Investor CDP Information Request

CDP 2013

June 2013

Report compiled by

PROMETHIUM CARBON

Table of Contents

Table of Contents

Introduction

0. Introduction

0.1 Introduction

Please give a general description and introduction to your organization.

You are not required to give an introduction to your corporation, but please do so if you wish.

Group Five is a diversified construction, infrastructure concessions and services group with an established and growing international client base engaged in resources, energy and infrastructure delivery. The group operates in South Africa, broader Africa, the Middle East and Eastern Europe.

The group believes that the ability to operate in a disciplined and sustainable manner over the long term is central to its ability to maintain a competitive advantage in both buoyant and challenging market conditions. Within this strategic context, Group Five has implemented a total quality management culture that underpins every aspect of its operations and reinforces the centrality of sustainability to the business. By placing quality management at the heart of its operations, Group Five has bound together often seemingly disparate business components and embedded the concept of a triple bottom line management culture.

With an annual turnover in the 2012 financial year of R9-billion, the group employs 10,400 people throughout its operations.

Group Five has taken a holistic approach to the green journey since 2004. This green strategy integrates compliance with innovation on the various project sites and offices.

2004
South Africa's first Social Responsibility Index (SRI) is launched on the JSE.

2007
Group Five becomes a member of the WWF and participates actively in seminars and information sharing sessions.

2008
Group Five is one of fourteen 'best performers' on the SRI index out of a total of 105 companies reviewed.

2009
Group Five becomes a Gold Founding Member of the Green Building Council of South Africa. Group Five participates in the South African Carbon Disclosure Project for the first time.

2010
Group Five acquires a major share in Kayema, a company specialising in solar water heating systems.

2011
Formed a joint venture with the Spanish renewable energy company Iberdrola.

2012
Despite not making it into the JSE Top 100 companies, Group Five continued reporting to the CDP. Following the review of the group's strategy and its decision to sell the energy intensive

Introduction

Construction Materials businesses, the group's portfolio and structure have been redefined in terms of its business model of developing, investing in, packaging, building and operating infrastructure.

0.2 Reporting Year

Please state the start and end date of the year for which you are reporting data.

Enter Periods that will be disclosed
01 July 2011 - 30 June 2012

0.3 Country list configuration

Please select the countries for which you will be supplying data. This selection will be carried forward to assist you in completing your response.

Select country
South Africa
Namibia
Botswana
Mozambique
Zimbabwe
Lesotho
Swaziland
Malawi
Congo, Democratic Republic of the
Zambia
Burkina Faso
Kenya
Tanzania
Dubai
Sierra Leone
Nigeria
Mauritius
United Arab Emirates
Jordan
Hungary
Poland
Ghana

0.4 Currency Selection

Please select the currency in which you would like to submit your response. All financial information contained in the response should be in this currency.

Introduction

Select currency
ZAR

Management

1. Governance

Group and Individual Responsibility

1.1 Where is the highest level of direct responsibility for climate change within your company?

Individual/Sub-set of the Board or other committee appointed by the Board

If individual/sub-set of the Board or other committee appointed by the Board; Senior Manager/Officer; or Other Manager/Officer:

1.1a Please identify the position of the individual or name of the committee with this responsibility

Job title: Group Risk Officer – responsible for managing all risks including those related to climate change.

Position in corporate structure: Executive Director of Group Five Construction (Pty) Ltd.

Individual Performance

1.2 Do you provide incentives for the management of climate change issues, including the attainment of targets?

Yes

If yes: **1.2a Please complete the table.**

Who is entitled to benefit from those incentives?	The type of incentives	Incentivized performance indicator
Business unit managers	Monetary reward	Developing and construction of green buildings and renewable energy projects.
Environment/sustainability managers	Monetary reward	Successful implementation of green initiatives and carbon emission reduction strategies and projects.
Risk managers	Monetary reward	Identifying climate change risks and opportunities and communicating climate change issues.
Board/Executive board	Recognition (non-monetary)	Communicating climate change issues.
Executive officer	Recognition (non-monetary)	Communicating climate change issues.
Management group	Recognition (non-monetary)	Communicating climate change issues.

Management

2. Strategy

Risk Management Approach

2.1 Please select the option that best describes your risk management procedures with regard to climate change risks and opportunities

Integrated into multi-disciplinary company-wide risk management processes.

If integrated into multi-disciplinary companywide risk management processes; or a specific climate change risk management process:

2.1a Please provide further details (see guidance)

The scope of the process (regulatory, customer behaviour changes, reputational and weather related risks and opportunities)

i. The risk management of climate change related issues is integrated into the corporate risk management strategy of Group Five; risks and opportunities related to climate change are therefore identified as part of the general risk management process within the company. Risk management is done on both the corporate level and, to the nature of an integrated construction business, on a project by project basis. The scope includes physical, regulatory, market, customer perception and behaviour changes, and other risks and opportunities.

How risks and opportunities are assessed at a company level

ii. To help assess risks and opportunities at a company level, Group Five have implemented a total quality management system (TQMS) that underpins every aspect of our operations and reinforces the centrality of sustainability and climate change to the business. The Group Risk Officer is responsible for risk management at the corporate level, and reports directly to the Board regarding identified risks and opportunities for the company. Ultimately the Board is responsible for the overall system of risk management. One of the Board's performance measures is risk management for which the impact is measured in the external audit report. For identification of climate change risks and opportunities on a company level, the Green Committee was established which consists of champions (the Environmental Managers) from each cluster. This team of champions, headed by the Group Risk Officer, are also responsible for recognizing ways to mitigate risks and to capitalize on opportunities identified.

How risk and opportunities are assessed at an asset level

iii. The group has sought to continue strengthening its strategic approach to risk management and to respond to risk factors at an operational level by threading a risk management mind-set into all of its business processes. Risks and opportunities are

assessed at an asset level for (a) all projects and sites, and (b) fixed operations and facilities. For new projects and sites, risks and opportunities inherent to each potential project are identified by the 'Risk Committee' during the tendering phase of a project. This committee consists of members of the 'Executive Committee' and the Tax, Legal, Commercial and Risk departments at head office. A comprehensive review of commercial, financial, technical, operational, SHEQ and climate issues is performed prior to approving the project. Risks and opportunities for fixed operations and facilities are assessed by the Green Committee, headed by the Group Risk Officer. Monthly contract and project review meetings are used to monitor and report progress on potential climate related risks and opportunities for projects and sites. Most sites also have Environmental Site Officers responsible for management of climate change risk and opportunities on-site. The group has an established enterprise risk management framework that allows management and the Board to analyse data related to risks and opportunities for individual projects and sites.

The frequency of monitoring

iv. Initial meetings for new projects and sites take place during the tendering phase to identify and assess initial climate change risks. Thereafter, monthly contract and project review meetings are used to monitor and report progress on potential climate related risks and opportunities for projects and sites. The enterprise risk management framework is reviewed annually by the Board.

Criteria for determining materiality/priorities

v. During this year new risk tolerance levels for the group, based on the board's risk appetite and the group's risk-bearing capacity, was established and implemented in the risk-bearing capacity (RBC) model. Risks and opportunities are assessed on probability, severity, and consequence. These attributes are evaluated and assigned risk values ranked according to the combined value of the risk ratings, thereby indicating the priority of the risk. The group's total quality management system is certified and measured to formal standards. The relevant standards used as criteria to determine materiality/priorities are ISO 31000 (Risk Management), OHSAS 18000 (Safety, health and environment), and ISO 14000 (Environment).

To whom are the results reported

vi. The results are reported, on a monthly basis, to the management team of each business unit responsible for the project. Quarterly, these risks and opportunities are reported to the Executive Directors and the Board.

Business Strategy

2.2 Is climate change integrated into your business strategy?

Management

Yes

If yes: **2.2a Please describe the process outcomes (see guidance)**

How the business strategy has been influenced, i.e. the internal communication/reporting processes that achieve this

i. Group Five's business strategy has been influenced by climate change on a number of levels:

- To source new business and projects from opportunities generated by both climate change mitigation (renewable energy, green buildings, etc.) and by climate change adaptation (infrastructure projects, etc);
- To optimise existing projects with respect to climate change mitigation (fuel efficiency on site) and adaptation (safeguarding sites against flash floods, etc); and
- To optimise fixed operations with respect to climate change adaptation and mitigation

The following internal communication and reporting structures ensure that climate change is effectively considered and potential influence on Group Five's business strategy is sufficiently communicated:

- The Green Committee, which consists of champions in each of the operating divisions, are responsible for identifying climate change risks and opportunities. The Green Committee has monthly meetings to monitor and review climate change risks and opportunities, and highlight issues of importance. The Group Risk Officer, who forms part of the Green Committee, reports to the Board. Every 6 months the Board and Exco consider any potential changes required to the strategy in response to issues brought to their attention.
- The Green Committee is also responsible for communicating climate change strategy throughout their individual divisions. Communication of green initiatives is done via the 'Green page' on the company intranet and monthly internal newsletters. Each champion is responsible for implementing and tracking performance of green initiatives within their own operating divisions.
- Annual feedback meetings with the heads of business units on the carbon footprint results and progress of the specific business unit also aid in communicating climate change related risks and opportunities.
- A new electronic management system is being implemented within the company. This system will enable reporting of not only financial indicators, but also the salient factors of projects and sites required for calculating a more complete and accurate GHG inventory. With this system, management will be able to access information regarding

projects and sites at anytime during the year and, combined with the risks and opportunities as reported by the Green Committee, make informed decisions.

