

The Rio Tinto logo is a red rectangle with the words "Rio Tinto" in white, serif font. It is positioned in the upper left quadrant of the page, overlapping the blue semi-transparent text box.

Rio Tinto

Rössing Uranium Limited

Working for Namibia

Moving forward with confidence  
Report to stakeholders 2018



## About this report



Rössing Uranium continues to fulfil its commitment to responsible environmental management by enhancing biodiversity protection. The lifting and replanting of plant species that are in danger of being disturbed due to our mining activities have been ongoing since the early 1970s. The Namib Botanical Garden in 2016 provided assistance to the mine to lift the plants and also received the rescued plants.

## Contents

- 01 Overview
- 02 Managing director's message
- 04 2018 at a glance
- 06 Our sustainable development approach
- 07 Our key drivers
- 08 Marketing our product
- 12 Our operations
- 18 Our people
- 35 Community relationships
- 42 Protecting the environment
- 56 Corporate governance at Rössing Uranium
- 60 Our value addition and summary annual financial statements
- 71 Assurance and list of references
- 72 Performance data table
- 73 The nuclear fuel cycle
- 74 Contact details

### The purpose of this report

This report aims to give readers an overview of the activities of Rössing Uranium Limited (Rössing Uranium) from January to December 2018, including our interaction with society, the economy and the environment.

Although the Rio Tinto Group is the majority shareholder of Rössing Uranium, it is not the only stakeholder that invested in the business. All individuals and institutions that influence and are affected by the company are stakeholders, including the mine's employees and contractors; the communities of Arandis, Swakopmund and Walvis Bay; Government of Namibia institutions; service providers; and the mine's customers.

The report offers locally relevant information about our business and aspects raised during the year. We believe in open communication and transparency and simultaneously instil a culture of sustainable development throughout our company.

We would appreciate your feedback on the content in this report. You can send us a text message to +264 81 143 3627; send an e-mail to [RUL.communications@rossing.com.na](mailto:RUL.communications@rossing.com.na); contact us via our website at [www.rossing.com.na](http://www.rossing.com.na), or phone the Communication section on Tel. +264 64 520 9111.

Front & back pages: Asset management is a strategy for the continuous process to improve the availability, safety, reliability and longevity of our physical assets. These include facilities, equipment and processes. A key component is to know the condition of the assets at any given time and to develop an asset care and maintenance plan. At Rössing Uranium Limited we have two operational areas requiring asset management plans, namely the processing and mining areas. In the mining area the operational condition of our haul trucks is critical and regular inspections are carried out by various specialists. From left are Mateus Nghuwilili (electrician), Martin Uugwanga and Maria Hamalwa (boilermakers), Jesaja Hango and Epafra Emvula (electricians) during an inspection of one of the mine's haul trucks.

# Overview

## Rössing Uranium

Uranium was discovered in the Namib Desert in 1928, but it was not until intensive exploration in the late 1950s that much interest was shown in the area. After discovering numerous uranium occurrences, Rio Tinto secured the rights to the low-grade Rössing deposit in 1966. Ten years later, in 1976, Rössing Uranium, Namibia's first commercial uranium mine, started production.

Today, Namibia has two significant uranium mines (Rössing Uranium and Swakop Uranium, after the Langer Heinrich Uranium mine was placed in care and maintenance during 2018), which together provide 8.4 per cent of the world's uranium oxide output; in 2018 Rössing Uranium produced 4.1 per cent of the world's output.

The mine has a nameplate capacity of 4,500 tonnes of uranium oxide per year and, by the end of 2018, had supplied a total of 135,088 tonnes of uranium oxide to the world.

The mine is located 12 km from the town of Arandis, which lies 70 km inland from the coastal town of Swakopmund in Namibia's Erongo Region. Walvis Bay, Namibia's only deep-water harbour, is located 30 km south of Swakopmund. The mine site encompasses a mining licence and accessory works areas of about 180 km<sup>2</sup>, of which 25 km<sup>2</sup> is used for mining, waste disposal and processing.

Mining is done by blasting, loading and hauling from the open pit before the uranium-bearing rock is processed to produce uranium oxide. The open pit currently measures 3 km by 1.5 km, and is 390 m deep.

Our partners and stakeholders include private citizens and their communities as well as non-governmental organisations, small-scale enterprises and multinational corporations. Thus, the benefits of our operations are felt locally, nationally, across the African continent and internationally.

Rio Tinto owns the majority of shares (68.62 per cent) in Rössing Uranium Limited. On 26 November 2018 Rio Tinto announced that it had agreed to the sale of its stake in Rössing Uranium with the China

National Uranium Corporation Limited (CNUC). The transaction is subject to certain conditions precedent, including merger approval from the Namibian Competition Commission. Subject to these conditions being met, the transaction is expected to complete in the first half of 2019.

The Namibian Government has a shareholding of 3 per cent and it has the majority (51 per cent) when it comes to voting rights. The Iranian Foreign Investment Company (IFIC) is a passive legacy investor in Rössing Uranium, holding a 15 per cent stake that goes back to the early 1970s in the financing of the mine. The Industrial Development Corporation (IDC) of South Africa owns 10 per cent, while individual shareholders own a combined 3 per cent shareholding.



Map of the Erongo Region indicating the location of the Rössing Uranium mine.

## Managing director's message



### Dear stakeholders

Welcome to Rössing Uranium's Report to stakeholders 2018. Thank you for your interest in our business. This report explains our mining operations and the approach we take in what we do. It also outlines how we performed in 2018 as measured against our key drivers.

In 2018, we experienced challenging operating conditions, even though we could capitalise on the higher ore grade we currently mine. In our ambition to be the best in the industry, we continuously focus on two areas that we must be best in – safety and productivity. High on our priority list was also the need to contain our operational expenditure in an environment where we have to continue investing in growth and preserve cash to maintain our operations.

### **Sustaining our business**

In 2018, we increased our production with 17 per cent: we produced 2,479 tonnes of drummed uranium oxide compared with the previous year's production of 2,110 tonnes. However, the total mined tonnes were 24 per cent below our target following a mining slow down to curtail the impact of water supply interruptions. This significantly contributed to below plan milling output of 8 per cent, while full year production was approximately 9 per cent below the target.

Revenue increased by 5 per cent compared with the previous year, due to a combination of a marginally better sales price achieved and a more favourable exchange rate.

Our cost saving initiatives unlocked N\$310 million, which mitigated other cost increases from above inflationary utility price increases and imported consumables priced in foreign denominations.

The combination of the above had a positive impact and resulted in a net profit after tax of N\$166.5 million (2017: net profit after tax of N\$1.9 million) from normal operations.

We will continue to look for ways of improving operating cost efficiencies, reducing capital spend and improving our working capital position.

As a major employer and a purchaser of goods and services, Rössing's contribution to the economic development in Namibia, and

more specifically in the Erongo Region, is significant. In 2018, our total expenditure for goods and services for our operations amounted to N\$2.49 billion, of which 78 per cent was spend with Namibian-registered suppliers. The bulk of what we spend in Namibian remains in the Erongo (44 per cent) and Khomas (45 per cent) regions.

Our safety performance in 2018 was disappointing: the mine recorded an All-injury Frequency Rate (AIFR) of 0.83 for the year, against a target of 0.35. However, we had five months with no recordable injuries – an indication that zero harm is possible and achievable.

#### **Sale of shareholding**

In November 2018, Rio Tinto, Rössing's majority shareholder, announced the signature of a binding agreement with China National Uranium Corporation Limited (CNUC) for its shares held in Rössing. It was the culmination of an extensive review of Rio Tinto's strategic options in relation to Rössing as it continued to focus on its core assets. The transaction is subject to a number of conditions to be met and is expected to be completed in the first half of 2019.

The announcement of the sales transaction of the majority shareholding is seen as very positive, giving certainty to the survival of the operation at least until 2025 and potentially extending the mine life beyond that. The deal will bring an aspect of vertical integration into the Chinese nuclear market, and in particular with the strongest player in that market.

#### **Market conditions**

Although global uranium oxide inventories remain high, uranium prices witnessed the best performance among commodities last year. This performance was driven by a downward shift in expected supply growth in the medium term and a renewal of investor interest in the market.

The price rise last year was underpinned by a decision of Cameco – one of the world's largest publicly traded uranium companies based in Canada – to suspend production at its McArthur River mine for an indeterminate period of time. In addition, the world's largest uranium producer, Kazatomprom, announced further reductions to its production growth plans. These two actions sparked renewed investor interest in uranium for its long-term fundamentals.

For the next year, Rössing will have a large exposure to the spot market. However, the potential shareholding sales transaction will facilitate the sale of its production into a vertically integrated off-taker in the Chinese nuclear market. With China being the only

country aggressively expanding their nuclear fleet, this is seen as a positive development for the mine.

#### **Looking ahead**

Going forward, in addition to delivering on our production plan, we will continue our consolidation and cost-saving efforts in 2019 and beyond, along with focusing on maximising our resources. It is imperative that we must maintain a culture of cost discipline, but above else, we must prioritise safety and in all aspects of our business strive to create a safe and caring workplace. It is vital that we consistently engage our people, as good engagement leads to good safety performance.

Therefore, in 2019, our health, safety and environmental improvement plan will focus largely on maintaining effective control of all health, safety, security and environmental critical risks. This improvement plan will take us closer to the goal of zero harm, even in challenging times.

We cannot be complacent if we want to deliver and add real value to our stakeholders and neighbouring communities. Therefore, and as in the past, we endeavour to work smarter and harder, always mindful of working safely, whilst staying committed to making a difference in Namibia.

Richard Storrie  
Managing director  
30 April 2019



**As a major employer and a purchaser of goods and services, Rössing's contribution to the economic development in Namibia, and more specifically in the Erongo Region, is significant."**

## 2018 at a glance

### Marketing our product

5% 

increase in sales portfolio price per pound when compared with the previous year

### Protecting the environment

59.7%

of the total water usage in the Processing Plant was recycled water

### Protecting the environment

Energy consumption and GHG emissions show a declining trend over the past

4 years 

### Community relationships

Rössing Uranium contributed N\$13 million to the Rössing Foundation and community initiatives

N\$13 million

## Our operations

17% 

increase in tonnes of uranium oxide drummed in 2018: 2,479 tonnes compared with 2,110 tonnes in 2017

## Protecting the environment

1,312

tonnes of recyclable waste material (mainly used oil and scrap metal) were removed from the mine site

## Protecting the environment

In 2018, Rössing reached a milestone:

30 years

of commitment and success in monitoring the riparian vegetation in the mine's compartment of the Khan River

## Our people

N\$6.9 million

invested in various training and development programmes, benefitting

161 people

# Our sustainable development approach

## Focusing on the issues that matter most

### **Sustainable development is the distinctive, significant and characteristic centre of our overall approach to business.**

Driving the integration of sustainable development at Rössing Uranium are the six themes highlighted below. These themes form the framework in which our business is conducted.

Everything we do is in line with the generally accepted definition of *sustainable development*, namely development that meets the needs of the present without compromising the ability of future generations to meet their needs.

This suggests that meeting the needs of future generations depends on how well we balance social, economic and environmental needs when making decisions today.

The aim of sustainable development is therefore to seek out win-win situations that can achieve environmental quality and increase economic wealth and social well-being, today and tomorrow.

Our sustainability vision remains focused on:

- creating long-lasting positive effects for the people of the Erongo Region and Namibia;
- building capacity to ensure that we contribute to the future well-being of our employees;
- minimising negative impacts and optimising positive ones; and
- maintaining our reputation as a responsible corporate citizen of Namibia.

When conducting our business we ensure that we maintain a balance in the way we:

- use our assets — both our own resources and environmental resources — to reflect our integrated approach in terms of profit, people and planet;
- contribute positively to the needs of society by providing support to communities without creating dependency; and
- generate economic wealth.

### **Economy**

#### **Economic viability**

In order to provide the best returns on our shareholders' investment, we need to understand the long-term demand for our product as well as the cost, resource availability and value creation associated with that demand. Economic viability also ensures that we continue to make significant contributions to Namibia's economy and her people in various ways.

### **Social**

#### **People**

Our workforce is central to our business. This means ensuring a safe and healthy workplace geared for human resource development in order to attract and retain employees, while maximising our contribution to their well-being.

#### **Communities**

By understanding the diversity of communities, and through continuous interaction with them, we can respond to their concerns and needs. Moreover, communities should realise a net benefit and a long-lasting, positive effect from our activities.

### **Environment and product stewardship**

#### **Environmental and asset resource stewardship**

We aim to be the leader in environmental stewardship in Namibia and to maintain our reputation as a responsible corporate citizen. This can be achieved by understanding and appreciating our natural resources, both biotic and abiotic, utilising them sustainably, and creating a net positive impact.

#### **Product stewardship**

This theme focuses on expanding our understanding of the impact of our product on society by working with all interested and affected parties.

### **Governance**

#### **Corporate governance and compliance**

We strive to be transparent and proactive in all our business operations. To this end we have auditable business systems in place which form the backbone of good corporate governance.



## Our key drivers

### Our strategic map

**Mission:** To be a uranium supplier to the global nuclear power industry creating maximum return for our shareholders, whilst delivering benefits to all stakeholders.

**Vision:** To be the safest and most efficient, long-life uranium producer in the world.

Strategic focus areas	Objectives
Health, safety, environment and communities	Zero harm
People and culture	Retention and recognition
Operational efficiency	Achieve integrated productivity model targets
Finance	Achieve integrated productivity model targets
Cash	Ensure cash flow positive
	Reduce unit costs
Partnerships	Privilege to operate

**Core values:** Safety — Teamwork — Respect — Integrity — Excellence

(Below) Noise and vibration is monitored at various points on- and offsite.





The Final Product Recovery section at Rössing Uranium is responsible for the extraction of uranium from ore mined and processed through a number of stages to produce uranium oxide ( $U_3O_8$ ). Securely drummed and packed, the uranium is shipped to our customers for further conversion. We produced 2,479 tonnes of uranium oxide in 2018.



## Marketing our product

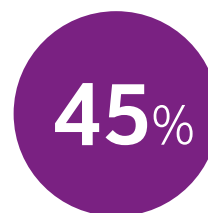
Report by James May, General manager: Commercial,  
Rio Tinto Marketing

Historically, a significant proportion of Rössing Uranium's production is marketed through long-term contracts with a diverse selection of customers worldwide.

At the end of 2018, uranium prices stood at US\$28.82 per pound, up 21 per cent from the end of 2017. The long-term indicator price rose to US\$32 per pound, an increase of 3 per cent. Uranium prices witnessed the best performance among commodities last year, driven by a downward shift in expected supply growth in the medium term and a renewal of investor interest in the market.

The price rise last year was underpinned by a decision of Cameco – one of the world's largest publicly traded uranium companies based in Canada – to suspend production at its McArthur River mine for an indeterminate period of time. This mine accounted for 10 per cent of global supply in 2017. Additionally, the world's largest uranium producer, Kazatomprom, announced further reductions to its production growth plans. These two actions sparked renewed investor interest in uranium for its long-term fundamentals.

### Rio Tinto Uranium customers by region (%), 2018



North America



Europe, Middle  
East and Africa



Japan



Asia

# Marketing our product

Spot trading spiked to an annual record high of 88 million pounds and a new physically-backed uranium fund called Yellow Cake was launched. The investors in this fund purchased about 8 million pounds of  $U_3O_8$  last year. Hedge funds, meanwhile, increased efforts to identify attractive long-term exposure to the market.

On the back of uranium's price recovery and a more favourable investment environment relative to the previous year, Kazatomprom listed 15 per cent of its company on the London and Astana stock exchanges.

Total global supply reductions in 2018 amounted to 16.5 million pounds and represented a 10 per cent decline from 2017. Meanwhile, demand is estimated to have increased by 1 per cent. While demand is expected to grow in the long term, the rate of growth remains uncertain due to its significant reliance on China's nuclear build plans. No new nuclear reactor units have been ordered in the last two years, although the start-up of the Sanmen AP-1000 power station in September 2018 was viewed by many in the industry as a positive development.

In February 2019, China's government gave preliminary approval for the construction of four new domestically designed reactors, ending a two-year long hiatus from approvals of new reactors. However, China currently has excess electricity generation capacity in certain coastal regions, which may ultimately contribute to a slower pace of nuclear development than previously expected.

A reversal in sentiment among countries toward their domestic nuclear businesses occurred last year as well, further adding to positive sentiments towards uranium demand growth in the future. In Korea, growing resistance to the idea of reducing nuclear energy's share of generation electricity has been building. Japan re-started four units in 2018, bringing its total operating reactors to nine. A referendum vote in

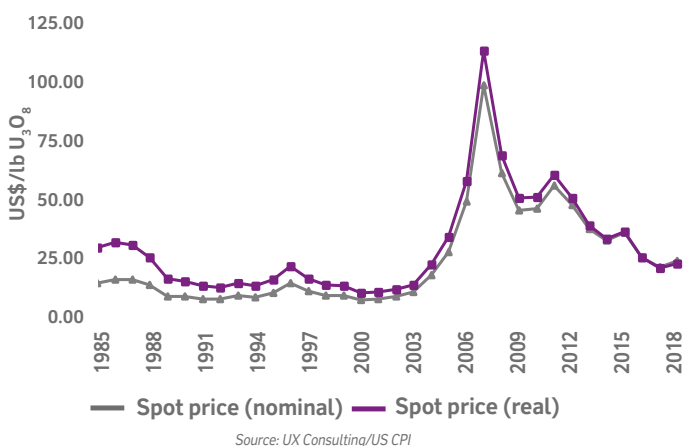
November 2018 overturned the current Taiwanese government's plan to phase out all nuclear power by 2025. In France, President Emmanuel Macron scaled back rhetoric on his initial pledge to reduce France's nuclear capacity from 75 per cent to 50 per cent of total generation by 2025. Instead, he proposed closing down 14 reactors by 2035, a decade after his predecessor's initial target.

Shortly after the Trump administration in the United States of America announced import tariffs on aluminium and steel, two US uranium mining companies petitioned for a section 232 investigation on uranium imports. The petition included a proposal that US utilities be required to purchase 25 per cent of their uranium needs (approximately 12 million pounds per year) from domestic miners. The Department of Commerce, responsible for section 232 investigations, agreed to launch an investigation. A report with recommendations is expected by March or April of 2019. If a quota is applied to US utilities as proposed or tariffs are put in place, US-delivered prices are expected to increase. Since the launch of the investigation in 2018, contracting activity has slowed among US utilities, who have taken a 'wait and see' position in the market.

Global inventories remain at record high levels, around 950 million pounds or approximately five years of forward utility requirements. Around half of global inventories are in excess of preferred levels. Excess inventories are not expected to be drawn down over the next five years, which is expected to curb price increases.

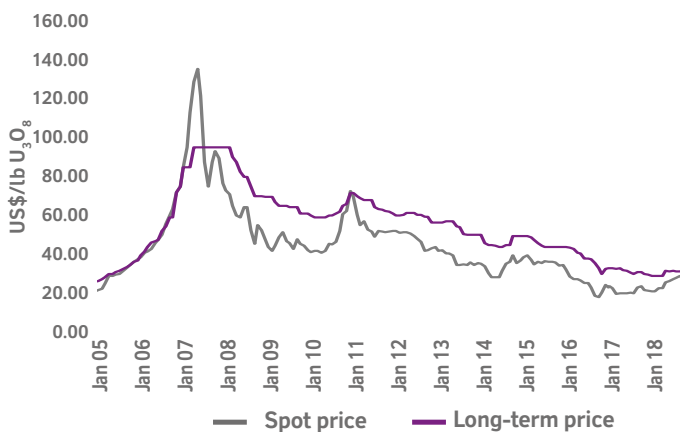
A long-term price recovery is expected, but may take another five years. Most price forecasts continue to project a modest increase in price over the next three years from around \$28 to \$29 per pound, up to around \$32 per pound in 2021. Moderate demand growth and subdued supply will drive this gradual price appreciation. Inventories are not expected to decline, but they are not expected to increase as strongly as over the past decade.

**Figure 1: Uranium spot prices (US\$/lb  $U_3O_8$ ), 1985 to 2018**  
(US dollar per pound of uranium oxide, annual averages)



Source: UX Consulting/US CPI

**Figure 2: Uranium prices (US\$/lb  $U_3O_8$ ), 2005 to 2018**  
(US dollar per pound of uranium oxide)

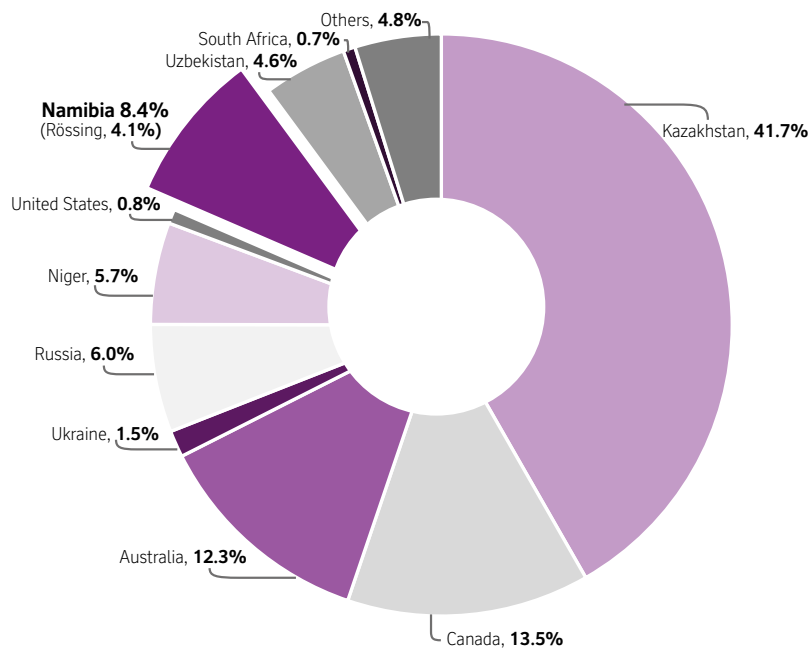


Source: UX Consulting/US CPI



Operator Immanuel Witbooi, checking a drum filled with uranium oxide at the new automated drumming facility at the mine's Final Product Recovery operation.

**Figure 3: World primary production of uranium oxide (%), 2018**



Source: UX Consulting/US CPI



The refurbishment of the leach tanks is part of a ten-yearly refurbishment programme to ensure that the structure of the leach tanks is in good condition. Risk assessments are carried out by the workers to check that the work is carried out safely. Employees of the Namibian Engineering Corporation (NEC), Sam Nujoma, Stephanus Mouton and Teopolina Fanuel are conducting a safety check while working on the refurbishment of one of the leach tanks.



