



21 February 2013

## **Independent Specialist Valuation Report**

**Firestone Energy Limited** (ASX/JSE: FSE) (the “**Company**” or “**Firestone**”) is pleased to announce the release of an Independent Specialist Valuation Report in relation to the coal assets of the Company’s Waterberg Coal Project Joint Venture with Sekoko Resources.

The Company engaged VenmynDeloitte to prepare the Independent Specialist Valuation Report and Venmyn Deloitte was instructed by Deloitte Corporate Finance Pty Limited (“**Deloitte Corporate Finance**”). Deloitte Corporate Finance has been separately engaged by the Company to prepare an Independent Expert’s Report in relation to the off-market takeover offer from Range River Gold Limited (ASX: RNG) to acquire all of the shares in the Company for consideration of 1 share in RNG for every 2 shares in the Company (“**Offer**”) to opine on whether the Offer is fair and reasonable to the Company’s shareholders.

The Deloitte Corporate Finance Independent Expert’s Report will take into consideration the Independent Specialist Valuation Report and both reports will accompany Firestone’s Target’s Statement.

All Firestone announcements are available on the Company’s website on [www.firestoneenergy.com.au](http://www.firestoneenergy.com.au) and via [www.asx.com.au](http://www.asx.com.au).

Yours sincerely,

**David Knox**  
**Chief Executive Officer**  
**[www.firestoneenergy.com.au](http://www.firestoneenergy.com.au)**  
**Tel: Australia (+61 08 9287 4600)**  
**South Africa (+27 11 706 3548)**

### **Competent Persons Statement**

*Information contained in the attached report that relates to Exploration results and Mineral Resources and is based on information compiled by Mr Neil McKenna who is employed by Venmyn Deloitte and is a member of the Australasian Institute of Mining and Metallurgy and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the “Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves” (The JORC Code). Mr McKenna consents to the inclusion of the attached report with this announcement of the matters based on his information in the form and context in which it appears.*

### **About Firestone Energy**

Firestone Energy Limited is an independent, Australian exploration and development company listed on the Australian Stock Exchange Ltd (ASX) and the Johannesburg Stock Exchange (JSE). Firestone Energy has entered into a Joint Venture with Sekoko Resources (Pty) Ltd through which Firestone Energy has acquired the right to 60% participation interests in the Waterberg Coal Project located in Lephalale area, Limpopo Province, South Africa.

The first stage of the project is to develop the Smitspan mine which has a substantial measured thermal coal resource and to develop the Velleegte mine which is a substantial metallurgical coal deposit.

Firestone Energy is committed to becoming a profitable independent coal and energy producer at its projects in South Africa, thereby making a substantial contribution to the social and economic development of the Lephalale area and South Africa.

### **Corporate Details**

ASX: FSE  
JSE: FSE

Issued Capital:  
3,549 million ordinary shares

Major Shareholders:  
Sekoko Resources (Pty) Ltd  
Linc Energy Ltd  
BBY Nominees Pty Ltd  
Bell Potter Nominees Ltd

### **Directors and Officers**

**Non Executive Directors:**  
Mr Tim Tebeila (Chairman)  
David Perkins (Deputy Chairman)  
Dr Pius Kasolo  
Ben Mphahlele  
Kobus Terblanche  
David Hillier  
Oren Zohar  
Jack James

**Officers:**  
Mr David Knox CEO  
Ms Amanda Matthee CFO  
Mr Jerry Monzu Company Secretary

Contact:  
Suite B9, 431 Roberts Road  
Subiaco, Western Australia 6008

**Independent Specialist Valuation Report  
on the Coal Assets of the Sekoko Coal (Pty)  
Limited (Sekoko Coal) – Firestone Energy Limited  
(Firestone) Joint Venture  
(Sekoko Coal – Firestone JV)  
at their Waterberg Coal Project, South Africa**

**N. MCKENNA (COMPETENT EXPERT)**

M.Sc. (Geol), Pr. Sci. Nat (400199/04)

MAusIMM (309030), MSAIMM, MGSSA, M. Inst. D.

**DIRECTOR**

**J.A. MYBURGH**

B.SC. (Mathematics)

**MINERAL PROJECT ANALYST**

**Reference No.:- VMD1393R**

**Effective Date :- 21<sup>st</sup> January 2013**

**Final Report Date : 14<sup>th</sup> February 2013**

# **Independent Specialist Valuation Report on the Coal Assets of the Sekoko Coal (Pty) Limited (Sekoko Coal) – Firestone Energy Limited (Firestone) Joint Venture (Sekoko Coal – Firestone JV) at their Waterberg Coal Project, South Africa**

Deloitte Corporate Finance Pty Limited  
Woodside Plaza  
Level 14  
240 St Georges Terrace  
Perth WA 6000

## **Synopsis**

Venmyn Deloitte was instructed by Deloitte Corporate Finance Pty Limited (Deloitte), an Australian company that holds an Australian Financial Services Licence, to prepare a Specialist Valuation Report on certain of the coal assets (contributing properties) of the Joint Ventures (JV) between Sekoko Coal and Firestone Energy Limited (Firestone) at their Waterberg Coal Project (Sekoko Coal – Firestone JV), located in the Limpopo Province, South Africa. Venmyn Deloitte understands that Deloitte will use this Specialist Valuation Report for the purposes of compiling an Independent Experts Report in relation to a proposed acquisition of 100% of the shares in Firestone by Range River Gold Limited.

To this end, Venmyn Deloitte has independently assessed the mineral assets and the results have been incorporated into this Specialist Valuation Report.

The valuation considers the Fair Value of the coal assets of the T1, T2 and T3 agreements properties (the contributing properties or the Waterberg Coal Project) on a 100% attributable basis. No assessment is made with respect to the relative values attributable to either Firestone or Sekoko Coal, nor is any opinion expressed regarding the proposed transaction.

The contributing properties are situated less than 5km to the west of the Grootegeluk Colliery mining lease boundary, approximately 240km northwest of Pretoria (Tshwane) and 70km south of the border with Botswana. The area is accessed via the tarred R517 between Modimolle (formerly Nylstroom) and Lephalale. The railway line from Thabazimbi terminates immediately north of Grootegeluk Colliery and power lines from the Matimba Power Station traverse the area.

Approximately 1.4 billion TTIS (Total Tonnes In Situ) of coal has been classified into the Measured, Indicated and Inferred categories for the contributing properties. These JORC compliant Coal Resources form the basis of the valuation of these properties, reported herein.

The mineral assets of the contributing properties were valued on the basis of available historical and recent exploration data and current Coal Resources, using methods appropriate for the development status of the project. Venmyn Deloitte's valuation considered the prospectivity of the project and attached a value range consistent with that assessment. The methods applied are accepted industry methods which aim to reduce subjectivity by assessing the relevance and effectiveness of exploration work.

This report has been prepared for Deloitte in compliance with, and to the extent required by, the Australian Code for the Technical Assessment and Valuation of Mineral and Petroleum Assets and Securities for Independent Expert Reports (VALMIN Code, 2005). Consistent with the VALMIN Code, in this report Fair Value is considered to be comprised of the 'Intrinsic' or 'Technical' value and a premium or discount relating to market, strategic or other considerations.

For the purposes of this valuation, Venmyn Deloitte have assumed that Sekoko Coal (and the JV) have secure tenure over all contributing properties.

To assess the Intrinsic/Technical Value, both the Cost and Comparable Transactions valuation approaches were utilised. These assessments resulted in an Intrinsic or Technical Value range of between ZAR1,247m and ZAR1,437m, with a preferred value of ZAR1,344m for the mineral assets of the contributing properties.

Our assessment suggests that it would be appropriate to apply a discount to the Intrinsic/Technical Value of the mineral assets, in terms of the requirements of VALMIN, 2005 in assessing Fair Value. In this case, Venmyn Deloitte consider that a discount of 21% is appropriate.

	INTRINSIC OR TECHNICAL VALUE					DISCOUNT (%)	FAIR VALUE (ZARm)
	FARM	COST APPROACH (ZARm)	COMPARABLE TRANSACTION APPROACH (ZARm)	PREFERRED VALUE (ZARm)	TOTAL (ZARm)		
T1	Olieboomsfontein 220 LQ	1.0	N/A	1.0	122.3	21%	1,067.8
	Vetleegte 304 LQ	116.6	126.0	121.3			
T2	Minnasvlakte 258 LQ	10.1	77.3	43.7	1,173.2		
	Smitspan 306 LQ	1,056.3	1,108.0	1,082.1			
	Massenberg 305 LQ	29.3	31.4	30.3			
	Hooikraal 315 LQ	14.6	19.5	17.1			
T3	Swanepoelpan 262LQ	19.2	71.6	45.4	48.0		
	Duikerfontein 263LQ	0.0	2.6	2.6			
	TOTAL	1,247.1	1,436.5	1,343.6	1,343.6	21%	1,067.8

Note: Rounding may result in computational discrepancies

This results in a Fair Value of ZAR1,068m. If a value range is required, we would consider it appropriate to apply the ~21% discount to the technical valuation range which would provide a value range of ZAR991m and ZAR1,142m.

The valuation of exploration assets is, by nature, subjective and uncertain. The placing of a specific monetary value on historical exploration can be misleading, and the reader is advised to consider the full ranges in which each property has been evaluated, and to further consider the technical merits of each project area and form an opinion regarding its prospectivity on the basis of the data presented in this report.

## Disclaimer and Risks

Venmyn Deloitte has prepared this Specialist Valuation Report and, in so doing, has utilised information provided by Sekoko Coal and Firestone as to its operational methods and forecasts. Where possible, this information has been verified from independent sources with due enquiry in terms of all material issues that are a prerequisite to comply with the JORC and Valmin Code. Venmyn Deloitte and its directors accept no liability for any losses arising from reliance upon the information presented in this report.

The authors of this Specialist Valuation Report are not qualified to provide extensive commentary on legal issues associated with Sekoko Coal's right to the mineral properties. Sekoko Coal and its attorneys have provided certain information, reports and data to Venmyn Deloitte in preparing this Specialist Valuation Report which, to the best of Sekoko Coal's knowledge and understanding, is complete, accurate and true and Sekoko Coal and Firestone acknowledge that Venmyn Deloitte has relied on such information, reports and data in preparing this Specialist Valuation Report. No warranty or guarantee, be it express or implied, is made by the authors with respect to the completeness or accuracy of the legal aspects of this document.

## Operational Risks

The businesses of mining and mineral exploration, development and production by their natures contain significant operational risks. The businesses depend upon, amongst other things, successful prospecting programmes and competent management. Profitability and asset values can be affected by unforeseen changes in operating circumstances and technical issues.

## Political and Economic Risks

Factors such as political and industrial disruption, currency fluctuation, increased competition from other prospecting and mining rights holders and interest rates could have an impact on Sekoko Coal and/or Firestone's future operations, and potential revenue streams can also be affected by these factors. The majority of these factors are, and will be, beyond the control of Sekoko Coal and/or Firestone or any other operating entity.

## Forward Looking Statements

This report contains forward-looking statements. These forward-looking statements are based on the opinions and estimates of Venmyn Deloitte and Sekoko Coal and Firestone at the date the statements were made. The statements are subject to a number of known and unknown risks, uncertainties and other factors that may cause actual results to differ materially from those forward-looking statements anticipated by Venmyn Deloitte and Sekoko Coal and Firestone. Factors that could cause such differences include changes in world coal markets, equity markets, costs and supply of materials, and regulatory changes. Although Venmyn Deloitte believes the expectations reflected in the forward-looking statements to be reasonable, Venmyn Deloitte does not guarantee future results, levels of activity, performance or achievements.

# Independent Specialist Valuation Report on the Coal Assets of the Sekoko Coal (Pty) Limited (Sekoko Coal) – Firestone Energy Limited (Firestone) Joint Venture (Sekoko Coal – Firestone JV) at their Waterberg Coal Project, South Africa

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# 1. Introduction

Venmyn Deloitte was instructed by Deloitte Corporate Finance Pty Limited (Deloitte), an Australian company that holds an Australian Financial Services Licence, to prepare a Specialist Valuation Report on certain of the coal assets (contributing properties) of the Joint Ventures (JV) between Sekoko Coal and Firestone Energy Limited (Firestone) at their Waterberg Coal Project (Sekoko Coal – Firestone JV), located in the Limpopo Province, South Africa. Venmyn Deloitte understands that Deloitte will use this Specialist Valuation Report for the purposes of compiling an Independent Experts Report in relation to a proposed acquisition of 100% of the shares in Firestone by Range River Gold Limited.

