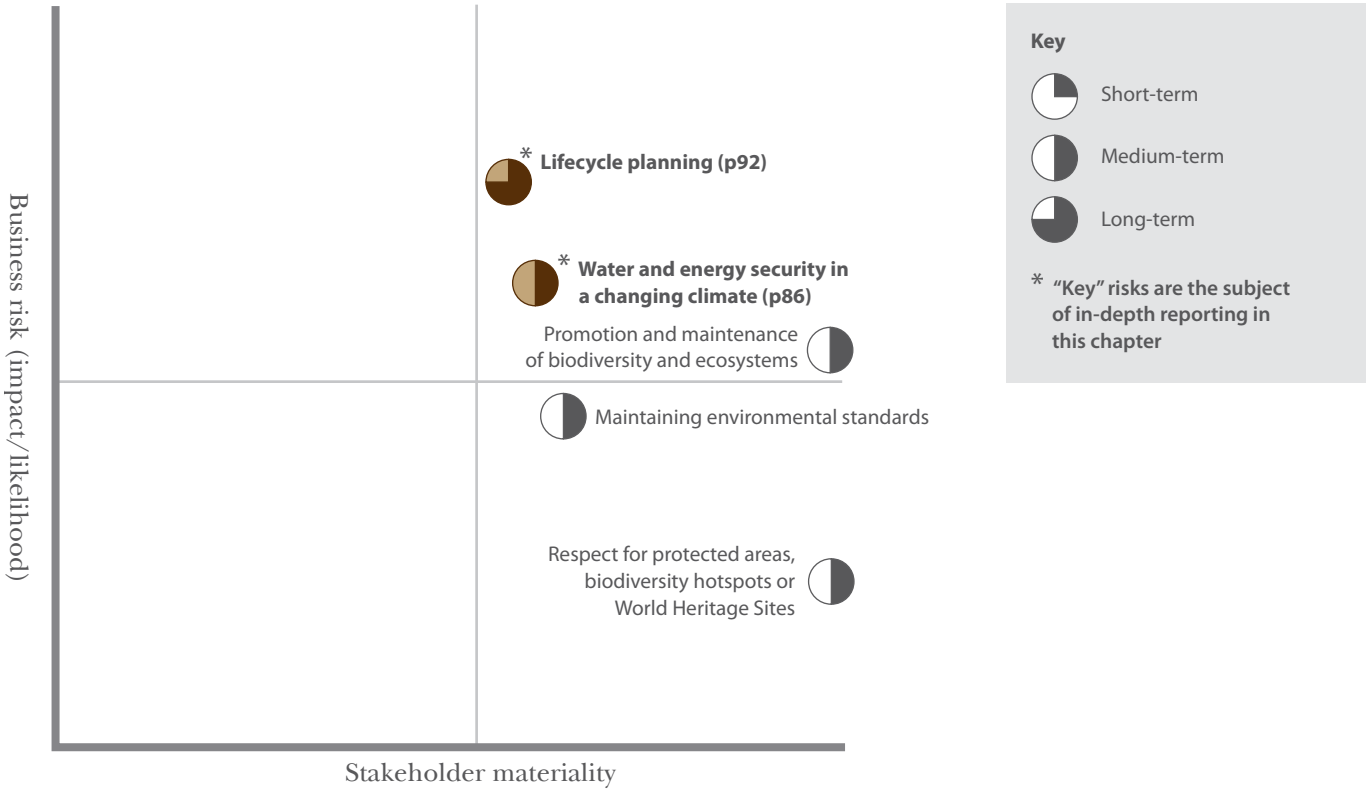
6 Environment

Our commitment to good environmental stewardship is shaped firstly by the need to respond appropriately to global imperatives concerning climate change, biodiversity conservation, energy use and water security; and secondly by our belief that the sustainable management of the natural environment is key to the future prosperity of all the countries where we operate.

Our approach to managing environmental issues is built on the effective integration of the environment discipline into our core business and the development of appropriate policies and tools to aid implementation. This process is underpinned by our ISO 14001 compliant management systems. Within this framework we develop holistic management solutions individually tailored to the environmental, social and economic contexts of each of our operations. This in turn means that we are sensitive to local needs and place particular emphasis on forging strategic partnerships with governments, local communities and non-governmental organisations to find creative solutions to environmental challenges wherever we operate.

In addition to our focus on developing effective management systems, our ongoing investment in building the capability of the environment discipline across the Family of Companies has also enabled us to respond to environmental challenges beyond the traditional mining focus area of land rehabilitation. Biodiversity, energy and water management are now specific areas of discipline expertise within the Family of Companies.

Key environmental risks



Risks

*** Water and energy security in a changing climate (p86)**
Our mines in Africa are located in water stressed environments. Shifting rainfall patterns and consequent water shortages present a challenge to sustained water access for both our business and local communities.

*** Lifecycle planning (p92)**
We seek to mitigate potential environmental impacts when planning, designing and implementing exploration, mining and related activities. This is motivated both by local regulation and our goal to remain the "operator of choice" for host governments, communities and peers.

Promotion and maintenance of biodiversity and ecosystems

Biodiversity – along with the connected issues of climate change and water – is one of the most significant environmental issues that we face. Managing biodiversity is rarely straightforward, and a responsible approach demands that we take a similarly sophisticated approach to its management. This means recognising the important links between biodiversity, climate change and water. It also means taking an ecosystems-based approach that recognises the complexity and interconnectedness of the fauna and flora around us.

Maintaining environmental standards

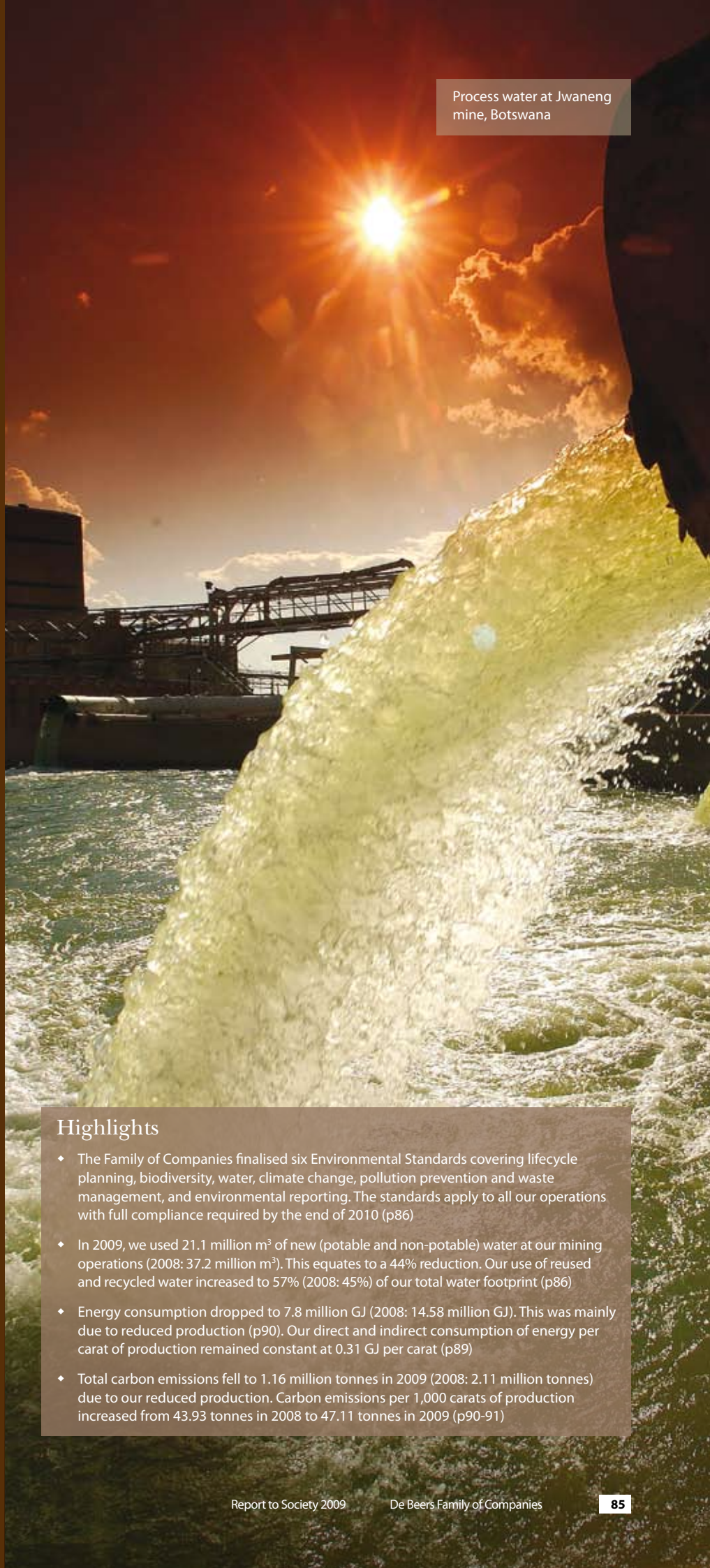
We are committed to aligning our environmental policies, systems, programmes, resourcing and training with those of the world's leading mining companies. This requires long-term commitment and sustained effort, regardless of short-term circumstances.

