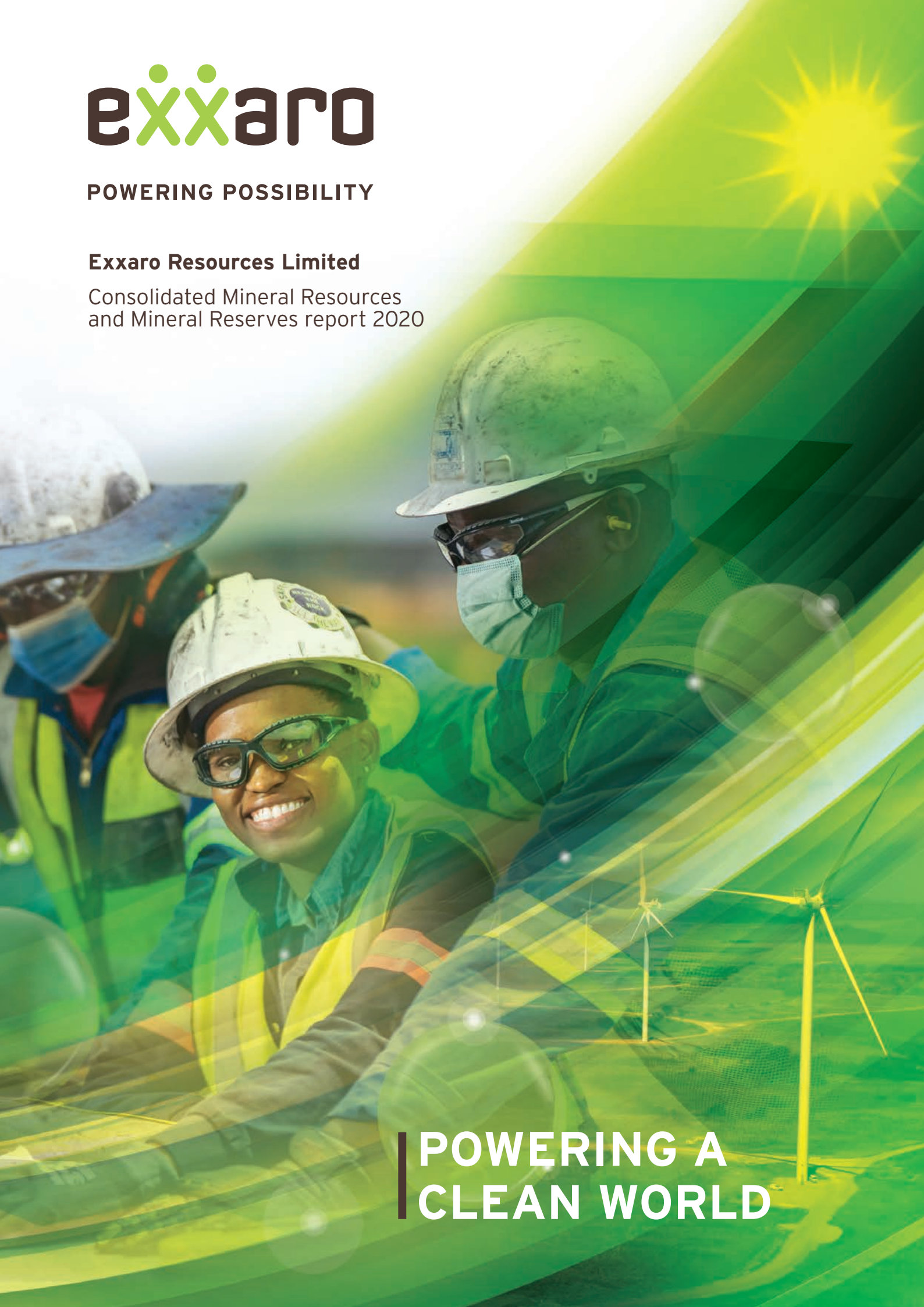
exxaro

POWERING POSSIBILITY

Exxaro Resources Limited

Consolidated Mineral Resources and Mineral Reserves report 2020



POWERING A CLEAN WORLD

FOREWORD

Exxaro continuously strives to enhance the level of estimation and reporting of Mineral Resources and Mineral Reserves. The group is committed to the principles of transparency, materiality and competency in reporting its Mineral Resources and Mineral Reserves.

The information in this report is aligned with the JSE Listings Requirements (section 12:13) and encapsulates information on reporting governance, competence, tenure, risk, liabilities and assurance, as well as auxiliary descriptions of applicable projects, operations and exploration activities.

Mineral Resources and Mineral Reserves were estimated by competent persons on an operational or project basis and in line with the South African Code for Reporting of Exploration Results, Mineral Resources and Mineral Reserves, 2016 edition (SAMREC Code) for African properties (coal), with the exception of Vedanta's base metal property, and the Australasian Code for Reporting of Exploration Results, Mineral Resources and Mineral Reserves, 2012 edition (JORC Code) for Australian (coal) and Vedanta's property.

For Coal Resources and Coal Reserves under Exxaro management's control, estimation is in line with the South African National Standard: South African guide to the systematic evaluation of Coal Resources and Coal Reserves (SANS 10320:2004). Exxaro is currently transitioning towards the proposed methodologies and concepts of the updated SANS 10320:2020 edition 2. Mineral Resource and Mineral Reserve estimates are quoted in full, irrespective of Exxaro's shareholding. The report primarily encapsulates all aspects relating to Exxaro's coal estimation and reporting. We therefore predominantly use the terminology Coal Resources and Coal Reserves throughout the report. We also use the terminology Mineral Resources and Mineral Reserves where we collectively refer to coal and base metal estimates.

Exxaro reports Mineral Resource and Mineral Reserve estimates directly under its management's control and includes estimates for entities in which we hold a 25% interest or more. Supplementary descriptions are provided for projects and operations directly under our management control. For projects and operations mentioned in the report, but in which Exxaro does not have management control, the reader is referred to that company's website, shown below, for supplementary information. This approach ensures maximum compliance with the principles of materiality and transparency.

Anglo American Coal operations and projects:
www.angloamerican.com/investors/annual-reporting

Kumba Iron Ore:
www.angloamericankumba.com/investors.aspx

Tronox: www.investor.tronox.com/secfiling.cfm

Vedanta Resources base metal operations and projects:
www.vedantaresources.com/investor-relations/

CONNECT WITH EXXARO

We encourage and welcome feedback on our reporting suite from our stakeholders. Please send any comments or suggestions to:

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Disclaimer: Photographs of people without masks were either taken pre-COVID-19 or full health and safety protocols were followed as appropriate.

Navigating this report

We use the following icons throughout our report:

Read more online
www.exxaro.com

Read more in this report

COVID-19's impact on our organisation

CERTIFICATION BY GROUP COMPANY SECRETARY AND LEGAL

In terms of section 88(2)(e) of the Companies Act, 2008 (Act 71 of 2008), as amended (Companies Act), I, Karen Maré, in my capacity as acting group company secretary and legal, confirm that, to the best of my knowledge, for the year ended 31 December 2020, Exxaro Resources Limited (Exxaro) has filed with the Companies and Intellectual Property Commission all such returns and notices as required of a public company in terms of the Companies Act and that all such returns and notices appear to be true, correct and up to date.

Karen Maré, Inlexso (Pty) Ltd
Acting group company secretary
Pretoria

19 April 2021

CERTIFICATION BY COMPETENT PERSONS

The Exxaro lead competent persons are appointed by the Exxaro executive management team.

The Exxaro lead Coal Resource competent person is Henk Lingenfelder, a member of the Geological Society of South Africa and professionally registered (400038/11) with the South African Council for Natural Scientific Professions. He has a BSc (Hons) in geology and 25 years of experience as a geologist in coal, iron ore and industrial minerals.

The person in Exxaro designated to take corporate responsibility for Coal Resources, Henk Lingenfelder, the undersigned, has reviewed and endorsed the reported estimates.

The Exxaro lead Coal Reserve competent person is Chris Ballot, a mining engineer registered (20060040) with the Engineering Council of South Africa. He has 24 years of experience in iron ore, mineral sands and coal in various technical and management roles. His qualifications include BEng (mining), GDE and MBA.

The person in Exxaro designated to take corporate responsibility for Coal Reserves, Chris Ballot, the undersigned, has reviewed and endorsed the reported estimates.

Henk Lingenfelder
BSc geology (Hons)
Pr Sci Nat (400038/11)
Group manager: geoscience

263 West Avenue, Die Hoewes
Centurion 0163

South African Council for Natural Scientific Professions
Private Bag X540
Silverton 0127
Gauteng
South Africa

Chris Ballot
BEng (mining)
ECSA 20060040
Group manager: mining processes

263 West Avenue, Die Hoewes
Centurion 0163

Engineering Council of South Africa
Private Bag X691
Bruma 2026
Gauteng
South Africa

Both parties are in the full-time employment of Exxaro, Henk Lingenfelder as the group manager: geosciences and Chris Ballot as the group manager: mining. Both parties have consented to the inclusion of Resources and Reserves estimates in the integrated report 2020. Exxaro has written confirmation from the competent persons (Table 77) that the reporting is compliant with the SAMREC Code, the relevant portions of Table 1 and the JSE Listings Requirements (section 12), in the form and context in which it was intended (JSE LR 12.13 (i)(6) and they consent to the publication of the report.

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PERFORMANCE AT A GLANCE

We focused on sustaining, developing and growing the mineral asset base through the employment of responsible and innovative technical management. The value extracted from the mineral assets is continuously challenged through mine planning, considering the evolving knowledge of the mineral asset geological complexities and its opportunities.

EXXARO EXECUTED A PROCESS OVER ALL ITS OPERATIONS IN 2019 TO EXTRACT HIGHER VALUE EARLIER DURING THE LIFE OF OPERATIONS.

To contribute our efforts towards our greater sustainable growth and impact strategy, we have prioritised responsible mining through our early coal value strategy. The focus was to ensure that the exploitation strategies maximised value without compromising on the longer-term viability of the assets. At the beginning of 2020, the strategies were finalised and approved for the various business units in Exxaro. To ensure accurate execution and control, the plans were embedded in Exxaro's business processes through incorporation in the life of mine (LoM) plans, the business plans and budgets. The strategies have been included in the LoM plans for Grootegeluk and Belfast during the reporting year. The strategy for Grootegeluk entailed a pit-shell redesign to exclude high stripping and low-quality areas and to target high-value areas in the LoM plan. For Belfast, the strategy entailed a revision of the pit sequence, targeting the high-value areas earlier in the LoM plan.

DORSTFONTEIN EAST, A TRADITIONAL OPENCAST COAL MINE, IS DEVELOPING AN UNDERGROUND OPERATION TO EXPLOIT THE SIGNIFICANT UNDERGROUND COAL RESOURCES.

Dorstfontein East mine has been operating as an opencast mine, since 2011, exploiting mainly coal seams S4 (S4U and S4L) and S2 (S2U and S2L) of the Witbank Coalfield. In the ensuing period, evaluation work identified underground Coal Reserves of both S4L and S2L. The S4L seam, with an average seam thickness of 3.8 metres (m), will produce an estimated Coal Reserve of 19.6 million tonnes (Mt) run of mine (RoM) delivering approximately 12 years of LoM. The S2L seam, affected by dolerite activity, will only produce 7.2Mt of RoM, unlocking an additional eight years of mine life. Both S4L and S2L can be exploited profitably using the bord and pillar extraction method. To expedite the underground exploitation, we investigated access via an adit from an existing highwall of one of the existing open pits. The study started in early 2019 with preparatory work and was initiated in early 2020, establishing two benches and removing material immediately in front of the highwall. Highwall design is such that only the portal face is supported to ensure highwall stability, and safety of personnel and machinery. First coal of S4L was accessed on 19 November 2020 and mining of S2L is scheduled to start around 2029. This initiative reflects both the innovative and exceptional technical abilities of our people.

Annual production figures of our Exxaro coal operations for the 2019 and 2020 reporting periods.

		2020	2019
Operations	**Product**	**(Mt)**	**(Mt)**
Grootegeluk	Thermal coal	**26.55**	25.68
Grootegeluk	Metallurgical coal	**2.22**	2.07
Matla	Thermal coal	**6.15**	5.99
Exxaro Coal Central (ECC)	Thermal coal	**3.69**	4.24
Leeuwpan	Thermal coal	**3.72**	4.40
Belfast	Thermal coal	**2.85**	1.03
Mafube	Thermal coal	**1.82**	1.87

OVERVIEW OF COAL RESOURCE AND COAL RESERVE ESTIMATES

OUR STRATEGY

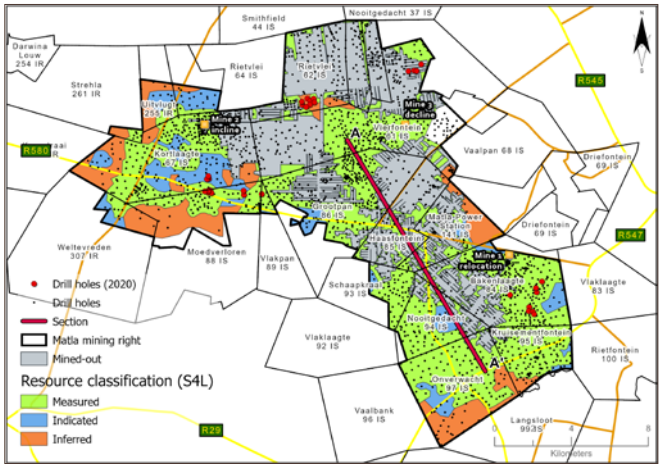
The Coal Resource and Coal Reserve strategy focuses on sustaining, developing and growing the mineral asset base by employing responsible and innovative technical management. Value extracted from the mineral assets is continuously reviewed with mine planning, considering evolving knowledge of the mineral asset's geological complexities and its opportunities.

Our competent persons are the custodians of the mineral asset and therefore accountable for ensuring its integrity and applying pioneering technology in combination with trusted knowledge to optimise its exploitation thereof.

Our projects, operations and expansion initiatives are built on trusted and assured Coal Resources and Coal Reserves, creating a platform for the LoM from which annual business plans are derived. The Mineral Resource managers of each operation are the custodians of the LoM and ensure professional execution of the business plans, stimulating profitability and return on investment while guarding against irresponsible exploitation.

Exxaro reviews macro-economic and other factors that may affect the Reserves on an annual basis. In 2019, we initiated an early value process, aligned with the Exxaro strategy, to contribute our effort towards our greater sustainable growth. The strategy entailed reviewing current practice and then compiling optimised exploitation plans, focusing on extracting higher value earlier in the life of operations. The optimised plans seek to unlock earlier value, importantly, without compromising the worth of the underlying Coal Resource. The optimum product mix for the operations was subsequently reviewed, calculating the margin based on the yield curve, mining cost and revenue per block to produce an optimum pit shell followed by consideration of the mining sequence. The maximum value sequence was approximated from high to low margin, allowing for mining practicalities and costs. The process ensured that all profitable blocks would be mined while the current value of future cash flows is maximised. It also ensured maximum value for our stakeholders by yielding early value without compromising future sustainability.

In early 2020, the new strategy was approved. Our 2020 and five-year exploration plans at the various operations were subsequently aligned with the new strategy. This was done to support the changes in mine layouts, ensuring that the Coal Resources and geotechnical parameters, which underpin the mining areas brought forward in the mine schedules, are of an acceptable level of confidence. A good example of this is at Grootegeluk where large-diameter resource drilling in the latter part of the LoM was changed to core and open-hole drilling in the much earlier introduced open-pit



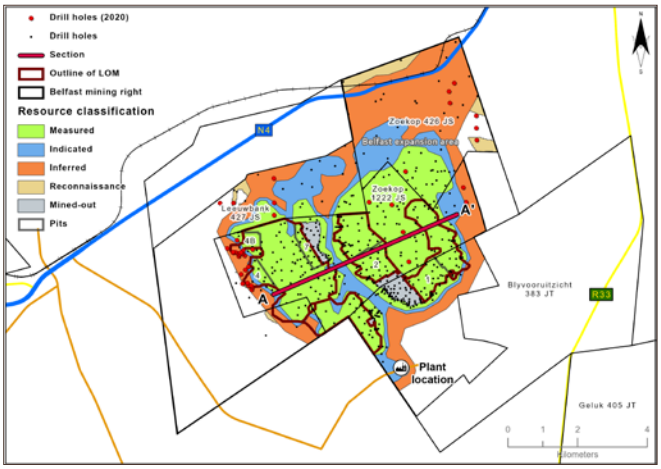
Matla mine outline

turnaround box-cut position. The newly introduced operational mine plans were subsequently embedded in Exxaro's business processes through incorporation into the LoM, business and budget plans. This process was completed during the reporting year for the Grootegeluk and Belfast operations.

In 2020, we continued with our strategic drive towards the use of innovation and technology in the execution of our exploration activities, as well as Resource and Reserve estimation processes. In 2019, we indicated that a number of initiatives were implemented, including the centrally managed acQuire database and the EQuIS groundwater database system. We reaped the benefits during 2020, increasing the ease and speed of core logging and sampling, and improving our data validation and accessibility of our geological and hydrogeological information to the rest of the business. Implementation of the EQuIS groundwater database and installation of telemetry systems for real-time data acquisition at Grootegeluk and Belfast ensure fast and effective decision making regarding water management as well as empowering us to take proactive steps in compliance with our water use licence requirements.

For the development of LoM plans, the mining department is transitioning from Runge's Xpac to the new Runge Xpac software solutions, namely opencast coal solution (OCCS) and underground coal solution (UGCS), for development of mine layouts and mine schedules. These tools shorten development time and reduce the need to convert information from one software package to another. This enables the department to develop more scenarios than possible in the past, improving the selection process when finalising the LoM plans. In 2019, OCCS software was implemented at Belfast and

Grootegeluk mine outline



Belfast mine outline

OVERVIEW OF COAL RESOURCE AND COAL RESERVE ESTIMATES
continued

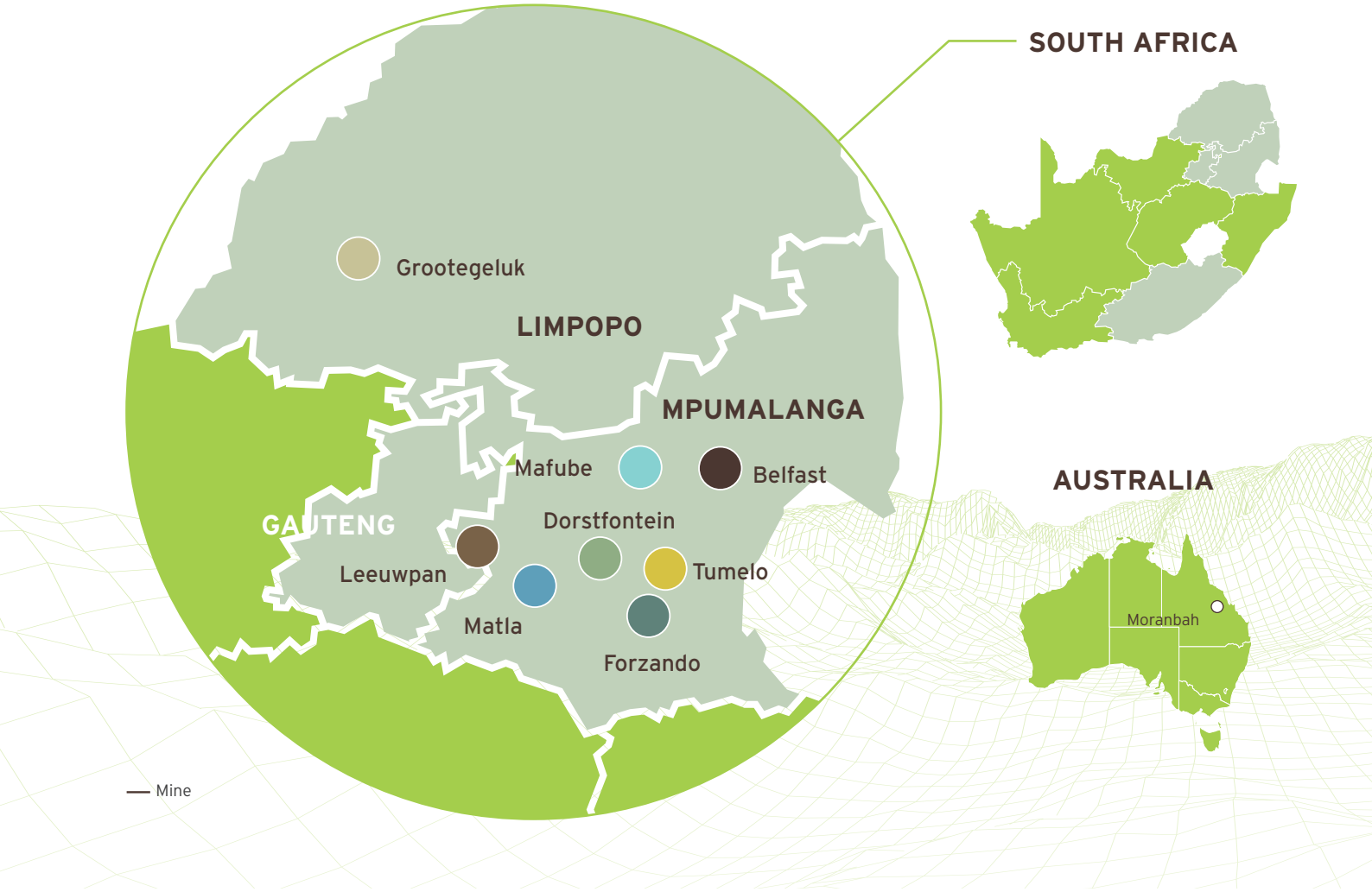
implementation was subsequently rolled out in 2020 at Grootegeluk. The change will empower us with more integrated and time-effective work flow, creating value-adding mine plans for faster and accurate decision making.

The execution of our exploration plans were significantly impacted by the outbreak of the COVID-19 pandemic. The outbreak coincided with the dry season, typically the period when we conduct drilling, surface geophysics and other field exploration activities at our operations. Drilling programmes were, as would be expected, postponed at the first lockdown and we only started with limited exploration activities later in the year when access to the sites was allowed under very strict health regulations. The operational exploration teams have, however, reacted very well to the challenge, completing around 60% of our planned drill holes after revising the plans in May/June and prioritising activities to support the most pertinent objectives of the original 2020 exploration plans.

At Grootegeluk we updated the Resource model with available drilling results. Our improved structural interpretation of the position and orientation of the interpreted fault positions in the northern pit will require additional drilling to ensure we outline the position of the faults more accurately. Most of the faulting could be managed through selective mining in the past. However, we have observed, in the past number of years, that the position and orientation of geological faulting increasingly impacts on the management of our geological bench horizons, disrupting our strict RoM quality control to the various coal processing plants. We plan to drill 54 holes in 2021, targeting resource, overburden, geological faulting, geotechnical and hydrogeological aspects of the coal deposit primarily within the northern pit.

The Approvals at Matla, an Eskom-tied underground mine, have been received to execute three expansion projects, namely Matla Mine 1 access shaft, Mine 2 incline and Mine 3 decline to access the large remaining S4 and S2 underground Coal Reserves. The decline at Matla 3 is in progress and Matla Mine 1 relocation was initiated with first coal expected in the fourth quarter of 2022. The strategic intent of the exploitation strategy at Matla is to supply Eskom in accordance with the coal supply agreement regarding volumes and quality at the lowest possible cost. Our exploration activities were also interrupted by the lockdown and only approximately 30% of the planned holes could be completed. Drilling was primarily focused at Mine 3 low seam where derisking of geological challenges like faulting, presence of sills and dykes, as well as basement highs, disrupts seam thickness continuity, and occasionally impacted coal qualities were targeted. A major achievement in 2020 was the successful execution of surface-to-seam directional drilling at the Mine 2 north-west access project. The targeted S4 Resource in this area presents challenging geological structural conditions and a number of long directional traces drilled from surface assisted tremendously in outlining geological structures, refining mine access design and optimising mine panel layouts. This drilling methodology proved to be vital for future Matla mine development areas. The drilling programmes for 2021 to 2023 will

Figure 1: Locations of our coal operations and projects



focus primarily on the new Mine 1, Mine 2 (decline) and Mine 3 (incline) project areas.

The ramp-up of production at Belfast mine is progressing well. The box-cut strategy was re-examined to ensure that the maximum value is unlocked for stakeholders. The opencast plan was reaffirmed as the best solution and actual operational performance data was captured as to update future LoM fact packs. Detail box-cut infill drilling at Belfast in 2019, at pits 1 and 7, underpinned the importance of adequate investigations during box-cut positioning and design. Exploration in 2020 mainly focused on infill drilling in and in front of these two pits, as well as the newly introduced pits 4 and 4B on the western side of the Coal Reserve, which forms part of the updated mine plan. The objective, as in 2019, was to derisk the box-cut areas regarding seam thinning, weathering and overburden characteristics. A number of holes were also drilled in the northern Belfast expansion area where environmental approvals and access have been secured. Additional drilling in the expansion area will continue in 2021.

A number of exploration activities were conducted at our Moranbah South JV project in Australia's Bowen Basin. A large three-dimensional (3D) seismic geophysical survey was completed during the reporting year, improving our understanding of the geological faulting within the project area. We also conducted a review of the 2012 3D seismic survey results, applying improved technology and innovative techniques to optimise the data sets. The integrated, optimised 2012 and new 2020 survey results will be used in updating the geological structural and resource models in 2021. In addition, a number of large and thin-size cored holes were drilled, investigating a suite of coal qualities, metallurgical and coking characteristics. We will continue with exploration activities during 2021.

We continuously strive to enhance the level of estimation and reporting of Mineral Resources and Mineral Reserves, committed to our governance structures and associated assurance processes. In 2020, we conducted strict internal reviews during the update of the geological and structural models at our Grootegeluk, Matla, Dorstfontein and Forzando operations. Peer review findings on data validation were addressed before the compilation of geological models was initiated. Our geological models were scrutinised by a review team consisting of geoscience, geotechnical, structural and mining specialists before sign-off and handover to mining was concluded. Reserve fact packs of all our operations were reviewed during the reporting period and updated mine plans for Grootegeluk and Belfast were peer reviewed. We also conducted a number of technical reviews of development projects with specific focus on the estimation that underpins the fundamentals of these projects. Reviews of the alternative mining solution and backfill phase 3 projects at Grootegeluk, the Belfast expansion project, Leeuwpan's heavy mobile equipment strategy ,as well as the Mine 1 and north-west development projects at Matla were concluded. A number of technical findings, as well significant value-unlocking opportunities, were documented and subsequently included in the various project development processes. Ernst & Young Inc. (EY) conducted an external estimation process audit at the Belfast operation. No critical findings were reported but a number of minor findings regarding housekeeping were highlighted. Correction measures were subsequently developed and implemented. Recommendations were also received to enhance the efficiency of our estimation and we welcome these valuable inputs to improve our current methodologies. Exxaro is currently transitioning towards the methodologies proposed in the updated SANS 10320:2020 edition 2. We will seek partnership with industry experts to ensure concepts are correctly understood within the context of our operations and implemented.

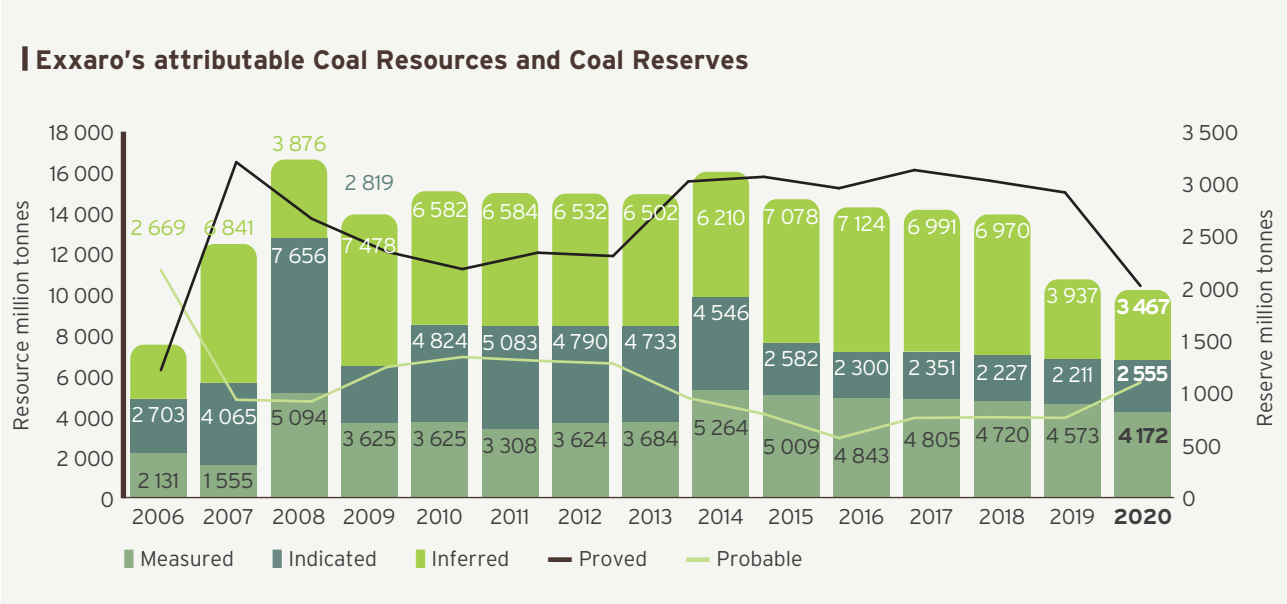
Exxaro has a world-class Coal Resource portfolio, comprising fully owned operations and projects, and a number of jointly owned operations and projects in South Africa and Australia. The fully owned operations and projects in South Africa are located in the large and highly prospective Waterberg coalfield in Limpopo and the more mature Highveld and Witbank coalfields in Mpumalanga. Exxaro's total attributable Coal Resource and Coal Reserve figures have been stable over the past number of years, only showing a significant decrease in Coal Resources in 2019 as a result of the relinquishment of the large Waterberg North and South exploration projects. This stable trend can primarily be ascribed to the relatively large Grootegeluk complex. Estimated to contain 40% to 50% of South Africa's remaining Coal Resources, the Waterberg is viewed as the future of South African coal mining. Exxaro holds an estimated three billion tonnes of Measured and around approximately 2.1 billion tonnes of Indicated Coal Resources in the Waterberg, primarily at Grootegeluk and the adjacent Thabametsi mining right. The Grootegeluk complex provides thermal Coal Reserves to Eskom's Matimba and the new Medupi power stations and produces semi-soft coking and metallurgical coal through eight beneficiation plants.

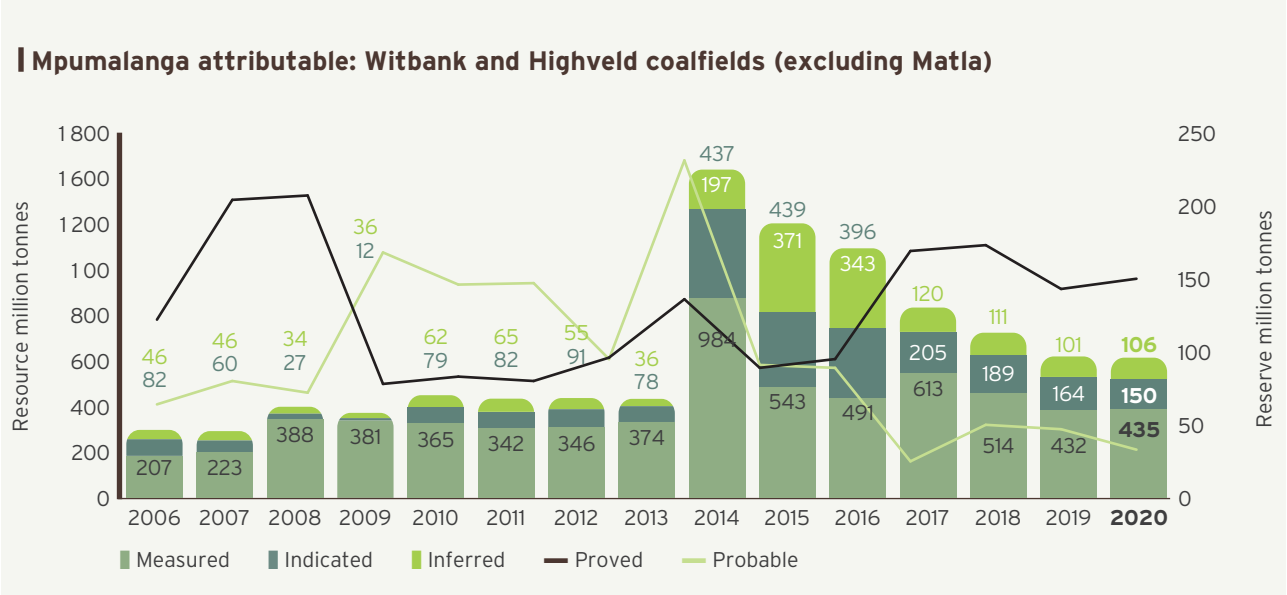
The Grootegeluk complex is continuously evolving, illustrated by several large value-unlocking projects. While these projects underline the resourcefulness of our people, they also demonstrate the successful implementation of innovative breakthrough technology. To an extent, the size of the Grootegeluk complex obscures changes in Coal Resource and Coal Reserve figures from events in the smaller Witbank and Highveld coalfields.

OVERVIEW OF COAL RESOURCE AND COAL RESERVE ESTIMATES
continued

The significant change in Coal Reserves from 2019 to 2020 is primarily the result of the implementation of the new early value exploitation strategy at particularly our Grootegeluk operation, the largest operation. The Grootegeluk pit was adjusted to higher-value areas with lower-value coal towards the latter part of the LoM excluded. As Grootegeluk has a significant remaining life, reinclusion could be considered at a later stage.

Figure 2: Exxaro's estimates over time





Notes:
- *Resource estimations are based on the latest available geological models, which incorporate new validated geological information and, if applicable, revised seam, Resource definitions and Resource classifications. For the 2020 reporting cycle, estimates reported are derived from actual mining up to the end of October, incorporating the planned estimates for November and December.*
- *Resource and Reserve estimates in our statements are quoted in full, irrespective of Exxaro shareholding. Exxaro attributable tonnage is clearly presented in Table 4 and, when used in our report, always clearly defined as such.*
- *Rounding off of figures quoted may result in minor computational discrepancies although it is not deemed significant.*

For all operations other than normal mining, no material changes to total Coal Resources are reported. New exploration information used to update geological and structural models at the Grootegeluk, Matla, Dorstfontein and Forzando operations increased geological confidence within the Coal Resource classification categories. At Grootegeluk, improved understanding of the geology and geological structure within the future mining areas resulted in Inferred Resources being upgraded to Indicated Resources. In addition, an amount of Measured Coal Resources within the northern pit area was reclassified as Indicated. Our improved structural interpretation of the position and orientation of the interpreted fault positions in the northern pit changed meaningfully enough to warrant this reclassification. When reviewing the supporting borehole information in this area, it was evident that the boreholes within each of the newly interpreted faulted blocks occur in single lines. This is not optimal to access the orientation and extent of seam development as well as the boundaries of the faulted Resource blocks. We do not consider this change material and focused drilling in 2021 and 2022 will be conducted to reconfirm the fault orientations. Within the middle pit, where mining is conducted, closely spaced open-hole drilling is implemented in front of the pit's progression to better delineate geological structures. These additional points of observation assist greatly in understanding the orientation of smaller scale faults and the impacts they have on coal exploitation. This drilling methodology will also be implemented in the northern pit to further increase the level of geological confidence.

First-time reporting of Proved Coal Reserves at Mafube is due to the consideration of the bankable feasibility study's approval at the Nooitgedacht operation. Material movements within the Reserve categories at the Dorstfontein complex are primarily due to implementing a new underground mine layout at the Dorstfontein East mine. The underground Coal Reserves were accessed through an adit in the existing highwall of one of the open pits. Studies commenced in 2019 with structural groundwork starting in early 2020 and first coal from the new S4L underground workings extracted on 19 November 2020. The S4L underground Coal Reserves will provide an estimated 12 years to LoM. Mining of S2L underground is scheduled to start in 2029, adding eight years to LoM.

Material changes in total Coal Reserves are reported at two of our operations. At ECC's Forzando mine, a decrease of approximately 60% (34.6Mt to 13.7Mt) RoM Coal Reserves is due to economic factors rendering Reserve blocks currently unprofitable. Implementing a high-value exploitation strategy at Grootegeluk resulted in an optimised mine layout prioritising high-value Reserve blocks for earlier mining and scheduling lower-value Coal Reserves blocks to the latter part of the mine life. This change resulted in an approximately 17% (3 165Mt to 2 628Mt) decrease in the total Grootegeluk RoM Coal Reserve without compromising the total Coal Resource. The Proved Coal Reserves at the Thabametsi mining right, an area adjacent to Grootegeluk, are reclassified as Probable as a result of the lapse of the independent power producer (IPP) project development agreement.

OVERVIEW OF COAL RESOURCE AND COAL RESERVE ESTIMATES
continued

UNLOCKING VALUE

In 2020, we continued to focus on unlocking value at our operations. We reviewed our operations' exploitation strategies through a lens of unlocking early value without compromising the Resource. We are, however, acutely aware that our success as a mining company is built on the integrity of our Coal Resources and the effectiveness with which we convert these Resources to Coal Reserves and then the exploitation and extraction of the Reserves.

INCREASING LEVEL OF GEOSCIENTIFIC KNOWLEDGE AND CONFIDENCE

Considering mining, metallurgical, processing, infrastructural, economic, marketing, legal, environmental, social and governance modifying factors

COAL RESOURCES	UNLOCKING VALUE	COAL RESERVES
Continuously improving our level of geoscientific understanding, minimising risk and unlocking opportunities	Modifying factors and our ability to extract our Mineral Resources	Optimising our plans to create the best for market use
Executing integrated exploration plans at the Dorstfontein, Forzando, Matla, Belfast, Grootegeluk and Leeuwpan mines	Increasing extraction through innovation and knowledge	Updated LoM plans for Matla, Belfast, Leeuwpan, Dorstfontein, Forzando and Grootegeluk mines
Update of geological and structural models at the Matla, Grootegeluk, Dorstfontein and Forzando mines	Implementation of updated exploitation plans at Grootegeluk and Belfast	Initiation of Dorstfontein East underground expansion
Consideration of geological risk and opportunity domain analysis (RODA) in conditional-based mine planning at Matla and implementation of risk domains at Leeuwpan mine		

INNOVATION

Implementation of digital communication for functional meetings, training and workshops during lockdown	Continuous radar scanning for slope stability monitoring	Implementation of OCCS and UGCS for the development of mine layouts and mine schedules at the Belfast and Grootegeluk mines
Optimising our centrally managed geological and hydrogeological databases	Terrestrial lidar scanning of pit faces to enhance reconciliation and Resource use	
Initiating first-time surface-to-seam directional drilling to outline geological challenges for improve mine planning		

GOVERNANCE

We align our reporting with the SAMREC Code and the JSE Listings Requirements (section 12) amendments for minimum contents of annual reports and annually review our LoM mineral assets policies and estimation procedures to incorporate learnings and/or improvements. We update our internal competent persons' reports annually to accommodate the SAMREC Code "if not, why not" principle. We are currently transitioning to align with the guidelines of the newly introduced SANS 10320:2020 edition 2. The planning and execution of our exploration and estimation activities have been impacted by COVID-19. We have, however, successfully adapted through prioritisation of activities, implementation of innovative technology and slight changes in role accountabilities.

ASSURANCE

We have conducted tier 1 concurrent Resource reviews at Grootegeluk, Matla, Dorstfontein and Forzando, resulting in updated geological models and LoM plans for these operations. On tier 2, technical reviews were conducted on Grootegeluk's alternative mining solution and backfill phase 3, the Belfast expansion, Leeuwpan mine heavy mining equipment and Matla's Mine 1 and north-west access projects. We have conducted a tier 3 (third-party) review at Belfast mine.
The external Matla 2019 audit findings were resolved and corrective measurements of findings received at Belfast in 2020 are in progress (see assurance section on page 23). The Consolidated Mineral Resources and Mineral Reserves (CMRR) 2020 report was externally peer reviewed for reporting compliance.

CASE STUDY

EARLY VALUE STRATEGY

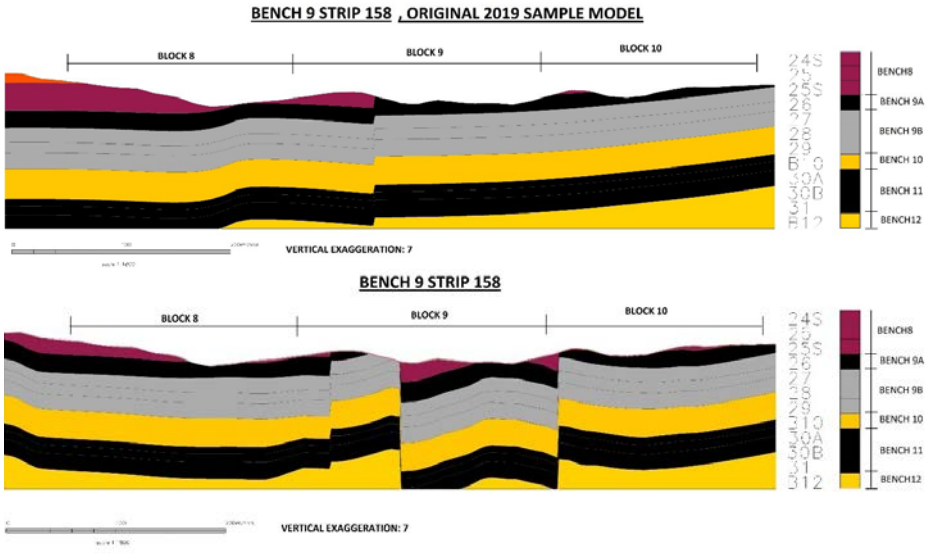
EXXARO CONDUCTED A PROCESS ACROSS ALL ITS OPERATIONS DURING 2019 TO EXTRACT HIGHER VALUE EARLIER IN THE LIFE OF OPERATIONS. AT THE BEGINNING OF 2020, THE STRATEGY WAS FINALISED AND APPROVED FOR THE VARIOUS BUSINESS UNITS. TO ENSURE THESE STRATEGIC PLANS ARE CAPTURED, IT WAS REQUESTED THAT THE PLANS ARE INCLUDED IN THE LoM PLANS AS WELL AS THE BUSINESS PLANS AND BUDGETS.

These strategies have been included in the LoM plans for Grootegeluk and Belfast. The strategy for Grootegeluk entailed a pit-shell redesign to target high-value areas in the LoM plan. The most prominent aspect resulting from the early value layout is the reduction in indentation in the middle pit that was previously designed. This improves pit bottom liberation in the first few years of the schedule. The revised pit shell eliminates high stripping areas and low-quality areas, and targets high-value areas in the LoM plans. The revised LoM schedule has shown that the mine will be able to satisfy its contractual obligations for the LoM. The strategy for Belfast entailed targeting the high-value areas earlier in the LoM plan. Based on these identified high-value areas, a revised sequence was determined to target these areas sooner. The LoM plan has been revised and the mining schedule has been run to facilitate extraction of the high-value areas sooner in the LoM. This schedule has not impacted the Reserves for Belfast but, by applying the revised sequence, the net present value of the operation has been substantially improved.

CASE STUDY

IMPLEMENTATION OF THE GROOTEGELUK SHORT-TERM GEO MODEL

THE GROOTEGELUK MINE COMPRISES A COMBINATION OF THE TWO TYPES OF COAL DEPOSITS, THE OVERLYING VOLKSRUST FORMATION (THICK INTERBEDDED SEAM COAL DEPOSIT), AS WELL AS THE UNDERLYING VRYHEID FORMATION (MULTIPLE SEAM COAL DEPOSIT).



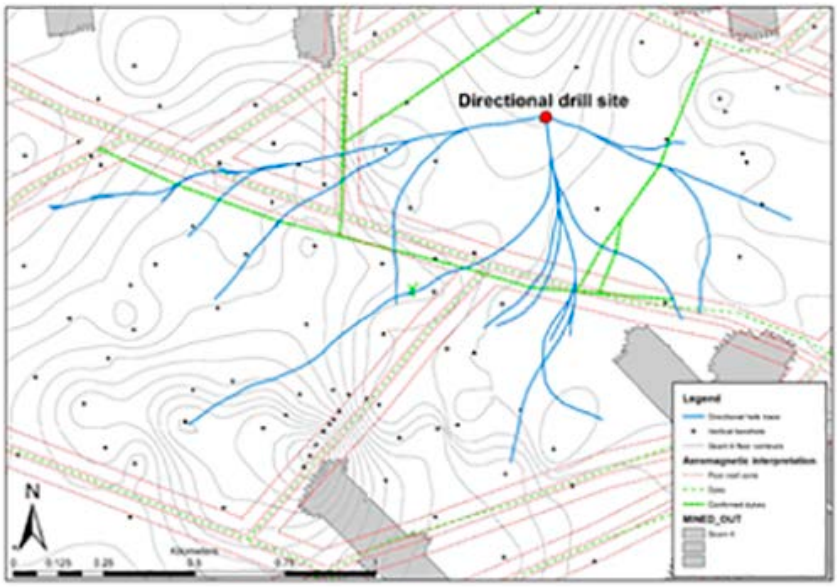
Comparison of interpretation before (above) and after (below) the short-term model

The Volksrust formation comprising intercalated mudstone or carbonaceous shale and bright coal layers requires detailed coal sample and mining horizon management to ensure correct RoM coal quality feed to the various coal processing plants. Grootegeluk implemented a short-term geological model to assist in optimising its day-to-day resource exploitation and short-term mine planning activities. Unlike the long-term geological model used for resource estimation and reporting, the short-term model is coal sample-based and updated weekly with new information obtained from geophysically logged blast holes, as well as surveyed floor surfaces in the pit. Blast holes are closely spaced (approximately 7.5m), which allows for densely spaced geological points of observation resulting in greater estimation accuracy than the long-term model, which typically uses exploration cored boreholes approximately 350m apart. The integrated model is applied to account for day-to-day material losses and/or gains as a result of under or over-mining of the benches. By ensuring that these mining deviations are accounted for in the tonnage and quality compositing of the mining blocks, block estimates are greatly improved in the short term. The short-term model has proved to be a valuable tool, assisting the operation in ensuring timely and accurate as-mined block estimates, as well as identification of geological risks within the mining blocks.