The Sekoko Coal-Firestone JV encompasses three separate agreements between Sekoko Coal and Firestone:-

**Table 1 : Sekoko Coal-Firestone JV Agreements**

AGREEMENT	SIGNATURE DATE	PROPERTIES	SEKOKO COAL CURRENT EFFECTIVE INTEREST	FIRESTONE CURRENT EFFECTIVE INTEREST
T1	12/06/2008	Olieboomsfontein 220LQ	40%	60%
		Vetleegte 304LQ		
T2	01/03/2009	Minnasvlakte 258LQ	40%	60%
		Smitspan 306LQ		
		Massenberg 305LQ		
		Hooikraal 315LQ		
T3	02/02/2010	Duikerfontein 263LQ	40%	60%
		Swanepoelpan 262LQ		

To this end, Venmyn Deloitte has independently assessed the mineral assets and the results have been incorporated into this Specialist Valuation Report. This valuation considers the Fair Value of the coal assets of the T1, T2 and T3 agreements properties (the contributing properties or Waterberg Coal Project) on a 100% attributable basis. No assessment is made in this report with respect to the relative values attributable to either Firestone or Sekoko Coal, nor is any opinion expressed regarding the proposed transaction. This valuation is therefore an assessment of the total Fair Value of the mineral assets only.

## 2. Scope of the Opinion

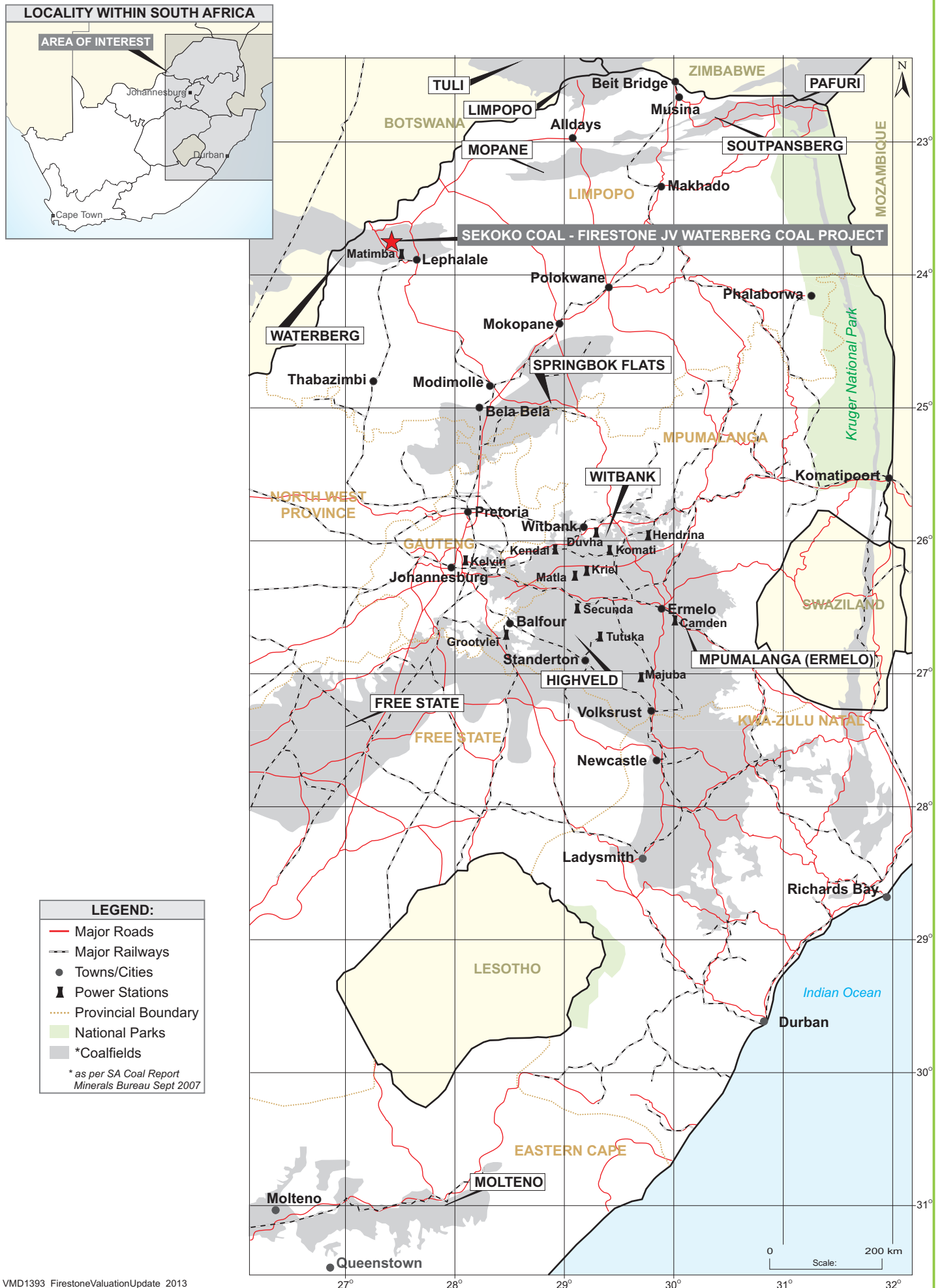
This valuation considers the Fair Value of the coal assets of the T1, T2 and T3 agreement properties (the contributing properties or Waterberg Coal Project).

In the execution of the mandate, Venmyn Deloitte have considered the strategic merits of the contributing properties and defined the valuation outcomes on an open and transparent basis. Venmyn Deloitte's mineral asset valuation (MAV) has been carried out using industry accepted methods being mindful of the development status of each property.

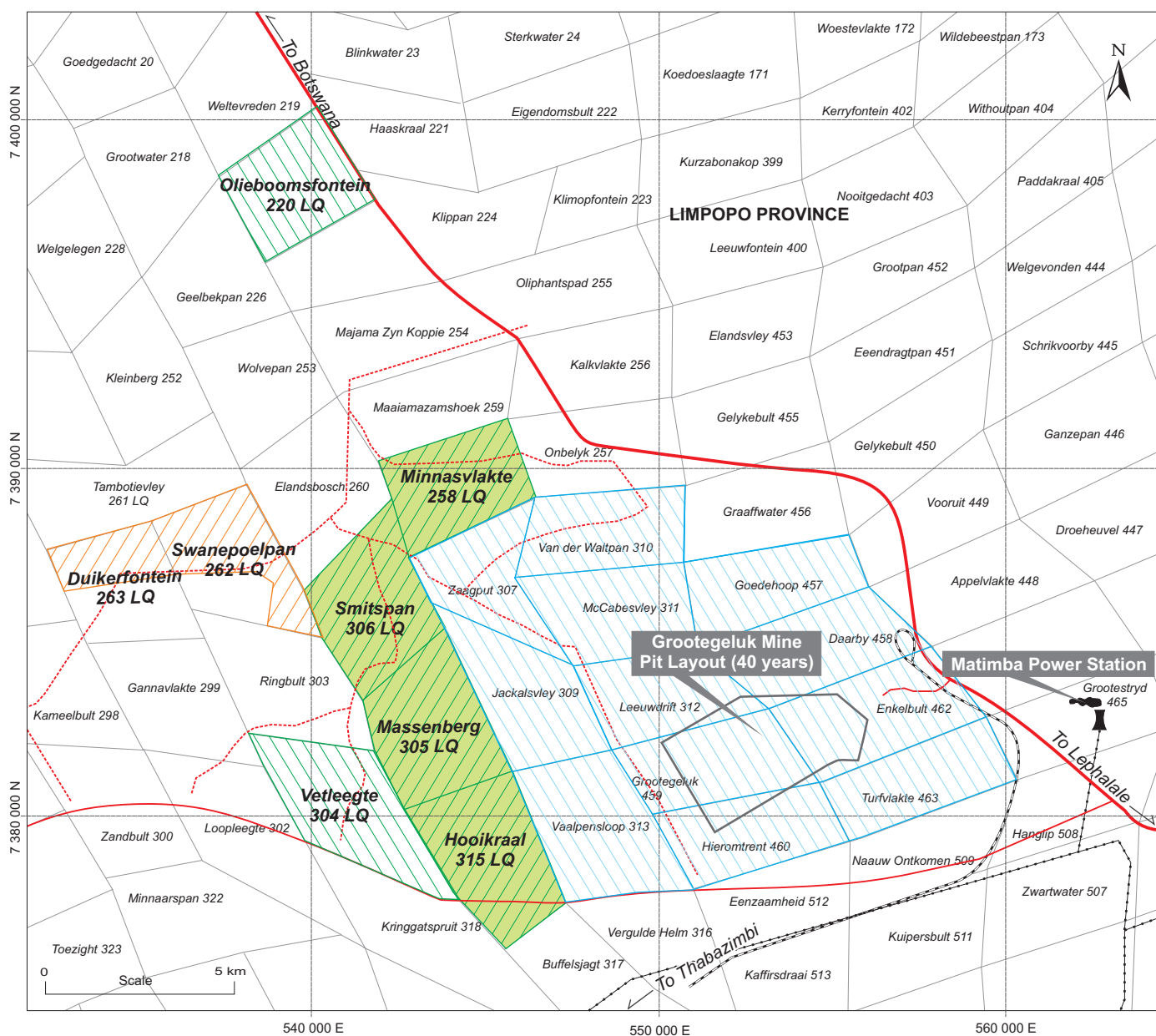
The MAV included in this report has been prepared in compliance with and to the extent required by The Code and Guidelines for Assessment and Valuation of Mineral Assets and Mineral Securities for Independent Expert Reports 2005 (VALMIN Code), prepared by the VALMIN Committee, a joint committee of The Australian Institute of Mining and Metallurgy (AusIMM), the Australasian Institute of Geoscientists and the Mineral Industry Consultants Association with the participation of the Australian Securities and Investment Commission, the ASX, the Minerals Council of Australia, the Petroleum Exploration Society of Australia, the Securities Association of Australia and representatives from the Australian finance sector.

These guidelines are considered by Venmyn Deloitte to be a concise recognition of the best practice valuation methods for this type of mineral asset and accord with the principles of open and transparent disclosure that are embodied in internationally accepted Codes for Corporate Governance.

## LOCALITY OF THE COAL ASSETS IN RELATION TO SOUTH AFRICAN COALFIELDS



## LOCATION OF THE CONTRIBUTING PROPERTIES OF THE WATERBERG COAL PROJECT



## LEGEND:

- Farm Boundary
- Main Road
- Secondary Road
- ... Farm Road
- Railway
- Powerline

- Grootegeluk Mine
- Grootegeluk Colliery Mining Lease

## Contributing Properties at the Waterberg Coal Project

- T1
  - T2
  - T3
- Sekoko Coal/Firestone JV

This Specialist Valuation Report considers the Fair Value of the coal assets of the contributing properties at the effective date (21<sup>st</sup> January 2013). This Specialist Valuation Report has been compiled based on information available up to and including the effective date of this report. The valuation is therefore only valid for this date and may change over time in response to economic, market, legal or political factors, in addition to changes in the Coal Resources and their classification as a result of further exploration.

The valuation of the mineral assets has been conducted on a 100% attributable basis. All monetary values included in this report are expressed in South African Rands (ZAR), unless otherwise denoted.

In the execution of the mandate, Venmyn Deloitte undertook a technical assessment of the contributing assets and also considered the strategic merits of each of the mineral assets. This work has been based upon technical information which has been supplied by Sekoko Coal and Firestone, and which independent review has been performed by Venmyn Deloitte, where possible. Sekoko Coal and Firestone have warranted in writing that they have openly provided all material information to Venmyn Deloitte which, to the best of their knowledge, understanding, and belief is complete, accurate and true, having made all reasonable enquiries and has not omitted anything likely to affect its import.

Venmyn Deloitte has prepared this Specialist Valuation Report in accordance with and to the extent required by the Code for Technical Assessment and Valuation of Mineral and Petroleum Assets and Securities for Independent Expert Reports, as amended (the Valmin Code, 2005).

Venmyn Deloitte consents to the inclusion of this Specialist Valuation Report in Deloitte's Independent Experts Report in relation to a proposed acquisition of Firestone shares, and to reference any part of this report, provided that no portion is used out of context or in such a manner as to convey a meaning which differs from that set out in the whole report.

Venmyn Deloitte reserves the right to, but will not be obliged to, revise this report or sections therein, and conclusions thereto, if additional information becomes known to Venmyn Deloitte subsequent to the date of this report.

This Specialist Valuation Report provides a detailed description of each asset, which includes reference to its tenure, status of development, recent exploration and production, resources and reserves, method of valuation, valuation assumptions and valuation results. Venmyn Deloitte has also included a review of the Global and South African coal industry (in Sections 12 and 13).

### 3. Statement of Independence

Neither Venmyn Deloitte nor its staff have, or have had, any interest in the contributing properties capable of affecting their ability to give an unbiased opinion and, have not received, and will not receive, any pecuniary or other benefits in connection with this assignment, other than normal consulting fees. Neither Venmyn Deloitte nor any of its personnel involved in the preparation of this Specialist Valuation Report have any material interest in either Sekoko Coal or Firestone.

Venmyn Deloitte has carried out the valuation in accordance with the relevant provisions of ASIC Regulatory Guides (RG), in particular RG111.99 and RG112 (Section E) and Venmyn Deloitte is independent under ASIC RG 112.

Venmyn Deloitte was remunerated a fixed fee amount for the preparation of this report, with no part of the fee contingent on the conclusions reached, or the content. Except for these fees, Venmyn Deloitte has not received and will not receive any pecuniary or other benefit whether direct or indirect for or in connection with the preparation of this report.