Respect for protected areas, biodiversity hotspots or World Heritage Sites

Our reputation, culture and regulatory responsibilities demand that we respect legally designated Protected Areas and World Heritage Sites and seek to minimise the disturbance of ecosystems through responsible planning and biodiversity stewardship – from exploration through to post-mining.

** Further information presented in this report*

Note: Data for 2008 presented in this report may be different to that contained in the Report to Society 2008. This is due to recently revised and updated environmental accounting



Process water at Jwaneng mine, Botswana

Highlights

- The Family of Companies finalised six Environmental Standards covering lifecycle planning, biodiversity, water, climate change, pollution prevention and waste management, and environmental reporting. The standards apply to all our operations with full compliance required by the end of 2010 (p86)
- In 2009, we used 21.1 million m^3 of new (potable and non-potable) water at our mining operations (2008: 37.2 million m^3). This equates to a 44% reduction. Our use of reused and recycled water increased to 57% (2008: 45%) of our total water footprint (p86)
- Energy consumption dropped to 7.8 million GJ (2008: 14.58 million GJ). This was mainly due to reduced production (p90). Our direct and indirect consumption of energy per carat of production remained constant at 0.31 GJ per carat (p89)
- Total carbon emissions fell to 1.16 million tonnes in 2009 (2008: 2.11 million tonnes) due to our reduced production. Carbon emissions per 1,000 carats of production increased from 43.93 tonnes in 2008 to 47.11 tonnes in 2009 (p90-91)

6.1 Water and energy security in a changing climate

Risk: Our mines in Africa are located in water stressed environments. Shifting rainfall patterns and consequent water shortages present a challenge to sustained water access for both our business and local communities.

6.1.1 A challenge for the Family of Companies

Climate change presents a direct and multi-faceted threat to the sustainability of our business. While these risks are often "predicted" rather than "occurring" they are most likely to manifest themselves in water scarcity, extreme weather events and rising temperatures in the vicinity of our operations. For example:

- With 95% of our rough diamond production originating from arid regions across southern Africa, a reduction in rainfall and consequent drop in regional water availability has the potential to seriously impact our production capacity
- The onset of climate change has been directly linked to the occurrence of extreme weather events. Were an event of this nature to take place off the west coast of southern Africa, where our operations are already impacted by challenging seas, it would pose a significant safety risk to our employees and the marine mining vessels on which they work
- Rising temperatures have the potential to disrupt our reliance on ice roads to supply our two mines in Canada. Both the Snap Lake and Victor mines are in remote locations. If these ice roads are rendered inaccessible all year round, our mines would have to place greater reliance on costly supply by air freight, undermining the commercial viability of each operation

The increased prominence of climate change in the public and political agenda influences our strategy of meeting and mitigating climate-related impacts. Our membership of the United Nations Global Compact, our ISO 14001 certifications, as well as our own Principles, Environment Policy and Climate Change Standard, commit the Family of Companies to progressive reductions in emissions, as well as water and energy use. This is not only "the right thing to do", it also makes good commercial sense.

6.1.2 Efficient and sustainable water use

In 2009, the Family of Companies finalised six Environmental Standards covering lifecycle planning, biodiversity, water, climate change, pollution prevention, waste management and environmental reporting. These Environmental Standards, which apply across the Family of Companies, enable the effective implementation of our Environmental Policy and will be used to benchmark our performance against that of other leading mining companies. Full compliance is required by the end of 2010.

Our Water Standard commits us to:

- Manage water supply and demand across all operations
- Ensure that all operations minimise and mitigate the pollution of water resources

The Water Standard defines requirements for all aspects of water management. Water Steering Committees ensure the alignment of our water strategies with best practices and legislation in addition to providing leadership on water conservation and demand management.

Inge Zaamwani-Kamwi, CEO, Namdeb

It is widely acknowledged that poor nations will suffer most from the effects of climate change. This vulnerability stems partly from geographic location but also as a result of a diminished capacity to cope owing to limited financial resources, skills and technologies and high levels of poverty. Countries such as Namibia are heavily reliant on climate-sensitive sectors such as agriculture, fishing and mining, a reality that poses a unique threat to the development of the nation. Where once land-based diamond mining provided the mainstay of operations, the future, to a large extent, lies in marine extraction. Climate change models are already indicating an increased prevalence of extreme weather events globally. Storm activity, more frequent heatwaves and heavy precipitation events are likely to have a material impact on the safety of marine operations and the time period in which employees can operate in some of the world's roughest seas.

NAMDEB On Diamonds We Build

6.1.2.1 Reducing our water consumption

In 2009, we used 21.1 million m^3 of new (potable and non-potable) water at our mining operations (2008: 37.2 million m^3). This equates to a reduction of 44% from 2008 (Figure 6-1) and is mainly due to the 49% reduction in production due to recessionary pressures (p23). Decreased production also resulted in reduced water efficiency per carat of production (Figure 6-2). This is mainly because of the need to keep full plant water processes operational, resulting in increased use per unit, less efficient water recovery and a reduction in overall efficiency.

Significant steps were taken to increase the use of reused/recycled water. As a result, reused/recycled water use increased to 57% (2008: 45%) of our total freshwater consumption. In 2009, we used 21.7 million m^3 of seawater at our west coast operations and vessels in southern Africa (2008: 45.6 million m^3).

All mines continued to investigate new technologies to improve water efficiency. These include:

- The amendment of ore treatment processes to enable the use of saline water
- Reduced groundwater use due to the installation of facilities for the capturing of storm water from urban areas
- Electro-kinetic dewatering, which uses electric fields to extract the last remnants of water from thickened slime or slurry[1]

6.1.2.2 DBCM

De Beers Consolidated Mines (DBCM) accounts for 31% of our water use and has a relatively low consumption per carat (1.36 litres). The company has set a water reduction target of 15% by 2015 using a 2007 base year.

As part of our efforts to meet this target:

- The Kimberley and Finsch mines have reduced their consumption by 8% and 12% respectively
- The Voorspoed mine continues to operate a largely closed water circuit, reusing most of its treatment process water from on-site dams

[1] Dewatering and other paste thickening research is a central part of our water conservation strategy. While this dewatering results in increased water efficiency, it does have significant energy costs

Case study: The impacts of climate change

The Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Synthesis Report was used to support our 2008 Climate Change Risk Assessment. This identified the following key risks to our operations:

Increased temperatures

The IPCC predicts a 0.2°C per decade temperature increase. This will be most significant over land and at high northern latitudes – including our Canadian operations. In permafrost regions, contraction in snow cover and widespread increases in thaw depth will lead to increased run-off and earlier spring peak discharge from glacier and snow-fed rivers. In addition to reduced access to ice roads, our Canadian mining operations will need to mitigate excessive water collection in the mine pit, which may result in increased removal costs.

Reduced water security

Water is critical to diamond mining due to its extensive role in the ore treatment process, as well as its use in industrial processes and the cooling of underground mines. Its growing scarcity is a risk for all of our southern African land-based operations. Subtle climatic changes can have significant impacts on both the quantity and seasonality of water resources. Reductions in available surface water mean we will need to rely on less economical sources such as groundwater or increased use of on-site treated waste water.

Biodiversity loss and ecosystems

Over the next 50 to 100 years, more frequent extreme weather events and associated resource security issues could result in a 35-55% reduction in the current number of plant and animal species worldwide. In southern Africa, indigenous vegetation could be altered, with grasslands being transformed into savannah and marine ecosystems affected due to sea level rises and temperature change.

Rural communities and disease

Impacts on communities in the vicinity of our operations will mainly be linked to food and water security. In southern Africa, drought and lower crop productivity could result in a 50% decrease in food availability by 2020. Associated health risks include increased heat stress and tropical diseases including malaria, which is already a challenge for our exploration activities in Africa .

Figure 6-1: Fresh water use (million m³)[2]

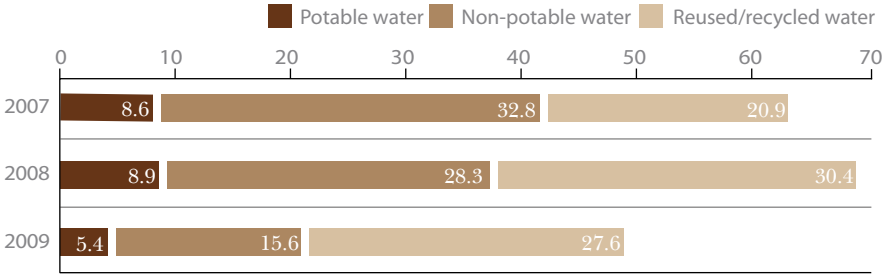
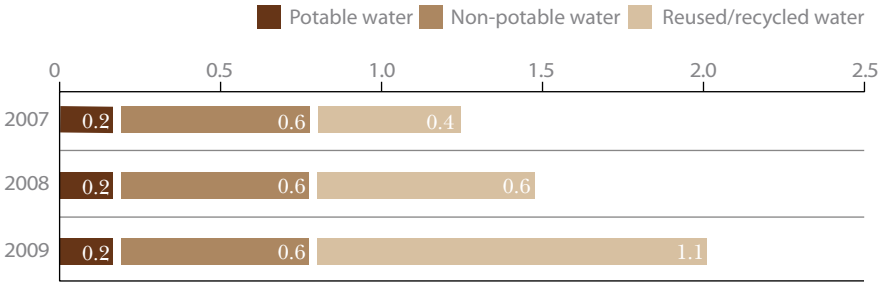


Figure 6-2: Fresh water use (m³ per carat production)



[2] Excludes water collected at Victor from dewatering, which is not used in the mine treatment process

Water treatment at Letlhakane mine, Botswana

Governance and water management

Since 2006, our DBCM operations have conducted annual water assurance audits through the central technical function. As the process has matured, accountability has shifted progressively to the operations themselves, which are now conducting self-assessments through the on-mine Steering Committees and compiling action plans to address gaps. In 2009, self-assessments were completed at site-level to assess compliance to the newly approved Water Standard. A milestone of full compliance is set for the end of 2010.