CASE STUDY

SURFACE-TO-SEAM DIRECTIONAL DRILLING AT MATLA

MATLA HAS THREE MAJOR LoM DEVELOPMENT PROJECTS UNDERWAY. THE PROJECTS WILL ENSURE EXTENDED MINE LIFE BY CREATING ACCESS TO COAL RESOURCES CURRENTLY NOT AVAILABLE THROUGH EXISTING WORKINGS AND INFRASTRUCTURE.



Matla Mine 2 north-west access project area showing surface-to-seam directional drill traces, target and confirmed structures

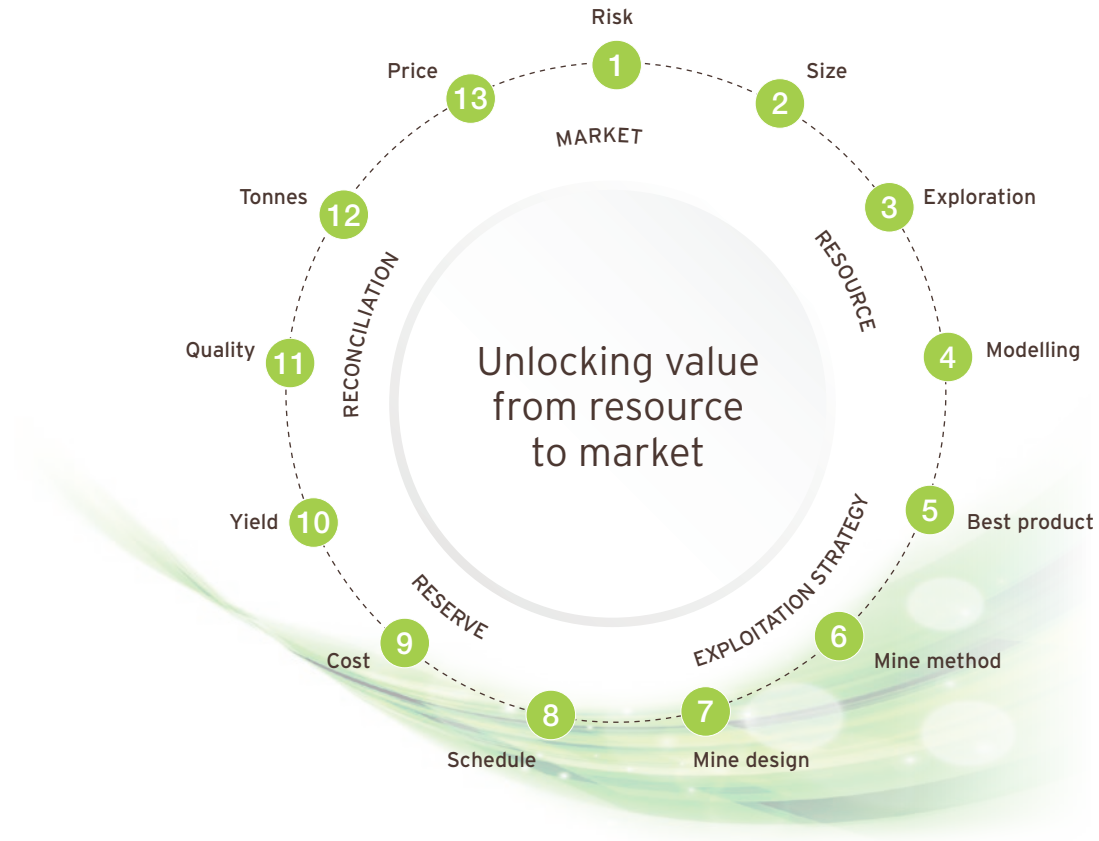
One of the projects is the north-west access project, which entails the development of an incline from the existing S2 workings up to the S4 Resource area. The S4 area is structurally challenging with multiple sets of igneous intrusives, including cross-cutting sills and dykes identified through aeromagnetic surveys and mining intersections. It is vital that the mine is designed to mitigate risks, to ensure maximum coal extraction and to ensure a safe working environment.
A surface-to-seam directional drilling programme was initiated during the reporting year, completing 13 500m of drilling, probing and derisking the mine layout for future mining development. Drilling results successfully outlined dyke intersections, thicknesses and displacements as well as outlining areas of poor ground conditions (burnt or fractured coal). The results were considered during the review of the mine plan, impacting on the access design as well as mine layouts. Surface-to-seam drilling has been used to collect crucial information that will not only be used for mine design but will cater for mine scheduling and production planning. In addition, inclusion of dyke thickness and displacement will allow for more informed decisions during mine scheduling and planning for stonework section deployment. The drilling has proved to be a vital quantitative tool that allows for the identification of various unknown factors well ahead of mining.

UNLOCKING VALUE IN THE ESTIMATION PROCESS

The purpose of LoM planning underlying our Resource and Reserve estimation is to unlock maximum value from the coal in the ground for Exxaro, taking margin and net value into consideration. Each orebody has a unique mining methodology, processing parameters and targeted market segment that deliver maximum value to shareholders. This is impacted by updated Resource information, developments in mining and processing technology and changes in market dynamics.

Consequently, the optimum exploitation strategy needs to be continually reviewed to ensure applicable Resources reach the most lucrative markets. This ongoing iterative process is illustrated below. A relentless drive to reduce the environmental footprint of operations is embedded in the process and the continuous impact of the evolving legislative landscape is reflected in designs.

Figure 3: Market to Resource model



OUR CONSOLIDATED MINERAL RESOURCE AND MINERAL RESERVE REPORT

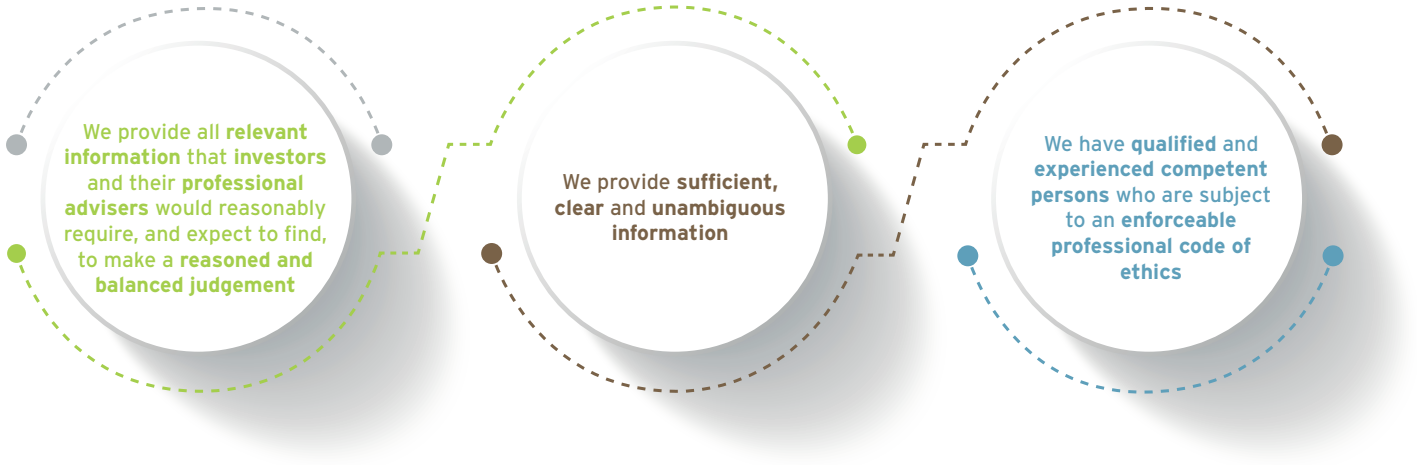
The content of this report is compiled from detailed independent reports received from appointed competent persons at our various operations and projects, available on request from the group company secretary. The reported Coal Resources and Coal Reserves presented here are therefore summaries from these reports.

The information in the CMRR report is aligned with the JSE Listings Requirements (section 12:13) and includes information on reporting governance, competence, tenure, risk, liabilities, exploration and assurance as well as ancillary descriptions of applicable projects, operations and exploration activities.

In addition, each operation and project maintains an individual competent person's report that encapsulates the systematic and detailed estimation process conducted or supervised by that person. These reports are aligned with the checklist and guidelines of the reporting and assessment criteria of the SAMREC Code and scrutinised and updated when required. Exxaro continuously examines various aspects of the Coal Resource and Coal Reserve estimation process and we have revised and aligned our reporting with the guidelines of the SAMREC Code.

OUR REPORTING PRINCIPLES

Exxaro is committed to the principles of materiality, transparency and competence, and continuously strives to enhance the level of estimating and reporting of Coal Resources and Coal Reserves.



HOW WE REPORT

The annual estimation and reporting process is managed through the Exxaro geosciences policy and associated Coal Resource and Coal Reserve reporting and LoM procedures. The documents dictate technical requirements for estimation and reporting, and include guidelines on methodologies, templates and assurance.

The policy and procedures are aligned with the guidelines of the SAMREC Code and, for South African coal reporting, SANS 10320:2004. Processes and calculations associated with the estimation process have been audited by internal competent persons and external consultants when deemed applicable. For mines or projects in which Exxaro does not hold the controlling interest, figures have been compiled by competent persons from the applicable companies and are not audited by Exxaro.

Coal Resource estimations are based on the latest available geological models, which incorporate all new validated geological information and, if applicable, revised seam, Resource definitions and Resource classifications. For Exxaro operations and projects, we use a systematic review process that measures the level of maturity of exploration work done, extent of geological potential, mineability, licence-to-operate considerations and associated geological risks/opportunities to establish eventual extraction. We have enhanced our methodology to ensure that all factors for reasonable and realistic prospects for eventual and economic extraction, as outlined in Table 1 (4.3) of the SAMREC Code, have been reasonably considered.

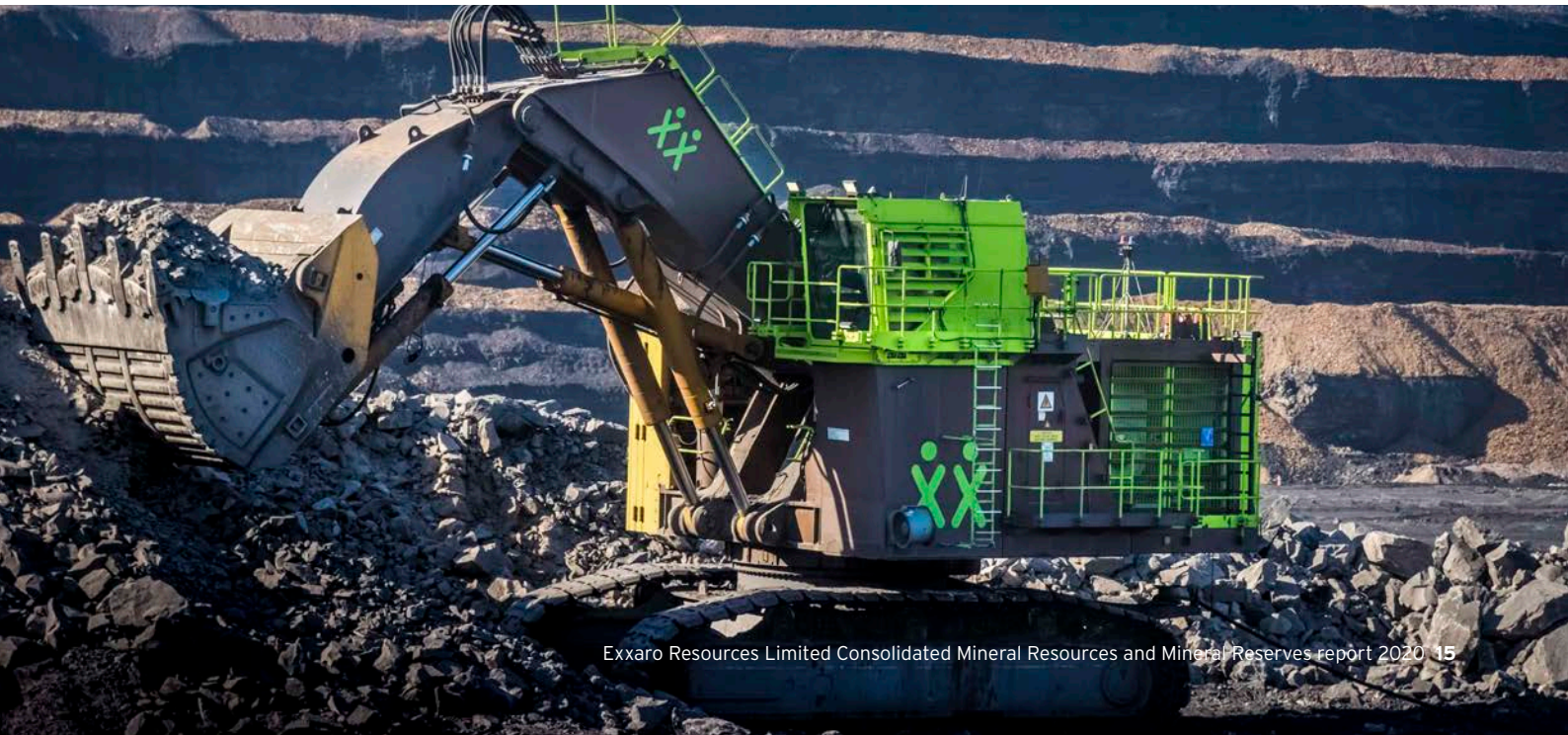
For Exxaro's Coal Resources, the location, quantity, quality and continuity of geology are known to varying degrees of confidence and continuously tested through exploration activities such as geophysical surveys, drilling and bulk sampling. Coal Resources are classified into Inferred, Indicated or Measured categories, based on the degree of geological confidence. Distribution of points of observation (drilling positions and trenches, among others), quality assurance and quality control in sample collection and evaluation of structural complexities are considered in classifying Resources. An annually compiled exploration strategy outlines activity planned to investigate areas of low confidence and/or geological or structural complexities to ensure Resources of a high level of geological confidence are considered for mine planning.

Coal Reserves are estimated using relevant modifying factors at the time of reporting (mining, metallurgical, processing, infrastructure, economic, marketing, legal, environmental, social and governance requirements). Modifying factors are reviewed before and after Reserve estimation by the persons responsible for ensuring all factors are timeously and appropriately considered. Signed-off Reserve fact packs that record losses, recoveries/yields, cost, commodity prices, exchange rates and other required factors applied, are documented in each LoM plan and independent competent person's report.

Exxaro aims to create maximum stakeholder value through its LoM planning. In the drive for early value, the highest margin and net value product, as well as the highest value mining sequence were re-examined to ensure that all exploitation strategies are optimally suited for current mining practices and market conditions. This was done while ensuring that medium and long-term objectives were not compromised. Strategic marketing objectives were overlain on this analysis to produce plans that minimise market risk and are robust under expected fluctuations in the underlying economic factors.

Reported Coal Reserves are derived from Indicated and Measured Coal Resources, although limited Inferred Resources may be included in the LoM plan at the discretion of the competent person but not converted to Coal Reserves. These inclusions are scrutinised, tested, documented and their impacts are known and quantified.

Environmental management, including applicable authorisations that support our estimates, closure plans, allocated funding and associated risks are discussed in detail in Exxaro's ESG report available online under the investors tab.



OUR MINERAL RESOURCES AND MINERAL RESERVES STATEMENT

The Mineral Resources and Mineral Reserves summarised on pages 28 to 32 are reported as those remaining on 31 December 2020 and compared with the corresponding estimates reported on 31 December 2019. Mineral Resources are reported including Mineral Resources that have been converted to Mineral Reserves and, at 100% Exxaro ownership, irrespective of the individual operation or project's attributable shareholding. We do, however, also report Mineral Resources that fall within our LoM plan to enhance transparency. An exception to inclusive reporting is the reporting for Gamsberg and Black Mountain as Base Metal Mineral Resources and Mineral Reserves from Vedanta Resources represent Resources excluding those Mineral Resources converted to Mineral Reserves.

It is important to note that reported estimates are not an inventory of all mineral occurrences identified but a reasonable estimate of those which, under assumed and justifiable technical, environmental, legal and economic conditions, may be economically extractable at present (Mineral Reserves) and eventually in future (Mineral Resources).

Mineral Resources and Mineral Reserves are estimated on an operational or project basis and in line with the SAMREC Code for African properties, except for Vedanta's property, and the JORC Code for Australian and Vedanta properties. For Coal Resources and Coal Reserves under Exxaro management's control, estimation is in line with the SANS 10320:2004 South African guide to the systematic evaluation of Coal Resources and Coal Reserves. We are currently transitioning to the methodologies and concepts of the newly introduced SANS 10320:2020.

Comprehensive information on each operation under Exxaro management control, which supports the Coal Resource and Coal Reserve estimates, is provided in the ancillary section of this report.

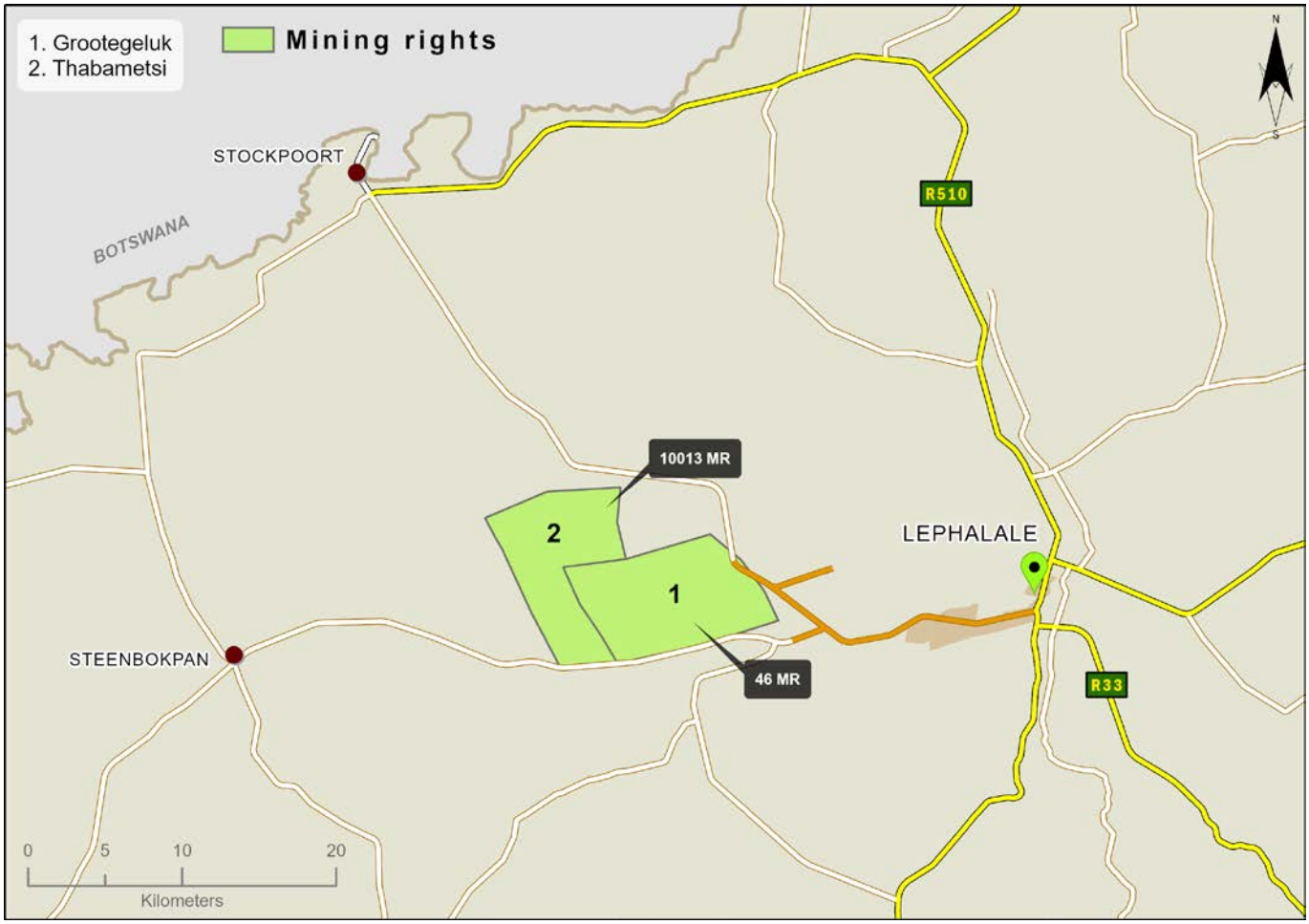
LIMPOPO

Grootegeluk coal mine

Exxaro's flagship open-pit coal mine produces power station coal, variously sized metallurgical coal products, as well as semi-soft coking coal for local and international customers. There is no material change to the total Coal Resource but a movement within the Resource categories are noted. New exploration information obtained at Grootegeluk mine was used to update the geological model. As outlined earlier, the improved understanding of the geological structure within the mining area resulted in an estimated 258Mt of Inferred Resources to be upgraded to Indicated Resources. In addition, approximately 151Mt of Measured Coal Resources within the northern pit area were reclassified as Indicated, resulting in an overall increase of approximately 409Mt within the Indicated Resource category. The reclassification to Indicated is deemed insignificant and done as a proactive step to ensure a point of observation occurs within the newly interpreted faulted blocks. Focused drilling in 2021 and 2022 will be conducted to reconfirm the fault orientations.

There has been a reduction in the Proved Reserve as well as total Coal Reserves as a result of the high-value schedule that has excluded lower value coal towards the latter years of the LoM. A brief overview of the methodology followed is included in the supplementary notes.

Figure 4: Exxaro's mining and prospecting rights in the Waterberg



Thabametsi coal project

The Thabametsi mining right, an area adjacent to the Grootegeluk operation, is earmarked to produce power station coal to supply a mine-mouth feed IPP plant. The project development agreement with Exxaro's partner for the IPP has lapsed and the Reserve category status has subsequently been changed from Proved to Probable.

In 2019 we reported that we relinquished the Waterberg North and Waterberg South projects. The closure activities are progressing well.

Supplementary notes

The Grootegeluk surface coal mining operation consists of a series of parallel benches advancing progressively across the deposit via a process of drilling, blasting, loading and hauling with truck and shovel fleets. The mining bench definitions in the Vryheid and overlying Volksrust formations coincide with the geological boundaries, resulting in 14 mining benches for saleable products and waste. Mining during the reporting year is reported as 54.6Mt RoM of which approximately 2.22Mt consists of metallurgical coal and largest portion of power station coal (approximately 26.55Mt) dispatched to the Matimba and Medupi power stations.

The early value re-evaluation at Grootegeluk as already discussed had several objectives. Due to the size of the deposit, there are a myriad options available to exploit the mine. A margin ranking analysis was run to highlight high-value areas. The pit shell was then subtly readjusted to ensure that the present value of future cash flows was optimised. Economical mining practices were factored in to ensure practical low-cost mining was still sacrosanct. The lower value areas were removed or delayed with some included in areas scheduled towards the end of LoM.

The product mix was re-optimised to ensure that the mix of power station coal for Medupi and Matimba, export thermal coal and semi-soft coking coal yields the best financial results. This entails running multiple permutations and combinations of coal seams, plants and wash densities. The mine will in future transition from the central pit to the northern pit. The mechanics of this has been incorporated into the LoM schedule to ensure that waste and coal mining progresses smoothly and without interruptions to customers and cash flows.

MPUMALANGA

Matla coal mine

An Eskom-tied underground mine approval has been received to execute three expansion projects, namely Matla Mine 1 access shaft, Mine 2 incline and Mine 3 decline to access the large remaining S4 and S2 underground Coal Reserves. The decline at Matla 3 is in progress and Matla Mine 1 relocation was initiated with first coal expected in the fourth quarter of 2022. The strategic intent of the exploitation strategy at Matla is to supply Eskom in accordance with the coal supply agreement regarding volumes and quality at the lowest possible cost.

Leeuwpan coal mine

Mining of the OI open-pit reserve area is progressing well. An investigation into the area, which indicated additional minable areas towards the west of OI, has been incorporated into the mine plan and Reserves following the granting of environmental approvals.

Belfast coal mine

The ramp-up of production is progressing well. The box-cut strategy was re-examined to ensure that the maximum value is unlocked for stakeholders. The opencast plan was reaffirmed as the best solution and actual operational performance data was captured. The data is annually reconciled with planned parameters and updated in the LoM fact packs.

ECC

The Dorstfontein West mine incline to access S4 Coal Reserves from existing mining infrastructure has been completed. Mining of S4 is progressing well. The study was successfully completed at Dorstfontein East to obtain access for underground mining to S4 lower Coal Reserves through five portals in the current pit 2 open area and was successfully completed. Construction of the underground portal is at an advanced stage and production from this area will commence in 2021.

The Forzando North and South reserves were reassessed, under prevailing economic and cost conditions, and adjustments were made to the mine to ensure maximum value leading to a reduction in Coal Reserves. This view will be continuously updated as new information becomes available.

Supplementary notes

Matla, an Eskom-tied underground operation, extracts coal through three underground mines. Matla extracts S2 select and the lower-quality but somewhat thicker S4 in a specific scheduled relationship to blend and honour the volume and quality requirements of the Eskom agreement. It is therefore of the utmost importance to have adequate access to quality Coal Reserves to ensure the correct volumes are scheduled for the short, medium and long-term strategies. Both coal seams' mineable Reserves are rapidly diminishing within mines 2 and 3 and the unfortunate closure of Mine 1 due to pillar instability in 2015 placing a burden on the operation to comply with contractual expectations. However, Exxaro has, since closure of Mine 1, accelerated exploration and outlined S2 and S4 Coal Resources that will be accessed through either new or existing infrastructure.

The outcome of the studies to secure long-term Coal Resources resulted in a number of expansion projects. The first was the completion of a relocation investigation that entails developing a new box-cut and tunnels to access the remaining Mine 1 S4 Coal Reserves. The study was approved and is currently under construction, expecting first coal in the fourth quarter of 2022. The LoM plans are balanced with project progress, production and the procurement of equipment aligned with the expected completion date of the new shaft access. Additional in-seam directional drilling has been completed in the area where mining is planned to commence. This information has been used to adjust the layouts of the initial panels, ensuring that the risk associated with new mining areas is minimised.

Two additional expansion projects, consisting of a decline and incline (respectively) below and above current workings at Mines 2 and 3, were approved by Eskom, unlocking S2 and S4 Coal Reserves. The decline at Mine 3, with the associated vent shaft, is under construction and first coal is expected in the second quarter of 2020. Matla accesses Coal Reserves under challenging geological and mining conditions. Thinning coal seams, variability in coal quality and roof conditions due to the impact of intrusive dykes and sills, as well as geological faulting, present challenges for coal extraction in a number of mining sections. Focused exploration activities, including surface and downhole geophysical surveys and vertical and horizontal drilling, are employed to proactively outline the impacts on mine planning. Directional surface-to-seam drilling will be implemented for the first time to investigate a number of prominent geological faults in the Mine 2 incline project area. The layouts will be optimised based on the results obtained from the drilling. Careful blending between mines and seams is required to maintain the contractual qualities while maintaining the long-term viability of the mine.

OUR MINERAL RESOURCES AND MINERAL RESERVES STATEMENT continued

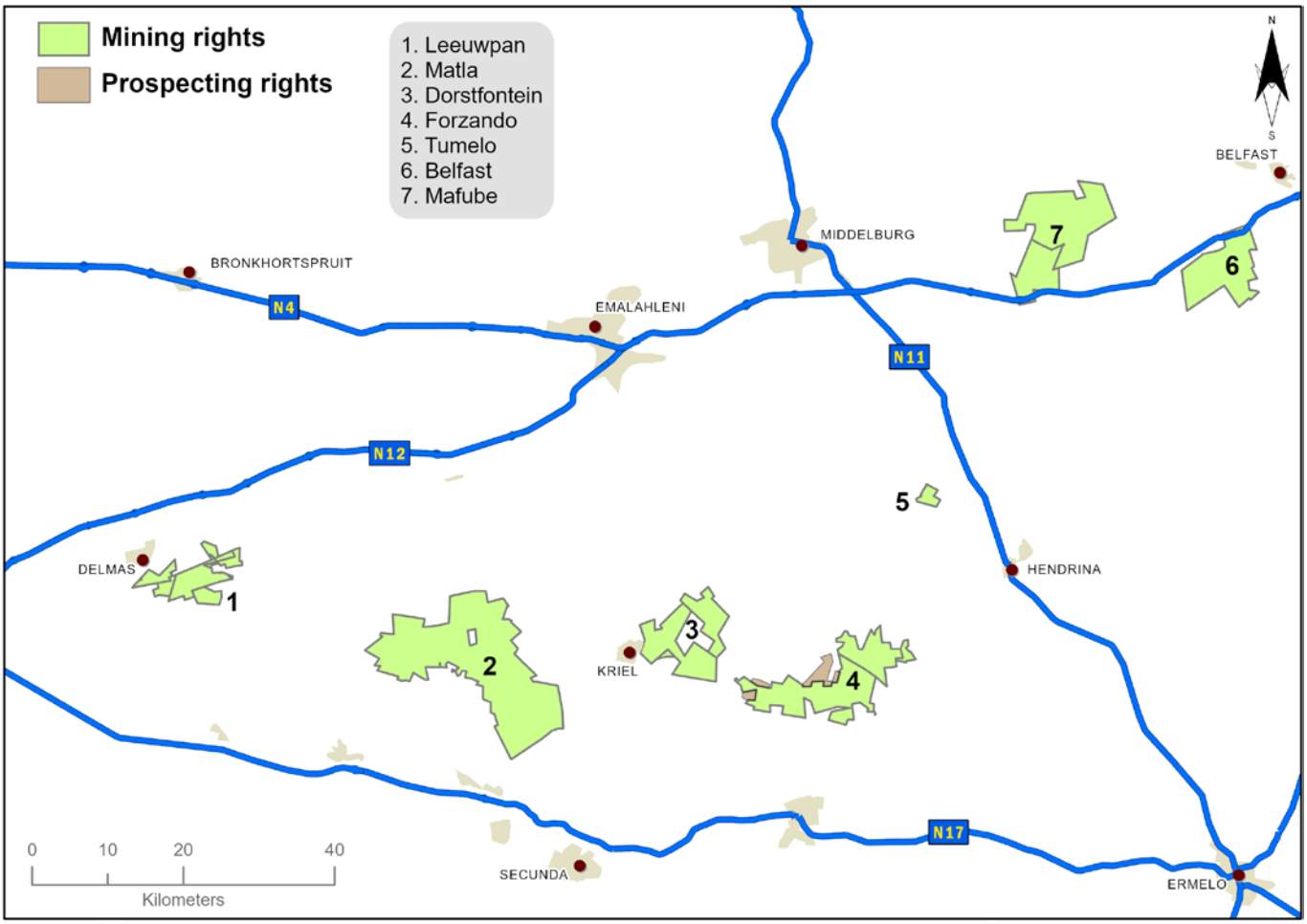
In line with Exxaro's commitment to unlock value, an expansion project to extend the LoM of Leeuwpan, an open-pit operation in Delmas, Mpumalanga, by 10 years was implemented in 2018. The updated plan incorporates changes in the price structure of the export market with higher prices for lower energy products leading to higher yields. An investigation surrounding the OI Reserve resulted in unlocking additional Coal Resources (approximately 2.7Mt) included as Probable Reserves in the LoM after all environmental approvals were secured. The market strategy for Leeuwpan is regularly assessed as it has the potential to produce products ranging from Eskom to the export market. Blending between pits must be done with precision to ensure current profitability and future sustainability.

Belfast is currently in a ramp-up phase. During the design of the mine, the planning and modifying factors used to obtain the optimum pit shell, product blend and schedule were based on theoretical numbers. During 2020, the actual conditions and performance were recorded. This data will be compared to the planning parameters either as a benchmark for improvement or to adjust the applied modifying factors. This ensures that the design and schedules are relentlessly improved and fine tuned for current and planned conditions.

The ECC complex comprises the Dorstfontein, Forzando and Tumelo operations (Figure 5). The complex comprises Dorstfontein West (an underground mine) and Dorstfontein East (an opencast and underground operation) as well as Rietkuil Vhakoni, an adjacent project awaiting approval. The Dorstfontein S4 incline project was implemented in 2018, unlocking S4's lower Coal Reserves through an incline in existing mine infrastructure. After the successful development of the incline, mining of S4 began and is progressing well. An interseam bunker was commissioned during 2020 to ensure compliance with planned production and qualities. Coal extraction from Dorstfontein East was executed from open pits 1 and 2 during the reporting year. A study was initiated to access the substantial S4 Coal Resource to the west of the open-pit areas through underground mining. Layouts for the underground area were completed and this has been included in the Reserves during 2020. Completion of construction of the underground access is imminent and production will commence in 2021.

Forzando comprises two underground mines: Forzando North and Forzando South. Both mining rights were executed in 2013 for a period of 16 years. In 2018, some historical workings were successfully accessed at Forzando North (under care and maintenance since 2014) to add to the overall product mix. However, adverse macro-economic assumptions, as well as areas excluded due to unfavourable floor gradients, negatively impacted the Coal Reserve and mining at Forzando North ceased. Mining in general is affected by geological faulting and dolerite (sill and dyke) activity, resulting in poor roof conditions and restricting access to potential Resource areas. Geological conditions affect the tempo of underground mining, which is the primary driver of cost per RoM tonnes. After tempo and cost adjustments were made, the margin ranking was recalculated using the latest price and exchange rate macros. The subsequent calculation indicated that certain Reserve blocks were not profitable to mine and these were excluded from the Reserve.

Figure 5: Exxaro's mining and prospecting rights in Mpumalanga



PROSPECTING AND MINING TENEMENT INFORMATION

Coal Resources and Coal Reserves quoted for Exxaro-managed assets fall within existing Exxaro mining or prospecting rights.

Rights are of sufficient duration (or convey a legal right to convert or renew for sufficient duration) to enable all Coal Reserves to be mined in line with current production schedules. The only exceptions are Grootegeluk (granted in February 2011 for 30 years), Thabametsi (granted in 2016 for 30 years), Matla (granted for 10 years), Dorstfontein (granted for 30 years) where adequate Coal Reserves exist for life-of-mine (LoM) plans extending well beyond the period for which they were granted. Exxaro's prospecting and mining authorisations are managed to ensure reporting compliance as required by the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) and the National Environmental Management Act, 1998 (Act 107 of 1998).

The status of prospecting and mining rights indicating the right type, name, reference number, status, expiry date and ownership (percentage attributable to Exxaro) is presented in Table 74 and Table 75 (Appendix A). The prospecting and mining right boundaries are also outlined in the discussion of individual operations and projects in the ancillary section (page 36). Material notes regarding mining tenure are provided below.

MPUMALANGA

Exxaro manages several operations in Mpumalanga (Figure 5 on page 18).

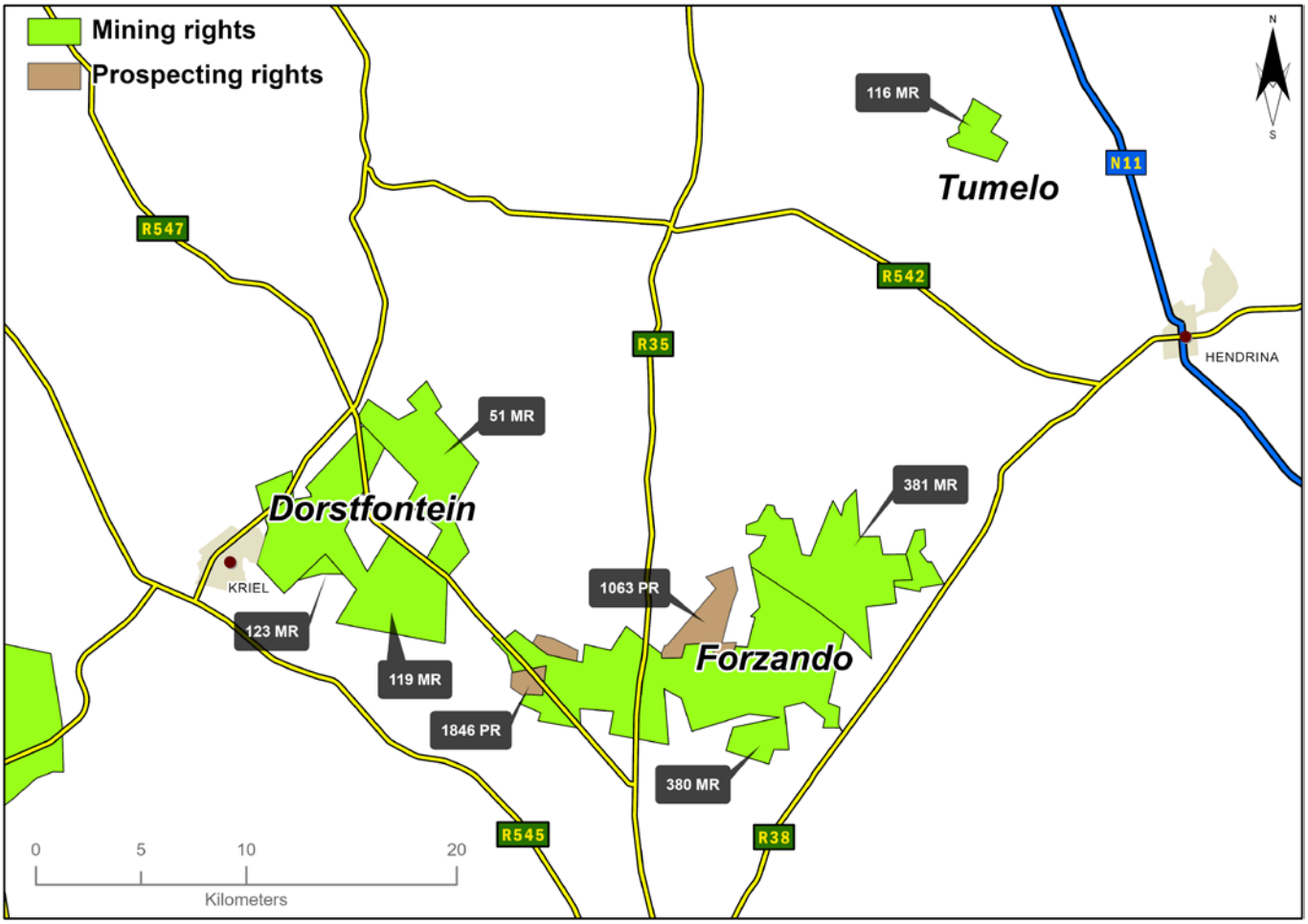
At Matla mine, communication received from the Department of Mineral Resources and Energy (DMRE) confirmed the mining right lapse date as 4 March 2025. The converted mining right and adjacent new mining right at Leeuwpan mine have been executed and registered. Approval of ministerial consent (section 102 of the Mineral and Petroleum Resources Development Act) submitted to amalgamate the two rights has been granted.

Our Belfast mining right (431MR) lapses on the 20th February 2043. An objection to a conflicting prospecting right application, which partially overlaps our right, was submitted to the DMRE. Response is pending but Exxaro has reasonable expectation that the illicit third-party application will be rejected.

The ECC complex comprises the Dorstfontein, Forzando and Tumelo operations.

The Dorstfontein complex comprises three mining rights. The mining rights of Dorstfontein West (123MR executed in June 2012), Dorstfontein West/Vlakfontein (119MR executed in June 2012) and Dorstfontein East (51MR executed in December 2006) were granted for 30 years. A new prospecting right application submitted for Rietkuil Vhakoni, an area adjacent to the Dorstfontein mining rights, is pending. Exxaro has reasonable expectation that the right will be granted. ECC lodged an appeal for a conflicting prospecting right application located over parts of the Dorstfontein West (119MR)

Figure 6: Locality map for ECC mining and prospecting rights



PROSPECTING AND MINING TENEMENT INFORMATION continued

mining right on the farm Vlakfontein 72 IS. We lodged the appeal on September 2017 and have reasonable expectation that it will be successful.

The Forzando complex comprises two mining rights: Forzando South (380MR) and Forzando North (381MR) both granted in November 2011 for 16 years. Applications to renew the prospecting right of Legdaar (1846PR) and Vlaklaagte (1140PR) were timeously submitted and approvals are pending. A new prospecting right submitted for Kalabasfontein, an adjacent area to the Forzando South mining right, is pending. Exxaro has reasonable expectation that the right will be granted.

ECC also holds a 49% interest in the prospecting right of Schurvekop (1063PR) with Mmakau Coal as the majority owner. A mining right submitted by Mmakau Coal in 2016 is progressing well.

The Tumelo mining right was registered in January 2013 and lapsed in 2015. A renewal was timeously submitted, approval granted in early 2019, executed in August 2019 and will lapse in January 2025.

LIMPOPO

Exxaro's Grootegeluk complex includes Grootegeluk and the adjacent Thabametsi mining rights (Figure 4 on page 16).

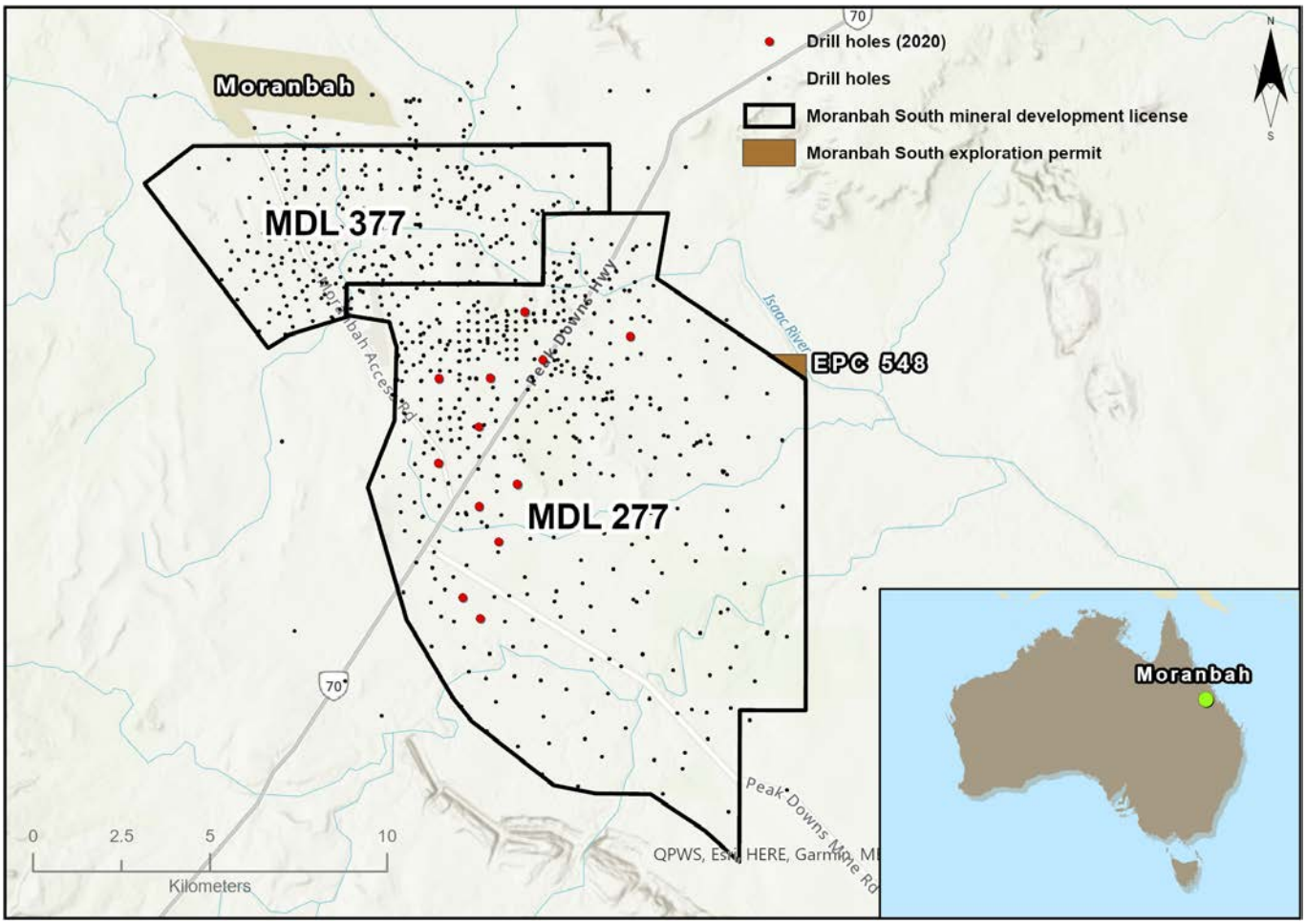
The converted Grootegeluk mining right (46MR) was executed in March 2011 and registered in May 2012 for a period of 30 years. An approval for ministerial consent (section 102 of the Mineral and Petroleum Resources Development Act) was submitted in September 2017 to include two mine dump areas that currently fall outside the mining right. This consent has been granted and execution is pending. Thabametsi was granted a mining right (10013MR) for 30 years. The mining right was executed in June 2016 and registered in July 2016.

