

**Annual Report** FY2012/13



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## **Foreword by the Minister**

Hon. Isak Katali, MP  
**Minister**

The goal of the Ministry of Mines and Energy remains constant, namely to be the successful and efficient custodian of Namibia's rich endowment of mineral, geological and energy resources. This annual report serves to inform you, our esteemed stakeholders, about our activities undertaken during the year 2012, in order to achieve this goal.

The Geological Survey of Namibia continued to enhance the knowledge and awareness of Namibia's geological resources. The Integrated Airborne Geophysical and Geological Interpretation Project of the //Karas Region were completed, and a new five-year Regional Geological Mapping Project was implemented. The Earth Data Namibia database was enlarged and has a new face, which makes it even more user-friendly. The 1<sup>st</sup> report on the Strategic Environmental Management Plan of the central Namib uranium activities was released, and a number of international events were attended in order to promote Namibia's mineral potential.

The draft Minerals Bill is in its final stages, and changes envisaged include incorporating a provision for strategic minerals to be solely issued to state owned entities. The draft policy document for the Nuclear Fuel Cycle will be finalized during the first quarter of 2013, and this will fulfill Namibia's commitment in terms of the Non-Proliferation Treaty Safe Guards Agreement. The regulatory framework that governs the energy sector is currently also under review.

The uranium industry is still affected by the Fukushima incident with uranium spot prices having continued to decline throughout 2012 due to weak demand. This has resulted in Areva placing the Trekkopje Mine under care and maintenance, and other developers postponing their investment decisions.

The Directorate of Diamond Affairs represents Namibia at the Kimberley Process Certification Scheme, and continued all activities to control and promote the Namibian Diamond Industry and its products.

Cabinet approved the transformation of Renewable Energy and Energy Efficiency Institute (REEEI) to the Namibia Energy Institute (NEI) to support the development and dissemination of knowledge, skills and good practices towards a safer, more secure and sustainable energy system in Namibia.

The Kudu Gas to Power Project is well on track with the final investment decision expected by March 2014. The invitation to tender for the Front End Engineering and Design (FEED) is expected in the coming financial year. The Engineering Procurement and Construction (EPC) Turnkey Tender has been announced, and the successful contractor will be selected in 2013. The first gas is expected to be delivered by the second half of



2017, and ushering Namibia into the league of hydrocarbon producing countries.

A total of 63 public institutions including schools, clinics, and police offices were electrified under the Rural Electrification Project. Under the Off-grid Energization Master Plan, public institutions that will not receive grid electricity in the next 15 – 20 years are electrified with solar technologies.

I thank all stakeholders and the committed staff of the Ministry of Mines and Energy for their loyalty and dedication.

It is my pleasure to hereby present the 2012/13 Annual Report, may it be a worthwhile reading pleasure.

.....  
Hon. Isak Katali, MP

**Minister**



### ***Vision***

“To be renowned as a performance driven Ministry that passionately works to achieve all of its strategic objectives.”

### ***Mission***

To promote, facilitate, regulate and monitor the responsible development and sustainable utilization of Namibia’s minerals, geological and energy resources; through competent staff, innovation, research and stakeholder collaboration in a conducive environment for the benefit of all Namibians.

### ***Strategic Themes***

Mineral and Energy Resource Development and Promotion  
Sustainable Utilization of the Mineral-, Energy- and Geo-Environment  
Operational Efficiency  
Socio-Economic Development  
Policy and Regulations





## Structure of the Ministry of Mines and Energy



Hon. Isak Katali, MP  
**Minister**



Willem Isaacks  
**Deputy Minister**



Kahijoro S. M. Kahuure  
**Permanent Secretary**



Selma-Penna Utonih  
**Director: Energy**



Erasmus Shivolo  
**Mining Commissioner:  
Mines**



Dr. Gabi Schneider  
**Director: Geological  
Survey of Namibia**



Mr John Titus  
**Director:  
Administration  
and Finance**



Kennedy Hamutenya  
**Diamond Commissioner:  
Diamond Affairs**



## **Executive Summary**

**Kahijoro S. M. Kahuure**  
**Permanent Secretary**

The Office of the Permanent Secretary provides the overall vision and leadership to the five directorates to carry out the objectives entrusted upon them in the vision and mission statements of the Ministry.

Regular interaction with bodies and stakeholders such as the Mineral Ancillary Rights Commission, the Electricity Supply Industry, and the Diamond Board of Namibia took place, and negotiations for hydrocarbon exploration licenses were held. The Ministry also partook in local and international fairs, expos, and conferences.

The Geological Survey of Namibia continued its mapping activities, and has compiled a number of very useful products for exploration, combining geological, geophysical and geochemical data and their interpretation. Environmental monitoring of active and abandoned mine sites assisted in minimizing the environmental risks that such operations pose. Our requirements under the Comprehensive Test Ban Treaty Organization (CTBTO) were met by the Geological Survey of Namibia's Tsumeb Geophysical Station.

Five mining licenses were issued, and a total of 312 EPLs were awarded. The successful implementation of the Business Process Re-engineering (BPR) has had a positive effect on the clearing of the backlog of processing of mining licenses and claim registration applications. This in turn increased the employment creation in the mining industry by 15%. The state mining company Epangelo acquired 39 EPLs, which are currently assessed and evaluated for their mineral potential. Exports of minerals generated N\$17 billion in the period under review.

Namibia continues to be 100% Kimberley Process Certification Scheme (KPCS) compliant and takes part in all KPCS meetings. Namibia also actively participates in the African Diamond Producers Association (ADPA), with a Ministry official seconded to ADPA's headquarters in Luanda. The total diamond production increased by 24%, with diamond sales accounting for more than 50% of all royalties collected.

The computerization of the licensing system in the energy directorate will soon come on stream. With the momentum of oil & gas exploration being high, a large number of license blocks are held by various national and international explorers. To date 57 exploration licenses have been issued. Eighteen offshore wells have so far been drilled in Namibia and we expect 9 wells to have been drilled between 2012 and 2014, equaling the high drilling rate that we saw between 1994-1998.

The Ministry remains committed to have minimal upward price adjustments for fuel, in order to offset cost and to minimize destabilization of the economy. To this end the Ministry has in this financial year paid



N\$4 199 million to the oil industry – an amount which otherwise would have been passed on to the consumers. In addition, a levy to cater for the construction of a Strategic Oil Storage Facility at Walvis Bay was approved.

The budget execution on development projects was a highly commendable 97%. Customer Charters remain displayed throughout the Ministry and our stakeholders are encouraged to contact the complaints coordinator should the need arise.

.....  
Kahijoro S. M. Kahuure

**Permanent Secretary**

**Directorate of Geological Survey of Namibia**





**Dr. Gabi Schneider**  
**Director: Geological Survey of Namibia**

The Geological Survey of Namibia is the national institution for earth sciences and geological resources. Its mission is to enhance knowledge and awareness of Namibia's geological resources. Through scientific research, the Geological Survey of Namibia facilitates the search for mineral resources, geological engineering, land-use planning and sustainable development with due regard to the environment.

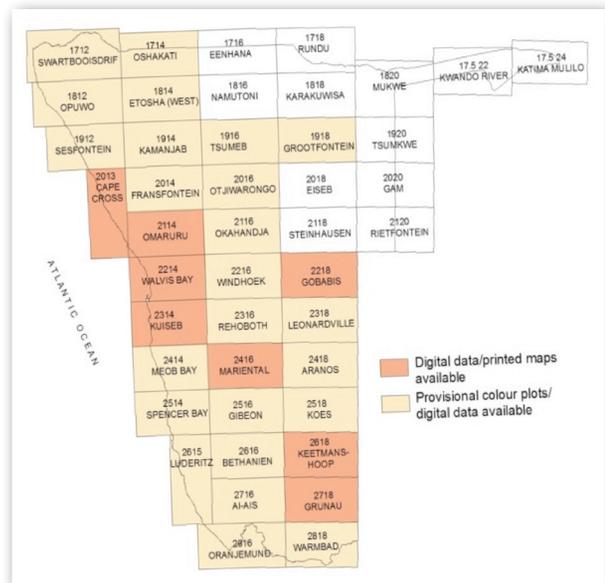
**The objectives of the Geological Survey of Namibia's for the year under review were:**

- Provide geo-scientific information through research to promote sustainable development and investment in Namibia
- Guide land-use decisions to ensure the availability and sustainability of resources for the current and future welfare of our society
- Stimulate investment in Namibia's mining sector in order to contribute to the development of Namibia's economy
- Create awareness of the earth sciences in order to enhance the understanding of the geo-environment and its interaction with the life-supporting system of the Namibian people.

**The following achievements were made under the objectives above:**

**Provide geoscientific information through research to promote sustainable development and investment in Namibia**

Updating of existing digital data and 1 : 250 000-scale geological maps with new mapping results published in "The Geology of Namibia" (Miller, 2008) continued on map sheets 1814 Etosha West, 1912 Sesfontein, 1914 Kamanjab, 1918 Grootfontein, 2414 Meob Bay, 2514 Spencer Bay, 2516 Gibeon, 2616 Bethanien, 2615 Lüderitz, 2716 Ai-Ais, 2816 Oranjemund and 2818 Warmbad.

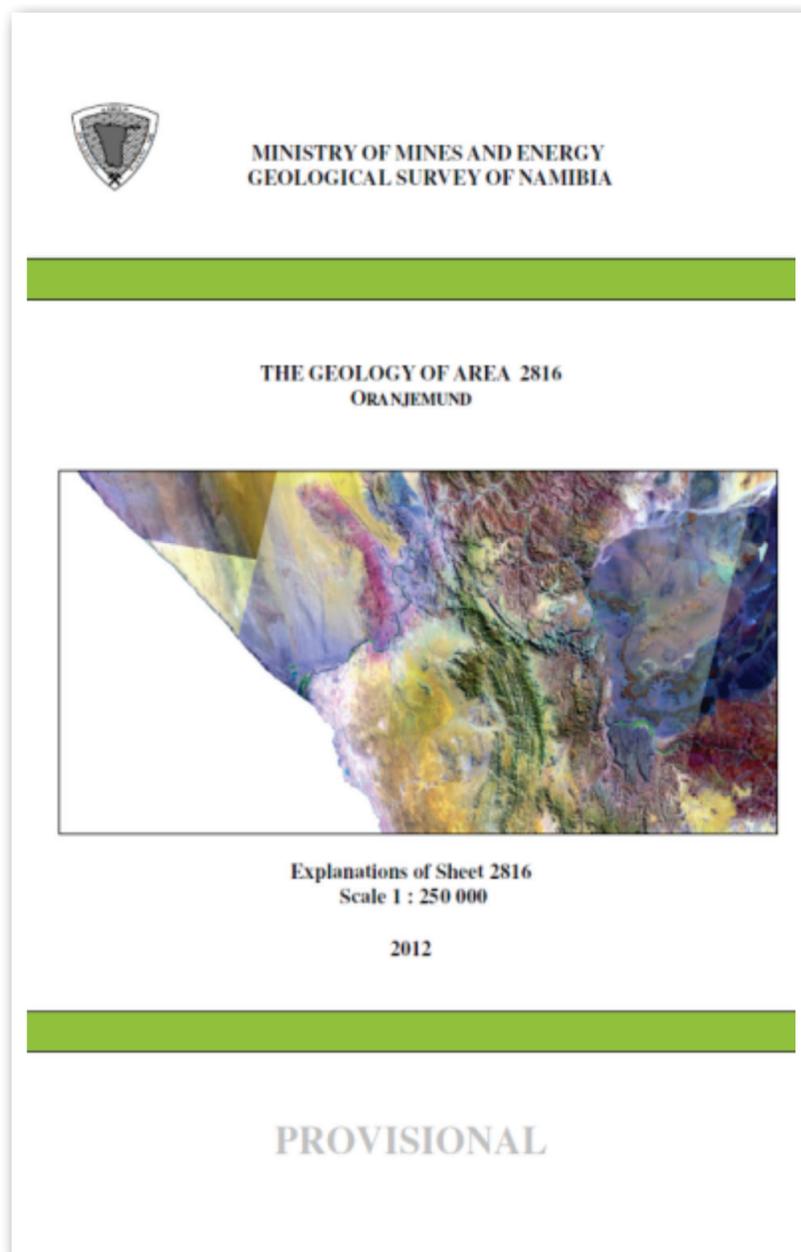


Index of available 1:250 000 geological maps

The seamless digital data set combining all 1:250 000 geological map sheets now covers more than 90% of the areas with bedrock exposure, although some 40% of these data represent only reconnaissance mapping (e.g. parts of the Swartbooisdrif and Opuwo map sheets), or satellite remote sensing interpretation, and await more detailed or revision mapping (e.g. Otavi Mountainland and Gariiep Belt). Provisional data sets in vector (ESRI shapefile) or raster (tif, jpg, pdf) format, as well as colour plots at 1:250 000 (1:100 000 of selected areas) are available through the Sales Office of the Geological Survey of Namibia. Customized maps can be produced at larger scales depending on base map data resolution. Standard 1:250 000 and 1:100 000 are also available

at the National Earth Science and Energy Information Centre (NESEIC) of the Geological Survey of Namibia.