Water Use License Applications

All of our South African operations are required by the Department of Water Affairs and Environment (DWE) to obtain water user licences through the submission of Integrated Water Use License Applications (IWULAs). By the end of 2009, all DBCM mines had submitted their IWULAs. Licences have already been granted for Mannels Vley in Namaqualand, as well as for certain uses at Voorspoed.

Water management partnerships

In 2010, DBCM will initiate a three year water management programme in the Limpopo region of South Africa, as part of the WWF Sanlam Living Waters Partnership. In collaboration with government and local stakeholders, the programme will contribute to water security in the region by enhancing water catchment management and water conservation. DBCM is a relatively small water user in the Limpopo region, where multiple users compete for common water resources. New mines proposed by other companies for the region are also likely to place greater pressure on water resources and water quality.

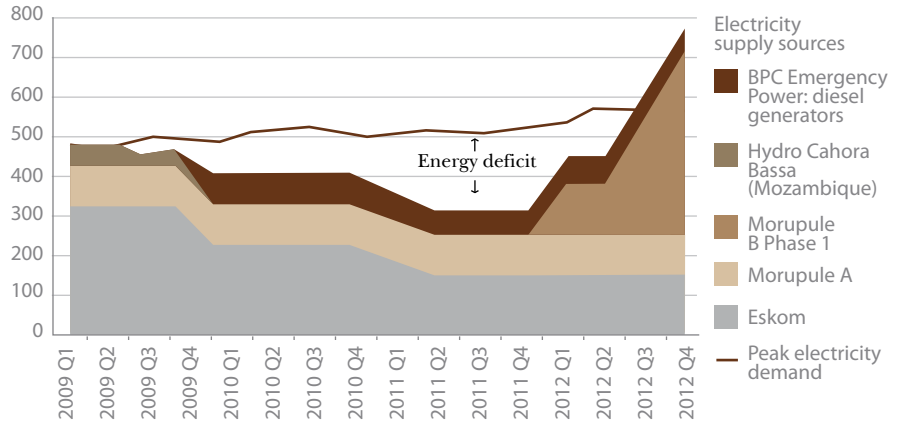
www.dwaf.gov.za
www.panda.org.za

Blackie Marole, CEO, Debswana

Recent discussions on the world stage have made it clear that water is likely to play an increasingly central role in many of the planet's most pressing issues, among them climate change, energy security and the need to spur economic growth. In Africa it is anticipated that by 2020, 75-250 million people will be exposed to heightened water stress and hence there will be competition for water resources. As CEO of Debswana, and as a citizen of Botswana, I firmly believe that we have a duty to act now if we are to protect our future. Our longstanding investment into reducing water content of "slimes" has, for example, already yielded significant reductions in the consumption of water in the extraction process. Our goal, however, is to ensure that this progress does not come at the expense of additional energy use – a tough balance must be struck, to which I feel personally accountable.

DEBSWANA

Figure 6-3: Projected energy demand and available sources for Debswana (MW)

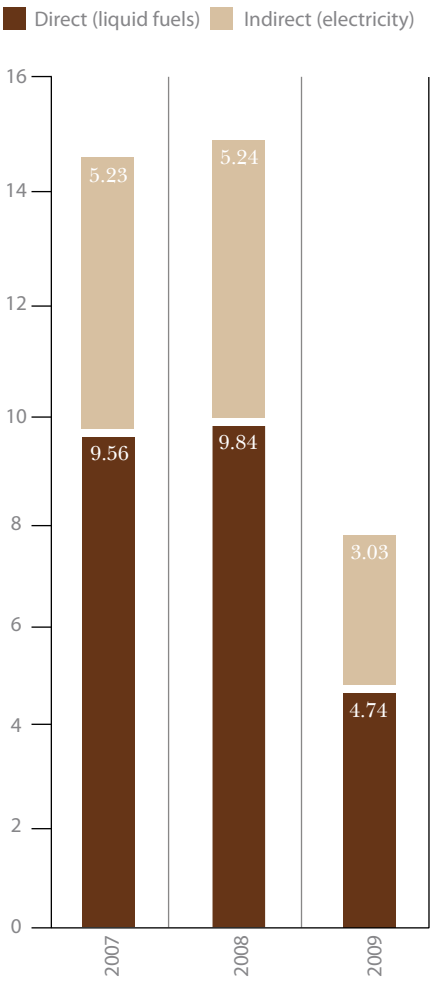


6.1.2.3 Debswana

Debswana has the largest water footprint in the Family of Companies. In 2009, it accounted for 43% of our total water usage. Debswana also has the lowest per-carat water use at just 0.8 litres. This reflects its high carat output, as well as a historical focus on water efficiency.

In 2003, Debswana set an ambitious target of 50% reduction in water use by 2008. By 2008, Debswana's consumption had been reduced by 35%, largely as a result of increased use of rainfall and storm water runoff, improved slimes recycling and thickening, and reduced wastage. All Debswana mines have identified water scarcity as a significant risk and are setting new water reduction targets. Debswana is also investigating the use of non-potable saline groundwater, which will reduce possible water competition with neighbouring communities.

Figure 6-4: Direct and indirect energy consumption (millions GJ)



Collaboration on a national water management plan

Debswana also continues to work with the Government of the Republic of Botswana (GRB) and the United Nations Development Programme (UNDP) to promote long-term, integrated water resource planning throughout Botswana. This ongoing collaboration is intended to produce a new integrated water resources management plan for the country.

Engagement with local communities

In 2009, the local community near Orapa mine raised concerns that water flows to Debswana's Mopipi Dam had negatively affected the Boteti River and impacted local fish supplies. Investigations by Debswana found that water used at Orapa was not linked to the water table at Mopipi Dam, which has not been in use since 1983. Studies also found the Boteti River to be recharged by water sourced from the Okavango Delta and not underground seepage from Mopipi. Nonetheless, Debswana elected to remove the dam at a cost of P3 million (US$430,000), restoring the flow regime to its original form.

www.gov.bw
www.undp.org

6.1.3 Energy efficiency and emissions reductions

The Family of Companies is committed to being a responsible energy user and to contribute towards combating climate change. We plan to achieve this by:

- Promoting the efficient and sustainable use of energy through the principles of reduction, recovery, reuse and recycling
- Reducing greenhouse gas emissions and participating in climate change initiatives.

Our approach to energy management is aligned with the parameters of the Greenhouse Gas Protocol, the setting of energy targets, the implementation of energy efficiency measures and the stringent assessment of energy requirements for capital projects.

www.ghgprotocol.org

6.1.3.1 Energy security in southern Africa

Energy security poses a growing risk to our operations in southern Africa. Between 2001 and 2005, half of all sub-Saharan African countries achieved annual GDP growth rates greater than 4.5%. Demand for energy matched this growth, yet capacity has expanded by only 1.2% annually. According to a 2009 joint study undertaken by the International Bank for Reconstruction and Development and the World Bank, only one-fifth of the population of sub-Saharan Africa has access to electricity, compared with one-half in South Asia and more than four-fifths in Latin America. The region also faces a power sector financing gap of approximately US$23 billion a year, spending only a quarter annually of what is needed on power.