Venmyn Deloitte have conducted other valuations for Firestone in the past two years, the most recent previous public valuation being in May 2012, which was used by BDO Corporate Finance (WA) (Pty) Ltd in the preparation of an Independent Experts Report at that time. In January 2013, Venmyn Deloitte conducted a valuation for Firestone, which was not made public. This report represents an update of the January 2013 report.

## 4. Competent Persons Declaration

Venmyn Deloitte's professional advisors and directors are Independent Experts as defined by the JORC Code, 2012. They are also members of the Australasian Institute of Mining and Metallurgy (AusIMM) which embodies the JORC Code and the Valmin Code. The Competent Person involved in the preparation of this report is a member in good standing with his professional institutions, and has the required qualifications and experience as defined in the JORC and Valmin Codes to conduct this valuation.

Venmyn Deloitte is an independent advisory company. Its consultants have extensive experience in preparing competent persons', technical advisers' and valuation reports for mining and exploration companies. The authors to this report are qualified to express their professional opinions on the values of the mineral assets described. To this end, Competent Persons' Certificates are presented in Section 15.

## 5. Site Visits

The Valmin Code requires that site visits be conducted to each asset being valued. A site visit to the contributing properties was conducted by the authors of this report in July 2010 in preparation of a resource assessment and MAV at that time.

Since no material exploration or in-field developmental work has occurred on the contributing properties since this site visit, it was not considered necessary, by Venmyn Deloitte, to visit the site again for the purposes of the MAV reported herein. In addition, Venmyn Deloitte is fully familiar with the geological and operating environment in which the contributing properties occur, having conducted numerous techno-economic evaluations of other projects within the Waterberg Coalfield.

## 6. Sources of Information

Venmyn Deloitte has based its assessment of the contributing properties, reported herein, on information provided by Sekoko Coal and Firestone, along with technical reports by its contractors and associates and other relevant published data. Drafts of this report have been provided to Sekoko Coal and Firestone in order to identify and address any factual errors or omissions prior to finalisation.

The report has been prepared based on exploration information available up to and including the 21<sup>st</sup> January 2013.

In broad terms we have relied upon, but were not restricted to, the following principal sources of information: -

- current corporate structure and ownerships;
- exploration expenditure data as at 31<sup>st</sup> December 2012;
- the Firestone website as at 21<sup>st</sup> January 2013;
- the Firestone Quarterly Report of 30<sup>th</sup> September 2012;
- the Mineral Resources Statement, prepared by Venmyn (now Venmyn Deloitte), as at August 2010;
- the Mineral Asset Valuation Report, prepared by Venmyn (now Venmyn Deloitte) in May 2012;
- publicly available information relating to the coal exploration and mining sector, as detailed in Section 15;
- the current Venmyn Deloitte coal transaction and valuation databases;
- the memorandum of understanding with Eskom for a 30 year coal supply agreement; and
- publicly available information relating to Sekoko Coal and Firestone that we deemed to be relevant, including:-
  - share price movements;
  - company announcements; and
  - media articles.



## 7. THE WATERBERG COAL PROJECT

### 7.1. Location

The contributing properties are situated less than 5km west of Exxaro's Grootegeluk Mine boundary, 240km northwest of Pretoria (South Africa's capital) and 70km south of the border with Botswana (Figure 2).

### 7.2. Accessibility

The properties are well placed with regards to the local infrastructure, located approximately 20km from the railway line that runs from Lephalale to Pretoria, and extends to Maputu, Richards Bay and Saldana Bay (Figure 2). The railway line terminates immediately north of the Grootegeluk Mine (Figure 2).

The road network in the area is well established, with the tarred D1675 within 10km from the contributing properties.

### 7.3. Climate and Vegetation

The climate of the area is warm, which ensures that exploration and mining can take place throughout the year. Summers are hot (averaging highs of 35°C) with occasional thunder storm activity. The winters are mild (averaging highs of approximately 20°C) and generally dry.

The Waterberg is generally dry, with an annual average rainfall of 450mm, and prone to drought.

The vegetation of the area consists of sparse Bushveld, with the main land use being for game farming. The Waterberg Coal Project properties are all currently being utilised as game farms.

### 7.4. Local Resources

The nearest town is that of Lephalale (Figure 2), which is located approximately 40km east of the contributing properties. The town is a regional centre and provides modern conveniences, including accommodation and services. The town is also a source of fuel and labour. The town services Eskom's Matimba Power Station as well as Exxaro's Grootegeluk Coal Mine among other industries.

Lephalale is approximately 3.5 hours drive from Pretoria (South Africa's capital) and Johannesburg (South Africa's economic hub) on good tarred roads and is also connected by a well established rail system.

### 7.5. Infrastructure

National infrastructure, including Transnet's Railway line (which terminates at the Grootegeluk Mine) and Eskom's power distribution network lie within 20km southwest of the contributing properties (Figure 2).

Eskom's existing 3,900MW Matimba Power Station is located adjacent to the Grootegeluk Mine, approximately 15km west of the contributing properties. Eskom's planned 4,800MW Medupi Power Station is located approximately 10km south of the Waterberg Coal Project properties, and is expected to be commissioned during 2014. Eskom plans to build at least one additional power station in the Waterberg. This together with Medupi will require an additional 30mtpa of coal.

In 2012, the South African government made a number of pronouncements on infrastructure (particularly water and rail) improvements in the Waterberg Coalfield region of South Africa.

The rail division of Transnet has undertaken to spend ZAR7b on rail upgrades in the next five years to increase coal exports from Limpopo as well as to ensure that coal from the region can reach South Africa's existing power stations in Mpumalanga, before their traditional feeder mines in Mpumalanga are depleted. Phase one includes an upgrade of the existing route from the Waterberg to Ermelo via Rustenburg and Pyramid South and includes the construction of passing loops and the increase in the axle loads capacity (Smith, 2012). Phase two of the investment programme is not on the capital expenditure schedule for the next seven years.

This involves the expenditure of ZAR31bn on a 450km line from south of Thabazimbi to Broodsniersplaas, north of Ermelo, as well as the upgrading of the existing line between Thabazimbi and the Waterberg (Smith, 2012)

## 7.6. Topography

The topography of the contributing properties is generally a flat plain, with small undulations over the project area. The elevation varies between ~860m above mean sea level (amsl) to ~900mamsl. The topography dips gently to the north and west towards the Limpopo River valley.

The Limpopo River, which forms the border between South Africa and Botswana in this area, is a perennial river, and is located approximately 15km from the contributing properties.

## 7.7. Legal Tenure

### 7.7.1. Mineral Rights Summary

The contributing properties are tabulated in Table 2 and illustrated in Figure 2, respectively:-

**Table 2 : Legal Tenure Summary for the Contributing Properties.**

AGREEMENT	FARM NAME	SURFACE AREA (ha)	MINERAL RIGHTS HOLDER	STATUS OF MINERAL RIGHT	EXPIRY DATE
T1	Vetleegte 304LQ	1,134	Uzalile Property Services (Pty) Ltd (60%) and Sekoko Resources (Pty) Ltd (40%) JV	Granted New Order Prospecting Right No. 651/2006, on 19/10/06	12/11/2011*
	Olieboomsfontein 220LQ	1,092	Sekoko Coal (Pty) Ltd	Granted New Order Prospecting Right No. 681/2007, on 13/10/05	12/10/2010*
<b>SUB TOTAL</b>		<b>2,225.9</b>			
T2	Minnasvlakte 258 LQ	1,023	Sekoko Coal (Pty) Ltd	Granted New Order Mining Right No. 22/2011, on 17/09/11	16/09/2041
	Smitspan 306 LQ	1,166			
	Massenberg 305 LQ	1,217			
	Hooikraal 315 LQ RE	955			
<b>SUB TOTAL</b>		<b>4,360.6</b>			
T3	Duikerfontein 263LQ	501	Sekoko Coal (Pty) Ltd	Granted New Order Prospecting Right No. 681/2007, on 13/10/05	12/10/2010*
	Swanepoelpan 262LQ	911			
<b>SUB TOTAL</b>		<b>1,411.9</b>			
<b>TOTAL</b>		<b>7,998.4</b>			

\* Sekoko Coal has applied for an extension to the prospecting rights.

Table 2 shows that Sekoko Coal has been granted a New Order Mining Right over Minnasvlakte 258LQ, Smitspan 306LQ, Massenberg 305LQ and Hooikraal 315LQ.

Over Vetleegte 304LQ, Sekoko Coal has applied for a renewal of their expired New Order Prospecting Right. Sekoko Coal have informed Venmyn Deloitte that the DMR have acknowledged receipt of the renewal documents but still need to issue the formal renewal. The DMR had an inspection at Vetleegte in early November 2012, and advised that the PR renewal would be issued upon compliance with their instructions. Venmyn Deloitte has been advised that Sekoko Coal have complied with the instructions and are now awaiting the renewal to be issued.

For Olieboomsfontein 220LQ, Duikerfontein 263LQ and Swanepoelpan 262LQ, while Sekoko Coal applied for a renewal over these properties (under DMR reference number: LP 30/5/1/1/2/137PR), the DMR incorrectly granted a renewal over the farms Minnasvlakte 258LQ, Smitspan 306LQ, Massenberg 305LQ and Hooikraal 315LQ, for which they already have a separate Mining Right. Sekoko Coal's legal department have informed the DMR of the error, however to-date the DMR have not responded nor rectified the error. Sekoko Coal have subsequently decided to amend the existing Mining Right to incorporate Olieboomsfontein 220LQ, Duikerfontein 263LQ and Swanepoelpan 262LQ, so as to have one mining right that contains all 7 farms.

Sekoko Coal are of the opinion that their tenure over the contributing properties is secure, based on, *inter alia*:-

- their view that Section 18(5) of the MPRDA applies in that, where a renewal application has been submitted, despite its expiry date, the licence shall remain in force until the renewal application has been granted or denied;
- Sekoko Coal applied for the renewal of Swanepoelpan, Duikerfontein, Olieboomsfontein and Vetleegte with the DMR within the prescribed time frame;
- at this point in time, their application has not been renewed nor rejected, accordingly, and as per the MPRDA they consider that their Prospecting Right over the farms is still valid and in full force; and
- to further strengthen their tenure on Swanepoelpan, Duikerfontein and Olieboomsfontein:-
  - Sekoko Coal have also applied for a Section 102 to amend the Mining Right to include the aforementioned farms; and
  - Sekoko Coal is also in the process of drafting a new Prospecting Right Application for the farms Swanepoelpan, Duikerfontein, Olieboomsfontein as a pre-emptive action.

In view of the above, and based on various legal opinions offered to Sekoko Coal with regard to the aforementioned farms, Sekoko Coal have informed Venmyn Deloitte that they are confident that their tenure over the farms is secure, and have done, and are currently in the process of securing full and final ownership of same.

Venmyn Deloitte are not qualified to provide extensive commentary on legal issues associated with Sekoko Coal or Firestone's right to the mineral properties. Sekoko Coal, Firestone and its attorneys have provided certain information, reports and data to Venmyn Deloitte in preparing this Specialist Valuation Report which, to the best of their knowledge and understanding is complete, accurate and true and Sekoko Coal and Firestone acknowledge that Venmyn Deloitte has relied on such information, reports and data in preparing this Specialist Valuation Report. No warranty or guarantee, be it express or implied, is made by the authors with respect to the completeness or accuracy of the legal aspects of this document.

For the purposes of this valuation, Venmyn Deloitte have assumed that Sekoko Coal (and the JV) have secure tenure over all contributing properties. However, the unresolved issues detailed above are a significant project risk and may have a significant effect on the value of the assets should Sekoko Coal not retain the mineral rights to the T1 and T3 properties, for whatever reason.

### **7.7.2. Effective Ownership of the Waterberg Coal Project**

Sekoko Coal, a wholly-owned subsidiary of Sekoko Resources (Pty) Limited (Sekoko Resources), has entered into three separate JV and 'Farm-In' agreements (Table 1) with Firestone, through various wholly owned South African subsidiary companies. Firestone's participation interest increases as various milestones are reached. At the effective date of this Specialist Valuation Report, the effective participation interests of Sekoko Coal in the Waterberg Coal Projects are graphically presented in Figure 3.

## **7.8. GEOLOGICAL SETTING**

### **7.8.1. Regional Geological Setting**

The Waterberg Coalfield reportedly accounts for over 45% of South Africa's unmined coal inventory. It is considered a strategic coalfield in light of South Africa's (and southern Africa's) current energy crisis, with Eskom as well as mining and exploration companies presently investing heavily in this coalfield.

The Waterberg Coalfield is rapidly becoming as important as the better known Witbank, Highveld and Ermelo Coalfields which currently supply the vast majority of Eskom's coal power stations. Its importance is set to surpass these other coalfields within the next 20 to 30 years as many of the more established coalfields become progressively more depleted, and as Eskom begins to increase its footprint in the Waterberg, away from the concentration of power stations in Mpumalanga in a bid to redistribute their impact on the environment and to satisfy the developmental needs of the Limpopo Province.





The Waterberg Coalfield is currently host to (Figure 2):-

- Exxaro Resources Limited's (Exxaro) 19mtpa Grootegeluk Coal Mine;
- Eskom's 3,700MW Matimba Power Station; and
- Eskom's planned Medupi Power Station which is currently under construction.