What climate change aspects have influenced the strategy

ii. Market developments influenced by climate change regulation and global climate change perceptions have influenced the strategy of Group Five significantly - the global move to a carbon-constrained economy provides opportunities for business development in construction and low carbon energy solutions. Opportunities like the increased demand for green buildings and renewable energy resulted in Group Five dedicating two teams for identification and implementation of these types of projects. The decision to establish these teams was underpinned by the large emission reduction targets pledged by South Africa and the barriers associated with development of renewable energy projects. These teams have a goal to secure as many projects as possible under the Eskom REIPP programme.

Physical climate change aspects (such as extreme weather events, extreme temperatures and precipitation pattern changes) and regulatory climate change aspects (such as the imminent carbon tax and increased fossil fuel prices) have also influenced the strategy. Our long term contracts are carefully worded to reduce weather related costs/penalties and projects are insured suitably to have cover for these instances if they occur. With respect to projects on our books, the strategy has been adapted to take cognisance of increased energy costs (either direct cost or as a result of increased costs passed down via the supply chain) and the potential impact of the proposed carbon tax for South Africa.

Most important components of the short term strategy that have been influenced by climate change

iii. In the short term (2 years), Group Five is aiming to position itself as the leading construction company in green buildings to capitalise on market opportunity. Employees are actively involved in the development of the Green Building Council of South Africa's (GBCSA) rating tools, and we also have an employee on the board of the GBCSA. Our marketing strategy has also been adopted to capitalise on promoting our leadership in the green buildings industry.

To more accurately calculate and track our GHG inventory, a new electronic management system is being implemented within the company that will record all the salient factors of projects and sites. With this system, management will be able to access information regarding projects and sites at anytime during the year and, combined with the risks and opportunities as reported by the Green Committee, make informed decisions. The more complete and accurate GHG inventory reporting might also enable target setting in future.

Most important components of the long term strategy that have been influenced by climate change

iv. With long term strategy in mind (5-10 years), the group has recognised climate change opportunities related to market developments and made the decision to continue to carry some underutilised resources as holding costs, as well as to invest in future opportunities

and capacity building in renewable power, nuclear readiness, and the postponed local and new over-border PPPs. Although the benefits of these will not be realised before F2013/F2014, the group is confident that it made the correct decision to finance these investments with the group's medium to long term growth strategies in mind. Group Five has two dedicated teams for identification and implementation of these projects:

- A division of IDS (Infrastructure Development Services) responsible for the development of renewable energy projects and bidding into the government program; and
- A division of E&C (Engineering & Construction) involved as EPC contractor in the construction of renewable energy projects.

During this financial year Group Five also successfully established Group Five Nuclear Services, and invested in Lesedi Nuclear Services.

How this is gaining you strategic advantage over your competitors

v. Group Five is an early mover in the green buildings and renewable energy field. The business is structured through the divisions described above to fully capitalise on the opportunities presented by climate change. With the implementation of the South African carbon tax and the probability of mandatory reporting, Group Five has good in-house knowledge and experience for reporting their carbon footprint in the very complex construction industry, this giving a competitive advantage over our peers. Carbon footprint reporting has already been done for 5 years in Group Five and we are familiar with the difficulties of boundary setting and emission allocation. Early implementation of reduction projects and identification of reduction possibilities aid in giving Group Five a competitive advantage when the carbon tax is implemented.

What is the most important business decisions made in 2012, influenced by the climate change driven aspects of the strategy

vi. Group Five is actively pursuing opportunities in the renewable energy sector. The company is a shareholder in Kayema, a South African based company that specialises in solar water heating, and Group Five is in a consortium with Spanish company IBERDROLA INGENIERIA to roll-out wind and solar energy projects under the REIPPP process of South Africa. During this financial year Group Five also successfully established Group Five Nuclear Services, and invested in Lesedi Nuclear Services.

Group Five also commenced construction of a new five star green office block in Waterfall Estate, Gauteng. All Group Five divisions previously located in numerous office buildings, will in future be housed in this new green building.

Grant Ramsay, a Group Five senior project manager, is on the board of the GBCSA and Group Five employees have been actively involved in all the green star rating tools developed to date.

Management

Engagement with Policy Makers (CDP 2012 Q2.3, amended)

2.3 Do you engage in activities that could either directly or indirectly influence policy on climate change through any of the following? (tick all that apply)

Direct engagement

If 'Direct engagement' is ticked:

2.3a On what issues have you been engaging directly?

Focus of legislation	Corporate position	Details of engagement	Proposed solution
Carbon Tax	Support with minor exceptions	Group Five has been engaging directly with National Treasury regarding the proposed South African carbon tax. The company has commented on the Green Paper on Carbon Tax and participated in the carbon tax impact study by Treasury to establish how local firms have responded to higher electricity prices as well firms' ability to respond to further electricity price increases.	Group Five is concerned over the lack of clarity on the country's climate change strategy and what government is seeking to achieve in terms of climate change mitigation per sector. A customised sectoral climate change mitigation plan for the construction industry has not yet been developed. Currently there is an absence of guidance on how the construction industry should operate so as to support the country-wide objective of meeting South Africa's emission reduction pledge under the Copenhagen Accord. It is difficult for construction firms, including Group Five, to develop a green strategy if no clear indications are provided in this respect. Border Tax is another issue of concern. For large construction projects, Group Five can either import or purchase local material (e.g. cement and steel). A carbon tax on input material will put local producers at an uncompetitive disadvantage, and favour inputs from other producers elsewhere. Suggested border tax adjustments and trade tariffs are not clearly defined in the Carbon Tax papers to date.

2.3e Do you fund any organizations to produce public work on climate change?

No

If 'Direct engagement', 'Trade associations', 'funding research organizations' or 'other' is ticked:

2.3h What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?
The same team that advise the board and influence strategy also has the responsibility to engage with policy makers. The Group Risk Officer that forms part of the Green Committee and report to the board also engage with policy makers on climate change related issues.

3. Targets and Initiatives

Targets

3.1 Did you have an emission reduction target that was active (ongoing or reached completion) in the reporting year?
No

If you do not have a target:

3.1e Please explain (i) why not; and (ii) forecast how your emissions will change over the next five years

i. Setting a target is a complex undertaking that requires a significant internal reporting process. Group Five is a diversified construction services, materials and infrastructure investment group. Therefore the overall footprint is directly correlated to number and type of construction projects and contracts in a given year.

As the carbon footprint of our operations is directly linked to the design of the projects we build and the design is dictated by the client, Group Five does not have direct control over the footprint of our projects. We do however engage actively with our clients to advise them on the climate change impacts of the designs we build.

Large infrastructure projects are typically joint venture agreements or consortiums with complicated data collection for carbon footprint calculations. This poses a barrier for the implementation of emission reduction initiatives and incentive schemes. In contrast, the fixed operations (permanent offices, asset management and manufacturing operations) have a fixed baseline. Therefore, systems to calculate this part of the carbon footprint are less complex.

Carbon footprinting in the project-based construction industry is significantly more complex than what it is for fixed operations and there is currently no clear guidance on many of the issues. The major challenges are the setting of organisational and operational boundaries for complex projects built by consortiums and joint ventures (a common practice in the mega-projects we are involved in) and the alignment of greenhouse gas accounting systems for projects where the participants have different approaches due to the lack of standards. These challenges are further exacerbated by the split incentive barrier where the client and

ultimate owner of the project has the biggest impact on the emissions through the design specifications, but counts the project's emissions in its Scope 3 and therefore have little incentive to reduce it.

For the F2011 and F2012 carbon footprints, Group Five adopted a new approach for determining the operational boundary. This entails accounting for carbon emissions according to the amount spent as captured in the financial system, thereby assuming that everything that Group Five purchased are under the operational control of the company and can be allocated as GHG emissions to Group Five.

To more accurately calculate and track our GHG inventory, a new electronic management system is being implemented within the company that will record all salient factors of projects and sites. The more complete and accurate GHG inventory reporting might bring more consistency and enable target-setting in future.