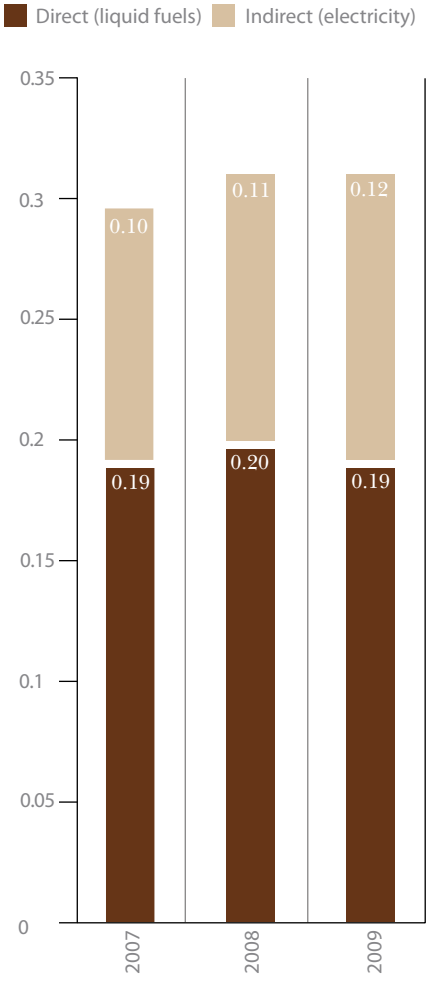
South Africa

The South African energy crisis illustrates the implications of this situation. State-owned electricity company Eskom provides 70% of electricity in sub-Saharan Africa. Shortages began in 2008 when delays in infrastructure investment and contracting of long-term coal supplies reduced the availability of energy in the national grid. This resulted in periodic power cuts (or "load shedding"), which are estimated to have cost an equivalent of 5% of South Africa's GDP in 2008. Many neighbouring countries, including Namibia and Botswana, were impacted by the power crisis due to their reliance on South African electricity exports.

The costs associated with the South African energy crisis underline the importance of enhancing our energy security through improved efficiency and the diversification of electricity supplies. This includes sourcing electricity from alternate suppliers and investing in alternative energy sources such as wind and solar (p82-83, p91).

web.worldbank.org
www.eskom.co.za

Figure 6-5: Direct and indirect energy consumption (GJ per carat production)



Jim Gowans, CEO and President, De Beers Canada (2009)

Back in July 2008 we opened De Beers first diamond mines outside of Africa; Snap Lake, located 220 km north east of Yellowknife and Victor in the James Bay Lowlands of Northern Ontario, approximately 90 km west of the coastal community of Attawapiskat First Nation. Our mines have already accomplished a tremendous amount in their few years of construction and operation. While we can and will overcome the economic challenges of today to position ourselves for a strong and long-term future in Canada, the threat of climate change poses a mixed long-term dynamic for us. Snap Lake, located within the Arctic Circle, carries out a substantial resupply of the mine each year through a seasonal ice road. Already, we have noticed a decline in the consistency of the 8 to 10 week window in which this road can remain safely accessible. As a consequence, the need for careful logistical planning has never been greater. Conversely, unseasonably mild conditions at Snap Lake in 2009 led to reduced fuel consumption for mine air heating purposes, providing an economic advantage as the mine began to ramp up operations.

De Beers CANADA

Figure 6-6: Our direct (liquid fuels) energy use profile, 2009

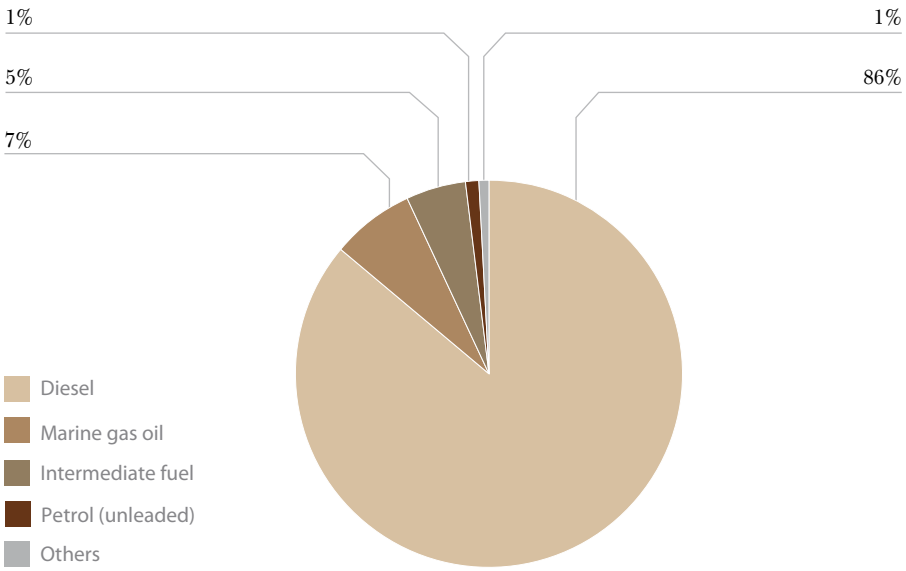


Figure 6-7: CO_2 equivalent emissions (million tonnes)

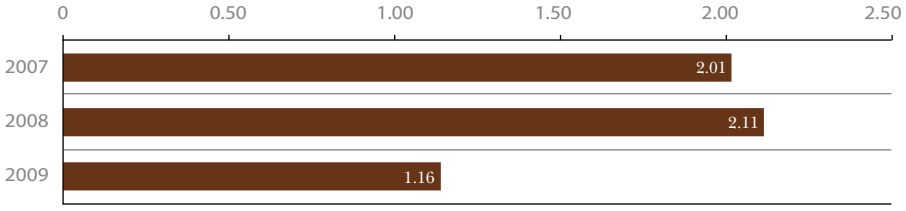
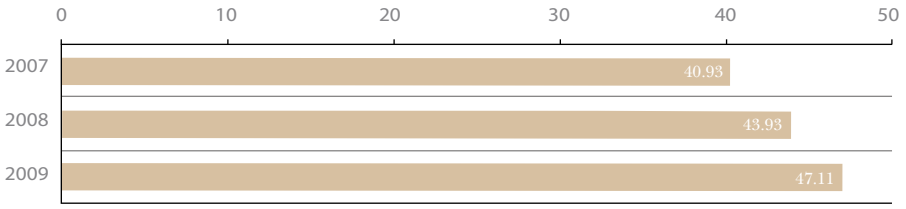


Figure 6-8: CO_2 equivalent emissions (tonnes per 1,000 carat production)



Charles Skinner, Head of Group Exploration

In 2008, we carried out a burden of disease study on malaria prevalence in our exploration team in Angola and assessed the utility of the rapid diagnostic test for P.falciparum malaria. The study, designed by De Beers, the National Institute for Communicable Diseases and the South African National Institute for Occupational Health, identified potential improvements for malaria prevention and in-country diagnosis. In 2009, a five point plan to combat malaria was developed and implemented by the exploration team. The value of this work is likely to become increasingly important as the negative impact of climate change on water borne diseases such as malaria becomes ever more apparent. Contemporary studies indicate that there will be a fourfold increase in the size of the population at risk of malaria within the next decade. This problem will prove costly in terms of immediate treatment costs to our staff, reduced productivity at our operations and, on a national scale, the loss of those individuals' contribution to the economies in which diamonds are found.

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Botswana

Eskom is progressively reducing its power supply to the Botswana Power Corporation (BPC). This will impact Debswana's ability to access energy from the Botswana national grid. To address this reduced supply, BPC is building a 600 MW coal-powered power station, Morupule B. Coal for the power station will be supplied from Debswana's Morupule coal mine, which is being expanded to meet the projected increase in demand. Once complete, coal production will increase from 1 million tonnes a year to 3.2 million tonnes. The Morupule B power station will only come online by the end of 2012, leaving a significant electricity supply deficit to Debswana's operations over the next three years (Figure 6-3).

In order to help address this projected deficit between 2009 and 2013, Debswana has installed 90 MW of diesel generation capacity at the Orapa mine. In the longer-term, Debswana plans to replace these generators with gas turbines fed by gas fields to the north of the mine. This is expected to cost a total of about P850 million (US$121.8 million).

6.1.3.2 Energy consumption and efficiency measures

In 2009, our direct and indirect energy consumption amounted to 7.8 million GJ (2008: 14.6 million GJ), a 46.5% reduction from 2008 levels. This reduction was due to the significant fall in production across our operations (p23). Despite this reduced production, our direct and indirect consumption per carat of production remained constant at 0.31 GJ per carat (Figure 6-5). Direct energy in its hydrocarbon form (including diesel) accounted for 61% of our energy profile (Figure 6-4). Indirect energy in the form of electricity accounted for the remaining 39%.