The Waterberg prospecting rights were relinquished in 2019 and are in closure.

AUSTRALIA

The Moranbah South project area in Australia includes two mineral development licences (MDLs 277 and 377) and one exploration permit for coal (EPC 548). Licence MDL 277 lapses in July 2021 and a renewal application was lodged in accordance with the Queensland regulations. Licence MDL 377 expires in September 2023 and EPC 548 in February 2022. The majority of exploration activities, including geophysical surface seismic surveys and drilling, are focused within the two MDLs.

Figure 7: Locality of the Australian MDLs and EPCs



GOVERNANCE

The Exxaro annual estimation and reporting process is managed through the Exxaro geosciences as well as LoM policies and associated Coal Resource and Coal Reserve reporting and estimation procedures. Policies and procedures are aligned with the guidelines of JSE Listings Requirements (section 12:13) and the SAMREC Code 2016.

The policy and procedures dictate technical requirements for estimation and reporting and include guidelines on methodologies, processes and deliverables. Procedures are also implemented for the geophysical, rock engineering, geotechnical, structural geology, tenure management, hydrogeological, exploration and mine planning disciplines that prescribe methodologies and minimum standards for compliance.

To align with the SAMREC Code, Exxaro has updated its internal competent persons' reports from 2017, annually testing the "if not, why not" principle to enhance transparency. The reports followed guidelines under Table 1 of the SAMREC Code.

Table 1: Exxaro reporting structure

Regulatory	Governance	Deliverables	Assurance
JSE Listings Requirements (section 12)	**Geosciences policy**	**Annual Resource and Reserve estimation schedule**	**Annual review and update of procedures**
2016 amendments to "minimum contents of annual report, point 12.13" were considered	*2019 update to align with our functional model strategy was considered*	*2020 estimation schedule for operations under Exxaro control was followed*	*2019 procedures and the 2020 updated exploration, geotechnical, rock engineering and structural geology procedures were considered*
SAMREC Code (Table 1)	**Exxaro's Mineral Resource and Mineral Reserve reporting procedure**	**Mineral Reserve fact packs**	**Competent persons' register update and review**
2016 updated Table 1 was considered	*2019 update to include audit findings and recommendations*	*2020 Mineral Reserve fact packs were reviewed and considered*	*Updated for 2020*
SANS 10320:2004	**Exxaro's Mineral Resource estimation procedure**	**Annual operation/project Mineral Resource and Mineral Reserve report**	**Consolidated Mineral Resource and Mineral Reserve report review and lead competent person sign-off**
We are reviewing and transitioning to align with the proposal and methodologies of SANS 10320:2020 edition 2	*2019 update to include audit recommendations*	*Competent persons' reports were updated for operations under Exxaro's management control*	*Externally peer reviewed and recommendations incorporated*
JORC Code	**Exxaro's Mineral Reserve estimation (LoM) procedure**	**Consolidated Mineral Resource and Mineral Reserve report**	**Applicable competent person and technical team sign-off**
	2019 update was considered	*Compiled to reflect 2020 estimates*	*Included in individual competent persons' reports, available on request*
		When required	**Internal review and external audit process**
		Competent persons' reports were updated for 2020 reporting period	*A number of internal and external audits were conducted in the reporting period. Findings were noted and subsequently addressed. The audits are discussed in the risk and assurance chapter (page 23)*

Comments on 2020 estimation shown in italics.

COMPETENT PERSONS

Exxaro applies three levels of "competency" to estimating Coal Resources and Coal Reserves:

- Competent person (as defined in the SAMREC and JORC codes) at each operation who officially takes responsibility for estimating and reporting Coal Resources and/or Coal Reserves at operational or project level. These competent persons have been appointed and acknowledged acceptance of accountabilities. Names, qualifications, affiliations and relevant experience are included in the independent operational and project reports in the form of a competent persons' certificate.
- Technical specialists could include geologists, mining engineers, geohydrologists, geotechnical engineers, financial experts and economists, among others. Technical specialists who contributed to estimating the operation's Coal Resources and Coal Reserves are included in the original competent persons' report documentation with their contributions specified, as well as their names and signatures.
- Person(s) designated to take corporate responsibility for the Coal Resource and Coal Reserve estimates presented in the consolidated report are clearly differentiated from the competent person at an operational level who takes overall corporate responsibility.

Exxaro's Coal Resources and Coal Reserves have been estimated or supervised by the competent persons listed in Table 77 (name, affiliation and relevant experience) on an operational basis in accordance with the SAMREC Code for South African properties and the JORC Code for Australian properties. All competent persons have sufficient relevant experience in the style of mineralisation, type of deposit and/or mining method(s) under consideration and/or being mined, and for the activity under their responsibility to qualify as "competent persons", as defined in the applicable codes at the time of reporting.

The appointed competent persons have signed off their respective estimates in their original competent persons' report for the various operations, and consent to the inclusion of the information in this report in the form and context in which it appears in the Consolidated Mineral Resources and Mineral Reserves report (CMRR) report. Technical specialists who contributed to estimating the operation's Coal Resources and Coal Reserves are included in the original documentation where their contributions are specified, as well as their names and signatures.

The various appointed competent persons are either full-time employees at the operation (resident geologist or mineral resource manager) or, in the case of projects, the competent persons have conducted appropriate site visits to the mineral property being evaluated. All operations under Exxaro's control have been visited by the applicable competent persons.

Exxaro's lead competent persons are appointed by the management team. The Exxaro lead Coal Resource competent person is Henk Lingenfelder, a member of the Geological Society of South Africa and registered (400038/11) with the South African Council for Natural Scientific Professions. He has a BSc (Hons) in geology and 25 years of experience as a geologist in coal, iron ore and industrial minerals.

The Exxaro lead Coal Reserve competent person is Chris Ballot, a mining engineer registered (20060040) with the Engineering Council of South Africa. He has 24 years of experience in iron ore, mineral sands, and coal in various technical and management roles.

ASSURANCE

Tier 1

Mineral Resource and Mineral Reserve estimation is undertaken as per Exxaro's governance framework. Sign-offs are required at each stage and the process is **concluded** in a f**ormal sign-off session** by a panel comprising Exxaro's lead **Mineral Resource and Mineral Reserve competent persons, competent persons, domain experts and technical specialists.** Technical **assurance** is managed in terms of **dedicated standards.**

Tier 2

Internal reviews are scheduled and planned for a **three-year cycle** or when deemed necessary**.** The focus is on projects and resource and associated reserve **compliance** with Exxaro's **governance framework** while **ensuring accountability** and **consequence management.**

Tier 3

External audits are scheduled in a **three-year cycle** or at the discretion of the lead competent persons and entail a **full review** of the **Mineral Resource and Mineral Reserve estimation process** from **borehole logging** to Mineral Reserve **evaluation.**

Assurance is implemented in terms of a three-tier system, aligned with the guidelines of Exxaro's Mineral Resource and Mineral Reserve reporting procedure, summarised as follows.

In 2020, tier 1 assurance was undertaken for the Grootegeluk, Matla, Dorstfontein and Forzando operations. The Mineral Resource fact packs indicated that an update of the Coal Resource estimate was required either due to additional information being available or as recommended by previous audits. Geological data validation, data analysis and subsequent updating of geological and structural models were concluded in the reporting period. These models were peer reviewed by geosciences central experts for the four operations and the models were signed off by the applicable competent persons and their supporting technical teams. Findings from the reviews were incorporated during the model update process. All the Mineral Reserve fact packs of Exxaro operations were reviewed in the reporting year. The Grootegeluk, Belfast and Leeuwpan LoM plans were subsequently updated. In addition, the Grootegeluk and Belfast strategies were reviewed, leading to optimisation of the LoM plans. The Leeuwpan mine layout was reviewed to accommodate the OL power line and bridge pit as well as an overburden (OVB) dump. An internal review of Matla's LoM plan was carried out in March 2020 with no findings reported.

Table 2 below indicates the tier 2 technical assurances conducted during the reporting year. Where technical findings were identified during reviews that may materially impact the business, remedial actions were recommended to ensure project robustness and shareholder return.

ASSURANCE continued

Table 2: Tier 2 technical assurances conducted in the reporting year with general points addressed

Project name	Project description	Resource Actions	Reserve Actions
Grootegeluk complex alternative mining solution prefeasibility study	Evaluation of optimisation alternatives to traditional truck and shovel methodology for overburden handling and placement over LoM	• Material types and variability established • Level of confidence assigned to key materials established • Clay occurrence relationships with weathering and faulting established • Outline of sample 1A and 1B (reactive material) established • Fragmentation during blasting of Bench 1B outlined	• Outline time availability, utilisation and tempo to establish value • Critically in the time available for overburden sealing on discard stacking system • Outline underfoot bearing to support the movement and operation equipment
Leeuwpan heavy mining equipment strategy	Reviewed every three years to ensure optimal and fit-for-purpose heavy mining equipment capacity to achieve production targets		Reviewed the dilution and loss modifying factors to ensure alignment with the equipment strategy
Belfast implementation project phase 2	Aimed to increase production throughput at Belfast mine	• Additional drilling to increase the level of confidence in the Resource area implemented • Geotechnical drilling at focused positions proposed and conducted • Geohydrological monitoring positions proposed	• Revised the mining sequence to maximise value for the mine over LoM • Reviewed the operational strategy to ensure operational excellence
Matla Mine 1	Aims to establish a new mine entrance to access Reserves	• Geological structures (faults, intrusive and undulation) identified to be addressed through focused exploration • Horizontal drilling to be conducted at all access points from historical workings into reserve area • Geotechnical domains as applied at the current workings established	• Reviewed the access and ventilation design • Revised the LoM plan to include the Mine 1 Reserves as per the project schedule
Matla north-west access	Aims to traverse between coal seams to access Reserves	• Ongoing exploration plan to address areas of low structural confidence and Inferred Resource categories • Monitor blast design and inputs from specialist engineer implemented • Review run-of-mine (RoM) availability for potential delays	Aligned LoM plan to project schedule
Grootegeluk backfill phase 3	This project is the third phase in the geographical extension of the Grootegeluk complex discard handling and backfill system	Impact of material types and availability thereof to be established for designs and construction philosophies	Revised LoM schedule to ensure that the mining operation and the backfilling operation are synchronised and hauling is minimised

On tier 3, in 2020, process audits were done by EY for the Belfast operation. The audit scope was limited to the following modules:
- Module 1: Process audit
- Module 2: Technical review on specific sections of the Coal Resources and Coal Reserves estimation process (covered in a separate report)

Conclusion: The overall review of the Coal Resources and Reserves, as well as the LoM plan processes, are in line with industry norms. EY identified housekeeping recommendations that will enhance the process. No material findings were reported while some improvements have been implemented. The additional recommendations noted in the audit are summarised in the table below and corrective measures, where applicable, were put in place.

COAL RESOURCES

The Coal Resource has been prepared and documented in accordance with the SAMREC Code and SANS 102320:2004 requirements and the process and methodologies are considered fit-for-purpose and considered to be within industry norms. The review of the geological model and Coal Resource classification has identified a number of recommendations, which are largely considered good housekeeping to improve future model and as such do not materially affect the Coal Resource estimate.

Table 3: Tier 3 external audit additional recommendations

Area under review	Conclusion and recommendation
Data collection review	EY considers the drilling, sampling and assaying methodology employed at Exxaro to be appropriate for the relevant coalfields as outlined by the reviewed standard operating procedures.
Geological modelling	The geological modelling parameters were reviewed and found to be appropriate for the style of mineralisation.
Coal Resource classification	The process followed in estimating the Belfast Coal Resources does not appear to be unreasonable and is in line with industry norms. EY has confirmed the Coal Resource classification using the distances provided in SANS but does recommend reviewing any Coal Resources that may be considered "spotted dog" classification. This does not materially impact the Coal Resource classification at Belfast.
Surface rights	EY is satisfied that the surface rights for the mining operation in the near term are secured. From observations in the surface rights review, Exxaro has put in place the necessary monitoring controls to manage any risks associated with the surface rights acquisitions.

ASSURANCE continued

COAL RESERVES

The Coal Reserves have been prepared and documented in accordance with the SAMREC Code guideline and the mine design and LoM scheduling processes as per Exxaro's standard procedures. The overall process reviewed is in line with industry norms. The review of the mine design and LoM scheduling has identified a number of recommendations, which are largely considered as good housekeeping to improve the process in future. As such, they do not materially affect the current estimated Coal Reserves.

Area under review	Conclusion and recommendation
Exploitation strategy	EY is satisfied with the process followed in establishing the business case for the operation and identified the ultimately mineable ore blocks for inclusion in the Coal Reserve estimate. The exploitation strategy process appears to have followed an appropriate process and it is in line with industry norms.
Mine design	The mine design process followed does not appear unreasonable. However, EY has identified that the geotechnical study may not be sufficient to inform the mine design as the project matures. The following recommendation should be taken into consideration: further geotechnical investigations with more detailed geotechnical parameters should be conducted to form part of the mine design as the project matures (slope angles).
Modifying factors	The modifying factors used in converting Coal Resources to Coal Reserves do not appear unreasonable. However, no reconciliation of the modifying factors to operational performance has been done yet as Belfast is still in project phase. The following recommendation should be taken into consideration: as the project progresses, management should reconcile the mine design parameters/technical assumptions with the actual performance to assess the reasonability of the modifying factors used in determining the 2019 Coal Reserves.
LoM plan	The LoM plan for Belfast does not appear to be unreasonable. However, based on a review of the 2020 business unit production results, it appears that Belfast may be lagging behind its production targets, which is not unexpected considering the ramp-up stage of the operation and the impact of the COVID-19 pandemic. EY therefore acknowledges the revised targets set with consideration of the COVID-19 impact.
Coal Reserve estimation	The competent person who signs off the Belfast Coal Reserves appears to be adequately qualified and sufficiently experienced to assume the role of competent person for the operation as per SAMREC Code guidelines and compliance with Exxaro's' mineral asset policy. The process followed in estimating the Belfast Coal Resources does not appear to be unreasonable and is in line with industry norms.
Economic assessment	The Belfast costs were benchmarked against other South African surface operations as well as other Exxaro operations and were found to be in line with South African coal operation costs. The Belfast operating costs therefore do not appear to be unreasonable considering other surface thermal operations in the same location. The Exxaro prices are not considered to be unreasonable in relative to broker forecast prices.

SUMMARISED GROUP MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

The Mineral Resources and Mineral Reserves remaining as at 31 December 2020 are indicated in this document. Mineral Resource and Mineral Reserve figures are not an inventory of all mineral occurrences drilled or sampled but a realistic record of those, under assumed and justifiable technical and economic conditions, that may be economically extractable currently and in future.

Mineral Resources and Mineral Reserves are reported inclusive of Mineral Resources that have been converted to Mineral Reserves. An exception is reporting for Gamsberg and Black Mountain Mining because figures received from Vedanta (JORC Code) represent Mineral Resources excluding those Mineral Resources converted to Mineral Reserves.

Exxaro includes all estimates directly under its management control and estimates of entities in which Exxaro holds a 25% interest or larger. Mineral Resources and Mineral Reserves are reported at 100% irrespective of the percentage attributable to Exxaro.

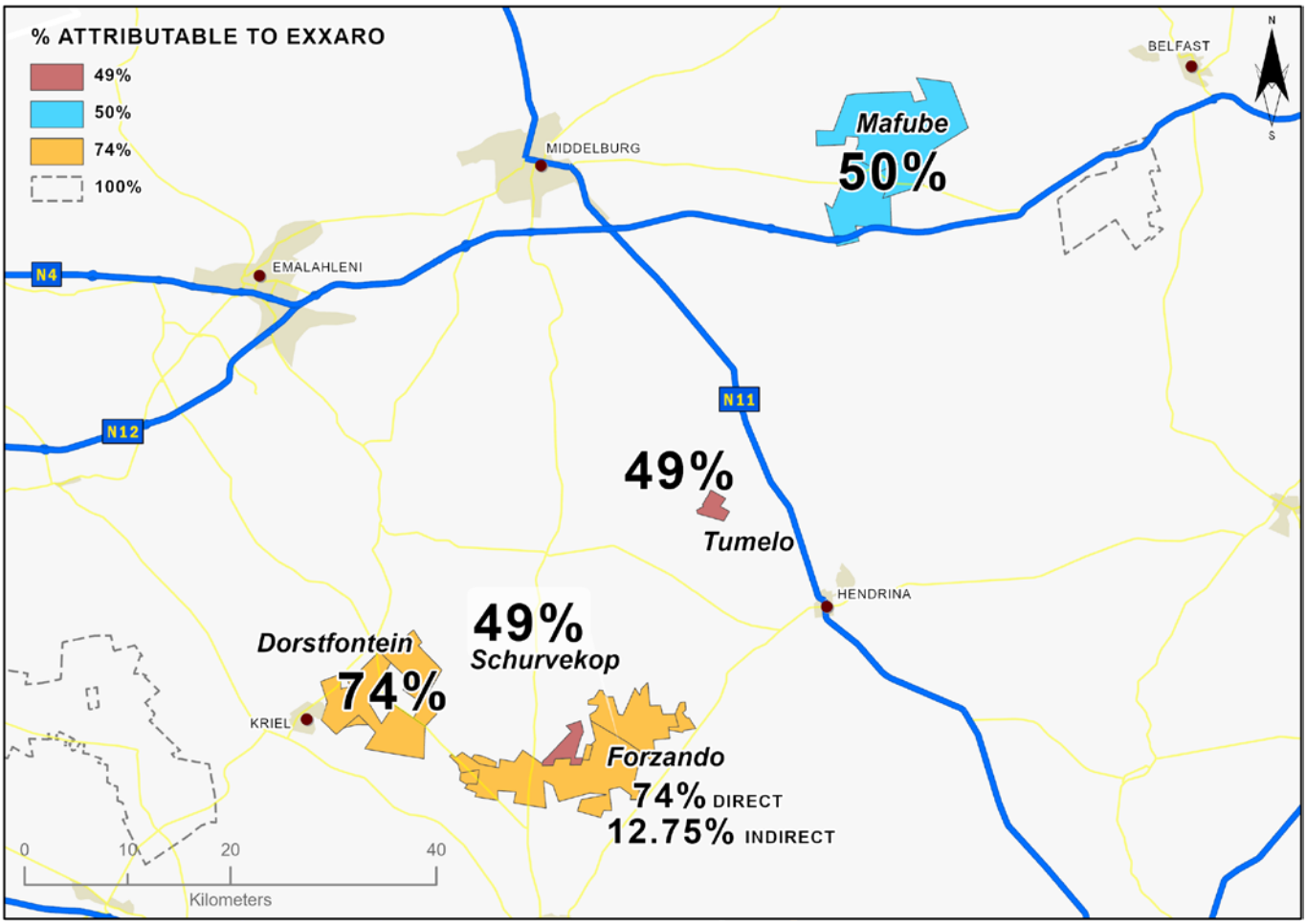
The percentage attributable tonnage (only coal) can be deduced from the attributable ownership (Figure 8) stated in the Coal Resources and Coal Reserves tables, and the summarised tonnages are shown in Table 4.

Explanations for material changes in year-on-year movements are provided as footnotes in the Mineral Resources and Mineral Reserves tables.

Table 4: Attributable Coal Resource and Coal Reserve tonnages

Commodity: Coal	Resource category	2020 mineable tonnes in situ (Mt)
Exxaro attributable tonnes	Measured	**4 172**
	Indicated	**2 555**
	Inferred	**3 467**
	Total Coal Resources	**10 194**
	Proved	**2 022**
	Probable	**1 095**
	Total Coal Reserves	**3 117**

Figure 8: Coal joint venture operations in Mpumalanga



SUMMARISED GROUP MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES continued

COAL RESOURCES

The table below details the total inclusive Coal Resources estimated as at 31 December 2020.

Table 5: Coal Resources and qualities

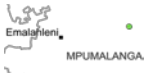
			2020						2019						
			Tonnes and quality[4]						Tonnes and quality[4]						
Operation[1]	Location[3]	Resource category	Mt	CV (MJ/kg)	% Ash	% IM	% VM	% S	Mt	CV (MJ/kg)	% Ash	% IM	% VM	% S	% change in tonnes[5]
Matla mine[6] (UG) (captive market) Mpumalanga 100% attributable to Exxaro[2]		Measured	694	20.5	29.9	4.5	22.2	1.0	705	20.2	30.6	4.5	22.0	1.0	(2)
		Indicated	123	20.4	29.4	4.5	22.1	0.8	105	21.1	27.6	4.3	22.1	0.9	17
		Inferred	151	19.4	31.8	4.6	20.7	0.9	232	19.6	30.8	4.5	21.3	0.9	(35)
		Total	969	20.3	30.2	4.5	21.9	0.9	1 043	20.1	30.4	4.5	21.8	1.0	(7)
		Resources inside LoM plan	290	21.3	27.7	4.8	22.9	1.0	311	21.2	27.6	4.7	22.9	1.0	(7)
Leeuwpan mine[7] (OC) (commercial market) Mpumalanga 100% attributable to Exxaro[2]		Measured	79.9	20.1	31.3	3.2	18.7	1.2	92.8	20.1	31.3	3.0	18.1	1.1	(14)
		Indicated	2.6	21.9	26.9	3.3	21.2	1.3	2.6	20.7	29.1	2.8	21.1	1.2	2
		Inferred	3.6	20.1	34.6	2.6	14.7	1.0	3.6	21.0	32.3	2.3	14.0	1.1	(1)
		Total	86.1	20.1	31.3	3.2	18.6	1.2	99.0	20.2	31.3	2.9	18.0	1.1	(13)
		Resources inside LoM plan	52.6	20.1	30.7	3.1	19.6	1.3	64.6	20.0	31.1	2.7	18.9	1.2	(19)
Mafube mine[8] (OC) (commercial market) Mpumalanga 50% attributable to Exxaro[2]		Measured	111.2	21.6	26.2	3.8	22.5	1.0	117.6	21.5	26.9	3.8	22.4	1.0	(5)
		Indicated	9.9	21.7	26.0	3.9	22.4	1.0	9.7	21.9	25.9	3.9	22.6	0.9	2
		Inferred	2.6	21.7	25.9	3.8	22.1	0.9							
		Total	123.7	21.6	26.1	3.8	22.5	1.0	127.3	21.5	26.8	3.8	22.4	1.0	(3)
		Resources inside LoM plan	59.2	22.2	24.5	3.8	22.9	1.0	56.5	21.9	25.6	3.7	22.7	1.0	5
Belfast mine (OC) (mining right) Mpumalanga 100% attributable to Exxaro[2]		Measured	71.3	24.8	18.5	3.6	23.3	1.1	74.6	24.9	18.5	3.6	23.3	1.1	(4)
		Indicated	19.9	22.3	25.3	3.6	22.0	1.1	20.1	22.4	25.2	3.6	22.0	1.1	(1)
		Inferred	34.0	21.5	26.9	3.4	20.9	0.8	34.1	21.6	26.8	3.4	20.9	0.8	–
		Total	125.3	23.5	21.9	3.5	22.4	1.0	128.8	23.6	21.7	3.5	22.5	1.0	(3)
		Resources inside LoM plan	44.2	25.0	18.4	3.5	23.5	1.2	45.7	25.0	18.3	3.5	23.6	1.2	(3)
Dorstfontein complex (OC/UG) (commercial market) Mpumalanga 74% attributable to Exxaro[2]		Measured	175.6	20.0	33.1	2.9	20.1	1.1	149.1	19.8	33.6	2.9	20.0	1.1	18
		Indicated	121.4	18.9	33.1	3.2	19.4	1.2	135.5	19.3	34.4	3.1	19.8	1.2	(10)
		Inferred	53.3	19.3	34.6	3.0	19.0	1.1	52.1	19.3	34.4	2.9	19.3	1.1	2
		Total	350.2	19.5	33.3	3.0	19.7	1.1	336.7	19.5	34.0	3.0	19.8	1.1	4
		Resources inside LoM plan	115.2	21.5	28.4	3.1	20.5	1.1	102.0	20.0	32.5	3.0	20.2	1.1	13
Forzando complex[9] (OC/UG) (commercial market) Mpumalanga 86.74% attributable to Exxaro[2]		Measured	86.9	21.2	30.2	2.8	22.7	1.1	85.5	21.6	29.1	2.8	23.3	1.1	2
		Indicated	32.3	21.6	29.6	2.8	21.4	1.2	36.3	22.2	27.6	2.8	22.7	1.3	(11)
		Inferred	30.5	20.8	31.2	3.1	20.6	1.2	26.4	21.2	30.2	2.9	20.6	1.2	16
		Total	149.7	21.2	30.3	2.9	22.0	1.2	148.2	21.7	28.9	2.9	22.6	1.2	1
		Resources inside LoM plan	17.8	21.7	28.9	3.0	23.4	1.2	43.3	21.2	30.1	2.8	22.9	1.1	(59)
Forzando projects[10] (OC/UG) (prospecting right) Mpumalanga 74% attributable to Exxaro[2]		Measured	1.6	21.7	29.3	2.7	18.5	0.8	0.2	21.3	30.7	2.5	19.6	0.5	544
		Indicated	2.6	20.9	32.1	2.6	15.5	0.7	2.1	21.6	29.5	2.7	18.0	0.7	25
		Inferred	0.8	17.2	41.8	2.9	13.9	0.5	0.5	18.0	38.5	3.1	16.6	0.6	65
		Total	5.0	20.6	32.7	2.7	16.2	0.7	2.8	20.9	31.1	2.8	17.9	0.6	78
Schurvekop 1063 PR (UG) (prospecting right) Mpumalanga 49% attributable to Exxaro[2]		Measured	35.9	20.0	32.1	3.3	21.9	1.2	35.5	20.1	31.9	3.3	22.0	1.2	1
		Indicated	5.5	19.7	32.6	3.3	20.9	1.0	6.5	20.1	31.9	3.3	21.0	1.2	(15)
		Inferred	0.2	19.6	32.7	3.8	21.7	0.8	0.2	19.6	32.6	3.8	21.7	0.8	–
		Total	41.6	20.0	32.2	3.3	21.7	1.2	42.2	20.0	32.2	3.3	21.9	1.2	(1)

Table 5: Coal Resources and qualities continued

Operation[1]	Location[3]	Resource category	2020 Tonnes and quality[4] Mt	CV (MJ/kg)	% Ash	% IM	% VM	% S	2019 Tonnes and quality[4] Mt	CV (MJ/kg)	% Ash	% IM	% VM	% S	% change in tonnes[5]
Tumelo mine[11] (UG) Mpumalanga 49% attributable to Exxaro[2]		Measured	7.7	21.6	29.9	2.5	21.6	1.5	8.4	21.6	29.9	2.5	21.6	1.5	(8)
		Indicated	0.2	20.6	32.8	2.5	21.1	1.6	0.2	20.6	32.8	2.5	21.1	1.6	–
		Inferred	1.8	21.4	31.0	2.4	19.4	1.8	1.8	21.4	31.0	2.4	19.4	1.8	–
		Total	9.7	21.5	30.1	2.5	21.2	1.6	10.4	21.5	30.1	2.5	21.2	1.6	(7)
Grootegeluk mine[12] (OC) (commercial market) Limpopo 100% attributable to Exxaro		Measured	2 532	16.7	47.7	1.8	20.3	1.5	2 786	16.7	47.8	1.7	20.3	1.5	(9)
		Indicated	1 422	16.1	49.3	1.7	20.1	1.4	1 017	16.5	48.4	1.6	20.0	1.4	40
		Inferred	338	16.4	48.4	1.8	20.2	1.6	653	16.5	48.0	1.8	20.1	1.5	(48)
		Total	4 291	16.5	48.3	1.8	20.2	1.5	4 455	16.7	48.0	1.7	20.2	1.5	(4)
		Resources inside LoM plan	2 965	16.2	49.1	1.7	20.3	1.4	3 722	16.3	48.8	1.7	20.2	1.5	(20)
Thabametsi project[13] (OC/UG) (mining right) Limpopo 100% attributable to Exxaro[2]		Measured	270	13.0	52.3	1.9	20.0	1.2	270	13.0	52.3	1.9	20.0	1.2	–
		Indicated	749	12.6	53.1	1.8	19.8	1.1	749	12.6	53.1	1.8	19.8	1.1	–
		Inferred	2 857	12.7	52.7	1.9	19.3	1.3	2 916	12.7	52.7	1.9	19.3	1.3	(2)
		Total	3 876	12.7	52.7	1.9	19.7	1.3	3 935	12.7	52.7	1.9	19.7	1.3	(1)
		Resources inside LoM plan	133	12.0	54.7	1.9	20.0	1.0	133	12.0	54.7	1.9	20.0	1.0	–
Moranbah South project[14] (UG) (prospecting) Australia 50% attributable to Exxaro[2]		Measured	482.0	26.7	23.7	2.6	18.5	0.6	482.0	26.7	23.7	2.6	18.5	0.6	–
		Indicated	222.0	27.3	21.7	2.6	17.9	0.6	222.0	27.3	21.7	2.6	17.9	0.6	–
		Inferred	28.0	28.5	18.9	2.7	17.0	0.5	28.0	28.5	18.9	2.7	17.0	0.5	–
		Total	732.0	27.0	22.9	2.6	18.3	0.6	732.0	27.0	22.9	2.6	18.3	0.6	–

- *Rounding of figures may cause computational discrepancies.*
- *All changes more than 10% in the total Resources of an operation are explained. Tonnages are quoted in metric tonnes and million tonnes is abbreviated as Mt.*
- *Coal Resources and qualities (raw coal) are quoted on a mineable tonnage in situ (MTIS) and air-dried basis.*
- *Coal Resources are quoted inclusive of Coal Resources that have been modified to Coal Reserves unless otherwise stated.*
- *Resources inside LoM plan refer to MTIS Resources in LoM plan layout.*
- *Thickness and quality cut-offs applied at each project or mine are stated in the ancillary section.*

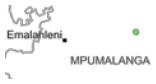
[1] *Operation refers to operating mine or significant project. The mining methods are opencast (OC) and underground (UG).*
[2] *Figures are reported at 100% irrespective of percentage attributable to Exxaro and refer to 2020 only.*
[3] *Locality maps are for illustrative purposes only. Detailed maps are provided in the ancillary section.*
[4] *Raw coal qualities (air-dried basis). CV: calorific value (gross), IM: inherent moisture, S: total sulphur and VM: volatile matter.*
[5] *The percentage difference between 2020 reported MTIS and 2019 reported MTIS with brackets signifying a negative.*
[6] *The move between the categories is the result of new information and the exclusion of sterilised resource blocks.*
[7] *The decrease is the result of mining (7.6Mt), implementation of geological risk domains (3.9Mt) and the disposal at Moabsvelden due to geotechnical considerations (1.5Mt).*
[8] *Estimates are received from Anglo American Coal Proprietary Limited and not audited by Exxaro.*
[9] *The change of Resources inside LoM plan reflects the change in the Reserve.*
[10] *The movement within the categories is the result of new information and an update of the geological model.*
[11] *Estimates are received from Mmakau Mining, the majority (51%) owner of the project.*
[12] *Change to Coal Resources inside LoM is the result of the new mine layout and movement within the categories is due to new information.*
[13] *The project is adjacent to the Grootegeluk mine.*
[14] *Estimates are received from Anglo American Metallurgical Coal Proprietary Limited and not audited by Exxaro.*

SUMMARISED GROUP MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES continued

COAL RESERVES

The table below details the total Coal Reserves estimated as at 31 December 2020.

Table 6: Coal Reserves

				2020					2019					
				RoM and saleable tonnes[5]					RoM and saleable tonnes[5]					
Operation[1]	Location[3]	LoM (years)[4]	Category	RoM (Mt)	RoM moisture %	Export (Mt)	Thermal (Mt)	Metal-lurgical (Mt)	RoM (Mt)	RoM moisture %	Export (Mt)	Thermal (Mt)	Metal-lurgical (Mt)	% change in RoM[6]
Matla[7] (UG) (captive market) 100% attributable to Exxaro[2]		3+	Proved	147.5	7.7		147.5		145.3	7.7		145.3		2
			Probable	21.7	9.7		21.7		15.6	9.7		15.6		39
			Total	169.2	8.0		169.2		160.9	7.9		160.9		5
			Inferred Resources inside LoM plan	8.4					27.2					(69)
Leeuwpan (OC) (commercial market) 100% attributable to Exxaro[2]		8	Proved	42.0	3.1		27.8		45.9	3.1		33.2		(8)
			Probable	5.7	2.8		2.0	1.9	6.1	2.7		3.2	1.3	(6)
			Total	47.8	3.1		29.8	1.9	52.1	3.1		36.4	1.3	(8)
			Inferred Resources inside LoM plan											
Mafube[8] (OC) (commercial market) 50% attributable to Exxaro[2]		11	Proved	32.1	5.7	21.1								
			Probable	23.0	5.8	14.8			56.7	8.4	36.9			(59)
			Total	55.1	5.7	35.9			56.7	8.4	36.9			(3)
			Inferred Resources inside LoM plan	1.8										
Belfast[9] (OC) (commercial market) 100% attributable to Exxaro[2]		11	Proved	40.2	3.3	36.5			42.2	3.3	30.8	6.9		(5)
			Probable	2.1	2.9	1.7			1.4	3.0	0.7	0.6		50
			Total	42.3	3.3	38.2			43.6	3.3	31.6	7.5		(3)
			Inferred Resources inside LoM plan	0.5					0.7					(29)
Dorstfontein complex[10] (OC/UG) (commercial market) 74% attributable to Exxaro[2]		16+	Proved	50.9	2.9	28.7			46.5	3.3	14.3	14.0		9
			Probable	30.1	3.3	18.9			41.5	3.3	13.3	13.3		(27)
			Total	81.0	3.1	47.6			88.0	3.3	27.6	27.4		(8)
			Inferred Resources inside LoM plan	0.8					0.9					(11)
Forzando complex[11] (OC/UG) (commercial market) 86.74% attributable to Exxaro[2]		5	Proved	9.6	3.0	6.1			23.9	2.7	13.8			(60)
			Probable	4.1	3.0	2.9			10.7	2.9	6.4			(62)
			Total	13.7	3.0	9.1			34.6	2.8	20.2			(60)
			Inferred Resources inside LoM plan	0.2					0.1					100
Waterberg Complex														
Grootegeluk mine[12] (OC) (commercial market) 100% attributable to Exxaro[2]		21+	Proved	1 730	3.0	113	712	40	2 520	3.0	146	1 015	70	(31)
			Probable	898	3.0	59	370	21	645	3.0	60	398	26	39
			Total	2 628	3.0	171	1 082	61	3 165	3.0	206	1 413	96	(17)
			Inferred Resources inside LoM plan	137					510					(73)
Thabametsi project[13] (OC) (IPP market) 100% attributable to Exxaro[2]		26	Proved						109	3.0		107		(100)
			Probable	130	3.0		127		21	3.0		20		519
			Total	130	3.0		127		130	3.0		127		–
			Inferred Resources inside LoM plan											

- *Rounding of figures may cause computational discrepancies.*
- *Tonnages are quoted in metric tonnes and million tonnes is abbreviated as Mt.*
- *Inferred Resources inside Lom plan refer to Inferred Resources considered for the LoM plan. These Resources have not been converted to Reserves.*
- *Coal Reserves are quoted on a RoM Reserve tonnage basis, which represents tonnages delivered to the plant at an applicable moisture and quality basis.*
- *Saleable Reserve tonnage represents the product tonnes of coal available for sale on an applicable moisture basis.*
- *All changes more than 10% in the total Reserves of an operation are explained.*
- *Resource to Reserve modifying factors per operation are stated in the auxilary section.*

[1] *Operation refers to operating mine or significant project. Mining method: OC or UG.*
[2] *Figures are reported at 100% irrespective of percentage attributable to Exxaro and refer to 2020 only.*
[3] *Locality maps are for illustrative purposes only. Detailed maps are provided in the auxiliary section.*
[4] *The + symbol is used in instances where the scheduled LoM plan extends beyond the expiry of the mining right. In each instance, Exxaro has a reasonable expectation that the mining right will be renewed.*
[5] *Export refers to export thermal coal except at Grootegeluk mine where it refers to semi-soft coking coal suitable for the export and inland markets.*
[6] *The percentage difference between 2020 reported RoM and 2019 reported RoM, and the percentage difference between 2020 reported total saleable tonnes and 2019 reported total saleable tonnes. Brackets signify a negative.*
[7] *The change is the result of new information and an updated LoM plan.*
[8] *Increase in Proved Reserves is the result of the approval of the bankable feasibility study. Estimates are received from Anglo American Coal Proprietary Limited and not audited by Exxaro.*
[9] *The increase of ~0.7Mt in the Probable category is the result of a new pit layout.*
[10] *Movement between categories is the result of mining (-4.1Mt), new information (3.6Mt), sterilisation due to dolerite activity (-4.5Mt), and the introduction of a new underground mine layout at Dorstfontein east (-1.8Mt).*
[11] *Decrease is due to economic factors rendering Coal Reserve blocks non profitable.*
[12] *High-value exploitation strategy excluded Coal Reserves within the latter part of the mine life.*
[13] *The Coal Reserve is reported as Probable as a result of the lapse of the IPP project development agreement.*

Table 7: Coal Reserve qualities

		THERMAL saleable (Proved and Probable)						METALLURGICAL saleable (Proved and Probable)						COKING saleable (Proved and Probable)					
Operation	**Seam/layer**	**Mt[1]**	**CV MJ/kg**	**% VM**	**% Ash**	**% S**	**Yield %**	**Mt**	**CV MJ/kg**	**% VM**	**% Ash**	**% S**	**Yield %**	**Mt[1]**	**CV MJ/kg**	**% VM**	**% Ash**	**% S**	**Yield %**
Matla mine	2 seam	63.30	22.40	24.76	21.97	0.84	100.00												
	4 seam	105.90	19.25	22.84	30.19	0.90	100.00												
Leeuwpan mine	TC[2]	11.58	22.65	19.53	25.97	0.97	54.90												
	BC[2]	18.21	24.03	24.29	21.40	0.91	77.70	1.87	27.83	8.43	14.96	0.90	57.73						
Mafube mine	Middlings	13.10	21.65	19.22	25.94	0.42	23.77												
	Export	22.70	26.61	26.14	13.34	0.40	41.20												
Belfast mine	Export	38.20	25.31	23.40	17.55	0.69	90.12												
Dorstfontein complex	All seams	47.60	24.60	22.10	20.10	0.58	58.70												
Forzando complex	All seams	9.10	25.50	26.70	18.90	1.06	66.20												
Grootegeluk mine	All seams	1 081.70	21.19	24.37	32.71	1.50	40.66	60.80	28.87	23.72	13.61	0.61	61.21	171.40	29.01	35.11	11.89	1.12	12.89
Thabametsi[3] project	T1	64.00	12.70	20.00	53.90	1.10	98.00												
	T2	63.00	11.30	19.00	55.70	1.00	98.00												

- *Rounding of figures may cause computational discrepancies.*
- *Volatile matter (VM), sulphur (S) and gross calorific value (CV).*
- *Saleable reserve tonnage represents the product tonnes of coal available for sale on an applicable moisture and air-dried quality basis.*

[1] *Saleable product tonnages are quoted in metric tonnes and million tonnes is abbreviated as Mt.*
[2] *Top coal (TC) and bottom coal (BC).*
[3] *Based on Thabametsi bench configuration as defined in phase 1 of the feasibility study.*

SUMMARISED GROUP MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES continued

BASE METAL RESOURCES

The table below details Base Metal Resources (exclusive) as at 31 March 2020.

Table 8: Base Metal Resources (exclusive)

		2020					2019					
		Tonnes and grade					Tonnes and grade					
Operation[1]	Category	Mt	% Zn	% Pb	% Cu	Ag g/t	Mt	% Zn	% Pb	% Cu	Ag g/t	% change in tonnes
Deeps mine[3]	Measured	3.3	3.2	3.6	0.3	38.5	5.6	2.9	3.2	0.3	37.0	(42)
Northern Cape	Indicated	3.9	3.2	2.7	0.5	37.1	9.1	2.6	2.2	0.5	27.0	(57)
(UG) (zinc, lead, copper and silver)	Inferred											
26% attributable to Exxaro[2]	**Total**	7.2	3.2	3.1	0.5	37.7	14.6	2.7	2.6	0.4	31.0	(51)
Swartberg mine[4]	Measured											
Northern Cape	Indicated	63.7	0.9	2.6	0.3	45.4	57.3	1.3	3.2	0.3	53.0	11
(UG) (zinc, lead, copper and silver)	Inferred	19.1	1.1	2.8	0.2	45.4	14	1.2	3.4	0.3	48.0	37
26% attributable to Exxaro[2]	**Total**	82.8	1.0	2.7	0.3	45.4	71.3	1.3	3.2	0.3	52.0	16
Big Syncline Project[5]	Measured											
Northern Cape	Indicated	6.1	3.0	1.1		15.5						
(OC) (zinc)	Inferred	161.8	2.5	1.0		12.3	151.7	2.5	1.0		13.0	7
26% attributable to Exxaro[2]	**Total**	167.9	2.5	1.0		12.4	151.7	2.5	1.0		13.0	11
Gamsberg North mine[6]	Measured	1.7	6.6	0.5			35.1	6.5	0.6			(95)
Northern Cape	Indicated	38.5	5.9	0.5			35.8	6.6	0.6			8
(OC) (zinc)	Inferred	17.9	5.8	0.5			17.9	6.7	0.5			–
26% attributable to Exxaro[2]	**Total**	58.1	5.9	0.5			88.8	6.6	0.6			(35)
Gamsberg East[7]	Measured											
Northern Cape	Indicated											
(project) (zinc)	Inferred	48.5	8.5	0.5			42.2	9	0.6			15
26% attributable to Exxaro[2]	**Total**	48.5	8.5	0.5			42.2	9	0.6			15

- *Rounding of figures may cause computational discrepancies.*
- *Percentage zinc (% Zn), percentage copper (% Cu), percentage lead (% Pb), grams per tonne silver (Ag g/t), percentage manganese (% Mn) and percent sulphur (% S).*
- *Tonnages are quoted in metric tonnes and million tonnes is abbreviated as Mt.*
- *Estimates as received from Vedanta Resources at 31 March 2020 and not audited by Exxaro.*
- *All changes more than 10% are explained.*
- *Tonnages are reported on a dry basis.*

[1] *Operation refers to the Black Mountain Mining operating mine or significant project. Mining method: OC or UG.*
[2] *Figures are reported at 100% irrespective of percentage attributable to Exxaro.*
[3] *The decrease is mainly the result of depletion and additional sterilisation of Resources not mined.*
[4] *The increase is mainly the result of additional exploration, reporting of open-pit Resources and affected by transferring of Resources to Reserves.*
[5] *Big Syncline is a brownfields exploration project. This is a high-volume, low-grade Zn deposit. The increase is the result of changes to Resource reporting criteria with increased commodity prices.*
[6] *The decrease is the result of Resources being transferred to Reserves.*
[7] *The increase is mainly the result of changes to reporting criteria with increased commodity prices.*

BASE METAL RESERVES

The table below details Base Metal Reserves as at 31 March 2020.