The company is in the process of standardising its carbon footprint boundaries and scope with the experience it has gained over the past five years of carbon footprint reporting, but until there is consistency in the reporting from one year to the next, the setting of targets, and subsequent monitoring of targets is a futile exercise.

ii. Over the next 5 years, reduction from the F2011 baseline will be split between the fixed operations of the business and the projects/contracts. It is envisaged that the projects/contracts could reach a 3% relative emission reduction while the fixed operations could achieve a 3% absolute emission reduction.

Emission Reduction Initiatives (CDP 2010 Q9.7-9.9; Q16)

3.2 Does the use of your goods and/or services directly enable GHG emissions to be avoided by a third party?
Yes

If yes: **3.2a Please provide details (see guidance)**

Emissions are avoided by customers utilising the green buildings constructed by Group Five. On average, green buildings are expected to achieve anything between 30-50% energy savings, and therefore greenhouse gas emission reductions, through their lifetime when compared with conventional buildings. Group Five is in the process of constructing our own new office building (5 star rating) and has tendered for the following projects:

- Department of Statistics (5 star rating)
- Maxwell Office Park II (4 star rating)
- New Head office Department of Rural Development and Land Reform (4 star rating)
- DStv City (4 star rating)

When compared to conventional buildings, and assuming an average of 60 years lifetime for a building, the avoided emissions of our new office building for the entire 60 years are estimated to be 320,000 tonnes CO_2e. Ratings for the buildings are awarded by the Green Building Council of South Africa against the "Green Star SA – Office v1" methodology. Standards and methodologies used to estimate savings for these initiatives, and subsequent initiatives discussed in this question, are the same as used for the Group Five carbon footprint: *ISO 14064-1* and *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)*. General emission factors used for calculating the possible savings are also the same as used in this year's carbon footprint calculations. The energy consumption of conventional buildings in South Africa was obtained from the *SANS 204 Draft facilitation project* documentation. An assumption was made that green buildings will on average be 40% more energy efficient than conventional buildings. CDM methodologies are available to register and claim carbon credits from energy efficient green buildings. However, reductions will take place by owners/occupants utilising the building itself, and therefore these credits will belong to the owners of the building unless an agreement is made between the owners and Group Five.

With the stake Group Five has in Kayema (a solar water heating company), clients using solar water heaters will save between 1-2 MWh electricity per annum for residential installations. Kayema's high-end system installations for 2012 could realize savings of over 7,300,000 kWh per year, which amounts to savings of roughly 7500 tons CO_2e per year. The solar water heaters have a 20 year life-cycle, which is guaranteed for 10 years. The CDM methodology used for calculating emission reductions and registering under the CDM for carbon credits is "AMS-I.J – Solar Water Heating Systems". To date, no carbon credits have been claimed for any solar water heater installations.

Group Five is part of project development teams responsible for the development of renewable energy projects. For every 1 MWh of renewable energy generated, 0.99 ton CO2 will be avoided by displacing an equivalent amount from the South African electricity grid. Group Five, in consortium with IBERDROLA INGENIERIA, will build two wind farms and two photovoltaic plants in South Africa with a total project cost of €265 million. The facilities to be built are the Dassiesklip wind farm (26.19 MW), the Jeffereys Bay wind farm (133.86 MW), the De Aar photovoltaic plant (48.25 MW) and the Droogfontein photovoltaic plant (also 48.25 MW). The plants will have a combined power generation potential of 257MW, with the opportunity to achieve between 3.5-5.5 million tons of CO_2 emission savings over 10 years of operation.

Group Five is in the process of investigating passive sustainable housing. A passive house should save at least 75% of the energy usage of a standard Eskom-grid connected house. With the use of photovoltaic LED Lighting, solar geysers, and design criteria, we have managed to reduce the electrical consumption requirement to 17% of Eskom supply, bringing the house below the 25% required to term it a passive house. Energy savings are very specific to each house, but can amount to roughly 5 MWh per year over the lifetime of the house (roughly 5.15 ton CO_2 per year over 10 years). Unfortunately, due to budget constraints imposed on Group Five by project developers and

the government, none of these energy reduction measures are currently implemented into low-cost housing projects.

The group is in various stages of discussion on developing efficient transport corridors in Eastern and Southern Africa. These corridors would facilitate the transport of materials and goods and contribute to carbon savings in the transport industry.

3.3 Did you have emissions reduction initiatives that were active within the reporting year (this can include those in the planning and/or implementation phases)?
Yes

If yes, complete questions 3.3a, 3.3b and 3.3c:
3.3a Please identify the total number of projects at each stage of development, and for use in the implementation stage, estimated CO2e saving

Stage of development	Number of projects	Total estimated annual CO2e savings (only for rows marked *)
Under investigation		
To be implemented*		
Implementation commenced*	2 (Zimbabwe toll plazas, Waterfall Office park)	6600
Implemented*	1 (EE in Offices and site buildings)	1000
Not to be implemented		

Management

3.3b For those initiatives implemented in the reporting year, please provide details in the table below

Activity Type	Description of activity	Estimated annual CO2e savings	Annual monetary savings (unit currency)	Investment required (unit currency)	Payback period
Energy efficiency: Building services	Carbon savings via energy efficiency on sites and fixed operations which entailed light-bulb switching, motion detectors for lighting, and installation of solar water heaters was implemented in the reporting year. These actions will reduce Scope 2 carbon emissions of Group Five for the lifetime of the specific equipment (roughly 6-10 years for a solar water heater and 1-3 years for a CFL). Equipment used on construction sites where buildings are not permanent will be reused on future construction sites. This project is voluntary.	1000 ton CO2e	R 400000	No additional investment required	>3 years

3.3c What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Dedicated budget for other emission reduction activities	General carbon management and reduction projects
Other	Dedicated business division involved in the development of renewable energy projects with a multi disciplinary approach.

4. Communications

4.1 Have you published information about your company's response to climate change and GHG emission performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s)

Publication	Page/Section reference	Identify the attachment
Annual Report	106	

Risks & Opportunities

5. Climate Change Risk

5.1 Have you identified any climate change risks (current or future) that have the potential to generate a substantive change in your business operations, revenue or expenditure? Please identify the relevant categories:

☒ **Risks driven by regulation**
☒ **Risks driven by changes in physical climate parameter**
☒ **Risks driven by changes in other climate-related developments**

Risks & Opportunities

5.1a Please describe your risks driven by changes in regulation

ID	Risk Driver	Description	Potential Impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
RR01	Carbon Taxes	On the 2nd of May 2013, the South African Government released a carbon tax policy paper for public comment. This policy paper is consistent with earlier published information on the carbon tax, including the Minister of Finance's budget speeches. The carbon tax policy paper proposes the introduction of a carbon tax of R120 per ton (t) CO2-eq above the tax-free thresholds from 1 January 2015. It presents a basic tax free threshold of 60%, with a potential (depending on the sector) additional allowance for trade exposure and process emissions and the option to offset part of the company's emissions. Sectoral benchmarks will be developed; companies performing below the sectoral benchmarks will be allowed additional tax exemption. Carbon tax will impact directly on the profitability of Group Five operations; both on the direct operations and also on the supply chain. Group Five has very large Scope 3 emissions and the construction industry in general is dependent on products that have a large embedded carbon footprint. The impact of the carbon tax on these products will be significant, and will impact on the Group Five supply chain. Suppliers will be under pressure to pass on the cost impacts of the carbon tax. This risk is expected to increase Group Five' operational costs if not managed correctly.	Increased operational cost	1-5 years	Direct	Very Likely	Low-medium

Risks & Opportunities

ID	Risk Driver	Description	Potential Impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
RR02	Emission reporting obligations	The Director of the Climate Change Monitoring & Evaluation Unit at the of the Department of Environmental Affairs (DEA) announced that a mandatory greenhouse gas (GHG) reporting system will be implemented in South Africa in 2014 DEA. Group Five's main risks in this respect are: • Emission reporting at the required level of detail will require the implementation of systems that will increase the operating cost of Group Five operations. • There are no clear guidelines with respect to the reporting of emissions in construction projects. The extreme variability in the project portfolio may cause Group Five to be liable to report in one year, but not in the next. There is no guidance on how businesses of this nature will be handled. There is also lack of detail and clarity in the reporting standards with regards to accounting that can be a risk to Group Five.	Increased Operational Cost	1-5	Direct	Very likely	Low

Risks & Opportunities

ID	Risk Driver	Description	Potential Impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
RR03	Uncertainty surrounding new regulation	There is a great deal of uncertainty regarding the scope, content and format of future climate change legislation in Africa. The nature of Group Five's business is that it moves into different regions on a temporary basis to execute projects. The company has methods in place in which it assesses the regulatory environment in a region before commencing work in that region. However, climate change introduces uncertainty in the process as potential climate change regulation may not be visible on the radar screen at the time that the tenders for large infrastructure projects are submitted or the contracts signed, but could impact the project budget at a later stage, prior to completion.	Inability to do business	Current	Direct	About as likely as not	Unknown