DBCM is a signatory to South Africa's Energy Efficiency Accord and has set an energy reduction target of 15% by 2015, from a 2005 base level. All DBCM operations have also agreed in principle to electricity consumption targets as part of the anticipated National Energy Conservation Program. In 2009, DBCM was well on track to meet these targets, although this was largely due to reduced production levels. Once production normalises, the following initiatives will be prioritised to reduce energy consumption:

- The introduction of high efficiency motors on a replacement basis
- Implementation of a motor repair programme improving engine efficiency
- A pilot project at Venetia on new approaches to load shedding, demand control and tariff optimisation
- Diesel energy monitoring programmes to assess the effect of road conditions on fuel consumption

Figure 6-9: SO_2 emissions from direct (liquid fuels) energy (tonnes)

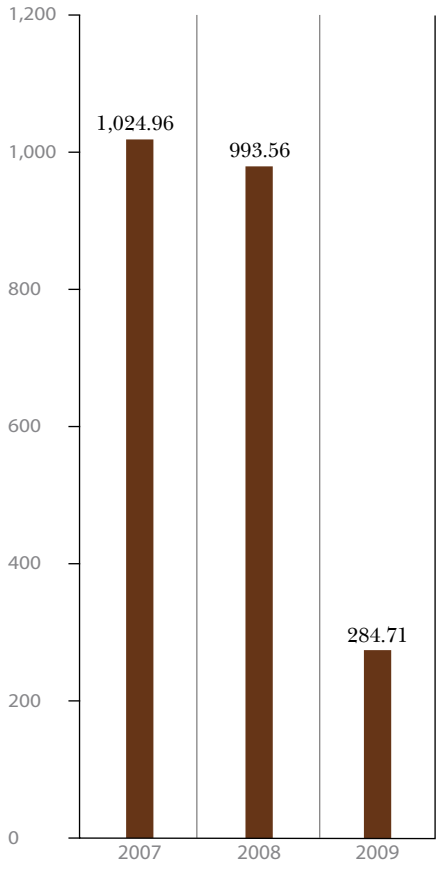
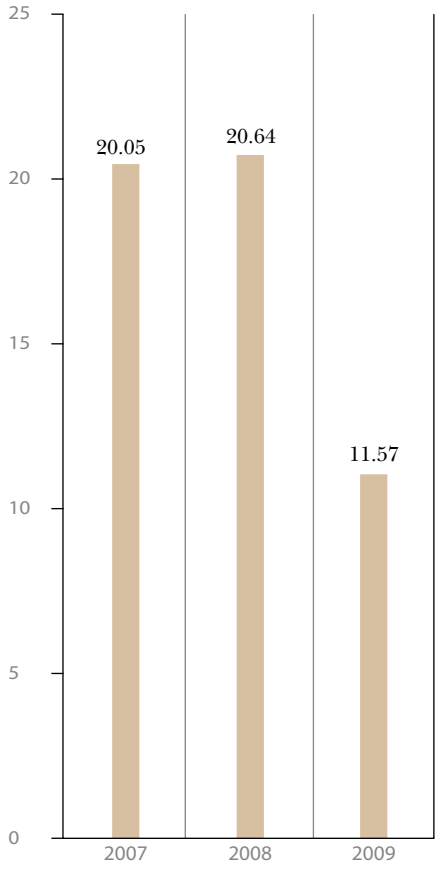


Figure 6-10: SO_2 emissions from direct (liquid fuels) energy (tonnes) per million carat production



The Family of Companies is continuing to investigate alternative energy options, including hydropower, solar power and biofuels. DBCM is evaluating wind power projects in Namaqualand, as well as a solar energy project in the Kimberley region. Likewise, De Beers Canada has tested wind power in Canada, which was found to offer significant reductions in fuel costs.

6.1.3.3 Carbon emissions

Our total CO_2e (carbon dioxide equivalent) emissions amounted to 1.16 million tonnes in 2009 (2008: 2.11 million tonnes) (Figure 6-7). Almost 70% of these emissions are associated with the electricity we purchase from national providers. These indirect emissions amounted to 0.8 million tonnes (2008: 1.28 million tonnes). Direct emissions from hydrocarbons (mainly diesel) amounted to 0.3 million tonnes (2008: 0.68 million tonnes). As with our energy consumption (p88-89), the reduction in our carbon emissions was due to reduced production during 2009. CO_2e emissions per 1,000 carats of production increased from 43.93 tonnes in 2008 to 47.11 tonnes in 2009 (Figure 6-8).

6.1.3.4 Other air emissions

Our sulphur emissions relate almost exclusively to energy use. As a result, any reductions in emissions are linked to reductions in our energy consumption. SO_2 (sulphur dioxide) emissions from liquid fuels used by the Family of Companies amounted to 285 tonnes in 2009 (2008: 994 tonnes) (Figure 6-9). SO_2 emissions from direct (liquid fuels) per million carats of production fell from 20.64 tonnes in 2008 to 11.57 in 2009 (Figure 6-10). Marine gas oil contributed 51% of SO_2 emissions, compared to 73.4% in 2008, due to reduced marine mining activity and the particularly sulphurous nature of marine fuel.

6.1.4 The future

In order to achieve compliance with our new Climate Change and Water Standards, we plan to prioritise the following activities during 2010:

- Development of local-level risk assessments for all business units and facilities in order to identify climate change risks and mitigation projects
- Development of integrated water management plans for all mining operations, including the setting of targets for all water stressed areas
- Active engagement with local government partners to ensure long-term water resource planning goals are implemented in dialogue with local communities
- Establishment of complete, accurate and repeatable data on energy consumption by type, as well as public reporting in accordance with the Greenhouse Gas Protocol (Scope 1 (direct emissions) and 2 (indirect emissions))
- Further energy efficiency interventions and, where possible, research and implementation of renewable energy options
- Setting of carbon emission and energy reduction targets at all mining operations
- Inclusion of energy efficiency requirements into the design of all projects and confirmation of compliance during investment assurance reviews

Patti Wickens, Group Environmental Principal

The far reaching impact of climate change on South Africa presents a troubling picture for our future. Changes in marine and terrestrial ecosystems are to have profound impacts on mining, forestry, agriculture and fisheries, as well as on biodiversity and hydrology. Within 50 -100 years thousands of indigenous species may disappear with only the hardiest surviving. The Succulent Karoo and our west coast is likely to be hardest hit. More frequent fires could also disrupt the relationships between plants and animals. Ultimately the complexities of climate change are such that only through multi-lateral partnership, thorough consultation and information sharing can we realistically prepare for the future.

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6.2 Lifecycle planning

Risk: We seek to mitigate potential environmental impacts when planning, designing and implementing exploration, mining and related activities. This is motivated both by local regulation and our goal to remain the "operator of choice" for host governments, communities and peers.

We recognise that our activities can have significant impacts on the environment. We are committed to understanding the extent of these impacts and implementing measures to mitigate them at every stage of the mining lifecycle. Much of our mining footprint includes sensitive, biologically diverse environments. As a result, we place particular focus on biodiversity in our environmental planning and impact mitigation efforts.

In 2009, we rolled out a Lifecycle Planning Standard, which outlines the two desired outcomes of our lifecycle planning processes:

- All phases of the mining lifecycle (environmental planning, implementation and management) should contribute towards a positive environmental and social legacy
- All operations should have environmental management systems and resources to address environmental risks from operational life through to closure (Figure 6-11)

6.2.1 Exploration and acquisitions

De Beers Exploration is committed to maintaining the wellbeing of the communities and environments in which it operates. It is guided in doing so by the Family of Companies Exploration Environment, Community, Occupational Hygiene, Health and Safety (ECOHS) Guidelines.

A risk assessment process is conducted in the early stages of exploration. This includes an assessment of the environment within which exploration will occur, as well as closure planning. If exploration advances towards project implementation, a social and environmental baseline study is also undertaken. This documents the current social and environmental status of the broader region and identifies possible risks both to the company and the environment.

Where projects or mines are acquired, a due diligence assessment is undertaken to identify, evaluate and report upon environmental and social issues related to the current and historical use of the site.

Exploration in Angola

Figure 6-11: Assessment conducted during the project phase of the mining lifecycle

Assessments	Phase	Objective
Environmental and social screening	Conceptual	To confirm which aspects of the proposed project have the potential to generate significant or unacceptable environmental or social impacts
Scoping	Pre-feasibility	To gather and evaluate information to focus the ESIA on significant issues or impacts
Environmental and Social Impact Assessment (ESIA) or Environmental Impact Assessment (EIA)	Feasibility	To identify, qualify and quantify project impacts on the biophysical, socio-economic, heritage, aesthetic and cultural environments
Environmental and Social Management Plan (ESMP) or Environmental Management Plan (EMP)	Feasibility	To document and detail future monitoring and management requirements outlined in the ESIA
Preliminary closure plans	Construction or commissioning	To detail the environmental closure and remediation costs of the project (p95-96). Preliminary closure plans are developed during the feasibility phase and are implemented on commissioning once project designs are confirmed

6.2.2 Projects

Projects are required to complete a range of assessments, depending on their stage in the mining lifecycle (Figure 6-11). In 2009, Debswana engaged with relevant stakeholders to complete Environmental and Social Impact Assessments (ESIA) for the Jwaneng Cut-8 project and its modular treatment plant (p69). Both assessments were submitted for approval to the Ministry of Environment, Wildlife and Tourism (MEWT).

In addition, an Environmental Impact Assessment (EIA) was approved for the Morupule Colliery expansion project (p90). Further EIAs for the Caprivi Exploration project and Environmental Management Plans (EMPs) for the marine 'Midwater' areas mined by De Beers Marine Namibia were completed and submitted to the Ministry of Environment and Tourism.

6.2.3 Operations

The management of environmental impacts during the operational phase of mining is guided by a Environmental Management System (EMS) developed for each mine.