The Waterberg Coalfield is currently being explored and developed by a number of exploration and mining companies (Figure 2):-, including *inter alia*:-

- Sekoko Coal, Firestone Energy, Resource Generation and Namane Resources for steam coal and coking coal;
- Sasol and PetroSA for various coal-to-liquids and gas-to-liquids projects; and
- Anglo Coal and Iscor Ltd (Iscor) with Batepro Limited for coal bed methane gas.

The Waterberg Coalfield extends for approximately 85km in a westerly direction from Lephalale and has a 40km north-south extent. The coalfield extends westward into Botswana where it is known as the Mmamabula Coalfield.

The coalfield is fault-bounded along the southern and northern margins by the Eenzaamheid and Zoetfontein faults respectively (Figure 4), creating a 'horst' structure. The Daarby fault, with a displacement of between 250m and 400m, divides the coalfield into a shallow opencastable western area and a deep northeastern area, where coal occurs at a depth of between 200m and 400m below surface and may only be extracted by underground mining.

The major coal bearing horizons of the Ecca Group of the Karoo Supergroup, in the Waterberg are:-

- the Volksrust Formation, which consists of 55m of intercalated mudstones and coal, and
- the Vryheid Formation, which incorporates four major discrete seams of approximately 1.5m, 3m, 9m and 4m, respectively.

Coal measures occur over a stratigraphic interval between 90m – 110m thick, characterised by 11 discrete coal zones, with the upper zones (Zone 6 – Zone 11) holding the highest commercial value (including semi-soft coking coals).

The Waterberg Coalfield does not exhibit a noticeable increase in rank (carbon/energy content) with increasing depth. The air dried volatile content of the coal remains at 35% – 36% from the sub-outcrop to a depth of 400m.

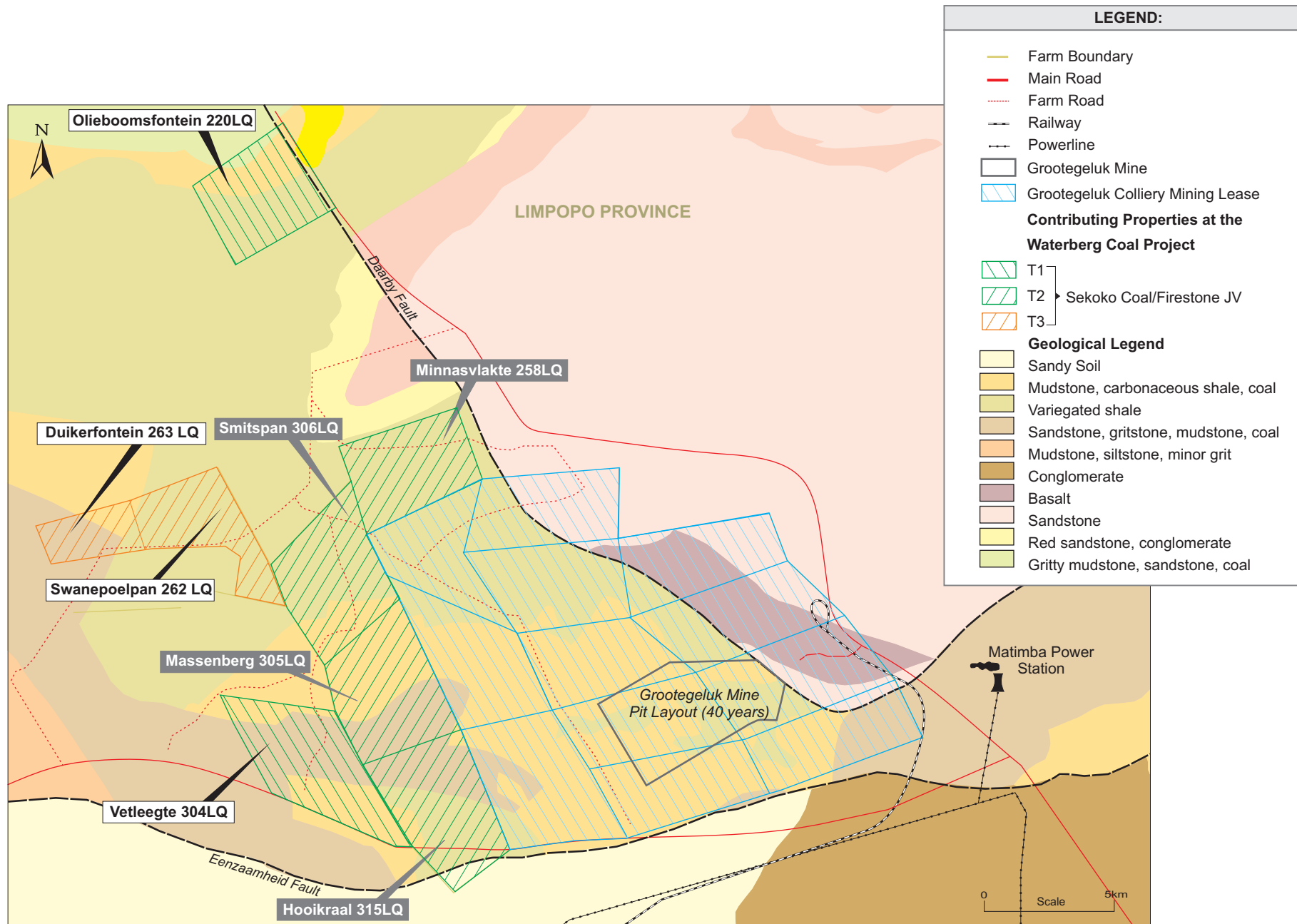
Only a few dolerite dykes outcrop in the southeastern portion of the Waterberg Coalfield and no sill features have, to-date, been encountered in any exploration borehole.

#### **7.8.1.1. The Volksrust Formation**

The Volksrust Formation differs from that of the main Karoo Basin by being dominantly carbonaceous where it is represented by intercalated carbonaceous shale and mudstone, and bright coal. The Volksrust Formation consists of cyclical repetitions of mudstone and coal with an average thickness of approximately 60m, and comprise the upper seven zones (identified as Zones 5 to 11) that can be correlated across the coalfield.

The Volksrust Formation coals are classified as a thick interbedded seam type deposits in terms of the SANS 10320:2004 guidelines.

There is a decreasing ratio of bright to dull coal from the top to the bottom of the succession, with the proportion of semi-soft coking coal greatest in Zones 6 to 11. The best quality coals are within Zones 8 to 11 over the majority of the coalfield. These zones are characterised by the highest yields and the presence of both bright and vitrinite coals.



The vitrinite content of the coal towards the top of the Volksrust Formation leads to the upper zones having a semi-soft coking coal yield as well as thermal coal. The remainder of the Volksrust Formation yields low grade thermal coal for power station consumption.

Each zone is typically characterised with bright coal at its base, with the ratio of coal to shale decreasing from the base in an upward direction. It follows therefore that the ash content of the zones increases upwards from approximately 20% to 45%.

The coal succession requires beneficiation or up-grading, to produce an acceptable coal quality for the market, which varies from semi-soft coking coals to internationally traded and local power station coals.

#### **7.8.1.2. The Vryheid Formation**

The Vryheid Formation coal seams are composed of predominantly dull coal with minor carbonaceous mudstone intercalations, mined as thermal coals. The coal seams are identified as Zones 1 to 4 from the base of the Formation. These coals occur over a stratigraphic interval of approximately 40m. The coal seams vary in thickness between 1.5m and 9m.

The Vryheid Formation coals are classified a multiple seam deposit type according to the SANS 10320:2004 guidelines. These are not unlike the coalfields in Mpumalanga.

While the majority of the coal seams or zones consist mainly of dull coal or inertinite-rich coal, some bright coal is developed at the base of zones 2, 3 and 4.

This coal is suitable for steam-raising, gasification or as a direct-injection coal in the metallurgical industry. It requires limited or no beneficiation to up-grade the coal quality parameters.

Due to lateral facies changes and changes in the depositional environment, these zones are characterized by a large variation in thickness and quality.

Zone 3 is the best-developed dull coal zone and reaches a maximum thickness of 9m. The basal portion yields a small fraction with semi-soft coking coal properties. Zone 2 is on average 4m thick and reaches a maximum thickness of 6m in the Grootegeeluk lease area. The basal portion also yields a fraction with semi-soft coking coal properties. Zone 1, the basal Vryheid coal zone, has an average thickness of 1.5m.

#### **7.8.1.3. Grootegeeluk Colliery**

Exxaro's Grootegeeluk Colliery is the only presently operating mine in the Waterberg Coalfield. This opencast mine commenced production in 1980 primarily as a source of coking coal for Iscor's steel works with a middlings fraction from the beneficiation process suited to power station consumption.

Saleable products currently include semi-soft coking coal, metallurgical coal and thermal coal, with the latter predominating as a dedicated supply to the Matimba Power Station. Metallurgical coal is primarily supplied to ArcelorMittal Steel, with semi-soft coking coal exported via the Durban and Richards Bay ports. Grootegeeluk currently has a 14Mtpa supply agreement with Eskom's neighbouring Matimba Power Station.

The coal strata extracted at Grootegeeluk is roughly 110m thick (Figure 5). The upper 60m consists of intercalated bright coal and carbonaceous shale of the Volksrust Formation, whilst the bottom 50m consists of well-defined dull coal seams separated by shale and sandstone interburden of the Volksrust Formation.

The deposit is mined selectively using a parallel bench advance approach, with benches extracted individually or in planned combination to satisfy specific end-product specifications. In addition, run-of-mine (ROM) from the various benches is blended to allow the washing plants, in turn, to supply a consistent product to the end-user.

Grootegeluk's export coal is railed via Thabazimbi to Rustenburg and on to the Gauteng area. From there it is railed on the general-freight lines to destinations such as Saldanha or Durban. Some export coal is railed via general freight to Middelburg and onto the coal link line to the Richards Bay Coal Terminal (RBCT).

Exxaro's Grootegeluk Coal Mine produces Eskom coal, soft coking coal and export steam coal.

### 7.8.2. Local Geology

The contributing properties are superimposed over the regional geology of the western half of the Limpopo Province (Figure 4). The Goedgedacht/Swartrand, Endragtpan and Greenwich Formations form part of the Karoo Sequence and consist of shales, sandstones, mudstones and coal occurrences. Both the Upper and Lower Coal Sequences are present within the Sekoko Coal-Firestone JV Waterberg Project area.

Structurally, the stratigraphy, especially in the area of the contributing properties appears to be significantly faulted, generally in an east-west orientation, and increasing in intensity to the south. There is a dominant east-west fault direction with fault throws varying from 10m in the north to as much as 130m in the south.

Understanding the structural-geological environment is, arguably, more important than understanding the distribution of the coal quality characteristics. The presence of the various coal zones is directly related to the faulting and subsequent erosion of the upper zones in the southern properties.

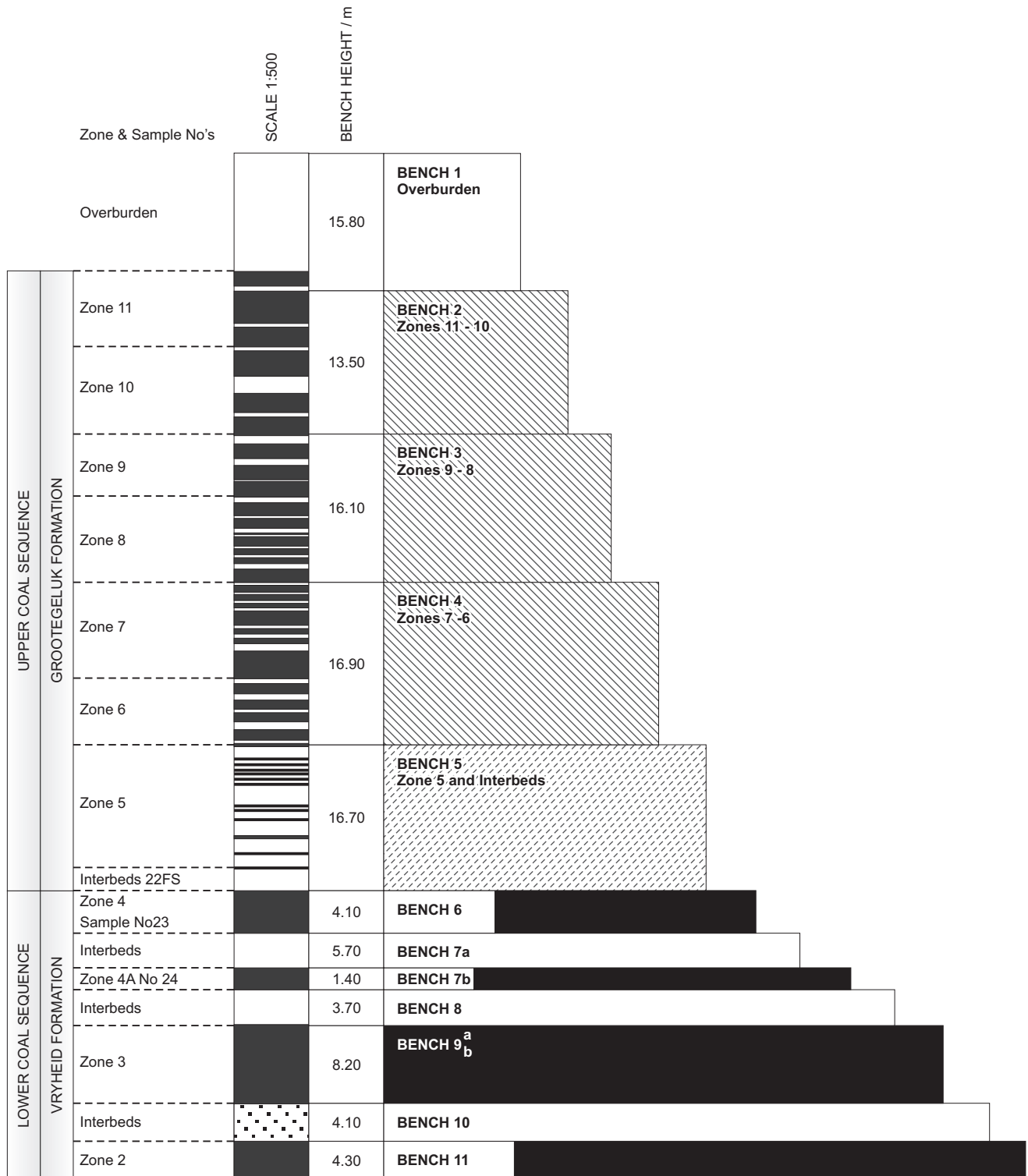
While the northern properties comprise all the coal zones (Zones 1 – 11), Massenberg 305LQ only has Zones 1 -9 in the north and Zones 1 – 4 in the south, and Hooikraal 315LQ only has Zones 1 – 4.