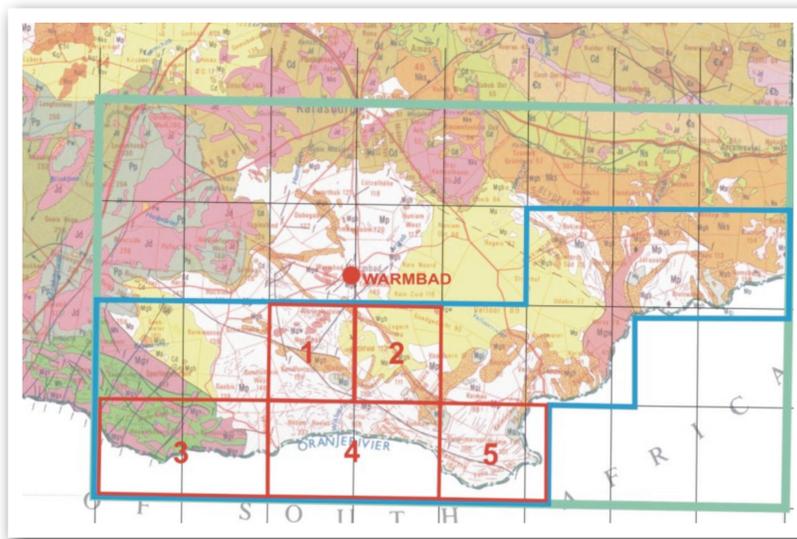
For ESRI ARCGIS users, legend files and sample maps are included in the digital datasets. To complement the map data, provisional map sheet explanations for areas 1981 Grootfontein, 1814 Etosha West, 2414 Meob Bay, 2514 Spencer Bay, 2516 Gibeon, 2616 Bethanien, 2615 Luderitz, 2716 Ai-Ais, 2816 Oranjemund and 2818 Warmbad have been compiled based on "The Geology of Namibia" (Miller, 2008) and are available under the Open File system. Other map products (e.g. thematic maps), are listed in the Geological Survey of Namibia Publication Catalogue.





The new five-year Regional Geological Mapping Project started in late 2012. During the first year, new and detailed 1:50 000-scale geological field mapping of five map sheets will be carried out in cooperation with the Council for Geosciences of South Africa (CGS). The project includes theoretical training in modern geological mapping methods and integrated hands-on instruction in field mapping and research. The area selected is located in the Warmbad District, southern //Karas Region and consists of map sheets 2818 DA, 2818 DB, 2818 CC, 2818 CD, 2818 DC 2818 DD, 2819 CC, and 2818 CD.

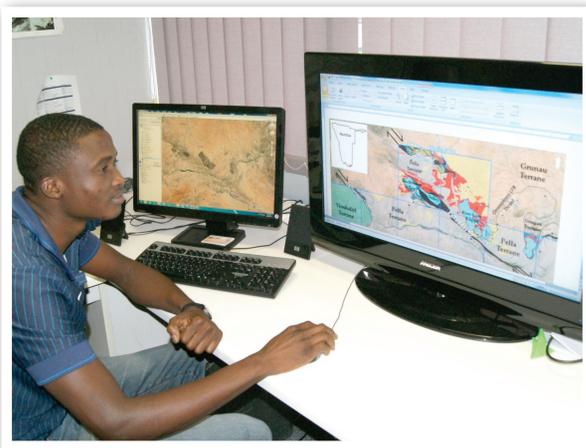
Quaternary to Recent surficial sediments of the Central Namib Uranium District project, which started in 2011 as a M.Sc. thesis project through the Centre for Exploration Targeting (CET) at the University of Western Australia and in collaboration with Australian Resources Research Centre (ARRC) of the Commonwealth Scientific and Industrial Research Organization (CSIRO), was completed. Several mineral maps were produced, using spectral mineralogical criteria, from which new regolith units were identified.



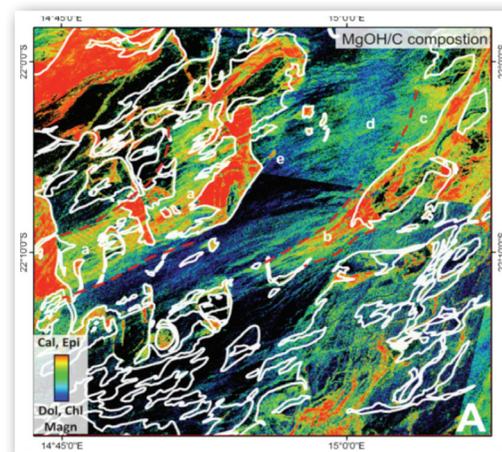
Outline of the Warmbad 2818 Map Sheet (green) and set of target 1:50,000 scale map sheets (blue) along the southern border of Namibia. The five map sheets to be mapped during the first phase of the project (2013-2014) are shown in red.

During 2012 work continued on a number of research projects in conjunction with new and revision regional mapping. Mapping of

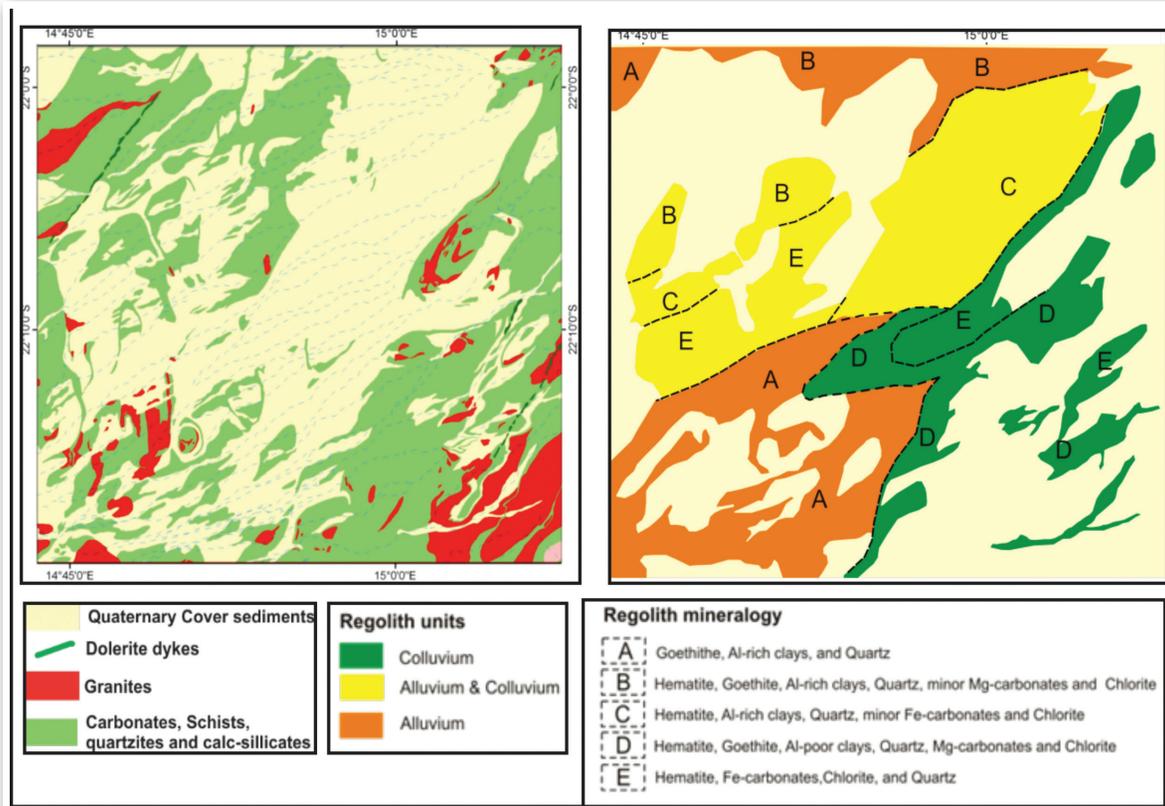
Results of the study have provided important new geological baseline data of the composition, distribution and provenance of surficial sediments.



Geological map compilation using GIS software



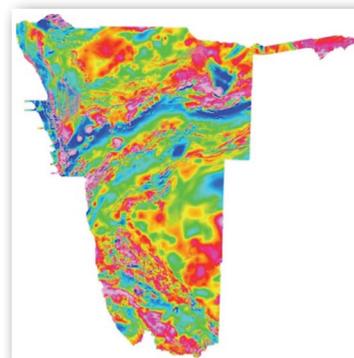
MgOH/C composition ASTER mineral map of northwestern part of the Walvisbay sheet



Part of the study area showing previously undifferentiated Quaternary surficial sediments (published map, left) and interpreted, new regolith units for the inland area (right). The inland site is dominated by alluvial cover sediments and here the regolith is transported SW, mainly by fluvial systems

An airborne survey of the remaining two 1:50 000 scale blocks within the Kalahari east survey area, totaling 7513 line kilometres, was carried out in March 2012. The completion of this survey brings the total line kilometres flown by the Geological Survey of Namibia since the start of the high-resolution airborne geophysics project in 1994 to 4 225 782 km.

The airborne EM survey was flown by Fugro Airborne Surveys using their Tempest208 EM system. The EM survey was reviewed by International Geoscience (IG) that noted the EM data will be most useful for explorers selecting areas of interest for exploration particularly where the Kalahari cover is less than 60m thick. The IG also recommended that GSN should extend the EM survey to northeastern Namibia and to other parts of the country concealed by Kalahari sediments.



High Resolution Airborne Magnetic data



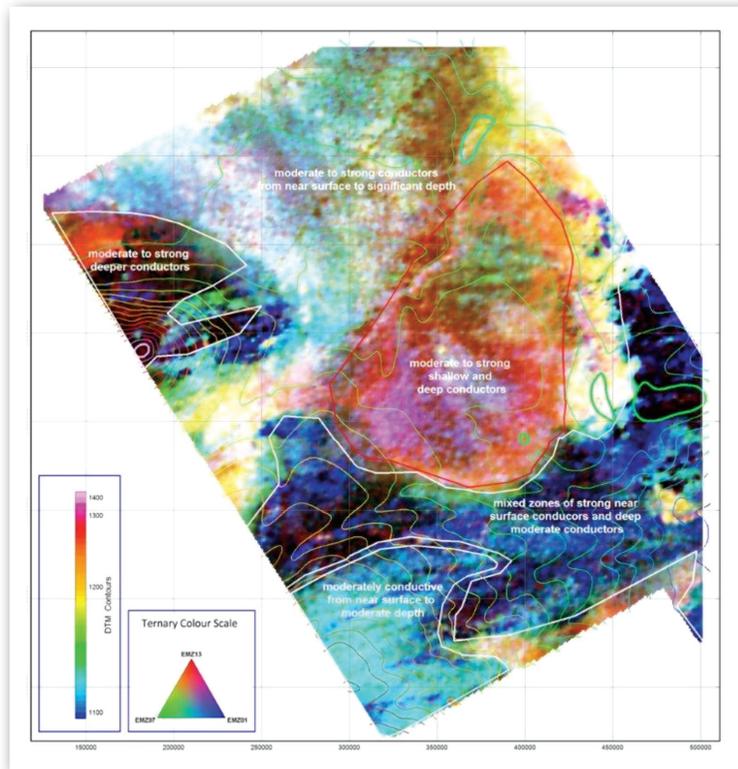
Tempest<sup>208</sup> EM System

In 2012 Hyvista Corporation conducted an

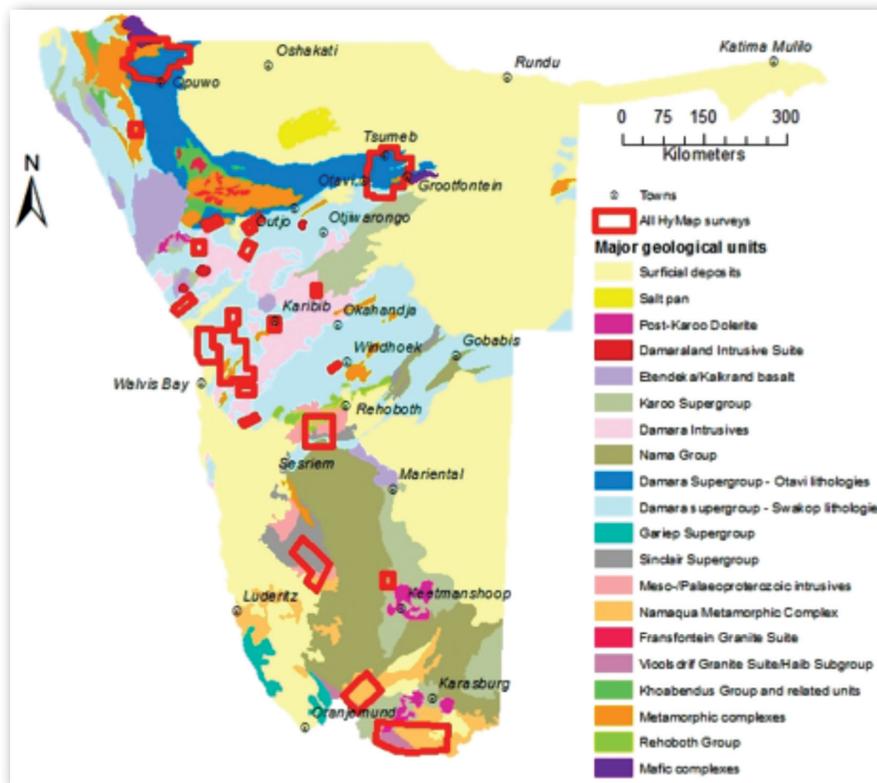


airborne hyper-spectral survey in the //Karas Region, covering an area of 3 000 km<sup>2</sup>. In addition, two

hyper-spectral surveys in the Hardap and Kunene Regions were conducted at the end of 2012.