## Our operations

Rössing Uranium's operations consist of two distinct activities: the first is mining uranium-bearing rock, while the second is processing this ore into uranium oxide for the world's nuclear energy market, which fuels the generation of electricity. Our attention is directed towards creating shareholder value and maintaining a secure and viable business, as well as ensuring that we remain a long-term contributor to Namibia's economy.

The uranium located in our mining licence area is embedded in very hard and abrasive granitic rock, known as *alaskite*. To move the necessary volume of ore and waste, the mine must conduct blasting operations regularly.

Electric and diesel-powered shovels load uranium-bearing rock onto haul trucks, which transport the ore to the primary crushers for the first stage in the crushing process. From there the crushed ore is conveyed to the coarse ore stockpile, where it is reclaimed and put through additional crushing stages in the Fine Crushing Plant, before the processing stage of operations begins.

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### 19.8 million

tonnes of rock were mined during 2018, compared with 25.2 million tonnes in 2017

### 8.0 million

tonnes of rock were uranium-bearing rock, compared with 9.6 million tonnes in 2017

### 11.5 million

tonnes of rock were waste rock removed from the open pit, compared with 15.5 million tonnes in 2017

### 2,479 tonnes

of uranium oxide were drummed, compared with 2,110 tonnes in 2017

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# Our operations

## Mining operations

In 2018, we mined 19.8 million tonnes of rock (21 per cent less than in 2017) of which 8.0 million tonnes uranium-bearing rock (17 per cent less than in 2017) were removed from the open pit and 11.5 million tonnes were waste rock (0.3 million tonnes were from in-pit dumping). This equates to a waste-to-ore strip ratio of 1.48, which is lower than 2017 at 1.57 and will continue to reduce as the open pit gets deeper.

Despite the lower tonnes mined, the ore processed remained consistent with 2017 at around 9 million tonnes with around 1 million tonnes coming from stockpiled ore. By the end of the first quarter, the run-of-mine (RoM) stockpiles had grown to the extent that a decision was taken to stop mining from the open pit for a month during the second quarter while continuing to feed the plant from stockpiles. This decongested the RoM stockpiles while saving a large amount of operating cost, an approach that continued to a lesser extent for the remainder of the year.

Both the uranium grade and calcium carbonate (calc) index continued to increase (15 and 11 per cent higher than 2017 respectively) with the better grade the main contributor to the 17 per cent increase in drummed product relative to 2017. While the high calc index of 16.7 kilogramme per tonne in 2018 had a negative impact on sulphuric acid consumption, a more consistent blend and better plant controls actually saw an increase in overall recovery by 3 per cent.

Grade and calc index will remain a key focus in 2019 with work ongoing to implement an online calc analyser to reduce the number of calc spikes to the plant.

Improvements were achieved in a number of other areas, especially in the area of safety and 2018 saw the benefit of continued safety focus with a milestone of 450 All-injury free days achieved for the mining department.

On the maintenance side, equipment availability and reliability continued to improve following the successful implementation of the Rio Tinto Asset Management tactics. A decision was taken to park one diesel shovel and two haul trucks during 2018 in line with reduced mining rates and better equipment reliability.

## Focus areas in 2019

Vehicle collision and roll-over with heavy mine equipment (HME) remains the highest safety risk in the open pit with incidents caused by fatigue and over-speed prevailing during 2018. The segregation of HME from light vehicle traffic on the permanent ramps has significantly mitigated the consequence of such incidents, but the fatality risk remains with the operators of HME, predominantly operators of haul trucks. Fatigue management and speed controls will remain a key focus for 2019.

Productivity remains a key challenge in the mining department with haul truck effective utilisation (EU) as the key performance indicator. Haul trucks are the 'conveyor belt' of the open pit and we did not achieve the target of 60 per cent EU in any month during 2018. This is due to a

Figure 4: Production, 2014-2018 (million tonnes)

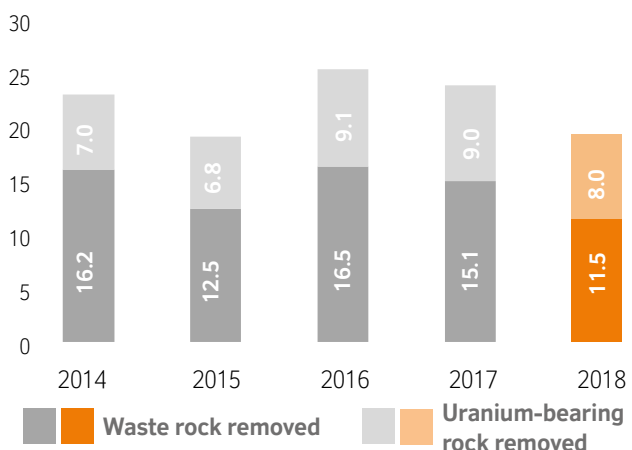
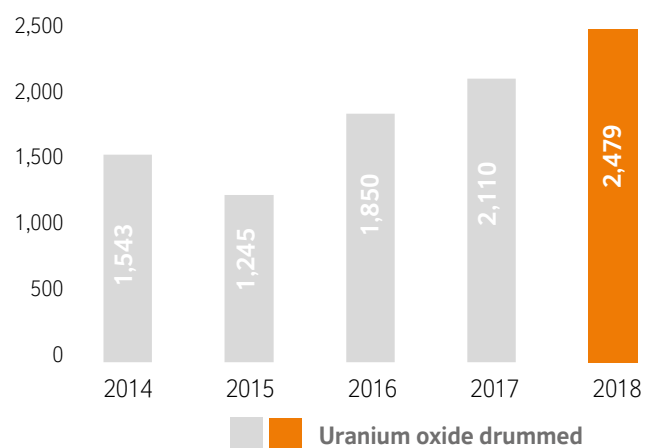


Figure 5: Uranium oxide drummed, 2014-2018 (tonnes)







# Our operations

## Engineering projects

Several engineering projects were undertaken during 2018.

### **Seepage recovery upgrade project**

Tailings seepage at Rössing Uranium is defined as process water which filters through the Tailings Storage Facility and drains through the underlying geology into the surrounding environment.

A network of seepage recovery systems, consisting of pumps installed in boreholes, sumps, cut-off trenches and the surface seepage collection dam, prevent the seepage from entering the wider environment, specifically the Khan River.

In 2018, the upgrade for the cut-off trenches, the most critical component of the seepage recovery systems, was completed. The recovery systems have been operational for over 30 years and the installations at the cut-off trenches needed a complete overhaul.

The cost to upgrade the now-completely automated system was over N\$30 million. These cut-off trenches are the critical groundwater controls between our Tailings Storage Facility and the Khan River, and are of utmost importance for the continuous protection of the water environment well into the future.

### **Construction of spur lines along haul road 20 and trolley 11 in the open pit area**

In 2018, the engineering team implemented the construction of spur lines – very short branch or secondary lines – along haul road 20 and trolley 11 in the open pit area. The aim of the project was to offer a long-term solution to power supply requirement by field equipment such as drills and shovels in the mining process of phase two of the SJ Pit and phase three. In the past, this was accomplished by means of trailing cables as a temporary solution.

The project was successfully completed and resulted in improved supply reliability, an increase in feeder capacity whilst maintaining steady voltage, improved cable availability, reduced pressure on maintenance crew working on cable repairs, as well as reduced maintenance cost.

### **Rodmill static exciter installation**

Rodmills are critical assets for the mine, forming part of the reduction process. The electric motors running these mills have an analogue excitation system. With improvement in technology over the years, a digital excitation system has been developed.

The electrical engineering team harnessed this technology to improve the rod mill operation and availability. The new system offers

far more motor control and therefore, improved rodmill reliability. The successful installation and commissioning of the first excitation system was done on Rodmill 2 in 2018; the remaining three will be installed during 2019.

### **Concentrated eluate tank**

The concentrated eluate tank is one of the processing tanks in SX plant. The tank failed in early 2016, causing the leakage of the concentrated eluate solution. Assessments revealed the severity of the tank's condition, while a cost analysis indicated it would be best to construct a new tank rather than repairing the existing one. In addition, onsite repair of the tank would have involved extensive welding works in the SX plant, which is undesirable due to the associated fire risks in that specific area.

Demolition of the old tank commenced in July 2016. To reduce the amount of hot work in the area for safety reasons and to be able to lift the tank from its position, the old tank was demolished by cutting into three sections, namely its roof, top shell section and bottom shell section, including the floor. Each section was cut and lifted out of its position by means of a 500-tonne mobile crane, the biggest mobile crane available in Namibia.

The new tank was constructed onsite in the mobile equipment workshop, following the same sequence of demolition. This was to allow lifting of the tank into its position during installation. Construction and installation of the various sections of the new tank was completed.

### **Arandis roofing project**

During 2018, the Arandis Town Council, in collaboration with Rössing Uranium and the Rössing Foundation, started a project to remove the hazardous asbestos roofing sheets from 823 houses and two primary and secondary schools, replacing these with zinc-aluminium roofing sheets that are environmentally friendly.

This followed engagement with the residents during the past two years through public meetings and awareness campaigns about possible health risks of using asbestos roof sheets. The replacement or refurbishment of roofs of the houses will be completed within the next three years. The project is expected to cost N\$28 million, which will be paid by Rössing Uranium.

All removed asbestos is disposed of at the Walvis Bay hazardous waste site.

# Safe operations

## Process safety management

Process safety management (PSM) is a systematic approach of controlling the unwanted release of hazardous substances, process solutions or fires and explosions that have the potential to significantly impact the health and safety of employees, the environment or the business.

Rössing Uranium's PSM team forms part of the Rio Tinto process safety working group sub-committee, which is tasked with the development of training packages for the Rio Tinto Group.

In 2018, the focus was on the accelerated deployment of the controlled-focused approach as being mandated by the Rio Tinto Energy and Minerals product group. The baseline assessment for both sulphuric acid and anhydrous ammonia was completed.

The main focus in 2019 will be to critically assess current plant process control philosophies on major hazards in collaboration with the processing operations team. The control activities in the controlled-focused approach will be updated with the asset management team, and the quality of the maintenance sheets assessed and amended.

Process safety control activities and the verification of these controls will be incorporated into the existing Critical Risk Management platform. CRM is a report and monitoring tool used by Rössing to manage tasks which could potentially lead to workplace fatalities by verifying that critical controls are in place and indeed effective.

## Information technology

In order to separate Rössing Uranium's IT system from that of Rio Tinto, the implementation of a stand-alone SAP ERP system commenced during 2018. This project will continue during 2019 with an expected go-live date of April 2019.

The contractor-management system that was established in 2017 to manage and administer contractors was embedded during 2018. A forum, consisting of the executive management team, will ensure that the principles of the system are implemented and adhered to.

Several IT improvement projects were also executed during 2018, such as improving the network coverage in the open pit and at Hill Jim observation point.

In addition, we extended the closed circuit television surveillance system to include nine areas in the processing plant. Benefits derived from this project include, among others, improved safety and security, improved response time to operational failures, improved visibility in obscured areas and reduced health and safety incidents.





## Our people

Our people are the most important asset of our business. In order to sustain and expand our operations, we need a safe, healthy and engaged workforce.

Aspiring to be an employer of choice, Rössing Uranium provides long-term and rewarding employment by investing in our people throughout their careers.

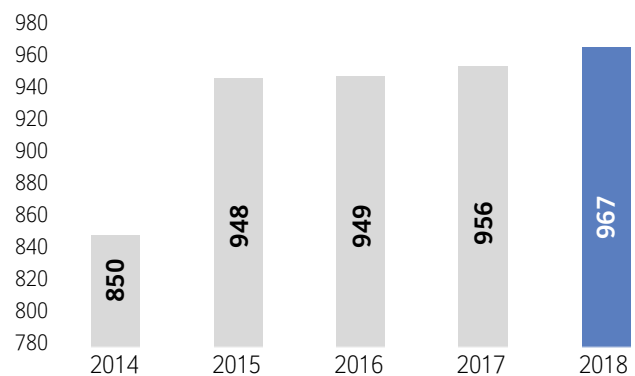
We believe that through employment creation we are making significant contributions to society and the economy, and contribute positively to our partnerships with local communities and other stakeholders. We recognise the importance of attracting, developing and retaining people with diverse backgrounds in our business and realise the benefits of developing the skills of others.

It is the mandate of the Training and Development section to see that this commitment is demonstrated and aligned to the Company's needs and objectives.

### Workforce at a glance

At the end of 2018, Rössing Uranium had a workforce totalling 967, slightly more than the 956 at the end of the previous reporting year. The average number of contractors at the mine decreased slightly from 964 to 938.

Figure 6: Number of employees, 2014-2018 (numbers)



# Our people

## Employee relations

Employee relations continued to be an important focus area for our business during 2018 as we strive to maintain harmonious relations with our workforce. One minor work stoppage was experienced in 2018. A monthly company-union forum takes place where both sides discuss issues and resolve matters. The two-year salary agreement signed by Rössing Uranium and the Rössing branch of the Mineworkers Union of Namibia is still in force until 2019.

## Inclusion and diversity

Inclusion and diversity remains a key initiative that serves as the foundation for accelerated development and retention. Our workforce numbers have been stable over the past four years (see the table below).

## Capability and development

At Rössing Uranium, capacity building and development of our people is a critical process aimed at enhancing productivity and organisational performance. The Training and Development section supports the mine's strategy to achieve its objectives by providing support and services to the various departments through collaboration and partnerships.

Workforce profile	2014 (%)	2015 (%)	2016 (%)	2017 (%)	2018 (%)
Historically disadvantaged Namibian men	76.0	77.1	78.2	77.0	78.0
Historically disadvantaged Namibian women	16.0	15.7	15.5	16.3	16.1
Previously advantaged Namibian women	1.6	1.7	1.5	1.4	1.2
Previously advantaged Namibian men	4.7	3.7	3.0	3.6	3.0
Non-Namibian men	1.6	1.5	1.5	1.4	1.4
Non-Namibian women	0.0	0.1	0.1	0.1	0.2
Persons with disabilities: men	0.2	0.2	0.2	0.2	0.1
Persons with disabilities: women	0.0	0.0	0.0	0.0	0.0

Our vision is to develop our people for growth, allowing our employees to recognise the Rössing Uranium values in terms of learning. The next few pages highlight the initiatives that will support us in achieving our goal of empowering and developing the workforce.

## Rio Tinto People Survey

Rössing continued to participate in the Rio Tinto Group-wide People Survey which provided employees with an opportunity to share their views on various aspects of the business. The aim of the survey is to listen, obtain input from employees, learn from the feedback and improve the business with focused actions on an on-going basis. This will result in a safer and inclusive environment where people are empowered to perform, challenge, develop and excel.

Two surveys were conducted, one during the first half of the year and the other during the second half of the year. The results indicated that those who responded to the survey have a largely favourable view of working at the mine.

## Recognising our employees

Rössing Uranium is committed to recognising our employees as a means of improving employee morale which drives performance excellence and engagement. The Making-a-Difference (MAD) programme has grown since its inception in 2012.

With our defined values of safety, teamwork, respect, integrity and excellence, we recognise and reward our people's efforts in

## Statistical information on our workforce, 2018

Local and foreign employees:

- Namibians: 98.2 per cent (950)
- Non-Namibians: 1.8 per cent (17), including:
  - 0.5 per cent (5) work permit holders, and
  - 1.3 per cent (12) permanent residence permit holders
- Female representation: 17.0 per cent (163)
- Average age of new employees: 39 years
- Number of employees who left the mine's employment: 77
- Number of new employees recruited: 82

# Capability and development

their quest for excellence. During 2018, 103 employees received recognition awards for their effort and for going the extra mile.

## Educational support

Developing young Namibians is part of our corporate social responsibility as it contributes to the growth of the nation at large and ensures the development of skills. A total of eight bursary students received support from Rössing Uranium at a total investment of N\$729,372 (excluding vacation work).

Two new bursaries in the fields of electrical and metallurgical engineering were awarded during 2018 for the 2019 academic year in line with operational requirements as determined by our manpower plan. Five existing bursaries were renewed during the same period.

The mine's educational assistance scheme for employee dependants at tertiary education level supported 28 dependants at a total investment of N\$550,000. A total of 30 trade apprentices completed their job attachments as part of their tertiary education curriculum, exposing them to on-the-job learning opportunities within their various disciplines. Further opportunities to support trade apprentices will continue during 2019.

## Vocational Education and Training Levy

Rössing Uranium has participated in the Namibia Training Authority's Vocational Education and Training (VET) Levy submission since its inception. Through its contribution, the mine has contributed N\$7 million during the 2018 training-levy cycle. A rebate of N\$ 6.7 million was received for the 2014-2017 period.

## Technical training

Technical training remains pivotal to ensure that the knowledge, skills and attributes of our workforce are enhanced. Various training interventions to drive efficiency and effectiveness were conducted to ensure that skills are imparted at the right levels.

Caterpillar (CAT) equipment training was identified as an area where practical on-the-job training for operators and maintainers was required during 2018. The aspects of the CAT training include elimination of 'machine abuse', an understanding of the cost associated with 'machine abuse' among the operators and technical skills trainers, a reduction in unscheduled failure of major components, providing of tailored engineering solutions for operational cases that intrinsically breach the original equipment manufacturer standards which is applicable to all CAT equipment on the mine site.

People supported by Rössing Uranium — 2014 to 2018: Number of participants in training and development programmes

Nature of participation	December 2014	December 2015	December 2016	December 2017	December 2018
Trade bursaries	20	10	0	0	0
Trade job attachments	0	10	10	30	30
Apprentice employees	2	1	0	0	0
College/university bursaries	16	10	11	10	8
College/university job attachments outside company bursary scheme	3	0	3	2	0
Employees enrolled at a technical college (full-time studies)	1	1	1	0	0
Employees enrolled at a college/university (full-time studies)	3	3	2	3	2
Employees involved in correspondence programmes	4	12	8	19	34
Employees enrolled in the leadership development programme (in-house)	0	0	64	0	58
Rössing Uranium dependant scholarships awarded	31	25	26	34	28
Employees in limited-contact studies in various fields	5	3	5	3	1
<b>Total number of participants</b>	<b>85</b>	<b>75</b>	<b>130</b>	<b>101</b>	<b>161</b>
<b>Training programme costs — this figure includes all other training initiatives carried out as part of capability development</b>	<b>N\$6.1 million</b>	<b>N\$5.4 million</b>	<b>N\$7.6 million</b>	<b>N\$8.5 million</b>	<b>N\$6.9 million</b>

# The value of learning

## Rio Tinto graduate summit

Rio Tinto launched the Graduate Excellence Path in June 2017. Part of the programme is for graduates in all Rio Tinto businesses to attend a three-day summit which enables them to gain a better understanding of the Rio Tinto values and how Rio Tinto operates, whilst building core leadership competencies during group exercises, as well as establishing networks with leadership, technical experts and other graduates.



In 2018, nine Rössing Uranium graduates attended the summit in Perth, Australia where they engaged with presenters and participants from around the world. In total, there were 120 graduates who attended the summit, with most being from Australia.

The primary aim of the summit was to develop graduates into future leaders. The workshop included a practical application of a case study where participants had to analyse a business case in small groups, designing a solution and presenting it to the summit leaders. The main aspects covered in the programme include, among others, self-reflection and understanding, building of confidence and resilience, decision-making ability, taking into account short- and long-term goals, building of trust and networking.

The graduate summit was also an opportunity for the graduates to build their networks with senior Rio Tinto employees and with fellow graduates.

(Photo) Graduates from Namibia with friends at the Perth graduate summit.

## Rössing Communication team member on secondment in the US

As part of Rio Tinto's LEAP (Learning, Empower, Assignment, Purpose) programme, the opportunity of a lifetime presented itself to me in the form of a secondment to the United States in 2017/18. At the time I had been promoted and was on the lookout for opportunities to benchmark and further develop my skills. Rio Tinto's corporate relations office in Arizona needed some help refocusing their communication activities, and before long, I was on my way to work at Resolution Copper (RC)!

The RC project is a proposed copper mine in a town called Superior, about 70km south-east of Phoenix. Since the project is in its permitting phase, with extensive internal and external stakeholder requirements, its successful permitting and the protection of Rio Tinto's reputation, requires sound, strategic and transparent communications.



The A-frame over Shaft 10 at the Resolution Copper project outside Phoenix, Arizona, US.

I had the opportunity to assist with effective outreach actions to the media and local communities. I helped develop a social media programme and contributed to communication strategies and tactics that will positively impact stakeholder perceptions and relationships. I also engaged with new members of the communications team.

A highlight for me was representing the RC project director at a networking event of the southern Arizona mining forum in Tucson, where we delivered a project overview. Another special moment was going down Shaft 10 – which will eventually be the deepest in the US – to do a photo session with the underground teams. The experience provided me with opportunities to learn new skills and pursue new career pathways. Reflecting on it, I strongly support the view that workforce development is most effective when 70 per cent is on the job, 20 per cent is through exposure and 10 per cent through classroom learning.

(Contributed by Botha Ellis)



Communication specialist Botha Ellis at a photo session with Shaft 10 team members.



## Safe operations and healthy people



Rössing's Critical Risk Management programme seeks to identify and assess hazards arising from our activities and manage associated critical risks to the lowest practical level.

The health, safety and well-being of our employees is our top priority. We understand that our operational environment may be hazardous, and for this reason, the identification and management of material risks are crucial in our business approach. We consistently strive to create a zero harm working environment, regardless where our people work or what type of work they are engaged in.

We are committed to zero harm and have put in place rigorous processes to ensure that every employee and contractor finishes his or her work day as safely and as healthy as they were when they reported for work. Every day we strive to eliminate fatalities while reducing the number and severity of injuries.

### Health study

An epidemiological study on the potential effects of low level occupational radiation exposures on mine workers started in 2015 in cooperation with the Centre for Occupational and Environmental Health at the University of Manchester in the United Kingdom. An external advisory committee, consisting of community leaders and Government representatives, is assigned to provide external input and advice.

The study is expected to be finalised during the first half of 2019. For more information, visit the Rössing website, Reports and Research section.

### Occupational health management

We firmly believe that occupational disease and illness can be prevented, provided that risks are properly identified, managed and controlled.

Our occupational health, hygiene and wellness programmes are aimed at preventing ill health, but also promoting good health and well-being.

We identify and quantify health hazards to enable us to minimise exposure and prevent injury and illness that may otherwise develop. In adherence to legislative requirements as well as to the risk-based occupational health standards of Rio Tinto, some of our key programmes include, but are not limited to:


- noise exposure control;
- workplace ergonomics management;
- health and medical monitoring;
- hazardous substances exposure control; and
- fitness for work and fatigue management.