It is generally believed that the geological and structural environment, due to its relatively close proximity to Grootegeluk, should be similar to the geological and mining-geological conditions encountered at that mine. However, since Grootegeluk was established in the most favourable mining-geological environment, areas in close proximity to the mine may not necessarily experience such favourable conditions, due to the presence of fault structures.

## 8. Geological Modelling

In August 2010, Sound Mining Solutions (Pty) Ltd (SMS) undertook geological modelling under the direct guidance of Venmyn Rand (Pty) Limited (now Venmyn Deloitte).

Orebody modelling was carried out using recent boreholes to derive the 3D geological and structural model. Coal zone roofs and floors were constructed on an inverse distance method using Micromine Version 11.0.5 Build 1134. The zone surfaces were cut on fault boundaries, received from Lexshell and also based on interpretations from the data where there were sudden changes in zone elevations. Where holes were drilled short, the zones were extrapolated using surrounding holes and fitting within the interpreted fault blocks. A wireframe for each zone was created separately per farm. A wireframe for each zone was created and in-filled in Datamine to form a block model. The block size was set at a maximum of 100m x 100m x zone height. The volumes, densities (at a wash of RD=1.9t/m<sup>3</sup>) and quality data (at a wash of RD=1.9t/m<sup>3</sup>) was modelled over the properties. A cut-off of 0.5mm minimum thickness limit was applied.

**STRATIGRAPHY OF THE WATERBERG COAL ZONES AND GROOTEDELUK COLLIERY MINING BENCHES**


## 9. Reporting and Classification of Coal Resources

All Coal Resources were categorised, in August 2010, by Venmyn Rand (Pty) Limited (now Venmyn Deloitte), in accordance with both the SAMREC and JORC codes. Consistent with the Australian Guideline for Estimating and Reporting of Inventory Coal, Coal Resources and Coal Reserves, the resources were classified according to the distances between points of information. According to section 4.3 of this guideline, “...Coal Resources should be estimated and reported for individual seams or seam groupings within a deposit. They should also be subdivided and reported on the basis of key variables, such as thickness, depth range, strip ratio, coal quality parameters, geographic constraints and geological or technical considerations. The key variables and assumptions for each deposit should be clearly stated in order to ensure clarity and transparency of the report.” Neither the guidelines nor the JORC Code prescribes how this should be undertaken, merely that resources should be quoted as Measured, Indicated and Inferred and reserves should be quoted as Proved and Probable.

Taking this requirement into account, the resources have been reported in a stepwise process demonstrating the application of each of the technical parameters listed in section 4.3 of the guideline. The SAMREC Code which embodies the South African National Standard: South African guide to the systematic evaluation of coal resources and coal reserves (SANS10320:2004) outlines a standard method of reporting of coal resources and coal reserves through the application of the various technical parameters described above in the Australian Guideline. This standard is typically applied to South African coal deposits in order to demonstrate the effect of applying each of these parameters to the resources and reserves. Coal resource and reserves are reported in this way to fully demonstrate clarity and transparency and enable comparisons to be made between projects.

Venmyn Deloitte believes that this method provides the reader with a full understanding of the resources and reserves quoted.

The SANS 10320:2004 (SANS) method of classification (stipulated in the SAMREC Code) for thick interbedded coal deposits was preferred, as it requires closer drill hole spacing than the JORC Code stipulates, and is specifically applicable to these types of South African coal deposits. The SANS scheme utilises the distance between boreholes as the primary defining factor between the classification of Measured, Indicated and Inferred resources and Reconnaissance/Exploration Target occurrences, as per Table 3 below:-

**Table 3 : SANS Classification of Coal Resources**

CATEGORY	FOR THICK INTERBEDDED SEAM DEPOSIT (<65% Ash)		FOR MULTIPLE SEAM DEPOSIT (<50% Ash)	
	MAX DISTANCE BETWEEN B/H (m)	NO. B/H PER AREA	MAX DISTANCE BETWEEN B/H (m)	NO. B/H PER Ha
Measured Resource	350.00	8 b/h per 100ha	350.00	8 b/h per 100ha
Indicated Resource	1,000.00	1 b/h per 100ha	500.00	4 b/h per 100ha
Inferred Resource	3,000.00	1 b/h per 1,000ha	1,000.00	1 b/h per 100ha
Reconnaissance/ Exploration Target	4,000.00	1 b/h per 1,600ha	2,000.00	1 b/h per 400ha

NB. Boreholes are required to have quality data.

In accordance with SANS, the coal resources have been reported according to the following definitions:-

- each coal zone was ‘washed’ at an RD=1.9 to ‘remove’ the rock fraction from the coal fraction and to calculate the volume of coal in the interlaminated sequence;
- the zone tonnage was multiplied by the percent yield (by mass) to derive the coal tonnage. Note that the coal tonnage has a lower RD than the zone tonnage.
- this coal tonnage was then reduced by the geological losses to obtain Total Tonnes In-Situ (TTIS);
- geological losses were selected based on the density of the drilling and the structures in the area; and
- the classification was based strictly on the radii from boreholes according to the SANS specifications.



Table 4 summarises the Coal Resources of the contributing properties, defined by Venmyn (now Venmyn Deloitte) in 2010. The resources are presented in the following standard manner:-

- Gross Tonnes In Situ (GTIS), application of mineral tenure boundaries, an RD of 1.9, and a 0.5m seam thickness cut-off. This is the simplest form of resource declaration; and
- Total Tonnes In Situ (TTIS), application of geological losses to GTIS.

**Table 4 : Coal Resources of the Contributing Properties (Venmyn, August 2010)**

FARM NAME & NO.	RESOURCE / OCCURENCE CATEGORY	ZONE	COAL GROSS TONNES IN SITU	COAL TOTAL TONNES IN SITU	AIR DRIED QUALITIES AT RD = 1.9				
					CV (MJkg)	ASH (%)	VOL. (%)	SULPH. (%)	MOIST. (%)
Minnasvlakte 258 LQ	Indicated	All	26,507,000	21,201,000	21.59	29.51	27.24	0.94	2.61
	Inferred	All	230,687,000	173,012,000	21.56	29.58	27.51	0.94	2.54
<b>TOTAL / AVE MINNASVLAKTE</b>			<b>257,194,000</b>	<b>194,213,000</b>	<b>21.56</b>	<b>29.57</b>	<b>27.48</b>	<b>0.94</b>	<b>2.55</b>
Smitspan 306 LQ	Measured	All	238,667,800	214,800,600	20.74	31.14	25.69	0.89	2.84
	Indicated	All	475,844,000	380,671,000	21.49	29.52	26.50	0.98	2.78
<b>TOTAL / AVE SMITSPAN</b>			<b>714,511,800</b>	<b>595,471,600</b>	<b>21.22</b>	<b>30.10</b>	<b>26.21</b>	<b>0.95</b>	<b>2.80</b>
Massenberg 305 LQ	Indicated	All	20,797,000	16,635,000	19.60	33.70	22.12	0.71	2.77
	Inferred	All	109,539,000	82,148,000	21.04	29.79	22.09	0.69	2.96
<b>TOTAL / AVE MASSENBERG</b>			<b>130,336,000</b>	<b>98,783,000</b>	<b>20.80</b>	<b>30.45</b>	<b>22.10</b>	<b>0.69</b>	<b>2.93</b>
Hooikraal 315 LQ	Indicated	All	7,282,000	4,366,000	22.56	25.89	26.64	1.00	3.11
	Inferred	All	155,491,000	77,742,000	22.38	26.63	25.19	0.83	2.78
<b>TOTAL / AVE HOOIKRAAL</b>			<b>162,773,000</b>	<b>82,108,000</b>	<b>22.39</b>	<b>26.59</b>	<b>25.27</b>	<b>0.84</b>	<b>2.80</b>
Vetleegte 315 LQ	Measured	All	1,224,000	1,040,300	25.99	16.60	24.27	0.98	3.20
	Indicated	All	204,499,000	143,146,000	21.37	28.22	24.71	0.75	3.53
	Inferred	All	17,893,000	11,090,000	22.61	24.81	23.89	0.66	3.67
<b>TOTAL / AVE VETLEEGTE</b>			<b>223,616,000</b>	<b>155,276,300</b>	<b>21.49</b>	<b>27.90</b>	<b>24.65</b>	<b>0.75</b>	<b>3.54</b>
Swanepoelpan 262 LQ	Indicated	All	1,072,000	853,000	21.49	29.83	25.12	0.82	3.34
	Inferred	All	378,227,000	283,666,000	21.60	28.52	26.65	1.14	3.35
<b>TOTAL / AVE SWANEPOELPAN</b>			<b>379,299,000</b>	<b>284,519,000</b>	<b>21.60</b>	<b>28.52</b>	<b>26.65</b>	<b>1.14</b>	<b>3.35</b>
Duikerfontein 263 LQ	Inferred	All	13,949,000	10,457,000	21.98	27.17	25.44	0.78	4.20
<b>TOTAL / AVE DUIKERFONTEIN</b>			<b>13,949,000</b>	<b>10,457,000</b>	<b>21.98</b>	<b>27.17</b>	<b>25.44</b>	<b>0.78</b>	<b>4.20</b>
<b>TOTAL / AVE RESOURCE FOR WATERBERG PROJECT</b>			<b>1,881,678,800</b>	<b>1,420,827,900</b>	<b>21.42</b>	<b>29.27</b>	<b>25.96</b>	<b>0.94</b>	<b>2.98</b>

Venmyn Deloitte understand that no additional resource drilling has been conducted over the resource area since the August 2010 resource estimate, and since no mining has taken place, Venmyn Deloitte consider Table 4 represents the Coal Resources as at the effective date of this report. On this basis ~1.4 billion TTIS of coal has been classified into the Measured, Indicated and Inferred categories for the contributing properties.

Venmyn Deloitte note that in September 2010, Parsons Brinkerhoff (PB) conducted a Definitive Feasibility Study for Sekoko Coal. As part of their report, PB reported certain Coal Resource estimates over the T2 properties and Vetleegte 315LQ, based on their own geological modelling. While full details of the calculation of the Coal Resources over Smitspan 306LQ were provided, there is no detailed Coal Resource reporting for any of the other T2 farms or Vetleegte 315LQ. Furthermore, the PB reports do not consider the Coal Resources of the T3 properties or Olieboomsfontein 220LQ.

The Venmyn Deloitte estimates can be considered fully JORC compliant. In addition, the Venmyn Deloitte estimates detail the Coal Resources over all the contributing properties, while the PB estimates only considered certain selected properties for the purposes of their Definitive Feasibility Study.

For the purposes of this valuation, only the Venmyn Deloitte Coal Resource estimates have been considered. Venmyn Deloitte have a high degree of confidence in the quality and reasonableness of these estimates, and they have been reported in compliance with the JORC Code.