EM survey of NE Namibia



Simplified Geological map of Namibia overlain by HyMap Hyperspectral Surveys done to date

National Gravity Surveys (NGS) were conducted over the Doros Complex, Goldkoppie near Omaruru and in the vicinity of Opuwo. In addition,

a Trimble R6 Differential Global Positioning System (D-GPS) was purchased from Optron Geomatics for the accurate positioning of NGS gravity stations.



Field assistant busy setting up the D-GPS



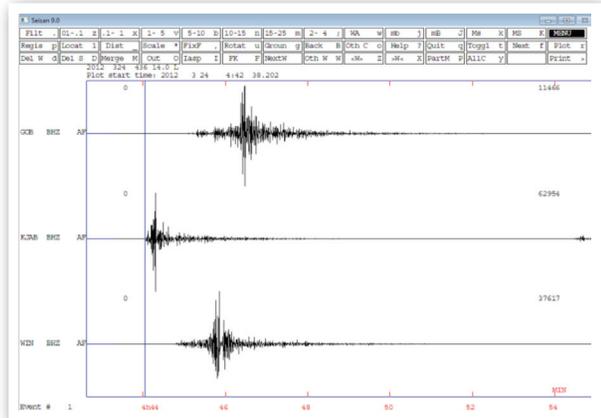
Differential Global Positioning System



Gravity surveying near Omaruru



The National Seismological Network (NSN) now consists of nine stations including Kamanjab, Windhoek, Tsumeb, Gobabis, and Ariamsvlei. The seismic stations at Karibib and Katima Mulilo are unfinished and require the installation of equipment and further construction, respectively. During the year, three significant earthquakes were recorded on NSN. The first event occurred on Saturday 24 March 2012, with a magnitude of 4.5 on the Richter Scale which was followed by an aftershock with a magnitude of 3.8 on the Richter Scale. The third earthquake with a magnitude of 3.0 on the Richter Scale occurred on 1 April 2012 north of Fransfontein.



Phase recordings of the Khorixas event from three NSN seismic stations

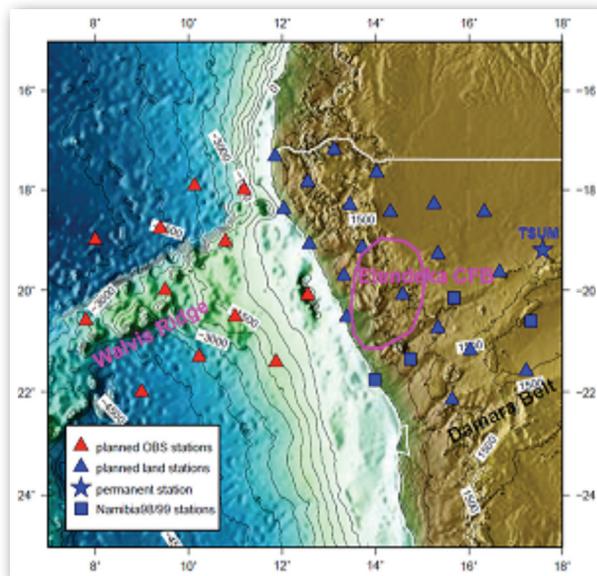
The Walvis Ridge Active and Passive Source experiment continued in January 2012. It included a follow-up survey by the research vessel MARIA S. MERIAN. The aim was to carry out a reflection seismic survey in northwestern Namibia on an identified high velocity zone for studies in processes involved in continental extension, break up and the roles of hot-spot related magmatism.



Seismic buoys

Renovations to the Tsumeb Geophysical Research Station offices and guest accommodation were completed in June 2012. Routine maintenance at the station, as well as daily maintenance and operations of the magnetic observatory and neutron monitor also continued throughout the year.

Daily operation and maintenance of the Infrasound Station (IS35), which forms part of the Nuclear Test



Walvis Ridge



Research vessel Maria S. Merian at the Walvis Bay Ridge

Ban Treaty Organization's (CTBTO) International Monitoring System (IMS), and the auxiliary seismic station (AS67) continued during 2012. A field fire in September 2012 not only damaged site HI of the Infrasound array, but also threatened many of the station's buildings. To improve fire-fighting in the future, a mobile fire-fighting unit has been purchased.

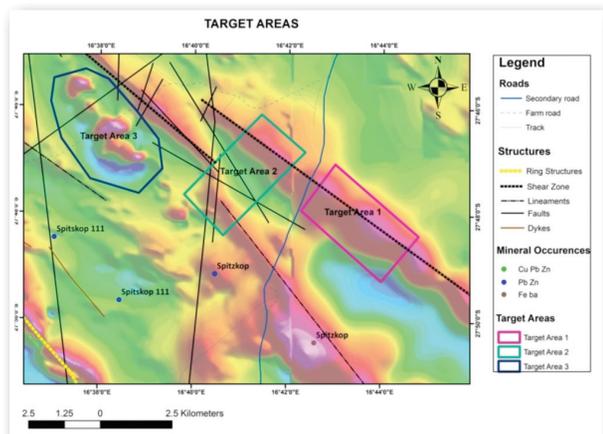


Renovated CTBTO office block and Tsumeb guest quarters

In 2012, geophysicists and geologists of the Geological Survey of Namibia participated in an integrated Airborne Geophysical and Geological Interpretation Project of the //Karas Region in co-operation with CGS. One of the primary objectives of the project was to generate targets with potential economic mineral deposits/occurrences and enhance the geological mapping of the identified areas. The study involved integrated interpretation of various geoscience datasets such as geophysical, geological, mineralogical and remote sensing data sets.



Field fire at the Tsumeb Station and damage to the Infrasound Arrays



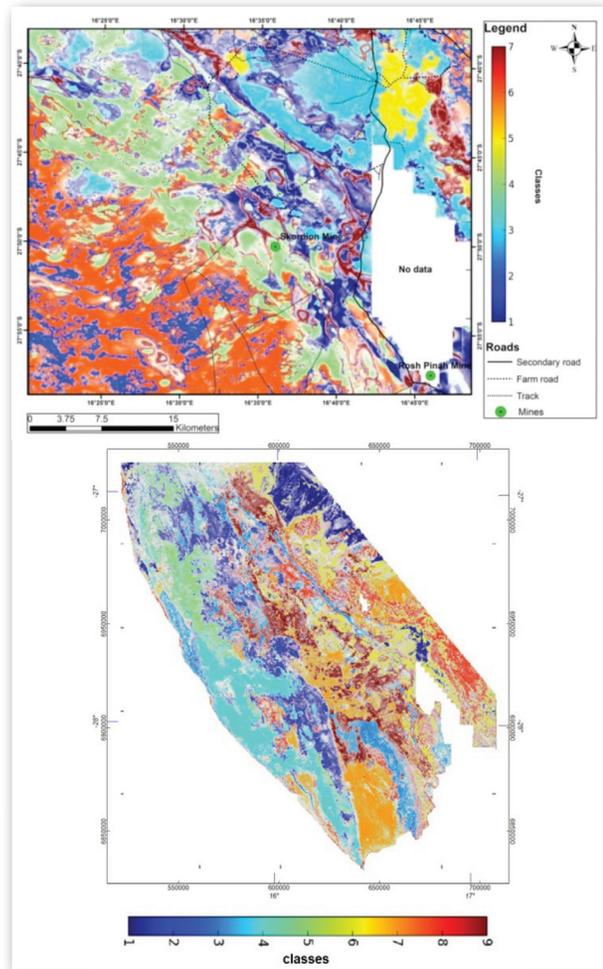
Total Magnetic Intensity Map with target areas north of Rosh Pinah

### Interpretation products generated from the project include:

- Anomaly pattern of magnetic domains: The magnetic domains can be used to map out iron alterations, geological features with elevated magnetite and pyrrhotite minerals, and lineaments.
- Clustering analysis of the entire Gariep Belt and Rosh Pinah Area: clustering analysis integrates sub-surface mapping techniques (Magnetics, Gravity, etc) together with surface mapping techniques (Radiometrics, Landsat imagery, etc) and provides a pseudo-value added lithological map of a large area. The existing geological map can be improved by using few classes (9 classes map of the Gariep Belt, and 7 classes map of the Rosh Pinah Area).
- Enhanced structural and geological maps of the area were compiled using both geological and geophysical techniques.



Geological mapping in Farm Spitzkop, deformed rhyolite and rhyodacite



Resultant classified lithology map of the Gariep belt and Rosh Pinah area

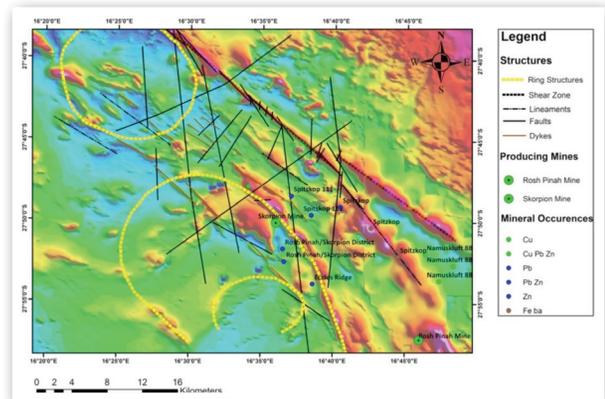


Under the Regional Geochemical Sampling Project (RGSP), drawing of catchments and the selection of 1800 sampling sites for the Tsumeb 1916 map sheet was completed in the second quarter of 2012. The sampling of the Tsumeb map sheet started during the fourth quarter of the 2012/13 financial year. The Tsumeb map sheet is the eighth map sheet to be worked on since 2000.

Despite the challenge of storage space for the RGSP samples, repacking of samples from previous geochemical sampling surveys in the Core Shed continued. Laboratory work on the RGSP samples included the cataloguing and proper storage of the Walvis Bay samples and sample preparation of samples from map sheet 2116AA, a 1:50 000 map of the 2116 Okahandja 1:250 000 sheet. The main focus was on milling the samples and preparing pressed pellets of the fine fraction (<180µm) for analysis with XRF.

As part of the capital project on laboratory upgrading, the Geological Survey of Namibia acquired a water purification system. Some of the laboratory equipment (ICP, NITON portable XRF and the air compressor) received major services.

During the year under review, a total of 205 clients submitted samples for analysis. The services rendered included XRD analyses for mineral composition, portable XRF analyses for chemical composition, and petrographic thin sections produced for mineral and rock identification with the microscope. Other geochemical services offered to various stakeholders included sample preparation such as cutting, polishing of slabs, crushing, milling, sieving and splitting and heavy mineral separation.



Structural Map of the Rosh Pinah area (Total Magnetic Intensity background)



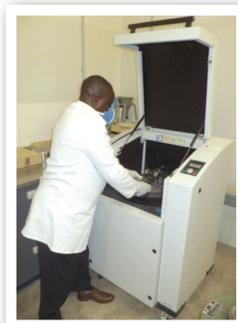
Field excursion carried out by Geological Survey of Namibia geologists and geophysicists



Packing of geochemical samples in the Core Shed



Preparation of pressed pellets with the hydraulic press



Milling of samples with the vibratory disc mill



**Guide land-use decisions to ensure the availability and sustainability of resources for the current and future welfare of our society**

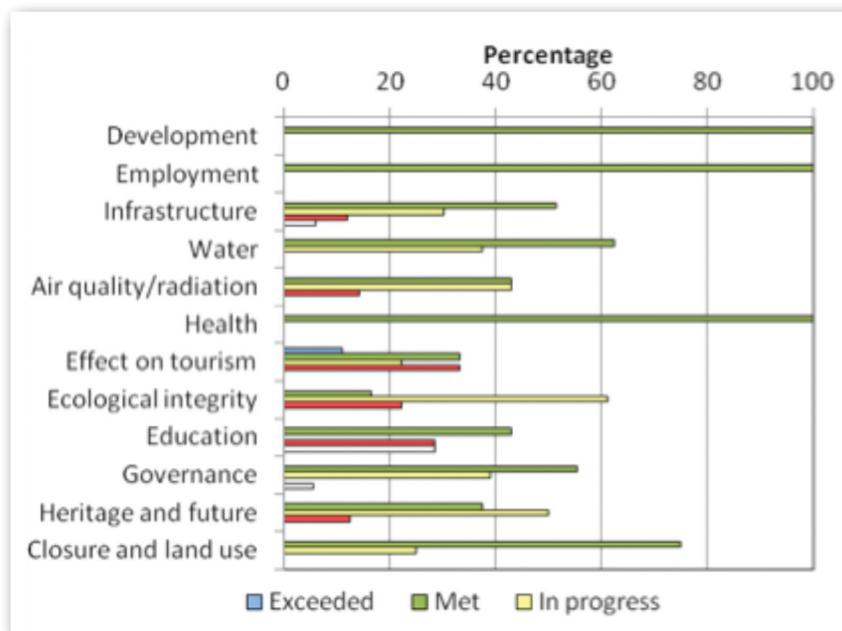
The 1st Strategic Environmental Management Plan (SEMP) report for the year 2011 was released in early 2013. During the reporting period, the uranium mining sector most closely resembled Scenario 1 (below expectations) as defined in the SEA. Rio Tinto/Rössing and Langer Heinrich were the only two uranium mines in operation. Construction of Swakop Uranium’s Husab mine is expected to start in early 2013, while AREVA’s Trekkopje mine will be put on care and maintenance in June 2013 due to the low uranium price. The Bannerman, Marenica, Reptile and Valencia uranium projects have been postponed for the same reason, though Reptile’s iron ore mine may go ahead. The overall performance for different SEMP indicators is summarised as follows:

Status:	NOT MET	IN PROGRESS	MET	EXCEEDED
	15 (12%)	41 (33%)	63 (50%)	(1%)

Environmental Quality Objectives (EQOs) for which 100% of the indicators were MET are EQO1 Socio-economic Development, EQO2 Employment and EQO6 Health, though the latter was mainly met in

the private healthcare sector. Of concern are those EQOs where some of the requirements were NOT MET. The highest number of six was reported for EQO3 Infrastructure. The other underperforming EQOs each had one indicator NOT MET: EQO5 Air Quality and Radiation: There was no accredited weather station at Swakopmund; EQO7 Tourism: Not all EIAs included a visual impact assessment; EQO8: Ecological Integrity: Species extinction risk was generally not addressed in EIAs; and EQO9 Education: The target of 50% of all English and Science marks in Grade 10 and 12 examinations being a D or better was NOT MET.