## HSEC Policy

# Health, Safety, Environment and Communities

Excellence in Health, Safety, Environment and Communities (HSEC) management is one of the foundations of Rössing Uranium's vision to be the safest and most efficient, long-life uranium producer in the world. This is in line with our commitment to Zero Harm, corporate citizenship, social responsibility and sustainability.

To accomplish this, Rössing Uranium is committed to:

- The protection of the health and safety of our employees, contractors, stakeholders and neighbouring communities. 
- Operating our business with respect and care for both the local and global environment in order to prevent and mitigate residual pollution. 
- Understand and manage the effects of our product through its entire life cycle. 
- Work with integrity and be in full compliance with applicable legislation and industry best practice. 
- Seek continual and sustained improvement in HSEC performance to create a Zero Harm work environment. 
- Identify and assess hazards arising from our activities and manage associated risks to the lowest practical level.
- Enhance biodiversity protection by assessing and considering ecological values and land-use aspects in investment, operational and closure activities.
- Continue in our efforts to raise the awareness of HSEC issues in our neighbouring communities.
- Regularly review our performance and publicly report our progress.
- Communicate our commitment to this HSEC policy to all interested and affected parties.

In implementing this policy we will engage in constructive dialogue with our employees, contractors, neighbouring communities and all other stakeholders in sharing relevant information and responsibilities for meeting our requirements.



**Richard Storrie**  
 Managing director  
 January 2019

**RioTinto**  
 Rössing Uranium  
 Working for Namibia

# Safe operations and healthy people

## Occupational hygiene

Our workplace health exposure monitoring programmes are designed to quantify potential emissions and exposures with the aim to control harmful health risks and agents.

At Rössing Uranium, our risk-based monitoring programme is reviewed annually. Our monitoring strategy is determined from the site risk register review process and it focuses on groups of workers who have the same general exposure profile due to the similarity and frequency of the tasks they perform and the similar materials and processes they use in their work. These groups are described as similar exposure groups (SEGs).

During 2018, we monitored 17 SEGs.

Monitoring data is used to better evaluate the risk to people in our workplace and to assist in determining the effectiveness of risk mitigating controls, compliance with legal requirements, our requirements of the Rio Tinto management system and health performance standards and progress against our objectives and targets.

To ensure that collected data is accurate, comparable and representative statistical analysis and validation is conducted. Internal criteria are established to protect the health of all our workplace personnel, including contractors, and they are defined as occupational exposure limits (OELs). Non-conforming monitoring results are investigated through the incident management process and appropriate actions are developed and implemented to rectify the non-conformance.

Some of the health risks and agents at our workplace include exposure to noise, dust (silica), musculoskeletal stressors and microbiological agents found in the water system.

During 2018, our occupational hygiene monitoring programme included measurements of noise levels, respirable dust (including crystalline silica quartz), welding fumes, manganese dust, volatile organic compounds (VOCs), compressed air quality (aero testing) and water-borne bacterium (Legionella and potable water).

### Dust

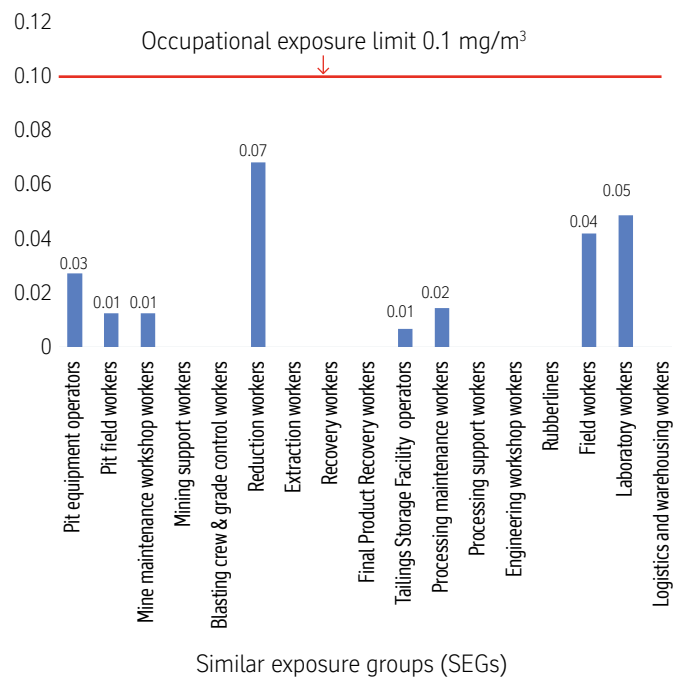
Our mining activities, such as the blasting, drilling, loading and hauling of ore on unpaved roads are typically the major sources of dust emissions.

Transfer and pulverising of ore, which is mostly dry, at the primary crushing circuit and Fine Crushing Plant hugely contribute to high levels of fine dust concentrations, which are experienced at the Processing Plant and surrounding work areas.

During the reporting year, our dust monitoring was focused mostly on crystalline silica quartz. Silica is a natural substance found in our ore; when the ore is processed, dust is created. Some of this dust is fine enough to reach deep inside the lungs; this is known as respirable crystalline silica (RCS) and can cause harm to a person's health.

During 2018, we collected 87 RCS samples from ten SEGs, applying the Rio Tinto occupational exposure limit (OEL) of 0.1 mg/m<sup>3</sup> for RCS. Monitoring results are reported not taking into consideration the protection factor of personal protection equipment.

Figure 7: Average personal respirable silica dust exposures, 2018 (UCL1, 95% - Land's "Exact")



# Our people



# Safe operations and healthy people



## Real-time wearable particle sensor technology

Silica dust remains a concern at our operation. Rössing invested in personal wearable particulate monitors that provides real-time personal aerosol monitoring.

The technology will provide us with real-time actionable data to determine if, when, and where a worker is being exposed to high concentrations of respirable particles such as silica in the air they are breathing.

The technology will enhance discussions to demonstrate risk areas to workers and to test the effectiveness of the engineering controls. This technology will assist us to identify cases of overexposure to dust timeously.

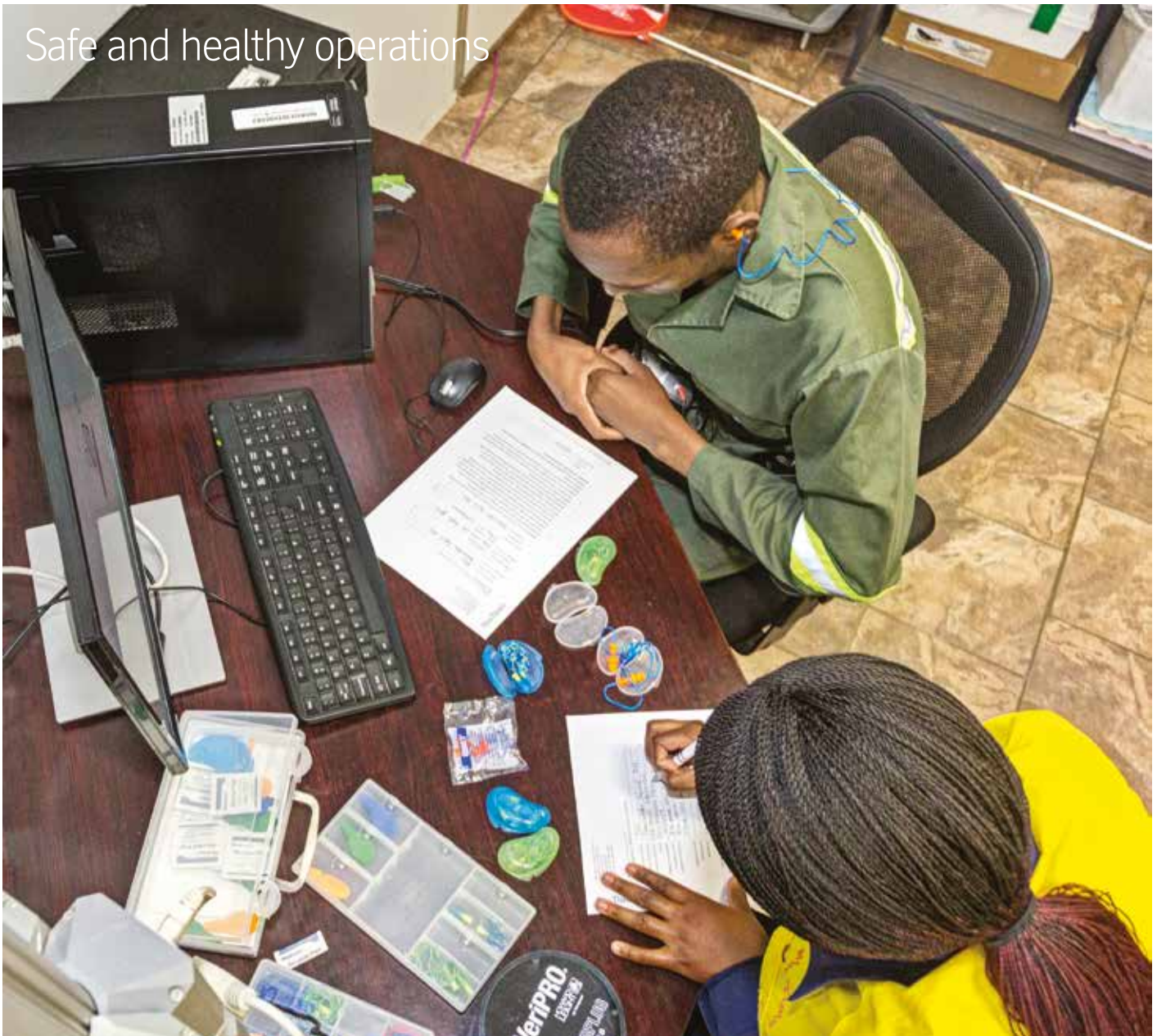
In the photograph on the left and below Occupational Hygiene Officer, Getrud Mbambo, demonstrates one of the real-time wearable particle sensors introduced at Rössing Uranium during 2018.



Figure 7 (on page 25) depicts the average personal respirable silica dust based on the upper confidence level (UCL). The main reasons for dust exposures measured in 2018 included, among others, engineering controls which were not effective, inconsistent application of work practices aimed at reducing dust, and limited water resources.

A review of all dust controls and the implementation of the dust-control strategy will be the key focus in 2019.

## Safe and healthy operations



### Noise

The aim of our hearing-conservation programme is to protect our workers' hearing, mainly because over-exposure to sound above the stipulated OEL of 85 dB (A) can result in noise-induced hearing loss, which is irreversible. This can be aggravated by simultaneous exposure to some chemical substances, for example carbon monoxide and solvents. Noise may also have an adverse effect on other systems, including the body's cardiovascular system.

The use of impact tools and engine noise of heavy mobile equipment, as well as general plant and equipment noise are the main sources of over-exposure to noise at Rössing Uranium.

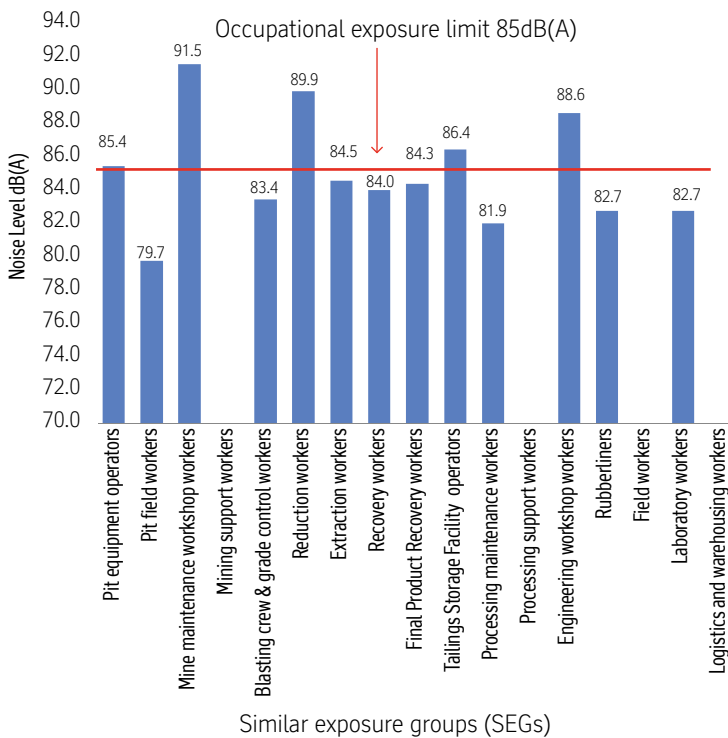
Noise zoning is applied in high-risk areas, together with the application of customised hearing-protection devices. In other areas, disposable ear plugs are used, as and when necessary.

### Hearing Fit validation

As part of our hearing conservation programme, Rössing invested in a fit testing system for hearing protectors which has the ability to test the real-world protection levels of the earplugs. The test enables the mine to find out whether the employees are receiving optimal protection, require additional testing on how to fit the ear plugs, or need to try a different model. The programme ensures that workers have proper selection and fit of earplugs appropriate for the noise level and workplace requirement, as well as worker comfort. In the photo on left and below are Occupational hygiene officers, Gertrud Mbambo and Nicco Matengu, demonstrating the steps to conduct a hearing-fit test.



**Figure 8: Average personal noise exposures, 2018**  
(Estimated Arithmetic Mean - MVUE)



During 2018, five of the 13 SEGs that were monitored exceeded the occupational exposure limit of 85 dB (A). The graph above depicts the average annual personal noise exposures measured for the different similar exposure groups in 2018.

Monitoring results do not take into consideration the protection factor of personal protection equipment (PPE). All employees who work in dust or noise high-risk areas are issued with customised respiratory- or hearing-protection devices. These devices are maintained and fit-tested on an annual basis. **Measured exposures indicated in Figures 8 do not take into account the protection factor provided by these devices.**

## Occupational medical surveillance

Occupational medical surveillance examinations provide baseline and periodic measurements to detect abnormalities in workers exposed to work-related health hazards early enough to prevent or limit disease progression through exposure modification or medical intervention.

At Rössing Uranium, a risk-based periodic medical programme is followed with consideration of the exposures of employees and contractor employees in different similar exposure groups (SEGs). These require employees and contractors to undergo pre-employment, periodical and exit medical examinations.

Other medical examinations during employment include transfer medical examinations and return-to-work fitness medical

examinations. Through the mine's workplace wellness programmes, employees are encouraged to undergo additional medical screening tests to manage their own health and as a means of detecting chronic and/or life threatening illness.

### Wellness

Our workplace wellness programmes are designed to help us in creating a work environment that is healthy for our employees. Encouraging employees to look after their health and well-being is a critical component of our overall approach to health and safety. The programmes also involve increasing knowledge and awareness through campaigns and education sessions and introducing policies that help employees make healthier choices. Various activities were undertaken during 2018 to support the following programmes:

#### Wellness Week

In collaboration with Namibia Health Plan (NHP), Rössing Uranium's annual Wellness Week was held onsite for the fifth consecutive year during August 2018. A total of 448 employees and contractors received wellness screenings during this week.

#### Blood donation clinic

The Blood Transfusion Service of Namibia held five blood donation clinics onsite, during which a total of 301 units of blood were donated. In recognition of the employees' support, we received the Namibian Blood Transfusion Coastal Industrial Award (Gold) at a special event.

#### Alcohol and drug awareness

External service providers held sessions at the mine to raise awareness of alcohol and drug abuse. A total of 448 employees and contractors attended these sessions. Subsequently, 36 volunteers were trained in managing alcohol and drug support groups in various communities.

#### Employees knowing their HIV status

During the reporting year, two HIV Voluntary Counselling and Testing (VCT) events were held onsite at no cost to employees and contractors. A total of 238 persons attended.

#### Rio Tinto Global Challenge

The Rio Tinto Global Challenge received good support with 47 Rössing teams, consisting of 329 participants, who participated in a 100-day virtual journey. Three teams ended in the final top ten of all the Rio Tinto teams who participated in this event that counted the participants' daily steps as a way to improve health.

### Focus areas in 2019

We plan to roll out a technology-based, fatigue risk assessment programme to enhance understanding of our risk and improving on the mine's fatigue management controls.

To remain aligned with global and local emerging health threats and managing these proactively, the mental health and wellness programme will receive special focus.

Hearing protection devices (ear plugs, ear muffs and customised hearing protection devices) are our critical control for noise exposure; therefore, focus will be placed on ensuring consistent and correct usage of these devices. Supporting these actions, we will implement a hearing-protection, fit testing validation programme for disposable ear plugs.

## Safe operations

Safety management is a critical issue and a systematic approach is essential to ensure consistency across the business. Our absolute focus is to eliminate fatalities and major injuries. To achieve this we are committed to create a zero harm environment and approach for our employees.

The mine recorded an All-injury Frequency Rate (AIFR) of 0.83 for the year, against a target of 0.35. The mine had five months with no recordable injuries – an indication that zero harm is achievable.

The following injuries occurred during the 2018 reporting period:

- Lost-day injuries: 7
- Medical treatment cases: 7
- The mine experienced 4 potentially fatal incidents (PFIs).

Highlights in our safety management during 2018 included the following:

- No major environmental issues were identified during the ISO 14001:2015 second surveillance audit, which is carried out annually. A recertification audit is scheduled to take place in 2019.
- A sectional housekeeping competition was held, driven by occupational health, safety and environment (OHSE) representatives. The purpose was to improve general housekeeping at the mine, as well as to instil a sense of pride in individual workshops. The competition took place every trimester and the winners were presented with tokens of appreciation at a prize-giving ceremony.
- During the reporting year, we identified three mitigation measures which were normalised during our 'Learning critical lessons' sessions. These three risks were isolation, vehicle-pedestrian segregation and ammonia awareness. To address these risks, we identified the following actions:
  - We conducted an in-depth review on all tasks involving isolation, which provided opportunities to implement a number of improvements, for example implementing an isolation permitting system. This review will continue during the first quarter of 2019.
  - Major improvements were done on traffic management at the mine entrance and in the open pit.
  - An ammonia awareness programme was rolled out. Ammonia offloading was restricted to take place only after 17.00 when day shift personnel have left the site. More ammonia muster rooms were identified and equipped.

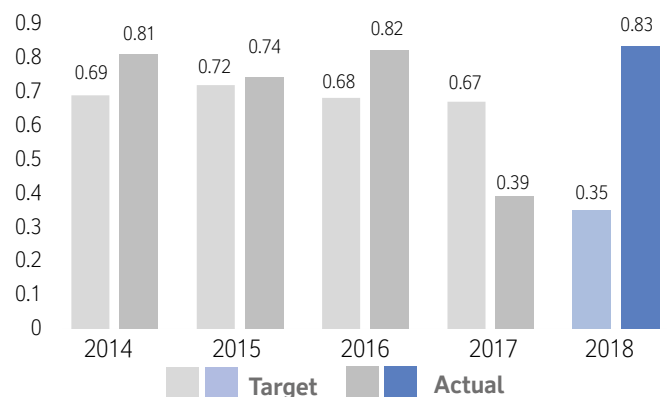
- A zero-harm pilot training programme was rolled out to all senior leadership team members. In 2019, a safety leadership coaching programme will be rolled out to all leaders, with special focus on in-field coaching for the front-line managers (ie foremen).
- The introduction and roll out of the Rio Tinto Group procedure, Mass Transportation, which focuses specifically on vehicles able to transport nine or more people. The full implementation for this procedure is scheduled for the first quarter of 2019.
- *Fundamentals of Process Safety* training was provided to key personnel involved in our process safety management (PSM) system. PSM focuses on the low probability/high consequence incidents, for example fires or explosions.
- The Rössing Uranium safety team actively participated in the Chamber of Mines of Namibia's Safety Committee in 2018.

Injuring employees and contractors is not in line with our goal of zero harm, which is that everyone goes home safe and healthy at the end of each working shift.

To enable us to achieve our goal of creating and sustaining a safe, caring workplace, the following will be amongst the focus items during 2019:

- sustain the Critical Risk Management (CRM) programme, with a reduction in critical control failure;
- conduct leadership assessment, training and coaching for operations line management;
- monitor material risks and mitigation plans;
- monitor mass transportation critical controls;
- review high consequence/low probability risks with the focus on engineering those risks out as far as reasonably practical;
- develop and provide PSM training to all levels of the business;
- continue with the safety initiatives started during 2018; and
- review our HSE training methodology to improve efficiency.

**Figure 9: All-injury Frequency Rate (AIFR), 2014-2018**  
(per 200,000 hours worked)







Acid Operator, Atanasius Nangolo, inspecting the transfer of sulphuric acid from rail tankers to the acid storage tanks onsite. Sulphuric acid is used as part of the leaching process in the Processing Plant. In line with the mine's safety culture, the operator is wearing the required personal protective equipment (PPE) for the area where the offloading of the sulphuric acid is done.

## Radiation safety

Exposure to ionising radiation at Rössing Uranium was controlled through a comprehensive programme that is described in our radiation management plan (RMP). The RMP is updated regularly and can be accessed via our website with the 'Reports and Research' tab. The RMP implementation reports for the past few years are also available for download on our website.

### Personal monitoring

Our occupational radiation protection programme includes a comprehensive monitoring programme for measuring the occupational exposure to ionising radiation of all employees (personal monitoring).

Three major exposure types are covered by part of this routine monitoring programme:

- Internal exposure to alpha radiation from the inhalation of radon and the short-lived decay products of radon;
- Internal exposure to alpha radiation from the inhalation of the long-lived dust; and
- External exposure to gamma radiation.

For each of these three pathways, an annual dose is obtained.

The workforce at Rössing Uranium is categorised into 19 similar exposure groups (SEGs), according to the potential radiation exposure encountered during different work processes. The annual doses from the three pathways mentioned are then added up to find the total annual radiation exposure dose for the individual SEG.

In 2018, we collected about 1,000 personal radiation exposure samples compared to about 600 samples in 2017.

Over the years, we have gathered a comprehensive database of radiation exposure measurements by pathway and by SEG. The regulatory dose limit is 20 millisievert (mSv) per year.

The annual dose in 2018, when averaging over the entire workforce was 1.2 mSv, which is about 0.2 mSv higher than reported for 2017. Assuming a working year of 2,000 hours, the extrapolated averaged dose by SEG is displayed shown in Figure 10. The dashed line is the average of 1.2 mSv per year, the solid circles represent the 2017 results.

Although the annual dose is slightly higher than in previous years, this weighted average dose is extremely low, as it includes background radiation for the duration of the work year.

### Area monitoring

In addition to personal monitoring, the area monitoring is a key element in our radiation protection programme. In the Final Product Recovery (FPR) area, the surface contamination is regularly monitored using wipe tests with subsequent analysis of the activity of the collected material.