6.2.3.1 Environmental management systems

ISO 14001 compliant EMSs are in place at all of our diamond mining operations. These are developed during the construction/ commissioning phase, with certification taking place during the operational phase. An ISO 14001 certified EMS enables us to:

- Identify and control the environmental impact of activities, products or services
- Continually improve our environmental performance
- Implement a systematic approach to setting and evaluating environmental objectives and targets

Correcting non-conformances

In March 2009, a detailed surveillance audit of our Venetia mine found 15 critical non-conformances, 40 non-conformances and 11 remarks. As a result, Venetia's certification was placed at risk. Over a three month period, Venetia made significant improvement to its EMS, managing to clear its non-conformances and retain certification. In addition, the mine's Environmental Department was reviewed and restructured to ensure the ongoing effectiveness and sustainability of its EMS. A significant number of non-conformances were identified at Orapa, which prompted the mine along with Debswana Head Office to address these issues. Morupule coal mine is preparing for ISO 14001 certification in 2010.

Case Study: Securing a positive environmental legacy for South Africa through the Diamond Route

The De Beers Diamond Route links nine conservation areas across the northern regions of South Africa in an integrated tourism route. These include:

- Brenthurst Gardens in Johannesburg
- The Ezemvelo Nature reserve near Johannesburg
- Kimberley
- Dronfield
- The Rooiport Nature Reserve
- Namaqualand
- The Tswalu Kalahari Reserve near the Korannaberg Mountains
- The Venetia Limpopo Nature Reserve
- Benfontein

Through the project, we have opened up 250,000 ha of ecologically protected land to the public. This demonstrates our commitment to protecting biodiversity-rich land in South Africa, and sharing the natural assets under our care with the broader population.

The Diamond Route is home to more than half of southern Africa's bird species (500 species in total), including 40 endemic species and 69 species on the International Union for Conservation of Nature Red Data List. Two properties are also listed in the definitive Important Bird Areas of Southern Africa Directory. Over 50 different mammal species make the Diamond Route their home, including the White Rhino, Wild Dog, Sable and Roan Antelope. Cultural and heritage characteristics have also been developed and preserved at each site, including restored buildings in the historic diamond-mining capital of Kimberley.

Several shared social development opportunities have been realised through the project, such as the Ezemvelo-Maharishi education programme. This promotes conservation-related education through the development of a rural eco-campus on the 4,500 ha Ezemvelo Reserve.

The Diamond Route concept was initiated in 2004 through a memorandum of understanding between De Beers, Ernest Oppenheimer & Sons, and Birdlife South Africa. Over the last five years, accommodation and facilities have been upgraded; new 4x4 and hiking trails developed; and new signage displayed at all sites. A total of 14 bird guides and five cultural guides have been trained through this project.

In 2009, a Diamond Route pledge and associated standards were agreed to at all sites. The pledge commits each site to nine values that showcase how the Family of Companies is "living up to diamonds." The values are supported by outcome standards against which the sites will be measured.

www.diamondroute.co.za
www.birdlife.org.za
www.iucnredlist.org

"The Diamond Route holistically pulls together the properties owned by the Oppenheimer family and De Beers. Each property is unique and adds something special to the entire route, together they are truly magnificent. The Route works on the concept, the whole is greater than the part."

Strilli Oppenheimer

Case Study: Biodiversity Action Plan for the South African Seas Areas

In 2009, De Beers Marine developed a Biodiversity Action Plan (BAP) for the South African Seas Areas (SASA) mining licence area. The SASA mining licence area is located 500 km north of Cape Town on the South African west coast and falls within the Namaqua bioregion. The licence area covers 8,816 km^2, but due to the patchy distribution of diamond deposits, the planned mining footprint is limited to 29 km^2 (0.33% of the licence area). Mining activities in the area include prospecting through acoustic surveys, as well as sampling and mining of the seabed.

The BAP helps identify biodiversity concerns and management priorities, as well as actions for monitoring and reviewing activities and impacts. In addition, it acts as a stakeholder consultation tool for those with biodiversity interests in the area. The BAP identified two key biodiversity risks to the SASA mining licence area.

The first is a lack of biodiversity knowledge, with existing data limited largely to that already collected by De Beers. In particular, there is a need for greater information on:

- The extent of habitat types
- The location, extent and nature of rocky outcrop habitats
- The sensitivity of rocky outcrop biodiversity to mining impacts

The second is an absence of marine protected areas in the Namaqua bioregion.

To address these risks, De Beers Marine has partnered with the WWF and the South African National Biodiversity Institute (SANBI). The research partnership will share information, expertise and tools to address the significant volume of benthic biodiversity knowledge in the Namaqua bioregion. Within its own areas of operations, De Beers is working with these partners to identify areas for protection.

www.wwf.org
www.sanbi.org

Commitment to pollution prevention

All our operations are committed to the minimisation of pollution and the responsible management of waste. Our new Environmental Standard for pollution prevention and waste management (p86) commits us to:

- Replace high risk hazardous substances with non-hazardous or less hazardous alternatives
- Manage effluents, wastes, emissions and hazardous substances to prevent pollution

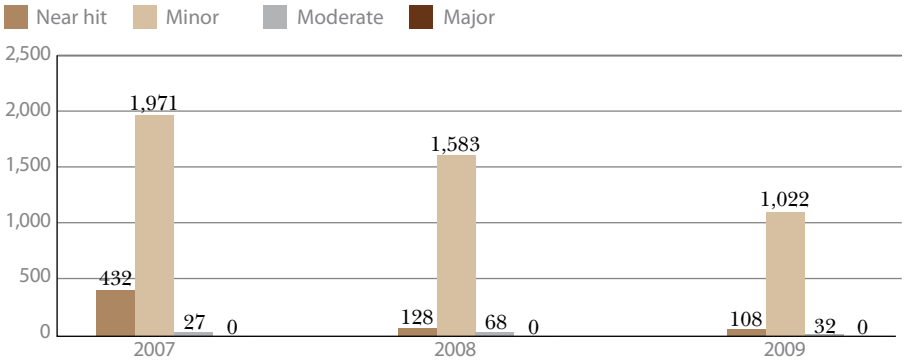
Managing Hydrofluoric Acid risks

The use of Hydrofluoric Acid (HF) has been identified as one of the most important environmental risks for exploration (p59). HF has been used by the Family of Companies since 1987 to dissolve kimberlite and recover microdiamonds, as well as in the diamond cleaning process. In 2009, a survey across the Family of Companies found that quantities of HF stored on site varied from 15,000 litres at the Kimberley Micro-Diamond Laboratory and 400 litres at the DTC in Kimberley. All facilities are ISO 14001 certified, while three were OHSAS 18001 certified. An HF working group was established in 2009 to further reduce the risks associated with HF use and to share information on existing management strategies (p55).

6.2.3.2 Environmental incidents

No major environmental incidents were reported during 2009 (Figure 6-12). Moderate environmental incidents included diesel spillages at Orapa and Letlhakane, as well as community vandalism of a water pipeline outside of a Debswana mine lease area. In 2009, the Environmental Peer Group completed a review of our incident reporting system. This system currently categorises incidents into "major", "moderate", "minor" and "near-hit". From 2010, the Family of Companies will include an additional categorisation that splits the "minor" category. This is mainly to ensure more accurate reporting around "insignificant" versus "minor" incidents and to build greater alignment with our group-wide risk matrix categories.

Figure 6-12: Environmental incidents[3]



[3] There is no industry standard for the categorisation of environmental incidents. Incidents are currently reported in these four categories as per the Environmental Reporting Standard. In particular, this requires that "major" incidents are immediately reportable by operations to the business unit, De Beers Group Services and ECOHS Committee

6.2.4 Closure and disposal

The finite nature of diamond mining means that all new and recent projects are undertaken by the Family of Companies with closure in mind. Older mines have rehabilitation programmes retrospectively applied. Our new Environmental Standard on lifecycle planning seeks to establish initial and final closure plans (p86).

Preliminary closure plans are required during the project planning phases. These are then evolved as the project progresses, moving from a preliminary closure plan, to a draft closure plan and then a detailed closure plan. As the mine nears closure, a final closure plan is developed. The costs of closure are reviewed and refined throughout this evolution.

6.2.4.1 DBCM

A rapid Strategic Environmental Assessment (SEA) has been undertaken for most operations as part of the preliminary mine closure planning. The SEA promotes sustainability through the integration of environmental considerations into strategic decision-making. In 2009, most of DBCM's operations commissioned a third party to facilitate on-mine discussions and to compile a preliminary closure plan in line with the Anglo American Closure Toolbox (p69, p79). Significant work has also been done to improve the level of detail in each operation's respective closure plan and to increase confidence in estimates for scheduled and unscheduled closure liabilities.

In 2009, mine closure planning workshops were held for our Finsch, Oaks and Voorspoed mines, as well as at Kimberley. The workshops provided an opportunity to understand mine closure processes, assess progress and identify opportunities for synergies and learning between operations. A key part of these workshops involved sharing lessons on how to rehabilitate mined areas.

6.2.4.2 De Beers Canada

In accordance with Canadian regulations, both the Victor and Snap Lake mines were required to obtain approval of their closure plans before operations commenced. Detailed cost estimates for closures are calculated every one to three years to reflect any additional rehabilitation requirements that may influence the plan.