Risks & Opportunities

ID	Risk Driver	Description	Potential Impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
RR04	Renewable Energy Regulation	Climate change is one of the drivers for the development of the Renewable Energy Independent Power Producer Programme in South Africa. This programme has however suffered from unexpected delays and uncertain deadlines in the financial close of rounds for submitting bids. Financial closure for window 1 has been delayed twice, and this has had a knock-on effect, resulting in postponements to other REIPPP deadline dates. These delays put strain on project developers in terms of extended costs that were initially not planned for and increased the risk of losing contractors. It also affects international credibility and investor confidence in South Africa's renewable projects. This uncertainty in the REIPPP process impacts operational cost of the Engineering and Construction team within Group Five and the consortium that Group Five has with IBERDROLA INGENIERIA, seeing as this is a team dedicated to the development of renewable energy projects and securing them for the REIPPP process. Group Five also run the risk of a project submitted not being selected to form part of the REIPPP programme, which results in losses for the company in terms of resources spent to complete the bid documents.	Increased operational cost	Current	Direct	Likely	Medium

Risks & Opportunities

5.1b Please describe (i) the potential financial implications of risk before taking action; (ii) the methods you are using to manage this risk and (iii) the costs associated with these actions

RR01 - Carbon Taxes

i. The financial implication of carbon tax on the Scope 1 emissions of Group Five, based on F2012 GHG inventory, will be R2.4 million per year. The current proposal by National Treasury is that companies will only be taxed on Scope 1 emissions; however, Eskom will be allowed to pass all taxes paid on their Scope 1 emissions through to the customer. The amount that Eskom could pass on, based on Group Five's 2012 electricity bill, is R3 million per year. The scope 3 emissions of diesel through the transport of construction materials such as steel, cement and aggregate to site would also be affected. Construction materials in general have a large embedded carbon footprint. Carbon taxes on either the manufacturing or purchasing of cement, steel, and bitumen, will affect both the availability and cost of these items downstream in the value chain.

ii. This risk is being managed within the company by pricing the known cost of electricity and fuel into the cost of the project at tender stage, and during project execution through the contractual relationship with the client, thereby passing the additional costs through to the client. By engaging with National Treasury, Group Five is also aiming to phase out the current non-renewable levy, as it amounts to double taxation on carbon emissions.

iii. There is no direct cost involved to managing this risk associated with increased operating costs as this is priced into the contracts. It does, however, make contracts more expensive, and can reduce competitiveness. For Group Five to remain competitive it has to reduce its direct emissions and non-renewable electricity usage, or reduce the profit margin on projects. For this reason Group Five established the Energy business division (within the Engineering and Construction Cluster). The cost to the company to establish this division was roughly R1 million in F2010. This division will be responsible for identifying and participating in energy projects (renewable and non-renewable) in order for Group Five to start investing in, and possibly generating, clean electricity. Group Five has also spent R400,000 on improving energy efficiency on sites and fixed operations. During this financial year the decision was made to sell the emissions intensive construction materials cluster of Group Five. This will help reduce Group Five direct emissions and our annual tax liability by roughly R700,000, based on the Scope 1 and 2 emissions of the F2012 GHG inventory.

RR02 - Mandatory greenhouse gas (GHG) reporting

i. In future, the potential financial implications of neglecting this risk will most likely result in penalties or fines; however, currently the financial implication to this risk cannot be quantified as the national reporting obligations are not yet in place. Another aspect of this risk will be reputational, as neglecting to report will reflect badly on Group Five and its management.

ii. Group Five is already in the process of calculating its footprint on an annual basis by making use of carbon consultants and in-house resources. The construction industry, especially on large construction projects, forms consortiums and joint ventures. Splitting the greenhouse

gasses generated through the development of a project is challenging and might require additional contract clauses once more accurate reporting becomes an obligation. Group Five is in the process of implementing an electronic management system that will enable more accurate and consistent reporting of the salient factors for the GHG inventory.

iii. Emission reporting at the required level of detail will require the implementation of systems that will increase the operating cost of Group Five operations. The F2012 budget for calculating and reporting of carbon emissions was R1,300,000 (this includes consulting fees, "green" marketing, and "green" events). The cost of the new electronic data management system is roughly R1,600,000.

RR03 - Climate change legislation in Africa

i. There remains a great deal of uncertainty regarding the scope, content and format of future climate change legislation in Africa. The nature of Group Five's business is that it moves into different regions on a temporary basis to execute projects. The financial implication before taking action might be as high as R71 million if there is as little as 1% change in the total revenue of all the construction projects due to overrun on certain projects.

ii. The company has methods in place in which it assesses the regulatory environment in a region before commencing work in that region. However, climate change introduces uncertainty in the process as potential climate change regulation may not be visible on the radar at the time that the tenders for large infrastructure projects are submitted or the contracts signed, but could impact the project budget at a later stage. This risk is being managed by drafting clauses into contracts before starting a project in order to exempt Group Five from any changes in regulation while the project is in progress.

iii. For this abovementioned reason there is no additional cost associated with taking action on this risk, as long as this risk is being managed accordingly by the risk management procedures already in place.

RR04 – Delays in the REIPPP process

i. On average a tender under the South African REIPPP process costs Group Five approximately 700 – 850 man-hours which translate to a cost of roughly R 300,000 to R400,000 per tender. Delays in the bid process means having to re-allocate resources which does at times pose a problem. Delays in the tender process not only disrupt the manpower allocated to tenders but also have an impact on other possible lost opportunities which could have been tendered for.

ii. To mitigate risks during the tender process we do try and identify the tenders which we believe have the best chance of being awarded. This is not always possible as even the best opportunities are delayed or cancelled at times.

iii. There is no additional cost associated with managing the risk involved seeing as identification of the best tenders is already embedded in the business of the E&C cluster.

Risks & Opportunities

5.1c Please describe your risks driven by change in physical climate parameters

ID	Risk Driver	Description	Potential Impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact
PR01	Changes in precipitation extremes and droughts	Extreme weather events including excessive rain and droughts can impact on our construction projects and project planning. The main risks to Group Five in this respect are: • Increased costs on projects • To have more lost days than what was provided for in the contract • To have to rework certain parts of a project due to storm damage • Logistical risks in the projects with regards to supply of materials, water and energy	Reduced/disruption in production capacity	Current	Direct	Very likely	Medium
PR02	Changes in precipitation patterns	Changing rainfall patterns can cause disruption of construction contracts as work plans are designed according to existing precipitation patterns. The main risks for Group Five are: • Prolonged dry periods can jeopardise water supply to a project • Prolonged dry periods can increase costs associated with activities such as dust control and compaction • Prolonged wet periods can increased lost days on a project • Prolonged wet periods can jeopardise site	Reduced/disruption in production capacity	Current	Direct	Very likely	Medium

Risks & Opportunities

ID	Risk Driver	Description	Potential Impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact
		access and construction material delivery • Prolonged wet periods can increase project cost with regards to issues such as water pumping, shuttering, etc.					
PR03	Induced changes in natural resources	Exposure of employees to tropical diseases, including malaria. Malaria is a material risk for Group Five because some clients insist that an employee who has contracted malaria three times is not allowed to return to a site in the malaria risk area. This means that the company has to appoint a different employee for that specific job, which can result in delays and loss of expertise.	Reduced/disruption in production capacity	Current	Direct	Very likely	Medium

Risks & Opportunities

5.1d Please describe (i) the potential financial implications of risk before taking action; (ii) the methods you are using to manage this risk and (iii) the costs associated with these actions

PR01 – Changes in precipitation extremes and droughts

i. Changes in precipitation extremes and an increase in the amount of rainy days during a contract can restrict working days not planned for at the tendering phase of the project. In a case study of Group Five's Akyem mining works project in Ghana, it was found that the contract made allowance for 2.5 "standing days" per calendar month. However, for each day of standing not planned for, it can cost Group Five roughly R700,000 per day.
ii. In the contract with the client it is stated that, if it can be proven by Group Five that there is substantial variance from the planned amount of rainy days, this additional cost of non-working days will have to be covered by the client. For this reason, if monitoring is done correctly throughout the life of the project by Group Five (which is compulsory for each project), this risk should have no financial implication for Group Five. The amount of rainy days are increasingly formalised upfront in contracts. The methods used to manage this risk are done by the 'Risk Committee' which consults the local weather bureau and assesses the specific weather patterns of in the region of the site prior to tendering and approving a project. This process considers the climate change projections based on the latest climate change science. During this assessment the average amount of rainy days are determined and drafted in to the contract with the client.
iii. This process is a standard and compulsory step for each contract and therefore there should be no additional costs associated with these actions of managing the risk.