## 10. Mineral Asset Valuation

Most of the international mineral asset valuation codes set out clear approaches and methodologies for the valuation of mineral assets, except for the VALMIN Code, with confidence in the Mineral Resource and/or Ore Reserves estimates being the primary value lever. In the Australian context, the JORC Code governs Mineral Resource and Ore Reserve classifications on the back of demonstrated confidence in the estimates achieved through the exploration process. With regard to valuation methodology, the VALMIN Code 2005 states “*The Expert and Specialist must make use of valuation methods suitable for the Mineral or Petroleum Assets or Securities under consideration. Selection of an appropriate valuation method will depend on such factors as:-*

- (a) the nature of the Valuation;*
- (b) the development status of the Mineral Assets; and*
- (c) the extent and reliability of available information.”*

The VALMIN Code further defines the various categories of Mineral Assets as follows:-

- **Exploration Areas** – properties where mineralisation may or may not have been identified, but where a Mineral or Petroleum Resource has not been identified;
- **Advanced Exploration Areas** – properties where considerable exploration has been undertaken and specific targets have been identified that warrant further detailed evaluation, usually by drill testing, trenching or some other form of detailed geological sampling. A resource estimate may or may not have been made but sufficient work will have been undertaken on at least one prospect to provide both a good understanding of the type of mineralisation present and encouragement that further work will elevate one or more of the prospects to the resource category;
- **Pre-Development Projects** – properties where Mineral or Petroleum Resources have been identified and their extent estimated (possibly incompletely) but where a decision to proceed with development has not been made. Properties at the early assessment stage, properties for which a decision has been made not to proceed with development, properties on care and maintenance and properties held on retention titles are included in this category if Mineral or Petroleum Resources have been identified, even if no further valuation, technical assessment, delineation or advanced exploration is being undertaken.
- **Development Projects** – properties for which a decision has been made to proceed with construction and/or production, but which are not yet commissioned or are not yet operating at design levels; and
- **Operating Mines** – mineral properties, particularly mines and processing plants that have been commissioned and are in production.

The VALMIN Code is not prescriptive as to valuation methodology; however, the Code provides that the decisions as to the valuation methodology or methodologies to be used are solely the responsibility of the Expert and must not be influenced by the commissioning entity. Venmyn Deloitte has opted to use provisions in the other internationally accepted mineral asset valuation codes for guidance from the CIMVAL Code from Canada and the SAMVAL Code from South Africa. Table 5 summarises the valuation approaches and the underlying methodologies as stipulated in the CIMVAL Code and the SAMVAL Code:-

**Table 5 : Valuation Approach and Methodologies**

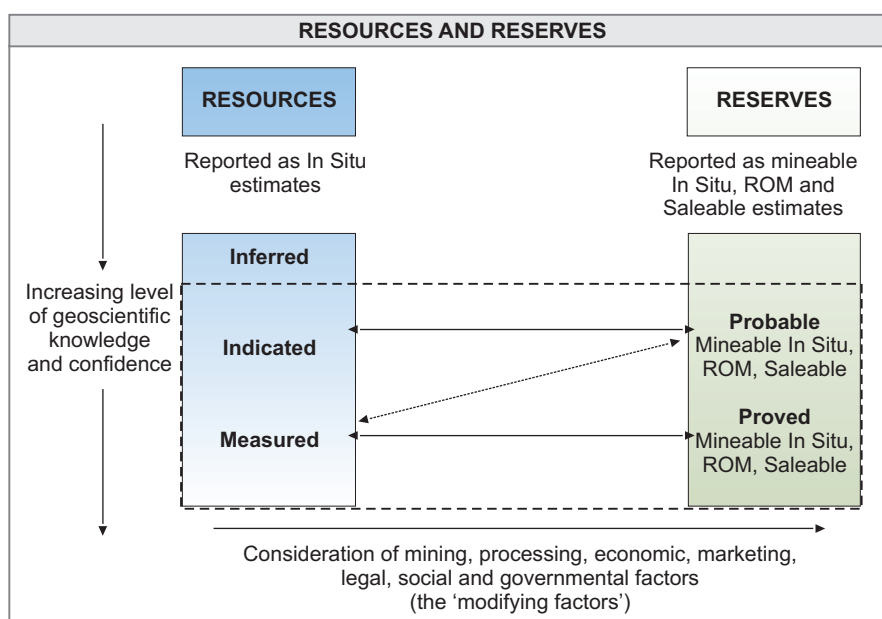
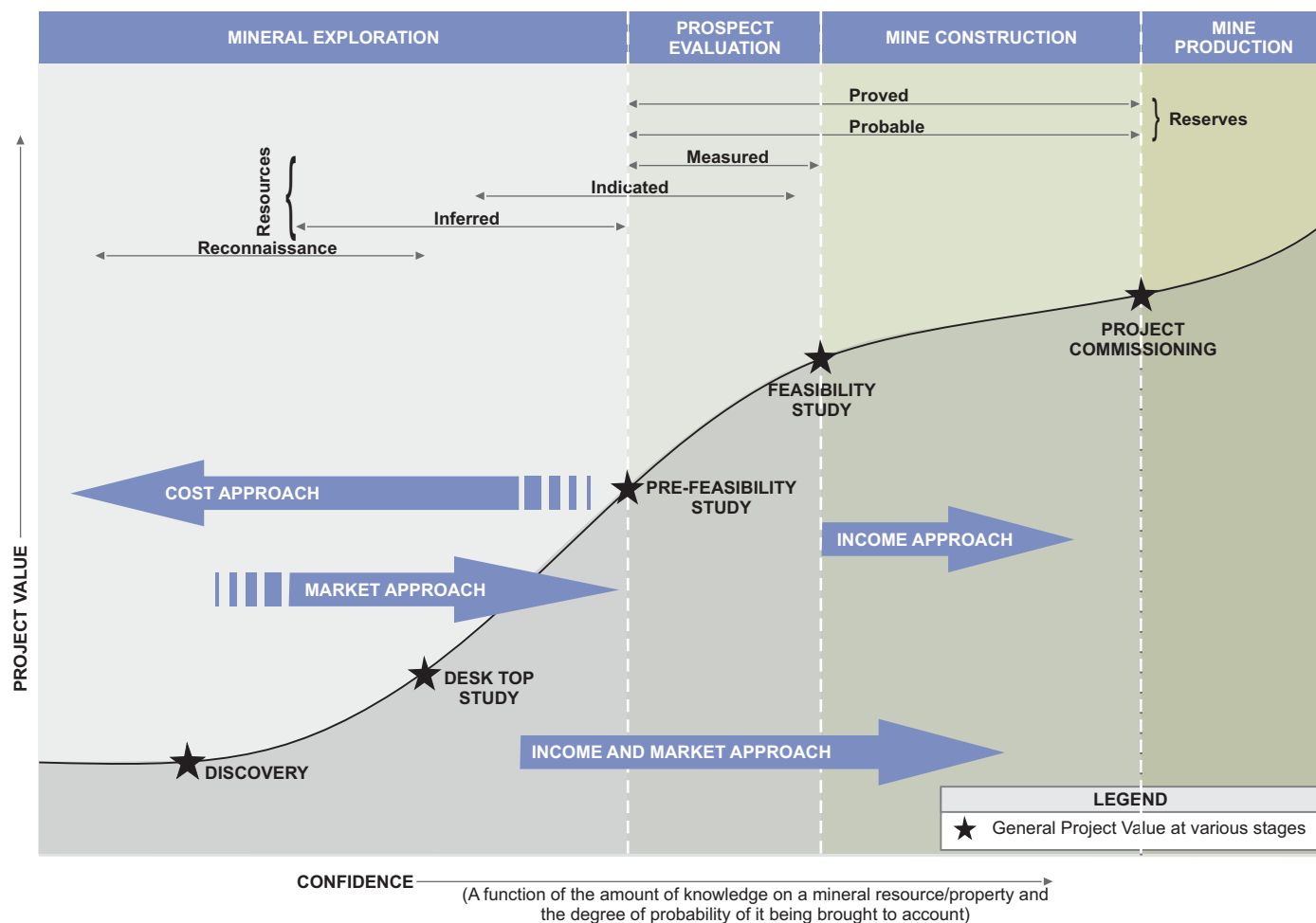
VALUATION APPROACH	VALUATION METHODOLOGY	EXPLORATION AREAS	DEVELOPMENT PROPERTIES	MINING PROPERTIES	DORMANT PROPERTIES ECONOMICALLY VIABLE	UNVIABLE	DEFUNCT PROPERTIES
Cash Flow	Various DCF methods	N/A	P1	P1	P1	NA	NA
Sales Comparative	Comparable transactions	P1	P3	P2	P2	P1	P1
Cost	Asset Recognition and Impairment Test	P2	NA	NA	NA	P3	P2

P1 = Most acceptable method and widely used

P2 = Acceptable approach and quite widely used

P3 = Less acceptable approach, less widely used and poorly understood.

## PROJECT LIFETIME VALUE AND VALUATION METHODOLOGY CURVE FOR MINERAL RESOURCE PROJECTS



Any decision to apply a valuation technique depends on:-

- the nature of the valuation;
- the development status of the mineral assets;
- the stage at which the project has been developed;
- the geological confidence;
- the extent and reliability of available information; and
- the potential of the mineral asset to satisfy the requirement for reasonable prospects for eventual economic extraction.

Changes in value of a mineral asset are associated with increasing confidence through increased knowledge, as well as the greater degree of probability of it being brought to account. As the confidence in mineral resource estimates is increased, i.e. from Inferred Mineral Resources to Indicated Mineral Resources and Measured Mineral Resource, so is the veracity of the valuation. An appropriate valuation recognises these possibilities.

The contributing properties are at different stages of development ranging from early to advanced stage exploration projects. Different valuation approaches and methodologies have consequently been used in the valuation of these individual mineral assets on a case by case basis.

At the exploration phase, coal projects are valued dependent upon prospects for eventual economic extraction. A seller's view may not necessarily match that of a potential buyer's, and the transaction price is usually a compromise.

The valuations presented in this document, aim to identify the mineral asset values on an asset-by-asset basis as a means of identifying the value contribution of each individual asset to the total asset value of the company as at the effective date of this report. Each asset has been valued according to the development stage in which it fits within the different phases in the mining and development cycle. Figure 6 graphically illustrates the different approaches and methodologies that are applicable to different mineral assets at each stage in the mine development cycle.

Venmyn Deloitte has valued the contributing properties in compliance with the VALMIN Code, 2005. Consistent with the VALMIN Code, in this report Fair Value is considered to be comprised of the 'Intrinsic' or 'Technical' value and a premium or discount relating to market, strategic or other considerations.

## 10.1. Technical or Intrinsic Value of the Mineral Assets

There are three generally accepted approaches for establishing the Technical Value of mineral assets. These are the:-

- the Cost Approach or Multiples of Exploration Expenditure (MEE);
- the Market Approach or Comparable Transaction Value Method; and
- the Cash Flow (DCF) Approach.

Where insufficient confidence exists in the technical parameters of a mineral deposit, or mineral asset, to classify resources, valuation methods mainly rely on the principle of historical cost. This implies that a mineral asset's value is related to the money spent on its acquisition, plus a multiple of the exploration expenditure, depending upon the degree to which its prospectivity has been enhanced by exploration.

Once resources have been classified, then market comparisons are made on a monetary value per unit of mineralisation (ZAR/t).

Once technical studies establishing the basis for future economic exploitation have been carried out, discounted cash flow (DCF) methods are applicable and all the methods used to identify a reasonable transaction value. Given that a feasibility study is still in preparation, a DCF valuation has not been considered appropriate at this time.

The contributing coal assets can be defined as early to advanced stage exploration projects, with JORC code compliant Measured, Indicated and Inferred Coal Resources. Therefore, all the contributing properties were valued using both the historical cost method and comparative sales transaction valuation method.

It is important to note that this valuation has utilised the Venmyn August 2010 Coal Resource Statement (Table 4), as this is considered the current compliant resources estimate for the Waterberg Coal Project.

The effective date of the valuation is 21<sup>st</sup> January 2013.

#### **10.1.1. Cost Approach**

The Cost Approach or MEE Method is based upon the principle of past exploration expenditures where some expenditures will have added value, and others not. Through the introduction of a prospectivity enhancement multiplier (PEM), a premium (or discount) multiplier can be applied to the total cost of exploration to-date, depending on whether the exploration expense being considered has relatively enhanced the prospectivity of the target or not.

The subjectivity of the method is reduced by addressing specific expenditures with reference to the relevance of the type of mineralisation being considered and the effectiveness of the exploration. A measure of the effectiveness of a historical exploration programme is the confidence that can be ascribed to the resultant mineral resource estimate.

Exploration expenditure does not only include the costs of physical in-field exploration, but also the costs incurred to make it possible to carry out the exploration, for example, the costs of aerial or other surveys and transportation costs, etc. The value of the resulting asset is not measured by the value of new deposits discovered by the exploration but by the value of the resources allocated to exploration during the period.

The Waterberg Coal Project can be considered as an early to advanced stage exploration project with varying degrees of historic and recent exploration and analytical data available on the various properties. Firestone have provided Venmyn Deloitte with all available acquisition and exploration cost data for the contributing properties and, where historical exploration data was available, Venmyn Deloitte assessed its relevance and effectiveness and estimated the cost of replicating that data.

Venmyn Deloitte have considered the prospectivity of the respective coal properties according to the classification of exploration phases illustrated in Table 6.

This table represents Venmyn Deloitte's standard PEM schedule for coal deposits. The magnitude of the PEM is determined by the level of sophistication of the exploration for which positive exploration results, applying the concept of successful efforts, have been obtained. In Venmyn Deloitte's opinion, these PEM values reflect fair and reasonable multipliers based upon on the amount of work associated with and/or development status of any particular project.