6.2.4.3 Debswana

The three mines at Orapa have estimated closure costs from an inventory of the rehabilitation footprint and removal of infrastructure, but are still to develop integrated (environmental and social) closure plans.

6.2.4.4 Namdeb

An integrated social and environmental closure plan has been completed for Namdeb, including a detailed rehabilitation plan (p98-99). The plan takes account of Nambeb's new status within the Sperrgebiet National Park, and is designed to restore native landscapes to their original form.

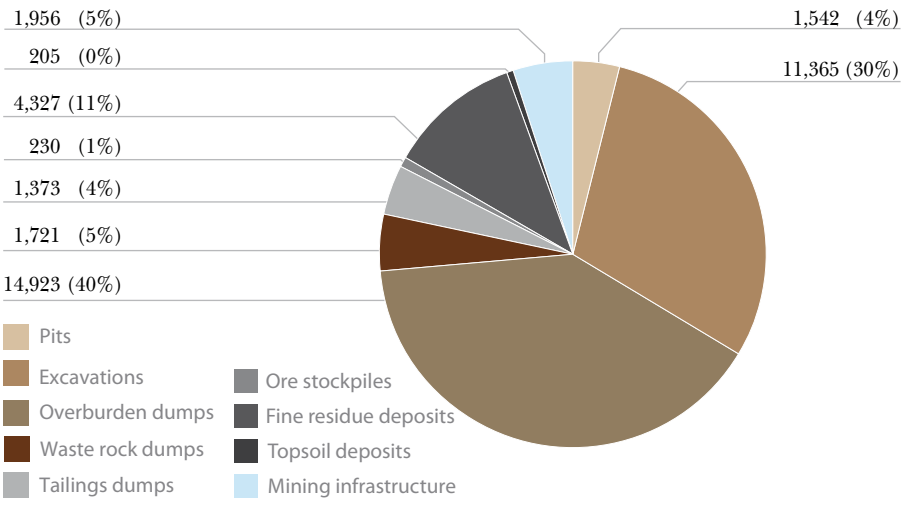
6.2.5 Rehabilitation

Rehabilitation is an ongoing process at all mines, but is especially pertinent at Namdeb and Namaqualand which are nearing closure.

6.2.5.1 Namdeb

In 2009, rehabilitation plans continued to move forward at Namdeb. The plans seek to address the legacy of 100 years of mining, much of which was prior to any form of environmental management. The plan addresses four key issues: pollution, infrastructure, landscape and biodiversity. Part of the rehabilitation costs are funded by the sale of scrap metal from legacy mining areas. In 2009, more than 40,100 tonnes of scrap was removed from Mining Area 1, leaving three scrap yards rehabilitated. Other areas that were rehabilitated included abandoned contractor sites in the Northern Coastal areas. These were signed-off as completed by the Ministry of Environment and Tourism as well as the Ministry of Mines and Energy in 2009. The rehabilitation plan makes provision for the reshaping of landforms on 24% of Namdeb's footprint, as well as active re-vegetation of 7% of its footprint (p98-99).

Figure 6-13: Our mining footprint in 2009 (ha)



6.2.5.2 Namaqualand

Extensive rehabilitation has been undertaken in the Namaqualand region of South Africa over the past few years. Expert scientific input was provided by Dr Peter Carrick, a specialist ecologist from the University of Cape Town. Alternative land-uses are being considered in place of rehabilitation. These include tourism and mariculture projects, wind power generation and the expansion of oyster and abalone farming. It is hoped that the two mining towns of Kleinzee and Koingaas will achieve proclamation. This will allow them to become open municipal towns, making housing and facilities available to the public and increasing opportunities for alternative economic development. Some of these initiatives are being completed under the Living Edge of Africa Project (LEAP), in partnership with Conservation International (CI). LEAP builds on the positive legacy created by diamond mining by combining restoration of the area with the promotion of enterprise development and job creation. De Beers has also entered into a research partnership with the WWF and the South African National Biodiversity Institute to support biodiversity conservation in the Namaqua bioregion.

6.2.5.3 Marine

Rehabilitation of the marine environment relies on natural recovery processes. The return of processed sediments during mining results in some degree of backfilling of mined areas. In addition, mined areas are subject to a natural refilling by fine sediments over time. This is followed by gradual recolonisation of the fine sediments by marine organisms. De Beers Marine and De Beers Marine Namibia conduct pre-mining baseline surveys, as well as post-mining monitoring surveys to demonstrate recovery. Depending on water depths, the proximity to sediment inputs and other local conditions, recovery usually takes place within 4 to 15 years.

- www.conservation.org
- www.uct.ac.za
- www.wwf.org
- www.sanbi.org

6.2.6 Biodiversity assessments

More than 221,000 ha of our owned and managed property is currently set aside as conservation areas or nature reserves. This includes properties leased in February 2009 to extend the Namaqua National Park, as well as areas that form part of the South African Diamond Route, an initiative that maximises research opportunities and biodiversity conservation on properties belonging to the Oppenheimer family and De Beers (p93). This 221,000 ha is more than five times the 37,641 ha (or 4%) of our total land-based licensed area of 943,552 ha that is disturbed by mining activities.

6.2.6.1 Biodiversity Action Plans

Biodiversity is considered in all aspects of the mining process and is arguably our most significant environmental issue. Risks to biodiversity are identified during exploration and are included in all EIAs and EMPs during project planning and operation phases. During 2009, we focused on the development of Biodiversity Action Plans (BAPs) across all of our operations. BAPs are used to develop a coordinated approach to biodiversity stewardship, supported by management objectives and actions. The BAPs provide a clear framework for defining actions and monitoring and reviewing impacts that affect biodiversity. They provide opportunities to improve communication and cooperation with stakeholders, including NGOs, and strengthen our strategic contribution towards biodiversity conservation.

6.2.6.2 South African Seas Areas

In 2009, a BAP was developed for the South African Seas Areas (SASA) mining licence area. The plan provides information on biodiversity concerns and management priorities in the concession area, which lies within the sub-photic (below the depth of light penetration) continental shelf zone of the Namaqua Bioregion.

Key biodiversity challenges for 2010 include:

- Risks associated with the impact of operations on cold water biodiversity areas
- A lack of biodiversity-zone information
- The achievement of environmental requirements for our new marine gold mining joint venture with AngloGold Ashanti (p97)

July 2009 saw the launch of the new International Union for Conservation of Nature (IUCN) Category IV Marine Protected Area (MPA), which covers the northern part of Namdeb's Inner Shelf Project area. It was primarily designed to protect the foraging habitats and breeding colonies of seabirds, as well as the spawning and nursery grounds of Rock Lobster. In 2010, we will continue with our extensive marine monitoring programme, which examines our impacts on, and rehabilitation of, sandy beaches, rocky shores and sub-tidal environments within the MPA.

6.2.6.3 Biodiversity Overlap Assessments

In order to assess and manage the high-level risks of our activities on biodiversity, we completed country-level Biodiversity Overlap Assessments (BOAs) at each of our business units. The BOAs identify the extent to which our operating areas overlap with protected areas, key biodiversity areas and World Heritage Sites. The assessment makes use of access to up-to-date biodiversity information from the Integrated Biodiversity Assessment Tool for Business (IBAT). IBAT is provided by a partnership of NGOs including BirdLife International, CI, IUCN and the United Nations Environment Programme (UNEP) World Conservation Monitoring Centre.

Mesembryanthemum flowers of the Northern Cape, South Africa

De Beers was the first mining company to apply the IBAT tool across all of its mining and prospecting sites. During 2009, this assessment was externally reviewed and approved by CI. The BOA found that the Family of Companies does not mine in any known IUCN Category I–IV protected areas. Our Venetia mine does, however, have water abstraction points and a water pipeline that runs through a section of the Mapungubwe National Park and Cultural Landscape. The EIA and infrastructure developments were completed before the proclamation of the National Park and World Heritage Site, however. Nonetheless, due diligence of the sensitivity of the region has been taken into consideration. Some exploration licences overlap with portions of known IUCN Category I–IV Protected Areas in South Africa, Namibia, Angola and India. In most cases, due either to the protected status of the land or the location of sites of interest (from an exploration perspective), prospecting activities are not conducted on these overlap areas.

- www.iucn.org
- www.ibatforbusiness.org
- www.birdlife.org
- www.conservation.org
- www.unep-wcmc.org

6.2.7 The future

Our strategy and overall environmental goal is to be aligned to the best environmental practices of leading mining companies by 2010 and to be recognised for our contribution to biodiversity conservation. In order to deliver on this goal, and in order to become compliant to our new environmental standards, we plan to focus on the following activities in 2010:

- Obtaining and retaining ISO 14001 certification at all of our operations, including the Morupule coal mine
- Developing integrated closure plans (environmental and social) at all mining operations, at an appropriate level of resolution
- Developing BAPs for all relevant mining operations
- Developing waste management plans for each operation in line with our Environmental Standards on pollution prevention and waste management

Questions from stakeholders:

Does De Beers participate in climate-related advocacy?