PR02 - Changes in precipitation patterns

i. In another case study it was found that the change in precipitation patterns disrupted road construction projects. On road-building projects, it is traditional to plan for no rainfall after April (in Gauteng area), in which case some works can be programmed on an accelerated basis to take advantage of the break in wet weather. At the same time, certain types of road surfacing cannot be undertaken when night-time temperatures drop below 5^{o}C, which normally happens after April. Late unseasonal rains, and hence the late start of the winter cold period, over the last 2 years have been assessed and the result shows that the assumptions made in programming road surfacing works have been incorrect, resulting in lower production as a result of wet weather, but permitting surfacing works to proceed for a longer period of time. The main impact is reduced productivity (approximately 20% compared with historical norms). On a major road project in Gauteng, a 1% loss in productivity translates into a cost of approximately R200,000, and therefore 20% is as much as R4 million, together with a potential late completion penalty of R120,000 per day.
ii. Methods used to mitigate the risks include: consultation with the weather bureau for short and medium term forecasting and planning, utilising off-peak periods such as weekends and night-time to reduce loss of production (albeit at an increased cost as a result of overtime

payments to staff), and increasing resources to improve utilisation of hot-mix asphalt capacity (albeit at an additional cost of equipment standby).

iii. Planning and prediction of weather patterns prior to the project results in no additional cost for Group Five, seeing as this is part of the normal planning process prior to construction. However, this case study showed that utilising off-peak periods costs Group Five R100,000 in additional overtime payments to staff, and R1,2 million for additional equipment standby costs for increased resources.

PR03 – Induced changes in natural resources

i. The changing climate has been linked to the spread of malaria and other tropical diseases. Group Five has many projects in Africa, and more specifically in high risk malaria areas. Malaria is a material risk for Group Five seeing that some clients insist that if an employee has had malaria three times, they are not allowed to return to that site in the malaria risk area, which means the company has to appoint a different employee for that specific job, which can result in delays and loss of expertise. The cost of evacuating a sick employee by air ambulance from a malaria area depends on the region within Africa from where he/she is being evacuated. The costs involved could therefore be in the order of R100,000 to R750,000 per employee.

ii. In order to manage this risk Group Five has started a “malaria prevention campaign”. This campaign is multidimensional and entails supplying expatriate employees with free malaria prophylactic medication, mosquito repellent lotions, external “fogging” of resident camp site areas, spraying offices and sleeping quarters, treating malaria breeding areas, and having a dress code that requires employees to wear clothing that covers the whole body.

iii. The average cost for the malaria prevention campaign on a project site with a “project peak” compliment of 400 expatriates over a period of one year, would be roughly R1.9 million.

Risks & Opportunities

5.1e Please describe your risks that are driven by changes in other climate-related developments

ID	Risk Driver	Description	Potential Impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact
OR01	Reputational risks	Group Five's response to climate change can result in reputational risks and loss of future projects and revenue. The reputational risks Group Five runs are in the following areas: • Investor relations – climate change awareness is becoming more important to a number of institutional investors. Two of Group Five's top 5 shareholders have stated publicly that climate change considerations feature explicitly in their investment decisions • Government relations – Any negative perception by regulatory authorities could impact negatively on the approvals required by Group Five to execute its projects. • Client relations – The rapidly changing public perceptions with regards to climate change means that Group Five's climate change reputation could impact on its ability to secure contracts. • Employee relations – Group Five actively tries to employ the best people in the industry. A negative reputation with regards to climate change may impact on our ability to achieve this goal.	Reduced demand for goods/services	Current	Direct	About as likely as not	Low

Risks & Opportunities

5.1f Please describe (i) the potential financial implications of risk before taking action; (ii) the methods you are using to manage this risk and (iii) the costs associated with these actions

OR01 – Reputational Risk

i. Although difficult to quantify, Group Five runs a reputational risk for late delivery or overspending on projects due to unforeseen impacts of climate change. This reputational damage may impact on its ability to secure future contracts. Indirect exposure to regulatory risks through suppliers and clients is a possibility as the nature of Group Five's primary business is involvement in the first stages of construction projects and contracts that would remain operational for years to come. Group Five is known for being one of South Africa's leading contractors in the rapidly evolving green buildings sector. Group Five was the Main Contractor for two of the first project in South Africa to be certified by the Green Building Council of South Africa (GBCSA) in accordance with its Green Star Rating System. Just as it is known that Group Five constructed these new green buildings, other buildings perceived as inefficient that were either designed or constructed by Group Five would carry a reputational risk. Although the long term emissions is the responsibility of the user, the realisation of projected savings will only be visible in accordance with international standards in the next 40-100 years. If Group Five fails to get a contract due to reputational damage, the lost revenue will impact on the profitability of the company. In F2012 Group Five construction contributed 81% to the company revenue. If we where to lose as little as 1% of projects due to reputational risk it would amount to a loss in revenue of roughly R71 million (based on F2012 figures).

ii. The company takes all climate risks into consideration when tendering, planning and executing a project. All possible risks to a specific project are reviewed by the 'Risk Committee' prior to tendering or commencing with a project. This action does not entail any additional costs as this is part of the normal risk management process. Another means to manage the risk was by appointing a carbon consultancy firm to calculate Group Five's carbon footprint and manage some of its climate related issues, like reporting to the CDP.

iii. An amount of roughly R1,300,000 was made available for this in F2012, as well as for marketing, advertising and promoting Group Five as a construction company that is actively involved in adaptation and mitigation actions with regards to climate change. Group Five also regularly attends green building conferences both locally and internationally.

6. Climate Change Opportunities

6.1 Have you identified any climate change opportunities (current or future) that have the potential to generate a substantive change in your business operations, revenue or expenditure? Please identify the relevant categories:

☒ **Opportunities driven by regulation**
☒ **Opportunities driven by changes in physical climate parameter**
☒ **Opportunities driven by changes in other climate-related developments**

Risks & Opportunities

6.1a Please describe your opportunities driven by changes in regulation

ID	Opportunity Driver	Description	Potential Impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact
RO01	Other: Emerging Markets	The pledge of South Africa to reduce its carbon emissions by 34% in 2020, the imminent carbon tax, organisational attempts to reduce GHG emissions, and the increased electricity price are all drivers that support the rising green building industry in South Africa. The South African Renewable Energy Independent Power Producers (REIPP) program is also a huge drive for the implementation of renewable energy and the development of the market. The expansion of low carbon technologies including public transport infrastructure and renewable energy offers additional areas for construction sector growth. Significant potential in construction related opportunities exist in solar water heater or insulated ceiling rollout, as part of social development and/or climate change mitigation efforts. Group Five are very well positioned to capitalise on these opportunities seeing as we have a strong focus on being the leader in the green buildings industry and have dedicated teams for developing renewable energy and nuclear projects.	Increased demand for existing products/services	Current	Direct	Very likely	Medium-high

Risks & Opportunities

ID	Opportunity Driver	Description	Potential Impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact
2	Cap and trade schemes	South Africa is a non-Annex I country which ratified the Kyoto Protocol. It is therefore possible for companies to register Clean Development Mechanism (CDM) projects in South Africa. CDM provides more incentive for renewable energy project development, and this in turn can mean increased demand for renewable energy services as provided by the dedicated teams within Group Five. The carbon tax policy paper also states that companies will be able to utilise carbon credits to offset a portion of their carbon footprints to reduce their tax liability. This will further stimulate the market and demand for carbon credits.	Increased demand for existing products/services	Current	Direct	Very likely	Medium-high
3	Voluntary Agreements	Group Five is a shareholder in Kayema, a company specialising in solar water heating systems. This investment positions the company well to capitalise on the DSM funding program for solar water heaters.	Increased demand for existing products/services	Current	Direct	Very likely	Medium-high

Risks & Opportunities

6.1b Please describe (i) the potential financial implications of the opportunity before taking action; (ii) the methods you are using to manage this opportunity and (iii) the costs associated with these actions

RO01 – Renewable Energy Market Growth

i. The pledge of South Africa to reduce its carbon emissions by 34% in 2020, the imminent carbon tax, organisational attempts to reduce GHG emissions and the increased electricity price are all drivers that support the rising green building industry in South Africa, and support a variety of technology and material providers. The South African Renewable Energy Independent Power Producers (REIPP) program is also a huge drive for the implementation of renewable energy and the development of the market. Overall, the programme is expected to attract investment of around R100 billion between 2012 and 2016. The expansion of low carbon technologies including public transport infrastructure and renewable energy, offers additional areas for construction sector growth. Significant potential in construction related opportunities exists in the implementation of large-scale heat pump, solar water heater or insulated ceiling rollout as part of social development and/or climate change mitigation efforts. The potential financial implication before taking action is the lack of revenue and possible market share that may arise from the potential projects in the renewable energy sector. If Group Five increase the amount of projects in F2012 by 10% with additional green buildings and infrastructure upgrading projects, it could amount to an estimated R711 million of additional revenue for the company. Group Five has tendered on 5 new buildings to be developed within the near future. In the first round of the REIPPP process IBERDROLA INGENIERIA, in consortium with Group Five, has been chosen to build two wind farms and two photovoltaic plants in South Africa for a total amount of roughly R3,4 billion.

ii. Group Five has 2 teams specifically focussed on renewable energy projects: (1) a division of IDS (Infrastructure Development Services) responsible for the development of renewable energy projects and bidding into the DOE program; (2) a division of E&C (Engineering and Construction) involved as EPC contractor in the construction of renewable energy projects. This E&C cluster was created in F2010 to manage the opportunity by providing procurement and construction support to dedicated renewable energy technologies.

iii. More than R1 million was spent by Group Five in F2010 to get the E&C division up and running. The key focus is on concentrated solar thermal power, wind energy and small hydro plants to be built in South Africa. Group Five is actively involved in the construction of various wind and photovoltaic projects. Marketing is another method to utilise this opportunity by informing the public that Group Five are the leaders in this space and making them aware of what the company can offer. The cost implication of “green” marketing is included in the R1,300,000 budget allocated to carbon emission reporting, “green” events and “green” marketing.