Table 9: Base Metal Reserves

			2020					2019					
			Tonnes and grade					Tonnes and grade					
Operation[1]	LoM (years)	Category	RoM (Mt)[3]	% Zn	% Pb	% Cu	Ag g/t	RoM (Mt)[3]	% Zn	% Pb	% Cu	Ag g/t	% change in RoM
BMM Deeps mine[3]		Proved	1.5	2.9	3.4	0.3	35.2	1.6	2.9	3.6	0.3	37.0	(9)
Northern Cape	3	Probable	2.5	3.1	1.6	0.7	21.1	3.5	2.9	1.4	0.7	21.0	(30)
(UG) (zinc, lead, copper and silver)		**Total**	3.9	3.0	2.3	0.5	26.4	5.1	2.9	2.1	0.6	26.0	(23)
26% attributable to Exxaro[2]		Inferred Resources inside LoM plan	–					–					
BMM Swartberg mine[4]		Proved											
Northern Cape	3	Probable	25.4	0.5	1.7	0.5	21.6	2.6	0.7	3.4	0.5	28.0	875
(UG) (zinc, lead, copper and silver)		**Total**	25.4	0.5	1.7	0.5	21.6	2.6	0.7	3.4	0.5	28.0	875
26% attributable to Exxaro[2]		Inferred Resources inside LoM plan	–					–					
Gamsberg North mine[5]		Proved	78.2	6.4	0.5			50.3	6.8	0.5			55
Northern Cape	12	Probable	29.9	5.2	0.5			3.4	5.8	0.5			779
(OC) (zinc)		**Total**	108.1	6.1	0.5			53.7	6.7	0.5			101
26% attributable to Exxaro[2]		Inferred Resources inside LoM plan											

- *Rounding of figures may cause computational discrepancies.*
- *Percentage zinc (% Zn), percentage copper (% Cu), percentage lead (% Pb), grams per tonne silver (Ag g/t), percentage manganese (% Mn) and percentage sulphur (% S).*
- *Tonnages are quoted in metric tonnes and million tonnes is abbreviated as Mt.*
- *Reserves are quoted on a RoM reserve tonnage basis, which represents tonnages delivered to the plant at applicable moisture and quality.*
- *Inferred resources in LoM plan refer to Inferred Resources considered for LoM plan.*
- *Estimates as received from Vedanta Resources at 31 March 2020 and not audited by Exxaro.*
- *All changes more than 10% are explained.*

[1] *Operation refers to the Black Mountain Mining operating mine or significant project. Mining method: OC or UG.*
[2] *Figures are reported at 100% irrespective of percentage attributable to Exxaro and refer to March 2020 only.*
[3] *The decrease is due to mining depletion.*
[4] *The increase is primarily the result of the completion of the open-pit feasibility study with the associated declaration of open-pit Reserves.*
[5] *The increase is mainly the result of the completion of technical studies relating to a larger open pit used for reporting the Reserves as well as the transferral of exclusive Resources into Reserves.*

ESTIMATION METHODOLOGY SUMMARY

COAL RESOURCES

The estimation process is summarised below and applies to all coal operations and projects under Exxaro's management control. The Resource competent person is actively involved throughout the process and no data is included/excluded without consent.

The Resource estimation process for Coal Resources under Exxaro's control is governed by the group's Resource estimation procedure and aligned to the SAMREC Code and SANS 10320:2004 standard. We will be reviewing the updated SANS 10320:2020 edition 2 to align our 2021 estimation and reporting with the newly introduced concepts. The data used for Resource estimation is managed by separate commodity-specific procedures through which core recovery and logging, sampling, quality assurance and control, relative density determination and wireline logging standards are enforced. These standards were updated in 2018 to comply with the SAMREC Code and SANS 10320:2004. Aspects to align with the SANS 10320:2020 version 2 are in progress as we are currently transitioning to implement proposed methodologies.

The core recovery standard (>95% in coal seams for valid points of observation), as stipulated in the SAMREC Code and SANS 10320 standard, is not always empirically enforced due to unavailability of digital core recovery data for pre-2017 boreholes. However, Exxaro's competent persons confirm that there is high confidence in core and sample recovery for all boreholes used for Resource estimation purposes, and any deviation is managed by increased geological losses within geological loss domains, downgrading Resource classification and/or redrilling boreholes. Core recovery is continuously reviewed and any shortcomings are actively addressed through downhole geophysical surveys, seam validations and redrilling.

For Coal Resources, relative density (air-dried) is determined by accredited laboratories using the Archimedes method in all instances, except for Grootegeluk mine and the Thabametsi project where relative density is determined using an on-site mine laboratory application of the Archimedes method, and results are continuously used to validate core recovery. A comparative study between the field and laboratory methods was undertaken in 2015 and results indicated no significant difference.

A formal, annually compiled, integrated and signed-off exploration strategy outlines planned activities to investigate areas of low confidence and/or geological or structural complexities to ensure Resources with a high level of geological confidence are considered for mine planning. Exploration plans are available as supplementary information to the competent persons' report.

Table 10: Summary of estimation considerations

Item	Description
Resource fact pack	Lists new information since last estimation together with a reconciliation between predicted MTIS and actual RoM with recommendations from internal/external audits
Technical data validation	Technical validation of data to be used for Resource estimation including collar validation, gaps and overlaps checks and data distribution
Data analysis	Entails a review and analysis of the geological integrity and continuity of data in a spatial and geostatistical sense with domaining and structural interpretations
Data modelling	Geovia Minex is used for coal modelling and the Minex growth algorithm is the preferred interpolation technique with Esri's ArcGIS used for modelling structural features. acQuire or Minex is used for coal compositing and, in both instances, representative substitute values are used for unsampled non-coal material. The geological model and structural interpretation are presented by the Resource competent person, aided by relevant technical specialists, to a panel comprising Exxaro's lead competent person and domain experts for sign-off and approval. Concept-level geological models, where applicable, are compiled for alternative interpretations and these risks are evaluated during sign-off. Feasibility level and/or LoM plan-level geological models are based on reviewed and signed-off interpretations
Resource classification	Resource classification follows the Exxaro estimation procedure and is aligned with SANS 10320:2004 and considers RODA. Anomalous borehole data and structurally complex areas are accounted for and Resource classification is used to control the adequacy of borehole data. Separate confidence zones are determined for structural features, based on a matrix approach. The effect of extrapolation is controlled by Resource classification in which classification domains are not extrapolated beyond half the average borehole spacing for the classification category. Only points of observation with applicable quality data are used for classification
Estimation and reporting	Resource reporting uses approved cut-offs and geological loss domains, followed by completion of all necessary reports and audit trails. Exxaro currently uses a systematic and integrated review process that measures the level of maturity of exploration work done, the extent of geological potential, licence to operate and associated geological risks to establish the eventual extraction. The criteria for assessing reasonable prospects for eventual economic extraction (RPEEE) are shown in Table 11 Reporting includes technical information that requires subsequent calculations to derive subtotals, totals and weighted averages. Such calculations may involve a degree of rounding and consequently introduce an error. Where such errors occur, Exxaro does not consider them material
Review and consolidation	Individual reports are reviewed and corrections are effected if necessary. Reports are endorsed by management and used to compile the consolidated Coal Resources and Coal Reserves report

ESTIMATION METHODOLOGY SUMMARY continued

Table 11: Exxaro considerations for RPEEE

Item	Criteria	Considerations
Geological data	Data validated and signed off by competent person	Seam depth and extent, seam thickness, structure and seam quality (cut-off)
Geological model	Geological model considered and signed off	
Structural model	Structure model considered and signed off	
Mining	Mining assumptions considered and defined	Mining method, inputs from metallurgist, rock engineer and hydrogeologist
Assurance	Minimum tier 1 assurance as per Exxaro governance and assurance framework	As per tier 1 requirement
Economic evaluation	Concept-level exploitation and economic evaluation quantifies economic potential based on economic and mining assumptions including geotechnical and geohydrological assumptions	Preliminary appraisal of layout, cost and profit
Environmental	Assessment of potential impediments and, if any exist, a reasonable expectation of resolution with reasonable demonstration that environmental approvals can be obtained within the context of local, regional and national legislation	
Tenure	Formal tenure must be demonstrated and, if any potential impediments exist, there must be reasonable expectation of resolution or, if a prospecting right, there should be reasonable demonstration that a mining right approval can be obtained within the context of local, regional and national legislation	
Infrastructure	Assumptions used should be reasonable and within known/assumed tolerances or have examples of precedence and any potential impediments should have a reasonable expectation of resolution, considering power, water and transport	
Market	Potential market for product that is planned to be extracted from the Resource with a reasonable assumption that this market is sustainable	

"RPEEE should be demonstrated through the application of an appropriate consideration of Mineral Resources. Such a consideration should include a reasoned assessment of the geological, mining engineering, processing, metallurgical, legal, infrastructural, environmental, marketing, socio-political and economic assumptions which, in the opinion of the competent person, are likely to influence the prospect of economic extraction. All of the issues listed in Table 1, under 'reasonable prospects for eventual economic extraction' should be discussed at the level appropriate for the specific investigation."

– SAMREC Code

We have enhanced our current process to consider all aspects as per SAMREC Code (Table 1, 4.3) to establish reasonable prospects for our operations and projects. The RPEEE of each operation or project is presented in the ancillary section. We continuously examine our criteria to review the probability of extraction and to identify any areas where potential risk may exist.

COAL RESERVES

Coal Reserves are estimated using the relevant modifying factors at the time of reporting (mining, metallurgical, economic, marketing, legal, environmental, social and regulatory requirements). Modifying factors are signed off before Reserve estimation by the persons responsible for ensuring that all factors are timeously and appropriately considered. Comprehensive modifying factor sign-off and Reserve fact packs that record losses, recoveries/yields and other factors applied are documented in each independent competent persons' report.

Exxaro is keenly aware of the importance of its mineral assets for the short-term profitability of its operations and the sustainability of the company. The optimisation of mineral assets beyond what is generally referred to as Mineral Resource management is being driven as a priority. Changes in the resources market, increased awareness of protecting the natural environment and changing legislation and statutory requirements demand a change in the utilisation strategy and execution of mining operations. Exxaro continuously assesses the various LoM strategic plans to consider the best way to address these challenges.

For Coal Reserve estimates to comply with LoM policy, survey, rock engineering, infrastructure, legal, processing, social, economic, political and environmental inputs are required for all Reserve estimates, as well as a Reserve estimation scoping report.

The following outputs are generated after successfully completing the procedure: validation and verification report, mining block model, exploitation strategy report, mining schedule and equipment strategy report, and Reserve estimation report.

At the start of the estimation process, the applicable Reserve competent person must compile, for every operation, a Reserve fact pack report, outlining the standards and norms of that operation as well as all relevant planning standards. All standards, norms and planning parameters, the geological model, infrastructure and environmental plans together with the structural plan, geotechnical review report, among others, are also considered. The market strategy, supply contracts and planned volumes drive the schedule. All operation standards must be signed off by the applicable mine management and Reserve competent person. A similar procedure is followed for projects, with the project steering committee fulfilling the role of mine management.

Reserve estimation may be conducted either as required (in a project-stage evaluation, for example) or as part of the annual Mineral Resource and Mineral Reserve estimation process. The data conversion, validation and verification report are the first outputs of this procedure.

On receipt of the geological model, the validation procedure is conducted and the model is converted into a mining model. A report is then compiled with possible geological model anomalies, and a comparison of volumes in the geological model and mining model to confirm data conversion has been conducted correctly. This information is signed-off as acceptable by the Resource competent person and manager: strategic mine planning and design.

The following components are included in the LoM plan and Reserve estimation: exploitation strategy, operational methodology and pit shell.

The exploitation strategy needs to broadly demonstrate the pit/mining economics in terms of Resource boundaries, legal and other, such as servitudes. For example, when converting the Resource to Reserve, explain the economics, in terms of stripping ratio, underground versus open pit, among others. Lastly, the extraction sequence of mining different areas in terms of access, economics or other criteria deemed most appropriate.

Operational methodology considers:

- Material flow explains the flow of material over time, such as open pit (ex-pit, horizontal and vertical distances and underground), geographical expansion versus stooping and deep pit (push-back strategy, minimum and maximum stripping curves)
- Equipment explains the size and type of equipment for the design, including life of equipment, major interventions and/or major changes (such as open pit to underground) over the life of the Resource
- Waste dumps (size and position), rehabilitation (main issues and interventions) together with legal and other indicate licences obtained and required
- Pit shell is the final delineation or envelope of the Resource that will be converted to a Reserve. The LoM plan pit shell is the foundation of the business case and, as such, is based on the most accurate information available
- Measured and Indicated Resources are used as basis for conversion. The first five years of the LoM plan must be covered by at least 80% Measured Resources
- Resource volumes/tonnages are converted to Reserve tonnages by applying the following mining modifying factors:
  - Mining efficiency losses as per average cut thickness are applied to account for net losses of Reserves due to mining equipment selection and mining method. The efficiency factor also accounts for the thickness of the selected RoM and waste horizons relative to selected mining equipment
  - Layout losses account for the loss of Reserves due to actual mining activities not reaching the defined Reserve boundary or due to the geometry of the Reserve block
  - RoM extraction accounts for losses incurred using the selected mining method
  - Contamination accounts for waste or inter-burden material unintentionally added to the mining horizon as a result of mining operations and equipment used
  - Free moisture accounts for the change in the Reserve tonnage due to the addition of moisture from bench-mining operations

The Reserve classification methodology for Coal Reserves under Exxaro's control is governed by the Exxaro Coal Reserve estimation procedure, as described in the LoM plan policy, and aligned with the SAMREC Code and SANS 10320:2004 standard. In general, Measured Resources are converted to Proved Reserves and Indicated Resources are converted to Probable Reserves. If an operation or project has additional constraints, such a supply agreement that has not been finalised or a sales/marketing strategy that limits the profitability of the mine, the Measured Resources can be downgraded to Probable Reserves. In situations where this has been applied, it is clearly stated in the footnotes for the Reserves tables.

Where Inferred Resources were considered for LoM plans, the amount (Mt) and effect is always clearly stated. When Inferred Resources are included in the LoM plan, these tonnages are never scheduled in the first five years of mine life. The rationale for considering Inferred Resources inclusion is explained and actions to address this issue are stated. Exxaro generally attempts to limit Inferred Resources to less than 15% of total Resources to be considered for LoM plans. Any inclusion of Inferred Resources must be tested, reported and modifying factors and assumptions that were applied to the Indicated and Measured Resources to determine the Coal Reserves must be equally applied to the Inferred Resources. However, Inferred Resources are not converted to Coal Reserves and are not stated as part of the Mineral Reserve. The amount of Inferred Resources considered for the reported LoM plan is included in the Reserve statement.

ANCILLARY RESOURCE AND RESERVE INFORMATION BY OPERATION

Supplementary descriptions are provided for projects and operations directly under Exxaro's management control.

For projects and operations included in the Exxaro Mineral Resource and Mineral Reserve statement, but in which Exxaro does not have management control, the reader is referred to that company's website for supplementary information (refer to foreword).

BELFAST MINE

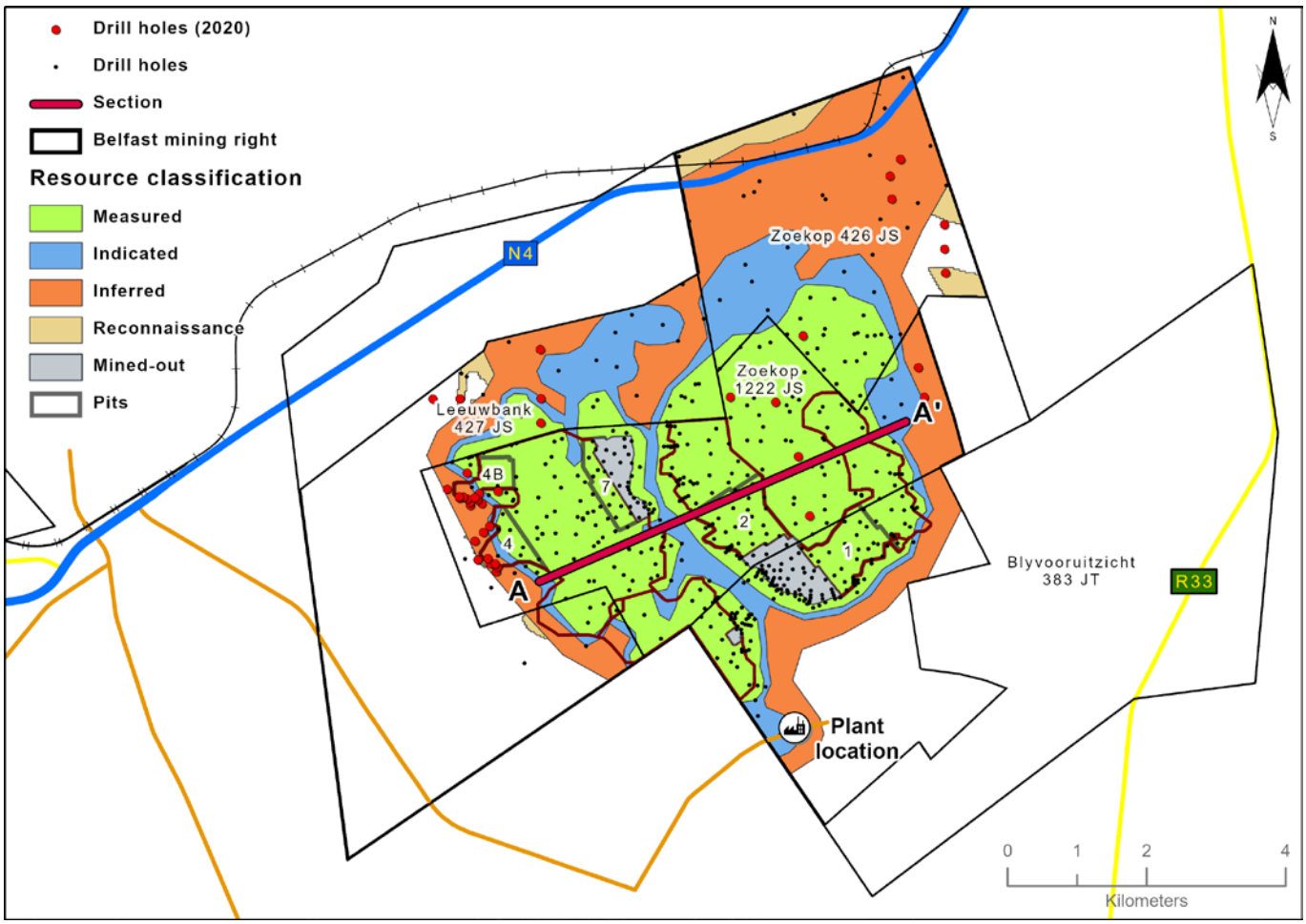
Belfast overview

The Belfast mine is located some 10 kilometres (km) south-west of the town of Belfast in Mpumalanga, South Africa, on the far eastern edge of the Witbank coalfield. The coalfield extends about 190km east-west between the towns of Springs and Belfast and about 60km in a north-south direction between the towns of Middelburg and Ermelo. The mineral tenure areas of Umsimbithi Mining (Wonderfontein coal mine) and Universal Coal (Paardeplaats) are to the west and north of Belfast respectively.

The Belfast mine is adjacent to the N4 highway connecting Pretoria and Maputo and can be accessed from the N4 via two district roads, namely D1110 and D1770. The mine is also adjacent to the railway line to Maputo. Nearby loading facilities connect the railway line to Richards Bay. Currently mining is taking place from three open pits using doze-over, truck and shovel hybrid mining method. By August 2021, two more box-cuts will be opened up. Once fully developed, the mine will have 11 opencast pits. There are prospects for additional opencast pits and an underground mining section.

Thermal coal is beneficiated in a two-stage dense medium separation plant to produce for the export market: RB1/RB2, Middlings 4 800 kilocalories per kilogram (kcal/kg) net as received products. About 15% of RoM, mainly S2 is sent to a crush and stack plant operation to enhance production throughput at Belfast mine, producing an RB3 product for the export market. Existing Eskom power lines are on the property for electricity supply. The mining right has been approved and all environmental appeals have been favourably addressed for the declared Reserves. Coal Resources occur within most of the mining right whereas the Coal Reserve is limited to the southern mining right area aligned with the existing LoM plan. A project was initiated in 2019 to review the current exploitation strategy, including testing economic viability (macro-economic outlook) of the northern area considering open-cut and underground mining scenarios. This process lead to the implementation of a new exploitation strategy through which the schedule was optimised to align to the Exxaro early value extraction strategy over the remaining LoM.

Figure 9: Belfast mine



Belfast history

Belfast has an approved mining right that covers 7 198 hectares (ha). The geological model incorporates 616 boreholes. The geological database also includes 113 boreholes outside the mining right area.

Table 12: Belfast operation history

Date range	Company	Material notes
1967	Fuel Research Institute of South Africa	25 boreholes
1969	Trans-Natal Steenkoolkorporasie Beperk	10 boreholes
1975 to 1983	Gold Fields Mining and Development	43 boreholes
2001 to 2003	Eyesizwe	155 boreholes
2008 to 2009	Exxaro	153 boreholes to refine classification and potential box-cut positions
2010 to 2019	Exxaro	133 boreholes to enable detailed box-cut designs and five-year mine plan infill drilling
2019 to 2020	Exxaro	51 boreholes drilled to enable Pit 4 and Pit 4B box-cut delineation and detailed design as well as in the Belfast expansion area

Belfast geology

The Witbank coalfield has up to five coal seams in the middle Ecca Group sediments of the Karoo supergroup. The Karoo sequence in the area is represented by the Dwyka formation and the middle Ecca with little or no lower Ecca development. The middle Ecca sequence of coal horizons interbedded with sediments is highly truncated due to erosion with only very minor areas where the full sequence is developed. Locally, there are mainly three seams being targeted (S2, S3 and S4). The S5 was intersected in only two boreholes in the northern part of the project area. S2, the most prevalent seam, is consistently developed, except in areas where it has been eroded, and has an average thickness of 2.8m dipping gently to the south. Both S3 and S4 are sporadically developed due to erosion and both have an average thickness of 0.6m. Due to the proximity of the northern edge of the Witbank Basin, the primary control of the coal development is the current weathering surface. The deposit is therefore divided by a perennial stream into two Resource blocks under two distinct spurs in the surface topography. There is no indication of pertinent faulting from the borehole information but potential intrusions of dolerite dykes are outlined by regional airborne magnetics, indicating the possible occurrence of regional north-south trending dykes.

There are no known geological structures that may affect the geology or coal seam continuity.

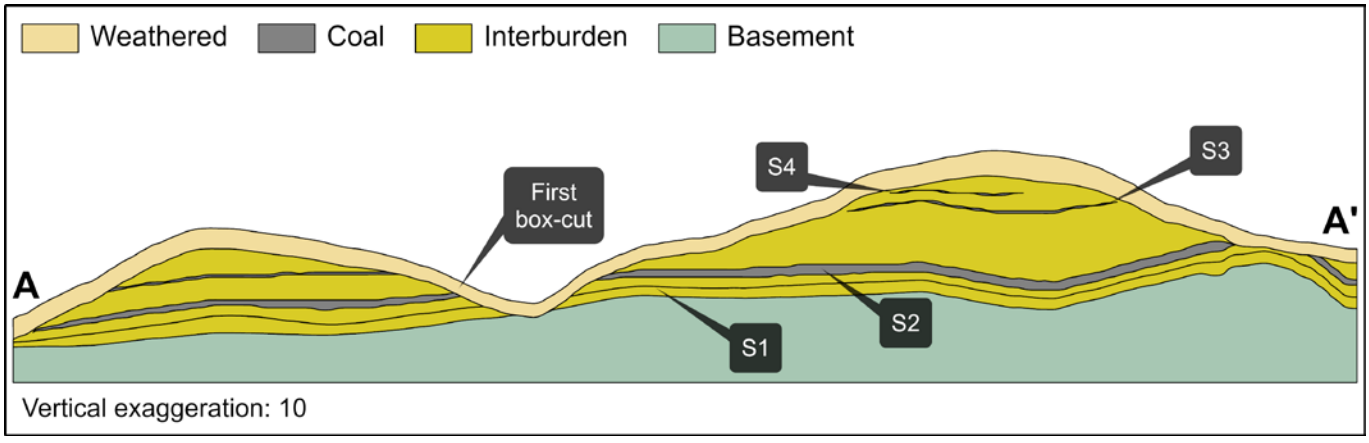
Belfast Resource evaluation

The senior geologist supervises all borehole drilling and is responsible for logging and sampling in compliance with Exxaro's logging and sampling standards, as well as standard operating procedures. Sampling of boreholes is only conducted after the stratigraphy has been correlated. All samples collected and bagged are registered in a sample sheet, which is also used as a dispatch sheet. The dispatch sheet is signed by the receiving laboratory personnel after ensuring that the number and sample ID on the dispatch sheet matches that of the actual samples to be analysed. Once the laboratory receives and signs the dispatch sheet, it is responsible for safekeeping and storage of that batch of samples.

All coal analysis was conducted at an accredited Bureau Veritas ISO/IEC 17025:2005 laboratory. Emphasis is placed on ensuring data integrity though rigorous procedures and supervision while processing. As part of the assurance and control process, audits are performed internally and externally. Bureau Veritas is South African National Accreditation System (SANAS)-accredited for analytical work and participates in monthly local and international round robins.

The Coal Resource classification methodology is fundamentally based on SANS 10320:2004 and considers borehole spacing, type of boreholes and structural complexity of the Resource. Alignment with SANS10320:2020 in is process. An update of the Resource and geological structural model is scheduled for 2021, incorporating new exploration information obtained during 2019/2020.

Figure 10: Belfast west-east cross-section



ANCILLARY RESOURCE AND RESERVE INFORMATION BY OPERATION continued

Table 13: Belfast Coal Resource reporting criteria

Thickness cut-off (thickness and extraction height considerations)	Quality cut-offs (adb)	Geological loss
Opencast ≤0.5m Underground ≤1.2m*	Ash >50%	5%

** Current proposed underground exploitation plan was used as a baseline for underground minimum thickness cut-off.*

Table 14: Belfast Coal Resource estimation criteria

	Item	Description
Database	Borehole database	acQuire
	Data datum	Cape LO29
	Number of boreholes used for Resource estimation	309 of the 616 do have wash analysis
	Validation	Conducted using queries in acQuire and Excel
	Data compositing and weighting	acQuire
Model	Previous model date	2012
	Last model update	2018, scheduled for 2021 update
	Geological modelling software	Geovia Minex™
	Estimation technique	Growth algorithm
	Grid mesh size	25m x 25m
	Scan distance	3 000m
	Data boundary	200m
	Model build limits	Upper: limit of weathering and topography/collar Lower: basement/Dwyka
	Model outputs	Roof, floor and thickness grids generated for structure Raw quality grids
	Changes to modelling process	None

Table 15: Belfast Coal Resource classification criteria

Category	Type of boreholes	Borehole spacing	Structurally complex areas	Borehole/ha
Measured	Cored boreholes with applicable coal qualities	0m to 350m	May be more conservative after consideration of RODA	0.08
Indicated	Cored boreholes with applicable coal qualities	350m to 500m	May be more conservative after consideration of RODA	0.04
Inferred	Cored boreholes with applicable coal qualities	500m to 1 000m	May be more conservative after consideration of RODA	0.01

Table 16: Belfast Resource and Reserve statement

Category	2020 (Mt)	2019 (Mt)	Difference in tonnes (Mt)	Difference (%)	Reason for change
Measured	**71.3**	74.6	(3)	(4)	Mining depletion
Indicated	**19.9**	20.1	0	(1)	
Inferred	**34**	34.1	0	0	
Total Coal Resources (OC/UG)	**125.3**	128.8	(4)	(3)	Mining depletion
Proved	**40.2**	42.2	(2)	(5)	Primarily mining depletion
Probable	**2.1**	1.4	1	50	Change is due to introduction of new pit layout
Total Coal Reserves (OC)	**42.3**	43.6	(1)	(3)	Mining depletion was off-set by an increase due to pit layout changes

Notes:
- *Rounding of figures may cause computational discrepancies.*
- *All changes more than 10% are explained.*
- *Mining method: OC.*
- *Figures are reported at 100% irrespective of percentage attributable to Exxaro.*
- *The tonnages are quoted in metric tonnes and million tonnes (Mt). Coal Resources are quoted as mineable tonnes in situ (MTIS) and refer to remaining Resources after 31 December 2020 and 31 December 2019.*
- *Coal Resources are reported on a mineable in situ (MTIS) basis.*
- *Cut-offs applied as per Resource reporting criteria table.*
- *Coal Resources are quoted inclusive of Coal Resources converted to Coal Reserves.*

Table 17: Belfast RPEEE considerations

Item	Criteria	Criteria met	Comment
Geological data	Data has been validated and signed off by competent person	Yes	Geological structures and depositional extent are considered as well as seam thickness <0.5m (OC) and <1.2m (UG), >50% ash content with coal qualities reported on an air-dry basis
Geological model	Geological model has been considered and signed off	Yes	
Structural model	Structural model was considered and signed off	Yes	2018
Mining	Mining assumptions considered and defined	Yes	Opencast and underground
Assurance	Exxaro internal audits and external audit conducted	Yes	Internal review in 2019 and external audit by EY in 2020
Economic evaluation	Exploitation study with economic and mining assumptions, including geotechnical and geohydrological assumptions	Yes	Belfast exploitation strategy over mining right (2020)
Environmental	Reasonable demonstration that environmental approvals can be obtained within the context of local, regional and national governmental legislation	Yes	Environmental management plan, integrated water use licence and National Environmental Management Act licences in place and compliant
Tenure	Formal tenure must be demonstrated with reasonable demonstration that a mining right approval can be obtained within the context of local, regional and national governmental legislation	Yes	Mining and surface rights in place. Potential land acquisitions for expansions considered. Land access obtained for expansion drilling
Infrastructure	Assumptions used should be reasonable and within known/assumed tolerances or have examples of precedence	Yes	Existing infrastructure adequate or can be upgraded with new required infrastructure under construction
Market	A potential market for the product with a reasonable assumption that this market is sustainable	Yes	Primary product qualities suitable for A-grade export market and middlings suitable for domestic power generation

ANCILLARY RESOURCE AND RESERVE INFORMATION BY OPERATION continued

Belfast Reserve estimation

Scheduling of the Reserve is determined using a mining scheduling application (Scheduler) from OCCS, which is the same software used to develop the LoM plan schedule. The geological 3D model used for the Resource statement is referred to as the Reserve geological 3D model.

The geological model is supplied to mining processes in the form of Minex™ grids. The grids are then imported into a reserving application (Reserver) from the same OCCS software. This application is used to validate the geological information received by checking the integrity of the geological structure and that quality and wash-table values are consistent, and to convert the geological 3D model into mineable block sizes.

Indicated Resources are generally converted to Probable Reserves and Measured Resources to Proved Reserves after consideration of all applicable modifying factors. If one or more of the modifying factors have not been fulfilled, Measured Resource is either not converted or the Measured Resource is converted but downgraded to Probable and the associated risk is clearly stated. Inferred Resources are not converted to Coal Reserves.

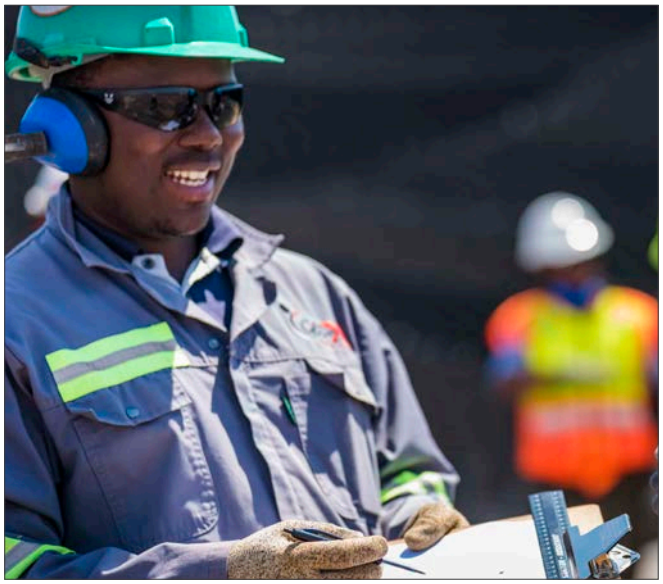
Some 0.5Mt of Inferred Resources are included in the LoM plan, representing 1.2% of the LoM plan, and are not considered material. The area with Inferred Resources, on the western edge of the pit, will only be reached towards the end of LoM.

Table 18: Belfast production figures

	Actual 2019	FC 2020	Actual 2020	FC 2021	FC 2022
RoM (Mt)	1.1	3.25	**3.24**	3.58	3.79

Table 19: Belfast modifying factors considered in converting Coal Resources to Coal Reserves

Modifying factors	Value
Geological loss	5%
Average thickness cut-off	S2 0.8m, S3 and S4 1.0m
Quality cut-offs	No quality cut-offs, economic cut-offs
Mining loss	0.1m
Boundary pillar	0
Dilution	0%
Contamination	0.1m
Mining recovery efficiency	100% (already accounted in mining loss)
Planned average slope angles	90 degrees on hards and on softs
Practical plant yield	88.30%
Strip ratio cut-off	Considered in the reserving process using the economic model to get mining boundaries
Environmentally sensitive areas	100m
Legal	Applicable mining right considered
Social	Applicable communities considered
Geohydrological	Applicable surface and groundwater models considered



Belfast known risks

Weathering impacting on coal seam continuity is a continuous risk, managed through strict grade control and infill drilling practices.

Proactive water management is vital to ensure effective mining production especially within the rainy season.

Belfast operational excellence

The Belfast expansion project currently under investigation will result in extending the LoM. This expansion will include the purchasing of a number of farms to the north of the current mining area. Access to these farms for exploration activities has been secured.

As part of the Exxaro market to resource excellence drive, Belfast Coal will be producing an RB2 product instead of an RB1 product for 2021. The product blend will continuously be reviewed to further optimise the market to resource excellence initiative.

A rigorous operational excellence process is also well entrenched at Belfast Coal where value chain optimisation is actively driven and progress tracked on a weekly basis to ensure the required optimisation of the mine production value chain is realised.

GROOTEGELUK MINE

Grootegeluk overview

Grootegeluk mine is on the southern margin of the Waterberg coalfield, south of the Daarby fault on the shallow opencast portion of the coalfield. The mine is 25km west of the town of Lephalale in the Lephalale magisterial district of Limpopo, South Africa. Grootegeluk can be reached from Lephalale via the hard-topped Nelson Mandela Drive, which is linked to the R510 road connecting Lephalale to the town of Vaalwater to the south and the Stockpoort border post between South Africa and Botswana to the north.

The mine is linked to the suburb of Onverwacht, the town of Lephalale and neighbouring towns, as well as nearby border posts with Botswana via the R510 road.

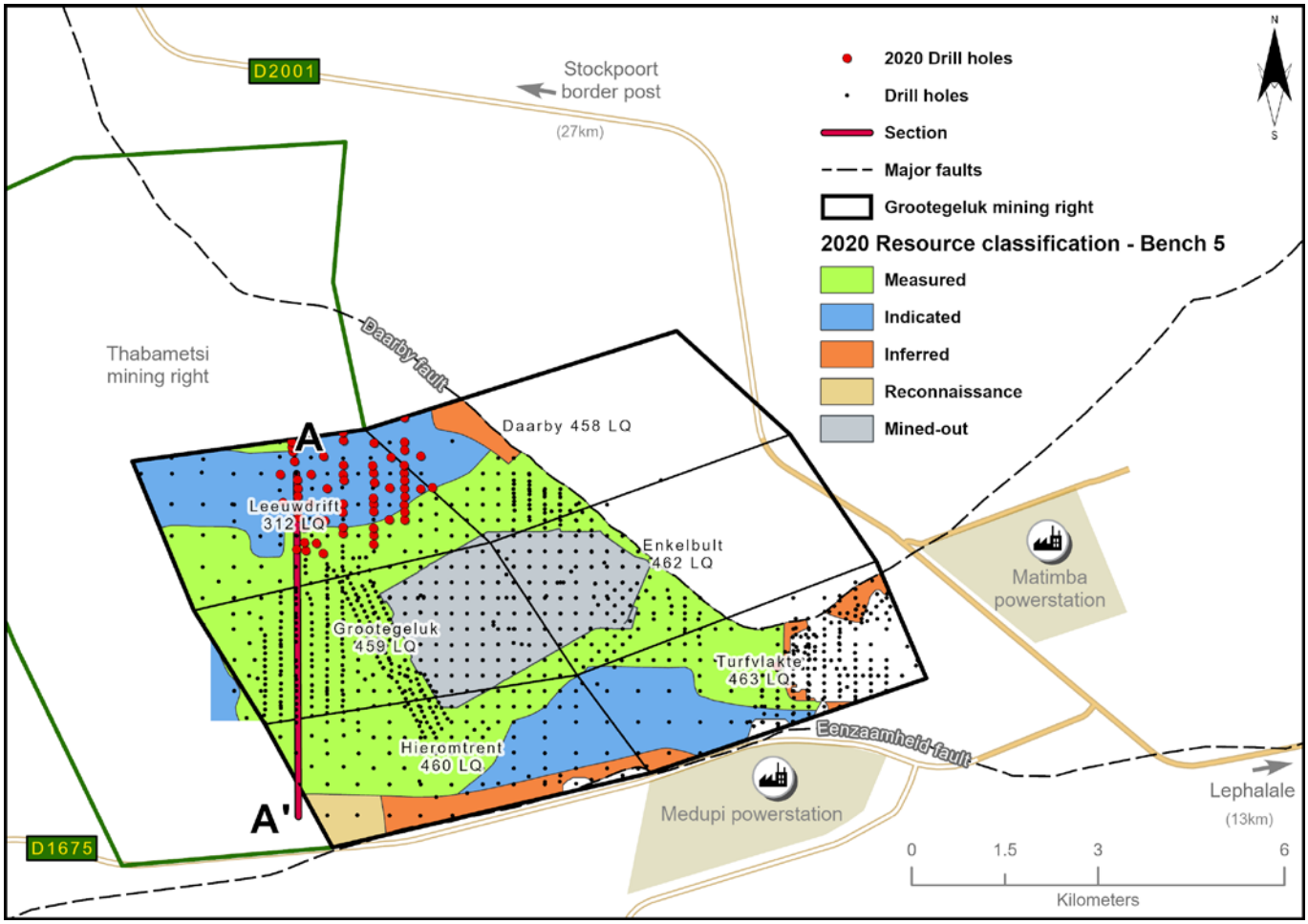
Grootegeluk comprises of one open-pit mine, which includes two overburden benches, nine RoM benches and three interburden benches. A series of parallel benches are advanced progressively across the deposit via a process of drilling, blasting, loading and hauling with truck-and-shovel fleets. RoM is transported to the Grootegeluk beneficiation complex via haul trucks and in-pit crushing and conveying systems.

Coal is beneficiated via eight different plants that produce power station coal (thermal coal) at 35% ash, variously sized metallurgical coal products at different quality specifications and semi-soft coking coal. Thermal coal is sold to Eskom in terms of long-term coal supply agreements to supply feed coal to the Matimba and Medupi power stations via conveyor belts. Various sized metallurgical coal products at 15% ash and 11.25% ash, semi-soft coking coal at 10.3% ash, as well as steam coal at 12.5% ash are railed to various customers and shipped to international clients via an export harbour. A small portion of the total product is sold on-site to smaller customers and dispatched by road. Beneficiation plant discard is backfilled into the mined-out portion of the open pit while slimes are pumped to a specially designed cyclic pond system from where it is later reclaimed and blended in small quantities with the power station coal produced.

A portion of the mine's product is railed from site to a range of customers by a single-gauge railway line that extends southward to Thabazimbi where it links into the main railway network. Most coal exports are shipped via Richards Bay Coal Terminal (710km south-east of Grootegeluk) and the rest from the Durban harbour (760km south-east of Grootegeluk).

Power supply to the mine is obtained directly from the power station via two 132kV lines that supply the mine's three 840 megavolt amperes (MVA) transformers, which in turn distribute 33 kilovolts (kV) through 12 (20MVA) transformers to the plant and mining operations. Raw water is delivered to the mine and to a water-treatment plant on the farm Zeeland by the 700mm-diameter Hans Strijdom pipeline. The pipeline originates at the Mokolo Dam, in the Waterberg mountains, 39km south-east of Grootegeluk. Potable water from the Zeeland water-treatment plant (11km south-south-east of Grootegeluk) is in turn routed to the mine and local communities.

Figure 11: Grootegeluk mine



ANCILLARY RESOURCE AND RESERVE INFORMATION BY OPERATION continued

Grootegeluk history

Table 20: Grootegeluk operation history

Date range	Company	Material notes
1960s to 1980	Yskor – Iscor – Iscor Mining – Kumba	Drilling exploration holes before mine commissioning took place (221 boreholes drilled)
1980 to 2020	Kumba – Kumba Coal – Exxaro Resources	Continued exploration drilling post mine commissioning (1 247 boreholes drilled)

Since beginning exploration activities at Grootegeluk, the company has changed its name and/or unbundled several times without selling the asset to new owners. Through all these changes, exploration drilling continued in the same way.

Small-diameter boreholes (HQ/TNW size core) were drilled on a 500m x 500m grid when the initial exploration project at Grootegeluk started. The suite of analyses performed at that time was analysed only per coal sample and the amount of core obtained from the boreholes was adequate for all the required analysis. Over time, gradual subdivision of coal zones into smaller units or "samples", as well as added relative density fractions to the suite of analysis, resulted in insufficient sample material in some samples and some relative density fractions for the required suite of analyses.

To accommodate the new sample subdivision and in order to have sufficient material available from each sample for the required suite of analyses to relative densities of 2.20 grams per cubic centimetre (g/cc), it was decided to change the size of exploration boreholes from small to large-diameter: 123 millimetres (mm)-diameter drill core. The large-diameter boreholes were drilled in between the existing 500m x 500m grid of small-diameter boreholes. The reason for this placement of large-diameter boreholes was that analysis of samples from the large-diameter boreholes could be used to supplement analysis of existing small-diameter boreholes where samples and density fractions were absent.

Grootegeluk executes its exploration strategy across the Coal Resource. Boreholes furthest from the open pit are spaced 3 000m x 3 000m and, closer to the pit, infill holes are drilled to reduce borehole spacing to 1 000m x 1 000m. For the area in front of the open pit (10 years ahead of planned pit-advance direction), drilled boreholes form a grid of 500m x 500m. In addition, infill holes are also drilled on a 350m x 350m spacing to cover the area that will be mined in the next five years and percussion boreholes are drilled in geologically complex areas to complement the structural interpretation.

Grootegeluk geology

Regionally, Grootegeluk is in the southern portion of the Limpopo depression, a relatively small corridor between the Limpopo River in the west and the Palala-Pietersburg plateau in the east. Fundamentally, it is a re-exposed post-Waterberg topographical feature on which Karoo sediments were deposited, followed by tectonic activity, which was the primary element responsible for the development of the depression.

The Zoetfontein fault forms the boundary of the Waterberg coalfield in the north while the Eenzaamheid fault forms the boundary in the south. The Daarby fault, with a throw of some 350m, divides the coalfield into a deep north-eastern portion and a shallow south-western portion. The first fresh coal in the shallow south-western portion is on average 20m below surface. The lowermost coal seam (Zone 1) occurs at a depth of about 130m in the shallow portion of the coalfield but this may vary depending on the local structure (Figure 16). The predominantly horizontal coal-bearing formations have a very gentle dip to the south-east near Grootegeluk. Only a few dolerite dykes outcrop in the south-eastern portion of the Waterberg coalfield and no sills have been encountered in any exploration boreholes drilled in the mine right area to date.

The upper part of the coal deposit, the Volksrust formation (approximately 60m thick), comprises intercalated mudstone or carbonaceous shale and bright coal layers. It displays such a well-developed repetition of coal-shale assemblages that it can be subdivided into seven discrete sedimentary cycles or zones (Zone 11 to zone 5). Smaller subcycles (samples) were chosen within these zones and sampled individually in the exploration phase. This subdivision of coal seams into smaller lithological units is necessary to cater for numerous mining bench definitions and/or product specifications. The terms "zone" and "sample" are used at Grootegeluk instead of "seam" and "ply" due to the site-specific intercalated nature of the coal and shale. The Volksrust formation is classified as a thick interbedded seam deposit type.

The Volksrust formation zones typically start with bright coal at the base. The ratio of coal to shale decreases from the base of each zone upwards. The basal zone (Zone 5) is an exception because of a more homogeneous distribution of coal and shale throughout this zone. The Volksrust formation shale shows an increase in carbon content with depth and varies from a massive bluish-grey mudstone to carbonaceous shale towards the base. Although the thickness and coal quality of the Volksrust formation are reasonably constant across the coal field, a large variation in the yield of semi-soft coking coal and total sulphur content occurs vertically in the coal succession.

The Vryheid formation (approximately 55m thick) forms the lower part of the coal deposit and comprises carbonaceous shale and sandstone with interbedded dull coal seams varying in thickness from 1.5m to 9m. It is therefore classified as a multiple-seam deposit type.

There are five coal zones that consist of predominantly dull coal with some bright coal developed at the base of zones 2, 3 and 4 in the Vryheid formation. Due to lateral facies changes and variations in the depositional environment, these zones are characterised by a large variation in thickness and quality. It is noted in the mine lease area that these zones depreciate in development and coal quality in a westward direction due to sedimentological facies changes. Zone 3 is the best-developed dull coal zone in the mine lease area and reaches a maximum thickness of 8.9m. The basal portion of this zone yields some semi-soft coking coal. Zone 2, on average 4m thick, reaches a maximum thickness of 6m in the mine lease area. The basal portion of this zone also exhibits semi-soft coking coal properties. Zone 2 exhibits the most consistent

thickness of all the Vryheid coal zones across the entire Waterberg coalfield. Zone 1, the basal Vryheid coal zone, has an average thickness of 1.38m. Zone 1 contains the best-quality metallurgical coal at Grootegeluk and is suitable to produce char but is not included in the mine plan due to the high-stripping ratio given a 12m thick overlying interburden sandstone seam. Due to previous mining activity, over 5Mt of high-quality low-phosphorous content metallurgical coal from Zone 1 has been sterilised to date by the pit backfill operation.