The investigation of a house with intensely cracked walls on Lazarett Street in Windhoek was finalized in the first quarter of 2012. The house was built over the so-called Pahl Fault, which is also known to underlie a number of other developments such as the Franco Namibian Cultural Centre, the Namibian National Archives, the new and the old State House, and the Bank of Namibia. The investigation indicated that the house is not safe and therefore an alternative place should be sought for the children that reside at the house. Further recommendations were made to the municipality to avoid geo-technically unstable areas when availing land for developments, or attached the necessary conditions for stabilizing the basement.





Earth image of No:12 Lazarett Street

Observed cracks at No:12 Lazarett Street

The risk assessment for exploration sites and abandoned mines carried out along the Orange River in June 2012 concluded that exploration trenches are the most common component observed at the sites visited. As per observation, no recent activity seems to have taken place at most of these trenches, although there are deeper excavations in some trenches that

look like artisanal excavations. The depths of trenches pose minimum risk, however these trenches may have a negative impact (visual) on the increasing tourism activities in the areas. The assessment was done in conjunction with Dr. Anje Burke from Enviro Science, whose main focus was on biodiversity and tourism-potential in the area.

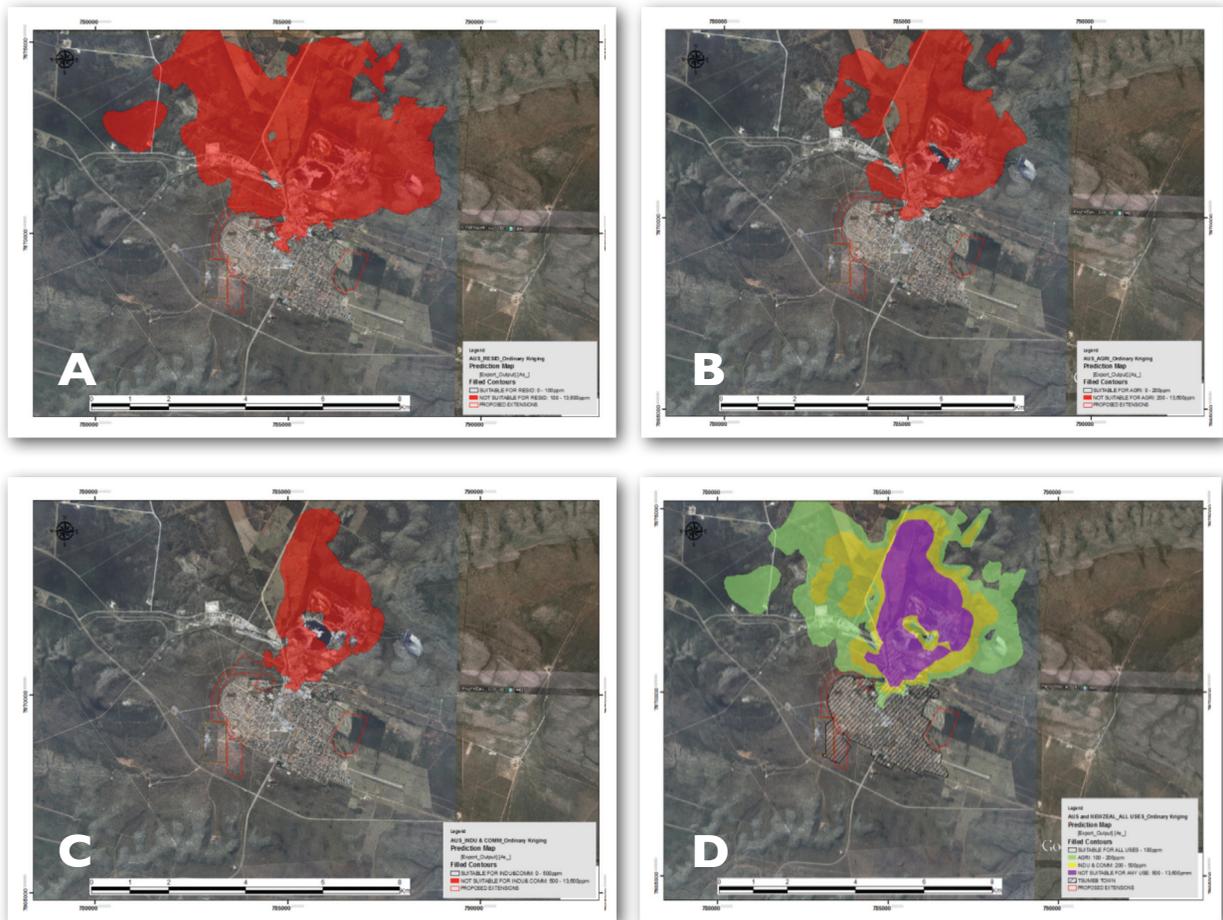


Old trench near the Orange River



The contamination mapping and land use planning exercise concluded by the division in Tsumeb in 2012 confirmed the contamination on the North and Northwestern areas of the smelter complex and the town, with arsenic (As) and other metals such as lead (Pb), cadmium (Cd) and zinc (Zn).

Based on the contamination trend in and around Tsumeb, It is recommended to restrict land use on the southern and eastern areas of the town to residential use as it is the least contaminated area, and therefore possess less toxicity potential to human being.



Landuse Categorization Maps; (A) Area outside the red patch is suitable for residential landuse, (B) Area outside the red patch is suitable for Agricultural landuse, (C) Area outside the red patch is suitable for Industrial/commercial landuse, (D) combined Categorization maps

Environmental monitoring of Navachab mine in May 2012 showed low cyanide in the groundwater as opposed to the results of a study earlier conducted by the GSN in 2002. Generally all metals of concern As, Cd, Pb, Zn are low and therefore posed no threat to the environment at the time of this monitoring.

**Stimulate investment in Namibia’s mining sector in order to contribute to the development of Namibia’s economy.**

On the economic front, several projects are being implemented at GSN including:

- Mineral Occurrences Information

series, of which the Walvis Bay map sheet has been completed, while the Rehoboth sheet is in progress.

- Dimension stone catalogue is in progress and the accompanied geotechnical data are being collected.
- A report on Coal and Oil project was compiled and editing is ongoing.

GSN continues to maintain the core facilities in Windhoek and Tsumeb.

Conferences attended by the GSN staff during 2012 included the Mining Indaba, ASEG, PDAC, IGARSS, “African Down Under”, the PSSA (Palaeontological

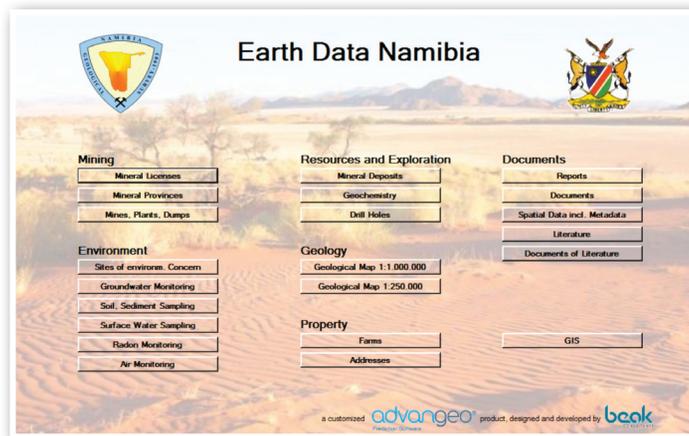
Society of South Africa), SASQUA (Southern African Society for Quaternary Research) and the COM Mining conference.

**Create awareness of the earth sciences in order to enhance the understanding of the geo-environment and its interaction with the life-supporting system of the Namibian people**

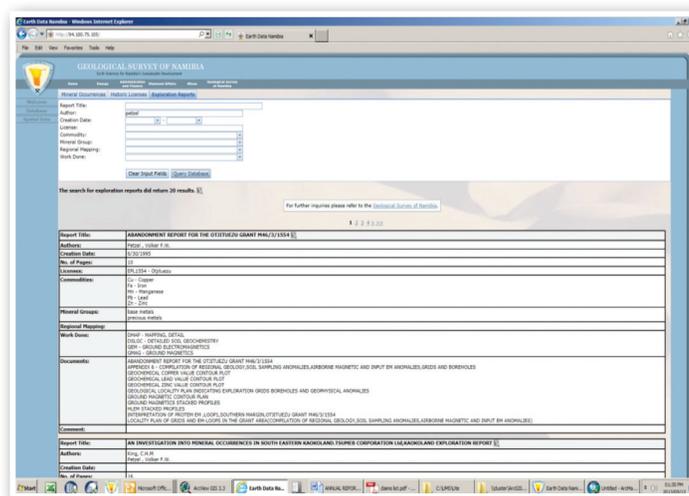
The Earth Data Namibia (EDN) database, which was first launched in October 2003, has received a new face! Since June 2012 this upgraded information system has been fully functional, although minor programming errors and adjustments continue to be ironed out. Further to the addition of new modules, especially in the sector "Environment" (e.g. radon monitoring, air monitoring, groundwater monitoring, soil/sediment sampling, surface water sampling) and "Spatial Data", the latter containing both geo-

referenced and unreferenced remotely sensed images (ortho-photos/satellite images), there has been a switch to SQL and ARCGIS as operating software to make the application more user friendly.

Populating and updating of the various modules (e.g. mineral licences) continues on a regular basis or whenever new and/or archival data become available or are captured into digital format (e.g. exploration reports/documents, geology, literature, geochemistry). While the full EDN application is accessible to clients through computer terminals at the National Earth Science and Energy Information Centre (NESEIC), certain spatial and metadata are now also available through the Ministry of Mines & Energy's website (web presence of EDN). These include mineral licences, exploration reports and documents, mineral deposits and simplified geology, as well as a variety of background data sets in image format (e.g. aeromagnetics, satellite imagery, topo maps).



Log-in screen of the "new" Earth Data Namibia Database



EDN web application: Reports can be queried by variety of search criteria such as mineral commodity exploration licence and author

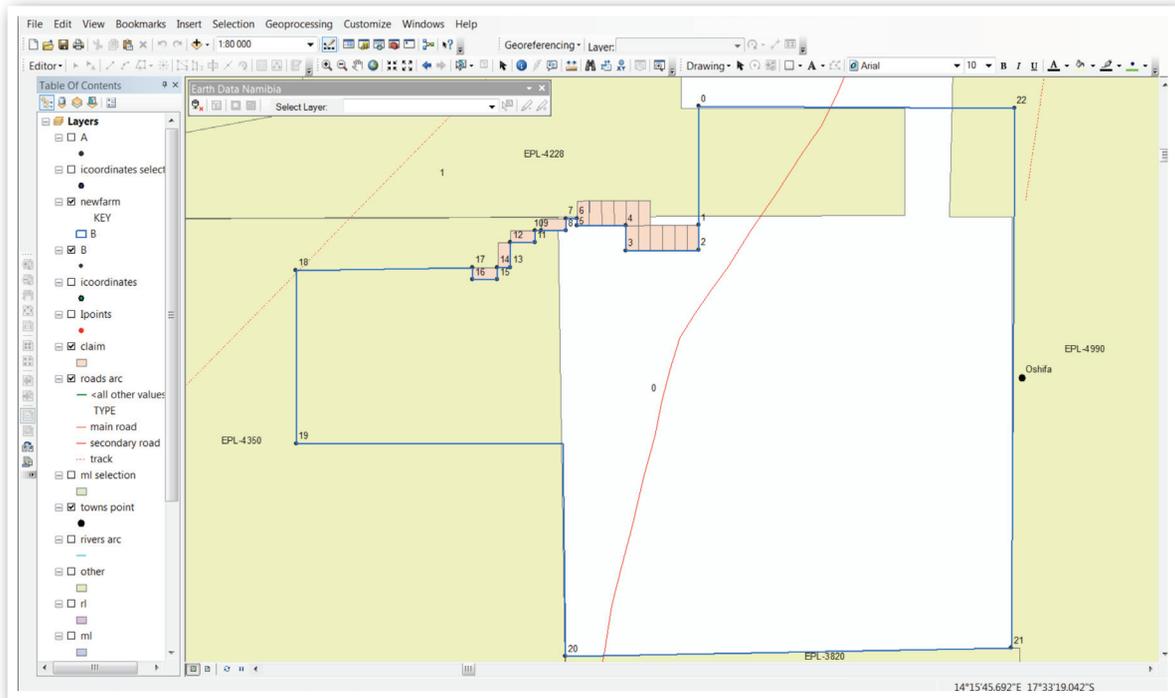


With reference to the borehole log, additional information mainly: purpose, yield and depth have been added. Epukiro and Boesmanland are 90% updated into the EDN, whilst Oshakati sheet is done with scanning of 162 log sheets only.