In 2018, our internal target of 1 becquerel (Bq/cm<sup>2</sup>) surface contamination was exceeded constantly (the target was reached in 2017). To reduce the surface contamination, it was decided to stop drumming for a short time in order to do a proper clean-up and maintain the plant before restart. As a result, the surface contamination dropped to about 0.6 Bq/cm<sup>2</sup>, which is well below target.

A programme to monitor radon gas and radon progeny was started. Measurements indoors (in offices) revealed the effect of air circulation on the concentration of the radioactive elements. Outdoor monitoring results will be implemented in a geographic information system (GIS) map.

The goal is to visualise radiation levels of long-lived radioactive dust, radon and gamma radiation across the whole mine using maps and 3D scenes. So far, we monitored one outdoor area for radon and radon progeny for one month, and a first map only including LLRD and gamma radiation was created.

### Sealed sources

Sealed sources are used in different process applications such as uranium-level monitoring in the drum filling process. Sealed sources contain highly radioactive substances and are manufactured in such a manner that in normal use, radioactive material cannot be dispersed.

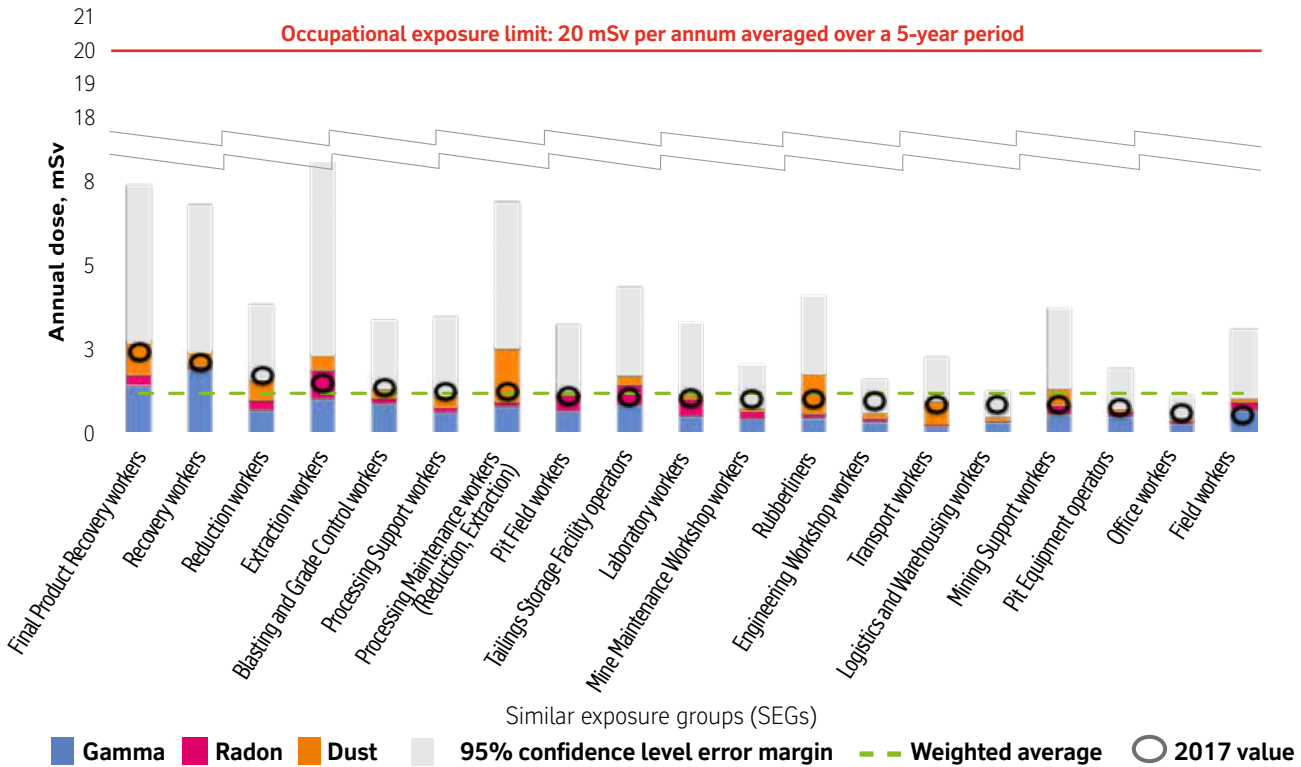
However, worldwide numerous accidents are reported where persons handling the source were not aware of the risk, which illustrates the potential danger from sealed radioactive sources.

In 2018, we removed the last five sealed sources from process applications at the Final Product Recovery plant and the Primary Crusher, and stored them safely in our Radiation Storage Facility. The next step is to explore the possibility of removing the now 14 stored sealed sources from the mine site. In this regard, discussions around the various possible removal or storage options with the National Radiation Protection Authority (NRPA) have already started.

To avoid the spread of contamination, all material leaving the mine site has to be radiation cleared, which means the level of contamination must not exceed 0.4 Bq/cm<sup>2</sup>. By monitoring all the equipment leaving the mine site, we ensured that the level of 0.4 Bq/cm<sup>2</sup> was not exceeded. In case the surface contamination of the equipment exceeded 0.4 Bq/cm<sup>2</sup>, it was rejected for removal and sent for cleaning.

# Radiation safety

**Figure 10: Personal radiation exposure dose by similar exposure group (SEG), 2018**  
Regulatory annual dose limit: 20 mSV (Annual dose in milli-sievert)



Besides the clearance of individual items, ranging from tools to forklifts, a total of almost 1,200 tonnes of scrap metal and about 35 tonnes of conveyer belts were removed from the mine site after being cleared of radiation contamination.

## Uranium spillage drill

A uranium spillage drill took place in 2018, in which four uranium mines participated, namely Rössing Uranium, Swakopmund Uranium, Orano and Bannerman. In the drill, which simulated a uranium spillage during road transport, the participants could validate their ability to react to emergencies, while also learning from the procedures of the different mines.

## Training programme

To improve awareness to the risk of radioactivity, internal training is one of the key elements in our radiation safety programme. Both new and existing employees need to be informed about the risk of radiation and hence know how to minimise radiation exposure.

All new employees have to pass a radiation safety induction, which is followed by a bi-annual radiation safety refresher. In 2018, 204 individuals, including regular employees, contractors and apprentices, attended the radiation safety induction, while 228 workers attended the radiation safety refresher training.

From July 2018 onwards, we made the radiation safety refresher training programme accessible online, as the online option is increasingly frequently chosen.



Community relationships



## Community relationships

We acknowledge that operating within a sustainable community provides our business distinct benefits, such as skilled and locally available employees; capable, local suppliers of goods and services; access to sustainably managed natural resources; and healthy and safe environments for our employees and their families.

An important part of that is good community relations, which is as necessary for our business success as the effective management of our operations. With this in mind, we implement long-term community development plans that focus on improvements in quality of life. In 2018, we continued successful efforts to maintain these mutually-beneficial relationships

### **Community relations**

Despite facing production and market challenges during 2018, Rössing Uranium remains committed to long-term stakeholder relationships that are mutually beneficial and executed in a respectful manner for both the beneficiaries and the mine. Honouring our corporate social responsibilities, we accomplished this through continued investment under the United Nations Sustainable Development Goals (SDGs). Primarily for 2018 our support has been on goal 11 Sustainable cities and communities.. Our activities are also aligned with the Chamber of Mines of Namibia's Mining Charter, Namibia's Fifth National Development Plan (NDP5) and the Harambee Prosperity Plan.

In 2018, Rössing Uranium supported the Rössing Foundation and other community initiatives with just over N\$13 million, of which N\$12 million went to the Rössing Foundation, and N\$1 million was in-kind and cash contributions to worthy community initiatives. This is over and above the direct and indirect economic benefits we created through local employment and the procurement of goods and services from local businesses.

(Photo) Michael Hercules, education officer of Biology instructing learners during a practical session at the Otjiperongo Junior Secondary school in the Erongo Region.

In 2017, a policy was developed through which a review committee was constituted with a policy and governance structure that guides its actions. This committee is responsible for reviewing all requests for sponsorships and donations.

A priority area that receives due consideration each year is the safety of our employees and other road users. The mine, together with relevant stakeholders, provides inputs for consideration and possible implementation on priority projects. Social performance for Rössing is based on the premise of active partnerships with all contractors that are willing to collaborate with us.

The neighbouring town of Arandis remained a key focus area for our community activities, with a major partnership initiative implemented on the Arandis Roofing Project. The perimeter wire fence at the Arandis valve house of the Arandis Town Council was refurbished with a precast wall. The infrastructure of the valve house belongs to the council and it houses the mine's monitoring stations for weather and dust fallout.

As part of the larger partnership between Rio Tinto and Birdlife International, the mine once again coordinated the annual Birdwatching event at the Walvis Bay Bird Paradise. In 2018, the focus was on encouraging learners from schools based in Arandis to participate in the event.

We donated emergency response equipment to the Arandis Emergency Response and Traffic Management Unit, and also supported the President of Namibia's call-to-action by actively participating in the national clean-up campaign in May 2018. The mine was joined by contractors on site in assisting the Arandis Town Council in cleaning up the town.

We supported the regional branch of the Mineworkers Union of Namibia during the hosting of their electoral conference to elect the regional executive committee who will manage its affairs in 2019.

2018 saw the outbreak of Hepatitis E in the Erongo Region, with the informal housing sector being hardest hit. Rössing Uranium supported the regional response by proving stipends to be paid to volunteers who conducted household response in Swakopmund by providing health training sessions on good handwashing practises and food preparation in the informal settlement environment.

In addition, we supported the Trans Kalahari Corridor Management Institution with the sub-regional joint law enforcement operation. This week-long operation included law enforcement agencies from Botswana, Zambia and South Africa.

### **Internal and external communication activities**

Informing both our internal and external stakeholders about our operations is one of the key enablers in our business success. It is the task of the Partnership, Communication and External Affairs department to implement various platforms, initiatives and activities to establish, nurture and maintain good relationships and promote the sharing of information with our stakeholders.

In 2018, a number of strategic communication activities were implemented to disseminate information about Rössing Uranium via a variety of channels in the print and electronic media, as well as by means of face-to-face communication.

We also kept the Namibian Government informed about our corporate business strategy. This was accomplished through the mine's senior management engaging politicians and senior officials on a number of matters of mutual interest, as well as working closely on information campaigns with the Namibian Uranium Association.

A number of stakeholder engagements hosted during the year with the Namibia business community, shared information about our business performance. Other communication activities involved a variety of external stakeholders through trade and career exhibitions, while Rössing's website presents information to a world-wide audience.

Media relations were facilitated through the management of various media enquiries which is an opportunity to create balanced coverage of our operations and business activities.

Our visitors' programme is a key means of engaging guests from around the world. Besides members of the public, the programme accommodates specialists, academics and government officials. In 2018, we hosted 27 groups at the mine with a total of 451 visitors.

In line with our drive to promote healthy habits and support positive lifestyles in the community, we sponsored the 27<sup>th</sup> Rössing Marathon National Championship, with Swakop Striders Athletics Club hosting the event. The competitors participated in a marathon, a half-marathon introduced for the first time and a 10-km race. A 5-km fun walk was held in support of the Cancer Association of Namibia. The marathon and 10-km race attracted just more than 500 athletes, while close to 300 members of the public participated in the fun walk.

The cash and in-kind sponsorships and donations initiated through the Corporate Communication section totalled N\$363,833 in 2018.



Learners from the Swakopmund Secondary School during the Mathematics sessions at Rössing Foundation Tamariskia centre.

## The Rössing Foundation

Report by Job Tjiho, Executive director, Rössing Foundation

The Rössing Foundation was established in 1978 through a Deed of Trust as a vehicle to oversee and implement many of Rössing Uranium's corporate social responsibility activities in Namibia.

The Rössing Foundation implements programmes and projects under the following mandates:

- To further the education of all Namibians in order to achieve greater national productivity and enhance lifelong learning.
- To encourage the creation and/or to create opportunities for people to use their education.
- To promote the advancement of the living standards of all the people in Namibia.
- To carry out any act or accomplish anything, which in the opinion of the Trustees, shall benefit Namibia or any or all of its inhabitants.

To align programmes and projects, the Rössing Foundation focuses mainly on the following identified targets:

- the improvement of primary and secondary education through the implementation of various teachers' and learners' support programmes;
- the diversification and strengthening of the local economy through support to small- and medium-scale enterprises; and
- working hand-in-hand with local authorities to strengthen their capacity and facilitate the development and implementation of their strategic plans.

### Education development programme

The Rössing Foundation has been working in partnership with the Ministry of Education, Arts and Culture since Namibia's independence in 1990. The partnership encompasses activities such as strengthening the capacity of teachers and learners, leadership and management programmes, resource sharing and exchanging expertise between the partners.

Rössing Foundation continued to manage its three English, Mathematics and Science centres in the towns of Arandis and Swakopmund in the Erongo Region, and in Ondangwa in the Oshana Region.

# Community relationships



Pohamba Mushelenga, education officer of Physical Science in class during the mobile laboratory's school visit to Okakarara Senior Secondary School in the Otjozondjupa Region.

In addition to these centres, the Rössing Foundation managed the English, Mathematics and Science mobile laboratory which travelled to many areas of the country. The mobile unit greatly benefitted rural schools, as many teachers and learners cannot afford to travel to the centres. The centres and mobile laboratory will continue to serve as the hub of support programmes, not only for learners and teachers, but also for Namibian communities.

### **Teachers' support programmes**

Rössing Foundation regards support for teachers to be vital, as a single, well-equipped teacher is able to benefit up to 30 learners. Teachers' support programmes are conducted either at a centre or through the mobile unit on school visits to rural areas as part of Rössing Foundation's national outreach programme.

A total of 186 teachers in the English language, Mathematics and Science were supported at the three centres in Arandis, Ondangwa and Swakopmund (located in the suburb of Tamariskia). The support was aimed to transfer knowledge and skills to the local teams of the Ministry to enable programme sustainability, as well as to strengthen the implementation of education plans.

The teachers continued to show enthusiasm and made use of networking opportunities to enable continued support, while the schools' management teams played a vital role in ensuring that planned activities are carried out in the schools.

### **Learners' support programmes**

The Rössing Foundation's three education centres remain popular among learners. In addition to on-going support provided to learners from different schools in the English language, Mathematics and Science, many learners flocked to the Arandis and Tamariskia centres for examination preparations.

The progress of the pre-primary reading programme started to yield positive results, benefitting 4,039 learners who attend classes regularly. The programme seeks to instil a passion for reading at an early age by engaging learners in lively and active reading sessions and by offering further opportunities to read in the Rössing Foundation libraries.

During 2018, a total of 315 pre-primary learners benefitted from the reading programme through story reading time, games and puzzles. Most of the 315 learners who participated in the programme did so at the Arandis Centre.



# Community relationships

All the centres participated in senior primary support initiatives, enabling an average of 1,167 per month to benefit from the activities – substantially more than the planned 70 per grade. However, the number of beneficiaries in the Science subjects and the English language needs to be intensified in 2019. Generally, attendance and consequently the benefits to learners in English and Mathematics have improved enormously. The concern remained with the Science subjects; to address this situation, a new Science education officer was appointed and will commence with duties at the beginning of January 2019.

In total, 3,000 junior secondary learners benefitted from the Rössing Foundation support programmes, consisting of 567 grade 8 and 10 English language learners, 2,025 grade 8 to 10 Mathematics learners, 206 Physical Science learners and 202 Life Science learners.

Mathematics continued to be very popular among learners in all grades. Over the years, the high learners' interest in Mathematics translated to good grades in national examinations, and the same was true in 2018. However, English and the Sciences remain a challenge with fluctuating attendance.

In total, 4,925 senior secondary learners benefitted from the Rössing Foundation English, Mathematics and Science programmes, consisting of 1,427 English language learners, 1,159 Mathematics learners, 792 Physical Science learners and 432 Life Science learners. Generally, attendance and consequently the benefits to learners in English and Mathematics has improve monumentally, with the Science subjects remaining a cause for concern.

## Mobile laboratory outreach programme

During 2018, the mobile laboratory visited 12 schools in the Kavango West, Kunene, Otjozondjupa and Ohangwena regions to support rural schools in English, Mathematics and Science. In most cases, the schools were visited on two occasions, each lasting a full week. This programme supported 15,625 learners and 304 teachers throughout the year.

A team of senior education officers from the Directorate of Education, Arts and Culture worked together with the Rössing Foundation team and staff of the schools to implement the national mobile laboratory outreach programme. The combined teams contributed greatly to the successful school support intervention in all the visited regions.

Learners are generally well-behaved, enthusiastic and willing to learn, while teachers continued to show enthusiasm and shared contact details with the visiting teams to enable continued support.



Learners busy with Mathematical practical assessments.

School management teams played a vital role in ensuring that planned activities are carried out in the schools.

## Vacation classes support initiatives

During the year, Rössing Foundation conducted vacation classes in all three centres to assist learners to consolidate what they had learned during the year, focusing mainly on supporting grade 10 and 12 learners.

Learners came in great numbers from schools located in various regions such as Ohangwena, Oshana, Oshikoto, Omusati and Otjozondjupa to attend the classes in English, Physical Science, Mathematics and Biology. In total, 1,048 learners were supported at the centres during the 2018 school holidays.

## Library services to the community

The main purpose of the Rössing Foundation's libraries is to ensure that learners, teachers and other community members have access to information through books. Improved reading skills are conducive to good results at school and deepen general knowledge as well.

# Community relationships

The Rössing Foundation libraries are located in the vicinity of the communities they serve. Learners and other members of the communities of Arandis, Ondangwa and Swakopmund make use of the libraries on a daily basis to study, conduct research on projects, and do homework.

The Ministry of Education, Arts and Culture community library in Windhoek provided a wide range of new books to the Ondangwa Centre close to the end of 2018. The gesture is a classic example that the strong partnership that exists between the Ministry and the Rössing Foundation.

Ondangwa library recorded the highest teacher and learner attendance, while Arandis recorded the highest book circulations. At all three centres, between 4,000 and 6,700 learners visited the three libraries respectively. All libraries were utilised beyond capacity as learners occupied all available space in preparation for examinations.

In 2018, a total of 17,278 learners, 388 teachers and 7,947 community members visited the libraries in Arandis, Ondangwa and Swakopmund.

## Readathon

The Rössing Foundation librarians organised a Readathon for teachers and learners from the local schools. The annual Readathon is a literacy awareness campaign which encourages the appreciation of the joy of reading. Its objectives are to nurture a culture of reading among learners, and to spread awareness of the importance of literacy in building an economically vibrant nation.

The Readathon was held under the theme of promoting literacy development skills among adult learners. The Regional Chief Librarians from the Ministry of Education, Arts and Culture delivered the keynote address.

The librarians also set up special event calendar and ensured that each learner read a book during the Readathon week. They also read stories to the audience and sensitise the learners on the importance of conserving energy.

## Establishing and maintaining effective school boards

In order to ensure that school boards function effectively, the Rössing Foundation (in cooperation with the Ministry of Education, Arts and Culture and with the support of the United Nations Children's Fund, through funding from the European Union) has been training school boards on how to efficiently manage schools to contribute to positive teaching and learning outcomes. Funding is provided within the framework of the Social Accountability and School Governance Programme, which aims to enhance grassroots level participation in school development and school management.

The training is designed to capacitate school boards, as representatives of the parents, as well as teachers and learners, to exercise their responsibilities in terms of school governance and to ensure that all stakeholders are accountable for what is happening in schools.

In 2018, various training-of-trainers sessions were held with 67 participants from the Directorate of Education of both Omaheke and Hardap regions. The aim was to:

- equip school board trainers with expertise enabling them to empower and skill school communities and particularly school boards on how to use social accountability tools and model systems to monitor school performance and improve monitoring and accountability in the education sector at local and regional level; and
- to support and monitor the school board trainers during the process of cascading the school board training down to school level.

## Enterprise development support

The Rössing Foundation continues to work with the Dreamland Garden members to improve the day-to-day operations of the garden. In order to address the problem of extended water outage, two additional water tanks were installed, enabling the garden to store 30,000 litres of water that can be used when their water supply system fails. A local bank, Bank Windhoek, approved their business plan and availed funds through the Erongo Development Foundation to purchase a water pump, which will ensure continuous water supply to the garden.

The Ôiba-Ôas Crystal Market Cooperative, situated on the main road between Usakos and Karibib, and the Rössing Foundation engaged with COSDEF Arts and Craft Centre in Swakopmund to provide training to the small-scale miners on value addition to their semi-precious stones. A two-week training session was held on jewellery design.

During a joint planning session, the Cooperative's board and the Rössing Foundation team identified the need to provide potable water and electricity to the Crystal Market. Discussions were held with Erongo Red to investigate the feasibility and cost implications to provide electricity to the community. As an alternative, the team proposed the refurbishment of the existing solar electric system. It is envisaged that the best solution will be implemented in the next reporting year.

A total of 26 Rössing Foundation-supported enterprises located in Arandis were assisted in personal business plan development and counselling, while one medium enterprise was assisted with a successful loan application of N\$25,000, enabling the business owner to purchase machinery to conduct his business.

Members of Rössing Foundation, Erongo Regional Council (Dâures Constituency) office and two committee members of the Okombahe Conservancy conducted a survey to determine the ownership of the land of the Okombahe community garden. Participants included the Traditional Authority under which Okombahe falls, former project workers and former board members. In 2019, the team will complete the analysis and interpretation of data to determine the garden ownership and to archive documentation for future references.



The Rössing Foundation Libraries continue to provide information to the general communities in Arandis, Ondangwa and Swakopmund. The learners, teachers and community members come to the libraries to study, do research and do homework as well as projects.

### **Community-supported activities in Arandis**

#### ***Arandis movie night***

The Rössing Foundation successfully assisted the Arandis Town Council with the re-activation of the Arandis amphitheatre where the community can watch free movies on a biweekly basis since mid-2018. The movie night contributes to building social cohesion in the Arandis community and provides an opportunity for local SMEs to market their products.

The Rössing Foundation recognises that indirect help through community involvement is key to developing and maintaining a strong SME environment in Arandis. The team interacts on an on-going basis with the community on the further improvement to the Arandis Amphitheatre by soliciting views and recommendations from community members.

#### ***Unlocking learner's potential***

In conjunction with Peace Corps Namibia, the Rössing Foundation developed a series of lectures under the theme "Why not you" aimed at motivating school learners. The purpose of the lectures is to expose learners to career options they might not otherwise have considered, and to inspire them to stay in school and continue their studies in order to achieve their career goals. Learners from UB Dax Primary School and Talitha Kumi Christian Academy participated, and the lecture series was well received. The same lecture was also presented in Karibib to 75 learners.

