

FOCUS ON THE NORTHAM GROUP

NORTHAM OPERATIONS ON THE BUSHVELD COMPLEX

Location of the Bushveld Complex, South Africa



The **Zondereinde** mine is an established, long-life operation which produces approximately 280 000oz of refined PGMs annually.

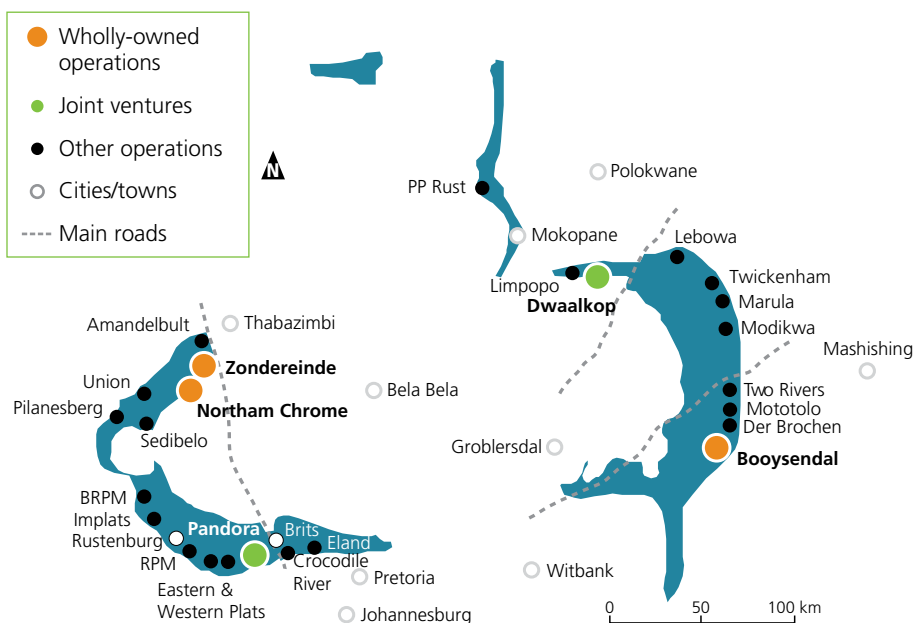
280 000_{oz}
OF REFINED PGMs

Operations on the Bushveld Complex

Booysendal UG2 North mine came into production in July 2013 and has now ramped up to full production of some 160 000oz per annum.

PRODUCTION OF

160 000_{oz}
PER ANNUM



CORE ACTIVITIES

Northam is an independent, fully empowered, mid-tier, integrated PGM producer with two primary operating assets, **Zondereinde** and **Booysendal** platinum group metal (PGM) mines in the South African Bushveld Complex. The Zondereinde lease area is also the location for Northam's **metallurgical operations**, which include a smelter and base metals recovery plant. **Northam Chrome Proprietary Limited** (Northam Chrome) is a wholly-owned subsidiary of Northam Platinum.

ASSETS AND RESOURCES

The **Zondereinde** mine is an established, long-life operation which produces approximately 280 000oz of refined PGMs annually. The mine is located on the northern end of the western limb of the Bushveld Complex near the town of Thabazimbi. Zondereinde has a life of mine (LoM) in excess of 20 years.

The shallower mechanised **Booysendal UG2 North** mine is located near the town of Mashishing (formerly Lydenburg) on the eastern limb of the Bushveld Complex. The mine came into production on 1 July 2013 and has now ramped up to full production of some 160 000oz per annum. The 105Moz orebody at Booysendal lends itself to brownfields expansion opportunities, which are currently being established on the property. These include a deepening project at the existing UG2 North mine and the development of the **Booysendal Merensky North** mine on the property.

In June 2015, Northam acquired the Everest platinum mine (now incorporated into **Booysendal South**) from Aquarius Platinum (South Africa) Proprietary Limited (AQPSA), contiguous to the Booysendal lease area. The integration process with the

existing Booysendal operation has begun, which will allow the group to begin extracting value and developing the new Booysendal South mine.

Northam Chrome is a wholly-owned subsidiary of Northam. Northam Chrome produces chrome from Zondereinde mine's UG2 tailings.

During the year under review, Northam acquired a 20% interest in **SSG Holdings** Proprietary Limited, a company providing security services to both the operating mines. A further 10% interest was acquired subsequent to year end.