RO02 – Cap and trade Schemes

Risks & Opportunities

i. With Group Five investing in renewable energy projects within the consortium with IBERDROLA INGENIERIA and having acquired a share in Kayema (SWH company), it is possible to obtain carbon credits for these projects if registered under the Clean Development Mechanism (CDM). CDM provides more incentive for renewable energy project development, and this in turn can mean increased demand for renewable energy services as provided by the dedicated teams within Group Five. The potential financial implication of carbon credits is very dependent on a specific project. The facilities that will be built within the consortium of Group Five and IBERDROLA INGENIERIA are the Dassiesklip wind farm (26.19 MW), the Jeffereys Bay wind farm (133.86 MW), the De Aar photovoltaic plant (48.25 MW) and the Droogfontein photovoltaic plant (also 48.25 MW). These projects have a combined power generation potential of 257MW, with the opportunity to have roughly between 3.5-5.5 million tons of CO_2 emission savings over 10 years of operation. The South African carbon tax policy paper permits offsets of a company's tax liability with carbon credits. This will stimulate the demand for carbon credits and raise the price to an estimated R100/ton CO2. At this estimated price the potential financial opportunity for the four mentioned renewable energy projects will be in the range of R 350-550 million over 10 years.
ii. This opportunity is being managed by the Engineering and Construction cluster and by the appointment of dedicated carbon consulting firms.
iii. Getting a project registered under the CDM will cost in the order of R1-3 million.

RO03 – Voluntary agreements

i. Eskom offers a rebate on solar water heaters (SWH) as part of their DSM funding program. With this rebate, return on investments in the SWH industry becomes very attractive. The potential financial implication before taking action is the lack of revenue and potential market share that may arise from investing in SWH projects or companies.
ii. Group Five is actively pursuing opportunities in the renewable energy sector in Southern Africa and is a shareholder in Kayema, a locally based company that specialises in solar water heating. Group Five holds 25% of the shares in Kayema.
iii. There is no additional cost associated with capitalising on this opportunity.

Risks & Opportunities

6.1c Please describe the opportunities that are driven by changes in physical climate parameters

ID	Opportunity Driver	Description	Potential Impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact
PO01	Other physical climate opportunities: Changes in frequency of extreme weather events	Rebuilding infrastructure after extreme weather events provides opportunities for Group Five to improve infrastructure, such as upgrades of drainage infrastructure, roads, embankments, and buildings. Group Five has many opportunities for embankment and harbour upgrades in African countries.	Increased demand for existing products/services	Current	Direct	More likely than not	Medium-high

6.1d Please describe (i) the potential financial implications of the opportunity before taking action; (ii) the methods you are using to manage this opportunity and (iii) the costs associated with these actions

Africa is vulnerable to climate change, and the Copenhagen Accord provides funds for adaptation (the total available resources available in the Adaptation Fund under the UNFCCC are expected to be between USD 300-500 million by end-2012). It is also estimated that the African continent requires an annual investment of at least USD $93 billion in infrastructure development over the next 10 years in order to catch up with other developing regions. It is likely that a portion of these substantial funds would be allocated to infrastructure improvements such as improved water supply, sanitation, irrigation, embankment and sea level protection. Group Five is well positioned with both project experience in countries throughout Africa and successful project delivery. Countries such as Ghana and Madagascar (countries in which Group Five has been active with construction projects) committed themselves to have mitigation and adaptation action in the transport, energy and industrial & process sectors, as part of their Copenhagen Accord participation. This could provide opportunities in terms of funding for new infrastructure projects. The South African Risk and Vulnerability Atlas show climate change risks for the country which will require significant investment from local government towards infrastructure upgrades for mitigation an adaptation. These infrastructure upgrades include upgrades of storm-water drainage, roads, embankments, and buildings.

An expansion in infrastructure investment was one of the central priorities of the 2013 Budget Speech by the South African Minister of Finance, Pravin Gordhan. Government will over the three years from 2013/14 invest R827 billion in building new and upgrading existing infrastructure. Approved and budgeted infrastructure plans amount to R537 billion is in the energy sector, R151 billion in transport and logistics projects, and R35 billion for building dams and pipelines. This is not only a function of the national developmental goal but also driven by the national climate change response policy. These sectors are the central focus of Group Five's business.

Increased regulatory requirements and prescribed standards (like SANS 204) will benefit the business as new business opportunities and larger tenders could arise. These would range from new housing requirements, through commercial buildings to new road infrastructure. It is estimated that buildings consume 40-50% of the world's energy through their construction and ongoing operation. Green buildings can reduce the consumption of energy to less than half of a conventional building. Group Five is at the forefront of not only the construction, but also the design and development of green buildings.

Apart from climate change and the need for adaptation, the Millennium Development Goals (reducing poverty by 2015) is an additional driver for governments in Africa to invest in public infrastructure such as water, electricity, transport, healthcare, education and administration. Group Five as a market leader in multi-disciplinary construction works is well positioned to deliver on these key contracts in a sustainable manner. Infrastructure contracts currently being rolled out include

conventional, coal-fired and nuclear electricity power; road networks; railway expansion; commuter schemes; port and harbour developments; large pipelines; water and waste water treatment plants and water storage facilities.

The potential financial implications before taking action on these abovementioned opportunities are the lack of revenue and possible market share that may arise from green buildings and infrastructure upgrade projects. Group Five could realise R711 million in additional revenue by increasing the amount of projects in F2012 by 10% with additional green buildings and infrastructure upgrading projects.

The method used to manage this opportunity is the development of the Engineering and Construction (E&C) cluster which cost the company more than R1 million to establish in F2010. Also, during this financial year Group Five successfully established Group Five Nuclear Construction Services (NCS), and invested in Lesedi Nuclear Services. The value of this investment amounts to R20 million. The value of the contracts signed by NCS up to the end of June 2013 is R105 million.

This opportunity is also managed with active marketing focused on informing the public of Group Five's offerings leadership in green buildings. Being active in the green building space and having a Group Five employee on the board of the GBCSA also give Group Five a competitive advantage over other construction companies. The cost implication of "green" marketing and events is included in the R1,300,000 budget allocated to carbon emission reporting, "green" events and "green" marketing.

Risks & Opportunities

6.1e Please describe the opportunities that are driven by changes in other climate-related developments

ID	Opportunity Driver	Description	Potential Impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact
OO01	Changing consumer behaviour	Group Five is actively involved in the renewable energy sector in Southern Africa, and with changing consumer behaviour there will be an increased demand for renewable energy rather than fossil fuel energy. Climate Change and the media surrounding it have influenced consumers to increasingly demand non-fossil fuel based energy (directly and indirectly).	Increased demand for existing products/services	Current	Direct	More likely than not	Medium-high
OO02	Changing consumer behaviour	A demand for green buildings for both commercial and residential properties will result in retrofitting and upgrading existing property assets as well as innovative new developments. Media coverage of climate change, as well as the increasing cost of energy, have influenced consumers to increasingly demand green buildings.	Increased demand for existing products/services	1-5 years	Direct	More likely than not	Medium

Emissions

6.1f Please describe (i) the potential financial implications of the opportunity before taking action; (ii) the methods you are using to manage this opportunity and (iii) the costs associated with these actions

OO01 – Renewable Energy Consumer Demand

i. Group Five is actively involved in the renewable energy sector in Southern Africa and with changing consumer behaviour there will be an increased demand for renewable energy rather than fossil fuel energy. The potential financial implication before taking action on these abovementioned opportunities is the lack of revenue and possible market share that may arise from these projects. Group Five has an aim to secure a large part of the estimated potential market share of R100 billion for renewable energy technologies in South Africa between 2012 and 2016. South Africa's Integrated Resource Plan for the energy sector envisages 3725 MW of renewable energy being added to the country's power mix over the coming few years.

ii. Management of this opportunity is done by Group Five's Engineering and Construction (E&C) cluster that are offering engineering, procurement and construction support to dedicated renewable energy technologies. The key focus is on concentrated solar thermal power, wind energy and small hydro plants to be built in South Africa. The Group Executive Committee (Exco) and Management Committee (Manco) have approved the initiative of creating a new concept that takes our sector focus forward in a new Engineering and Construction (E&C) business.

iii. Establishment of the E&C cluster resulted in a cost to the company in F2010 of more than R1 million. The E&C business is intended to add to the Group's penetration of markets and add new prospects and opportunities to the group. The key E&C sector focus will initially include, but not limited to: renewable and gas fired power generation and green business opportunities. Group Five has a 25% stake in Kayema (as solar water heating company) and in F2011 formed a joint venture with a Spanish company (IBERDROLA INGENIERIA) to access relevant technology and expertise for renewable projects in South Africa. Marketing is another method to utilise this opportunity by informing the public that Group Five are the leaders in this space and making them aware of what the company can offer. The cost implication of "green" marketing is included in the R1,300,000 budget allocated to carbon emission reporting, "green" events and "green" marketing.