A good number of visitors, 466 visitors visited the

National Earth Science Museum during 2012. Most of these included school groups, university students, visiting scientists and tourists.

The National Earth Science Museum was featured in various articles in the Allgemeine Zeitung newspaper and Travel News Namibia magazine.



Working with GIS makes interaction with the map possible



Pre-Primary School children view the Dinosaur Massospondylus

The French-Namibian Palaeontology Expedition visited the Sperrgebiet for three weeks, resulting in many new discoveries made and more than 300 fossil specimens were collected, which included 27 Isurus teeth, more than 120 varying shark teeth from the Eocene, more than 86 Eocene mollusks and samples of freshwater snails and pieces of petrified tree trunks.

Various donations were received for the museum exhibition, including a drill bit from Enigma Oil and Gas. In addition the museum was fortunate to add another meteorite to its collection.

The National Earth Science Museum continued to remain an active member of the Museums' Association of Namibia.

The geo-scientific information in the National Earth Science and Energy Information Centre and at the Sales Office created awareness of the earth

sciences and lead to a better understanding of the geo-environment and its interaction with the life-supporting system of the Namibian people.

The museum and Geological Survey was represented at the Katutura Multipurpose Youth Centre career fair, the 9th National Science, Engineering and Innovation Week and the 18th Polytechnic Career Fair.

Various posters were prepared for conferences and outreach activities in Namibia and abroad. GSN staff attended numerous career and science fairs in including in Oshakati and Rundu towns. Posters on the local usage of natural resources (e.g. clay, sand) were prepared and handed over to the Elise Shipale Combined School, in the Ohangwena Region on geoscience awareness day. GSN was also instrumental in the design of educational posters for small scale miners and educational institutions from pre-primary school to tertiary institutions.



*The complete pelvis of a fossil bovid from Elisabethfeld*



*Drill bit*



Elise Shipale Combined School in Okauva village on the geoscience awareness exercise day

Services rendered to clients include provision of historic exploration reports; mineral deposits information; cadastral data and general advice on mineral prospects of Namibia.

GSN provides standard 1:250 000 and 1:100 000 geological maps (colour plots), customized geological maps for mineral and groundwater exploration, and digital data (ESRI shapefile format). The Cartography Subdivision handled numerous GIS related requests such as geo-referencing of maps and projection of coordinates collected from the field with GPS. For more information and prices please consult the publication list accessible on the website of the Geological Survey of Namibia (<http://www.mme.gov.na/gsn/default.htm>).

**The following constraints were encountered while executing the above duties:**

*The high staff turn-over and problems to attract experienced staff negatively affect the work of the*

*Geological Survey of Namibia, and the institution remains severely understaffed. This is mainly the result of a structure which is not fully funded. Inadequate funding for travel hamper the execution of field work, while at the same time field work lies at the basis of every geological research.*

*Likewise unchanged are the challenges faced in respect of delays in the repairs on some of the equipment due to unavailability of qualified local service technicians and lack of maintenance funds to do the repairs, and an inadequate budget and technical support for IT requirement. The latter being a particular problem, as the available IT services are not at all commensurate with the high volume of data generated by the Geological Survey of Namibia and the complex software applications required to manipulate and interpret these data. Data security and outside storage urgently needs to be improved, and the slow internet connectivity must also be speeded up in order for the Geological Service to be able to meet its international commitments and utilize information appropriately.*

# Directorate of Mines



Contributed by Saskatchewan Uranium



Erasmus Shivolo  
**Mining Commissioner: Mines**

**The objectives of the Directorate of Mines for the year under review were amongst others to:**

- Finalise the revision of the legal framework and to make it competitive and conducive to promote investment
- Ensure that the mining industry continues to be integrated with other sectors
- Ensure that the mineral resources are exploited in a safe, responsible and sustainable manner
- Ensure that a vibrant and sustainable Small Scale Mining Sector continues to be supported and developed
- Ensure that value for money and customer orientated services are rendered in an efficient, timely and comprehensive manner

**The following achievements were made under the objectives above:**

**Finalise revision of the legal framework and to make it competitive and conducive to promote investment**

Except for the Regulations, the draft Minerals Bill is in its final stages. However, efforts to incorporate the provision of Strategic Minerals and the recognition of Epangelo Mining Company for this purpose have been challenging, and will still be dealt with during the 2013/2014 financial year. The regulations will be developed following the promulgation of the Bill into law.

The Directorate of Mines drafted a Model Minerals Agreement with the assistance of the Commonwealth Secretariat in accordance with Section 49 of the Minerals (Prospecting and Mining) Act, 1992. The draft has been submitted to the Ministry of Justice and Attorney General for review.

The development of a Nuclear Fuel Cycle Policy started with project consultations between the Ministry of Mines and Energy, the Ministry of Health and Social Services, the Ministry of Justice, the Geological Survey of Finland (GTK), and the Radiation and Nuclear Safety Authority of Finland (STUK) in November 2010. During the year under review, the draft Nuclear Fuel Policy document was submitted to the Ministry of Justice for review.

Comments are expected during the first quarter of the 2013/2014 financial year. The legal framework to follow the policy document will aim to regulate the exploration, mining, and processing of nuclear fuel minerals; provide for nuclear energy production and regulation, human health safeguards, safety, security and the protection of the environment; and will fulfill Namibia's commitment in terms of the Non-Proliferation Treaty and Safeguards Agreement.

**Ensure that the mining industry continues to be integrated with other sectors**

During the reporting period, 312 Exclusive Prospecting Licenses, 5 Mining Licenses, 216 Mining Claims (new and renewals) were processed and granted. In addition 463 Non Exclusive Prospecting Licenses were registered during the same period.

Epangelo Mining Company and Swakop Uranium finalized an agreement for the subscription of a 10% stake in Swakop Uranium in a deal valued at N\$ 1,882 billion. Epangelo Mining has acquired 39 Exclusive Prospecting Licences (EPL) which are currently being assessed and evaluated for their mineral potential. The EPLs cover a wide spectrum of strategic minerals. So far four desktop studies have been conducted, partly through engagement of students and own staff. Due to scarce exploration funds and the high risk involved in exploration, it is anticipated that the company will conclude Joint Ventures Agreements in order to advance the exploration of these licenses.

Government allocated N\$34.6 million to Epangelo Mining Company for the next Medium Term Expenditure Framework to be used for operational expenditures.

A trophy was awarded to the Ministry of Mines and Energy for significant progress achieved by the Directorate of Mines in the implementation of the recommendations of Business Process Reengineering (BPR) to clear the backlog in processing exploration and mining licenses as well as claim registrations. The Ministry now forms part of the BPR Practitioner's forum.

The Directorate of Mines continued to undertake visits to various mining companies and operations to collect information, verify and discuss issues of mutual

concern with the intent to improve on statutory obligations as per the Minerals Act, and to strengthen cooperation with the industry. The Directorate of Mines continued to provide reliable and timely statistics on employment, production, exports, royalties, and exploration expenditure to the National Statistics Agency, Banking Institutions and independent researchers. The statistical mining data are essential for the compilation of national accounts, analysis of growth trends and performance of the sector, and formulation of national macroeconomic policies. The Directorate also continued to collaborate with international organizations such as the International Lead and Zinc Study Group, and the International Atomic Energy Agency as a national commitment to those UN institutions.

The Directorate of Mines implemented safeguards in line with the provisions of the Safeguards Agreement by scrutinizing uranium sales and uranium oxide purchase and sales agreements to provide assurance that uranium of Namibian origin is exclusively exported for peaceful applications.

The Ministry of Mines and Energy continues to provide support for in-transit uranium shipments from Malawi's Kayelekera mine, which are transported from this land-locked country through Namibian territory for shipment via the port of Walvis Bay.



Signing of Joint Venture agreement between Epangelo and Swakop Uranium



**Ensure that the mineral resources are exploited in a safe, responsible and sustainable manner**

In respect of loss time injuries (LTIs), the Namibian mining industry has experienced improvements during the period under review. However, in terms of fatalities, the worst year in a long time saw four serious accidents with fatal consequences.

Previously recurring mine accidents prompted the Chamber of Mines, in consultation with the Directorate of Mines, to engage an International Mining Safety Expert to assess the Namibian mining industry's safety standards in 2012. The expert has since provided recommendations for improvement.

Not all mine accidents were caused due to negligence or contravention of the law by the Mineral Rights Holders, but some are due to unsafe behaviour and negligence by individuals. For example operating machinery without proper authorization, failure to follow safe working procedures, and not anchoring safety gear when working at heights. Shortcomings were shared with mining industry operators and the general public by the Chief Inspector of Mines and his team.

The safety of the mining industry in Namibia was benchmarked against various international mining jurisdictions. Although the rating proved to be the best, the four fatalities experienced in one year

remain unacceptable. All reported Mine accidents were procedurally investigated by the office of the Chief Inspector of Mines and findings forwarded to the office of the Prosecutor General for decision making. There was an increase in young Namibians acquiring blasting certificates for both open cast and underground mines. The candidates are tested and when successful, certified by the Chief Inspector of Mines as qualified and competent persons to undertake blasting operations at exploration and mining sites.

**Ensure that a vibrant and sustainable Small Scale Mining Sector (SSM) is in place**

During the 2012/2013 financial year, N\$19 million was budgeted for the implementation of three small scale mining capital projects. These projects are: Setting up of a slate stone cutting and polishing facility in Noordoewer in //Karas Region. Setting up of a cutting and polishing facility for dimension stone off-cuts in Karibib in Erongo Region. Setting up of sodalite off-cuts and semi-precious stone cutting and polishing facility in Khorixas in Kunene Region.

During the period under review plots were obtained in Noordoewer, Karibib and Khorixas. Consultants (Deidre de Waal Architect, Seal Consultants and Blokker, Jacob & Kuschke Quantity Surveyors) were appointed to survey the plots and prepare technical drawings for the construction of the offices and plant



*A land surveyor surveying the plot in Karibib for the envisaged dimension stone off-cuts cutting and polishing facility*

facilities for the three projects. All the drawings/plans were completed during the period under review.

A land surveyor surveyed the plot in Karibib for the envisaged dimension stone off-cuts cutting and polishing facility. A number of tenders were awarded for the acquisition of cutting and polishing equipment, vehicles and office furniture.

The Ministry of Mines and Energy purchased an existing slate processing facility which was privately owned and operated in Noordoewer for many

years, with the view of expanding it to create jobs for the unemployed population in that part of the country. The Directorate of Mines through its Small Scale Mining Division successfully hosted a small scale mining workshop in April 2012 in Windhoek in cooperation with the Swedish Government.

The workshop was attended by various local and international stakeholders to share information and discuss issues pertinent to the development of the small scale mining sector in Namibia.

One of the Small Scale Mining Division's functions is liaising with external agencies to optimize support to Small Scale Mining. A number of workshops with outside agencies were therefore attended, including a workshop organized by the Ministry of Agriculture's Division of Cooperative Development for the Kunene and Erongo Cooperatives. The Division is also serving on the Keetmanshoop Gemstone Centre Steering committee.

During the year under review, geotechnical sample analyses, assistance with the pegging of mining claims, and other support services were provided to small scale miners countrywide. Twelve small scale miners from the Kunene, Erongo and //Karas regions received financial and logistical support to exhibit their mineral products at the Ongwediva and Windhoek tradeshows.

Meetings and Information sharing forums were held in the Omaheke and //Karas Regions, where a lot of small scale miners were engaged in mining activities without valid mineral rights.



A. A facilitator engaging the participants during the workshop.  
B. Group discussions during the workshop.  
C. SSM products on display during the workshop.

Calcrete mining at Okatumba in the Omaheke Region



Small scale mining communities in the Hardap, southern Kunene and //Karas Regions were sensitized to form legal small scale mining bodies through which they can access services from the Ministry of Mines and Energy. Assistance was sought from the Legal Assistance Center for the process of registration of Small Scale Mining Associations. The various groups are in different stages in the process of formation and registration of Small Scale Mining Associations. The Noordoewer (Gariap) Small Miners Association was formed and is in the process to be registered.

### Highlights from the mining industry and Statistics

U308 Prices US\$/Lb

The Fukushima incident drastically affected the uranium demand and in turn lowered the uranium prices. This is evident from the table above, and the uranium spot price continued to decline during 2012 due to weak demand. By March 2013, the spot price was just above US\$40/lb.

The downward prices caused delay in the development of some uranium projects. AREVA put its Trekkopje uranium mine under care and maintenance until such time when the market conditions will improve. Most uranium projects will only be viable at a price of about US\$75/lb or more.