#### ***English courses for adults***

Adult English Comprehension sessions has commenced in Arandis, with the aim being to improve the ability of the six participants to comprehend more advanced English through reading, discussing

and writing about topics in class and at home. Another two community members participated on a part-time basis due to scheduling conflicts. The ten-session class, which started early mid-2018, meets three times a week.

The Ondangwa Centre, in partnership with the Oshana Education Directorate, trained community members and Correctional Services Officers of the Ministry of Safety and Correctional Services to demonstrate the knowledge and skills learned about presentations using the Microsoft Power Point software program.

#### ***Youth development activities***

In order to engage young people into healthy social activities during their free time, the Dominoes Club was started in Arandis, and meets regularly on Mondays and Wednesdays.

#### ***Support to Erongo Development Fund micro-finance***

The Rössing Foundation continues to support the micro-finance scheme of the Erongo Development Fund (EDF). A meeting was held with the Arandis-based beneficiaries to get feedback on progress they achieved in their businesses. The beneficiaries voiced the challenges they face and it was agreed that the Foundation's enterprise development team will meet the beneficiaries on a monthly basis to get an update on their activities and to support their initiatives.

The Arandis-based SMEs will form part of the Rössing Foundation mentoring programme and we are working closely with the Arandis constituency office on this undertaking, while other SMEs will be supported by their respective constituencies in the Erongo Region. The EDF beneficiaries range from security services and tailoring to construction and poultry production.

# Protecting the environment





## Protecting the environment

Rössing Uranium is committed to protecting the environment in which we operate. Measures include a wide range of preventative monitoring activities.

We have a particular focus on water management and monitoring, especially in light of the extreme rainfall associated with the Erongo Region's water-scarce, hyper-arid climate. We have a strong history of engagement and co-operation with our regulators and other stakeholders to ensure that the environment remains protected.

We manage impacts on the environment with guidance from, among others, Namibian legislation, the ISO 14001 Environmental Management System, Rio Tinto's performance standards and international best practices. Through transparent reporting we provide our stakeholders with the assurance that our environmental impacts are monitored and the necessary mitigation measures are in place to keep our environmental impacts minimal.

Our environmental management performance, measured against set objectives and plans, is discussed on the next pages.

(Left) The lifting and replanting of plant species that are in danger of being disturbed due to our mining activities has been ongoing since the early 1970s. The Namib Botanical Garden, a private initiative located on the northern bank of the Swakop River, was established a few years ago with the aim to rescue, preserve and publicly display indigenous plant species of the Namib Desert. In 2016, a major relocation exercise of endangered flora from Rössing Mine to Namib Botanical Gardens was undertaken. Now, a few years later, these plants have settled well and show the success achieved by Rössing Uranium and the Namib Botanical Garden commitment to biodiversity protection and conservation. Rössing's Stefaans Gaeseb (left), project geohydrologist, and Frank Löhnert, project coordinator of the Namib Botanical Garden, inspect one of the many plants relocated successfully from the mine site.

# Protecting the environment

## Water management

Water management at Rössing Uranium is guided by a formal water strategy and management plan, developed according to the Rio Tinto performance standard, Water quality protection and water management, and supported by Rio Tinto's Water use and quality control guidance notes.

The notes cover all activities related to water abstraction, dewatering, transport, storage, usage (potable and process) and treatment, and involves surface water (including run-off), impounded water and ground water. The intent of the standard is to ensure efficient, safe and sustainable use and protection of water resources and ecosystems.

In addition, Rössing Uranium adheres to all water-related aspects pertained in the Constitution of the Republic of Namibia. To that effect, we operate with Waste Water and Effluent Disposal Exemption Permit 674 (valid until 16 January 2021) and Water Abstraction Permit 10200 (valid until March 2019).

Knowing that our water requirements are substantial, our focus is on the sustainable and accountable use of this scarce and valuable resource, with minimal adverse effect on the environment.

We carry out various continuous monitorings, which include:

- taking frequent flow-meter readings at various points in the Processing Plant to provide a continuous overview of our water balance data;
- taking frequent water level measurements at our Tailings Storage Facility (TSF) and numerous monitoring locations across the mine site, extending to the Khan and Swakop Rivers; and
- conducting water-quality sampling at various locations (starting at the source, the TSF) which we use to understand changes in water chemistry due to chemical reactions in the heterogeneous environment.

All spillages in the Processing Plant are captured and channelled to a large recycle sump for reuse. Effluents from the workshops are treated to remove oils and sewage is treated in the onsite sewage plant. These purified effluents are used in the open pit for dust suppression.

On the deposition pool (active paddy) of the Tailings Storage Facility (TSF), water is recycled and reused on a continuous basis in the Processing Plant, minimising evaporation and infiltration into the tailings pile. Remaining water that has infiltrated is recovered by pumping boreholes and open trenches installed on the facility itself to reduce the volume of underground water within the tailings pile.

Seepage control systems are also employed outside the TSF. They include a surface seepage collection dam to capture water from the engineered tailings to drains, cut-off trenches in sand-filled river channels, dewatering boreholes situated on geological faults and fracture systems on the downstream, western side of the facility. All systems are designed to lower the water table to the extent that flow towards the Khan River is interrupted. The recovered water is reused in the Processing Plant.

### Freshwater use

Our water demand is met by the local bulk water supplier, NamWater, via a pipeline from the Orano Desalination Plant at Wlotzkasbaken. In 2018, freshwater supply to the mine was interrupted when the marine desalination plant experienced high sulphur outbreaks and went through production stoppages due to maintenance interventions. The supply of freshwater is an ongoing challenge for our operation.

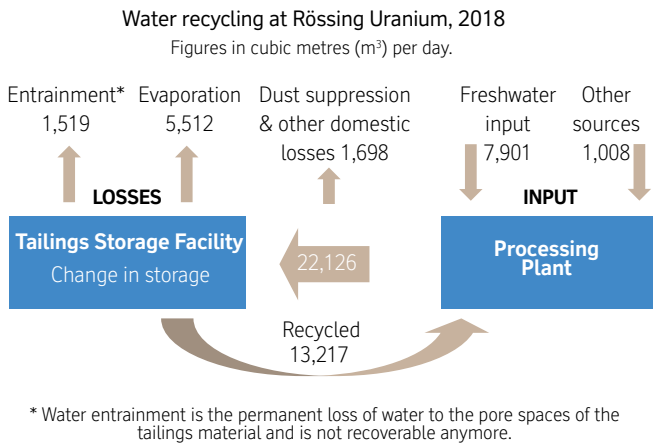
The total freshwater usage target for 2018 was set at 2,990,000 cubic metres (m<sup>3</sup>). The actual consumption of fresh water came to 2,883,953 m<sup>3</sup>, which is 3.68 per cent below the planned target.

Production challenges experienced were as a result of high calcium carbonate (calc) ore throughput. The high calc material requires the addition of fresh water to the system, which has a ripple effect that requires more water.

However, with sound water management systems and tactics driven by a culture of saving, monitoring, control and improvement, the fresh water consumption was minimised as far as possible. In total, 59.7 per cent of the total water usage was attributed to recycled water (Figure 11). Amongst others, the recent improvement on upgrading the seepage recovery systems at the cut-off trenches is attributed largely to our commendable recycling efforts.

As depicted in Figure 12, a steady increase was recorded from May, which required thorough management. On average, the business met the freshwater usage per tonne of ore milled of 0.33 with 0.326 m<sup>3</sup>/t recorded. Freshwater consumption performance from 1984 until 2018 is depicted in Figure 13.

**Figure 11: Overview of Rössing Uranium's water balance, 2018**



**Water-quality management programme**

Acknowledging our impacts and its inevitable influence on the environment, Rössing Uranium established a network of monitoring sites, which begins at the TSF, extending to the Khan and Swakop Rivers.

In 2018, infrastructure for our seepage-recovery systems was successfully upgraded including the installation of fully automated, state-of-the-art telemetry systems which enable real-time monitoring. The system is the last line of defence in a multi-layered seepage recovery mechanism and is designed to limit seepage from the TSF flowing towards the Khan River.

In consultation with the regulator, the Ministry of Agriculture, Water and Forestry, we changed our water quality monitoring programme to a more adaptive approach which provides a better visibility on the mine's seepage plume. We continue to use the same indicator of sulphate concentration greater than 3,000 parts per million (ppm) to define the seepage front. However, the new approach enables us to actively map the seepage front and reflect on the effectiveness of the mine's various recovery systems proactively.

The year also saw the structural refurbishment of the water-quality monitoring boreholes. This involved rehabilitating the aging monitoring borehole network which has been in existence for over 30 years.

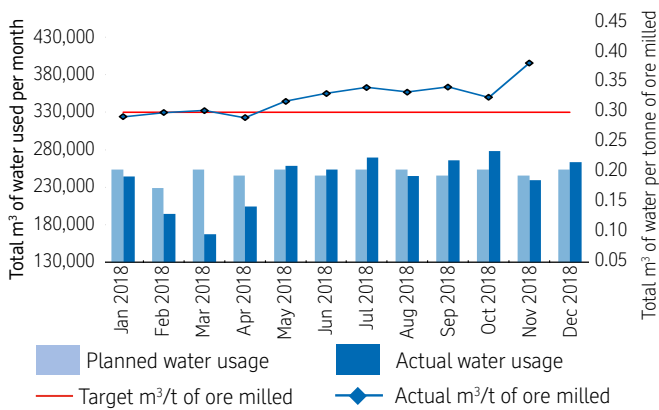
**Khan River water use**

Saline groundwater from the Khan River aquifer is used for the purpose of haul road dust suppression in the open pit. A total of 129,210 m<sup>3</sup> of water was abstracted from the aquifer during 2018, which is 15 per cent of the permitted 870,000 m<sup>3</sup> per year.

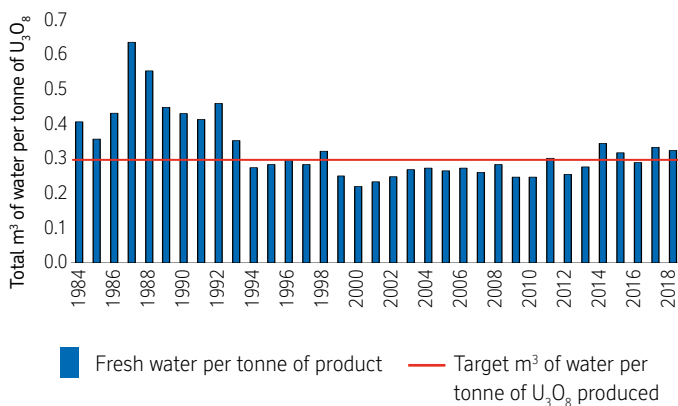
Although we abstract a low portion of the permitted volume, we continue to monitor the vegetation and water levels in the Khan River to prevent over-abstraction, based on the ecosystem response.

In compliance with the abstraction permit conditions, annual reports derived from the water-level and vegetation-monitoring programmes are sent to the Ministry of Agriculture, Water and Forestry's Directorate Water Resources Management.

**Figure 12: Freshwater use per month, 2018 (cubic metre)**



**Figure 13: Volume of fresh water consumed per tonne of U<sub>3</sub>O<sub>8</sub> produced, 1984-2018 (cubic metre)**



# Protecting the environment

## Air-quality management

Air-quality management in mining refers to all the actions Rössing Uranium undertakes to help protect the environment from the harmful effects of air pollution caused by mining activities.

Dust is generated during blasting, loading and dumping of ore and waste, as well as during the crushing and conveying of ore. Winds at speeds above 30 km/h potentially erode fine particles from rock dumps and the TSF and disperse them in the environment.

In addition, noise and ground vibrations are created during blasting which is conducted when required, while the machinery deployed in the open pit and the Processing Plant generates noise continuously.

Due to dust emissions and noise created during mining activities, there is a need to understand the impact it has on the people and the environment. Hence, the Air quality monitoring programme (AQMP) is in place to measure and monitor air pollutants in the mine area and its surroundings. This guides us in implementing programmes to help reducing these impacts.

### Environmental dust

The climatic conditions in our desert environment makes dust an inevitable reality in the mining operations such as ours; hence, environmental dust monitoring remains a focus area. Dust emissions are of concern to residents of Arandis and Swakopmund as effected environments, especially when high-velocity winds occur during the winter months.

To quantify dust fallout and allow mitigation when necessary, the Air quality monitoring programme (AQMP) is in place. Measures are taken to ensure that exposure levels do not exceed the adopted occupational limits and that the controls efficiently detect variations resulting from process changes.

Two types of dust are measured: firstly, a very fine inhalable dust invisible to the naked eye that is comprised of particulate matter less than 10 micron (known as  $PM_{10}$ ), and secondly, fallout dust, which is visible on the ground and comprised of larger particles, including  $PM_{10}$ .

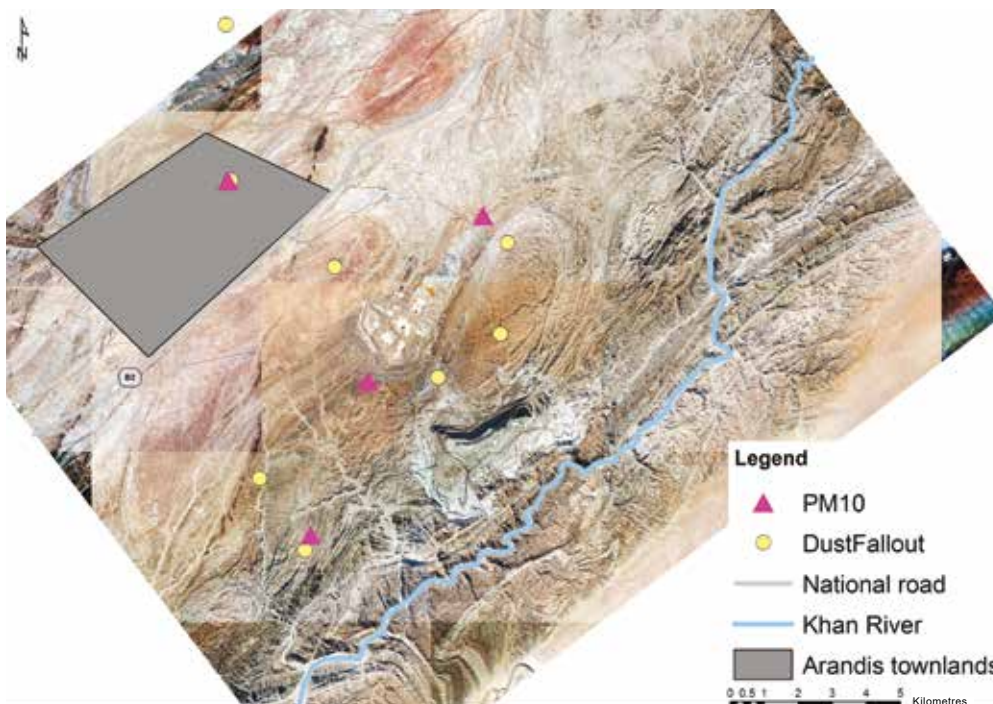


Figure 14: The map shows the  $PM_{10}$  dust monitoring network samplers and dust fall-out buckets.



The measure of PM<sub>10</sub> is the weight of particles less than or equal to ten micrometres in diameter in one cubic metre of air. When inhaled, these tiny particles are not filtered out by the body and therefore reach the lungs.

We continuously monitor PM<sub>10</sub> dust levels at four monitoring stations: three onsite and one in the nearby town of Arandis (see Figure 14, denoted by pink triangles).

The levels measured in 2018 showed that PM<sub>10</sub> dust concentrations at all stations were below the adopted World Health Organisation (WHO) Standard of 0.075 mg/m<sup>3</sup>, (see Figure 15).

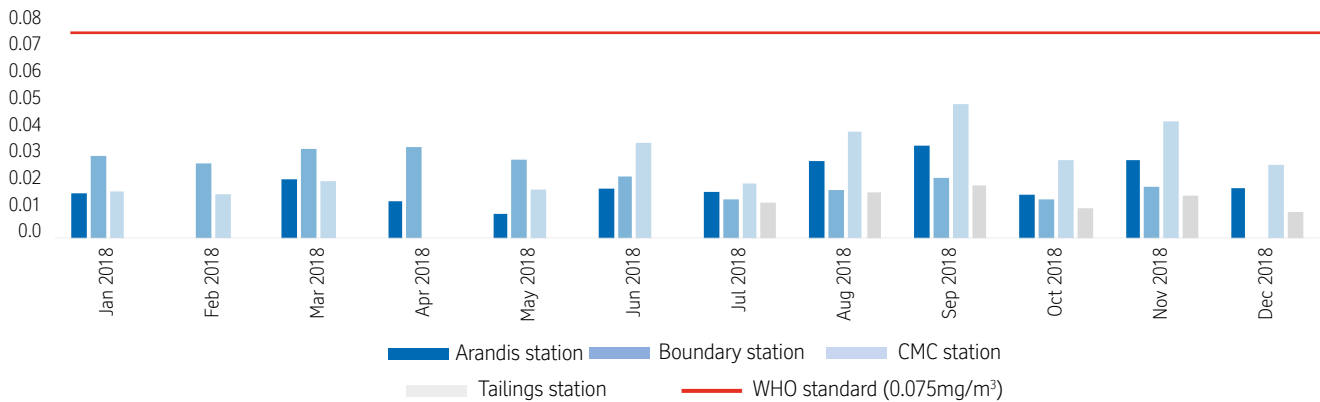
There were no records for the Tailings station and the Boundary station for the first months of the year as it was faulty.

Fallout dust is measured at six stations at different locations along the mine boundary (see the yellow dots on the map of Figure 14).

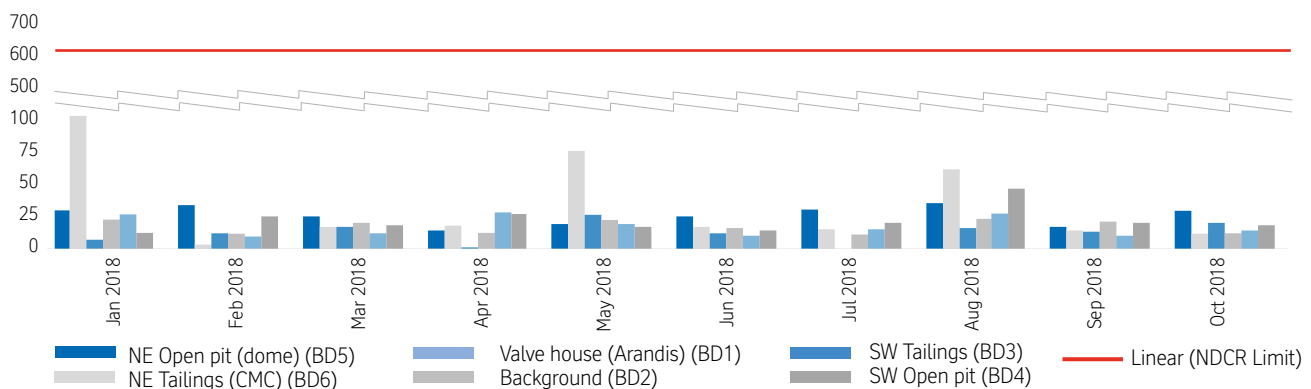
The dust-fallout limit is 600 mg/m<sup>2</sup> per day with an annual average target of 300 mg/m<sup>2</sup> per day. Values measured during 2018 at the six stations ranged between 1 and 102 mg/m<sup>2</sup> per day with an annual average of 22 mg/m<sup>2</sup> per day (see Figure 16).

All measured deposition rates were well below the adopted South African dust control regulation.

**Figure 15: Monthly average PM<sub>10</sub> dust concentration, 2018** (milligramme per cubic metre)



**Figure 16: Monthly average of daily dust deposition rates at the mine boundary, Jan-Oct 2018** (milligramme per square metre per day)





# Protecting the environment

## Noise and vibration

In the absence of Namibian legislation on environmental noise and vibration, Rössing Uranium has adopted to the Rio Tinto Environment Performance Standard E6 (Noise and vibration control).

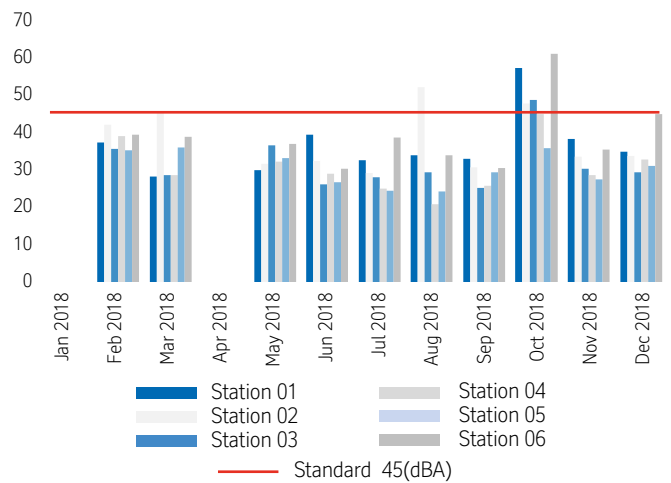
Noise and vibration is monitored at various points on- and offsite. Environmental noise is monitored according to a specific procedure and reported on a monthly basis.

Throughout 2018, both air-blast and ground vibration levels have been consistently below the limits of 134 dB and 12.5 mm/s respectively. Blasting is only carried out in the open pit, and monitored at two places, namely onsite and one offsite in Arandis.

Environmental noise is measured over snapshots of ten minutes at six different sampling points. There were seven events in 2018 during which noise levels, as recorded at the sampling points on the mine boundary, were above 45 dB(A) (A-Weighted decibels) and, thus, had exceeded the standard (Figure 17).

The events during which noise levels exceeded the standard are not ascribed to the operational activities at the mine, but are the result of natural sounds, passing vehicles and aeroplanes in the immediate vicinity of the sampling points. In April of the reporting year, no monitoring was done as the equipment was submitted for calibration.

**Figure 17: Environmental noise over a period of 10 minutes, 2018**  
(Leq I (equivalent continuous A-weighted sound pressure level, Leq I using the 'I' (Impulse)) 10 min (dBA))



Recorded data indicated that in 2018 noise levels exceeding the standard were not ascribed to operational activities at the mine but rather the result of natural sounds and trainsuch as passing vehicles and trains in the immediate vicinity of the monitoring point.

(Left) Environmental advisor: Air Quality, Vistorina Nangolo, sets up noise monitoring equipment at a monitoring point offsite to monitor environmental noise – the access road and railway track to the mine site are visible in the background.