OO02 – Green Buildings Consumer Demand

i. A demand for green commercial and residential properties will result in retrofitting and upgrading existing property assets as well as innovative developments. The potential financial impact to Group Five before taking action on this opportunity is the possibility of a loss in new market share that may arise from the green buildings sector. The project cost for the green buildings built by Group Five in F2012 was R1.8 billion. With the expansion of the green building industry this market can become much more significant and contribute a large fraction of the overall Group Five annual revenue.

ii. The green star rating system, developed by the Green Building Council of South Africa in conjunction with Group Five and other role players, has been adopted by a number of government agencies for the design of their new offices. Group Five has, through early adoption, a competitive advantage in submitting designs for these concessions. Group Five is in the process of constructing our own new office building (5 star rating) and tendered on the following projects:

- Department of Statistics (5 star rating)
- Maxwell Office Park II (4 star rating)
- New Head office Department of Rural Development and Land Reform (4 star rating)
- DStv City (4 star rating)

iii. All costs associated with green building design and construction is paid for by the client. However, it cost Group Five around R200,000 in F2012 to train and equip personal for working on green building sites.

7. Emissions Methodology

Base Year

7.1 Please provide your base year and base year emissions (Scope 1 and 2)

Base Year	Scope 1 Base year emissions (metric tonnes CO2e)	Scope 2 Base year emissions (metric tonnes CO2e)
2010	69463.70	84483.82

Methodology

7.2 Please give the name of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions

ISO 14064-1

The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

7.3 Please give the source for the global warming potentials you have used

Gas	Reference
CO2	IPCC Third Assessment Report (TAR-100 year)

7.4 Please give the emissions factors you have applied and their origin; alternatively, please attach an Excel spreadsheet with this data

Fuel/Material/Energy	Emissions Factor	Unit	Reference

Diesel/Gas oil	2.67	kg CO2e per litre	Defra (2012)
Motor Gasoline	2.31	kg CO2e per litre	Defra (2012)
Bituminous Coal	2.44	metric tonnes CO2e per metric tonne	2006 IPCC Guidelines for National Greenhouse Gas Inventories, Vol. 2 (CO2 emission factor 96,100 kg/TJ; Calorific value 25.8 MJ/kg)
Sasol Gas (Natural Gas)	0.0561	metric tonnes CO2e per gigajoule	2006 IPCC Guidelines for National Greenhouse Gas Inventories, Vol. 2
LPG	1.53	kg CO2e per litre	Defra (2012)
Other: South African Grid Electricity	0.99	metric tonnes CO2e per MWh	Eskom Annual Report 2011

8. Emissions Data

Boundary

8.1 Please select the boundary you are using for your Scope 1 and 2 greenhouse gas inventory (CDP 2012 Q8.1, amended)
Operational Control

Scope 1 and 2 Emission Data

8.2 Please provide your gross global Scope 1 emissions figures in metric tonnes CO2e
50 593

8.3 Please provide your gross global Scope 2 emissions figures in metric tonnes CO2e
62 071

8.4 Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions which are not included in you disclosure?
No

Data Accuracy

Emissions

8.5 Please estimate the level of uncertainty of the total gross global Scope 1 and 2 emissions figures that you have supplied and specify the sources of uncertainty in your data gathering, handling and calculations

Scope 1 emissions: uncertainty range	Scope 1 emissions: main sources of uncertainty	Scope 1 emissions: please expand on the uncertainty in your data	Scope 2 emissions: uncertainty range	Scope 2 emissions: main sources of uncertainty	Scope 2 emissions: please expand on the uncertainty in your data
Less than or equal to 2%.	Data Gaps Data Management Assumptions	Data gaps may occur due to some requests that may not have reached every part of the organisation despite every caution being taken to ensure this.	Less than or equal to 2%.	Data Gaps Data Management Assumptions	Data gaps may occur due to some requests that may not have reached every part of the organisation despite every caution being taken to ensure this.

External Verification or Assurance

8.6 Please indicate the verification/assurance status that applies to your Scope 1 emissions
Third party verification or assurance complete

If Scope 1 emissions have been subject to third party verification or assurance (complete or underway), answer questions 8.6a and 8.6b:
8.6a Please indicate the proportion of your Scope 1 emissions that are verified/assured
More than 90% but less than or equal to 100%

8.6b Please provide further details of the verification/assurance undertaken, and attach the relevant statements

Type of verification or assurance	Relevant standard	Relevant statement attached
Reasonable assurance	ISO14064-3	Yes

8.7 Please indicate the verification/assurance status that applies to your Scope 2 emissions
Third party verification or assurance complete

If Scope 2 emissions have been subject to third party verification or assurance (complete or underway), answer questions 8.7a and 8.7b:
8.7a Please indicate the proportion of your Scope 2 emissions that are verified/assured
More than 90% but less than or equal to 100%

Emissions

8.7b Please provide further details of the verification/assurance undertaken, and attach the relevant statements

Type of verification or assurance	Relevant standard	Relevant statement attached
Reasonable assurance	ISO14064-3	Yes

Carbon Dioxide Emissions from Biologically Sequestered Carbon

8.8 Are carbon dioxide emissions from biologically sequestered carbon relevant to your organization? (CDP 2012 Q8.8, amended)
No

9. Scope 1 Emissions Breakdown

9.1 Do you have Scope 1 emissions sources in more than one country? (CDP 2012 Q9.1, amended)
Yes

If yes: **9.1a Please complete the table below**

Country/Region	Scope 1 metric tonnes CO2e
South Africa	42678
Zambia	58
Burkina Faso	24
DRC	4145
Tanzania	27
Sierra Leone	672
Mozambique	675
Ghana	1049
Namibia	12
Hungary	47
Poland	1206

9.2 Please indicate which other Scope 1 emissions breakdowns you are able to provide (tick all that apply)

- ☒ **By business division (9.2a)**
- ☐ **By facility (9.2b)**
- ☐ **By GHG type (9.2c)**
- ☐ **By activity (9.2d)**

- ☐ **By legal structure (9.2e) (New for CDP 2013)**

9.2a Please break down your total global Scope 1 emissions by business division

Business division	Scope 1 emissions (metric tonnes CO2e)

Construction Materials	4428
Construction	19962
Engineering and Construction	0
Manufacturing	23900
Investments and Concessions	2303

10. Scope 2 Emissions Breakdown

10.1 Do you have Scope 2 emissions sources in more than one country? (CDP 2012 Q10.1, amended)

Yes

If yes: **10.1a Please complete the table below (CDP 2012 Q10.1a, amended)**

Country/Region	Scope 2 metric tonnes CO2e	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low carbon electricity, heat, steam or cooling (MWh)
South Africa	57344	57923	
Namibia	1	29	
Ghana	10	130	
Mozambique	-	21	
Burkina Faso	-	124	
Sierra Leone	-	10	
DRC	1	211	
Hungary	7	19	
Poland	4708	5250	

10.2 Please indicate which other Scope 2 emissions breakdowns you are able to provide (tick all that apply)

☒ **By business division (10.2a)**
☐ **By facility (10.2b)**
☐ **By activity (10.2c)**
☐ **By legal structure (10.2d) (new for CDP 2013)**

10.2a Please break down your total global Scope 2 emissions by business division

Business division	Scope 2 emissions (metric tonnes CO2e)
Construction Materials	9384
Construction	3330
Engineering and Construction	386
Manufacturing	40160
Investments and Concessions	8811

Emissions

11. Energy

11.1 What percentage of your total operational spend in the reporting year was on energy?

More than 10% but less than or equal to 15%.