In order to establish an appropriate PEM, each property was classified with respect to Table 6 knowing that each new exploration phase was carried out contingent upon the successful outcome of the preceding phase. In addition, the PEM selected, was reviewed taking into consideration proximity to well understood resource areas, drillhole density and a qualitative assessment of the prospects for eventual extraction.

To-date ~ZAR72.2m of expenditure can be allocated to the acquisition of the prospecting rights, prospecting and current economic studies over the contributing properties, according to information provided by Firestone to Venmyn Deloitte. These costs include geological modelling and resource definition, as well as other project related expenditures.

**Table 6 : Coal Prospect Exploration Phase Classification and the Corresponding PEM**

PHASE	EXPLORATION PHASE	PEM VALUE		EXPLORATION ACTIVITY
		UPPER	LOWER	
0	Exploration Concept	0	0	Project about which nothing is known, but which has potential on a conceptual basis.
1	Desktop Study	1	0	Historical and literature study, records or evidence of coal findings in the area. Historical mining data, if any.
2	Reconnaissance	1	1	Geological mapping if terrain is suitable. Palaeo topographical mapping. Historical drilling with intercept data, no laboratory assay.
3	Ground Follow-up	1	1	Detailed outcrop mapping, identification of coal hosting strata, coal seam outcrop mapping. Sampling of exposed coal seams where available. Historical drilling data with intercept and analyses, but of questionable authenticity.
4	Ground Follow-up	2	1	Ground geophysics, remote sensing techniques. Reliable historical drilling, but correlations difficult due to density of drilling.
5	First-phase Drilling	5	2	Large diameter core drilling, widely spaced grid with preliminary coal analysis. First-pass tonnage estimate. Inferred coal resource.
6	Resource Drilling and Laboratory Testwork	11	5	In-fill drilling, detailed coal analysis and washability test work. Established coal qualities, market potential, detailed resource tonnage estimation, washabilities. Advanced Inferred and Indicated Coal Resource classification.
7	Historic Mining	20	11	Previous commercial production, establishing reliable and well documented quality, tonnage, washability etc. Measured Coal Resource classification.
8	Reserve Classification	>20	20	Complete feasibility assessment, establish economics and design a mine of an appropriate nature. Classification of Coal Reserves.

Venmyn Deloitte have analysed and rated the contributing properties according to the results achieved from historical and recent exploration activities as well as the success these activities have had on the classification of coal resources over the various properties.

The expenditures have been multiplied by the following PEM's:-

- PEM's of 1.0 – 2.0 for Olieboomsfontein 220LQ;
- PEM's of 11.0 – 20.0 for Vetleegte 304LQ;
- PEM's of 11.0 – 20.0 for Smitspan 306LQ;
- PEM's of 5.0 – 11.0 for Minnasvlakte 258LQ; Massenberg 305LQ, Hooikraal 315LQ, and Swanepoelpan 262LQ; and
- PEM's of 2.0 – 5.0 for Duikerfontein 263LQ

Smitspan 306LQ has received high PEMs since a significant amount of drilling and sampling has been carried out on this property relative to the other properties. While a previous Feasibility Study has been completed on this property, a revised Feasibility Study is underway to meet the requirements of the recently signed MoU with Eskom. Clearly Smitspan 306LQ is the 'stand-out' property and is considered highly prospective by Venmyn Deloitte. Consequently Venmyn Deloitte has selected the maximum PEM of 20.0 to reflect the advanced nature of this property in terms of its level of exploration and development as well as the fact that a revised Feasibility Study is underway.

Vetleegte 304LQ has received a preferred PEM of 12. While significant drilling and sampling has been conducted and Measured Resources classified, this property has not undergone the same level of technical investigation and economic studies as Smitspan 306LQ.

Minnasvlakte 258LQ, Massenberg 305LQ, Hooikraal 315LQ and Swanepoelpan 262LQ have received preferred PEM's of 8.0 to reflect the classification of Indicated Resources. However, unlike Smitspan 306LQ, these properties are generally lacking in the Upper Coal Sequence coals and are structurally very complex or have significantly deeper coal, and are therefore considered significantly less prospective than Smitspan 306LQ.

Duikerfontein 263LQ has received a preferred PEM of 4, reflecting the very limited exploration work, and very limited Coal Resources (at low levels of confidence) over this property.

Olieboomsfontein 220LQ has received a preferred PEM of 2, reflecting the very limited exploration work, and the absence of declared Coal Resources over this property.

Based on the principles discussed above, PEM values of between 2.0 – 20.0 were allocated to the various properties, with respect to the present value estimates of historical exploration expenditure. This reflects the relative enhancement in the prospectivity that has been achieved on each property as a result of the historical exploration.

The various costs, multiplied by their allocated PEM's (Table 7) have then been added to derive the Cost Approach valuation for each property. This methodology has resulted in a preferred Cost Approach valuation of ZAR1,247m for the contributing properties.

**Table 7 : Cost Approach Valuation**

	FARM	TOTAL ATTRIBUTED EXPENDITURE (ZARm)	LOWER PEM	UPPER PEM	PREFERRED PEM	MIN PROJECT VALUE (ZARm)	MAX PROJECT VALUE (ZARm)	PREFERRED PROJECT VALUE (ZARm)
T1	Olieboomsfontein 220 LQ	0.5	1.0	2.0	2.0	0.5	1.0	1.0
	Vetleegte 304 LQ	9.7	11.0	20.0	12.0	106.9	194.4	116.6
T2	Minnasvlakte 258 LQ	1.3	5.0	11.0	8.0	6.3	13.9	10.1
	Smitspan 306 LQ	52.8	11.0	20.0	20.0	581.0	1,056.3	1,056.3
	Massenberg 305 LQ	3.7	5.0	11.0	8.0	18.3	40.2	29.3
	Hooikraal 315 LQ	1.8	5.0	11.0	8.0	9.1	20.1	14.6
T3	Swanepoelpan 262LQ	2.4	5.0	11.0	8.0	12.0	26.4	19.2
	Duikerfontein 263LQ	0.0	2.0	5.0	4.0	0.0	0.0	0.0
	<b>TOTAL/ WT. AVE</b>	<b>72.2</b>	<b>10.2</b>	<b>18.7</b>	<b>17.3</b>	<b>734.1</b>	<b>1,352.3</b>	<b>1,247.1</b>

## 10.2. Comparable Transaction Approach

The comparable transaction value method is based upon other, preferably recent, arm's length transactions of a similar nature, which determines a monetary value per unit of resource (ZAR/t).

Since Coal Resources have been classified for the contributing properties, Venmyn Deloitte was able to carry out a comparable transaction valuation on the basis that recent market valuations of a similar nature provide the proxy for value. In order to arrive at a reasonable value with which to compare the respective projects, appropriate recent and historical transactions must form the basis.

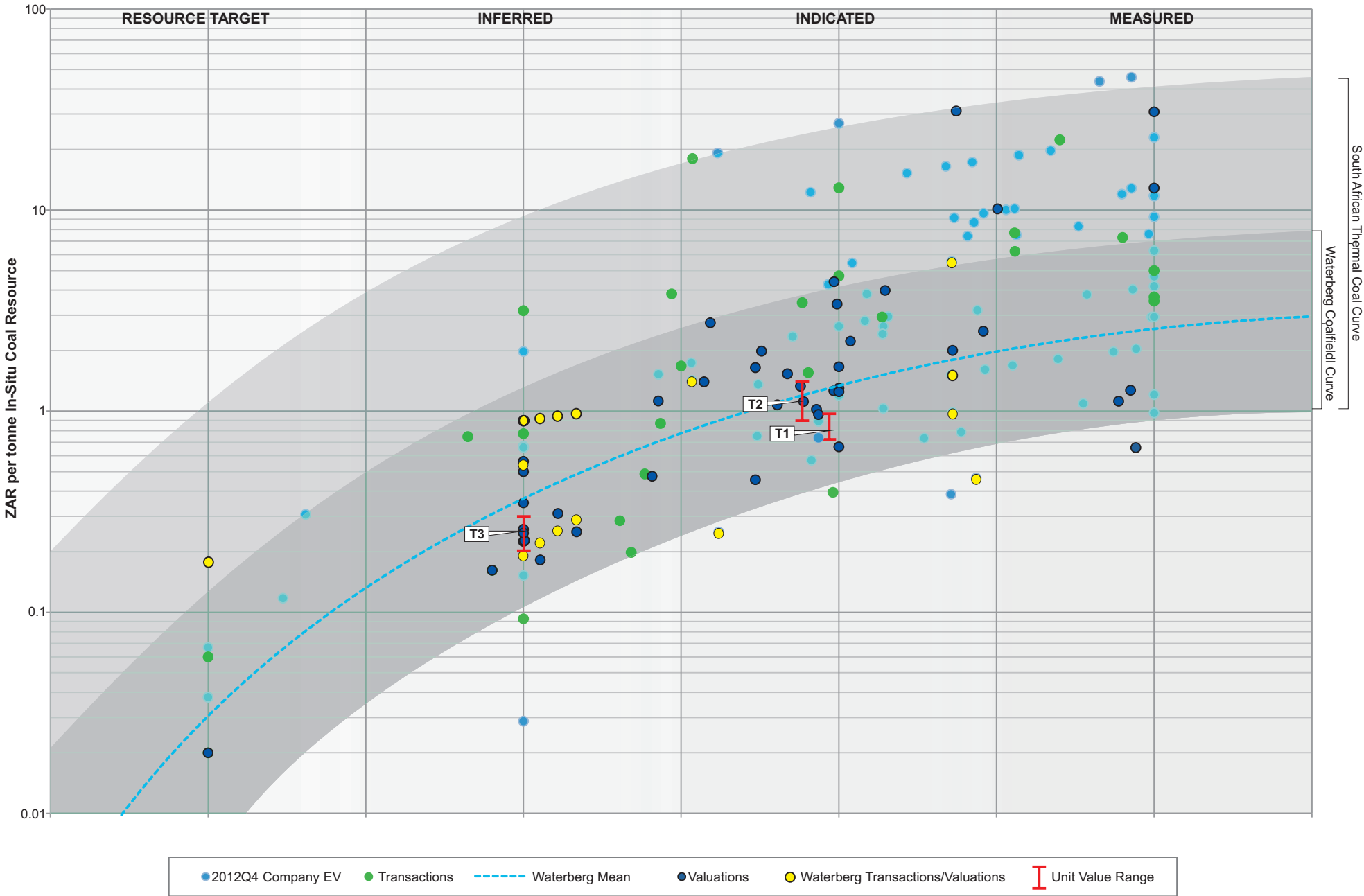
To this end, Venmyn Deloitte maintains a database of coal projects, coal resources and reserves, production statistics and financial information of listed coal mining and exploration companies on the various international stock exchanges. Venmyn Deloitte consolidates this information into coal valuation curves using internally developed algorithms to attribute a company's enterprise value to its various projects taking cognisance of the following factors:-

- level of confidence in the Mineral Resource;
- strategic value of the commodity; and
- geological setting.

Based on pre-determined weights for each of these factors, the implied enterprise value per resource is determined. Similarly, recent transactions and compliant public valuations are also analysed and presented on the curves.

Venmyn Deloitte has graphically plotted recent transactions of a similar nature in relation to their specific stage of exploration in order to make the necessary comparisons. Figure 7 illustrates Venmyn Deloitte's current Coal Valuation Curve, which represents the coal transaction database for coal projects with mineral resources. This is used for valuations based on a monetary value per unit of resource (ZAR/t).

# VALUATION CURVE FOR SOUTH AFRICAN COAL PROJECTS





Venmyn Deloitte's South African coal database comprises 194 data points (98 market comparative points each representing a mine/mining project, 52 transactions and 44 valuations). This covers over 200 South African coal projects and over 30 listed companies. Of the 98 market comparison points, 18 represent projects located in the Limpopo Province of South Africa.

Given that Venmyn Deloitte's coal database represents actual transactions and company/project valuations, Venmyn Deloitte have a high degree of confidence in using this data in order to benchmark the mineral assets of the contributing properties with regards to establishing appropriate mineral asset values using the Market Approach.

While Venmyn Deloitte have considered the entire coal transaction database, we have paid particular attention to the Limpopo Coalfields data sub-set within our database and on the coal curve for these valuations. Venmyn Deloitte has also taken into account the following recent transactions/valuations within the Waterberg Coalfield:-

- the valuation by SRK Consulting (South Africa) (Pty) Limited (SRK) in June 2006, of the Grootegeluk Colliery ahead of the merger of Eyesizwe and Kumba (now Exxaro) – Eyesizwe/Kumba Grootegeluk transaction;
- the joint venture transaction between Sekoko Coal and Firestone Energy, in July 2009, concerning the farms Minnasvlakte 258LQ, Smitspan 306LQ, Massenberg 305LQ and Hooikraal 315LQ in the Waterberg;
- the joint venture transaction between Sekoko Coal and Firestone Energy, in February 2010, concerning the farms Swanepoelpan 262LQ and Duikerfontein 263LQ in the Waterberg;
- RSV Enco's valuation of Resource Generation's project in the Waterberg in July 2010; and
- IDC's ZAR249m funding of the development of Sekoko Coal and Firestone Energy's Waterberg Coal Project, resulting in the IDC owning 33.3% of Sekoko Coal's equity in the Waterberg Coal Joint Venture.