# Protecting the environment

## Energy efficiency and greenhouse gas emissions

Rio Tinto strives to reduce greenhouse gas (GHG) emissions and improve energy efficiencies. In line with this responsibility, Rössing Uranium measures and manages its GHG emissions and energy intensities.

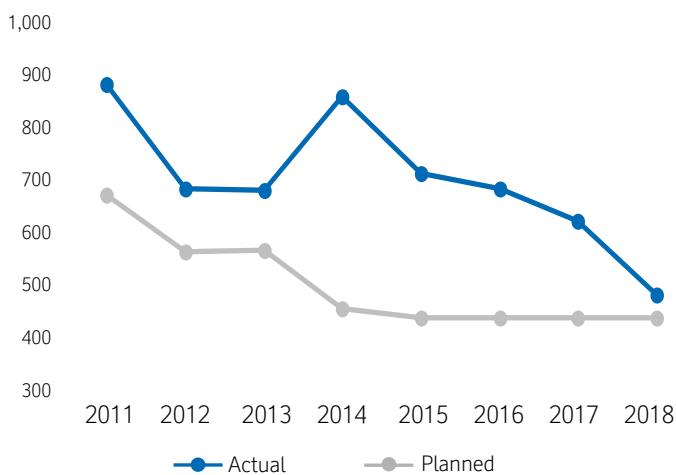
Sources of GHG emissions at Rössing Uranium include electricity and fuel consumption, the transportation of reagents and uranium oxide, blasting (using of explosives), waste management areas (the sewage plant, rubbish disposal and landfill site), and the extraction and processing of ore. The intensity of emissions is reported per unit of uranium oxide produced.

In 2018, the total energy consumption of the mine was 1,192,655.79 GJ for 2,479 tonnes of uranium oxide drummed. This converts to an annual energy consumption of 481 GJ per tonne (GJ/t) of uranium oxide produced, which is 10 per cent above the projection target of 438 GJ per tonne uranium oxide produced.

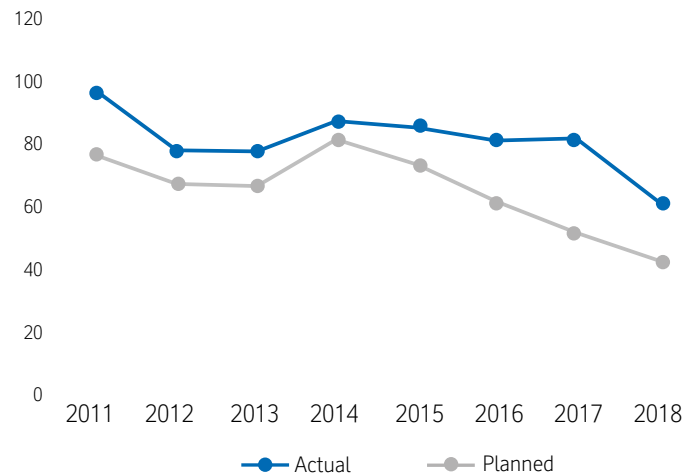
Energy consumption shows a declining trend over the past four years (see Figure 18 below). In 2018, the ore grade was the key factor as it has increased by almost 20 per cent from 2017 to 2018 (0.3 to 0.35kg/t).

Emissions of carbon dioxide (CO<sub>2</sub>) per unit of production in 2018 amounted to 60.04 tonnes of CO<sub>2</sub> equivalent per tonne (CO<sub>2</sub> - e/t) of uranium oxide, which was above the target of 43 tonnes CO<sub>2</sub> -e/t of uranium oxide for the year (see Figure 19 below).

**Figure 18: Energy consumption, 2011-2018**  
(gigajoules per tonne of U<sub>3</sub>O<sub>8</sub> produced)



**Figure 19: Carbon dioxide emissions, 2011-2018**  
(tonnes of CO<sub>2</sub> equivalent per tonne of U<sub>3</sub>O<sub>8</sub> produced)



## Waste management

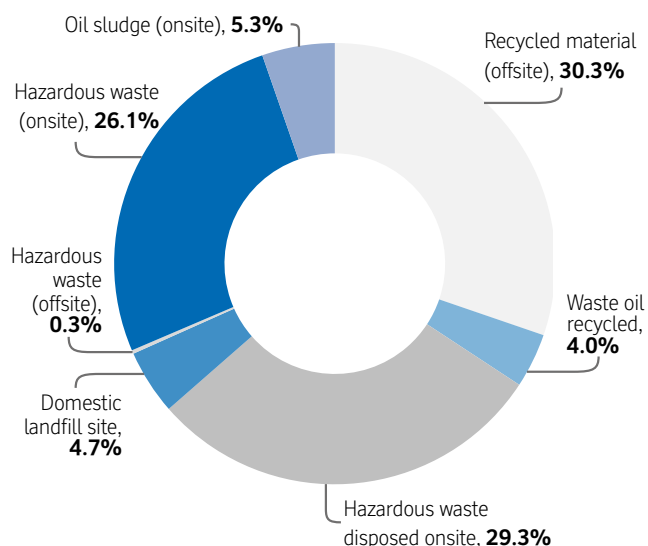
Mining operations are resource-intensive, consuming land, water, power, fuel, chemicals and construction materials to extract the metal held by the ore body. During the ore mining and metal refining processes, waste materials are produced which consist of mineral wastes in the form of rock and process tailings, and other waste products generated by the services that support the mining process.

### Mineral waste

During 2018, a total of 20.4 million tonnes of mineral waste were generated by the mine. This includes 8.9 million tonnes of tailings and 11.5 million tonnes of waste rock. In the previous year, more tonnages were generated – 24.1 million tonnes. At the end of December 2018, a total cumulative mineral waste stored onsite was 955.0 million tonnes of waste rocks and 427.1 million tonnes of tailings.

Tailings were deposited on the existing TSF, mainly in the reactivated deposition areas that were prepared in 2015. The tailings footprint remained the same as in 2017 when it extended by 0.6 ha, or 0.1 per cent, into a partially disturbed area immediately north of the facility. The rock waste was deposited on top of the existing rock dumps close to the open pit without the footprint being extended.

**Figure 20: Waste generated and disposed of, 2018**  
(percentage)



The total mineral waste inventory generated by Rössing Uranium over the past 42 years now consists of 1.40 billion tonnes. The mineral waste facilities cover a total area of 1.377 ha north-west of the Khan River. This reflects no change from 2017 as the storage facilities only gained in height but not in footprint. These facilities are about the same size as the town of Swakopmund, but are being managed in such a way that they are not visible to the nearby Arandis community, or from the B2 highway.

### Non-mineral waste

Non-mineral waste materials include, for example, waste water not generated from the mineral ore, scrap materials, redundant conveyor belts, domestic waste, used oils and lubricants from maintenance activities. The aim of managing waste at the mine is to ensure that the waste generated onsite is reused, recycled, recovered and disposed of in accordance with Rio Tinto standards, applicable laws, regulations and permit conditions.

An integrated waste contractor was appointed in June 2016 to handle recyclable waste materials onsite such as scrap metal, wooden pallets and packaging materials (including paper, plastic and metal containers).

During 2018, a total of 1,312 tonnes of recyclable waste material (mainly used oil and scrap metal) were removed from site by the contractor to the offsite recyclers. Domestic waste is transported from the mine site to the contractor's Swakopmund waste sorting facility before it is dispatched to Windhoek for recycling and re-use at the contractor's refuse derived fuel plant. The non-recyclable materials are disposed of at the landfill site of the Municipality of Swakopmund.

The contaminated waste generated on the mine includes all waste from the Processing Plant area. In 2018, 1,272 tonnes of contaminated solid wastes were disposed of on the TSF, while 231.3 tonnes of oil sludge soil was disposed at the bioremediation facility for treatment.

Hazardous waste generated onsite includes oils, greases, redundant chemicals and other items such as fluorescent tubes and batteries. A total of 173 tonnes of used oil were sent offsite for recycling, while 11 tonnes of asbestos were disposed at the Walvis Bay hazardous landfill site.

Medical waste generated onsite is transported from the mine site to Medix in Arandis before it is dispatched to Walvis Bay for incineration. During 2018, a total of 0.43 tonnes of medical waste was incinerated.

## Land-use management

The disturbance of land is an inevitable consequence of any mining activity. It is our objective to keep expansions of the footprints of the open pit, the rock disposal areas and the tailings facility to a minimum.

As a large-scale open pit operation, Rössing Uranium's footprint is characterised by artificial landforms, which include its waste rock dumps, an open pit and a tailings facility. Together with the Processing Plant, offices and linear infrastructure such as power lines, pipelines and roads, our total footprint is about 2,456.44 ha.

Sustainable land management is an important tool to promote environmental management and sustainable development. Rössing Uranium has developed a Land use management plan that governs the use of land within the Rössing mining license area.

In 2018, the total footprint at Rössing has not increased due to the mineral waste disposal strategies of the rock dumps and the tailing facilities. There were no new projects on pristine land.

## Progressive rehabilitation

The Rio Tinto environmental standard *E14 – Land disturbance control and rehabilitation* requires business units to undertake rehabilitation as soon as possible on land that is no longer needed for current or future operational requirements.

About 10 per cent of Rössing's total operational footprint is available for progressive rehabilitation before closure. The rest of its total operational footprint is still in operational use; rehabilitation plans of these areas are addressed in the closure plan. Progressive rehabilitation refers to reshaping and re-vegetation works undertaken during the life of a project as soon as practicable following the cessation of use of an area.

In 2018, about 100 hectare of the upper Dome gorge area was earmarked for progressive rehabilitation. The upper Dome gorge area had been substantially disturbed during the construction phase of the mine. In addition to quarrying sand from the river-bed and gravel from hard rock outcrops, flood retention structures, pipelines leading to the temporary contractor camp, power lines and exploration tracks were established in the early 1970s.

The rehabilitation involved demolishing redundant infrastructure and facilities, clean-up activities of waste and litter, removal of buried waste, landscaping (slope stability and erosion protection) and ecological restoration, carried out by a local contractor.



## Closure planning

Over 350 tonnes of waste from dismantled facilities, litter and buried rubble were removed in this exercise and disposed on the mine's landfill area. Estimating the depth and quantities of buried waste is a big challenge, especially for waste that was buried many years ago. A successful trial using ground-penetrating radar was carried out and identified that it is possible to map buried historical waste in the area without using destructive methods.

Undertaking progressive rehabilitation facilitates the development of the knowledge and capability to meet the rehabilitation targets and restoration criteria. It also aids in the best techniques and options for rehabilitation, especially in the hyper-arid area we operate in. It furthermore leads to timely adjustments in operating costs and budgeting for future work.

Landscaping and ecological restoration is earmarked for 2019. Seeding was identified in the past through research as a challenge for ecological restoration. In 2018, a seeding assessment option was completed with a plan for restoration research and trials including seed collection.

Seeding is one of the methods to accelerate ecological restoration of an area. It is important to us to determine the viability of ecological restoration to reach our objectives at closure of rehabilitating the mine site to a state of erosional and geotechnical stability and ecological functioning.

The current mine plans foresee a cessation of production seven years from now at the end of 2025. The open pit will not be backfilled; it will remain a mining void into the future. The Tailings Storage Facility will be covered with waste rock to prevent dust emissions and rainwater erosion. Rössing Uranium will continue recovering tailings seepage, but instead of reusing it for mining processes, it will be allowed to evaporate.

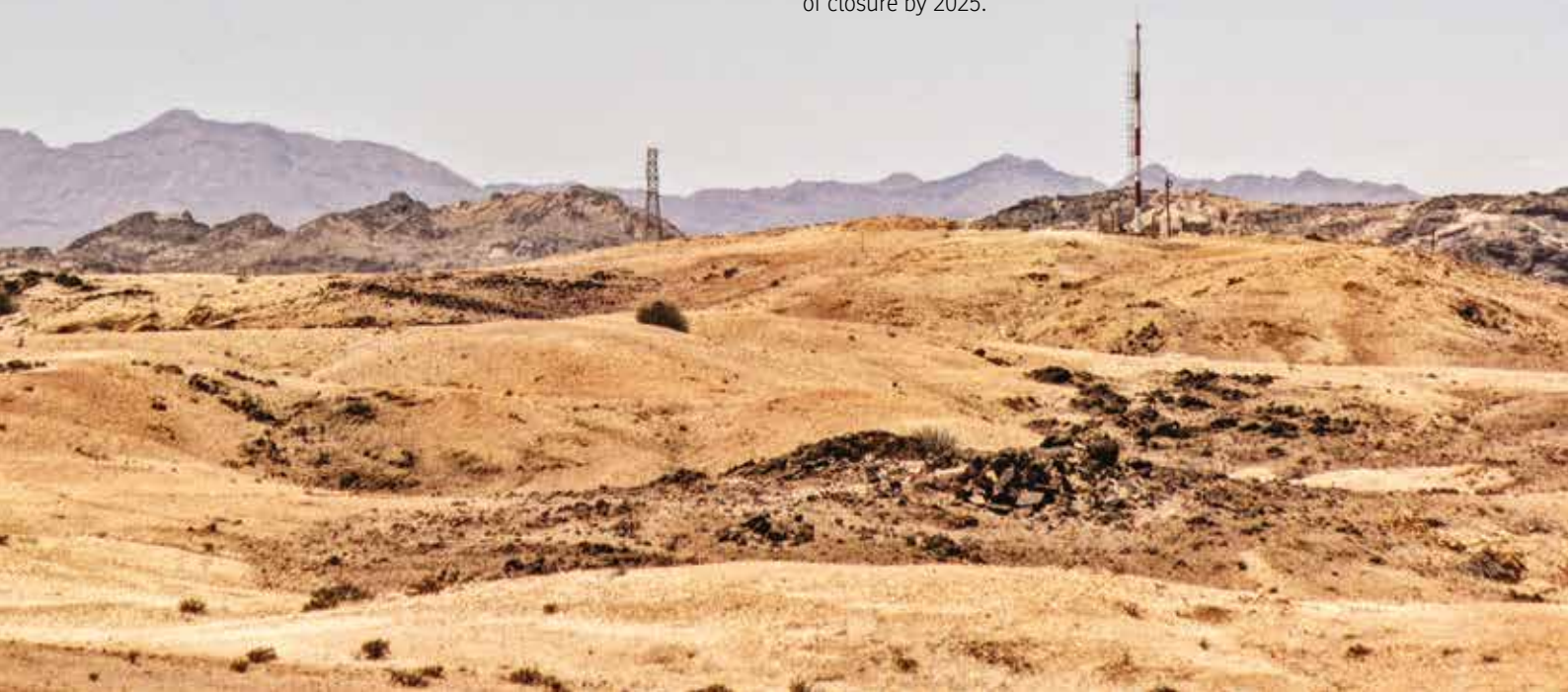
The Processing Plant and the mine's infrastructure will be demolished. Recyclable materials will be decontaminated before selling them. Materials not leaving site will be disposed of safely and sufficiently covered so that they cannot cause harm.

To achieve these objectives and targets, Rössing Uranium developed implementation plans for mitigatory measures and calculated the associated closure costs. A detailed closure plan at pre-feasibility level, containing more technical detail and higher cost-estimation accuracy than the current plan, will be developed in 2019 and 2020.

The establishment of the Rössing Environmental Rehabilitation Fund, which provides for expenditures associated with Rössing Uranium's closure, complies with statutory obligations and stipulated requirements of both the Ministry of Mines and Energy and the Ministry of Environment and Tourism.

Accordingly, the fund agreement states that each year the Company will make a contribution to the fund to provide for the eventual closure of the mine.

At the end of December 2018 the fund had a cash balance of N\$845 million. In 2018, the total cost of closure, excluding retrenchment costs, was estimated at N\$1.56 billion. The mine will make additional payments to the fund each year to provide for the eventual total cost of closure by 2025.



# 30 years of Khan River vegetation monitoring

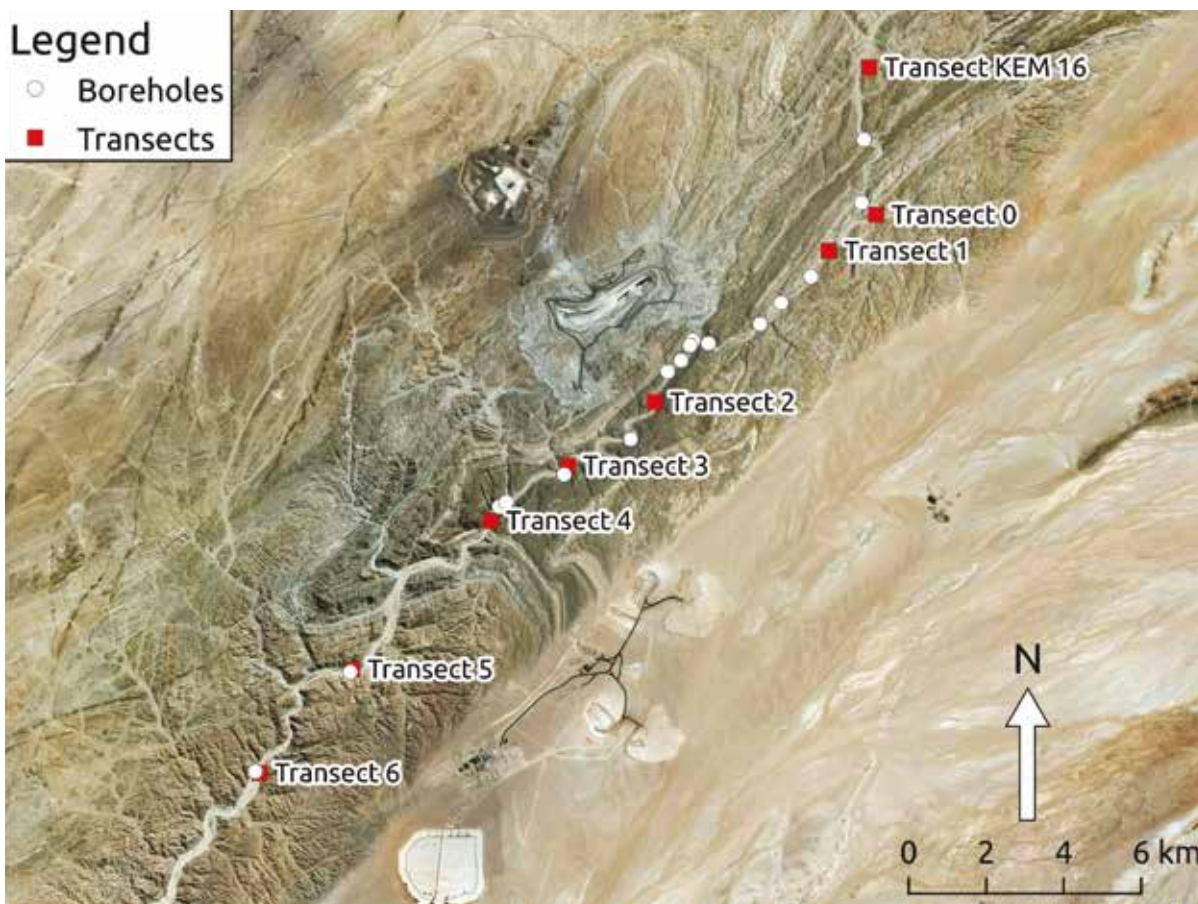
## Protecting the environment

Since the Rössing Uranium mining operation started in 1976, it has extracted brackish water from the Khan River for industrial purposes. In 2018, Rössing reached a milestone of 30 years of commitment of monitoring the riparian vegetation along the mine frontage of the Khan River.

Early research indicated that the abstraction could impact the dependent vegetation and associated biodiversity of the Rössing compartment of the Khan River. Rössing hence requested the Council for Scientific and Industrial Research (CSIR) South Africa to develop a monitoring programme that would assess the impacts of water abstraction from the Khan River on the vegetation in the river bed.

The water abstraction was then permitted by the Department of Water Affairs of the Ministry of Agriculture, Water and Forestry by granting an abstraction permit with the condition that the Khan River vegetation is regularly monitored. Accordingly Rössing implemented the recommended monitoring programme in 1988 which is still in place.

The first objective of the programme is to ensure that changes in the vitality of the trees due to ground water abstraction are noticed early enough to adjust the pumping rate and to prevent irreversible damage to the vegetation, as well as to ensure compliance to the Khan River abstraction permit conditions.



Location of transects and production boreholes (Drawn: Sokolic, 2018)





The mine is located in a hyper-arid environment and we have monitored the impact of abstraction from the Khan River for the past 30 years. To date, no trees have been observed deteriorating due to the water abstraction.

The programme consists of monitoring eight sites of which six (transect 1-6) were chosen in 1988 whilst transect 0 and KEM16 were chosen in 1993 and 1996 respectively when new production holes were introduced. Each transect has about eight trees that are identified and tagged. The monitoring is carried out twice a year, in March and September respectively. The transects are positioned over a total distance of 22km along the banks of the Khan River (see map on previous page).

The trees' general conditions are assessed during the survey by recording the presence of flowers, production of pods, as well as assessing the leaves' conditions and estimating the proportion of dead branches. Fixed point photography is also employed during each survey. Each tree's trunk circumference and height are measured. The results are reported annually to the Department of Water Affairs. Over the years the monitoring programme has informed management decisions to reduce the number of production boreholes from ten to two.

In 2018, a qualitative research approach was used to evaluate the Khan River riparian vegetation monitoring programme, in respect of its effectiveness as a case study for a master's thesis. The research assessed to which extent the monitoring programme has been effective to satisfy Rössing's management requirements.

The programme was reviewed against set criteria by gathering information through semi-structured interviews with key informants and review of records.

Previous research on evaluation criteria has shown that there is no one-size-fits-all approach that will satisfy all monitoring programmes, but certain key characteristics have been proven to be instrumental in the effectiveness of a monitoring programme. The findings of the present review revealed that the Khan River riparian vegetation monitoring programme's effectiveness can be attributed to continuous funding, committed leadership, the sharing of data with research institutes and regular review ensuring legal compliance over the years.

Long-term monitoring programmes are a valuable part of environmental management. They provide evidence-based information that informs policy, environmental management decisions and contribute to new knowledge. Long-term monitoring provides insight into changes in the ecosystem that cannot be determined from short-term research.

The Khan River vegetation monitoring programme will continue for the years to come, at least as long as the mine abstracts water from the Khan River.

## Corporate governance at Rössing Uranium



We are committed to doing business with the highest level of integrity, transparency and accountability and with business partners who share our values. We build our business from a foundation of compliance with relevant laws, regulations and international standards, and in line with various Rio Tinto and Rössing guidelines on leading business practices.