The company holds a 7.5% interest in another PGM mining operation in the Bushveld Complex, the **Pandora joint venture** (JV), in partnership with Anglo American Platinum Limited and Lonmin plc.

Northam also owns a 50% interest in the **Dwaalkop JV** and a 51% initial participatory interest in the **Kokerboom JV exploration project** in the Northern Cape.

The group milled a total of 4.2Mt (Zondereinde: 2.0Mt, Booysendal North: 2.2Mt) in the year under review to produce 13 591kg of metal, which has been processed to realise sales revenue of R6.1 billion (FY2015: R6.0 billion) – an increase of 1.0% year on year. The higher production volumes are largely due to Booysendal ramping up to steady-state production.

At 30 June 2016, Northam held a combined resource base of 200.3 million ounces (Moz) – 24.5Moz in the reserve category – with a mining life of more than 50 years.

At a glance:

ZONDEREINDE



- Northern end of the western limb of the Bushveld Complex
- Deep-level conventional mining
- Includes metallurgical operations - a base metals recovery plant and smelter
- UG2 and Merensky ore, shifting to higher ratio of UG2
- Mature operation
- Produces approximately 280 000oz of PGMs annually
- LoM greater than 20 years
- Resource estimated at 84.1Moz
- Deepening project underway

BOOYSENDAL



- Eastern limb of the Bushveld Complex
- Booysendal UG2 North:
 - Shallow mechanised mining
 - Room and pillar operation
 - Came into production on 1 July 2013
 - Produces approximately 160 000oz of PGMs annually
 - LoM of 25 years
 - Resource estimated at 7.8Moz
 - Deepening project begun
- Booysendal Merensky North being established
- Booysendal South integration process underway

FOCUS ON THE NORTHAM GROUP CONTINUED

PROCESSING

Northam's activities are integrated; from the underground mining function, through to the concentrating, smelting and base metal recovery processes.

Concentrating: Merensky and UG2 plants

- In the crushing/screening circuit the ore is crushed to reduce its size before it reports into the mill.
- Merensky ore feeds into a fully autogenous (FAG) mill. In the UG2 plant, the ore feeds into a high pressure grinding roll crusher and then into a primary ball mill.
- The flotation circuit includes rougher cells, scavenger cells and cleaner columns. External sparger column cells act as a cleaner and this helps to produce a final UG2 concentrate with significantly lower chrome content while maintaining PGM recoveries.

Smelting

The existing smelter at the Zondereinde metallurgical complex has a 15MW capacity. Key processes include drying and smelting the concentrate and converting the furnace matte. Concentrate brought in is blended and dried concentrate is pulverised and then stored in silos. Concentrate and flue dust is mixed with lime and then fed through to the day bin and into the furnace where electrodes provide heat via resistance to the current through the material in the bath. The lighter oxides float to the top as slag and the more dense sulphides, which contain the PGMs, sink to the hearth as furnace matte.

The board approved capital expenditure for the installation of a new 20MW furnace as part of the smelter expansion and de-risking programme. In October 2015 an agreement was reached with Heraeus Deutschland GmbH & Co KG and Heraeus South Africa Proprietary Limited (Heraeus) – Northam's refining partner of some 25 years – in terms of which they will contribute €20.0 million towards the new furnace construction. Construction began in February 2016 and commissioning is expected by the end of the 2017 calendar year. The additional capacity will add significant mining flexibility allowing for higher volumes of UG2 to be mined and treated. The total cost of

the expansion project is estimated at R750.0 million. (For more information on the expansion project, please go to page 30.)

Base metal recovery

By-product metals, copper and nickel sulphate, are extracted at the on-site base metals recovery plant and sold in the domestic market.

Refining

Final precious metal concentrate is transported from the Zondereinde metallurgical complex for refining to the Heraeus facilities in Hanau, Germany and Port Elizabeth.

Heraeus is a registered member of the London Platinum and Palladium Market (LPPM) and has London-Zurich 'Good Delivery' status for metal production. The refinery in Hanau is subject to strict European Union and materials handling protocols. Product transportation is also strictly defined by international aviation regulations.