Grootegeluk Resource evaluation

All exploration boreholes are logged and sampled by experienced on-site geologists, aligned and in compliance with logging and sampling standards, and standard operating procedures. Samples are selected according to seam coal and shale contacts, visual variation in the vitrinite content, assisted by a suite of downhole geophysical logs, and non-coal material present in the seam boundaries. Large-diameter core (123mm) boreholes are drilled for Coal Resource purposes.

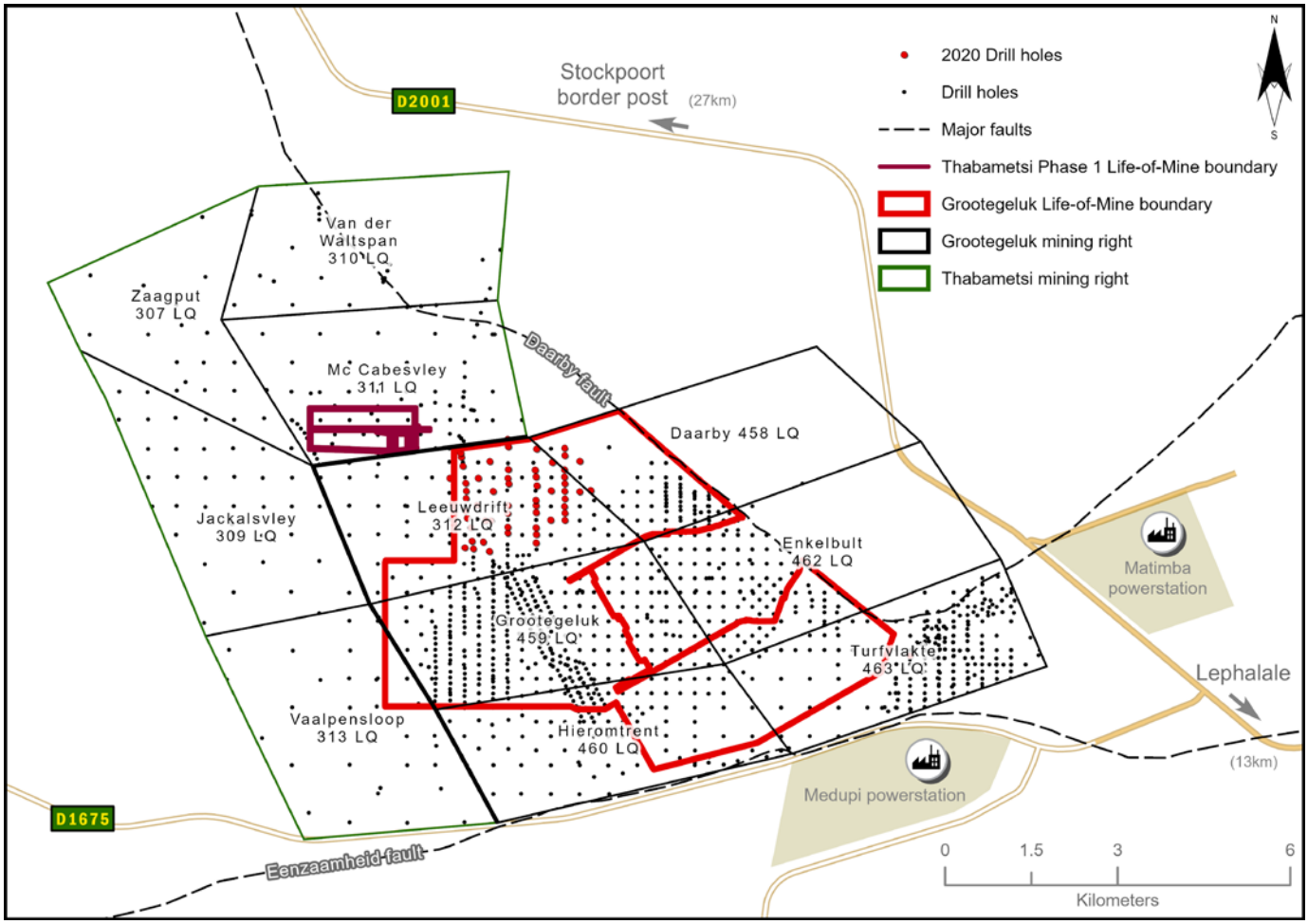
Core loss for coal seam intersections is recorded and a recovery of <95% through coal (by volume) is deemed unsatisfactory. Anomalies were investigated and redrilled if required. Logging is conducted by recording lithology down to centimetre scale according to the classification of the various coal "lithofacies"/coal types (shale-coaly, coal-shaly, coal dull, coal mixed/mainly dull, coal mixed, coal mixed/mainly bright and coal bright) based on the discernible lithofacies change and identified marker horizons, particularly through coal zones.

Sampling of boreholes is only conducted after the stratigraphy has been correlated. The geologist in charge supervises all borehole drilling, and is responsible for logging and sampling. Each sample submitted to the laboratory is accompanied by a unique sample number for validation and tracking, as well as a submission list that serves as a sample advice sheet with instructions for analysis. The delivery or turnaround time is calculated as the time from which the laboratory receives the samples to the time when the last batch of analysis is reported. Once the laboratory has received and signed the dispatch sheet, the safekeeping and storage of that batch of samples lies with the laboratory.

Grootegeluk uses Bureau Veritas laboratory for its exploration borehole sample analyses. Bureau Veritas acquired Advanced Coal Technology in 2013, which performed Grootegeluk's analysis of exploration borehole samples since the early 1960s. Advanced Coal Technology was an outsourced company formed from the old Iscor pilot plant laboratories and has been a continuation of services previously provided by Iscor.

The only form of subsampling conducted at Grootegeluk is the separate sampling of coal and shale layers of the Volksrust formation sample units for analyses. The coal and shale samples per sample interval are weighed to determine the samples' relative densities and percentage core recovery. Relative density measurements are carried out at Grootegeluk using the "mass in air versus mass in water" method.

Figure 12: Grootegeluk mine and the adjacent Thabametsi project area



ANCILLARY RESOURCE AND RESERVE INFORMATION BY OPERATION continued

Current sample intervals as per exploration borehole are, in certain cases, subintervals of historical sample intervals. For instance, samples 22A, 22B, 22C, 22D and 22E are subdivisions of sample 22 as it was sampled in historical boreholes hence the nomenclature. When compositing these relevant subintervals, it is fully representative and can be used in conjunction with historical boreholes to describe the same geological unit.

The laboratory follows one of four standard suites of analysis for each sample from Grootegeluk, namely Volksrust formation coal, Volksrust formation shale, Vryheid formation coal and Vryheid formation shale. Coal samples are analysed before shale samples because of potential changes that could take place in the characteristics of the coal due to exposure to the atmosphere.

The analyses performed on the borehole core samples include proximate analysis, ash composition analysis, ash fusion temperature analysis and petrography. Analyses are performed separately on the coal and shale samples after float-and-sink analyses have been performed to obtain fractional analysis for the range of densities. All data received from Bureau Veritas is in digital format and checked against the original request list to ensure the required analyses were conducted and results were recorded appropriately. The digital data is then imported into the same database in which the core log data has been captured (acQuire) and subsequent validation procedures are conducted. This serves to verify laboratory accuracy and it is performed during the data-importation stage.

The Coal Resource classification methodology for both formations is fundamentally based on SANS 10320:2004 and considers borehole spacing, type of boreholes and structural complexity of the Resource. Additional exploration efforts are employed to provide for areas with perceived geological risk.

The classification method is the same for the overlying Volksrust and underlying Vryheid formations Coal Resources for practical considerations. The classification methodology is reviewed each year and reconciliation for that year is used to test the classification criteria. The review addresses specific geological risks expected in the Resource, including increased variability in certain coal qualities, thinning of certain benches by weathering in the Volksrust formation, deterioration of coal formation in certain benches and a gradual increase in the average total sulphur content in general. Only cored boreholes with applicable coal quality data are used and structurally complex areas must be complemented by additional geophysically logged open (percussion drilled) boreholes. Aspects relating to guidelines of the new SANS 10320:2020, specifically regarding the resource classification of the Volksrust and Vryheid formations, are currently under review.

Figure 13: Typical north-south section through Grootegeluk geological model showing the various benches and zones

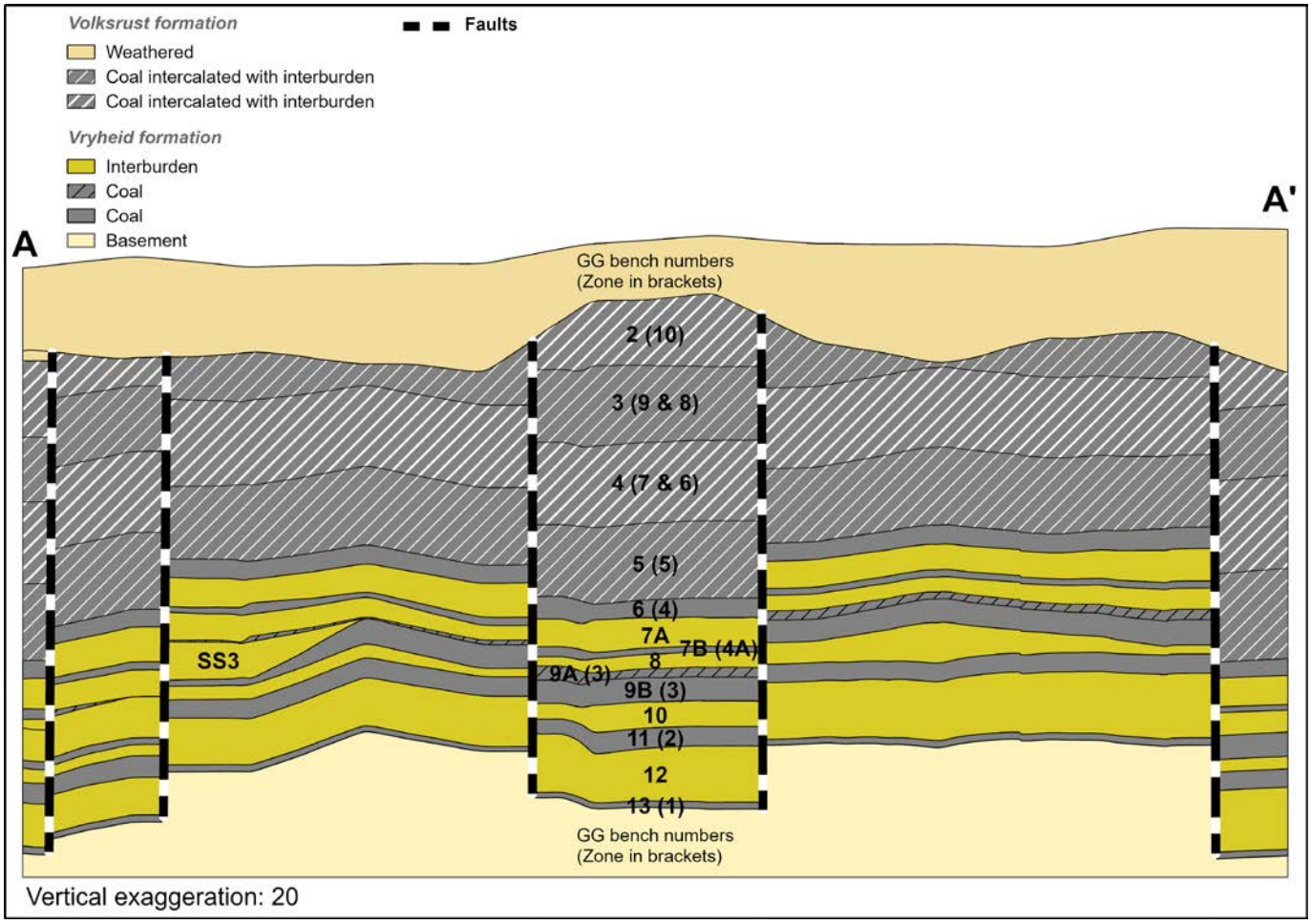


Table 21: Grootegeluk Coal Resource reporting criteria

Thickness cut-off (thickness and extraction height considerations)	Quality cut-offs (adb)	Geological loss (%)
<0.5m	Ash content of >65%	Variable per bench, calculated each year considering geological model estimation error and physical geological loss

Table 22: Grootegeluk Coal Resource estimation criteria

	Item	Description
Database	Borehole database	acQuire
	Data datum	LO27 WGS 84
	Number of boreholes used for Resource estimation	1 083
	Validation	Conducted using queries in acQuire and Excel
	Data compositing and weighting	Coal analyses and beneficiation (CAB) module in Sable Data Warehouse
Model	Previous model date	2016
	Last model update	2020 updated
	Geological modelling software	Geovia Minex™
	Estimation technique	Growth algorithm
	Grid mesh size	20m x 20m
	Scan distance	2 000m
	Data boundary	200m
	Model build limits	Upper: limit of weathering and topography/collar Lower: Zone 1 floor
	Model outputs	Roof, floor and thickness grids generated for structure. Coal-washability quality grids
	Changes to modelling process	Definition of Bench 9A to exclude sample 25 and 25S from RoM bench

Table 23: Grootegeluk Coal Resource classification criteria

Resource category	Type of boreholes	Borehole spacing (Volksrust and Vryheid formations)	Structurally complex areas	Borehole/ha
Measured	Cored boreholes with applicable coal qualities	≤500m	Matrix (additional geophysically logged boreholes needed)	0.1
Indicated	Cored boreholes with applicable coal qualities	>500m and ≤1 000m	Matrix (additional geophysically logged boreholes needed)	0.03
Inferred	Cored boreholes with applicable coal qualities	>1 000m and ≤3 000m	Matrix (additional geophysically logged boreholes needed)	0.03

ANCILLARY RESOURCE AND RESERVE INFORMATION BY OPERATION continued

Table 24: Grootegeluk Resource and Reserve statement

Category	2020 (Mt)	2019 (Mt)	Difference in tonnes (Mt)	Difference (%)	Reason for change
Measured	**2 532**	2 786	(254)	(9)	The decrease is primarily the result of new information (11Mt), reclassification (~151Mt), mining (58Mt) and sterilisation due to the change in LoM plan (56Mt)
Indicated	**1 422**	1 017	405	40	The change is the result of new information (~255Mt) and reclassification (~151Mt Measured to Indicated)
Inferred	**338**	653	(315)	(48)	The change is the result of new information (~325Mt) and the inclusion of a small amount of Resource located in the adjacent Thabametsi mining right
Total Coal Resources	**4 291**	4 455	(164)	(4)	
Proved	**1 730**	2 520	(789)	(31)	The decrease is primarily the result of mining depletion (56Mt), new pit layout (480Mt) and changes in the Resource base (253Mt)
Probable	**898**	645	253	39	The increase is the result of changes within the Resource categories (253Mt)
Total Coal Reserves	**2 628**	3 165	(536)	(17)	The change is primarily due to the implementation of a new mine plan

Notes:
- *Rounding of figures may cause computational discrepancies.*
- *All changes more than 10% are explained.*
- *Mining method: OC.*
- *Figures are reported at 100% irrespective of percentage attributable to Exxaro.*
- *Tonnages are quoted in metric tonnes and million tonnes (Mt). Coal Resources are quoted as MTIS and refer to remaining Resources after 31 December 2020 and 31 December 2019.*
- *Coal Resources are reported on MTIS basis.*
- *Cut-offs applied as per Resource reporting criteria table.*
- *Coal Resources are quoted inclusive of Coal Resources converted to Coal Reserves.*

Grootegeluk Reserve estimation

The LoM plan for Grootegeluk was revised in 2020 and the change in the pit layout, mining sequence and LoM schedule are reflected in the 2020 Reserve Statement. All modifying factors were considered and downgraded, where applicable, to the Coal Reserves in the various categories.

RPM Global's XPAC mine-scheduling software is used to derive the remaining saleable Reserves from RoM Reserves in the approved pit layout. After converting the geological model's grids to the appropriate format, the floor, roof and thickness data as well as quality data for each bench is imported into the XPAC model. In this model, validations are performed to evaluate the data for possible discrepancies, such as incremental yields anomalies for each bench, thus ensuring they rise with increases in the relative float densities. The Resource category areas are also loaded into the XPAC model for Reserve categorisation purposes.

The XPAC model integrates new geometallurgical principles into the LoM planning process and scheduling model to better predict as-mined plant performance. This is an all-inclusive model that can simulate all the plants in the Grootegeluk complex from one integrated flow sheet. The key improvement is that the model provides:

- Combined washability data for all material fed to a specific plant
- The data is combined for each relative density
- The impact on plant yield performance, due to the RoM feed consisting of coal from various benches, is modelled

A number of audits have been conducted, in conjunction with the mine, to ensure the process applied is well understood, documented and that predicted product volumes are realistic and transparent.

Table 25: Grootegeluk RPEEE considerations

Item	Criteria	Considered	Comment
Geological data	Data has been validated and signed off by competent person	Yes	Geological structures, seam thickness ≥0.5m, ash content <65%. Coal qualities reported on an air-dry basis
Geological model	Geological model was considered and signed off	Yes	2020
Structural model	Structural model was considered and signed off	Yes	2019
Mining	Mining assumptions considered and defined	Yes	Opencast
Assurance	Minimum tier 1 assurance (Exxaro governance)	Yes	Resource and LoM done in 2018
Economic evaluation	A concept-level exploitation with economic and mining assumptions, including geotechnical and geohydrological assumptions	Yes	Exploitation strategy over mining right
Environmental	Reasonable demonstration that environmental approvals can be obtained within the context of local, regional and national governmental legislation	Yes	Current required approvals in place
Tenure	Formal tenure must be demonstrated with reasonable demonstration that a mining right approval can be obtained within the context of local, regional and national governmental legislation	Yes	Mining right (21 years) with reasonable expectation that right will be renewed
Infrastructure	Assumptions used should be reasonable and within known/assumed tolerances or have examples of precedence	Yes	Existing infrastructure adequate or can be upgraded. New required infrastructure under construction
Market	A potential market for the product with a reasonable assumption that this market is sustainable	Yes	Current coal supply agreements for local and export markets

The washability tables for each blast block are imported into the geometallurgical model (XPAC). The geometallurgical schedule imitates reality at Grootegeluk as portions of a single blast block can be allocated to several beneficiation plants in a particular scheduling period. Once the production schedule has run, a blend of blast blocks from different benches is allocated to each plant for each scheduling period. A new composite wash table is then derived for each plant for each scheduling period, which represents the blend of material fed from the mine to that plant. This composite wash table is then used to derive the specific products required to be produced by that plant for that period. A set of calibrated plant factors is applied per plant to adjust theoretical product yields to practical expected levels. It is thus not assumed that a block in its entirety is allocated to one plant only, as this does not represent reality at Grootegeluk. The scheduled mining blocks are of the same size as current actual blast blocks in the mine. The fact that material from different benches is combined and beneficiated simultaneously creates difficulty in reporting saleable product tonnages per bench. The preferred reporting practice at Grootegeluk is therefore RoM tonnes per bench and saleable product tonnes per beneficiation plant.

Indicated Resources are generally converted to Probable Reserves and Measured Resources to Proved Reserves after consideration of all applicable modifying factors. If one or more of the modifying factors have not been fulfilled, Measured Resource is either not converted or the Measured Resource is converted but downgraded to Probable and the associated risk is clearly stated. Inferred Resources are not converted to Coal Reserves.

Some 137Mt of Inferred Resources are included in the LoM plan, representing 5.2% of the LoM plan, and are not considered material. The impact of the Inferred Resources are known, with the majority thereof occurring at the tail end of the LoM plan and are addressed by an integrated exploration plan that is reviewed every year.

ANCILLARY RESOURCE AND RESERVE INFORMATION BY OPERATION continued

Table 26: Grootegeluk production figures

	Actual 2019	FC 2020	Actual 2020	FC 2021	FC 2022
RoM (Mt)	56.2	59.8	**54.6**	61.9	68.4

Table 27: Grootegeluk modifying factors considered in converting Coal Resources to Coal Reserves

Modifying factors	Value
Geological loss (varies per bench)	0 to 0.75% for Proved Reserves 0 to 1.5% for Probable Reserves
Thickness cut-off	≥0.5m
Quality cut-offs	≤65% ash content (raw in situ coal)
Mining loss	0 due to the fact that all mining boundaries are reached, no pillars are left
Boundary pillar	N/A
Dilution	Applied to in situ mineable Reserves due to the inter-layered composition of the deposit
Contamination (varies per bench)	0 to 0.75m applied to interburden seams
Mining recovery efficiency (varies per bench)	0 to 0.75m depending on bench height
Planned average slope angles	<61.7 degrees
Practical plant yield	Considered in the reserving process as per wash table information per combination of blocks per planning increment and the empirically determined practical yield adjustment factor
Strip ratio cut-off	Energy strip ratio >7GJ/ex-pit tonne
Environmentally sensitive areas	Areas underlying wetlands and other eco-sensitive areas are excluded from the Reserves with a 100m or 100-year floodline cut-off applied
Legal	The layout is within the mining right boundary and not closer than 15m
Social	There are no known socially sensitive areas in the pit layout (for example, graveyards and dwellings)
Geohydrological	Areas identified are flagged and excluded or reclassified in the reserving process

Grootegeluk known risks

We do not know of any pertinent risks or other material conditions that may impact on the company's ability to mine or explore including technical, environmental, social, economic, political and other key risks.

There are a number of low risks addressed by continuous actions at the operation:

- **Geological structure accuracy:** The structure interpretation (fault positions) is based on current points of observation. Additional percussion boreholes are required in structurally complex areas to finalise the position and characteristics of faults. This risk was illustrated by the reclassification of approximately 151Mt of Measured Resources to the Indicated category this year. Our improved structural interpretation of the position and orientation of the interpreted fault positions in the northern pit changed meaningfully enough to warrant a reclassification. When reviewing the supporting borehole information in the area, it was evident that the boreholes within each of the newly interpreted faulted blocks occur in single lines. This presents a challenge when trying to access the orientation and extent of seam development as well as the boundaries of the faulted resource block. Focused drilling will be conducted to outline the fault orientations.
- **Thinning of upper benches:** Bench 2 and bench 3 are thinning, and are not present in certain areas of the Coal Resource due to weathering with only a small portion of bench 2 remaining in the next few years. This information has been incorporated in the mine's production schedules. Large portions of bench 2 and bench 3 are still available in the planned pit layout further away from the current production face
- **Increasing total sulphur content in semi-soft coking coal:** A trend of increasing sulphur content in the benches used to produce semi-soft coking coal (benches 2, 3 and 4) is observed in the geological model. Coal sulphur content is known to be highly variable, which makes it difficult to estimate accurately. The variability was considered during the revision of the 2020 pit and LoM plan
- **Phosphorus content in semi-coke feed coal:** The phosphorous content of bench 11 poses a risk to the production of semi-coke. Bench 11 and Zone 1 are the sources of relatively low phosphorus content coal but bench 11 shows a continual increase in phosphorus content. Studies conducted show that most of the phosphorous content of bench 11 is in the uppermost portion of the bench and can be removed separately to mitigate the risk. In addition, Zone 1 (bench 13) is currently omitted from the mine plan due to its high-stripping ratio but can be used as a sweetener if it is blended with bench 11

- **Resources within the Thabametsi mining right:** Approximately 58Mt is included in the Grootegeluk LoM. Both mining rights are held by Exxaro and the risk is therefore deemed low

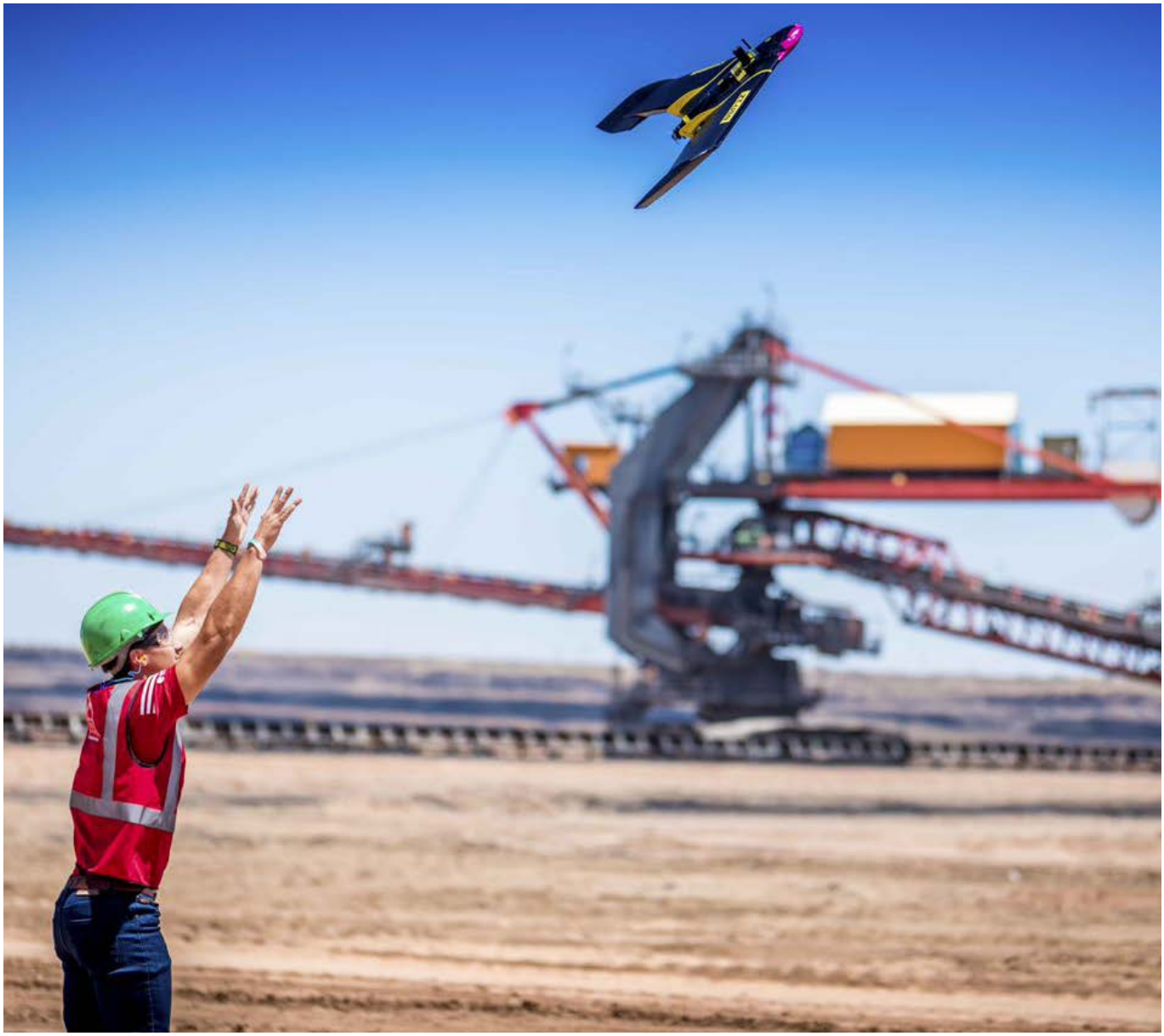
Grootegeluk excellence

The implementation of the short-term geological model proofs to be a significant valuable instrument for medium and short- term mine planning. The development of an online geographic information system (GIS) tool to manage pit survey, mining development surfaces as well as COVID-19 management is an exceptional development for the operation.

At the beginning of 2020, the new optimised exploitation strategies were finalised and approved for the various business units in Exxaro. To ensure accurate execution and control, the plans were embedded in Exxaro's business processes through incorporation in the LoM plans and the business plans and budgets. These strategies have been included into the LoM plan for Grootegeluk. This strategy entails a pit-shell redesign to exclude high stripping and low-quality areas and to target high-value areas in the LoM plan.

GG6 expansion project is an expansion of the existing Grootegeluk 2 plant and aims to enable additional production of semi-soft coking coal. First production is expected during 1Q2021.

The new rapid load out station project delivered a rail siding equipped with a load out facility for Grootegeluk. It is a state-of-the art facility and is equipped with a telescopic chute that enables continuous loading of different mix product wagon trains. The development will enhance the infrastructure expansion of the Grootegeluk mining complex significantly.



ANCILLARY RESOURCE AND RESERVE INFORMATION BY OPERATION continued

THABAMETSI PROJECT

Thabametsi overview

The Thabametsi project is 22km west of the town of Lephalale and adjacent to Exxaro's Grootegeluk mine. The project area is divided into a northern opencast portion and a southern underground area. The northern portion aims to produce power station coal for an on-site IPP as part of phase 1. A feasibility study on phase 1 was successfully concluded in 2016 and studies on extending the phase and the southern project area are ongoing. In October 2016, the South African Minister of Mineral Resources and Energy announced that the Thabametsi power project, for which Thabametsi project has a 30-year coal supply agreement, had been selected as a preferred bidder in the first bid window of South Africa's coal-baseload IPP procurement programme. The subsequent process to realise this initiative has progressed during the last number of years. The project development agreement with our IPP project partner, however, lapsed during the reporting year and we subsequently changed our reporting of Proved Reserves to Probable category to address this uncertainty. Exxaro is currently ensuring that all compliance actions are executed.

Thabametsi history

Drilling on the Thabametsi project area began in 1979 during Iscor's regional exploration of the Waterberg. This investigation was prompted by positive results on adjacent farms where Grootegeluk mine began production in 1980.

As part of this exploration, one borehole was drilled on all farms of interest. On farms where results were promising, follow-up drilling was conducted in 1980/1981. During this time, eight boreholes were drilled on four of the five Thabametsi farms: McCabesvley, Jackalsvley, Zaagput and Vaalpensloop. Two boreholes were drilled in 1988 on the remaining farm Van der Waltspan to complete regional exploration of the Thabametsi project area. All regional exploration during this time, except the boreholes on Van der Waltspan, was conducted through rotary core diamond drilling using an NQ-sized (47.6mm) core barrel. The boreholes on Van der Waltspan used a T6-146-sized (123mm) core barrel.

Exploration activities began in earnest on the project area in 2008. Since the start of the latest drilling programme, 61 boreholes have been drilled on Thabametsi at a cost of around R50 million. All boreholes completed on the project site since 2008 were undertaken using a T6-146-sized core barrel to produce a 123mm diameter core.

Figure 14: Thabametsi project

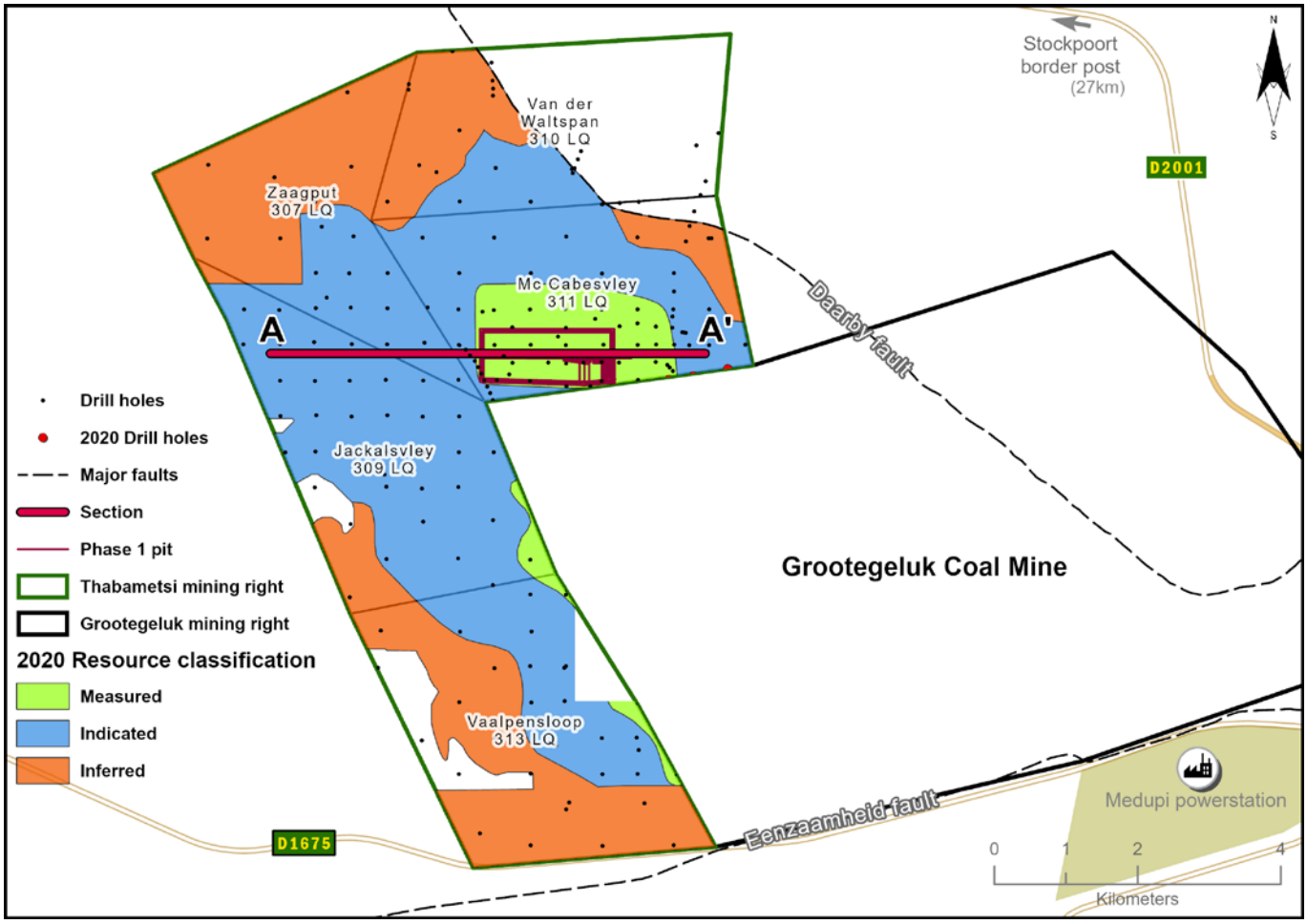


Table 28: Thabametsi project history

Date range	Company	Material notes
1979 to 1988	Iscor – Iscor Mining	Exploration drilling began (seven boreholes drilled)
1989 to 2006	Kumba	51 boreholes drilled
2007 to 2015	Exxaro Resources	Prospecting right and exploration activities specifically on the project area (180 boreholes drilled)
2016 to current	Exxaro Resources	Mining right registered in 2016 is valid for 30 years (11 boreholes drilled)

Thabametsi geology

The geology is similar to Grootegeluk's geology but practical mining practice to supply RoM to the proposed IPP facility required a different bench configuration. In the north, the full succession of the Volksrust and Vryheid formations is present. However, further south, the Volksrust formation thins out and eventually disappears. A pertinent channel sandstone in the northern portion of the project area affects benches 9A and 9B. A cross-section through the geological model is presented in Figure 16.

Thabametsi Resource evaluation

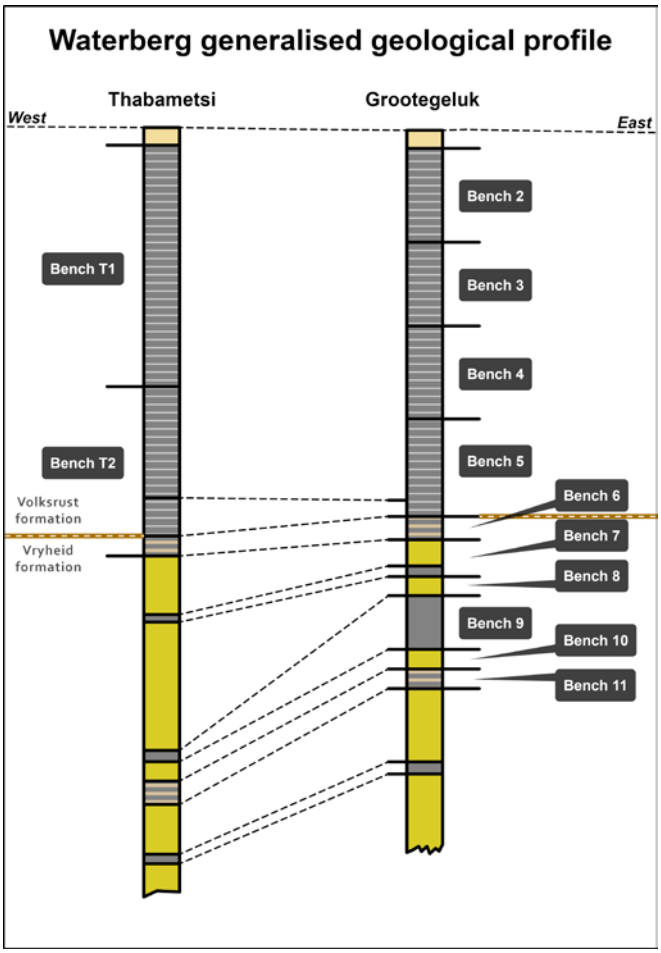
Logging and sampling follow the same protocols as at Grootegeluk mine. Controls in the work procedure ensure that mistakes are omitted from the process, initially from the placement of borehole survey data in the field to the point of delivery of samples to the laboratory, and after that from receiving analyses back from the laboratory to the point where data is used for geological modelling. These procedures include controls to ensure the drill core is correctly correlated, sampled, relative densities determined and material recoveries validated to stipulated standards.

Prior to dispatching, coal and shale samples are reweighed in air to check that they have been correctly labelled and that the initial weights recorded are correct for subsequent relative density calculation. When samples arrive at the Bureau Veritas laboratory in Pretoria, they are reweighed and checked against the recorded relative densities on the sample list supplied with the samples by the geology department. The geology personnel are notified of any discrepancy, which is rectified without delay.

The senior geologist in the geodata subsection at Grootegeluk mine is responsible for maintaining a system to ensure that all exploration borehole data is verified and all geological information is correctly entered into the borehole database (acQuire). The individual is also responsible for tracking borehole samples in the analytical process, accepting analytical data from Bureau Veritas, electronic transfer of analytical data to the borehole database and validation of the data. Resource estimation and data compositing methods are aligned with the methodology applied at Grootegeluk.

The Resource classification methodology throughout the Volksrust and Vryheid formations, although fundamentally based on SANS 10320 (guidelines for multi-seam deposits), is based on a matrix approach that incorporates borehole spacing, type of boreholes and structural complexity in the Resource. The approach is recognised as more conservative than applying guidelines for thick interbedded-type deposits and was chosen to remain conservative during current studies. The classification methodology will be reviewed (as with Grootegeluk) in 2021. Some 116 boreholes were used for Resource estimation and all contain coal-washability data.

Figure 15: Generalised profile of the Grootegeluk and Thabametsi geological profile



ANCILLARY RESOURCE AND RESERVE INFORMATION BY OPERATION continued

Table 29: Thabametsi Coal Resource reporting criteria

Thickness cut-off (thickness and extraction height considerations)	Quality cut-offs (adb)	Geological loss (%)
<0.5m	Ash content of >65%	5%

Table 30: Thabametsi Coal Resource estimation criteria

	Item	Description
Database	Borehole database	Sable Data Warehouse
	Data datum	LO27 WGS 84
	Number of boreholes used for Resource estimation	116
	Validation	Conducted using queries in Sable and Excel
	Data compositing and weighting	Sable Data Warehouse
Model	Previous model date	2014
	Last model update	2015 (conclusion of 2020 update in progress)
	Geological modelling software	Geovia Minex™
	Estimation technique	Growth algorithm
	Grid mesh size	45m x 45m
	Scan distance	1 000m
	Data boundary	300m
	Model build limits	Upper: limit of weathering and topography/collar
	Model outputs	Roof, floor and thickness grids generated for structure Coal-washability quality grids
	Changes to modelling process	None

Figure 16: Cross-section through 2015 Thabametsi geological model

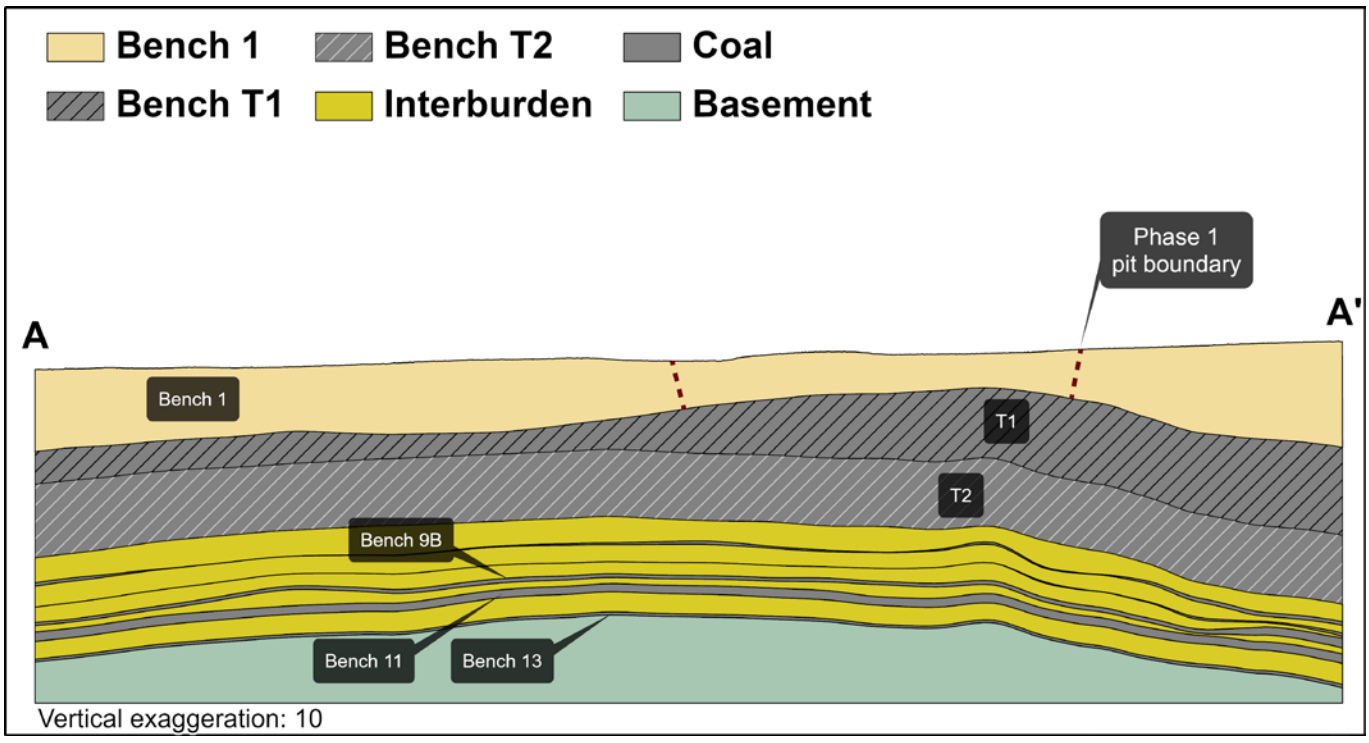


Table 31: Thabametsi Coal Resource classification criteria

Resource category	Type of boreholes	Borehole spacing (Volksrust and Vryheid formations)	Structurally complex areas
Measured	Cored boreholes with applicable coal qualities	0 to 350m	(Matrix) Additional geophysically logged boreholes needed
Indicated	Cored boreholes with applicable coal qualities	350m to 500m	(Matrix) Additional geophysically logged boreholes needed
Inferred	Cored boreholes with applicable coal qualities	500m to 1 000m	(Matrix) Additional geophysically logged boreholes needed

Table 32: Thabametsi Resource and Reserve statement

Category	2020 (Mt)	2019 (Mt)	Difference in tonnes (Mt)	Difference (%)	Reason for change
Measured	**270**	270	–	–	
Indicated	**749**	749	–	–	
Inferred	**2 857**	2 916	(59)	(2)	Coal Resources that fall inside the Grootegeluk LoM was included in Grootegeluk estimates
Total Coal Resources	**3 876**	3 935	(59)	(1)	
Proved		109	(109)	(100)	Movement is due to the lapse of the IPP project development agreement
Probable	**130**	21	109	519	
Total Coal Reserves	**130**	130	–	–	

Notes:
- *Rounding of figures may cause computational discrepancies.*
- *All changes more than 10% are explained.*
- *Mining method: OC, UG.*
- *Figures are reported at 100% irrespective of percentage attributable to Exxaro.*
- *Tonnages are quoted in metric tonnes and million tonnes (Mt). Coal Resources are quoted as MTIS and refer to remaining Resources after 31 December 2020 and 31 December 2019.*
- *Coal Resources are reported on MTIS basis.*
- *Cut-offs applied as per Resource reporting criteria table.*
- *Coal Resources are quoted inclusive of Coal Resources converted to Coal Reserves.*

Thabametsi Reserve estimation

For the phase 1 of the IPP feasibility study, XPAC mine-scheduling software is used to derive remaining saleable Reserves from RoM Reserves in the approved pit layout. After converting the geological model's grids to the appropriate format, the floor, roof and thickness data as well as the quality data for each bench is imported into the XPAC model. With this model, validations are performed to evaluate the data for possible mistakes, such as incremental yields for each bench rising with increases in relative float densities.

The Resource category areas are also loaded into the XPAC model for Reserve categorisation. Indicated Resources are generally converted to Probable Reserves and Measured Resources to Proved Reserves after consideration of all applicable modifying factors. If one or more of the modifying factors have not been fulfilled, Measured Resource is either not converted or the Measured Resource is converted but downgraded to Probable and the associated risk is clearly stated. Inferred Resources are not converted to Coal Reserves. No Inferred Resources are included in the LoM plan.