In line with our corporate values, Rössing Uranium is committed to the responsible stewardship of natural resources. We aim to be a leader in environmental stewardship and to maintain our reputation as a responsible corporate citizen. This aim can only be realised if we understand and appreciate the natural resources which are located in the areas in which we operate and if we use them in a manner that minimises the mine's impact, even after mining operations will have ceased.

### The Rio Tinto ethics and integrity programme

Rössing Uranium has adopted the Rio Tinto ethics and integrity programme. This programme ensures that the mine meets the Group's integrity and compliance commitment, as set out in The way we work, which dictates our work ethic and our global code of business conduct and applies to all our employees and contractors. The way we work outlines how we embody both our purpose and strategy. It clarifies how we should behave, in accordance with our values of safety, respect, integrity and excellence.

### The board of directors

The board of directors executes a mandate received from the shareholders. This mandate ensures that Rössing Uranium operates as a world-class, responsible company which has assembled an executive team to achieve specific targets. The board runs the company in accordance with the mandate outlined in Rössing Uranium's Articles of Association, ensuring that stakeholder interests are balanced and receive due attention.

#### Board of directors as at 31 December 2018

Board of directors as at 31 December 2018	Role
F L Namene	Chairperson, independent non-executive director
R J B Storrie	Managing director (executive director)
W Duvenhage	Rio Tinto plc shareholder representative; non-executive director
H P Louw	Independent non-executive director
G N Simubali	Government of the Republic of Namibia's shareholder representative; non-executive director
C W H Nghaamwa (alternate to G N Simubali)	Government of the Republic of Namibia's shareholder representative; non-executive director
D S Kunji-Behari	Rio Tinto plc shareholder representative; non-executive director
L Dechambenoit (alternate to D S Kunji-Behari)	Rio Tinto plc shareholder representative; non-executive director

# Corporate governance at Rössing Uranium

Rössing Uranium has a unitary board and the roles of chairperson and managing director are separated and distinct. The number of board members and stature of the independent directors ensures significant decisions can be made with sufficient independence. The board is comprised of members who possess a wide spectrum of skills, experience and diversity, which will best serve the interests of the company and its stakeholders.

The board held two special and four regular meetings during the year under review. The members of the board of directors are listed in the table on the previous page.

## Functions of the board

A board charter governs the functions of the board of directors, while the Nomination and Remuneration Committee monitors the board's performance.

The board adopts corporate strategy, plans of action and major policies, and monitors operational performance. Its duties include identifying risks to the company's sustainability, monitoring risk management and internal controls. It also oversees compliance management, corporate governance, business plans and key performance indicators which include non-financial criteria and annual budgets.

The board is also responsible for maintaining favourable and productive relationships with stakeholders. All directors bear full fiduciary responsibility and are obliged to exercise care in all company matters commensurate with their ability and skills. The board meets quarterly and otherwise when circumstances require.

## Board Audit and Risk Committee

The Board Audit and Risk Committee was established as a sub-committee of the board of directors and acts in accordance with an approved mandate under terms of reference, and assists the board to fulfil its oversight responsibilities relating to:

- the safeguarding of assets;
- the operation of adequate systems and control processes;
- the preparation of accurate financial reports and statements in compliance with applicable legal requirements and accounting standards;
- the preparation of accurate and reliable operational reports and statements in compliance with applicable legal requirements and operational standards;
- Rössing Uranium's compliance with relevant laws and regulations;
- Rössing Uranium's compliance with established policies and procedures; and
- the effective implementation and compliance with Rössing Uranium's risk-management process.

In performance of its duties, the Board Audit and Risk Committee maintains effective working relations with the board of directors, management, internal and external auditors and other assurance providers and is entitled to refer to the findings of experts, which shall include internal and external auditors.

## Nominations and Remunerations Committee

The Nomination and Remuneration Committee is appointed by the board of directors to assist in fulfilling its responsibility to the company's shareholders regarding the selection, nomination, performance, remuneration and succession of directors.

The Nomination and Remuneration Committee determines a remuneration structure for the board of directors and members of the sub-committees.

The remuneration rates are subjected to an annual review in February and any increases are submitted to the board of directors for presentation to the Annual General Meeting for shareholder approval.

The primary duties of the Nomination and Remuneration Committee are to:

- identify qualified individuals as potential members of the board of directors;
- make recommendations to the board relating to the nomination and selection of directors;
- review the findings of performance assessments of board members;
- ensure that appropriate procedures are used to assess the remuneration of the chairperson, executive and non-executive directors, board committees and the board as a whole;
- review the policy for executive remuneration and for the remuneration and benefits of individual executive directors;
- review plans for the succession for board members; and
- review reporting disclosures related to Nomination and Remuneration Committee activities to ensure these disclosures meet the board's disclosure objectives and all relevant compliance requirements.

Functions of the committee will remain flexible so that it can react to changing conditions effectively and assure the board of directors and shareholders that the company can attract, remunerate and retain directors of the highest calibre.

# Corporate governance at Rössing Uranium

## Special-purpose vehicles

The company established two special-purpose vehicles, namely the Rössing Foundation and the Rössing Environmental Rehabilitation Fund, which are managed independently of Rössing Uranium by their own trustees. Members of Rössing Uranium's board are among these trustees.

The trustees of the Rössing Environmental Rehabilitation Fund review the closure plans and trust funds to make provision for the eventual closure and rehabilitation of the mine site.

Rössing Uranium established the Rössing Foundation in 1978 through a Deed of Trust to implement and facilitate its corporate social responsibility activities in communities of Namibia.

## The Corporate Governance Code for Namibia (NamCode)

Effective 1 January 2014, Rössing Uranium adopted the NamCode, which is the Corporate Governance Code for Namibia, based on international best practices and the King Code of Governance for South Africa, King III.

Rössing Uranium voluntarily adopts the principles of the code which is a prerequisite for all companies registered on the NSX (Namibian Stock Exchange), which Rössing Uranium is not. In instances where we do not conform to the code, explanations have been provided, thereby adopting the 'apply or explain' principle as set out in the NamCode. Rössing Uranium's deviations from NamCode are listed in the table below.

Deviations from the NamCode	
NamCode 16.1: The chairperson should be appointed by the board every year after carefully monitoring his independence and factors that may impair his independence.	Rössing Uranium Articles of Association Art. 82: The chairperson is elected for a period determined by the directors. If no period is designated, the chairperson shall hold office until otherwise determined by the directors.
NamCode 16.10: There should be a succession plan for the position of the chairman.	Nomination and Remuneration Committee: The need was to identify and to appoint a deputy chairperson but no appointment was made to date.
NamCode 18.3: The board should comprise of a majority of non-executive directors, who should be independent as this reduces the possibility of conflicts of interest and promotes objectivity.	The current board is composed of six directors of which five are non-executive directors. Only two of these are independent while three are shareholder representatives. This is as a result of the resignation of independent directors and the board made a decision not to make additional appointments.
NamCode 18.12: As a minimum two executive directors should be appointed to the board, the chief executive officer (CEO) and a director responsible for the finance function (CFO). This will ensure that there is more than one point of contact between the board and management.	In line with a board decision to reduce its size, the chief financial officer (CFO) is available at all meetings to answer questions and make presentations to the board.
NamCode 26: Companies should disclose the remuneration of each individual director and certain senior executives.	The remuneration of directors and senior management is disclosed to shareholders. Rössing Uranium does not propose to disclose this information to the public.
NamCode 27: Shareholders should approve the company's remuneration policy.	Remuneration is reviewed in detail by the <b>Nomination and Remuneration Committee</b> and approved in principle by shareholders.

### **Financial statements**

The directors are responsible for monitoring and approving the financial statements to ensure that they fairly represent the company's affairs and its profits or losses at the end of each financial year. Independent auditors are responsible for expressing an opinion on the fairness with which these financial statements represent the company's financial position.

Rössing Uranium's management prepares the financial statements in accordance with the International Financial Reporting Standards (IFRS) and in a manner which the Namibian Companies Act (Namibian Companies Act (28) of 2004, amended 2011) requires. Independent auditors found the company's statements on appropriate accounting policies were applied consistently and supported by reasonable and prudent judgements and estimates.

### **Independence of external auditors**

The independent auditors, PricewaterhouseCoopers, audited Rössing Uranium's annual financial statements. The company believes that the auditors have observed the highest professional ethics and has no reason to suspect that the firm has not acted independently of the company. The Board Audit and Risk Committee has confirmed the independence of the external auditors for the reporting period.

### **Company secretary**

The company secretary, Glynis Labuschagne, is suitably qualified and has access to the company's resources to effectively execute her duties. She provides support and guidance to the board in matters relating to governance and compliance.

### **Risk management**

Risk management is a fundamental feature of the company's business activities. The company keeps risk management at the centre of its activities and cultivates a culture in which risk management is embedded in the daily management of the business.

The board acknowledges its overall responsibility in the process of risk management as well as responsibility to review its effectiveness.

Executive management is accountable to the board for designing, implementing and monitoring the process of risk management, as well as for integrating it with the company's day-to-day activities. To this end, the company has fully adopted and implemented the Rio Tinto Group risk policy and methodology.

### **Internal audit**

The company's internal audit function performs an independent appraisal activity with the full cooperation of the board and management. It has authority to independently determine the scope and extent of the business activity which is to be performed. Its objective is to assist executive management with the effective discharge of its responsibilities by examining and evaluating the company's activities, resultant business risks and systems of internal control.

The mandate of the internal audit function requires it to bring any significant control weaknesses to the attention of management and the Board Audit and Risk Committee for remedial action.

The internal audit function is outsourced to KPMG. The internal audit reports functionally to the company's Board Audit and Risk Committee and administratively to the company secretary.

### **Internal control**

Internal control comprises methods and procedures management implemented to ensure:

- compliance with policies, procedures, laws and regulations;
- authorisation, by implementing the appropriate review and approval procedures;
- reliability and accuracy of data and information (decision-making at Rössing Uranium needs to be grounded in accurate, timely, useful, reliable and relevant information);
- effectiveness and efficiency, which all operations at Rössing Uranium need to embody, using resources economically, while adding value to the economy. Rössing Uranium achieves this objective by continuously monitoring its goals and by embodying the credo, "that which is measured is controlled"; and
- safeguarding of assets, which need to be protected from theft, misuse or use for fraudulent or destructive purposes.

The directors are responsible for maintaining an adequate system of internal control. It is understood that such a system reduces, but cannot entirely eliminate, the possibility of fraud or error.





## Our value addition and summary annual financial statements

The motivation to do value-added reporting is linked to the overall process of disclosure regarding financial information. By sharing information about the value Rössing Uranium adds through its operations and business activities, the mine aims to bring into focus all aspects of the impact the company makes on the economy of the region in which it operates, as well as on the country's economy as a whole.

Our value-added statement (page 64) reflects the wealth created through the sale of our uranium oxide production, payments for services to suppliers, taxes to the Namibian Government, payments to employees and the investments made in Namibian communities.

(Left) Material operator, Kleophas Tjongarero, safely operating equipment in the mine's Plant Store. As a major employer and purchaser of goods and services, we make a significant annual contribution to economic development in the Erongo Region, in particular, and to Namibia at large.

### **How Rössing Uranium adds value**

Sustainable development is underpinned by sustainable economies. Our continuing operations are based on our ability to secure access to land, people and capital. We use our economic, social, environmental and technical expertise to harness these resources and create prosperity for our stakeholders.

As a major employer and purchaser of goods and services, we make a significant annual contribution to economic development in the Erongo Region, in particular, and to Namibia at large. Rössing Uranium gives rise to a significant 'multiplier effect' — the phenomenon whereby spending by one company creates income for and further spending by others.

Given the prevailing market conditions, our primary focus was to procure goods and services as cost-effectively and efficiently as possible and to focus on maximising our contribution to the local economy.

Despite the current financial strain under which we operate, Rössing's total expenditure for goods and services for our operations was N\$2.49 billion during 2018. As was the case during the previous reporting year, most of it was with Namibian-registered suppliers, amounting to N\$1.9 billion, accounting for 78 per cent of our total procurement expenditure.

We spent N\$305 million of total procurement with international suppliers, representing 12 per cent of our procurement expenditure, while we spent N\$250 million with South African suppliers, representing 10 per cent of our total expenditure.

Rössing Uranium remains committed to supporting local suppliers with the main focus on developing SMEs. The bulk of what we spend in Namibia remains in the Erongo (44 per cent) and Khomas (45 per cent).

We invested N\$13 million in Namibian communities during 2018, either directly or through the Rössing Foundation.

The review period also saw us continue to demonstrate our value to Namibia through contributions to the fiscal authorities. Rössing Uranium paid the Government N\$87.5 million in royalty tax, and N\$141.6 million in pay-as-you-earn tax on behalf of employees. No corporate tax or dividends were paid in 2018.

Payments to public enterprises, such as NamWater and NamPower, amounted to N\$456.1 million, which includes the Vocational and Education Training levy of N\$7.0 million paid to the Namibia Training Authority. We also spent N\$591.9 million in net salaries and wages.

### **Preferential procurement and enterprise development**

With the aim of securing economic growth, prosperity and the human dignity of all Namibians, the Government of Namibia developed the Harambee Prosperity Plan and the national, broad-based New Equitable Economic Empowerment Framework (NEEEF).

We remain committed to support Government development initiatives and policy frameworks. As such, we support local suppliers with the main focus on developing small- and medium-sized enterprises, equipping them with the necessary skills and knowledge to compete with international suppliers.

During the reporting period, we purchased N\$100 million worth of goods and services from previously disadvantaged Namibians and local small- and medium-sized enterprises.



# Our value addition and summary annual financial statements

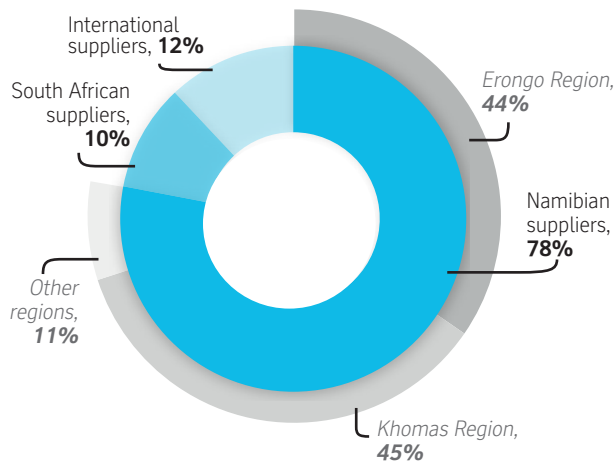
## Summary of Rössing Uranium's value addition

Our business provides a strong base for economic growth in communities located in the Erongo Region and in Namibia as a whole. Our economic contribution comprises the value we add by paying wages, employee benefits and Government taxes and

royalties, as well as by making dividend and interest payments, and by retaining capital to invest in the growth of the mine.

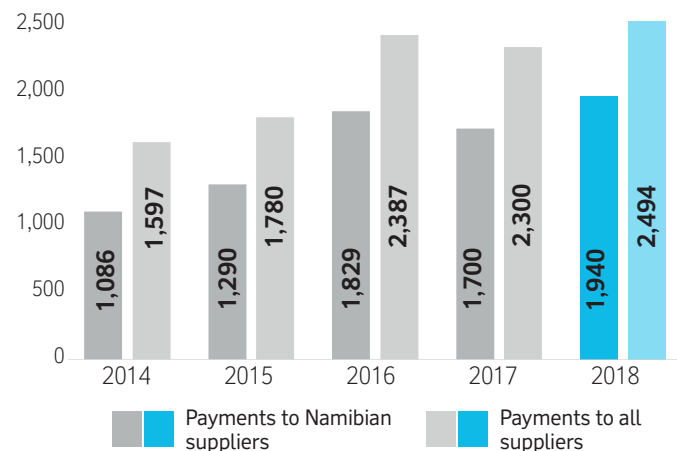
In addition, we make significant payments to our suppliers for goods and services, both locally and nationally. The graphs below highlight some of the key socioeconomic contributions we have made to Namibia over the past five years, 2014 to 2018.

### Distribution of Rössing Uranium's procurement expenditure, 2018 (percentage)



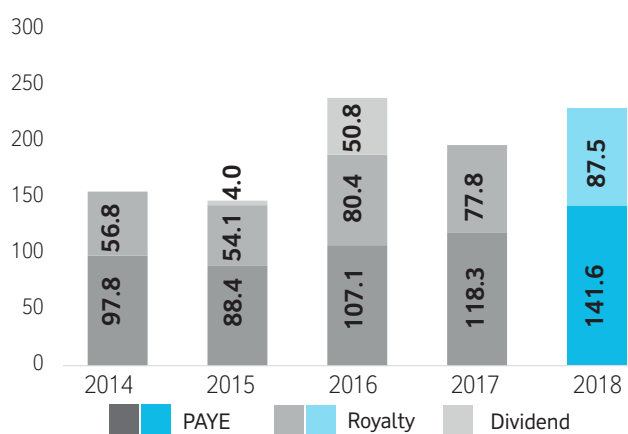
### Payments to suppliers, 2014 to 2018

(N\$ million)



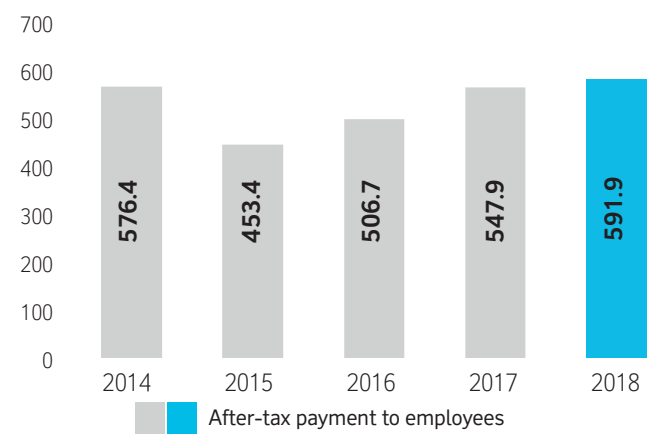
### Contribution to Government revenue, 2014 to 2018

(N\$ million)



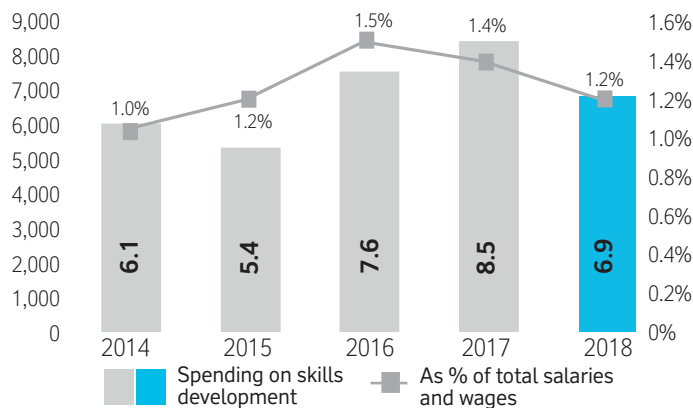
### After-tax payments to employees, 2014 to 2018

(N\$ million)



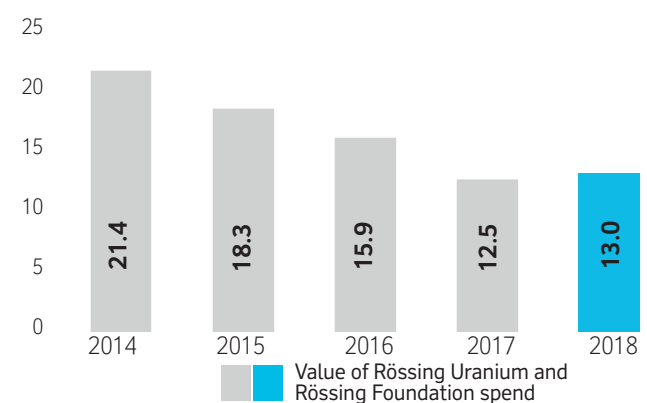
### Contribution to skills development, 2014 to 2018

(N\$ million and percentage)



### Contribution to Namibian communities, 2014 to 2018

(N\$ million)



Our value addition						
Stakeholders' Value Added Statement <sup>1</sup>	Notes	N\$'000	N\$'000 (Restated)	N\$'000	N\$'000	N\$'000
For the year ended		2018	2017	2016	2015	2014
Turnover		2,835,698	2,695,803	3,070,853	1,841,012	2,405,747
Other income — sale of substitute concentrate		-	325,023	-	-	-
Less: Purchased material and services from non-stakeholders		1,547,543	1,710,585	1,830,175	1,347,984	1,597,397
<b>Total value added</b>		<b>1,288,155</b>	1,310,241	1,240,678	493,028	808,350
Investment income		82,402	61,903	46,050	39,361	38,735
Release of foreign denominated cash		101,702	-	1,487,750	-	-
<b>Total wealth created</b>		<b>1,472,259</b>	1,372,144	2,774,478	532,389	847,085
Employees	1	733,504	693,259	613,842	541,761	674,138
Providers of equity capital		-	-	1,436,906	111,798	-
Providers of loan capital		-	-	-	-	-
Government	2	551,762	506,466	523,900	371,891	414,288
The Rössing Foundation		12,000	12,000	12,000	12,000	1,394
Reinvested in the Group	3	174,993	160,419	187,830	(505,061)	(242,735)
<b>Total wealth distributed</b>		<b>1,472,259</b>	1,372,144	2,774,478	532,389	847,085

<sup>1</sup> Stakeholders in this context: Shareholders, Government, lenders, employees and the Rössing Foundation

Notes to the Stakeholders' Value Added Statement						
1. Employees		733,504	693,259	613,842	541,761	674,138
- Net salaries and wages		591,925	574,911	506,684	453,379	576,379
- Pay-as-you-earn (PAYE) taxes		141,579	118,348	107,158	88,382	97,759
2. Government		551,762	506,466	523,900	371,891	414,288
- Dividend		-	-	50,844	3,956	-
- Erongo Regional Electricity Distributor		1,262	1,701	2,008	2,372	2,584
- Mining royalty tax		87,511	77,833	80,352	54,132	56,828
- NamWater		145,890	136,887	128,680	101,129	142,392
- NamPort		2,731	2,551	2,740	2,271	2,064
- NamPower		277,560	257,389	232,043	178,852	183,188
- Rates, taxes and licences		320	231	1,388	3,239	2,492
- Namibia Training Authority		7,017	6,432	5,594	5,013	4,756
- Receiver of Revenue		-	-	-	-	-
Current tax		-	-	-	-	-
Export levy		7,887	3,592	-	-	-
- Road Fund Administration		1,610	1,454	1,383	1,349	1,229
- Telecom Namibia		3,067	2,853	4,375	2,683	3,843
- TransNamib		16,907	15,543	14,493	16,895	14,912
3. Reinvested in the Group		174,993	160,419	187,830	(505,061)	(242,735)
- Depreciation		8,501	418,004	333,697	279,842	262,876
- Retained earnings		166,492	1,949	107,099	(384,780)	(90,877)
- Deferred stripping capitalised		-	(114,501)	(282,538)	(227,591)	(340,564)
- Deferred tax		-	(145,033)	29,572	(172,532)	(74,170)

## SUMMARY ANNUAL FINANCIAL STATEMENTS

### COMPANY OPERATIONAL AND FINANCIAL REVIEW AS AT AND FOR THE YEAR ENDED 31 DECEMBER 2018

#### Financial performance

Revenue increased by 5% compared to the previous year. The margin scrape mechanism was not used during 2018 due to the increase in uranium spot price, making material purchases more expensive. Costs were slightly reduced from 2017. The combination of these elements resulted in a net profit after tax of N\$166 million (2017: net profit after tax of N\$2 million) from normal operations. Further details of the company's financial performance are set out in the summary statement of comprehensive income.