As a global business leader, De Beers also plays a role in urging governments to agree on climate-related goals. In 2009, De Beers signed the Prince of Wales Copenhagen Communiqué on climate change. This initiative called for an effective climate agreement at the United Nations (UN) Climate Change Conference. De Beers also supported "Seal the Deal", a UN worldwide campaign on climate change. In September 2009, Gareth Penny presented at the water security session of the UN Leadership Forum on Climate Change. During the session he outlined our commitment to climate change mitigation and adaptation, both for our operations and local communities.

De Beers is also a signatory to the UN Global Compact's CEO Water Mandate, a partnership between business leaders and the international community to coordinate water management efforts. This mandate commits the Family of Companies to take action, where appropriate, in the following areas:

- Our own direct operations (including water-use assessments, conservation and waste water targets, and technology-use)
- Supply chain and watershed management (including improved water management by suppliers, capacity building, promotion of water-use assessments and sharing of good practice)
- Collective action (including partnerships with civil society and governments, the development and use of new technologies and support for existing water initiatives involving private sector)
- Public policy (including input into the formulation of government regulation, advocacy and support of policy orientated bodies and frameworks)
- Community engagement (including understanding community impacts, undertaking water-resource education and support for infrastructure development)
- Transparency (including identification of actions and investments undertaken in relation to the CEO Water Mandate and the reporting of water strategy)

www.unglobalcompact.org

Questions from stakeholders:

How will the Family of Companies manage the potentially significant environmental impacts of its marine gold mining deal with AngloGold Ashanti on the south west coast of southern Africa, New Zealand and Chile?

In 2009, De Beers Group and AngloGold Ashanti agreed to form a joint venture to explore for and develop marine placer deposits of gold (as well as other metals and minerals) off continental shelves worldwide.

The project will use our existing marine prospecting technology, which includes non-destructive acoustic survey methods, as well as seabed sampling tools for the collection of sediment. All project activities will comply with De Beers and AngloGold Ashanti environmental standards.

Assessments by independent experts have found that acoustic surveys are unlikely to result in significant negative impacts on marine mammals. Nonetheless, De Beers Marine has implemented precautionary mitigation measures, including visual scans for nearby mammals, the ceasing of operation if mammals demonstrate affected behaviour and "soft starts" or gradually increasing volume for loud equipment.

Should the project prove economically viable, it is not envisaged that any chemicals would be used in the recovery process. As placer gold occurs in the form of loose articles, it can be recovered using similar mechanical processes as used in marine diamond mining. This currently involves the removal of unconsolidated sediments from the sea floor using drill or crawler technologies. Sediments are then brought to the surface for onboard processing in which chemicals are not required. Tailings are then returned to the mined area. Although seabed disturbance does occur, research has demonstrated recovery of seabed communities to a stable state within 4 to 15 years depending on local conditions.

West Coast Rehabilitation

Since the discovery of Namibia's first diamond near Kolmasnkop in 1908, prospecting and mining rights have been granted for about 300 km of Namibia's coastline, from the Orange River in the south to the Kunene River in the north. Although diamond mining is confined to a narrow diamondiferous strip along the coastline and Orange River, public access to the entire licence area is restricted. Diamond-related security has therefore contributed to the preservation of Namibia's unique coastal environment. As onshore diamond production declines, the Family of Companies is rehabilitating the 2% (195 km²) of the licence area that has been disturbed through mining activities.

Approach to rehabilitation

In 2009, Namdeb's Rehabilitation Plan was approved by the relevant ministries of the Government of the Republic of Namibia (GRN). The approach to rehabilitation was developed through extensive research in partnership with the Namibian Botanical Research Institute (NBRI) and the Millennium Seed Bank Project (MSBP) at Kew Gardens in the United Kingdom, and was designed in consultation with the future end land user, namely the Ministry of Environment and Tourism (MET).

Sites 1

Rehabilitation of pocket beaches at Site 2 approved by the MET and the Ministry of Mines and Energy (MME)

The scrap removal project removed 40,100 tonnes from MA1 in 2009. A proposal to establish a dedicated asbestos disposal site has been submitted to the GRN

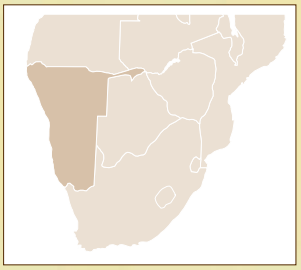
One of seven pilot rehabilitation projects completed at Skilpadberg. The Skilpadberg project helped formulate the overall West Coast rehabilitation method

The rehabilitation plan involves the following steps

1. All pollution waste and scrap is removed

2. Any infrastructure not required for future use is removed

in Namibia



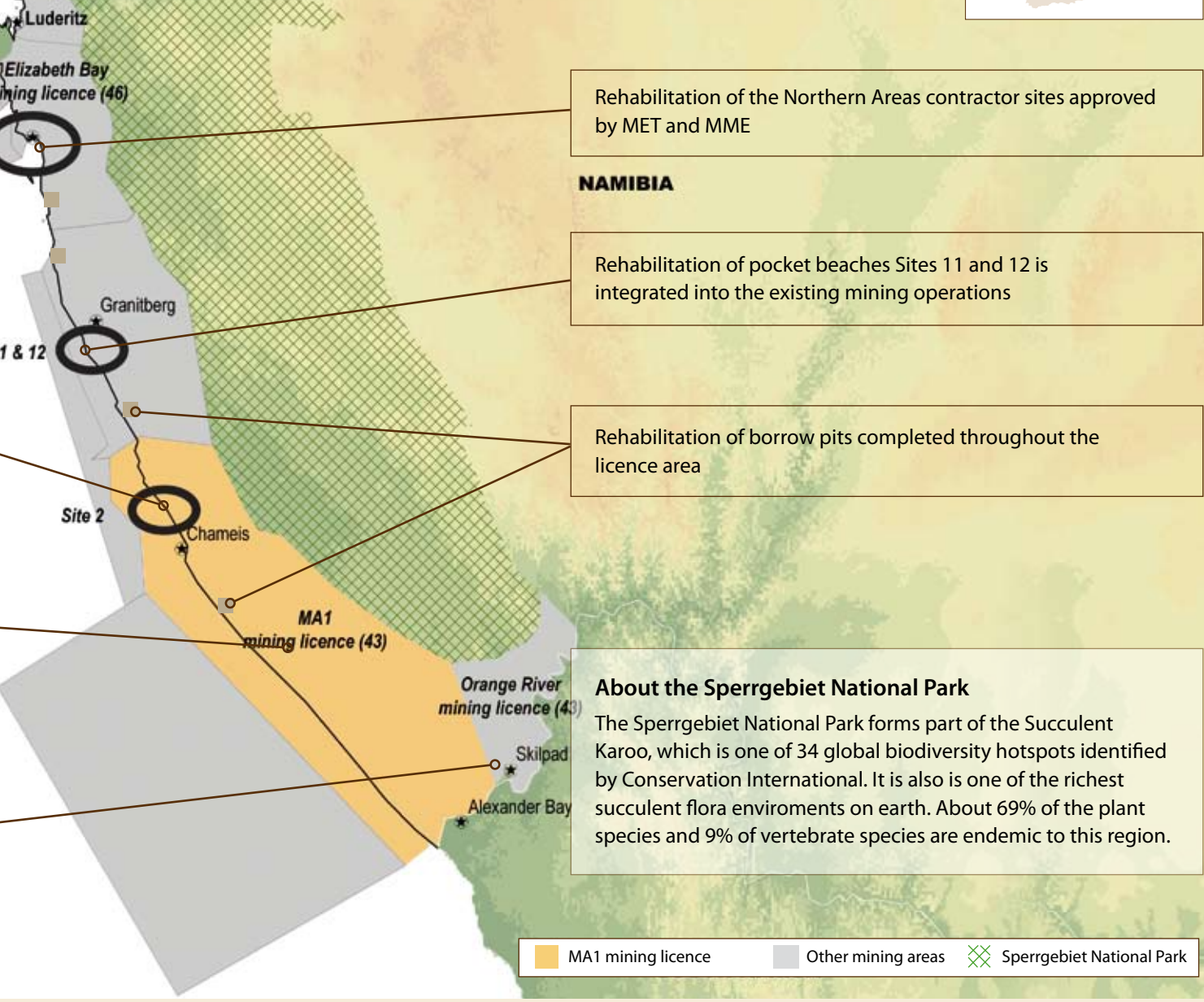
Rehabilitation of the Northern Areas contractor sites approved by MET and MME

Rehabilitation of pocket beaches Sites 11 and 12 is integrated into the existing mining operations

Rehabilitation of borrow pits completed throughout the licence area

About the Sperrgebiet National Park

The Sperrgebiet National Park forms part of the Succulent Karoo, which is one of 34 global biodiversity hotspots identified by Conservation International. It is also is one of the richest succulent flora enviroments on earth. About 69% of the plant species and 9% of vertebrate species are endemic to this region.



3. Where necessary, existing landforms are reshaped to their original structures. Current planning estimates that this will be required in 24% of the disturbed area

4. Where necessary, the area is revegetated. Current planning estimates this will be required in 7% of the disturbed area