The Coal Reserve is based on a bankable feasibility project level of investigation. The project development agreement with our IPP project partner lapsed during the reporting year and we subsequently changed our reporting of Proved Reserves to the Probable category to address this uncertainty. Exxaro is currently ensuring that all compliance actions are executed.

Thabametsi known risks

Some assumptions regarding the highwall mining method need to be confirmed at the start of the operation.

Geological structures (primarily faulting) are vital considerations for potential underground exploitation. Additional surface geophysical surveys as well as vertical and incline drilling are required to enhance the potential underground mine layouts.

Thabametsi opportunities

The Thabametsi Coal Resource is a substantial asset, including both the Volksrust and Vryheid formations with coal deposit characteristics very similar to the adjacent valuable Grootegeluk mine resource. Its location to Grootegeluk mine presents various high-potential opportunities that are currently under investigation. The potential to exploit Thabametsi both opencut as well as underground underline its value.

The geological model and classification of the Thabametsi mining area are in the last phases of completion. Drilling results to be included in the 2021 model will enhance the current level of geological confidence.

ANCILLARY RESOURCE AND RESERVE INFORMATION BY OPERATION continued

Table 33: Thabametsi RPEEE considerations

Item	Criteria	Considered	Comment
Geological data	Data has been validated and signed off by competent person	Yes	Geological structures, seam thickness ≥1.0m, ash content <65%. Coal qualities reported on an air-dry basis
Geological model	Geological model was considered and signed off	Yes	2015, 2020 model update in process to conclude
Structural model	Structure model was considered and signed off	Yes	2015 and 2020 model update in process to conclude
Mining	Mining assumptions considered and defined	Yes	Opencast and underground
Assurance	Minimum tier 1 assurance (Exxaro governance)	Yes	2015
Economic evaluation	A concept-level exploitation with economic and mining assumptions, including geotechnical and geohydrological assumptions	Yes	Studies that underpin the IPP study and mining right mine works programme
Environmental	Reasonable demonstration that environmental approvals can be obtained within the context of local, regional and national governmental legislation	Yes	Approvals and land ownership in place
Tenure	Formal tenure must be demonstrated with reasonable demonstration that a mining right approval can be obtained within the context of local, regional and national governmental legislation	Yes	Mining right (26 years)
Infrastructure	Assumptions used should be reasonable and within known/assumed tolerances or have examples of precedence	Yes	Current infrastructure
Market	A potential market for the product with a reasonable assumption that this market is sustainable	Yes	IPP and current Grootegeluk steam coal market

Table 34: Thabametsi modifying factors considered in converting Coal Resources to Coal Reserves

Modifying factors	Value
Geological loss	5%
Average thickness cut-off	<1m
Quality cut-offs (adb)	Raw CV >11Mj/kg
Mining loss	*T1 – 0.5m losses to overburden *T2 – 0.25% of coal left in pit bottom
Boundary pillar	N/A
Dilution	Applied to in situ mineable Reserves due to inter-layered composition of deposit
Contamination	T2 – 0.3m
Mining recovery efficiency	No additional losses due to proposed mining method. Coal transfer between benches T1 and T2 will balance out over time as both go to same plant
Planned average slope angles	35 degrees
Practical plant yield	Crushing and screening process 98%
Strip ratio cut-off	Energy strip ratio >7Gj/ex-pit tonnes Strip ratio <0.3 cubic metre per tonne (m^3/t)
Environmentally sensitive areas	No sensitive areas in pit layout
Legal	The layout is within the mining right boundary
Social	There are no socially sensitive areas in the pit layout (for example graveyards and dwellings)
Geohydrological	No areas identified in the mining area

DORSTFONTEIN COMPLEX

Dorstfontein overview

Dorstfontein complex forms part of ECC and is on the northern margin of the Highveld coalfield along the boundary of the Smithfield Ridge, the boundary between the Highveld and Witbank coalfields.

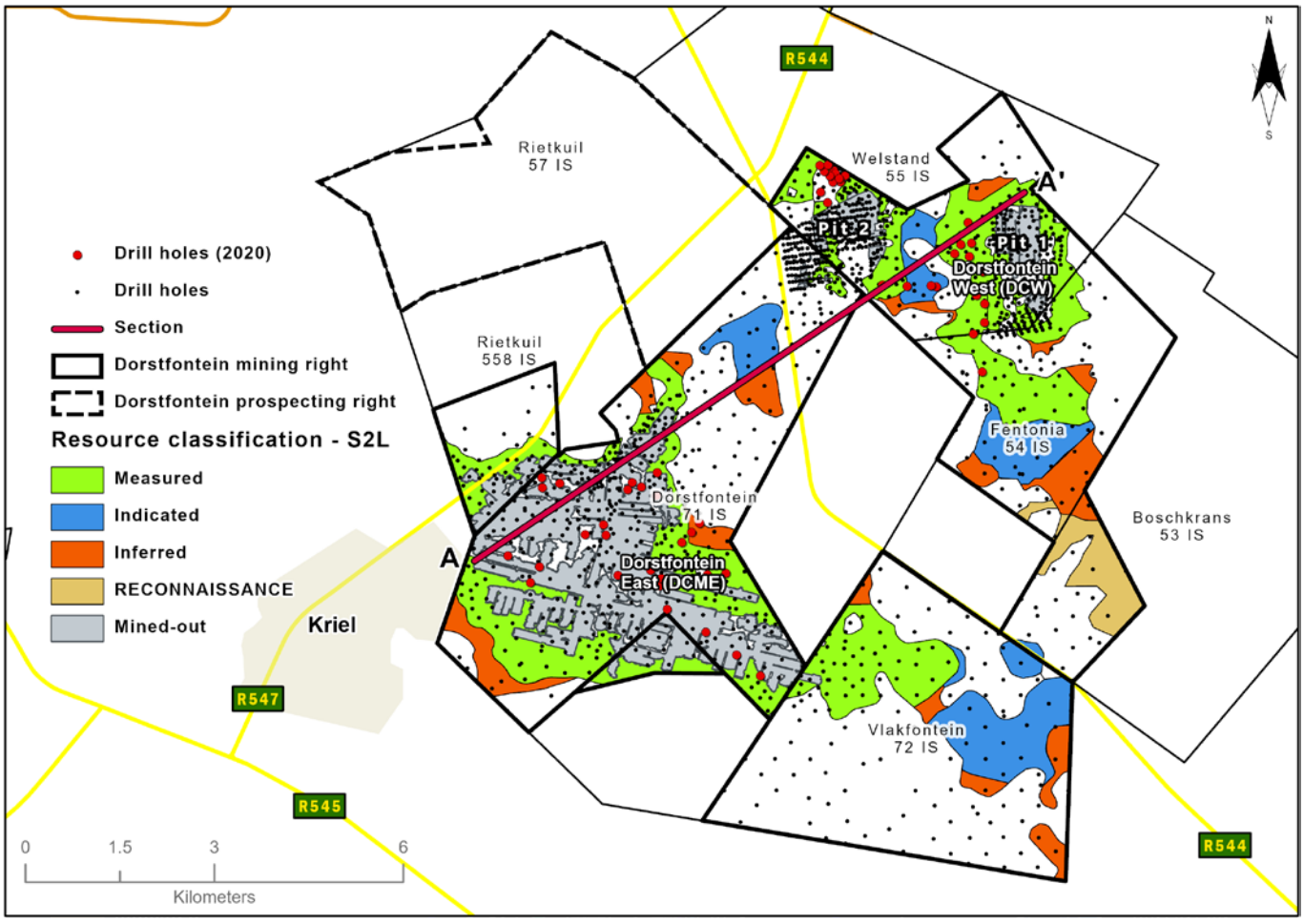
It is 36km south of the town of eMalahleni and, to the south-west, the property borders the town of Kriel. It is in the Highveld magisterial district, under the jurisdiction of the eMalahleni local council, Mpumalanga, South Africa. Operations can be reached via the hard-topped R544/R547 roads linking the towns of Witbank and Kriel. It is surrounded by mineral right tenure owned by Kusile Mining to the west, the Universal Coal New Clydesdale operation to the north, the Kriel East operation to the south and Mbuyelo Coal to the east.

The complex covers a total rights area of 7 892ha comprising the underground Dorstfontein West mine and opencast and newly developed underground mine at Dorstfontein East mine. Seams being exploited are mainly S4 divided into S4 upper (U) and S4 lower (L) and S2 divided into S2U and S2L. The Dorstfontein West operation is exploiting the S4L through an incline development from the historical S2 workings with three production sections. A new development at Dorstfontein East is the implementation of an underground mine exploiting S2 through two adits accessed from one of the open pits. Dorstfontein East is the only opencast mine in the ECC stable targeting primarily S2 and S4. However, where thicker than 1.0m S5, S3 and S1 are present, they are also extracted. Mining activities use a truck-and-shovel method to expose and extract coal.

A major high-tension power line from the Komati power station crosses the property, in a south-westerly direction, over the northern part of the farm Fentonia 54IS and then swings westward over portions 1, 2 and 9 of the farm Dorstfontein 71IS. A secondary high-tension power line runs along the southern boundary of the farm Welstand 55 IS and continues over portions 2 and 3 of the farm Fentonia 54IS.

Dorstfontein West mining infrastructure extends over a portion of the farm Rietkuil 558 IS and portion RE 3 of the farm Dorstfontein 71IS while Dorstfontein East mining infrastructure lies on portion 11 of the farm Welstand 55 IS. Surface infrastructure consists of mine buildings (offices, workshops and change houses), a box-cut to access the coal seams, conveyor belt systems, coal-washing plant, pollution-control dams, coal stockpile areas, truck-loading facilities with weighbridges, discard dumps and a rapid coal-loading facility (rapid-loading terminal) linked to the main Richards Bay Coal Terminal. Dorstfontein West RoM is beneficiated in a heavy medium coal-washing plant for various sizes. Final plant product is screened and classified into large nuts, small nuts, jumbo peas, peas and duff. RoM from Dorstfontein East is also beneficiated in a heavy medium coal-washing plant to produce a product that depends on the contractual requirements. Currently Dorstfontein West and East mainly support the export market. However, Dorstfontein East is scheduled to start supplying Eskom from 2022.

Figure 17: Dorstfontein complex



ANCILLARY RESOURCE AND RESERVE INFORMATION BY OPERATION continued

Dorstfontein history

Dorstfontein complex mining and prospecting rights cover some 8 617ha (mining and prospecting right areas), which have been explored since the 1950s. To date, 2 365 boreholes have been drilled. However, the 2020 geological model was built using 1 717 boreholes with wash-quality information and excluding the remaining boreholes based on a rigorous data-validation process. As a result of the long history of ownership and various exploration companies some boreholes cannot be directly correlated with a certain company or date drilled as the boreholes logs do not always have the relevant information.

Table 35: Dorstfontein operation history

Date range	Company	Material notes
1956	Natal Navigation Collieries jointly with Estate Company	Widespread drilling of 13 boreholes on the farms Dorstfontein 71IS, Welstand 55IS and Rietfontein 43IS
1970	Anglo American	Drilling of 37 boreholes for more detailed cover
1974 to 1975	South Cape Exploration	Drilling of 37 boreholes for more detailed cover
1976 to 1978	Sun Mining and Prospecting, an Anglovaal exploration company	82 boreholes drilled and 328 coal samples analysed for washing characteristics
1980 to 1982	Anglovaal	100 boreholes drilled on the farm Dorstfontein 71IS
1996 to 1998	Anglovaal	Drilling of 105 boreholes on the southern portion of the farm Dorstfontein 71 to support a feasibility study of the S2 mining operation at Dorstfontein West for first coal in 1997
1999 to 2004	Total Exploration South Africa	Total Exploration South Africa took over the Dorstfontein West operation
2004 to 2007	Dorstfontein Coal Mines	Total Coal South Africa emerged from Total Exploration South Africa. Continuous drilling for exploration and mine planning purposes. In 2007, 140 boreholes drilled for the feasibility study of the proposed S4 mining operation at Dorstfontein West. An additional 25 boreholes drilled for specialised analysis
2008 to 2015	Dorstfontein Coal Mines	Since 2008, a total 1 022 boreholes drilled in both areas where ECC holds prospecting and mining rights. First coal was recorded at Dorstfontein East in 2011
2015 to 2019	Dorstfontein Coal Mines	Exxaro acquired Total Coal South Africa in 2015. The feasibility study for Dorstfontein West S4L project was approved as a replacement for the current Dorstfontein West S2L operations. A total of 201 boreholes were drilled
2020	Dorstfontein Coal Mines	Pit 2 opencast operation came to an end in the fourth quarter of 2020. Preparations for S4L underground as a replacement through an adit in Pit 2 highwall is progressing well. A total of 59 boreholes were drilled during the reporting year.

Dorstfontein geology

Coal measures of the Highveld and Witbank coalfields are hosted in the Ecca group, which includes the Vryheid and Volksrust coal-bearing formations. All coal seams in the ECC area are hosted in the Vryheid formation, which ranges in thickness from 80m to 300m. There are five major coal seams present in the area, named from the base upwards as S1, S2, S3, S4 and S5.

A granitic basement high, which forms part of the Smithfield Ridge and is referred to below as the Central plateau, divides the Dorstfontein complex into two separate geological domains, and the western and eastern limbs can be found on either side of this plateau. S1 is only developed in the central portions of the paleo-valleys, ranging in thickness from 0.1m to 2.5m. Underground extraction of this seam is considered uneconomic due to its highly variable thickness, inferior quality, isolated occurrence and coal devolatilisation. In the Dorstfontein complex, seam splitting is generally a provenance of detrital material resulting largely from the proximity of the seam to the Smithfield Ridge and, as a result, the S2 and S4 are further subdivided into S2L, S2U and S4L and S4U respectively.

S2L is thinnest over palaeo-highs and thickest over troughs of palaeo-valleys. Two S2L thickness domains exist in the complex. In the west (Dorstfontein West), seam thickness ranges from 0.1m to 5m and in the east (Dorstfontein East) from 0.2m to 6.0m. In the north of Dorstfontein West, the S2L exists as a single coal horizon, generally devoid of stone partings. To the south of this block, an arenaceous parting splits the seam into an upper and lower subseam. The parting separating S2U and S2L in both the west and east attains a maximum thickness of 4.5m and, in the northern portion, a minimum of 0.2m with an average of 1.5m. The S2U is considered uneconomic to mine separately by underground methods but is included for the opencast blocks. Generally, S2L is the thicker of the two subseams and has better quality coal. As such, S2L is theoretically the mining target. However, practical mining of S2L is often problematic due to parting between two subseams S2L and S2U.

On the basis of seam thickness and coal quality, S4L is the main underground exploitation target in S4, which comprises coal and minor in-seam partings, and is characteristically banded with alternating dull and bright coal. The seam contains one in-seam parting of significant thickness and lateral extent with a thickness

average of 0.2m but can reach 0.5m. Generally, the average thickness of S4L is 3.0m. S4U has an average thickness of 1.7m in the west and, in the east, the thickness is generally more than 1.0m, reaching 3.0m in the centre of the palaeo-valley. S4U has a higher ash content and thus lower CV compared to S4L. Thickness of the S5 is generally over 1.5m. Due to a significant parting, the seam is considered uneconomic for underground extraction but can be considered for selective extraction in opencast.

Numerous Jurassic dolerites (dykes and sills) intrude the Vryheid formation at various stratigraphic levels in the area. These intrusions negatively influence the stratigraphy and coal qualities in places. The distribution of the lower coal seams are strongly influenced by basement topography while distribution of the upper seams is controlled by present-day topography. Most affected by basement topography are S1 and S2. Seams are often thin and sometimes pinch out over and against palaeo-highs. Strata (including coal) are often faulted, although displacements are rarely more than 1m. Structural displacements, resulting from intrusions of dolerite sills through seams, often complicate mining seams.

The Dorstfontein complex geology and grade continuity are largely influenced by palaeo-topography, present-day topography, surface weathering, seam thickness variation (mainly between Dorstfontein West and East), in-seam parting, in-seam washouts, dolerite intrusions in the form of sills and dykes, resulting in minimal to extensive zones of devolatilisation. These geological risks are well managed through extensive drilling in areas of concern, using downhole wireline logging for better definition, underground channel sampling incorporated as points of observation in the short-term model, underground face mapping generally used to track both vertical and lateral variations in the lithology to assist with reconciliation as well as structural interpretation and surface mapping, particularly of basement outcrops. The information collated from the various approaches is incorporated in the structural model, together with additional potential risks from other disciplines and represented in a GIS-based RODA, allowing for a more integrated approach to risk management.

Dorstfontein Resource evaluation

All exploration boreholes are logged and sampled by experienced on-site geologists aligned and complying to logging and sampling standards and standard operating procedures. Samples are selected according to seam boundaries, visual variation in the vitrinite content, assisted by density logs, and non-coal material present in the seam boundaries. Each sample submitted to the laboratories is accompanied by a unique sample number for validation and tracking as well as a submission list that serves as a sample advice sheet with instructions for analysis. Three major laboratories have been used over the past 10 years: Australian Laboratory Services, SGS and CoalLab, all with SANAS accreditation (T0611, T0815 and T0612 respectively). All three laboratories have committed to assuring the quality of results provided to the customer by ensuring quality assurance, quality control, data validation and proficiency testing procedures are observed.

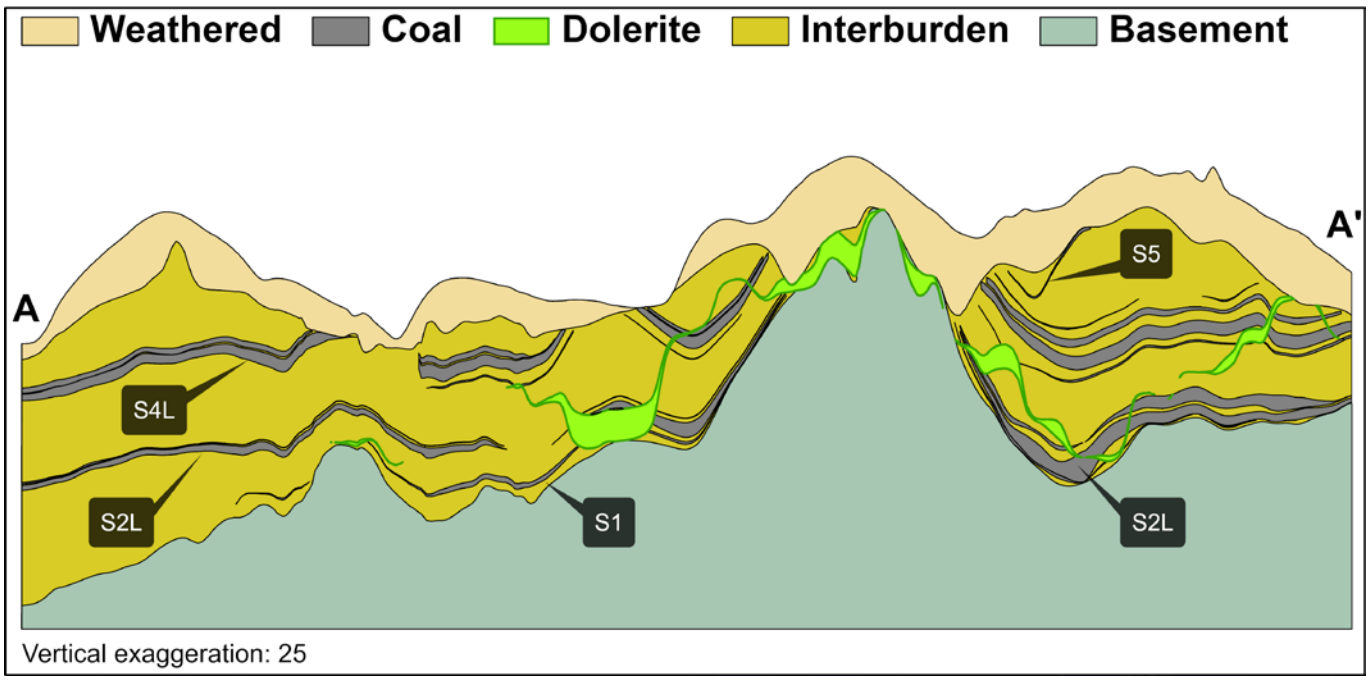
The Coal Resource classification methodology is fundamentally based on SANS 10320 and considers borehole spacing, type of boreholes and structural complexity of the Resource.

Table 36: Dorstfontein Coal Resource reporting criteria

Thickness cut-off (thickness and extraction height considerations)	Quality cut-offs (adb)	Geological loss*
Opencast ≤0.5m Underground ≤1.2m	Dry ash free volatiles (DAFV) ≤24% Raw ash ≥50%	10% to 50% (domains)

** A 10% standard geological loss is applied but may vary based on the consideration of structural complexity (dolerite sill breakthrough – 25% loss within determined spatial extent), seam gradient impacted by proximity to basement (>4 degrees – 50% loss) and weathering (25% loss).*

Figure 18: Typical south-west-north-east section through Dorstfontein geological model



ANCILLARY RESOURCE AND RESERVE INFORMATION BY OPERATION continued

Table 37: Dorstfontein Coal Resource estimation criteria

	Item	Description
Database	Borehole database	acQuire
	Data datum	LO29 WGS 84
	Number of boreholes used for Resource estimation	1 717 of 2 365 boreholes in the database
	Validation	The laboratory conducts data validation and proficiency testing on the samples submitted. In the acQuire database additional validations are conducted on the points of observation where missing data and or duplicate data are identified and corrected. Data is exported from acQuire into comma separated values (csv) files where it is subjected to additional checks
	Data compositing and weighting	Data compositing is conducted per seam using a weighted value from the individual samples that make up the seam along with the relative density and length of each individual sample. This is done in Geovia Minex™
Model	Previous model date	2017
	Last model update	2020
	Geological modelling software	Geovia Minex™
	Estimation technique	Growth algorithm
	Grid mesh size	25m x 25m
	Scan distance	2 000m
	Data boundary	200m
	Model build limits	Upper: limit of weathering and topography/collar Lower: basement/Dwyka
	Model outputs	Roof, floor and thickness grids generated for structure with raw quality and washability grids
	Changes to modelling process	Faulting included

Table 38: Dorstfontein Coal Resource classification criteria

Category	Type of boreholes	Borehole spacing	Structurally complex areas	Borehole/ha
Measured	Cored boreholes with applicable coal qualities	0m to 350m	Structural complexity and coal variability (RODA) additional infill drilling	0.24
Indicated	Cored boreholes with applicable coal qualities	350m to 500m	Structural complexity and coal variability (RODA) additional infill drilling	0.09
Inferred	Cored boreholes with applicable coal qualities	500m to 1 000m	Structural complexity and coal variability (RODA) additional infill drilling	0.06

Dorstfontein Reserve estimation

Scheduling of the Reserve is determined using mining scheduling applications from XPAC. This is the same software used to develop the LoM plan schedule.

The geological 3D model used for the Reserve statement is referred to as the Reserve geological 3D model. This Reserve model differs from the Resource model as the latter uses the full coal seam (with specific reporting assumptions) while the Reserve model uses a select mining height based on practical mining heights and other modifying factors. The process ensures that the model represents practical aspects of the capabilities of production sections and their equipment.

Indicated Resources are generally converted to Probable Reserves and Measured Resources to Proved Reserves after consideration of all applicable modifying factors. If one or more of the modifying factors have not been fulfilled, Measured Resource is either not converted or the Measured Resource is converted but downgraded to Probable and the associated risk is clearly stated. Inferred Resources are not converted to Coal Reserves.

A total of 0.8Mt of Inferred Resource is included in the LoM plan, which is around 1% of the LoM plan. The majority is located along main developments that serve as access to future Reserve blocks well beyond the first five years of LoM. The impact of including these Coal Resources is well understood and tested and exploration activities are planned to upgrade these categories to a higher level.

Table 39: Dorstfontein Coal Resource and Reserve statement

Category	2020 (Mt)	2019 (Mt)	Difference in tonnes (Mt)	Difference (%)	Reason for change
Measured	**175.6**	149.1	27	18	The change is the result of new information from the Dorstfontein East underground and Pit 1 north-west opencast extension areas and mining from both Dorstfontein West and Dorstfontein East mines
Indicated	**121.4**	135.5	(14)	(10)	The movement is due to new information leading to an increased level of confidence
Inferred	**53.3**	52.1	1	2	
Total Coal Resources (OC/UG)	**350.2**	336.7	13	4	Mining (4.6Mt) is offset by new information (15.9Mt) and model refinement (2.4Mt)
Proved	**50.9**	46.5	4	9	Mining depletion was offset by new information used to update the geological and subsequent mining model
Probable	**30.1**	41.5	(11)	(27)	New information resulted in an updated LoM plan
Total Coal Reserves (OC)	**81**	88	(7)	(8)	Movement between categories is the result of mining (4.1Mt), new information (3.6Mt), sterilisation due to dolerite activity (4.5Mt), and the introduction of a new underground mine layout at Dorstfontein East (1.8Mt)

Notes:
- *Rounding of figures may cause computational discrepancies.*
- *All changes more than 10% are explained.*
- *Mining method: OC AND UG.*
- *Figures are reported at 100% irrespective of percentage attributable to Exxaro.*
- *Tonnages are quoted in metric tonnes and million tonnes (Mt). Coal Resources are quoted as MTIS and refer to remaining Resources after 31 December 2020 and 31 December 2019.*
- *Coal Resources are reported on MTIS basis.*
- *Cut-offs applied as per Resource reporting criteria table.*
- *Coal Resources are quoted inclusive of Coal Resources converted to Coal Reserves.*

Table 40: Dorstfontein RPEEE considerations

Item	Criteria	Considered	Comment
Geological data	Data has been validated and signed off by competent person	Yes	Geological structure and depositional extent, seam thickness >1.2m (underground) and >0.5m (opencast), <50% ash content and >24% DAFV with coal qualities reported on an air-dry basis
Geological model	Geological model was considered and signed off	Yes	
Structural model	Structural model was considered and signed off	Yes	RODA review
Mining	Mining assumptions considered and defined	Yes	Opencast and underground areas defined and aligned with exploitation strategy
Assurance	Minimum tier 1 assurance (Exxaro governance)	Yes	Compliance updated in 2018
Economic evaluation	Concept-level exploitation with economic and mining assumptions, including geotechnical and geohydrological assumptions	Yes	Only approved economic assumptions and parameters are applied
Environmental	Reasonable demonstration that environmental approvals can be obtained within the context of local, regional and national governmental legislation	Yes	Environmental and social concept assessment is done, applications and approvals are considered
Tenure	Formal tenure must be demonstrated. Reasonable demonstration that a mining right approval can be obtained within the context of local, regional and national governmental legislation	Yes	Mining and prospecting rights licences are valid. Extensions or annexations will be lodged when necessary with reasonable expectations that the applications will be granted
Infrastructure	Assumptions used should be reasonable and within known/assumed tolerances or have examples of precedence	Yes	Current infrastructure is considered
Market	Market(s) identified – form part of an existing operation market strategy or potential market for which a conceptual market study exists	Yes	Operational strategies are aligned with existing markets

ANCILLARY RESOURCE AND RESERVE INFORMATION BY OPERATION continued

Table 41: Dorstfontein production figures

	Actual 2019	FC 2020	Actual	FC 2021	FC 2022
Dorstfontein East RoM (Mt)	**2.2**	2.3	**1.7**	2.0	3.0
Dorstfontein West RoM (Mt)	**1.3**	1.8	**1.7**	2.1	2.5
Dorstfontein complex RoM (Mt)	**3.5**	4.1	**3.4**	4.1	5.6

Table 42: Dorstfontein modifying factors considered in converting Coal Resources to Coal Reserves

Considerations	Underground	Opencast
Geological loss	10% to 50%	10% to 50%
Average thickness cut-off	1.4m	1.0m
Quality specification	4 800/5 300kcal/kg	4 800/5 300kcal/kg
Mining loss	0.05m	0.1m
Depth to roof	15m	0
Safety factor	1.6 to 2.0	0
Bord width	6.5m	0
Barrier pillar	At least equal to the panel pillar width	0
Boundary pillar	15m	15m
Pillar centres	14m x 14m	0
Mining height	1.4m	0
Extraction factor	65%	0
Dilution	Already included in model	Already included in model
Contamination	0.05m	0.10m
Practical plant yield	Considered in reserving process	Considered in reserving process
Environmentally sensitive areas	Areas underlying wetlands and other eco-sensitive areas are excluded from Reserves. A higher safety factor is used underneath rivers and surface structures	50m cut-off away from opencast mining activities
Legal	Mining right boundary	
Social	Considered in reserving process	
Geohydrological		

Dorstfontein known risks

Dorstfontein East pits 1, 2 and 3 and Vlakfontein areas are affected by dolerite activity. Risk in these areas has been accommodated in mine planning by assigning higher geological loss values to areas reasonably expected to incur losses caused by dolerite activity. Reporting of Coal Resources on the Rietkuil Vhakoni prospecting right (1916PR) is currently under review with regard to RPEEE considerations.

Dorstfontein excellence

Dorstfontein East has been operating as an opencast mine since 2011, exploiting mainly coal seams S4 (S4U and S4L) and S2 (S2U and S2L) of the Witbank coalfield. The implementation of an underground mine at the east mine, targeting significant S4L and S2L Resources, is exploited using the bord and pillar extraction method, celebrated as an exceptional excellence drive. The study started in early in 2019 and is progressing. First coal of S4L was accessed on 19 November 2020 and mining of S2L is scheduled to start around 2029.

FORZANDO COMPLEX

Forzando overview

The Forzando complex, consisting of the Forzando North and Forzando South (FZO) operations and contiguous prospecting rights, is in the north-eastern corner of the Highveld coalfield, separated from the Witbank coalfield by the pre-Karoo Smithfield Ridge.

The Forzando complex is in Mpumalanga province, some 10km north of the town of Bethal. The complex is also some 55km and 77km from two major urban cities, eMalahleni and Middelburg, respectively. Major forms of transport include road and railway networks that operate throughout the year. Major roads servicing the area are R35 and R542. The complex is adjacent to several other mineral tenures, including the Anglo American Coal project of Elders to the north and prospects of Canyon and Continental Coal to the south. Two provincial roads run through the property: Bethal-Middelburg tarred road lies just west of the area and Bethal-Hendrina tarred road passes along the extreme eastern edge. Three secondary, all-weather dirt roads traverse the area.

The complex covers 13 233ha and comprises two underground operations, namely Forzando North and Forzando South with Forzando North placed under care and maintenance in March 2020. Forzando South is characterised by mechanised bord-and-pillar mining using a suite of continuous mining equipment. The operation is currently exploiting the S4L with four continuous mining sections, and is supported by a fleet of primary and secondary mining equipment. Forzando North also used mechanised bord-and-pillar mining using a suite of continuous mining equipment to exploit primarily the S4L although S2L was also previously exploited.

Surface infrastructure still in use includes mine buildings (offices, workshops and change houses), box-cuts to access the coal seam, conveyor belt systems, two coal-washing plants and a rapid coal-loading facility (rapid loading terminal) linked to the main Richards Bay Coal Terminal via a privately owned railway loop.

RoM from Forzando South is conveyed by surface to the beneficiation plant at Forzando North supporting the export market.

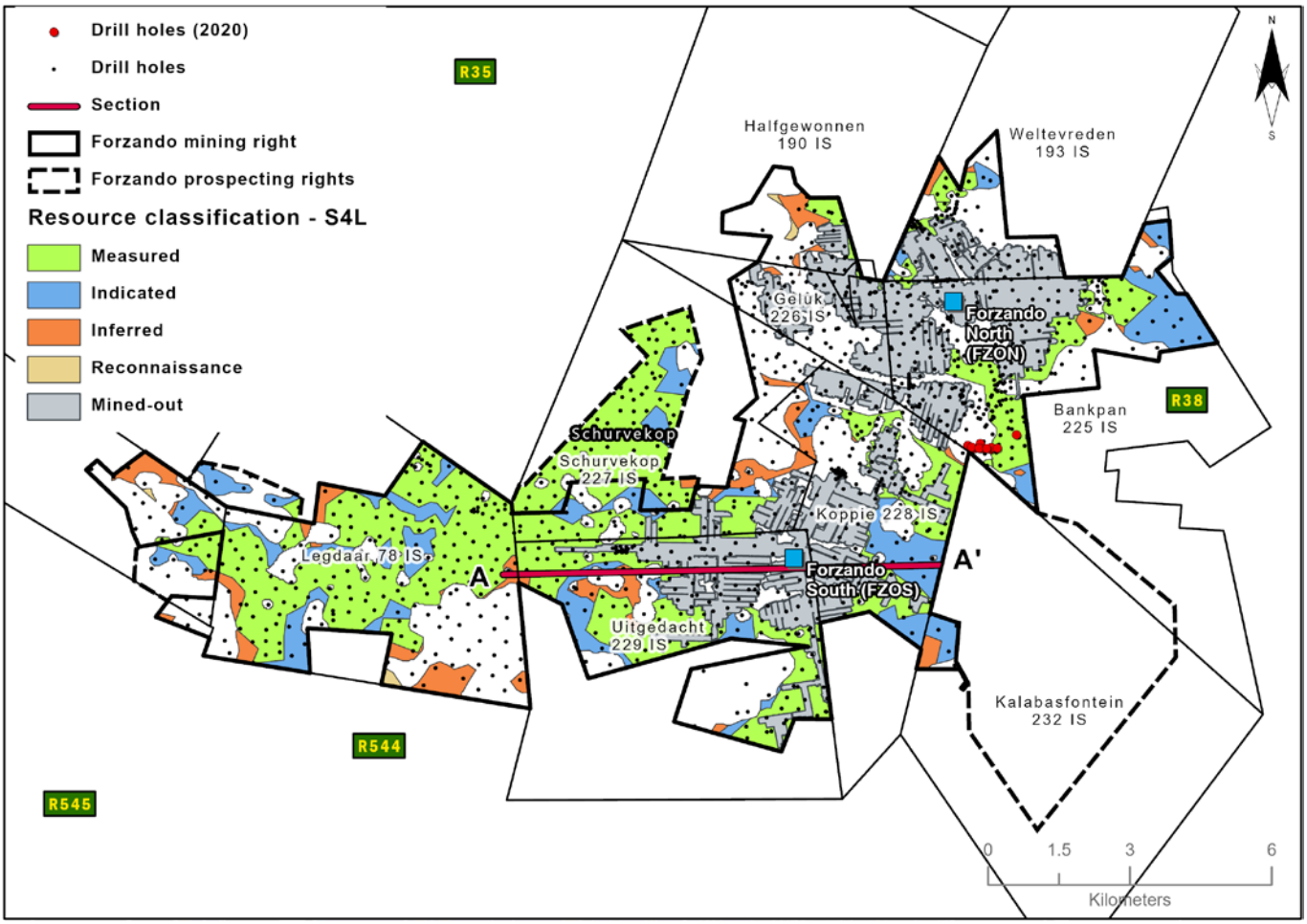
Forzando history

The complex has been exploited since the late 1960s with several companies undertaking drilling campaigns.

The Forzando complex mining and prospecting rights cover 13 233ha. To date, 2 484 boreholes have been drilled with only 1 937 falling in the respective Forzando rights. The 2020 geological model was built using 1 209 boreholes with wash-quality information. In general, the Forzando complex has a borehole distribution of 0.11 borehole/ha as per classification criteria in the table below. Exploration has been conducted through diamond core and open wireline (percussion) drilling as well as surface geophysical magnetic surveys.

As a result of the long history of ownership and various exploration companies, some boreholes cannot be directly correlated with a certain company or date drilled as the boreholes logs do not always have the relevant information.

Figure 19: Forzando complex



ANCILLARY RESOURCE AND RESERVE INFORMATION BY OPERATION continued

Table 43: Forzando operation history

Date range	Company	Material notes
1966 to 1969	Anglo American	The first company to conduct an exploration programme, approximately 34 boreholes drilled
1995 to 1998	Anglovaal Minerals	Forzando complex was acquired by Anglovaal Minerals in the 1980s. Exploitation of S4L started in 1995 at Forzando North. Approximately 322 boreholes drilled
1999 to 2004	Total Exploration South Africa	TESA took over the operations and exploitation of S4L continued at Forzando North. Approximately 1 082 boreholes drilled
2005 to 2015	Total Coal South Africa	Further exploration work was conducted by Total Coal South Africa. Exploitation of S4L started in 2006 at Forzando South. Forzando North placed was placed under care and maintenance in February 2014. Approximately 320 boreholes drilled
2015 to 2019	ECC	Total Coal South Africa became ECC after it was taken over by Exxaro in August 2015. Forzando North reopened in October 2018 after being on care and maintenance for five years. 147 boreholes drilled
2020	ECC	Forzando North was been placed under care and maintenance in March 2020. Five Boreholes have been drilled

Forzando geology

Highveld coalfield hosts up to five coal seams in the middle Ecca group sediments of the Karoo Supergroup. The stratigraphic sequence in the mine area includes five coal seams that can be correlated with seams found in the Witbank coalfield, named from the base upwards as S1, S2, S3, S4 and S5. Seam splitting is common feature in the area. This is fundamentally attributed to the proximity to the Smithfield Ridge and thus the provenance of detrital material. The S2 may be split into S2U and S2L while S4 is split into three subseams, S4L, S4U and S4A. Furthermore, S4A may be split into S4A1 and S4A2 and S5 is generally split into the S5 and S5L.

The thickest and most ubiquitous being the S2, S4 and S5 seams. S1 is restricted to palaeo-lows while S3 only occurs on the western side of the complex. The principal economic seams currently exploited are S2L and S4L with the remaining seams being either too thin, laterally discontinuous, poor quality or impractical/ uneconomical to mine.

Forzando complex is characterised by two adjoining palaeo-valleys, one in Forzando North and the other in Forzando South. The valley in Forzando North has higher-quality coal while Forzando South is characterised by lower-quality coal. The different coal qualities are indicative of different depositional environments and thus the different geological domains. Remnants of the Smithfield Ridge exist in the north-western edge of Forzando North and northern extremity of Schurvekop.

The S2 occurs over most of the Forzando area, except for areas of extreme palaeo-highs along the Smithfield Ridge, along the central portion and in an isolated palaeo-hill in the north-east of the complex. The seam varies in thickness from under 1.0m to over 6.0m, with siltstone and sandstone parting typically found in areas where the seam thickness exceeds 3.5m. The seam has been extensively devolatilised, leaving disconnected pockets of unaffected coal. Within these pockets, coal quality is extremely variable with high ash content resulting from the prevalence of thin shaly partings. The lack of continuity of unburnt coal renders it of no economic value.

Throughout the area the S4 consists, from top down, of S4A (a gritstone parting), S4U (siltstone and coarse-grained sandstone parting) and the S4L. In the east, the siltstone and coarse-grained sandstone below have been eroded, leaving only the overlying grit. Both S4A and S4U are rarely thick enough and too poor in quality to be considered economic. S4L is the only seam that is thick enough, of sufficient quality and developed throughout the area to warrant economic extraction in prevailing economics. In the Forzando complex area, the thickness of the seam ranges from 0.5m to 4.0m with an average of 2.1m.

The total Forzando area has been intruded by Karoo dolerites even though the impact on S4 is comparatively small and confined to those areas where they come close to or intersect the seams. Transgressive sills with a thickness of 5m to 30m have been noted, resulting in extensive burning of coal in areas, particularly where the sill either closely underlies or overlies the seam. Seams are also burnt and devolatilised near the sill transgression zones with burnt zones ranging from a few metres to 20m.

Dolerite dykes and stringers with a thickness ranging from 0.5m to 5.0m are commonly encountered in the Forzando complex. Dolerite structures have a tendency to pinch and swell, even over very short distances. Dolerite stringers are thought to be offshoots from the dykes which in turn feed from the dolerite sills below. Dykes in the area are noted as having a general preferred orientation of north-west to south-east and north-east to south-west. Burnt coal zones associated with dykes/stringers vary considerably from zero to approximately 10m with the width of the burnt zone not necessarily relating to the thickness of the dyke/stringer. These

geological risks are well managed through extensive surface vertical and underground horizontal drilling in areas of concern, use of downhole wireline logging for better correlation, underground channel sampling incorporated in the short-term planning model, underground face mapping to track both vertical and lateral variations in the lithology, which assists with reconciliation and structural interpretation and surface mapping, particularly of basement outcrops.

The information collated from the various approaches is incorporated in the structural model, together with additional potential risks from other disciplines and represented in a GIS-based RODA, allowing for a more integrated approach to risk management.

Forzando Resource evaluation

All exploration boreholes are logged and sampled by on-site experienced geologists, aligned and complying with Exxaro standards and standard operating procedures. Samples are selected according to seam boundaries, visual variation in the vitrinite content (assisted by density logs) and non-coal material present in the seam boundaries. Each sample to be submitted to the laboratory is accompanied by a unique sample number for tracking and a submission list that also serves as a sample advice sheet with instructions for analysis.

Three major laboratories have been used over the past 10 years: Australian Laboratory Services, SGS and Bureau Veritas, all with SANAS accreditation (T0611, T0815 and T0313, respectively). ISO and SANS have a standard set of tests and methods used for coal analysis by South African laboratories. The noted laboratories have committed to assuring the quality of results provided to the customer by ensuring quality assurance, quality control, data validation and proficiency testing procedures are observed.

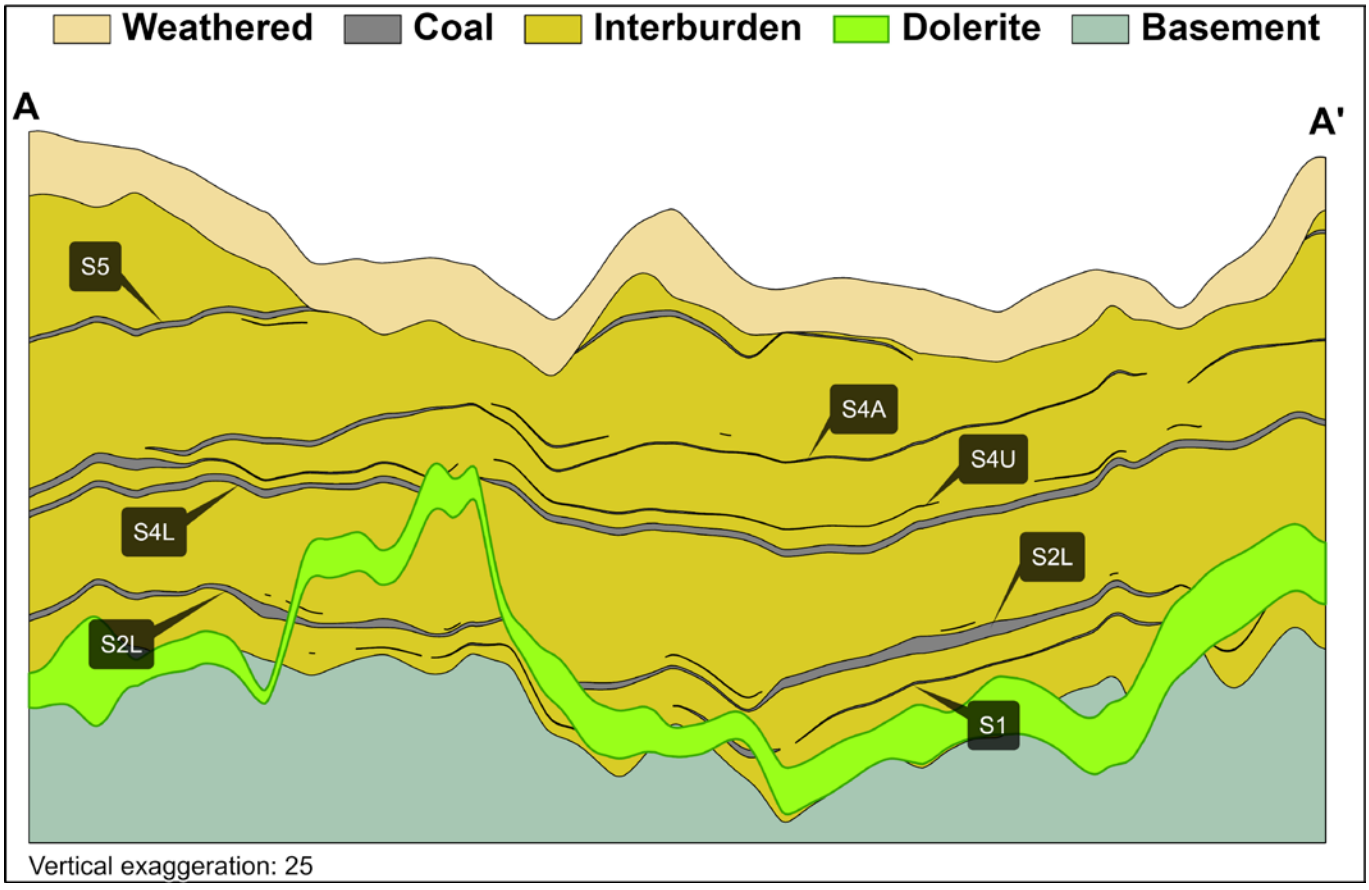
The Coal Resource classification methodology is fundamentally based on SANS 10320 and considers borehole spacing, type of boreholes and structural complexity of the Resource.