Export earnings from minerals generated N\$17 billion in 2012. The average number of employees increased

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2002	9.70	9.95	9.75	9.90	9.90	9.90	9.85	9.85	9.75	9.90	9.85	10.20
2003	10.10	10.10	10.10	11.00	10.90	10.90	11.20	11.30	12.25	12.20	13.75	14.40
2004	15.60	16.75	17.75	17.75	17.75	18.50	18.50	20.00	20.00	20.20	20.50	20.50
2005	21.20	21.75	22.60	26.00	29.00	29.00	29.50	30.00	32.00	33.25	35.00	36.50
2006	37.50	38.75	41.00	41.50	43.00	46.00	47.50	52.00	55.75	60.25	64.00	72.00
2007	75.00	85.00	95.00	113.00	133.00	135.00	123.00	85.00	75.00	90.00	93.00	89.00
2008	75.00	73.00	71.00	65.00	60.00	59.00	64.50	64.50	52.00	46.00	55.00	52.00
2009	47.00	44.00	42.00	45.00	49.00	51.00	47.00	46.00	43.00	46.50	42.25	44.50
2010	42.25	40.50	41.75	41.75	40.75	41.75	45.25	45.50	46.75	52.00	60.25	62.00
2011	72.25	69.50	58.50	55.00	56.50	51.50	52.00	49.25	52.00	51.75	51.50	52.00
2012	52.25	52.00	51.10	51.50	51.25	50.75	49.50	48.00	46.50	41.00	42.50	43.25

Mineral Production and Exports 2012			
Commodity	Production	Exports	
		Mass	Value (N\$)
Diamonds	1,665,683.91 (cts)	1,628,779.80 (cts)	7,858,787,306.34
Fluorspar	74,157 (t)	78,261 (t)	209,974,872.00
Gold Bullion	2,287(kg)	2,285 (kg)	983,210,295.00
Granite	44,564(t)	23,021(t)	21,034,784.00
Lead Concentrate		6,552(t)	42,414,515.00
Manganese	188,863(t)	179,984(t)	109,020,225.00
Marble	43,351(t)	29,914(t)	44,995,497.00
Salt	810,000 (t)	727,805 (t)	256,740,039.00
Uranium oxide	5,540.85 (st)	10,575,647.70(lbs)	5,454,554,059.40
Zinc concentrate	105,332 (t)	6,070(t)	602,943,996
Zinc Refined	144,508(t)	140,443(t)	2,358,194,847.00

by 15%, partially as a result of new mining licenses approved during the reporting period. Unfortunately, the industry also experienced layoffs of employees during the same time.

Royalties collected from the sales of minerals were 15% higher than the previous reporting period, and totaled in excess of N\$923 670 million. Diamond sales accounted for more than 50% of all royalties collected. The total amount of diamonds produced increased by 24% in 2012/2013. The significant rise was mainly due to increased production from Namdeb's offshore operations, as well as renewed production from the Elizabeth Bay Mine which resumed operations at the end of 2011.

Generally, the 2012/2013 mine production levels increased gradually, recovering from the constrained output of the previous years.

**The following constraints were encountered while executing the abovementioned objectives:**

*The Directorate of Mines noted with concern that foreign nationals were employed at the mines without proper documentation, and the illegal smuggling of mineral products across borders which is a threat to safety and the general security of the country. Staff members continued to be vigilant in addressing these matters.*

*Four mine fatalities were recorded during the Year 2012/2013 - one at Otjihase Mine, one at Matchless, one at Purity Manganese Mine and one at Trekkoppje Mine.*

*The Inspectorate of Mines continues to experience challenges in recruiting and retaining qualified and experienced personnel for various reasons, hence a revised structure has been proposed in an effort to resolve this problem through the Public Service Commission.*

*Non-compliance with provisions of the Minerals (Prospecting and Mining) Act by some exploration and mining companies and claim holders continue to be a challenge. However, engagement with stakeholders has*

*resulted in better understanding and improved compliance. A shortage of certain professionals, in particular the absence of a legal expert in the Ministry of Mines and Energy has resulted in delays in finalizing certain legal matters, as well as challenges instituted by parties who felt aggrieved by the Ministry's sometimes unintentional actions.*

*Budgetary constraints limit the capacity to carry out certain tasks. Abandonment of mining sites and quarries by mineral rights holders (particularly small scale miners) without following the provisions of the Act, including rehabilitation, remains a problem.*

*Inaccessibility of certain mineral rights areas by rights holders due to difficult and uncompromising land owners pose challenges.*

*Some Mineral Rights holders are regularly submitting inaccurate and/or incomplete reports based on provisional data. An advanced database is being developed to address some of the shortcomings in this area.*

*The deduction of non-prescribed allowable deductions by mining entities to avoid paying requisite royalties, as well as the unreasonably late payments of both, royalties and penalties, has been noted with concern, but will be addressed continuously.*

*Suspicious discrepancies on volumes and values of mineral commodities declared on the royalty payment Schedule lead to under-estimation of royalties. In some cases Transfer Pricing is suspected.*

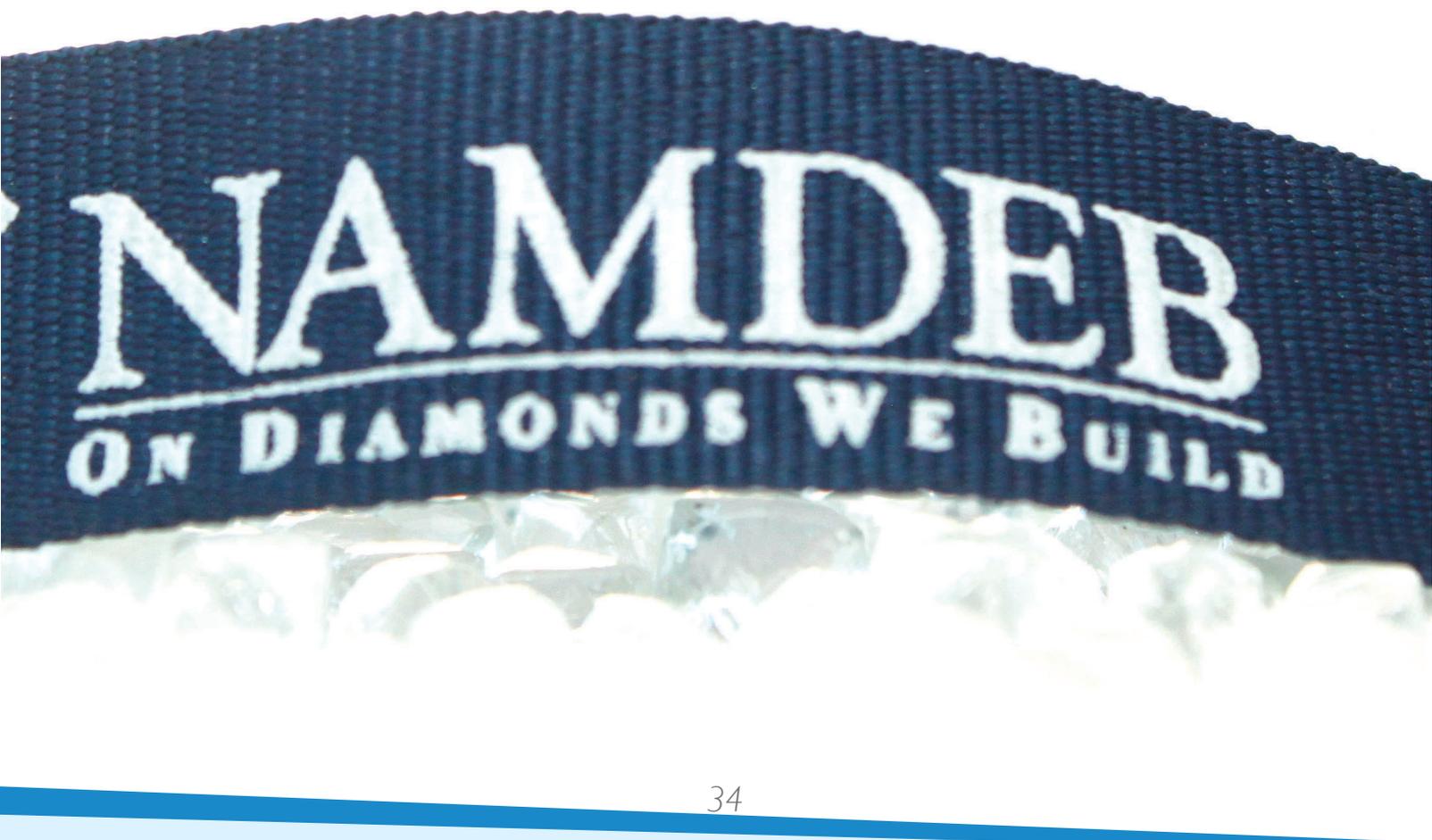
*Some Small Scale Miners operate in an unsafe and environmentally unfriendly manner causing environmental degradation of the ecosystem.*

*Value addition to minerals remains a challenge although there have been engagements with the Ministry of Trade and Industry to encourage establishment of manufacturing industries.*

*While some of the above challenges can be dealt with directly by the staff members of the directorate, some require outsourcing and involvement of external parties.*

**Directorate of Diamond Affairs**

Contributed by DeBeers





Kennedy Hamutenya  
***Diamond Commissioner: Diamond Affairs***

The Directorate of the Diamond Affairs is the national establishment charged with the responsibility of monitoring and regulating the Diamond Industry of Namibia in order to protect it from the threats of smuggling and other illicit activities. Its core duties also include promoting the diversification and integration of the diamond industry into the rest of the economy, in order to maximize its contribution to the socio-economic development of Namibia.

The Directorate strives to maintain complete control and monitor all diamond exploration, mining and manufacturing activities, and the handling of diamondiferous concentrate within and out of Namibia, in order to ensure compliance with the provisions of the Diamond Act of 1999 and its subsidiary regulations, and to ensure that Namibia maximizes benefits from the extraction and beneficiation of its diamond resources. The Directorate also ensures compliance with the requirements of the Kimberley Process International Certification Scheme (KPCS) for the import and export of rough diamonds in order to preserve the good image of the diamond industry. The Directorate is extensively decentralized, with its headquarters at the Ministry of Mines and Energy in Windhoek, and sub-offices located in Lüderitz, Oranjemund and Swakopmund, in proximity to the bulk of the mining and prospecting operations.

**The objectives of the Directorate of Diamond Affairs for the year under review were to:**

- Ensure that diamond licences are allocated in

accordance with the provisions of the Diamond Act (Act 13 of 1999)

- Issue import, export and other permits on a timely basis
- Manage and use modern information technology to communicate, share and process diamond information and data
- Issue restricted area (Section 27K) permits
- Ensure compliance with the Kimberley Process
- Ensure the effective and efficient control of the handling and transportation of rough diamonds in Namibia
- Promote the growth, stability and viability of the Namibian down-stream diamond industry
- Ensure that the valuation and sale of Namibian diamonds meet international acceptable standards
- Uphold the good image of the Namibian diamond industry



**The following achievements were made under the objectives stated above:**

**Ensure that Diamond licences are allocated in accordance with the provisions of the Diamond Act (Act 13 of 1999)**

During the year under review one tool-making license was granted by the Minister of Mines and Energy and issued by the Diamond Commissioner.

**Issuance of import, export and other permits on a timely basis**

A total number of 214 import permits (a – j) were issued by the Windhoek Office.

Import and export permits were issued on the same day the necessary documentation was received.

**Issue restricted area (Section 27K) permits**

All restricted area permits were issued within two working days.

A total number of 30 589 restricted area permits were issued by the Directorate of Diamond Affairs during the year under review: 28 032 by the Oranjemund Office, 2 480 by the Lüderitz Office and 77 by the Windhoek Office.

**Manage and use modern information technology to communicate, share and process diamond information and data**

The data base modular system managed and stored all information generated on rough and polished diamonds.

All KPCS and permits records are stored in the data base, making it easier to retrieve information when required.

**Ensure compliance with the Kimberley Process Certification Scheme (KPCS)**

Namibia submitted all its quarterly reports to the KPCS on time.

The Directorate of Diamond Affairs attended the Intercessional and Plenary meetings in Washington

DC/USA. The Directorate also attended the African Diamond Producing Countries Association (ADPA) Ministerial Meeting in Ghana.

Namibia is a member of the following KPCS Committees and Working Groups:

- The Committee on the Reform of the KPCS
- The Participation Committee
- The Selection committee
- The Working Group on Diamond Experts (represented by Government Diamond Valuers (GDV) – Global Diamond Valuers (Pty) Ltd.)

All diamond registers at the diamond cutting and polishing factories were reconciled with the stock on hand.

All exports were inspected and sealed by the diamond Inspectors in order to ensure that all exports are accompanied by a Kimberley Process Certificate from the Office of the Diamond Commissioner; in order to remain KPCS compliant.

Import permits were issued for all diamonds entering Namibia to ensure that all imports are accompanied by a Kimberley Process Certificate from the country of provenance.

Namibia issued 101 KPCS Certificates, while 37 were received from other participants of the KPCS for the period under review.

**Ensure the effective and efficient control of the handling and transportation of rough diamonds in Namibia**

All transactions were done as per the Diamond Act and regulatory requirements.

All diamond vessels were inspected and cleared upon arrival and departure from the territory of Namibia.

Sealing of diamond shipments was done in the presence of a Diamond Inspector, PRU and customs officials.

Applications for approval of contractors and subcontractors were processed and those that were security cleared had their contracts approved within a week. Three new contractors/subcontractors were approved for the year under review.

Cutting factories and restricted areas were inspected

on a regular basis. Cross checks and reconciliation of all diamond registers has also been done effectively.

One security plan was recommended by the Directorate of Diamond Affairs and approved by the Minister of Mines and Energy for the period under review.

Regular inspections were conducted at all the sites handling diamonds. All flights from Oranjemund to Windhoek (NDTC) carrying diamonds were escorted by Diamond Inspectors to ensure that shipments are not tampered with.

All mining vessels leaving Namibian waters to South Africa for dry-docking were escorted by Diamond Inspectors. All potentially diamond bearing gravel on board was stored in containers for safe keeping, and sealed to ensure they are not tampered with.