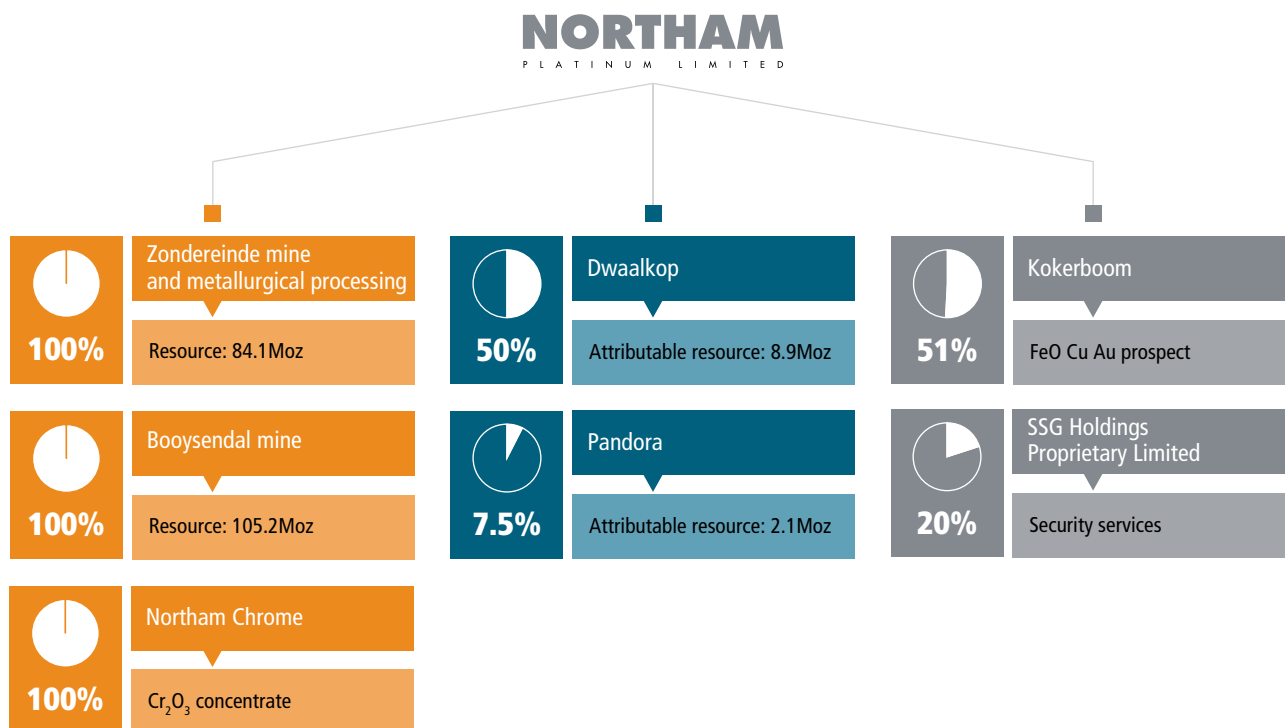
PRODUCTS AND END USES

Northam's primary products are the three main PGMs: platinum, palladium and rhodium. The primary consumers of platinum, palladium and rhodium are the motor-manufacturing and jewellery industries. Other industrial uses range from chemical and electrical applications to glass manufacture. In the automotive sector, PGMs are used in exhaust systems, specifically autocatalysts, helping to reduce noxious and greenhouse gases released into the atmosphere. Platinum jewellery is popular in Asia.

PGMs are traded on international markets where the metal prices are determined by global supply and demand, and are US dollar-denominated. This means that South African PGMs realise prices in US dollars, which are then converted and reported in South African rands. Northam has no influence on the sales price of its metal and is essentially a price taker. The metal is sold in sponge or ingot form to customers in the US, Europe and the Far East.

Northam's in-house marketing department is responsible for marketing and sales of products domestically and to major global markets in Asia, Europe and North America.

Group structure as at 30 June 2016



LISTING

Northam's shares are listed on the JSE. Its share code is NHM and its debt instruments are listed under the symbol NHMI. The company has been admitted to participate in the JSE's Socially Responsible Investment (SRI) Index.

Northam's shareholders are predominantly South African institutional investors who hold 89.9% of the equity. The remainder is held in North America (5.6%), Europe and the United Kingdom (1.8%) and the rest of the world (2.7%).