Table 44: Forzando Coal Resource reporting criteria

Thickness cut-off (thickness and extraction height considerations)	Quality cut-offs (adb)	Geological loss*
Opencast ≤0.5m Underground ≤1.2m	DAFV ≤24% Raw ash ≥50%	10% to 50%

** A 10% standard geological loss is applied but may vary based on the consideration of structural complexity (dolerite sill breakthrough – 50% loss within determined spatial extent), seam gradient (>4 degrees – 50% loss), dolerite sill proximity to seam (25% loss) and weathering 25% loss. A 10% geological loss is applied (weighted average of the various risk domains).*

Figure 20: Typical west-east section through Forzando geological model



ANCILLARY RESOURCE AND RESERVE INFORMATION BY OPERATION continued

Table 45: Forzando Coal Resource estimation criteria

	Item	Description
Database	Borehole database	acQuire
	Data datum	Cape LO29
	Number of boreholes used for Resource estimation	1 937 of 2 484 boreholes in the database
	Validation	The laboratory conducts data validation on samples. In acQuire, additional validations are conducted and corrected. Data is exported from acQuire into csv files where additional checks are conducted in Excel
	Data compositing and weighting	Data compositing is conducted per seam using a weighted value from individual samples that make up the seam, along with the relative density and length of each individual sample. This is conducted in Geovia Minex™
Model	Previous model date	2017
	Last model update	2020
	Geological modelling software	Geovia Minex™
	Estimation technique	Growth algorithm: general purpose gridding
	Grid mesh size	25m x 25m
	Scan distance	2 000m
	Data boundary	200m
	Model build limits	Upper: limit of weathering and topography/collar Lower: basement/Dwyka
	Model outputs	Roof, floor and thickness grids generated for structure with raw quality and washability grids
	Changes to modelling process	Faulting included in areas where evident

Table 46: Forzando Coal Resource classification criteria

Category	Type of boreholes	Borehole spacing	Structurally complex areas	Borehole/ha
Measured	Cored boreholes with applicable coal qualities	0 to 350m	Structural complexity and coal variability (RODA)	0.15
Indicated	Cored boreholes with applicable coal qualities	350m to 500m	Structural complexity and coal variability (RODA)	0.06
Inferred	Cored boreholes with applicable coal qualities	500m to 1 000m	Structural complexity and coal variability (RODA)	0.04

Table 47: Forzando RPEEE considerations

Item	Criteria	Considered	FZO applicable comments
Geological data	Data has been validated and signed off by competent person	Yes	Geological structure and depositional extent, seam thickness >1.2m (underground) and >0.5m (opencast), <50% ash content, >24% DAFV with coal qualities reported on an air-dry basis
Geological model	2017 geological model was considered and signed off	Yes	
Structural model	Structural model was considered and signed off	Yes	2020
Mining	Mining assumptions considered and defined	Yes	Opencast and underground aligned with exploitation strategy
Assurance	Policy-driven governance, internal and external audits	Yes	External audit in 2018
Economic evaluation	Concept-level exploitation with economic and mining assumptions, including geotechnical and geohydrological assumptions	Yes	Only approved economic assumptions and parameters are applied within current prefeasibility and feasibility studies
Environmental	Reasonable demonstration that environmental approvals can be obtained within the context of local, regional and national governmental legislation	Done	Environmental and social concept assessments were considered
Tenure	Only areas within acceptable prospecting and mining rights. In areas adjacent to existing rights where legal section application is pending with reasonable expectation of approval	Yes	Mining and prospecting rights are valid
Infrastructure	Only areas within acceptable prospecting and mining rights. In areas adjacent to existing rights where legal section application is pending with reasonable expectation of approval	Yes	Current infrastructure
Market	Market(s) identified form part of an existing operation market strategy or potential market with a conceptual market study	Yes	Operational strategies are aligned with existing markets

ANCILLARY RESOURCE AND RESERVE INFORMATION BY OPERATION continued

Table 48: Forzando Coal Resource and Reserve statement

Category	2020 (Mt)	2019 (Mt)	Difference in tonnes (Mt)	Difference (%)	Reason for change
Measured	**86.9**	85.5	1.4	2	The change is due to new information and the subsequent update of the geological model
Indicated	**32.3**	36.3	(4.0)	(11)	The decrease is the result of mining and the inclusion of new information into the updated geological model
Inferred	**30.5**	26.4	4.1	16	The increase is mainly due to new information
Total Coal Resources	**149.7**	148.2	1.5	1	The decrease from mining (2.3Mt) and disposal of barrier pillars (4.5Mt), is off-set by new information (8.4Mt)
Proved	**9.6**	23.9	(14.3)	(60)	Decrease is primarily due to the consideration of economic factors rendering Coal Reserve blocks unprofitable, as well as mining depletion
Probable	**4.1**	10.7	(6.6)	(62)	
Total Coal Reserves	**13.7**	34.6	(20.9)	(60)	

Notes:
- *Rounding of figures may cause computational discrepancies.*
- *All changes more than 10% are explained.*
- *Mining method: UG.*
- *Figures are reported at 100% irrespective of percentage attributable to Exxaro.*
- *Tonnages are quoted in metric tonnes and million tonnes (Mt). Coal Resources are quoted as MTIS and refer to remaining Resources after 31 December 2020 and 31 December 2019.*
- *Coal Resources are reported on MTIS basis.*
- *Cut-offs applied as per Resource reporting criteria table.*
- *Coal Resources are quoted inclusive of Coal Resources converted to Coal Reserves.*

Forzando Reserve estimation

Scheduling of the Reserve is determined using mining scheduling applications from XPAC. This is the same software used to develop the LoM plan schedule.

The geological 3D model used for the Reserve statement is referred to as the Reserve geological 3D model. This Reserve model differs from the Resource model in that the latter uses the full coal seam (including specific reporting criteria) while the Reserve model uses a select mining height based on practical mining height considerations. The process ensures the model represents the practical aspects of the capabilities of current production sections and their available equipment.

Indicated Resources are generally converted to Probable Reserves and Measured Resources to Proved Reserves after consideration of all applicable modifying factors. If one or more of the modifying factors have not been fulfilled, Measured Resource is either not converted or the Measured Resource is converted but downgraded to Probable and the associated risk is clearly stated. Inferred Resources are not converted to Coal Reserves.

A total of 0.2Mt of Inferred Resource is included in the LoM plan, representing 1.5% of LoM plan. The majority is located along the boundaries of the LoM layout towards the end of LoM. The impact of including these Coal Resources is well understood and tested and exploration activities are planned to upgrade these categories to a higher level.

Current economic assumptions at Forzando North have resulted in a decrease in Reserves. This will be re-evaluated in 2021. The Proved and Probable Reserves at Forzando South were reduced due to the removal of non-profitable mining blocks, in line with the business plans. The margin between product cost and achieved price is used to determine the economic viability.

Table 49: Forzando production figures

	Actual 2019	FC 2020	Actual 2020	FC 2021	FC 2022
Forzando South RoM (Mt)	2.1	1.8	**2.1**	2.0	2.0
Forzando North RoM (Mt)	0.6		**0.1**		
Forzando complex RoM (Mt)	2.7	1.8	**2.2**	2.0	2.0

Table 50: Forzando modifying factors considered in converting Coal Resources to Coal Reserves

Considerations	Underground	Opencast
Geological loss	10% to 50%	10% to 50%
Average thickness cut-off	1.65m	1.0m
Quality specification	4 800/5 300kcal/kg	4 800/ 5 300kcal/kg
Mining loss	0.1m	0.1m
Depth to roof	30m, unless rock strength allows otherwise	0
Safety factor	1.6 to 2.0	0
Bord width	7.2m	0
Barrier pillar	At least equal to pillar width	0
Boundary pillar	15m	15m
Pillar centres	14m x 14m	0
Mining height	2.1m	0
Extraction factor	65%	0
Dilution	Already included in model	
Contamination	0.1m	0.1m
Practical plant yield	Ratio of saleable product to RoM based on current plant specifications	Considered in the reserving process as per the wash table information per block and the empirically determined practical yield adjustment factor
Environmentally sensitive areas	A higher safety factor is used underneath rivers and surface structures together with weathering depth consideration	Coal blocks underlying wetlands and other eco-sensitive areas are excluded from Reserves and 50m cut-off away from opencast mining activities
Legal	Mining right boundary	
Social	Socially sensitive areas in the mining right (such as graveyards) are excluded from Reserves in the reserving process	
Geohydrological	Areas identified are flagged and excluded or reclassified in the reserving process	

Forzando known risks

There is a high occurrence of dolerite dykes and faulting at the various Forzando operations. Applicable surface geophysical surveys, wire-logged vertical open holes and horizontal drilling are used to provide adequate cover ahead of mining panels. The reporting of Coal Resources on the Kalabasfontein prospecting rights (1170PR and 1035PR) is currently under review with regard to RPEEE considerations.

Forzando excellence

The introduction of in-house computerised mine-planning capabilities involves the building of short-term mining models that will incorporate roof and floor lithologies, as well as economic assumptions for reporting purposes, enabling quick response time on adapting to the actual mining conditions.

ANCILLARY RESOURCE AND RESERVE INFORMATION BY OPERATION continued

MATLA MINE

Matla overview

Matla mine is in the Highveld coalfield, immediately south of the Witbank coalfield. Matla is in Mpumalanga province, South Africa, some 15km west of Kriel and 63km south of eMalahleni. Two power stations, Kriel and Matla, are some 10km from the mine and it is contracted to supply bituminous coal to Eskom's Matla power station. Matla is on the P53-1 and R547 secondary roads branching off the R580 and R545. The well-known Kriel coal mine neighbours Matla mine to the east and the operations of Khutala (South32) and Zondagsfontein (Anglo American) to the north.

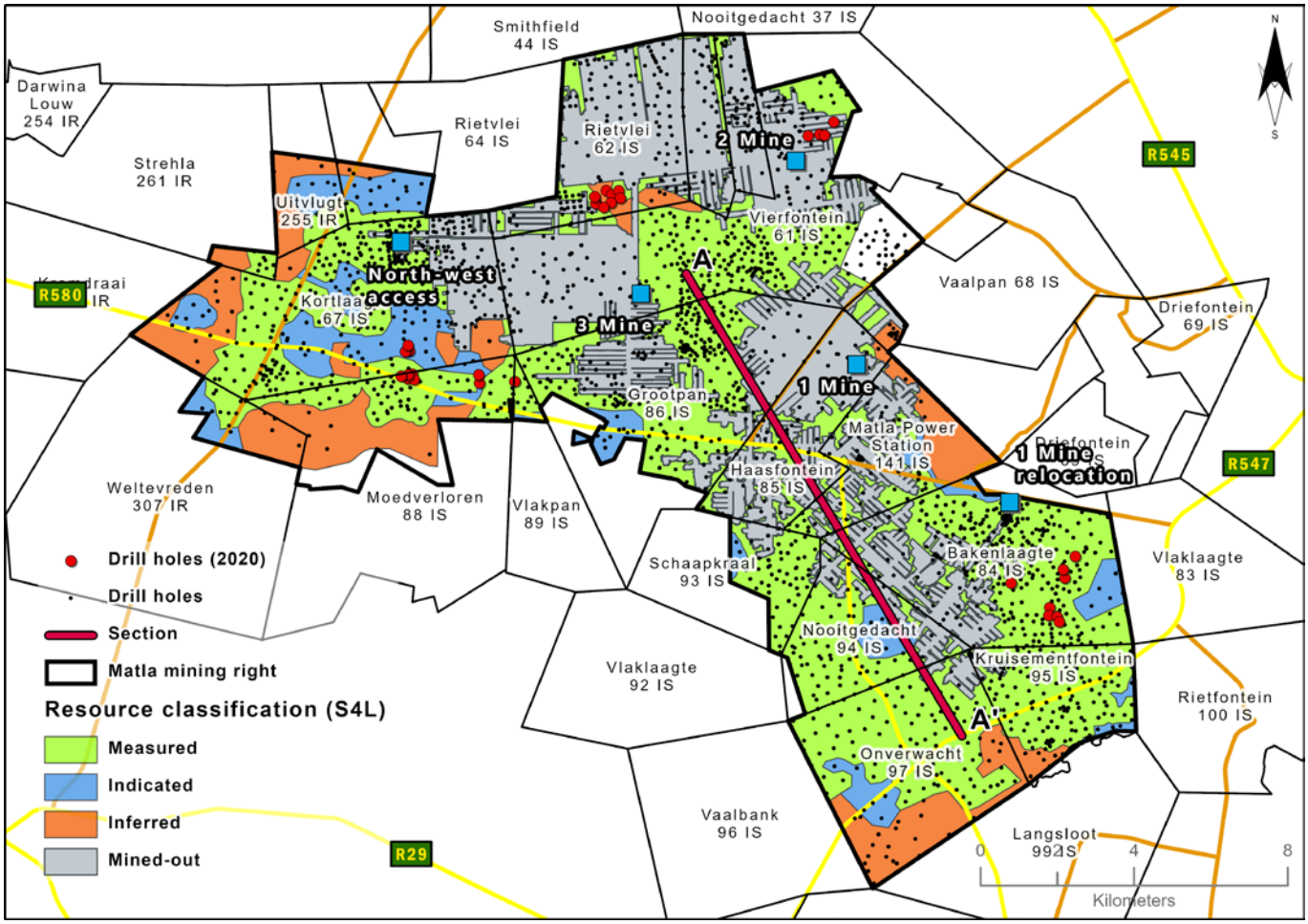
Matla comprises three underground production facilities: Mine 1, Mine 2 and Mine 3. All three are long-life assets, each with a specific operating capacity comprising conventional coal circuits to produce bituminous coal. Work at Mine 1 was stopped in 2015 due to pillar instability but an Eskom-approved project to relocate Mine 1 access is currently in the implementation phase. Mine 2 and Mine 3 use both bord-and-pillar and shortwall methods to mine S2 and S4 coal seams. In 2020, Matla continued with pillar extraction (stooping) as a mining method to maximise Resource extraction. At mine 2, there are four continuous miner sections (two currently stooping) and a shortwall section mining S2. At Mine 3, there are two continuous miner sections (one currently stooping) and a shortwall section mining S4 and three continuous miner sections mining S2.

Existing infrastructure of the three shaft complexes includes three ventilation shafts, a network of conveyor belts, coal silos and stockpiles, a crushing and screening plant, four pollution-control dams, hospital, accommodation facilities, offices, workshops, and a water treatment plant. Potable water is received from Eskom and no potable water plant exists on the mine property. Electricity is sourced from Eskom (Matla power station) and transporting coal from the mine to Matla power station is via a network of conveyor belts.

Matla mine produces thermal coal exclusively to Eskom. Historically, Matla produced approximately 12.5Mt of coal per annum. Due to the closure of Mine 1, Matla currently produces about 6Mt of coal annually. None of the coal mined at Matla is beneficiated but is crushed and screened (sized) before being conveyed to the power station.

The Eskom contract renewal is due in 2023 but Exxaro has reasonable expectations that the contract will be renewed. The Matla Resource base is sufficient to sustain mining beyond the 2023 contract-review date, where Resource thickness and quality permit mining according to existing operational standards.

Figure: 21: Matla mine



Matla history

Matla has been exploiting since the mid-1970s and a significant amount of exploration and extraction activities has been conducted over the large tenure area of some 22 000ha. The 2020 geological model update includes 2 523 boreholes where only those boreholes with relevant qualities have been considered for resource classification.

Table 51: Matla operation history

Date range	Company	Material notes
1976 to 1990	Trans Natal Mines	Construction began in 1976 with full production in 1983 and 465 boreholes drilled in this period
1990 to 2020	Eyesizwe – Exxaro	Eyesizwe (now Exxaro) took over ownership from Trans Natal Mines with >2 181 boreholes drilled in this period

Matla geology

The coal deposit at Matla forms part of the Highveld coalfield. The coal seams are found in the Vryheid formation of the Karoo Supergroup. The stratigraphy sequence in the Matla area includes five coal seams that can be easily correlated with seams found in the Witbank coalfield. Coal seams in the area are generally flat and continuous, with subsequent igneous activity resulting in displacements and devolatilisation of coal seams at places.

The principal economic seams currently exploited are S2 and S4 with mining of S5 terminated in 1998 due to high levels of contamination and subsequent increase in abrasive index. The Matla mining area is characterised by two distinct dolerite types, the B8 (porphyritic) and B4 (olive-rich) types which have varying effects on seam displacements and coal burning and devolatilisation. A dolerite sill with an average thickness of 10m is generally found above S5 in Mine 2 and 3, however, the sill intersects the coal seams and underlies S2 in Mine 1 and S4 on the south-western part of the Reserves. This sill has burned and devolatilised S2 on the southern part of the mining area in Mine 1. Floor rolls have been encountered in S2 workings and created some challenges in some mining sections. The floor rolls strike north-east-south-west, vary in width between 50m and 200m and have amplitudes up to 1.5m. The floor rolls are more prominent if the seam floor is close to the basement contact. Sandstone lenses encountered are generally less than 0.5m in width but can reach up to 1.5m in thickness.

The S5 was historically mined for a limited period but is currently not extracted. The seam is most prominent in the Mine 2 and Mine 3 areas and, to a limited extent, in the western limb of the southern part of the mining rights area. The roof comprises approximately 0.5m of thick sandy micaceous shale at Mine 2 that thickens up to approximately 1.6m in Mine 3. Above this is competent sandstone, usually saturated with water, resulting in a weathered parting between the two sequences. This presents challenges in supporting the shale during coal extraction and must, in most cases, be removed. The seam consists of mixed coal and torbanitic material with an average thickness of 1.5m.

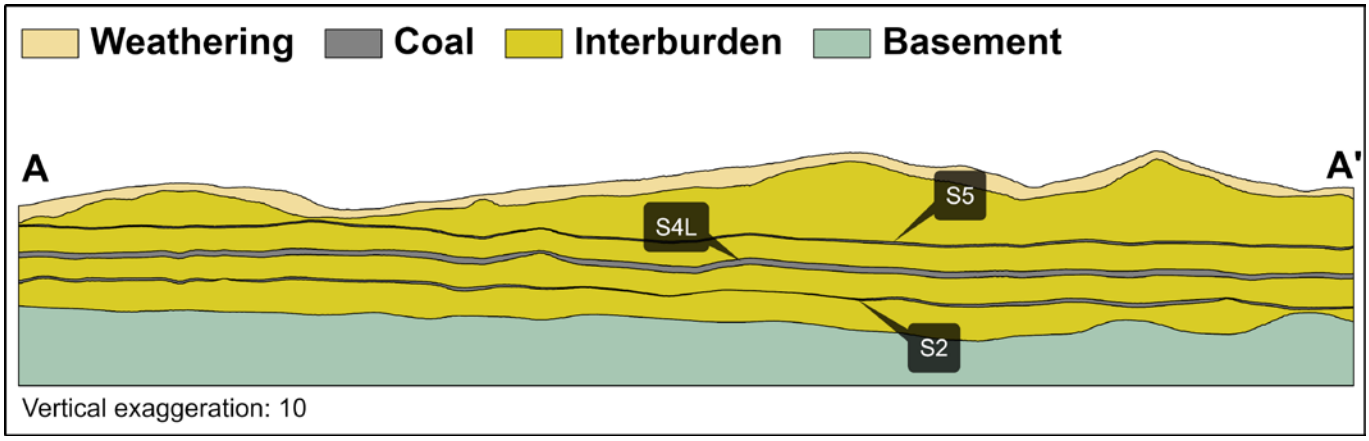
The S2 at Matla is well developed in the north-western part of the mining area in the mines 2 and 3 Resource areas. It thins out to the south, where thickness averages at 1.2m to 2.5m. Coal qualities are also generally poor in this area, thus S2 is not generally mined in the southern portion of the Mine area. S4 is generally well distributed throughout Mine 1, Mine 2 and, to a limited extent, Mine 3. Seam thickness varies between 1.0m to 5.5m and consists of homogenous, dull lustrous coal interspersed with bright coal bands.

The S4 splits in two thin and poor-quality horizons impacting the economic viability in Mine 3. The best S4 qualities are on the southern part of the lease area (Mine 1 area). However, S4 is heavily intruded by dykes in this area, creating significant challenges for coal extraction.

Matla Resource evaluation

Geological and structural models were updated in 2020, incorporating new information from drilling and results of reviewing previously excluded historic borehole information. The new information was used to review Coal Resource classification categories and enhanced specifically the outlines of the Indicated and Measured Resource categories.

Figure 22: Typical north-south section through Matla geological model



ANCILLARY RESOURCE AND RESERVE INFORMATION BY OPERATION continued

All data collection (geological logging, description, interpretation, sampling, validation and capturing of borehole cores information) is undertaken by on-site qualified, trained and competent geologists and aligned with Exxaro standards. A well-trained grade-control and geological mapping team undertakes mapping and reconciliation. Mapping captures intrusions, devolatilised coal, channel sandstones/in-seam partings, slumping structures, faults, joints, guttering, slabbing and floor rolls as well as measurements of mined heights, contamination and dilution. Dips and dip directions of all geological features and structures are measured and recorded. Surface mapping was only conducted where outcrops were observed.

Core loss for coal-seam intersections is recorded and a recovery of <95% through coal (by volume) is deemed unsatisfactory. Anomalies are investigated and redrilled if required. Wireline logging is conducted on all vertical holes to enhance the definition of contacts and improve seam correlation.

All geological logging and sampling are undertaken by a team of on-site qualified, trained and competent geologists. Logging is conducted by recording of lithology down to centimetre according to the classification of the various coal "lithofacies"/coal type zones or ply (shale-coaly, coal-shaly, coal dull, coal mixed/mainly dull, coal mixed, coal mixed/mainly bright and coal bright), based on discernible lithofacies change and identified marker horizons, particularly through coal zones. All holes are captured in the acQuire Technology Solutions geological database.

All core sampling is done at the drill sites. Samples are selected according to their respective coal-seam boundaries after thorough correlation. A general rule of >0.5m seam sample thickness cut-off is applied but is evaluated in the field where necessary. In addition, the proposed mining method, mining equipment and sample mass (chemical and physical analysis required) are also considered. In-seam partings are sampled together with coal zone samples, especially the PL parting (after considering thickness) within the seam.

All geological coal core samples are sent to Siza Coal laboratory (SANAS accreditation no T0447) in Kinross. ISO and SANS have a standard set of tests and methods used for coal analyses by South African laboratories.

Resource classification was guided by SANS 10320: 2004 minimum guidelines (~350m spacing between boreholes with quality and structural information). Additional closer-spaced drilling was conducted in areas of structural complexity to ensure timely geotechnical accessibility and mineability (fall-of-ground considerations) of Coal Resources/Reserves.

Table 52: Matla Coal Resource reporting criteria

Thickness cut-off (thickness and extraction height considerations)	Quality cut-offs (adb)	Geological loss
<1.8m	DAFV ≤26% CV <15MJ/kg, Ash ≥50%	10% (may vary considering RODA)

Table 53: Matla Coal Resource estimation criteria

	Item	Description
Database	Borehole database	acQuire
	Data datum	Cape LO29
	Number of boreholes used for Resource estimation	S2 1 881 and S4 1 729 boreholes of the 2 523
	Validation	Conducted using queries in acQuire and Excel
	Data compositing and weighting	Conducted in Geovia Minex™
Model	Previous model date	2019
	Last model update	2020
	Geological modelling software	Geovia Minex™
	Estimation technique	Growth algorithm
	Grid mesh size	25m x 25m
	Scan distance	2 000m
	Data boundary	200m
	Model build limits	Upper: limit of weathering and topography/collar Lower: basement/Dwyka
	Model outputs	Roof, floor and thickness grids generated for structure Raw quality grids
	Changes to modelling process	None

Table 54: Matla Coal Resource classification criteria

Category	Type of boreholes	Borehole spacing	Structurally complex areas	Borehole/ha
Measured	Cored boreholes with applicable coal qualities	0 to 350m	Closer-spaced boreholes and geotechnically logged holes are required to evaluate mineability	Approximately 0.22 (average 2 and 4 seam)
Indicated	Cored boreholes with applicable coal qualities	350m to 500m		~0.11 (average 2 and 4 seam)
Inferred	Cored boreholes with applicable coal qualities	500m to 1 000m		Approximately 0.09 (average 2 and 4 seam)

Table 55: Matla Coal Resource and Coal Reserve statement

Category	2020 (Mt)	2019 (Mt)	Difference in tonnes (Mt)	Difference (%)	Reason for change
Measured	**694**	705	(11)	(2)	Change is the result of mining depletion (~10.5Mt), sterilisation and disposal resulting from the Kriel colliery swop (approximately 64Mt) offset by new information approximately 63Mt
Indicated	**123**	105	18	17	The increase is due to new information (~18Mt)
Inferred	**151**	232	(81)	(35)	The change is due to new information with subsequent increase in the level of geological confidence (~63Mt to Measured and 18Mt to Indicated)
Total Coal Resources	**969**	1043	(74)	(7)	
Proved	**148**	145	2	2	
Probable	**22**	16	6	39	
Total Coal Reserves	**169**	161	8	5	Overall a net increase of ~9Mt of Reserves from 2019 to 2020. A large portion of this increase is attributed to the new geological information with subsequent increase in the level of geological confidence, resulting in the upgrade of Inferred Resources included in the LoM in 2019 to now classified as Probable Reserves in 2020. Changes due to mining (6.2Mt) and pillar extraction removal (LoM plan) have been offset by the increase in development areas

Notes:
- *Rounding of figures may cause computational discrepancies.*
- *All changes more than 10% are explained.*
- *Mining method: UG.*
- *Figures reported at 100% irrespective of percentage attributable to Exxaro.*
- *Tonnages quoted in metric tonnes and million tonnes (Mt). Coal Resources quoted as MTIS and refer to remaining Resources after 31 December 2020 and 31 December 2019.*
- *Coal Resources reported on MTIS basis.*
- *Cut-offs applied as per Resource reporting criteria table.*
- *Coal Resources quoted inclusive of Coal Resources converted to Coal Reserves.*

Matla Reserve estimation

Scheduling of the Coal Reserve is determined using mining scheduling applications from XPAC and ProgCad. The geological 3D model used for the Coal Reserve estimation is referred to as the Reserve 3D model. The Coal Resource model uses the full coal seam while the Reserve model only defines a select mining height. The process ensures the model represents reality regarding the technical capability of current production equipment.

At Matla, Indicated Resources are generally converted to Probable Reserves and Measured Resources to the Proved Reserve category, except if any modifying factors have not been (partly) fulfilled, where the Resource is either not converted or downgraded to the Probable Reserve category, clearly stating the outstanding requirement and risk. The LoM was updated in the reporting year to incorporate new information used in the geological model update. All applicable modifying factors have been considered, specifically focusing on geotechnical as Matla faces several geological structural challenges.

Resources are converted to Reserves where the Resource confidence, continuity and other factors (including economic, environmental, safety and social aspects) allow for the reasonable expectation of successful extraction. Reserves are converted using modifying factors which account for layout design and associated losses. The Reserves stated are subject to verification according to an approved fact pack, which sets out the standards and considerations for all reserving and scheduling processes. This document is reviewed annually and vetted by all relevant stakeholders.

ANCILLARY RESOURCE AND RESERVE INFORMATION BY OPERATION continued

Table 56: Matla RPEEE considerations

Item	Criteria	Considered	Matla applicable comments
Geological data	Data validated and signed off by competent person	Yes	Seam depth, seam thickness >1.8m, dry ash-free volatiles >26% air-dried CV >15MJ/kg and ash <50% with coal qualities reported on an air-dry basis
Geological model	Geological model considered and signed off	Yes	2020
Structural model	Structural model considered and signed off	Yes	2020
Mining	Mining assumptions considered and defined	Yes	Underground
Assurance	Minimum tier 1 assurance (Exxaro governance)	Yes	2019 (model and chain of custody)
Economic evaluation	Concept-level exploitation with economic and mining assumptions, including geotechnical and geohydrological assumptions	Yes	LoM exploitation study
Environmental	Reasonable demonstration that environmental approvals can be obtained within the context of local, regional and national governmental legislation	Yes	All required approvals in place. Additional requirements can be demonstrated in the context of local, regional and national legislation. Land acquisitions for future stooping can be achieved based on current acquisition strategy
Tenure	Formal tenure must be demonstrated with reasonable demonstration that a mining right approval can be obtained within the context of local, regional and national governmental legislation	Yes	Approval for mining right is pending. Exxaro has a reasonable expectation that the right will be granted
Infrastructure	Assumptions used should be reasonable and within known/ assumed tolerances or have examples of precedence	Yes	Current infrastructure
Market	A potential market for the product with a reasonable assumption that it is sustainable	Yes	Current coal supply agreement in place until 2023

Table 57: Matla production figures

	Actual 2019	FC 2020	Actual 2020	FC 2021	FC 2022
RoM (Mt)	6.0	7.5	**6.2**	6.6	8.3

Table 58: Matla modifying factors considered in converting Coal Resources to Coal Reserves

Modifying factors	Value
Geological loss	10% (already included in model)
Average thickness cut-off	>1.8m and <4.8m
Quality cut-offs (adb)	DAFV >26% and CV >15MJ/kg
Mining loss	Already included in model, based on specific geological conditions and mining restrictions
Depth to roof	40m unless rock strength allows otherwise
Safety factor	Tertiary panels 1.6 and main development 2.0
Bord width	7.2m
Barrier pillar	At least equal to pillar width
Boundary pillar	15m
Pillar centres	19m x 19m or depending on depth and safety factor
Mining height	>1.8m and <4.8m
Extraction factor	Already included in model
Dilution	Already included in model
Contamination	Use select seam
Practical plant yield	N/A
Environmentally sensitive areas	Areas underlying wetlands and other eco-sensitive areas are excluded from Reserves. A higher safety factor is used underneath rivers and surface structures
Legal	Mining right boundary
Social	None
Geohydrological	None

Matla known risks

The risk of geological faulting as well as the impact of sill and dykes are very pertinent challenges in all three of the Matla mine expansion projects. Dykes have been identified through both geophysical surveys and mining observations and are known to affect S4 at Mines 1 and 2 as well as S2 at Mine 3. Dykes impact on production rate and roof stability, where sill activity causes burnt coal, devolatilisation and instability and mine-panel accessibility challenges. The challenges are addressed through a suite of exploration activities and are generally proactively accommodated in mine planning. Continuous surface exploration drilling aims to improve sill characterisation in Mine 2 while underground horizontal drilling is used to pinpoint dykes in operating sections at Mines 2 and 3. Unforeseen geological structural complexity (faulting and intrusives) poses risk for specifically the low seam Reserves at Mines 2 and 3. Geological faults with a significant offset have been encountered and they have production tempo impacts mining sections.

Sizeable pillars of generally good qualities with the potential to be mined by the stooping method are left behind due to current mining equipment limitations.

Obtaining environmental approvals for stooping, as an alternative mining method, may have an impact on the mining schedule, and requires a revision of the LoM plan. The ability to extract all planned stooping Reserves is dependent on Eskom purchasing the required surface rights.

The implementation of the various expansion projects on schedule is important to ensure the availability of adequate S2 and S4 coal Reserves.

Matla excellence

The implementation, currently in progress, of both Mine 1 relocation and the two (Mines 2 and 3) expansion projects (called the north-western access projects) will unlock considerable value for the operation and provide vital mining flexibility for mine planning and operational teams.

The implementation of surface-to-seam directional drilling to outline intrusive sills and dykes as well as geological faults at the north-west access mine project unlocked exceptional value for the operation. The same methodology will be implemented at the Matla Mine 1 operation in 2021.

ANCILLARY RESOURCE AND RESERVE INFORMATION BY OPERATION continued

LEEUWPAN MINE

Leeuwpan overview

Leeuwpan mine is in the Delmas coalfield, on the western border of the Witbank coalfield. Leeuwpan, in the Victor Khanye Local Municipality in Mpumalanga province, is 10km south-east of the town of Delmas, 80km east of Johannesburg and 70km south-east of Pretoria. It lies alongside the R50 hard-topped secondary road and is serviced by a rail track that includes a rapid load-out station.

Leeuwpan is an opencast operation with various Reserves, in various pits, mined simultaneously. Current mining operations are on the OWM (depleted in March 2020), OL and OI Reserves. The mine uses trucks and shovels for mining-related operations. We estimate that the mine will be in production until 2028 with the mining right lapsing in 2039. Leeuwpan supplies domestic and export markets. The mine is equipped with a rapid rail load-out station, which is the preferred means of coal offtake, although road transport is accommodated.

Leeuwpan has two dense medium separator plants that beneficiate export thermal coal and two dry plants, crush-and-stack and bypass plants that handle selectively mined thermal coal either for the local market or the export market. The second dense media separation plant, commissioned in 2016, is operated by Fraser Alexander whereas the original plant is operated by Exxaro. Both plants are geared for 5 300kcal/kg production. The crush-and-stack and bypass can produce either 5 300kcal/kg, 4 800kcal/kg or 4 200kcal/kg products. All plants produce mainly thermal coal.

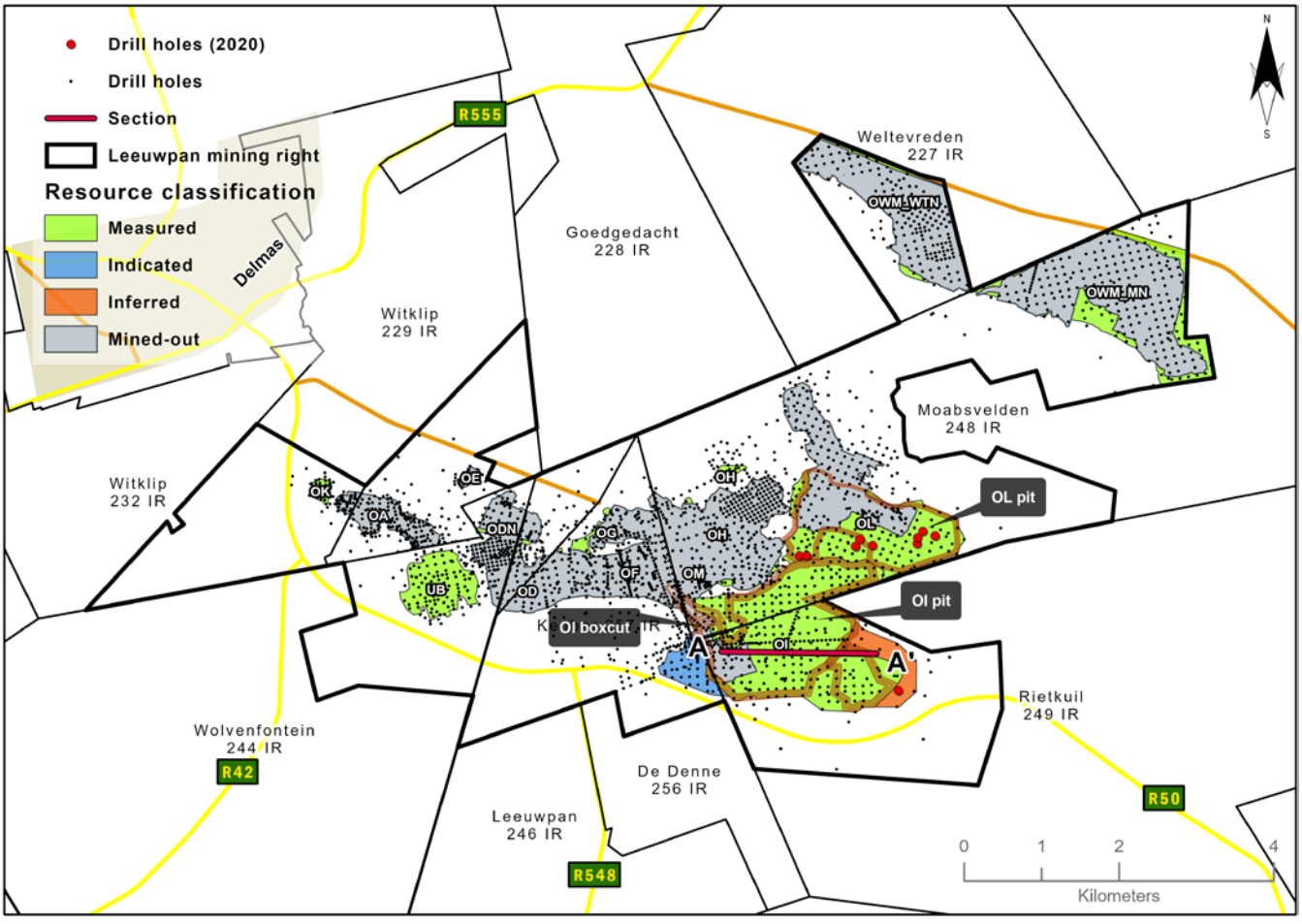
Leeuwpan history

Leeuwpan has 3 321 boreholes in the mining right area covering 4 269ha but only 612 of those boreholes were used for the creation of the geological model. These boreholes were drilled in various drilling campaigns over the years. All Measured Resources at Leeuwpan are currently at 100m x 100m drill spacing.

Table 59: Leeuwpan operation history

Date range	Company	Material notes
Up to 1988	Southern Sphere	262 borehole records exist for this period. Leeuwpan was sold to Kumba in 1988
1988 to 2006	Kumba	Exploration began in 1990. Box-cut was commissioned in 1992. Rights were ceded to Exxaro Resources in 2006
2006 to 2019	Exxaro Resources	Ongoing exploration campaigns focused mainly on operational derisking drilling programmes. This led to mining of additional pits of OG in 2007, ODN in 2010, OH in 2011, ODS in 2012 and OM in 2014. OWM was mined prior to 2011, stopped and reopened in 2011 and a similar occurrence in OJ where mining happened in two phases
2020	Exxaro Resources	Infill drilling occurred at OI and OL with 10 boreholes

Figure 23: Leeuwpan coal mine



Leeuwpan geology

Two coal seams have been identified at Leeuwpan: top coal seam and bottom coal seam. The bottom coal seam correlates with the S2 of the Witbank and Highveld coalfields and the top coal seam correlates with the S4 and S5. The bottom coal seam qualities are generally higher than the top coal seam qualities.

The coal seams at Leeuwpan are primarily interbedded with sandstone, shale and carbonaceous shale. The coal was deposited on glacial sediments of Dwyka tillite, which in turn was deposited on dolomite of the Transvaal Supergroup. A significant amount of magma intruded as concordant sills of dolerite in the Karoo strata in the Delmas area. Associated with the dolerite intrusion are numerous thin dolerite dyke structures that transgress the stratigraphy. Factors controlling geological and quality continuity are mainly surface weathering, significant variation in seam thickness due to an undulating tillite floor, faulting associated dolerite activity and dolomitic basement, and devolatilisation and weathering due to dolerite intrusions (sills and dykes).

The average total seam thickness at Leeuwpan is 10.9m, with an average raw calorific value of 20.1MJ/kg, raw volatile matter of 18.7% and raw ash content of 31.4% (adb). These qualities require beneficiation for export-quality products.

Leeuwpan Resource evaluation

Samples are named and numbered as per the standard task procedure at Leeuwpan (STP-LP-PO.003) which states that samples should be numbered on the borehole core using a wax marker in a different colour to that of the lithology code. The number of samples is recorded on the log sheet as per STP-LP-PO.002. Numbering of the sample tag is written in the order of Reserve BHID/sample number, example, MN971/2.

Samples are split on the lithological contact, if needed, using a chisel and hammer to ensure a clean break. Each sample is put in an individual bag with all contents represented in that interval, ensuring no contamination occurs between materials to be sampled. Should there be any unwanted material in the bag, a comment is made on the sample sheet. Two sample tags are written on plastic sample tags using a permanent marker. One sample tag is placed inside the bag and the second on the outside of the bag then sealed with a cable tie.

In 2019, SGS was awarded the coal quality analyses contract for sample preparation and analyses. Raw relative density is determined before the sample is crushed to -12.5mm and the 0.5mm fraction is screened out. Raw analysis is done on the +0.5mm -12.5mm material and float-sink analyses performed at float RD: 1.4, 1.5, 1.6, 1.7 and 1.8. Proximate analysis, CV and sulphur are performed on each fraction. All sample preparation is done in accordance with ISO 3909 parts 1 to 5.

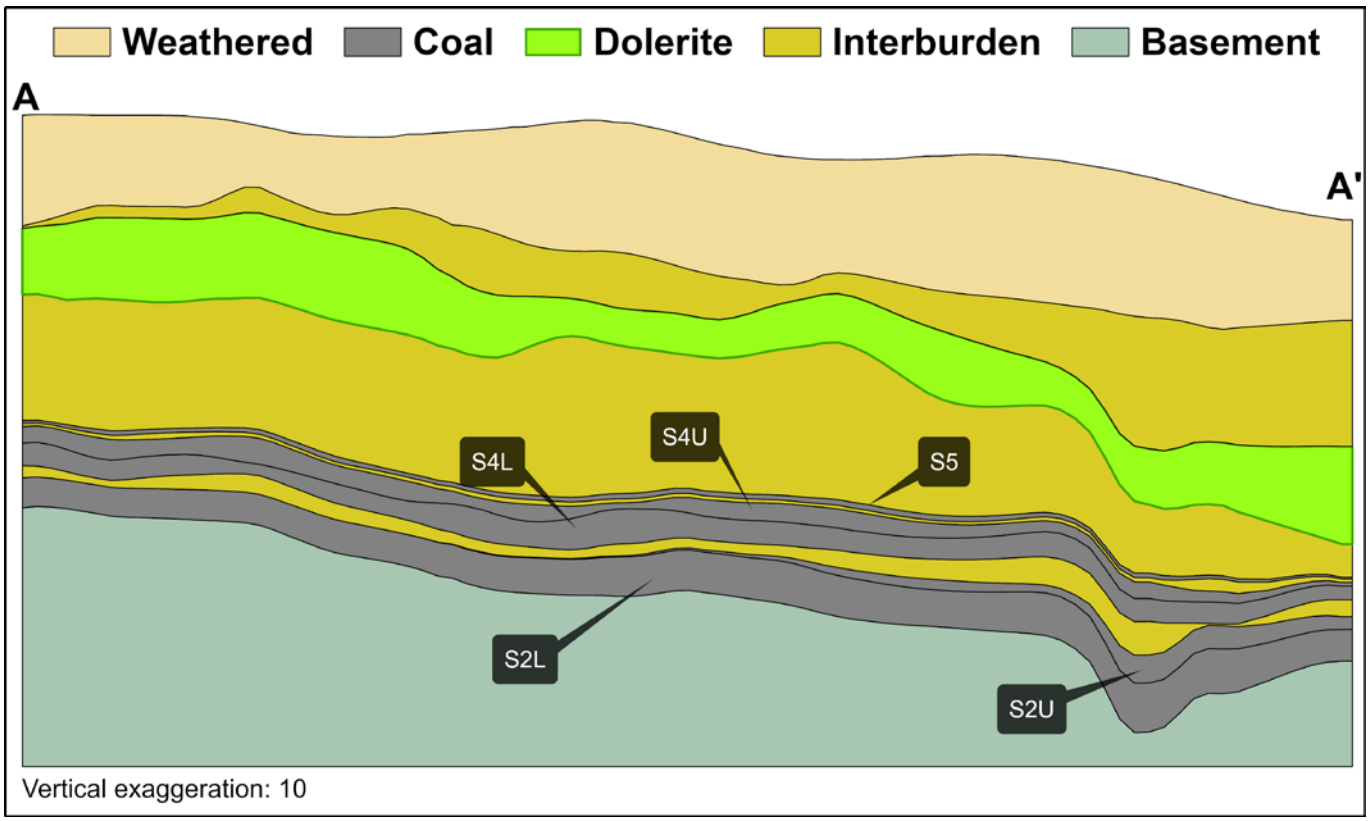
SGS is SANAS-accredited for analytical work and participates in monthly local and international round robins.

Table 60: Leeuwpan Coal Resource reporting criteria

Thickness cut-off (thickness and extraction height considerations)	Quality cut-offs (adb)	Geological loss*
<2m (2014 model) <1m (2015 model and onwards) <0.5m except S5 (2019 model) <1.0m for S5 (2019 model)	Ash >50%	5-100% (domains)*

** A 5% standard geological loss is applied but may vary based on the consideration of structural complexity (dolerite sill breakthrough – 50% loss within determined spatial extent and fault displacement zone – 100%) and seam floor adulation (10% loss).*

Figure 24: Typical cross-section through Leeuwpan geological model (OI)



ANCILLARY RESOURCE AND RESERVE INFORMATION BY OPERATION continued

Geovia Minex™ is used to model the coal seams and estimate in situ Coal Resources at Leeuwpan. Coal Resource block sizes vary, and boundaries are determined by farm boundaries, coal qualities, coal thicknesses, infrastructure, environmental factors and geological structures. The model generates grid surfaces for the upper and lower boundaries of the coal seams from borehole intersection points. The grid surfaces of the top of a seam and bottom of the seam are then subtracted from each other to estimate the thickness of the seam. The washability qualities associated with each sample are also converted from point to grid data. The gridding of both structure and quality grids uses the same growth algorithm technique. The method gives smooth surfaces, which replicate the regional trends of geology, while reflecting local anomalies.

The Coal Resource classification methodology is fundamentally based on SANS 10320:2004 making use of borehole spacing but the type of boreholes and structural complexity of the Resource are also considered.