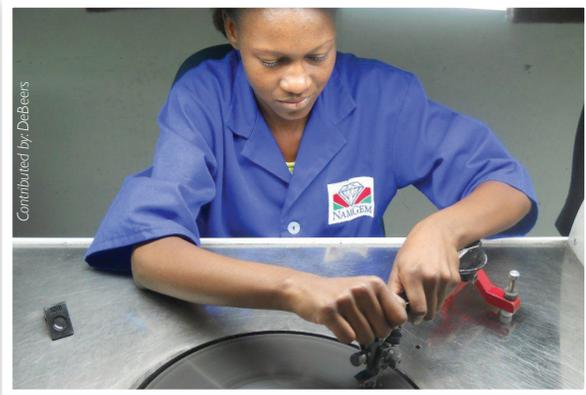
*Diamond Mining Vessel*

### **Promote the growth, stability and viability of the Namibian down-stream diamond industry**

There are currently fourteen diamond cutting and polishing factories in Namibia. Almost all of those factories are sight holders of the Namibia Diamond Trading Company (NDTC).

The NDTC therefore continued to supply almost all cutting and polishing factories in Namibia with rough diamonds, except for one which is not a sight-holder. Nonetheless, the Directorate of Diamond Affairs continues to lobby for all factories to be supplied with the right quantities, classes, and sizes of rough diamonds

in order to ensure that they are viable and sustainable, and in line with the goals of NDP4.



*Diamond cutting factory*

### **Ensure that the valuation and sale of Namibian diamonds meets internationally acceptable standards**

The Diamond Inspectors continued to closely monitor diamond valuation procedures. With the increased number of factories, diamond valuation counts have also increased, as rejects that cannot be cut locally are re-valuated before export.

Analyses of international diamond market reports and Government Diamond Valuator reports were done on a regular basis to keep up with trends in the world diamond pipeline. Other reports were received from reputable sources and shared with the relevant policy makers.

The compilation of import and export reports and sales statistics was done on an ongoing basis.



*Staff valuing diamonds*



**EXPORTS AND ROYALTY PAYMENTS  
FOR THE PERIOD 01 APRIL 2012 TO 31  
MARCH 2013**

place occasionally to discuss possible threats that could hamper the good working relationship that exist and other diamond security related matters.

<b>1 April 2012 – 31 March 2013</b>	<b>Carats</b>	<b>Value - N\$</b>	<b>Royalties – N\$</b>
	<b>1 965 688.40</b>	<b>7 940 047 505.40</b>	<b>855 496 278.80</b>

**Uphold the good image of the Namibian diamond industry**

Four Diamond Board meetings were held for the period under review.

The Office of the Diamond Commissioner responded to a number of queries by international diamond investors within 14 days.

Five new Diamond Inspectors were recruited during the period under review.

All Diamond Inspectors attended a two weeks rough diamond course at the Harry Oppenheimer Diamond Institute in Johannesburg, South Africa.

Two Chief Diamond Inspectors attended cross border cooperation meetings with South African law enforcement agencies. The meetings dealt with defence, security, illegal mining and cross-border crime, and discussed measures to combat it.

All Diamond Inspectors at the regional offices attended a Sea Survival course which was sponsored by De Beers.

A Local Fellowship Committee consisting of Namdeb Security Department and the Police and inspectors meet occasionally to discussed diamond theft and other security threats.

A stakeholders meeting consisting of GRN section heads and DeBeers Marine Namibia (DBMN) takes

**THE FOLLOWING CONSTRAINTS  
WHERE ENCOUNTERED WHILE  
EXECUTING THE ABOVE OBJECTIVES:**

Limited and constraining budget allocated to the Directorate. Shortage of transport at the Regional Offices remains a problem that hampers the smooth operation, as well as frequent and unannounced security checks on mining vessels and mines.

The shortage of manpower remains a problem that limits operations in the field.

Inaccessibility or difficulties of visiting some concessions. Unsafe environment due to lack of networks within the Tsau-Keib (Sperrgebiet) National Park.

Insufficient office & operational resources or even complete lack thereof, including office equipment and computers. In Oranjemund there is even not enough space to keep old records.

Security concerns of frequent flights by chartered aircrafts using the Kunene and Torra airstrips.

Lack of training in investigation, seizure and arrest procedures.

Lack of cooperation, danger of infringement, and poor communication with other Government agencies.

Staff disciplinary issues. Lack of meaningful involvement in the Ministry budgeting process by the field offices.



# Directorate of Energy

Contributed by: NonPower





Selma-Penna Utonih  
**Director: Energy**

*The Directorate of Energy develops and implements Government's energy policy by realizing Government's commitment to efficiently supply and secure reliable and competitively priced energy to all sectors of the economy within the constraints of the competing demands of social equity and environmental sustainability on a short, medium and long term basis.*

**The objectives of the Directorate of Energy for the year under review were:**

- Improved and harmonized legislation and regulations
- Reduced Red Tape
- Improved Licensing in the Energy Sector
- Improved Regulation of Exploration and Production
- Improved Health, Safety and Environment
- Increased use of Renewable Energy
- Increased energy generation, strategic storage and energy export
- Strengthened transmission network
- Enhanced rural electrification
- Reliable, affordable and cost-reflective energy
- Promoted value-addition of oil and gas
- Reduced number of accidents in the energy sector

**The following achievements were made under the objectives above:**

**Improved and harmonized legislation and regulations**

The current regulatory framework that governs the energy sector is outdated and therefore the stakeholders identified the need for a review and update. VTT (Finland) in conjunction with MME is currently busy with the updating of the document.

**Improved Licensing in the Energy Sector**

Automation of the licensing system is at its final stage and will be operational soon.

During the period under review, the Directorate was able to issue thirteen wholesale licenses, seventeen retail licenses, and twenty two consumer installation certificates. It is therefore noted that there is a significant growth in the number of licenses issued annually.

Downstream as well as upstream safety inspections were carried out regularly during the year under review, and have contributed to the better management of both upstream and downstream activities in the country. There were no serious or fatal accidents reported.

**Increased use of Renewable Energy**

Under the Off-Grid Energization Master Plan, public institutions that will not receive grid electricity in the next 15 – 20 years are electrified with solar technologies. Tenders were awarded to electrify the following public institutions: Omusati Region: Utsathima School, hostels, teachers' houses and veterinary houses; Okeeholong School, Okatsedi

School, litapa School, Hiaukambe School; Kavango Region: Erago School.

The Renewable Energy and Energy Efficiency Institute (REEEI) in collaboration with MME launched two energy shops in the Karas and Erongo regions, bringing the total of the shops launched to 13. The Embassy of Finland was a project partner in the establishment of the energy shops.

The NGO Namibia San Development Organisation (NSDO), in cooperation with the Directorate of Energy electrified five San schools with solar power in the Tsumkwe constituency.

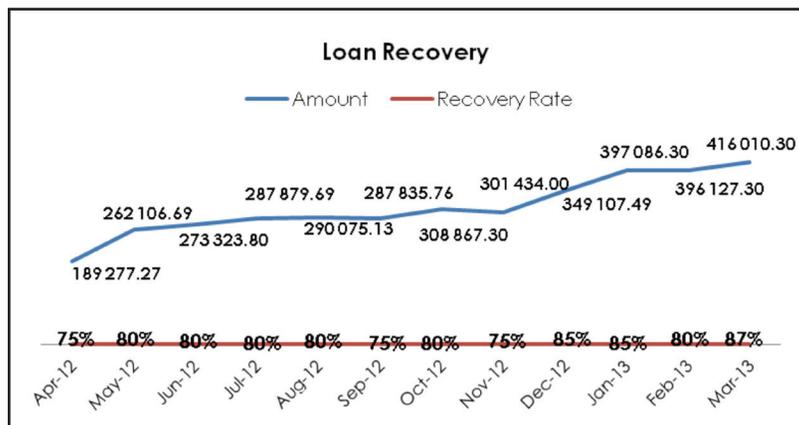
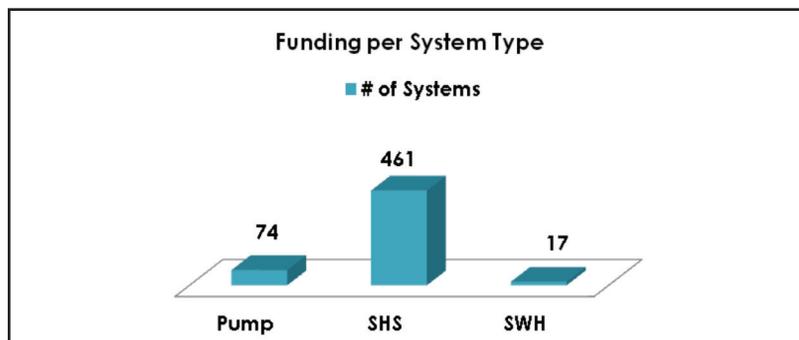
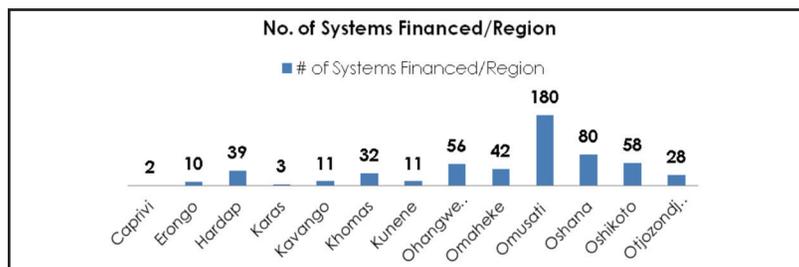
The Solar Revolving Fund (SRF) financed a number of systems in 13 regions the financial year 2012/13 as per the diagrams below.

The SRF is receiving its funding from the budget of the

Off-grid Energization Master Plan. The annual funding is N\$4 million and this funding is for the entire project which includes the establishment of Energy Shops and electrification of public buildings with solar power. The N\$4 million currently being released is not enough to fulfill the mandate of the entire project and therefore new ways need to be explored for additional funding to be injected into this project.

In December 2012, Cabinet approved the transformation of the Renewable Energy and Energy Efficiency Institute (REEEI) into the Namibia Energy Institute (NEI), in order to support the development and dissemination of knowledge, skills and good practices towards a safer, more secure and sustainable energy system in Namibia. The transformation roll-out will start in 2013 with completion expected in 2015.

A.G.A Technical Services was appointed by the National Wind Resource Assessment Project to





install the measuring equipment at 8 MTC masts. To date wind resource data are collected at 11 sites by the Department of Mechanical Engineering of the Polytechnic of Namibia. These sites are Kanas, Schlip, Okanapehuri, Helmeringhausen, Terrace Bay, Warmbad, Gobabeb, Amperbo, Khorabib, Lüderitz and Walvis Bay. Other International partners such as the International Renewable Energy Agency (IRENA) and the University of Basel have joined in the project.

REEEI is the secretariat of the Project Management Unit (PMU) of the Renewable Energy Procurement Process Project established by the Ministry of Mines and Energy. The PMU provides technical advice to the Project whose Steering Committee is comprised of the Directorate of Energy, the Electricity Control Board (ECB) and NamPower. Current work is on developing a request-for-proposal (RFP) for the procurement of a 30MW solar/photovoltaic power plant from an Independent Power Producer (IPP) through international competitive bidding.

The aim of the Solar Thermal Training and Demonstration Initiative (SOLTRAIN) training course is to increase the knowledge on solar thermal systems and applications of “professionals”, which are already working in the field of solar thermal, enabling trainees to design, build and install solar thermal systems. SOLTRAIN Phase I ended in June 2012 and phase II was approved to commence in December 2012. It will be implemented for the next 3 years. SOLTRAIN II will build up on a previous project which ran from 2009-2012. The project is supported by the Austrian Development Agency (ADA) and AEE-INTEC (Institute for Sustainable Technologies from Austria). Project Partners are the Sustainable Energy Society of Southern Africa (SESSA), the Centre for Renewable and Sustainable Energy Studies (CRSES), the Renewable Energy and Energy Efficiency Institute (REEEI), Eduardo Mondlane University (UEM), and Domestic Solar Heating (DSH) of Zimbabwe.

The final workshop of the pre-feasibility study for the Concentrated Solar Power (CSP) Project was held in July 2012. The final document of the study has been submitted by the consulting team led by Gesto Energy Solutions from Portugal. Deliverables of the project include a solar map for Namibia, five sites selected for CSP development, a technology review, capacity building frameworks and best practices for ground measurements of solar energy. The study was funded

by the Ministry of Mines and Energy and the Energy and Environment Partnership with Southern and East Africa (EEP S&EA).

Under the Namibia Energy Efficiency Programme in Buildings (NEEP), the Associated Working Group for the Green Building Council of Namibia (GBCNA) was established in February 2012 to oversee the establishment of GBCNA. Price Waterhouse Coopers (PwC) are developing the business plan as part of their corporate social responsibility. The NEEP project participated in Annual Trade Fairs and Expos, namely the Ongwediva Annual Trade Fair, the Okakarara Trade Fair, and the Windhoek Agricultural and Industrial Show as part of its awareness on energy efficiency raising efforts.

The Development Dialogue Forum (DDF) is an initiative of the Polytechnic and UNDP to provide a platform for deliberations on sustainable development in Namibia. To date 4 DDF's took place. The first 2 DDF's focused on Renewable Energy and Energy Efficiency. The 3rd forum focusing on “Sustainable Energy for All” was held in May 2012 in collaboration with the Ministry of Mines and Energy. The last DDF was held in August 2012 in collaboration with the Ministry of Agriculture, Water and Forestry under the theme “Towards a Food Secure Nation”.