BEE STRUCTURE

Northam is a fully empowered PGM producer. Historically disadvantaged South African (HDSA) ownership levels in the company are pegged at 31.4% following the conclusion of a R6.6 billion black economic empowerment (BEE) transaction, which included the successful raising of R4.6 billion. The transaction was announced in October 2014 and approved by shareholders in March 2015. In terms of the deal, Northam issued 112 195 122 new shares (equivalent to 22% of Northam's issued share capital) to a special purpose BEE vehicle known as Zambezi Platinum (RF) Limited (Zambezi or Zambezi Platinum). These shares were supplemented by 47 710 331 shares (equivalent to 9.4% of Northam's issued share capital), sold to

Zambezi Platinum by the Public Investment Corporation SOC Limited (PIC), a long-standing Northam shareholder.

Zambezi Platinum comprises a range of HDSA stakeholders including an employee trust, two community trusts, a women's group and a core of strategic partners. Together they hold a 31.4% stake in Northam, in excess of the Mining Charter requirements, with a 10-year lock-in period for the participants from May 2015.

Zambezi Platinum financed the acquisition of shares in Northam through a preference share arrangement. Zambezi Platinum's preference shares were listed on the JSE on 11 May 2015.

Northam's issued share capital at 30 June 2016 remained unchanged at 509 781 212 shares (FY2015: 509 781 212 shares) and the company's market capitalisation was R21.9 billion.



Strategic BEE interests and free float (%)

Free float	68.6
Zambezi Platinum	31.4

FOCUS ON THE NORTHAM GROUP CONTINUED

OUR MATERIAL ISSUES

Our material issues are those issues that are most material to the business and stakeholders, and which fundamentally influence the assessments and decisions of stakeholders.

We identify our material issues through workshops which analyse our internal and external environments, from information contained in the group's risk register and from stakeholder feedback. These issues are reviewed by management on an ongoing basis. We take this materiality determination process seriously, seeing it as an opportunity to assess whether we are focusing our energy and resources in the correct areas.

In the *Business performance* section of this report, we report on our financial and non-financial performance under the capitals (pages 30 to 95). Our material issues, along with associated risks, have been linked to each capital.

Our material issues for FY2016 were determined as follows:

- **Managing production and performance to ensure successful execution of our business strategy**

It is the role and responsibility of executive management to set realistic strategic targets for the business. The success of this strategy affects shareholders and stakeholders alike. See *Financial capital* (page 30 to 36) and *Manufactured and Intellectual capital* (page 38 to 43).

- **Continuing to improve the safety performance and the health and wellness of our workforce**

It is our aim to further improve the safety performance and the health and wellness of both our employees and indirect employees. We will do this by continuously seeking to reduce injuries, applying appropriate technologies, through communication and training, and reinforcing operational standards and responsibility. See *Human capital* (page 44 to 59).

- **Establishing and maintaining constructive communication channels with our employees and their representative bodies**

It is vital we establish and maintain constructive communication channels with our employees and their representative bodies, both for our employees' sake and that of the sustainability of our business. We do this through sound employee relations based on direct channels of two-way communication. See *Human capital* (page 44 to 59).

- **Conducting active stakeholder engagement to minimise any adverse impact on our stakeholder relations**

We conduct regular engagement with all our stakeholders. We recognise that stakeholders, be they shareholders, employees, communities or government, have certain expectations of the group, not all of which may be appropriate or possible to meet. We need to understand and manage these expectations through credible and effective stakeholder engagement. See *Social capital* (page 60 to 67).

- **Maintaining our legislative and regulatory compliance, focusing on the MPRDA and the Mining Charter**

We recognise that we do business within the legal framework of the various South African government departments and aim for full compliance with the laws of the land. Given its influence on our licence to operate, the most relevant aspects of legislation for Northam and its operations are the Mineral and Petroleum Resources Development Act (MPRDA) and the associated Mining Charter. See *Human capital* (page 44 to 59) and *Social capital* (page 60 to 67).

- **Managing the environmental impact of our operations and conserving natural resources**

We make every effort to minimise our environmental impacts; we seek to comply strictly with all environmental legislation and where possible we conserve land. We make optimal use of and conserve our natural resources (our focus is on water and energy, areas where we are most exposed). See *Natural capital* (page 68 to 95).