Table 61: Leeuwpan Coal Resource estimation criteria

	Item	Description
Database	Borehole database	acQuire
	Data datum	Cape LO29
	Number of boreholes used for Resource estimation	612 boreholes with 492 boreholes with wash analysis
	Validation	Conducted using queries in acQuire and Excel
	Data compositing and weighting	Geovia Minex™
Model	Previous model date	2018
	Last model update	2019
	Geological modelling software	Geovia Minex™
	Estimation technique	Growth algorithm
	Grid mesh size	20m x 20m
	Scan distance	1 000m
	Data boundary	200m
	Model build limits	Upper: limit of weathering and topography/collar Lower: basement/Dwyka
	Model outputs	Roof, floor and thickness grids generated for structure Raw quality grids Wash quality grids
	Changes to modelling process	None

Table 62: Leeuwpan Coal Resource classification criteria

Category	Type of boreholes	Borehole spacing	Structurally complex areas	BH/ha
Measured	Cored boreholes with applicable coal qualities	0 to 100m	Resource blocks limited by faults, dolerite sill breakthrough and devolatilisation Geotechnical risks associated with faulting, dykes, sill and weathering – infill drilling	1.1
Indicated	Cored boreholes with applicable coal qualities	100m to 200m	Resource block limited by devolatilisation and coal depth – infill drilling	0.6
Inferred	Cored boreholes with applicable coal qualities	200m to 1 000m	Resource block limited by devolatilisation – infill drilling	0.2

Table 63: Leeuwpan Coal Resource and Reserve statement

Category	2020 (Mt)	2019 (Mt)	Difference in tonnes (Mt)	Difference (%)	Reason for change
Measured	**79.9**	92.8	(12.9)	(14)	The net decrease is the result of mining (7.6Mt), a change in modelling methodology (3.9Mt), geotechnical disposals (1.5Mt) and model refinement (0.3Mt) offsetting the slight increase due to reconciliation (0.4Mt)
Indicated	**2.6**	2.6	–	2	
Inferred	**3.6**	3.6	–	(1)	
Total Coal Resources	**86.1**	99.0	(12.9)	(13)	
Proved	**42.0**	45.9	(3.9)	(8)	The decrease is the result of mining depletion (6.22Mt) offsetting increases due to the mine plan and reconciliation (1.58Mt)
Probable	**5.7**	6.1	(0.4)	(6)	
Total Coal Reserves	**47.8**	52.1	(4.3)	(8)	

Notes:
- *Rounding of figures may cause computational discrepancies.*
- *All changes more than 10% are explained.*
- *Mining method: OC.*
- *Figures reported at 100% irrespective of percentage attributable to Exxaro.*
- *Tonnages quoted in metric tonnes and million tonnes (Mt). Coal Resources quoted as MTIS and refer to remaining Resources after 31 December 2020 and 31 December 2019.*
- *Coal Resources reported on MTIS basis.*
- *Cut-offs applied as per Resource reporting criteria table.*
- *Coal Resources quoted inclusive of Coal Resources converted to Coal Reserves.*

Table 64: Leeuwpan RPEEE considerations

Item	Criteria	Considered	Leeuwpan applicable comments
Geological data	Data validated and signed off by competent person	Yes	Seam depth, seam thickness >0.5m all seams except S5 thickness >1m <50% ash content, coal qualities are reported on an air-dry basis
Geological model	Geological model considered and signed off	Yes	2019, update in 2021
Structural model	Structural model considered and signed off	Yes	2019, update in 2021
Mining	Mining assumptions considered and defined	Yes	Opencast
Assurance	Minimum tier 1 assurance (Exxaro governance)	Yes	2018
Economic evaluation	Concept-level exploitation with economic and mining assumptions, including geotechnical and geohydrological assumptions	Yes	LoM exploitation study
Environmental	Reasonable demonstration that environmental approvals can be obtained within the context of local, regional and national governmental legislation	Yes	Current required approvals in place
Tenure	Formal tenure must be demonstrated with reasonable demonstration that a mining right approval can be obtained within the context of local, regional and national governmental legislation	Yes	Mining right valid to 2039
Infrastructure	Assumptions used should be reasonable and within known/assumed tolerances or have examples of precedence	Yes	Current infrastructure
Market	A potential market for the product with a reasonable assumption that it is sustainable	Yes	Current market

ANCILLARY RESOURCE AND RESERVE INFORMATION BY OPERATION continued

Leeuwpan Reserve estimation

The SANS 10320:2004 standard is used in the conversion from Coal Resources to Coal Reserves. The process typically progresses systematically through the stages of exploration, mine design, scheduling and costing. In each of these stages, modifying factors are applied to gain a higher confidence level for the purposes of reporting.

The Coal Resource is converted into a Coal Reserve through a process of applying modifying factors. The first of the modifying factors applied are usually the losses (both geological and mining), dilution factors, plant efficiencies/recoveries as well as quality considerations. Economic modifying factors will then be applied at a later stage to determine the economic viability of the reserve and estimate the cost of production and expected net present value (NPV) based on the selected mining method.

RoM Reserves are reported as Reserves within the LoM plan (LoMP), taking into account geological losses, dilution, mining losses, contamination and as-mined moisture corrections. All reporting is conducted on an air-dried basis.

Scheduling of the Reserve is determined using mine scheduling applications from OCCS, which is the same software used to develop the LoM plan schedule. Careful product selection and balancing of remaining reserves is required at Leeupan to ensure maximum value for Exxaro.

There is no difference between Resource grids and Reserve grids. Grid validation for Leeuwpan is conducted by checking for negative thicknesses, ensuring contact integrity and checking energy ratios to ensure progressive increase down the wash tables.

At Leeuwpan generally, the Measured Resources are converted to Proved Reserves, except for UB, where it is classified as a Probable Reserve because of additional modifying factors such as low volatiles and the limited market for this particular quality of coal. Indicated Resources are converted to Probable Reserves as is the case for OI West.

Table 65: Leeuwpan production figures

	Actual 2019	FC 2020	Actual 2020	FC 2021	FC 2022
RoM (Mt)	6.5	7.1	**6.0**	7.3	7.0

Table 66: Leeuwpan modifying factors considered in converting Coal Resources to Coal Reserves

Modifying factors	Value
Geological loss	5% to 100% based on risk domains
Average thickness cut-off	0.5m all seams except S5 which is 1.0m
Quality cut-offs	N/A
Mining loss	25% for S5 and 5% for all other seams
Boundary pillar	100m
Dilution	0
Contamination	5% on dense media separation plants and 1% on crush-and-stack plant
Mining recovery efficiency	5% (crush-and-stack) and 5% (dense media separation bypass)
Planned average slope angles	45 degrees. For highwall stability, soft material is mined at least one strip ahead of hard material and coal-mining activities
Practical plant yield	90% dense media separation and 90% Frazer Alexander (FA) dense media separation with slimes loss on dense media separation of 9% and 15% on FA dense media separation
Strip ratio cut-off	N/A
Environmentally sensitive areas	Environmentally sensitive areas such as wetlands
Legal	Mining right boundary
Social	Socially sensitive areas in the mining right (such as graveyards) are excluded from Reserves in the reserving process
Geohydrological	Pit floor was taken into consideration to minimise water handling in the pit face

Leeuwpan known risks

Geological challenges (such as seam floor undulation and presence of sill and dykes) are addressed through proactive infill drilling, grade control and mine planning.

Groundwater management and pit dewatering requires constant monitoring to ensure that it does not influence production.

Achieving the higher than previously experienced overburden volumes, as scheduled, is critical to obtain the mine's planned production.

Leeuwpan Operational Excellence

The markets targeted by Leeuwpan are reviewed on a regular basis, as it is possible to produce to a number of qualities and uses. This needs to be monitored continuously with the ebb and flow of the market. The transition to the OI, which is substantially deeper than previous mining areas at Leeuwpan, has placed renewed importance on the cost of overburden removal and placement. Studies are underway to ensure that this is done in the best possible way. The use of a centralised control room, with in state-of-the-art in-time information of the full value chain plays a key role in this regard.

TUMELO MINE

Tumelo overview

Exxaro only provides an overview in projects and operations directly under Exxaro's management control. Tumelo shareholding is 51% Mmakau Mining and 49% ECC. We, however, decided to include an overview of Tumelo since it formed part of the original Total Coal South Africa complex. Tumelo mine forms part of ECC and is in Mpumalanga, 15km north-west of the town of Hendrina and 5km south-east of Hendrina power station. The Hendrina-Middelburg tarred road passes 6km east of the property. An all-weather dirt road linking the town of Hendrina and the power station runs 500m to the west of the property while the Wonderfontein-Broodsnyersplaas railway line lies 2km west with the closest siding being Pullenshope 3.5km away.

Tumelo's mining right (10115MR) covers 462.9ha on the farm Boschmanskop 154 IS. Following the purchase of Total Coal South Africa assets by Exxaro in August 2015, the current Tumelo shareholding is 51% Mmakau Mining and 49% ECC. The project is included in the ancillary section as Tumelo forms an integral part of the ECC complex.

Surface infrastructure still in use includes mine buildings (offices, workshops and change houses), box-cuts to access the coal seam, conveyor belt systems and a RoM stockpile facility.

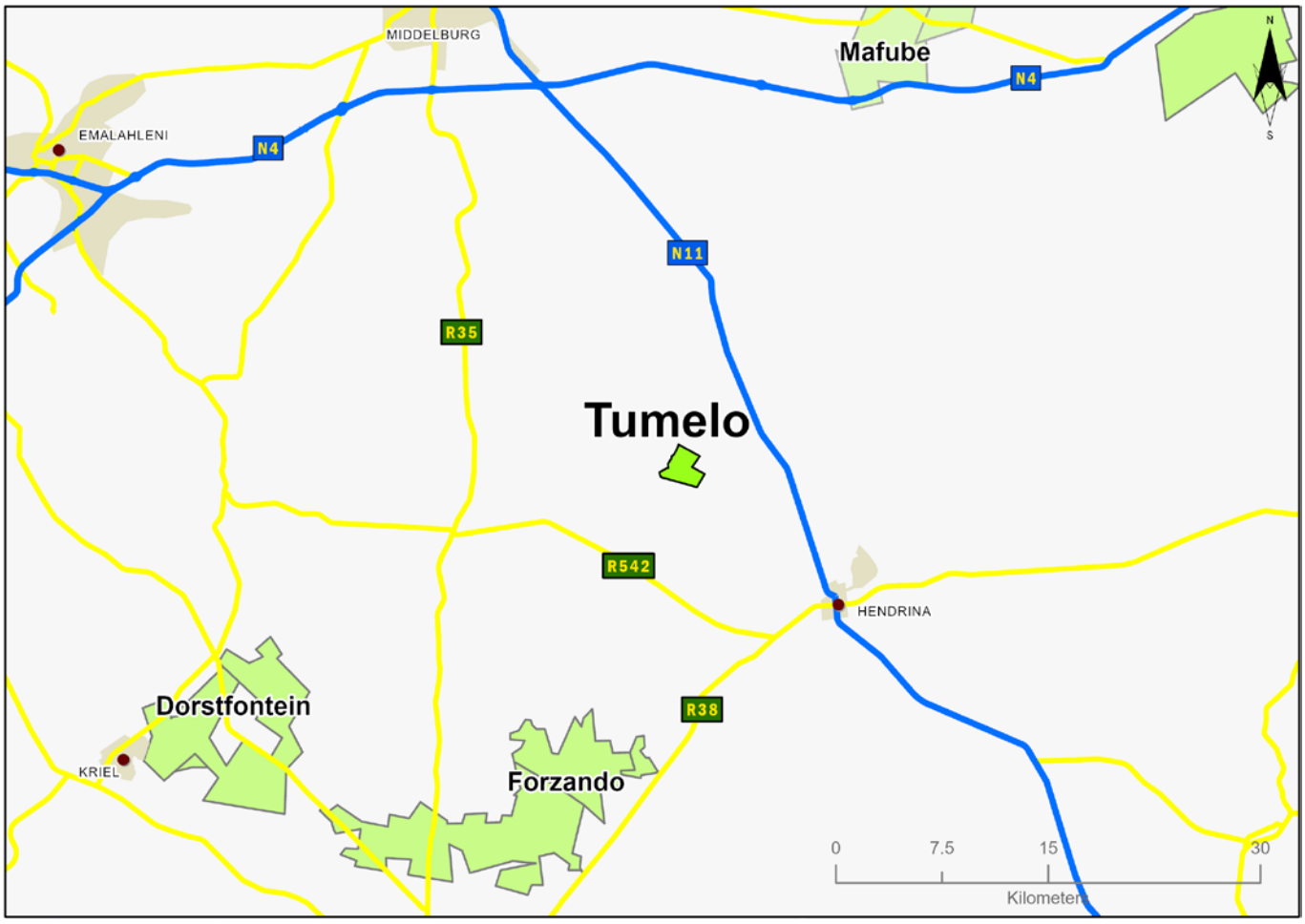
After operating for six years, Tumelo ceased production in January 2014 after its mining contract expired, and it was placed on care and maintenance. Since then, a series of technical and economic evaluations were conducted by Total Coal South Africa and Mmakau Mining, reviewing the potential of the remaining mineable Reserves, mining method and production rate. Mmakau Mining recommissioned the operation in 2019 with first coal mined in April.

Tumelo exploits S2 on the edge of the Springs-Witbank coalfield and RoM was trucked using existing roadways to Forzando North where it was beneficiated for a 5 800kcal/kg export product.

Tumelo history

Exploration activities started in the early 1990s with a mining right submitted in 2006 and first coal production in 2009. To date, there are 132 boreholes (103 with coal wash data) in Tumelo's mining right area. The 2017 geological model update incorporated all existing boreholes with wash-quality information. In general, Tumelo has a borehole distribution of 0.22 boreholes/ha.

Figure 25: Tumelo locality map



ANCILLARY RESOURCE AND RESERVE INFORMATION BY OPERATION continued

Table 67: Tumelo project history

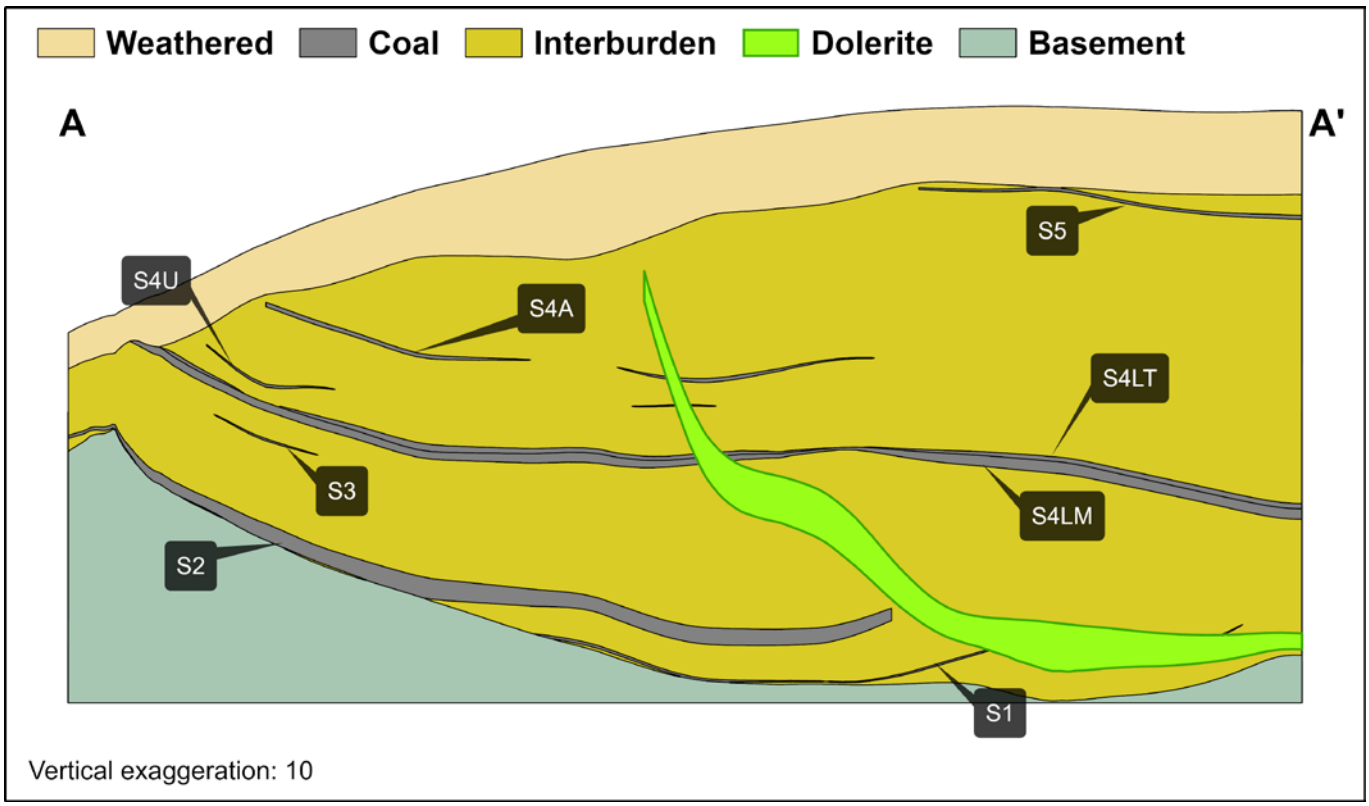
Date range	Company	Material notes
1990	Senekal mine	The first company to conduct exploration programme, drilling 26 boreholes
1991	Hanover Mining	Further exploration work, 34 boreholes drilled
2002	Total Exploration South Africa	Total Exploration South Africa acquired the project with 18 boreholes drilled during its tenure. A feasibility study in 2002 confirmed the presence of economic Coal Reserves. The Boschmanskop project would later become known as Tumelo
2004 to 2013	Total Coal South Africa	Further exploration work undertaken by Total Coal South Africa. Mining right applied for in 2006 in the name of Tumelo coal mine. First coal recorded in 2009, exploiting S2 via bord-and-pillar method. Mining outsourced to SBS Mining, a mining contractor. Initially RoM coal was custom washed for an export product at the Shanduka (Glencore)-owned Koornfontein colliery washing plant but would later be trucked to Total Coal South Africa's Forzando North and washed for a 5 800kcal/kg export product
2014 to 2015	Total Coal South Africa	Production ceased in January 2014 when the mining contract expired. Failure to agree on a possible extension with the contractor led to the operation being placed under care and maintenance in February 2014
2015 to 2018	ECC	Total Coal South Africa became ECC after being taken over by Exxaro in August 2015. Tumelo remained under care and maintenance
2019 to 2020	ECC	Mmakau Mining recommissioned the operation in 2019 with first coal mined in April. Normal production throughout 2020

Tumelo geology

Tumelo is to the north of the Smithfield Ridge on the north-eastern edge of the Springs-Witbank coalfield. The area is part of the Karoo basin with stratigraphy similar to that of other ECC operations, Dorstfontein and Forzando with subtle location-induced differences.

Six coal seams are developed in the area, named from the base up as S1, S2, S4L, S4U, S4A and S5. The S1 is very thin, being only developed in the deepest part of the palaeo-valley. The thickest average seam is the S2 (0.5m to 5.3m), developed mainly in a palaeo-valley where it is either thin or absent over the adjacent palaeo-ridges. The S2 has been exploited since Tumelo production started in 2009. The S4L is the most continuous and second-thickest seam while S4U is thin and has mostly been eroded. The S4A is thin and patchily developed and S5 is only present in a topographically high area in the south-east. The only economically exploitable seam is S2.

Figure 26: Tumelo cross-section



Late Jurassic dolerite sills and dykes occur in the Tumelo area. The intrusions resulted in displacement of the various seams and devolatilisation of extensive areas of coal. The geological complexity and associated challenges are proactively managed by extensive infill drilling, downhole wireline logging for better contact definition and seam correlation as well as surface mapping, particularly of basement outcrops. This information is captured in a structural model, together with potential risks captured in a GIS-based RODA, allowing for a more integrated approach to risk management.

Tumelo Resource evaluation

All exploration boreholes are logged and sampled by qualified geologists, aligned with Exxaro logging-and-sampling standards and standard operating procedures. Samples are selected according to seam boundaries, visual variation in the vitrinite content, assisted by density logs, and non-coal material present in the seam boundaries. The geologist takes cognisance of the borehole purpose and drilling conforms to ECC standards.

ECC's sampling governance and chain of custody requires that each sample to be submitted to the laboratories is accompanied by a sample submission list that also serves as a sample advice sheet with instructions for analysis. The laboratory is notified of samples that are ready for collection. On collection, the laboratory representative cross-checks all samples against the submission list to confirm the names and number of samples they are receiving. All submission lists are managed in duplicates with signed copies scanned and saved electronically in the geology server.

All geological core samples are sent to the laboratory for coal quality analysis. Two major laboratories have been used at Tumelo: Australian Laboratory Services and SGS with SANAS accreditation (T0611 and T0815 respectively). ISO and SANS have a standard set of tests and methods used for coal analysis by South African laboratories. These laboratories have committed to assuring the quality of results provided to the customer by ensuring quality assurance, quality control, data validation and proficiency testing procedures are observed.

Table 68: Tumelo Coal Resource reporting criteria

Thickness cut-off (thickness and extraction height considerations)	Quality cut-offs (adb)	Geological loss*
Underground ≤1.2m	DAFV ≤24% Raw ash ≥50%	10% to 50%

** A 10% standard geological loss is applied but may vary based on consideration of structural complexity (dolerite sill breakthrough – 50% loss within determined spatial extent), seam gradient (>4 degrees – 50% loss) and dolerite sill proximity to seam (25% loss). A 15% geological loss is applied (weighted average of the various risk domains).*

Table 69: Tumelo Coal Resource estimation criteria

	Item	Description
Database	Borehole database	acQuire
	Data datum	Cape LO29
	Number of boreholes used for Resource estimation	103 of 132 boreholes in the database with washability data
	Validation	The laboratory conducts data validation on samples. In acQuire, additional validations are conducted and corrected. Data is exported from acQuire into csv files where additional checks are conducted in Excel
	Data compositing and weighting	Data compositing is conducted per seam using a weighted value from individual samples that make up the seam, along with the relative density and length of each sample. This is done in Geovia Minex™
Model	Previous model date	January 2010 in Stratmodel
	Last model update	January 2017
	Geological modelling software	Geovia Minex™
	Estimation technique	Growth algorithm – general purpose gridding
	Grid mesh size	25m x 25m
	Scan distance	2 000m
	Data boundary	200m
	Model build limits	Upper: limit of weathering and topography/collar Lower: basement/Dwyka
	Model outputs	Roof, floor and thickness grids generated for structure. Raw quality and washability grids
	Changes to modelling process	Change in modelling package from Stratmodel to Geovia Minex™

ANCILLARY RESOURCE AND RESERVE INFORMATION BY OPERATION continued

Table 70: Tumelo Coal Resource classification criteria

Category	Type of boreholes	Borehole spacing	Structurally complex areas	Borehole/ha
Measured	Cored boreholes with applicable coal qualities	0 to 350m	Structural complexity and coal variability – additional infill drilling	0.30
Indicated	Cored boreholes with applicable coal qualities	350m to 500m	Structural complexity and coal variability – additional infill drilling	0.20
Inferred	Cored boreholes with applicable coal qualities	500m to 1 000m	Structural complexity and coal variability – additional infill drilling	0.11

Table 71: Tumelo Coal Resource statement

Category	2020 (Mt)	2019 (Mt)	Difference in tonnes (Mt)	Difference (%)	Reason for change
Measured	**7.7**	8.4	(0.7)	(8)	Mining depletion of 0.75Mt
Indicated	**0.2**	0.2	0.0	—	
Inferred	**1.8**	1.8	0.0	—	
Total Coal Resources	**9.7**	10.4	(0.7)	(7)	

Notes:
- *Rounding of figures may cause computational discrepancies.*
- *All changes more than 10% are explained.*
- *Mining method: UG.*
- *Figures reported at 100% irrespective of percentage attributable to Exxaro.*
- *Tonnages quoted in metric tonnes and million tonnes (Mt). Coal Resources quoted as MTIS and refer to remaining Resources after 31 December 2020 and 31 December 2019.*
- *Coal Resources reported on MTIS basis.*
- *Cut-offs applied as per Resource reporting criteria table.*
- *Coal Resources quoted inclusive of Coal Reserves.*

Table 72: Tumelo RPEEE considerations

Item	Criteria	Considered	Comment
Geological data	Data validated and signed off by competent person	Yes	Geological structure and depositional extent, seam thickness >1.2m (underground), <50% ash content, >24% DAFV. Coal qualities reported on an air-dry basis
Geological model	2017 geological model considered and signed off	Yes	
Structural model	Structural model considered and signed off	Yes	
Mining	Mining assumptions considered and defined	Yes	Underground areas defined and aligned with exploitation strategy
Assurance	Policy-driven governance, internal and external audits	Yes	Internal Exxaro review 2012
Economic evaluation	Concept-level exploitation with economic and mining assumptions, including geotechnical and geohydrological assumptions	Yes	Only approved economic assumptions and parameters applied
Environmental	Reasonable demonstration that environmental approvals can be obtained within the context of local, regional and national governmental legislation	Done	Areas where there is reasonable expectation that mining will not be permitted are considered, such as wildlife sanctuary, river and streams, historic sites and monuments. Environmental and social concept assessments have been completed
Tenure	Only areas in acceptable prospecting and mining rights. In areas adjacent to existing rights where legal section application is pending with reasonable expectation of approval	Yes	Mining right/prospecting right licences are valid. Extensions or annexations will be lodged as necessary
Infrastructure	Assumptions used should be reasonable and within known/assumed tolerances or have examples of precedence	Done	Current infrastructure
Market	Market(s) identified form part of an existing operation market strategy or potential market for which there is a conceptual market study	Done	Operational strategies aligned with existing markets

Tumelo known risks

The Tumelo mining right was approved in early 2019, executed in August 2019 and will expire in January 2025.

Boreholes received from third parties and drilled between 1990 and 1991 lack wash information for specific fractions. A limited amount of drilling is required to address this data gap. The Coal Resources estimates are received from Mmakau Mining.

Tumelo excellence

Continuous reviews of geological information and economic viability by Mmakau Mining lead to the mining of 0.47Mt during the reporting year.

EXPLORATION

Exploration was significantly impacted by the COVID-19 pandemic. We, however, prioritised activities to support the most pertinent objectives of the 2020 plans.

In 2020 we continued with our strategic strive towards development and utilisation of innovation in the execution of our exploration activities. In 2019, we indicated that a number of initiatives were implemented including the centralised managed acQuire database and the EQuIS groundwater database system. We reaped the benefits during 2020, increasing the ease and speed of core logging-and-sampling but importantly improving our data validation processes and subsequent integrity of our data. We have during the reporting year also enhanced the capabilities of our database system to accommodate compositing of the complex sample data at the Grootegeluk mine and improved the standardisation functionality for this data.

In addition to the implementation of the EQuIS groundwater database, the installation of telemetry systems for real-time data acquisition ensures fast and effective decision making regarding water management as well as empowering us in taking proactive steps to with regard to compliance to our water use licence requirements. COVID-19 travel restrictions hampered the implementation of the telemetry system for real-time field data acquisition at Grootegeluk. Proof of concept was, however, demonstrated at Matla and Belfast during the reporting year. We will focus our efforts in 2021 to complete the roll out of this system and improve our monitoring capabilities. Improved reporting capabilities through visual dashboards are planned for 2021 to make water data more accessible throughout the company.

All exploration holes, aligned with our exploration procedure, are downhole geophysically logged using density and gamma probes for validating borehole depths and geological contacts. In 2019, we also started surveying selective holes using optical televiewer (OTV), acoustic televiewer (ATV) and Sonic to obtain geotechnical information of the rock mass. We use the above mentioned techniques to allow us to conduct repeatable measuring of the physical properties of the undisturbed rock mass down the borehole wall and through the application of empirical methods obtain required geotechnical parameters. Advantages of applying these techniques include non-destructive, quick, precise, repeatable, and continuous surveying along the depth of the borehole (including weak zones). COVID-19 restrictions have, however, limited our access to sites and in 2020 we only conducted ATV surveys at Leeuwpan mine. We envisaged that due to eased access to exploration sites ATV surveys will increase and both OTV and sonic will be added to the suite of surveys.

The Coal Resource in the various operations were reviewed in 2020 to identify and outline geological challenges. We use a matrix, the RODA to outline geological challenges and predict their impacts. Based on this review, an integrated exploration plan is compiled that includes activities required to address Coal Resource and metallurgical characterisation, overburden characterisation, geological structure as well as rock engineering and hydrogeological data requirements. The plan is dynamic and additional activities are included when unforeseen complexities are encountered.

Exploration plans have been aligned at the start of 2020 with the newly introduced early value exploitation strategy at various operations. The exploration focus was adapted to support the updated optimised mine layouts and schedules and to support the potential value that the strategy aims to unlock. A good example of this could be observed at Grootegeluk mine where large diameter resource drilling in the latter part of the LoM was changed to core and open hole drilling in the now much-earlier introduced turnaround box-cut position.

The execution of our exploration plans were suddenly and significantly impacted by the outbreak of the COVID-19 pandemic. The outbreak coincided with the dry season at our operations, typical the period in which we conduct drilling, surface geophysics and other field exploration activities. Drilling programmes were, as would be expected, postponed at the first lockdown and we only started with limited exploration activities later in the year when access to the sites were again allowed although under very strict health regulations. The operational exploration teams have, however, reacted extremely well in refocusing plans and activities in April/May 2020 to support the most pertinent objectives of original 2020 exploration plans.

The updated exploration plans were primarily focused to improve geological confidence in the new mine plans to enhance geological modelling and estimation as well as to support operational mining developments. These boreholes are depicted in the relevant locality maps in the ancillary section. A limited amount of geotechnical and hydrogeological drilling was conducted to improve mine-planning parameters and is included in exploration (Table 78).

No exploration was conducted on areas not included in the Coal Resource statement. The exploration costs reflected at Thabametsi are related to the continuous reworking of exploration data to support scenario planning, identify information gaps to plan future exploration activities, as well as for the compilation of reports associated with legal reporting.

Exploration at the Grootegeluk mine was significantly impacted by COVID-19 lockdown. The team concluded a number of large diameter (122mm) cored exploration boreholes to increase geological confidence before operations were closed down. Prioritisation of activities resulted in a focus change concentrating on the turnaround box-cut position and the northern pit area. We plan to drill 54 holes in 2021 targeting resource, overburden, geological faulting as well as geotechnical and hydrogeological aspects of the coal deposit. Large diameter cored drilling will be focused in the northern pit box-cut position with open holes (non-cored percussion holes, geophysically logged) positioned in both the northern and southern pits to investigate structural challenging areas.

At Matla mine, exploration activities were interrupted by the lockdown and only approximately 30% of the planned holes could be completed. The drilling was primarily focused at Mine 3 low seam where derisking of geological challenges like faulting, presence of sills and dykes and basement highs disrupted seam thickness continuity and impacting coal qualities.

A major achievement this year was the successful execution of surface-to-seam directional drilling at Mine 2 north-west access project. The targeted S4 resource area present challenging geological structural conditions and a number of long directional drilled traces assisted hugely to optimise the access and mine panel layouts. This drilling methodology proved to be vital for Matla's other mine developments areas. The proposed drilling programme for 2021 to 2023 focuses on Mine 1 and Mine 3. Mine 1 is due to reopen in 2023/24, requiring additional exploratory work to be conducted to derisk some of the operational areas. Future exploration drilling in 2021/2022 will be conducted across the planned Mine 1 mining area, utilising vertical and inclined surface and underground horizontal drilling methods.

Infill drilling of the two box-cut areas at Belfast mine in 2019 underpinned the importance of adequate infill drilling during box-cut positioning and design. Exploration in 2020 mainly focused on infill drilling in these two pits as well as pits 4 and 4B on the western side of the resource that forms part of the new updated mine plan. The objective, similar as in 2019 was to derisk the box-cut areas regarding seam thickness variability, weathering and overburden characteristics. A number of holes were drilled in the northern Belfast expansion area where environmental approvals as well as surface access have been secured. Infill drilling and Resource drilling inside Belfast expansion project will continue in 2021.

Drilling at Leeuwpan mine was executed to improve the confidence of coal seam continuity, coal qualities and geological structure in the OL Resource area. The 2021 exploration strategy aims to increase the confidence level of the OI Inferred Resource and to delineate geological structures known to exist within this area.

Exploration activities at ECC focused as in 2020 on derisking the first five-years in the LoM plan. A significant number of boreholes were drilled at Forzando East to investigate dyke and sill occurrence as well as geological faulting. Drilling at Dorstfontein was primarily conducted at Dorstfontein East, to the north of Pit 1, as well as to the west of Pit 2 where ECC will expand into an underground operation.

A number of exploration activities were conducted at our Moranbah South joint venture project in Australia's Bowen Basin. A large 3D seismic geophysical survey was completed during the reporting year improving our understanding of the geological faulting within the project area. We also conducted a review of the 2012 3D seismic survey results applying the latest technology and innovative techniques. The integrated optimised 2012 and new 2020 survey results will be used in the update of the geological structural and resource models in 2021. In addition to the 2020 seismic survey, a number of large as well as thin size cored holes were drilled investigating a suite of coal quality, metallurgical and coking characteristics. We will continue with exploration activities during 2021.

Table 73: Summary of exploration expenditure for coal

	2019 actual		2020 actual				2021 planning*	
Project or mining operation	Number of boreholes	Total cost (Rm)	Number of boreholes	Drilling cost (Rm)	Analysis and other costs (Rm)	Total costs (Rm)	Number of boreholes	Total cost (Rm)**
Grootegeluk	155	20.8	**63**	**4.4**	**2.9**	**7.3**	54	20.2
Matla***	109	10.9	**31**	**3.5**	**22.3**	**26.2**	53	7.5
Belfast	59	3.0	**51**	**1.0**	**0.3**	**1.3**	30	1.7
Leeuwpan	6	1.5	**10**	**0.3**	**0.2**	**0.5**	5	0.7
Thabametsi project (mining right)****		1.2			**0.8**	**0.8**		1.2
Dorstfontein	41	3.8	**59**	**2.6**	**3.1**	**5.7**	35	8.7
Forzando	2	0.1	**5**	**1.8**	**1.3**	**3.0**	14	3.8
Tumelo								
Others (projects not reported on)		7.0						
Total	372	41.9	**219**	**13.6**	**30.9**	**44.9**	191	43.8
Moranbah South Project (not under operational control)			**12**	**A$ 1.7**	**A$ 0.8**	**A$ 2.5**	22	A$ 6.3
Mafube (not under operational control)			**141**	**5.2**	**1.1**	**6.3**	228	14.8

* *Non-committed.*
** *Includes all associated exploration cost, such as drilling, geophysics surveys and geotechnical, hydrogeological and metallurgical test work, excluding personnel, and excludes horizontal drilling.*
*** *2020 cost includes directional surface-to-seam drilling.*
**** *Includes surface geophysical surveys over the southern area of the project.*

ENDORSEMENTS

The Exxaro lead competent persons are appointed by the executive management team.

The Exxaro lead Coal Resource competent person is Henk Lingenfelder, a member of the Geological Society of South Africa and registered (400038/11) with the South African Council for Natural Scientific Professions. He has a BSc (Hons) in geology and 25 years of experience as a geologist in coal, iron ore and industrial minerals.

The person in Exxaro designated to take corporate responsibility for Coal Resources, Henk Lingenfelder, the undersigned, has reviewed and endorsed the reported estimates.

Henk Lingenfelder

BSc geology (Hons)
Pr Sci Nat (400038/11)
Group manager: geoscience

263 West Avenue, Die Hoewes
Centurion 0163

South African Council for Natural Scientific Professions
Private Bag X540
Silverton 0127
Gauteng
South Africa

The Exxaro lead Coal Reserve competent person is Chris Ballot, a mining engineer registered (20060040) with the Engineering Council of South Africa. He has 24 years of experience in iron ore, mineral sands and coal in various technical and management roles. His qualifications include BEng (mining), GDE and MBA.

The person in Exxaro designated to take corporate responsibility for Coal Reserves, Chris Ballot, the undersigned, has reviewed and endorsed the reported estimates.

Chris Ballot

BEng (mining)
ECSA 20060040
Group manager: mining processes

263 West Avenue, Die Hoewes
Centurion 0163

Engineering Council of South Africa
Private Bag X691
Bruma 2026
Gauteng
South Africa

Both parties are in the full-time employment of Exxaro, Henk Lingenfelder as the group manager: geosciences and Chris Ballot as the group manager: mining processes. Both parties have consented to the inclusion of Resources and Reserves estimates in the integrated report 2020. Exxaro has written confirmation from the competent persons that the reporting is compliant with the SAMREC Code, the relevant portions of Table 1 and the JSE Listings Requirements (section 12), in the form and context in which it was intended JSE LR 12.13(i)(6) and they consent to the publication of the report.

ABBREVIATIONS

adb	air-dried basis
CMRR report	Consolidated Mineral Resources and Mineral Reserves report
CV	calorific value
DAF	dry ash free volatiles
DCM	Dorstfontein complex
FZO	Forzando
GIS	geographic information system
ha	hectare
IM	inherent moisture
JORC Code	Australasian Code for Reporting of Exploration Results, Mineral Resources and Mineral Ore Reserves, 2012 edition
JSE	JSE Limited (founded in 1887 as the Johannesburg Stock Exchange)
kcal/kg	kilocalories per kilogram
LoM	life of mine
MTIS	mineable tonnes in situ
MJ/kg	megajoules per kilogram
Mt/Mtpa	million tonnes/per annum
RODA	risk and opportunity domain analysis
RoM	run of mine
SAMRE	South African Code for Reporting of Exploration Results, Mineral Resources and Mineral Reserves, 2016 edition
SANS	South African National Standard

APPENDIX A

Table 74: Shareholding and tenure of reported Mineral Resources and Mineral Reserves

Complex		Name of right	Type	Status	% attributable to Exxaro	Expiry date	Remainder attributable to
Matla	Matla (UG)	Matla (327MR)	Mining right	Executed	100	4 March 2025	
Leeuwpan	Leeuwpan (OC)	Leeuwpan (157MR)	Mining right	Registered	100	31 May 2039	
		Leeuwpan Ext (171MR)	Mining right	Registered	100	31 May 2039	
Mafube	Mafube (OC)	Mafube (172MR)	Mining right	Registered	50	30 July 2030	Anglo American Coal
		Nooitgedacht (10026MR)	Mining right	Registered	50	13 November 2043	Anglo American Coal
Strathrae*	Strathrae (OC)	Strathrae (328MR)	Mining right	Granted	100	22 November 2019	
			Renewal	New application	100		
Belfast	Belfast (OC)	Belfast (431MR)	Mining right	Registered	100	20 February 2043	
Grootegeluk	Grootegeluk (OC)	Grootegeluk (46MR)	Mining right	Registered	100	13 February 2041	
Thabametsi	Thabametsi (UG and OC)	Thabametsi (10013MR)	Mining right	Registered	100	20 May 2046	
Dorstfontein	Dorstfontein (OC and UG)	Dorstfontein West + Vlakfontein (119MR)	Mining right	Registered	74	18 December 2036	Mmakau Mining
		Dorstfontein West (123MR)	Mining right	Registered	74	18 December 2036	Mmakau Mining
		Dorstfontein East (51MR)	Mining right	Registered	74	27 November 2036	Mmakau Mining
		Rietkuil Vhakoni (16335) *	Prospecting right	New application	74		Mmakau Mining
Forzando	Forzando (OC and UG) ECC has an additional indirect 12.75% shareholding through Mmakau Coal hence a total interest of 86.74%	Forzando South (380MR)	Mining right	Executed	86.74	9 November 2027	Mmakau Mining
		Forzando North (381MR)	Mining right	Registered	86.74	20 November 2027	Mmakau Mining
		Projects: Legdaar (1846PR)	Prospecting right	Renewal submitted	74	4 May 2015	Mmakau Mining
		Projects: Legdaar (13825PR)	Renewal	New application	74		Mmakau Mining
		Kalabasfontein (16338) *	Prospecting right	New application	86.74		Mmakau Mining
Schurvekop	Schurvekop Applicant Mmakau Coal	Schurvekop (10160MR)	Mining right	New application	49		Mmakau Mining
Tumelo	Tumelo (UG)	Boschmanskop (10115MR)	Mining right	Executed	49	29 January 2025	Mmakau Mining

** No Coal Resources declared.*

Complex		Name of right	Type	Status	% attributable to Exxaro	Expiry date	Remainder attributable to
Australian region	Moranbah South (OC and UG)	MDL277 and 377	Mineral development licences	Granted	50	31 July 2021 and 30 September 2023	Anglo American Coal
		EPC 548	Exploration permit	Executed	50	20 February 2022	Anglo American Coal

Notes:
- *PR: Prospecting right.*
- *MR: Mining right.*
- *Prospecting right of Schurvekop Port 24 and the Vlaklaagte (1140PR and 10991PR) prospecting rights that form part of the Forzando Complex are not displayed as they are currently under review.*

Table 75: Shareholding and tenure of reported Base Metal Resources and Reserves

Commodity	Name of right	Type	Status	% attributable to Exxaro	Expiry date	Remainder attributable to
Base metals	Deeps and Swartberg (zinc, lead, copper and silver)	Converted right	Executed	26	30 September 2038	Vedanta Resources
	Gamsberg North and Gamsberg East prospecting (zinc)	Converted right	Executed	26	18 August 2038	Vedanta Resources

Table 76: Coal production figures (Mt)

Operation	Product	2019	2020	FC 2021*	FC 2022*
Grootegeluk	Thermal coal	25.68	**26.55**	26.48	27.46
Grootegeluk	Metallurgical coal	2.07	**2.22**	3.17	5.00
Matla	Thermal coal	5.99	**6.15**	6.21	6.05
ECC	Thermal coal	4.24	**3.69**	3.98	5.36
Leeuwpan	Thermal coal	4.40	**3.72**	5.51	5.65
Belfast	Thermal coal	1.03	**2.85**	3.26	3.44
Mafube (buy-ins from joint venture)	Thermal coal	1.87	**1.82**	1.88	1.88

** Forecast.*

APPENDIX A continued

Table 77: 2020 competent persons' register

Mineral Resources					Mineral Reserves			
Operation/ project	**Name**	**Relevant experience (years)**	**Job title**	**Registration***	**Name**	**Relevant experience (years)**	**Job title**	**Registration**
Lead competent person: Exxaro	JH Lingenfelder	25	Group manager: geosciences	SACNASP (400038/11)	CC Ballot	24	Group manager: mining	ECSA (20060040)
Belfast	G Gcayi	13	Resident geologist: Belfast	SACNASP (400299/11)	Al Dednam	22	Mineral Resource manager: Belfast	SAIMM (710051)
Grootegeluk	CW van Heerden	18	Resident geologist: Grootegeluk	SACNASP (400069/04)	R van Staden	17	Manager: mining operations	ECSA (20050123)
Leeuwpan	P Themba	18	Resident geologist: Leeuwpan	SACNASP (400031/09)	M Sethethi	13	Mine manager: Leeuwpan	ECSA (20095030)
Matla	TF Moabi	15	Mineral Resource manager: Matla	SACNASP (400067/08)	TF Moabi	15	Mineral Resource manager: Matla	SACNASP (400067/08)
Thabametsi	CW van Heerden	18	Resident geologist: Grootegeluk	SACNASP (400069/04)	CC Ballot	24	Group manager: mining	ECSA (20060040)
Dorstfontein and Forzando	G Bittah	13	Manager geologist: ECC	SACNASP (400217/12)	G Ndebele	37	Mineral Resource manager: ECC	SACNASP (400107/10)
Tumelo and Schurvekop 1063	G Bittah	13	Manager geologist: ECC	SACNASP (400217/12)				
Mafube (Nooitgedacht and Wildfontein)	D Xaba	21	Geology manager: Anglo American Coal	SACNASP (400019/05)	N van der Merwe	16	Geology manager: Anglo American Coal	ECSA (201110033)
Moranbah South, Australia	AJ Laws	25	Specialist resource geologist: Anglo American Coal	AusIMM (209913)	N/A			
Black Mountain (Deeps mine, Swartberg and Big Syncline)	M Campodonic	20	Director and corporate consultant: resource geology, SRK Consulting (UK)	AusIMM (CP Geology), FGS	J Miles	31	Associate principal consultant: mining engineering, SRK Consulting (UK)	MIMMM (CEng)
Gamsberg	M Campodonic	20	Director and corporate consultant: resource geology, SRK Consulting (UK)	AusIMM (CP Geology), FGS	J Miles	31	Associate principal consultant: mining engineering, SRK Consulting (UK)	MIMMM (CEng)

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- *Engineering Council of South Africa: Private Bag X691, Bruma 2026, Gauteng, South Africa.*
- *Australasian Institute of Mining and Metallurgy: 204 Lygon Street, Carlton VIC 3053, Australia.*
- *SRK Consulting (UK) Limited: 5th Floor Churchill House, 17 Churchill Way, City and Country of Cardiff, CF10 2HH, Wales, United Kingdom.*
- *Anglo American, Metallurgical Coal, Corporate office, Technical, 201 Charlotte Street, Brisbane 4000, Australia.*

All competent persons are Exxaro employees except where otherwise stated and competent person qualifications are included in the individual competent persons' reports.

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