A Techno-Socio-Economic Survey of energy efficiency has been commissioned and the final document was delivered by Mangrove Consultancy in December 2012.

The energy auditing in private and public buildings was commissioned and conducted by Emcon Consulting Engineers.

REEEI, assisted by the Technical Research Centre of Finland (VTT) collected input data for the Energy System Model of Namibia in different categories of consumption, transmission and production, covering the period 2000 – 2010. The focus was on electricity, but efforts were made in the process, also to compile other primary sources of energy, such as coal, woody biomass, heavy fuel oil, petrol, diesel, aviation fuel, gas, solar and wind.

REEEI through the National Technical Committee on Renewable Energy (NTRCE) provides technical support in the development and adoption of

renewable energy quality standards. To date, 29 PV installers, 6 solar thermal installers and 29 Renewable Energy Suppliers have been registered. NTRCE continues to support various Government agencies including the National Ozone Committee.



Solar Panels installation on rural houses

### Increased energy generation, strategic storage and energy export

Namcor's mandate to import 50% of the country's petroleum products requirements was revoked by Cabinet; and the oil industry was given authority to import 100% of the country's fuel needs with effect from 01 February 2011.

The annual retail margin survey was conducted and implemented; this is to ensure that dealer margins remain sustainable and profitable.

The Namibian Government has maintained the momentum of oil and gas exploration in the country. Almost all the available license blocks have been issued to various international exploration companies,

which have teamed up with Namibian empowerment companies as well as with Namcor.

The Ministry's aggressive licensing campaign over the last 8 years has resulted in 57 exploration licenses being issued to date, culminating in the current drilling campaign that started in 2012. So far our 2D seismic data base comprises 121 287 line kms and an additional 15 682 line kms is expected to be acquired in 2013/14. Our 3D seismic data base at the end of the year under review measures 24 313 km<sup>2</sup>. An additional 12 500 km<sup>2</sup> is planned for 2013 – 2014. Eighteen offshore wells have so far been drilled in Namibia and it is expected that nine more wells will be drilled between 2012 and 2014, matching the high drilling rate that occurred between 1994 and 1998.

The Ministry of Mines and Energy and Namcor, together with their partners PGS, GXT/ION and Fugro have teamed up to embark on an unprecedented seismic data acquisition campaign offshore Namibia with an emphasis on the open deep-water blocks.

**PGS MC2D Regional Programme**

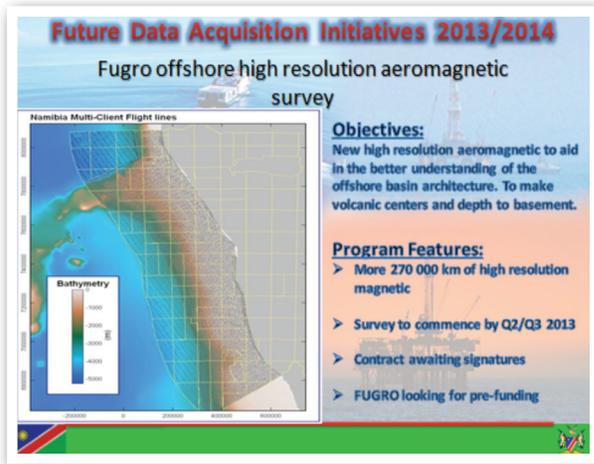
- PGS in conjunction with MME/Namcor acquiring MC2D regional survey in the deep-water of the Namibe, Walvis, Luderitz and Orange Basins.
- This data provides a high quality grid of data over currently unlicensed Blocks.
- PGS is using GeoStreamerGS technology
- The data is available for licensing by oil companies

**Future Data Acquisition Initiatives 2013/2014**  
ION (Gx Technology) Regional 2D (BasinSPANS)

**Objectives:**  
To aid understanding of the entire West African Margin. To refine crustal limits of Basins. To understand the limits of the known petroleum systems.

**Program Features:**

- More than 7 000 km of long offset data
- Survey to commence in Q1 or Q2 2013
- Contract awaiting signatures



GXT/ION is about to sign a contract with Namcor and will be looking to solicit pre-funding before they do the long span lines over the entire offshore Namibia. This kind of data will be very crucial especially for those exploration companies interested in a regional perspective. Fugro will also be looking for pre-funding.

The Kudu Gas to Power Project, which has been on the drawing boards for many years, is now back on track and the final investment decision is expected by March 2014. All the parties to the project have signed the Project Development Agreement (PDA) and GSA term sheets, which unlocked further funding for the project. On the upstream side, the JOA has been in place since 20 December 2012, the pipeline survey has commenced and Invitations to Tender for the Front End Engineering and Design (FEED) will come out soon. Namcor is going to start the process of searching for a partner to take up 70% of the 54% it currently holds in the Production Licence.

On the downstream side, the prequalification for the Engineering Procurement and Construction (EPC) Turnkey Tender has been announced by NamPower, and the successful contractor will be selected in 2013. Construction will commence straight after the final investment decision and the first gas is expected to be delivered in the second half of 2017, ushering Namibia into the league of hydrocarbon producing countries.

The Techno-Economic Feasibility Study and the Environment Impact Assessment were completed. The Draft Studies were presented to the PJTC in 2012 and the final reports will be submitted soon.

The Ministry of Mines and Energy has engaged NamPower to investigate the possibility of constructing a Small Hydro Power Plant on the Orange River and progress is at an advanced stage.

**Enhance rural electrification**

The Ministry of Mines and Energy will continue with rural electrification by providing electricity to schools and other government buildings (such as clinics, police offices and agricultural development centres), including the installation of transformers at the formal and informal business centers in rural areas in all regions of the country. During the 2012/2013 financial year, N\$60 million was budgeted and about 63 localities benefited from the annual rural electrification project.

**Reliable, affordable and cost-reflective energy**

Fuel prices are currently adjusted on a monthly basis. They are influenced by market forces beyond our control, especially at this time of volatile international crude oil prices. The Ministry of Mines and Energy continues to keep the fuel price to a minimum without destabilizing the economy, and several adjustments to fuel levies were done.

- The National Energy Fund (NEF), established in 1990 by the Petroleum Products and Energy Act of 1990, Section 11, subsection 1 and 2, as amended in 2003.
- To ensure reliable, affordable and cost reflective energy, NEF has paid a total amount of N\$199 million for the slate under-recovery.
- A total amount of N\$90.6 million was paid in road delivery subsidies for rural and far outlying areas during the 2012 – 2013 financial year.
- NEF will continue to subsidize the energy prices and provide financial support to energy projects for the benefit of all Namibian consumers. In addition, the NEF will supplement the energy budget to develop energy infrastructures, and ensure that the national energy mix reacts positively to the global energy turmoil.
- During the period under review, Cabinet approved the imposition of a levy on electricity

by NamPower. The amount of the levy is 1.02 cents per kwh, and become effective 01 July 2013.

- Cabinet also approved a levy of 15 cents per liter for the NEF strategic oil storage facility levy enable the construction of a strategic oil storage facility at Walvis Bay. An amount of N\$171 million was collected for this purpose during 2012 – 2013.

### **Reduced number of accidents in the energy sector**

Through inspection of both, petroleum upstream and downstream activities, stakeholders are educated and informed about the importance of safety management.

### **The following constraints were encountered while executing the above objectives**

*Namibia has a shortage of qualified and adequately experienced rural electrification contractors at present,*

*and this makes it difficult to attract experienced contractors into regions, such as Kavango and Zambezi, as advertised on tender. Tender exemption are therefore required to allow reputable and experienced contracting companies to be approached to provide quotations and thereby fast tracking of the project implementation.*

*It takes contractors two to three months to receive equipment, such as transformers and others, as it has to be ordered from South Africa. In addition to that, South Africa is catering for the entire SADC region as well as for other parts of the African continent. Priority is given to South African projects, and long waiting periods are therefore experienced.*

*The rainy season from November to April causes problems in flood prone areas, where contractors may not have access to the sites, and most of the power lines pass through Oshanas.*

*The current structure of the Energy Directorate is not responsive to the demands of the sector and a restructuring exercise needs to be completed urgently.*



*A sample of oil that was discovered in Namibia*

# Directorate of Administration and Finance





Mr John Titus  
**Director: Administration and Finance**

*The Directorate of Administration and Finance is designed to create a conducive working environment as well as cultivating a high performance culture through optimal financial management; management of the Ministry's assets, human resource management and skills development in an efficient and effective manner.*

**The objectives of the Directorate of Administration and Finance, in order to ensure an enabling environment and high performance culture, and for the year under review were:**

- Optimal financial management
- Management of ministry's assets
- Human Resources Management
- Skills Development
- Improved Information & Communication Technology

**The following achievements were reached under the objectives above:**

**Optimal financial management**

In the 2012/2013 financial year, the Ministry of Mines and Energy managed to execute its Capital Projects at a rate of 97%, and 87% of the Operational Budget. This has been a milestone for the Ministry, whereby we are striving to accomplish a 100% success rate.

Process and procedures were introduced to enhance the financial management. Circulation of

expenditure reports are one amongst others of the procedures initiated. This has kept all stakeholders and project managers informed about the possible areas for overspending or underspending, which empowers them to better manage their capital spending.

**Management of the Ministry's assets**

The Ministry has introduced a new asset management. This management involves the renovation and upgrading of the Ministry's premises. The premises include the regional offices such as Oranjemund, Lüderitz, Tsumeb and Swakopmund.

Renovations on the Lüderitz office were started and completed successfully. This constituted Phase 1 and the commencement of Phase 2 will still be determined in the next financial year.

To enhance the security at the MME headquarters, an electrical fence was erected with the establishment of a security committee was established to look into all security matters of the organisation, including the upgrade the fire alarm system.

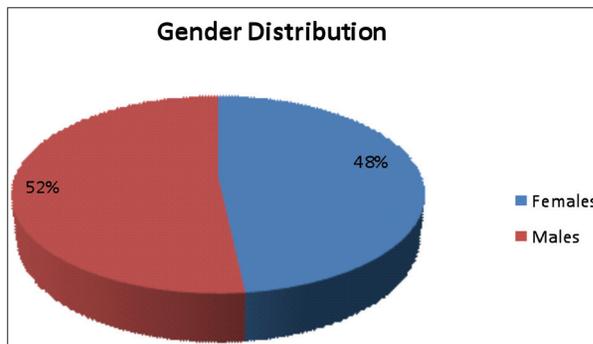
Due to the development and proliferation of mining activity in Erongo region, the Ministry took a strategic decision to bring the services of MME closer to the stakeholders. This will be achieved with the upgrade of the Swakopmund office in Erongo region. Through the Ministry of Works and Transport, the Project to build the Swakopmund office was initiated, with the architectural drawings completed.



## Human Resources Management

The Ministry has a total staff complement of 345 employees of whom 48% are females and 52% are males. The Ministry is regarded as an attractive employer and this is largely due to the Ministry's positive image as a professional employer. The ministry has successfully recruited 29 new staff members and 11 staff members were promoted.

Posts	Quantity
Females	111
Males	119
<b>Total Vacancies Filed</b>	<b>230</b>
<b>Total Staff Compliment</b>	<b>345</b>



The Ministry is keeping pace with specified Affirmative Action targets. Of importance too, is that the Employment and Equity Commission approved our progress reports and awarded the Ministry with another Affirmative Action Compliance Certificate during August 2012. The Ministry has identified women and persons with disabilities as underrepresented in the organisation. The Organisation continued therefore to implement affirmative action measures and interventions to ensure that employees from the designated groups, the ones that are physically challenged, are represented. This was achieved with the recruitment of two staff member with physical disability.

The Ministry is persistently engaged in wellness information sessions. HIV/Aids and employee wellness information sessions are the highest on our agenda. Two information sharing days were held in the year under review. The importance of these sessions is driven from the Minister's office to ensure a maximum participation from the employees, which has proven to be one of the contributing factors of the successful involvement of the employees.

The Ministry also initiated activities that will enhance and promote awareness of the activities of the Ministry. This

was accomplished by attending five trade fairs and three career fairs, which has proven to be a success.

Staff members who served the Ministry for 10 years and longer were awarded certificates during the annual year end function.

## Improved Information & Communication Technology

The Ministry took cognisance of IT as an important support structure for the organisation, thus using IT to implement infrastructures and applications to ensure the effective operation of the Ministry.

Although the IT department is faced with financial challenges, new IT equipment to complement for the newly appointed staff members has been acquired.

It is of essence that the Ministry recruits the best IT staff that can support the business of the organisation, because of the specific graphical systems used in the Ministry.

IT programmers have developed tailored systems in-house, to support the business processes of the organisation. The systems developed that are currently in a testing phase are:

- Tender Management System
- Mineral Statistics System
- Spectrum Record System

Sophisticated software and applications of graphical data used by geologists and scientists has been acquired to support the business of the Ministry.

Storage has proven to be a challenge as the graphical data generated increase at a fast rate. In order to keep up with the demand of storage, 900GB hard drives has been acquired to increase the storage capacity for the Earth Data Namibia Database of the Geological Survey of Namibia.

### **The following constraints were encountered while executing the above objectives**

*There was insufficient budget for training courses for staff members, as well as for maintenance of the MME buildings.*

*High staff turnover experienced at the Ministry remains a challenge.*