#### Operations

Production of uranium oxide for the year was 2,479 metric tonnes compared to 2,110 metric tonnes in 2017. A total of 19,789,315 metric tonnes (2017: 25,157,848 metric tonnes) were mined from the open pit and 8,851,288 metric tonnes (2017: 8,962,922 metric tonnes) of ore were milled. The mine is currently operating on an approved life-of-mine plan to 2025 (2017: 2025). The additional available mineral resources have been written off following an economic re-assessment in 2017.

#### Dividends

No dividends were declared during the year (2017: No dividends declared).

#### Subsequent events

There were no subsequent events to report as at date of issue of the audited financial statements.

#### Auditors opinion

The summary results for the year ended 31 December 2018 have been audited by PricewaterhouseCoopers. The auditor's unqualified opinion is available for inspection at the company's registered office.

#### Directors

F L Namene (Chairman), R J B Storrie\* (Managing), W Duvenhage\*\*, D S Kunji Behari\*\* (alternate L Dechambenoit\*\*\*), H P Louw\*\*, G N Simubali (alternate C W H Nghaamwa)

\* British \*\* South African \*\*\*French

#### Company secretary

G D Labuschagne

PO Box 22391

Windhoek

#### Auditors

PricewaterhouseCoopers

PO Box 12

Walvis Bay

## Our value addition and summary annual financial statements

### SUMMARY ANNUAL FINANCIAL STATEMENTS (continued)

#### SUMMARY STATEMENT OF FINANCIAL POSITION AS AT 31 DECEMBER 2018

	Notes	Audited 2018 N\$'000	Audited 2017 N\$'000
<b>ASSETS</b>			
<b>Non-current assets</b>		<b>1,181,165</b>	813,769
Property, plant and equipment	6	116,236	26,944
Defined benefit pension asset		215,105	68,775
Derivative	7	4,639	-
Rössing Environmental Rehabilitation Fund asset		845,185	718,050
<b>Current assets</b>		<b>2,982,902</b>	2,407,798
Inventories	8	924,029	619,387
Trade and other receivables		181,285	188,863
Derivative		10,631	-
Rio Tinto Finance Ltd receivable		-	968,658
Cash and cash equivalents	9	1,508,171	293,503
Restricted cash	9	358,786	337,387
<b>Total assets</b>		<b>4,164,067</b>	3,221,567
<b>EQUITY AND LIABILITIES</b>			
<b>Equity</b>		<b>1,530,940</b>	1,026,399
Share capital		223,020	223,020
Retained earnings		1,307,920	803,379
<b>Non-current liabilities</b>		<b>1,386,431</b>	1,281,459
Deferred tax liabilities		-	-
Provision for closure and restoration costs		1,369,707	1,266,100
Post-employment obligation		16,724	15,359
<b>Current liabilities</b>		<b>1,246,696</b>	913,709
Bank overdraft	9	282,255	-
Trade and other payables		964,441	913,709
<b>Total equity and liabilities</b>		<b>4,164,067</b>	3,221,567

#### SUMMARY STATEMENT OF CHANGES IN EQUITY FOR THE YEAR ENDED 31 DECEMBER 2018

	Share capital N\$'000	Retained Earnings N\$'000	Total N\$'000
<b>Balance at 1 January 2018</b>	<b>223,020</b>	<b>803,379</b>	<b>1,026,399</b>
Total comprehensive income and expenses	-	504,541	504,541
Dividends paid	-	-	-
<b>Balance at 31 December 2018</b>	<b>223,020</b>	<b>1,307,920</b>	<b>1,530,940</b>
<b>Balance at 1 January 2017</b>	223,020	4 255,879	4,478,899
Total comprehensive income and expenses	-	(3,452,500)	(3,452,500)
Dividends paid	-	-	-
<b>Balance at 31 December 2017</b>	<b>223,020</b>	<b>803,379</b>	<b>1,026,399</b>

**SUMMARY ANNUAL FINANCIAL STATEMENTS (continued)**
**SUMMARY STATEMENT OF COMPREHENSIVE INCOME AND EXPENSES FOR THE YEAR ENDED 31 DECEMBER 2018**

		Audited 2018 N\$'000	Audited 2017 N\$'000
<b>Continuing operations</b>	<b>Notes</b>		
Revenue		2,835,698	2,695,803
Other income		46,179	373,494
		<b>2,881,877</b>	3,069,297
Operating costs		<b>(2,646,181)</b>	(2,688,225)
Depreciation, amortisation and impairment charges		<b>(8,501)</b>	(3,722,130)
Other net gains / (loss)		<b>210,012</b>	(146,728)
Royalties-mining		<b>(87,511)</b>	(77,833)
<b>Operating profit / (loss)</b>		<b>349,696</b>	(3,565,619)
Finance income	4	<b>82,402</b>	61,903
Finance costs	4	<b>(87,166)</b>	(96,818)
<b>Profit / (loss) before income tax</b>		<b>344,932</b>	(3,600,534)
Income tax	5	<b>(3,704)</b>	145,033
<b>Other comprehensive income / (loss) for the year</b>			
Actuarial gains on defined benefit pension asset		<b>163,313</b>	3,001
<b>Total comprehensive income / (loss) for the year attributable to equity holders of company</b>		<b>504,541</b>	(3,452,500)
<b>Reconciliation of total comprehensive income for the year to net profit after tax from normal operations</b>			
<b>Total comprehensive income / (loss) for the year as above</b>		<b>504,541</b>	(3,452,500)
- Actuarial gains on defined benefit asset		<b>(163,313)</b>	(3,001)
- Forex (gain) / loss on Kalahari and Extract funds		<b>(159,466)</b>	153,324
- Forex (gain) / loss on Derivative Financial asset		<b>(15,270)</b>	-
- Impairment loss		-	3,304,126
<b>Net profit after tax from normal operations</b>		<b>166,492</b>	1,949

**SUMMARY STATEMENT OF CASH FLOWS FOR THE YEAR ENDED 31 DECEMBER 2018**

<b>Cash flows from operating activities</b>			
Cash (utilised) / generated by operations		<b>(63,336)</b>	207,133
Interest received	4	<b>24,155</b>	10,717
Interest paid	4	<b>(4,869)</b>	(20,740)
Tax paid – US Federal tax	5	<b>(3,704)</b>	-
<b>Net cash (utilised) / generated by operating activities</b>		<b>(47,754)</b>	197,110
<b>Cash flows from investing activities</b>			
Purchases of property, plant and equipment	6	<b>(76,483)</b>	(116,524)
Decrease in investment in Rio Tinto Finance Ltd.		<b>968,658</b>	325,552
Proceeds from sale of fixed assets		<b>11,604</b>	22,553
Contributions made to Rössing Environmental Rehabilitation Fund		<b>(68,888)</b>	(63,382)
<b>Net cash generated from investing activities</b>		<b>834,891</b>	168,199
<b>Cash flows from financing activities</b>			
Dividends paid		-	-
Decrease in interest-bearing borrowings		-	(10,945)
<b>Net cash utilised by financing activities</b>		-	(10,945)
<b>Increase in cash and cash equivalents</b>		<b>787,137</b>	354,364
Cash and cash equivalents at beginning of year		<b>630,890</b>	287,445
Effects of exchange rate changes on cash and cash equivalents		<b>166,675</b>	(10,919)
<b>Cash and cash equivalents at end of year</b>	9	<b>1,584,702</b>	630,890

# Our value addition and summary annual financial statements

## SUMMARY ANNUAL FINANCIAL STATEMENTS (continued)

### NOTES TO THE SUMMARY ANNUAL FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 DECEMBER 2018

#### 1. Reporting Entity

Rössing Uranium Limited is a company domiciled in the Republic of Namibia. These are the summary annual financial statements of the company as at and for the year ended 31 December 2018. The audited annual financial statements of the company as at and for the year ended 31 December 2018 are available upon request from the Company's registered office.

#### 2. Statement of compliance

These summary annual financial statements have been prepared in accordance with the framework concepts and the measurement and recognition requirements of IFRS and disclosure requirements of IAS 34, Interim Financial Reporting and the requirements of the Company's Act of Namibia. They do not include all of the information required for full annual financial statements, and should be read in conjunction with the annual financial statements of the company as at and for the year ended 31 December 2018.

#### 3. Significant accounting policies

The accounting policies applied by the Company in these summary annual financial statements are the same as those applied by the Company in its annual financial statements as at and for the year ended 31 December 2018. The accounting policies and methods of computation applied in the preparation of the summary consolidated financial report are consistent with those applied for the period ended 31 December 2017.

	<b>2018</b>	2017
	<b>N\$'000</b>	N\$'000
<b>4. Finance income and costs</b>		
Finance income - Rehabilitation fund	<b>58,247</b>	51,186
Interest income - Bank balances	<b>24,155</b>	10,717
Finance income	<b>82,402</b>	61,903
Interest expense - Bank borrowings	<b>(4,869)</b>	(20,740)
Provisions - unwinding of discount	<b>(82,297)</b>	(76,078)
Finance costs	<b>(87,166)</b>	(96,818)
<b>5. Taxation</b>		
Namibia - current taxation	-	-
Namibia - differed taxation	-	(145,033)
	-	(145,033)
US Federal tax charge - 2017	<b>3,704</b>	-
<b>6. Property, plant and equipment</b>		
Net book value at beginning of the year	<b>26,944</b>	3,463,209
Additions	<b>76,483</b>	116,524
Deferred stripping capitalised	-	114,501
Disposals	-	(1,328)
Depreciation charge	<b>(8,501)</b>	(418,004)
Impairment loss	-	(3,267,543)
Increase / (decrease) in closure provision	<b>21,310</b>	19,585
Net book value at end of the year	<b>116,236</b>	26,944

No impairment charge was incurred during 2018, nor was there sufficient evidence to indicate a reversal of previous impairments. In 2017, the continued decline in the uranium spot price, combined with the increasing exposure of the production to the spot market and a strengthening local currency against the US Dollar, indicated the carrying value of property, plant and equipment unsupported by future cash flows and the asset's value in use. This resulted in an impairment loss amounting to N\$3,267,542,564 recognised in 2017 against the property, plant, equipment and intangible assets as well as a further N\$36,583,353 against long-term inventory (refer to Note 8).

The Value-in-Use was used as the recoverable amount for the cash generating unit, which comprised the business as a whole, to determine the impairment. The net present value of future cash flows was used to determine the value in use, which is estimated at a value of N\$ Nil (2017: negative N\$1,485,600,000) at a year-end exchange rate of USD/NAD14.43 (2017: USD/NAD 12.38) using a discount rate of 7.7% (2017: 7.7%) and a closure discount rate of 2% (2017: 2%).

**SUMMARY ANNUAL FINANCIAL STATEMENTS (continued)****NOTES TO THE SUMMARY ANNUAL FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 DECEMBER 2018**

	2018	2017
	N\$'000	N\$'000
<b>7. Derivative</b>		
<b>Opening balance at beginning of the year</b>	-	-
Initial recognition of forward exchange contract	253,772	-
Fair value gains / (losses) through profit or loss – after initial recognition	(238,502)	-
<b>Closing balance at beginning of the year</b>	<u>15,270</u>	-
Forward exchange contract – non-current	4,639	-
Forward exchange contract – current	10,631	-
	<u>15,270</u>	-
<b>Amounts recognised in profit or loss:</b>		
Fair value gains / (losses)	15,270	-
Realised foreign exchange gains / (losses)	7,825	-
	<u>23,095</u>	-

On 15 November 2018, the Company concluded hedging contracts in line with the proposed strategy as approved by the Board, to achieve a rate of USD/ZAR of 14.50 for 2019, on a portion of the revenue stream. The first trade of USD12,500,000 was executed on the 3rd of December 2018 at a hedge rate of USD/NAD 14.4956. Future monthly lots of USD12,500,000 will be converted at increasing rates up to the last trade on the 1st of December 2020. An average rate of USD/NAD 14.7998 will be achieved for 2019 and an average rate of USD/NAD 15.4907 will be achieved for 2020. The hedge transaction is secured against USD30,000,000 collateral on short term call deposits.

**8. Inventories**

Inventories are stated after

- Providing for obsolescence and impairment

- raw materials obsolescence

- long term work-in-progress impairment

29,105	25,005
36,583	36,583

**9. Cash and cash equivalents**

Cash at bank and in hand (Note 9.1)

Bank overdraft (Note 9.1)

Short term call deposit (Note 9.2)

Restricted cash – Rio Tinto sales agreement guarantee (Note 12)

Restricted cash – Iran Foreign Investment Company (Note 9.3)

481,749	293,503
(282,255)	-
1,026,422	-
72,150	61,912
286,636	275,475
<u>1,584,702</u>	<u>630,890</u>

For the purpose of the statement of cash flows the year-end cash and cash equivalents comprise the above.

**9.1 Cash at bank and overdraft**

The company deposits cash surpluses only with major banks of high-quality credit standing. The overdraft is unsecured.

**9.2 Short term call deposit**

Investment in call deposit

Drawdown of funds

Forex gains / (loss) on funds

**Closing balance**

968,658	-
(101,702)	-
159,466	-
<u>1,026,422</u>	<u>-</u>

# Our value addition and summary annual financial statements

## SUMMARY ANNUAL FINANCIAL STATEMENTS (continued)

### NOTES TO THE SUMMARY ANNUAL FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 DECEMBER 2018

#### 9.3 Restricted cash – Iran Foreign Investment Company

The restricted cash relates to historic dividends that are payable to the Iran Foreign Investment Company shareholder. The transfer of the funds was restricted in terms of UN Security Council Resolution 1929. The board is actively investigating the potential payment of these dividends within the legal ambit of the remaining sanctions on the restriction.

#### 10. Capital commitments

Capital expenditure contracted but not yet incurred as at 31 December 2018

<b>59,811</b>	9,719
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#### 11. Unconditional purchase obligations

The Company has entered into minimum off-take agreements with the suppliers of sulphuric acid for the next two years as well as commitments with regard to imports of manganese within one year. The total undiscounted amount at the year-end amounted to N\$637,612,407 (2017: N\$680,571,315).

#### 12. Guarantees

In 2017 the Company entered into an amended marketing arrangement with Rio Tinto Marketing Singapore Pte (RTU). The arrangement allows for more flexibility regarding the delivery on sales commitments through a margin scrape mechanism whereby RTU could be instructed to buy and sell material on behalf of the Company and only remitting the margin scrape differential on the transaction to the Company. In order to facilitate this arrangement, the Company issued a financial guarantee to RTU of US\$5 million with a value at year end of N\$72,150,072 (2017: N\$61,911,838) in terms of the requirements of the amended agreement.

The hedge transaction is secured against USD30,000,000 collateral on short term call deposits (refer Notes 7 and 9).

#### 13. Related parties

The Company is controlled by Skeleton Coast Diamonds Limited which owns 68,6% of the Company's issued shares. The remaining 31,4% of the shares are widely held and includes a 3.4% shareholding by the Government of Namibia. The ultimate holding company is Rio Tinto plc, a company registered in the United Kingdom.

#### Summary of related party transactions

Sales to related parties	<b>2,835,698</b>	2,544,973
Other income from related parties	-	325,023
Purchase of product and services	<b>67,811</b>	209,216
Receivables from related parties	<b>1,679</b>	1,004,696
Payables to related parties	<b>117,375</b>	91,609
Transactions with Government, state-owned and semi-state-owned enterprises	<b>551,762</b>	506,466

#### 14. Fair Value of Financial Instruments

At 31 December 2018, the carrying amounts of cash and short-term deposits, trade accounts receivable, trade accounts payable, accrued expenses and current interest-bearing borrowings approximated fair values due to the short-term maturities of these assets and liabilities. The carrying value of the non-current and current derivative approximates fair value as foreign currency forward contracts are valued using the present value of future cash flows based on forward exchange rates obtained from financial institutions at the balance sheet date. The derivative (refer to Note 7) is categorised as level 2. All other financial instruments are categorised as level 3. Settlement costs are expected to be immaterial.



# Assurance and list of references

## Assurance

Our vision is to conduct our business with integrity, honesty and fairness at all times. We build from a foundation of compliance with relevant laws, regulations and international standards, and are in line with various Rio Tinto and Rössing Uranium guidelines on leading business practices, such as *The way we work*, Rio Tinto's global code of business conduct.

Much of our work is subjected to various, external-assurance and verification processes throughout the year. For example, external auditors audit our financial statements, while an external, environmental-auditing company audits our environmental figures each year. The following auditing companies, Government bodies and other institutions reviewed the company's practices in 2018:

- PricewaterhouseCoopers (Rio Tinto Corporate Annual Report data assurance, designed to provide limited assurance over selected items; in Rössing Uranium's case, AIFR data, closure costing and water usage);
- KPMG (internal audits);
- Rio Tinto Corporate Assurance (internal audits);
- Bureau Veritas (ISO 14001:2004 certification and Rio Tinto HSEQ management system business conformance);
- International Atomic Energy Agency (industry control);
- AECOM and KnightPiesold (third party review of Tailings Storage Facility stability and design);
- Ministry of Labour and Social Welfare: Affirmative Action (Employment) Act, 1998 (No. 29 of 1998) (compliance verification in respect of labour-related Acts);
- Ministry of Health and Social Services (compliance verification in respect of health and related Acts);
- Ministry of Agriculture, Water and Forestry (compliance verification in respect of effluent management and water-related Acts);
- Ministry of Mines and Energy (compliance verification in respect of mining operation-related Acts); and
- Ministry of Finance (compliance verification in respect of income tax and finance-related Acts).

## List of references

*The way we work*: Rio Tinto's global code of business conduct

*Rio Tinto Procurement principles*

*Business integrity standard*

*Antitrust standard*

*Data privacy standard*

*Employment policy*

*Inclusion diversity policy*

*HSEC policy*

*Communities and social performance standard*

*Governance policy*

*Human rights policy*

*Risk management policy*

*Treasury policy*

*Tax policy*

These reference documents are all available electronically at [www.riotinto.com](http://www.riotinto.com), or in hard copy by writing to Rio Tinto, 6 St James's Square, London, SW1Y 4AD, United Kingdom, Tel. +44 20 7781 2000.

# Performance data table

	2018	2017	2016	2015	2014
<b>Employees</b>					
Number of employees	<b>967</b>	956	949	948	850
<b>Production</b>					
Uranium oxide produced (tonnes)	<b>2,479</b>	2,110	1,850	1,245	1,543
Ore processed ('000 tonnes)	<b>8,851</b>	9,000	9,194	6,876	7,040
Waste rock removed ('000 tonnes)	<b>11,459</b>	15,110	16,467	12,471	16,225
Ratio of ore milled to waste rock removed	<b>0.77</b>	0.63	0.56	0.55	0.43
<b>Health, safety and environment</b>					
New cases of pneumoconiosis	<b>0</b>	0	0	0	0
New cases of dermatitis	<b>0</b>	0	0	0	1
New cases of hearing loss	<b>0</b>	1	0	0	1
New cases of chronic bronchitis	<b>0</b>	0	0	0	0
All-injury Frequency Rate (AIFR)	<b>0.83</b>	0.39	0.82	0.74	0.81
All-injury Frequency Rate (AIFR) target	<b>0.35</b>	0.67	0.68	0.72	0.69
Number of Lost-day injuries	<b>7</b>	3	5	7	8
Source dust levels at Fine Crushing Plant (mg/m <sup>3</sup> )	<b>0.05*</b>	2.37	1.81	1.25	2.03
Freshwater consumption ('000 m <sup>3</sup> )	<b>2,883</b>	2,998	2,654	2,103	2,436
Freshwater usage per tonne of ore milled (m <sup>3</sup> /t)	<b>0.33</b>	0.33	0.29	0.30	0.35
Ratio of fresh water:total water	<b>0.36</b>	0.40	0.38	0.36	0.43
Seepage water collected ('000 m <sup>3</sup> )	<b>2,703</b>	2,083	2,407	2,206	1,848
Energy use onsite (GJ x 1,000)	<b>1,193</b>	1,321	2,528	1,777	1,108
Energy use per tonne of ore processed (MJ/t)	<b>134.7</b>	147.46	137.03	129.25	148.88
CO <sub>2</sub> total emission (kt CO <sub>2</sub> equivalent)	<b>148.7</b>	157.44	150.06	106.87	118.31
CO <sub>2</sub> equivalent emission per tonne of production (e/t uranium oxide)	<b>60.04</b>	74.20	81.81	85.87	82.00
<b>Product and customers</b>					
Uranium spot market price (US\$/lb) (average)	<b>24.59</b>	22.16	25.64	36.55	33.17

\* These measurements were done with PM<sub>10</sub> (real-time) instruments which differs from the gravimetric sampling instruments that were used in previous years.

# Rössing Uranium's production of uranium oxide and the nuclear fuel cycle

Uranium is a relatively common element that is found in the earth all over the world, mined in many countries and processed into yellow cake, that is, uranium oxide ( $U_3O_8$ ). Uranium oxide has to be processed before it can be used as a fuel for a nuclear reactor, that is, where electricity is generated to produce heat and steam in order to drive a turbine connected to a generator.



## Rössing Uranium Limited

Registered in Namibia No. 70/1591

**Please contact us for any feedback, comments, concerns, suggestions or complaints about Rössing's operations.** You can either send us a text message to +264 81 143 3627; an e-mail to [RUL.communications@rossing.com.na](mailto:RUL.communications@rossing.com.na); contact the Partnership, Communication and External Affairs department via our website; phone us on +264 64 520 9111 or send a fax to +264 64 520 1506.

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