11.2 Please state how much fuel, electricity, heat, steam, and cooling in MWh your organization has consumed during the reporting year

Energy Type	MWh
Fuel	176094
Electricity	63717
Heat	0
Steam	0
Cooling	0

11.3 Please complete the table by breaking down the total "Fuel" figure entered above by fuel type

Fuels	MWh
Diesel/Gas oil	105372
Motor Gasoline	4810
Bituminous Coal	61744
Sasol Gas (Natural Gas)	4137
LPG	31

11.4 Please provide details of electricity, heat, steam or cooling amounts that were accounted at a low carbon emission factor

No purchases or generation of low carbon electricity, heat, steam or cooling.

12. Emissions Performance

Emissions History

12.1 How do your absolute emissions (Scope 1 and 2 combined) for the reporting year compare to the previous year?

Decreased

If emissions have increased, decreased or remained the same overall:

12.1a Please complete the table

Reason	Emissions value (percentage)	Direction of change	Comment
Change in output	31	Decrease	Change in the number of projects and the decrease in the production of the Construction Materials cluster.
Emission Reduction Activities	1	Decrease	Emission reduction activities such as energy efficient lighting and other reduction measures

			implemented at the Group Five offices and sites resulted in a electricity usage reduction from the from the previous year's electricity usage.

Emissions Intensity

12.2 Please describe your gross combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO2e per unit currency total revenue

Intensity Figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
12.83	Ton CO_2	Million R turnover	23	Decrease	There was a large decrease (32%) in emissions due to a reduced output and energy efficiency measures. Revenue only decreased by 5%.

12.3 Please describe your gross combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO2e per full time equivalent (FTE) employee

Intensity Figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
10.82	Ton CO_2	FTE employees	22	Decrease	There was a large decrease (32%) in emissions due to a reduced output and energy efficiency measures. The number of full-time employees also decreased by 13%, but this is lower than the emission decrease.

12.4 Please provide an additional intensity (normalized) metric that is appropriate to your business operations

Intensity Figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
23.25	Ton CO_2	Permanent employees	2	Decrease	There was a large decrease (32%) in emissions due to a reduced output and energy efficiency measures. Permanent employees also decreased by 28%, but this is lower than the emission

					decrease.

13. Emissions Trading

13.1 Do you participate in any emissions trading schemes?

No, and we do not anticipate doing so in the next 2 years

13.2 Has your company originated any project-based carbon credits or purchased any within the reporting period?

No

14. Scope 3 Emissions

14.1 Please account for your organization's Scope 3 emissions, disclosing and explaining any exclusions (CDP 2012 Q15.1, amended)

Sources of Scope 3 emissions	Evaluation status	Metric tonnes CO2e	Methodology	Percentage of emissions calculated using primary data	Explanation
Purchased goods and services	Relevant, calculated	69385	(i) The activity data was obtained from supply chain records for quantity of each type of product purchased. The direct supplier emissions are estimated by multiplying the quantity of purchased product by an emission factor associated with the production of the product. Emissions from the manufacturing of aggregates, concrete and cement were included. Life cycle emission factors (including embodied carbon) were obtained from the "Inventory of Carbon and Energy" study on construction material done by the University of Bath (2011). (ii) The data quality is low due to the general emission factors used (not supplier specific). (iii) This section was completed in accordance with the Scope 3 Accounting and Reporting Standard by The Greenhouse Gas Protocol Initiative.	100	-
Capital goods	Not relevant, explanation provided	-	-	-	Insignificantly small compared to other Scope 3 emissions
Fuel-and-	Relevant,	10576	(i) The activity data was obtained from	100	-

energy-related activities (not included in scope 1 or 2)	calculated		supply chain records for quantity of each type of product purchased. The direct supplier emissions are estimated by multiplying the quantity of purchased product by an emission factor associated with the production of the product. Upstream emissions from coal, diesel, petrol, LPG, Paraffin, and T&D losses from electricity purchases were included. Defra 2012 Scope 3 emission factors was used for purchased fossil fuels, and a T&D losses emission factor was calculated using data from Eskom. (ii) The data quality is low due to the general emission factors used (not supplier specific). (iii) This section was completed in accordance with the Scope 3 Accounting and Reporting Standard by The Greenhouse Gas Protocol Initiative.		
Upstream transportation and distribution	Relevant, calculated	5020	(i) The quantity of fuel used for upstream transport and distribution was obtained from suppliers. This was multiplied by an emission factor associated with the type of fuel used for transport. Petrol and Diesel as transportation fuel was included in this section. Defra 2012 emission factors were used for the upstream production and utilisation of the fossil fuels. (ii) The data quality is low due to the general emission factors used (not supplier specific). (iii) This section was completed in accordance with the Scope 3 Accounting and Reporting Standard by The Greenhouse Gas Protocol Initiative.	100	-
Waste generated in operations	Not relevant, explanation provided	0	N.A.	N.A.	Very little organic waste generated and waste estimated as insignificant.
Business travel	Relevant, calculated	21060	(i) Air travel data was obtained from the company's travel agent. The number of flights and destinations was used to estimate distances travelled by aircraft. This was then multiplied by the appropriate Defra 2012 emission factor. Car rentals and claimed kilometres for business travel by road were obtained from the travel agent and the company's financial system. The monetary value of claimed kilometres and an average rate was used to calculate km's travelled. An average vehicle emission factor from Defra	100	-

			2012 was used to calculate the emissions from this road business travel. (ii) The data quality is low due to the general emission factors used (not supplier specific). (iii) This section was completed in accordance with the Scope 3 Accounting and Reporting Standard by The Greenhouse Gas Protocol Initiative.		
Employee commuting	Relevant, calculated	19185	(i) Number of employees was obtained from the annual report. Average travel distance of 40km per day was assumed with 240 travelling days per annum. The distance travelled by the specific method was multiplied with the appropriate emission factor from Defra 2012 to obtain the emissions. (ii) The data quality is low due to the general emission factors used (not supplier specific) and the assumptions made regarding the distances travelled by employees. (iii) This section was completed in accordance with the Scope 3 Accounting and Reporting Standard by The Greenhouse Gas Protocol Initiative.	50	
Upstream leased assets	Not relevant, explanation provided	0	N.A.	N.A.	Very few leased assets are used in Group Five operations. The emissions associated with upstream leased assets are estimated as insignificant.
Investments	Not relevant, explanation provided	0	N.A.	N.A.	Assumed to be insignificant.
Downstream transportation and distribution	Not relevant, explanation provided	0	N.A.	N.A.	Due to the nature of the business there is very little downstream transport and distribution, and assumed to be insignificant.

Processing of sold products	Not relevant, explanation provided	0	N.A.	N.A.	Due to the nature of the business there is very little processing of sold products, and assumed to be insignificant.
Use of sold products	Relevant, calculated	666517	(i) All the toll roads have records of the amount and specific class of vehicle that used the road. Emission factors from Defra (2012) are used for the specific vehicle classes and multiplied by the length of the toll road. (ii) The data quality is low due to the general emission factors used (not supplier specific) and the assumptions made regarding the distances travelled. (iii) This section was completed in accordance with the Scope 3 Accounting and Reporting Standard by The Greenhouse Gas Protocol Initiative.		
End of life treatment of sold products	Not relevant, explanation provided	0	N.A.	N.A.	Due to the high levels of uncertainty this was not calculated and difficult to estimate.
Downstream leased assets	Not relevant, explanation provided	0	N.A.	N.A.	Group Five do not lease out any assets
Franchises	Not relevant, explanation provided	0	N.A.	N.A.	The franchise model is not used in Group Five
Other (upstream)					
Other (downstream					

14.2 Please indicate the verification/assurance status that applies to your Scope 3 emissions

Not verified or assured.

14.3 Are you able to compare your Scope 3 emission for the reporting year with those for the previous year for any sources?

Yes

Emissions

If yes: **14.3a Please complete the table**

Sources of Scope 3 emissions	Reason for change	Emissions value (percentage)	Direction of change	Comment
Purchased goods and services	Change in output	9	Decrease	
Fuel-and-energy-related activities (not included in scope 1 or 2)	Change in output	78	Decrease	
Upstream transportation and distribution	Change in output	140	Increase	
Business travel	Change in output	2	Decrease	
Employee commuting	Change in output	28	Decrease	

14.4 Do you engage with any of the elements of your value chain on GHG emissions and climate change strategies? (Tick all that apply) (New for CDP 2013)

☐ **Yes, our suppliers**
☐ **Yes, our customers**
☐ **Yes, other partners in the value chain**
☒ **No, we do not engage**

If 'no, we do not engage' is ticked:

14.4d Please explain why not and any plans you have to develop an engagement strategy in the future

We have different types of projects in various countries. The projects and suppliers are changing on a regular basis, and therefore engagement with specific suppliers will not necessarily benefit subsequent projects. Design and final deliverables of our projects are dictated by the client; Group Five does not have a direct control over the footprint of the project. We do however try to advise our clients on the climate change impacts of the designs we build.