These transactions represent recent transactions of a similar nature, and have been used, together with enterprise values of listed companies with projects in the Waterberg, to define a Waterberg Coal Valuation Curve.

It is clear, in Figure 7, that the Waterberg Coal Valuation Curve, informed by the above transactions/valuations define a less variable range of values than that defined by the entire dataset, and falls within the middle-lower portion of the greater coal curve.

As discussed in 7.8.2, the presence of the various coal seams differs across the properties. At Hooikraal 315 LQ and Massenberg 305LQ, for example, the preferred (higher quality) Upper Coal Sequence coal zones (zones 5 – 11), are largely absent. These properties are also associated with a more structurally complex environment. As a result, Venmyn Deloitte considers these properties of lower prospectivity and has allocated unit values that are significantly lower than for the highly prospective Smitspan 306LQ property.

Similarly, while Minnasvlakte 258LQ has both Upper Coal Sequence and Lower Coal Sequence coal zones present, the coal is deeper in this region, and consequently Venmyn Deloitte have adjusted the unit values downwards to reflect that this property has a lower prospectivity than Smitspan 306LQ, but higher prospectivity than those properties absent in Upper Coal Sequence coal zones.

The comparable transaction value range selected for the valuation of the contributing properties has considered the nature of this valuation and the risk factors.

Venmyn Deloitte is of the opinion that the ranges defined are reasonable in light of transactions of a similar nature and consideration of the following:-

- the opencastability of the resources;



- the presence of commercially valuable coal zones;
- the range of potential coal qualities;
- the magnitude of the classified Coal Resource;
- availability of infrastructure and logistics; and
- the timing of potential exploitation.

The range of values generated, based upon all TTIS coal quantified for the contributing properties of the Sekoko Coal-Firestone JV Waterberg Coal Project, are summarized in Table 10 based on the most recent Venmyn (now Venmyn Deloitte) estimates (we note that these have not changed since May 2012). The valuation range was calculated from the range of unit values as defined by the Comparative Transaction Valuation method. The value range reflects the level of confidence attached to the respective Coal Resources and the probability of their being brought to account. The population of historic market transactions provides an indication of reasonability.

Table 8 summarises the results of the Compatible Transaction valuation approach.

**Table 8 : Summary of the Results of the Comparable Transaction Valuation.**

FARM	TOTAL RESOURCE (Total Tonnes in- situ) (Mt)	COMPARABLE TRANSACTION VALUE		
		MIN PROJECT VALUE (ZARm)	MAX PROJECT VALUE (ZARm)	PREFERRED PROJECT VALUE (ZARm)
Olieboomsfontein 220 LQ	-	-	-	-
Vetleegte 304 LQ	155.28	103.5	148.6	126.0
Minnasvlakte 258 LQ	194.21	62.3	92.4	77.3
Smitspan 306 LQ	595.47	810.3	1,405.7	1,108.0
Massenberg 305 LQ	98.78	25.6	37.2	31.4
Hooikraal 315 LQ	82.11	15.2	23.8	19.5
Swanepoelpan 262LQ	284.52	57.3	86.0	71.6
Duikerfontein 263LQ	10.46	2.1	3.1	2.6
<b>TOTAL/ WT. AVE</b>	<b>1,420.83</b>	<b>1,076.3</b>	<b>1,796.7</b>	<b>1,436.5</b>

Venmyn Deloitte's preferred value is the mean value derived from the unit value ranges per category. This results in a preferred full Comparable Transaction Value of ZAR1,437m for the contributing properties of the Sekoko Coal-Firestone JV Waterberg Coal Project, and equates to a unit value of ~ZAR1/TTIS. Approximately 80% of the value of the contributing properties is made up from the coal assets at Smitspan 306LQ.

### 10.3. Intrinsic value Summary

Table 9 summarises the results from the various valuation methods used in establishing the Intrinsic/Technical Value of the mineral assets of the contributing properties:-

**Table 9 : Intrinsic Value Summary**

	FARM	INTRINSIC OR TECHNICAL VALUE			TOTAL (ZARm)
		COST APPROACH (ZARm)	COMPARABLE TRANSACTION APPROACH (ZARm)	PREFERRED VALUE (ZARm)	
T1	Olieboomsfontein 220 LQ	1.0	N/A	1.0	122.3
	Vetleegte 304 LQ	116.6	126.0	121.3	
T2	Minnasvlakte 258 LQ	10.1	77.3	43.7	1,173.2
	Smitspan 306 LQ	1,056.3	1,108.0	1,082.1	
	Massenberg 305 LQ	29.3	31.4	30.3	
	Hooikraal 315 LQ	14.6	19.5	17.1	
T3	Swanepoelpan 262LQ	19.2	71.6	45.4	48.0
	Duikerfontein 263LQ	0.0	2.6	2.6	
	<b>TOTAL</b>	<b>1,247.1</b>	<b>1,436.5</b>	<b>1,343.6</b>	<b>1,343.6</b>

The table above demonstrates general agreement between the values derived from the various valuation methods, however the Cost Approach results in lower values in all cases.

**Table 10 : Comparative Valuation Based on Venmyn Deloitte Resource Estimates**

FARM	THE MARKET APPROACH														
	INFERRED COAL RESOURCE				INDICATED COAL RESOURCE				MEASURED COAL RESOURCE				PROJECT VALUE		
	VENMYN TOTAL INFERRED RESOURCE	LOWER UNIT VALUE	UPPER UNIT VALUE	MEAN VALUE	VENMYN TOTAL INDICATED RESOURCE	LOWER UNIT VALUE	UPPER UNIT VALUE	MEAN VALUE	VENMYN TOTAL MEASURED RESOURCE	LOWER UNIT VALUE	UPPER UNIT VALUE	MEAN VALUE	MIN PROJECT VALUE	MAX PROJECT VALUE	PREFERRED PROJECT VALUE
	(Total Tonnes in- situ) (Mt)	(ZAR/t)	(ZAR/t)	(ZARm)	(Total Tonnes in- situ) (Mt)	(ZAR/t)	(ZAR/t)	(ZARm)	(Total Tonnes in- situ) (Mt)	(ZAR/t)	(ZAR/t)	(ZARm)	(ZARm)	(ZARm)	(ZARm)
Olieboomsfontein 220 LQ	-	0.20	0.30	-	-	0.70	1.00	-	-	1.00	2.00	-	-	-	-
Vetleegte 304 LQ	11.1	0.20	0.30	2.8	143.1	0.70	1.00	121.7	1.0	1.00	2.00	1.6	103.5	148.6	126.0
Minnasvlakte 258 LQ	173.0	0.25	0.35	51.9	21.2	0.90	1.50	25.4	-	1.50	2.50	-	62.3	92.4	77.3
Smitspan 306 LQ	-	0.30	0.40	-	380.7	1.00	2.00	571.0	214.8	2.00	3.00	537.0	810.3	1,405.7	1,108.0
Massenberg 305 LQ	82.1	0.15	0.25	16.4	16.6	0.80	1.00	15.0	-	1.50	2.00	-	25.6	37.2	31.4
Hooikraal 315 LQ	77.7	0.15	0.25	15.5	4.4	0.80	1.00	3.9	-	1.50	2.00	-	15.2	23.8	19.5
Swanepoelpan 262LQ	283.7	0.20	0.30	70.9	0.9	0.70	1.00	0.7	-	1.00	2.00	-	57.3	86.0	71.6
Duikerfontein 263LQ	10.5	0.20	0.30	2.6	-	0.70	1.00	-	-	1.00	2.00	-	2.1	3.1	2.6
TOTAL/ WT. AVE	638.1		0.26	160.2	566.9		0.99	737.7	215.8		1.75	538.6	1,076.3	1,796.7	1,436.5

The Cost Approach defines the bottom (ZAR1,247m) of the value range identified, while the Comparative Transaction Approach defined the top (ZAR1,437m) of the value range identified. The preferred Intrinsic/Technical Value is considered to be represented by the mean of the two valuation approaches, and results in a value of ZAR1,344m.

#### 10.4. Implied Value of the Mineral Assets

Venmyn Deloitte consider that the Market Price of Firestone implies a value of the mineral assets, as the contributing properties are the principal mineral assets of Firestone. Since Firestone currently have a 60% interest in the mineral assets, the current Market Price of Firestone, adjusted for net debt, could be considered to represent 60% of the value of the mineral assets. On this basis, the Implied Value of the contributing properties can be calculated on a 100% attributable basis. On this basis Venmyn Deloitte have assessed the current Implied Value of the mineral assets to be ZAR792m.

Venmyn Deloitte notes the relatively small volume of trade in Firestone shares and also considers that delays in project development and challenges with respect to financing may be contributing to the relatively low Market Price. It is noted further that the Intrinsic Value is based on past transactions, and that the current state of the coal market and future outlook for the coal market are less favourable than when the transactions occurred. This might also have led to the Implied Value of the mineral assets being lower than the Intrinsic Value.

#### 10.5. Fair Value of the Mineral Assets

The assessment above suggests that it would be appropriate to apply a discount to the Intrinsic/Technical Value of the mineral assets, in terms of the requirements of VALMIN, 2005 in assessing Fair Value. In this case, Venmyn Deloitte consider that a discount of 21% is appropriate.

This results in a Fair Value of ZAR1,068m. If a value range is required, we would consider it appropriate to apply the ~21% discount to the technical valuation range which would provide a value range of ZAR991m and ZAR1,142m.

#### 10.6. Valuation Summary

The results of the valuations carried out by Venmyn Deloitte are given in Table 11:-

**Table 11: Summary of Valuation Results**

	INTRINSIC OR TECHNICAL VALUE						
	FARM	COST APPROACH (ZARm)	COMPARABLE TRANSACTION APPROACH (ZARm)	PREFERRED VALUE (ZARm)	TOTAL (ZARm)	DISCOUNT (%)	FAIR VALUE (ZARm)
T1	Olieboomsfontein 220 LQ	1.0	N/A	1.0	122.3	21%	1,067.8
	Vetleegte 304 LQ	116.6	126.0	121.3			
	Minnasvlakte 258 LQ	10.1	77.3	43.7			
T2	Smitspan 306 LQ	1,056.3	1,108.0	1,082.1	1,173.2		
	Massenberg 305 LQ	29.3	31.4	30.3			
	Hooikraal 315 LQ	14.6	19.5	17.1			
T3	Swanepoelpan 262LQ	19.2	71.6	45.4	48.0		
	Duikerfontein 263LQ	0.0	2.6	2.6			
	TOTAL		1,247.1	1,436.5		1,343.6	1,343.6

Note: Rounding may result in computational discrepancies

Our assessment determined that the Implied Value is significantly lower than the Intrinsic/Technical Value of the mineral assets. In terms of the requirements of VALMIN, 2005, Venmyn Deloitte considers it appropriate to apply a discount to the Intrinsic/Technical Value of the mineral assets in estimating the Fair Value. In this case, Venmyn Deloitte consider that a discount of ~21% is appropriate.

In Venmyn Deloitte's opinion the current Fair Value of the Contributing Properties of the Waterberg Coal Project, given their current state of development and current market conditions is ZAR1,068m.

The valuation of exploration assets is, by nature, subjective and uncertain. The placing of a specific monetary value on historical exploration can be misleading, and the reader is advised to consider the ranges in which each property has been evaluated, and to further consider the technical merits of each project area and form an opinion regarding its prospectivity on the basis of the data presented in this report.

The reader should note that a transaction involving the assets in question will rely on a willing-buyer willing-seller arms length transaction which will need to consider other strategic considerations, such as the relative scarcity of South African coal projects.

## 10.7. Key Assumptions

We arrived at our opinion of value based on the following assumptions: -

- that all information provided to Venmyn Deloitte, by Sekoko Coal and/or Firestone can be relied upon;
- that the valuation is with respect to the face value of the mineral assets only;
- that the valuation was conducted on a 100% attributable basis;
- that the legal status of the mineral rights and statutory obligations were fairly stated;
- that the prospecting licences will be kept valid and that they can be converted to Mining Licences in the future;
- that expired Prospecting Rights will be successfully renewed;
- that the Mining Right will be kept valid;
- that all other regulatory approvals for exploration and mining will be timeously obtained;
- that the corporate structures and ongoing activities were fairly presented;
- that reliance can be placed on the exploration expenditures provided by Sekoko Coal and/or Firestone;
- that reliance can be placed on the Financial Statements provided by Firestone;
- that reliance can be placed on the current Mineral Resource Statement;
- that the coal quality lends itself to the production of a suitable thermal coal product after washing;
- that Sekoko Coal, Firestone and their subsidiaries would continue as going concerns and would continue to be fully funded; and
- that Sekoko Coal and/or Firestone would be able to secure markets and off-take for any future operations.

Venmyn Deloitte made due enquiry into these issues to be satisfied of the potential impact on the mineral asset valuation.

We have relied upon and assumed the accuracy of the information provided to us in deriving our opinion. Where practical, we have corroborated the reasonableness of the information provided to us for the purpose of our valuation, whether in writing or obtained in discussion with management of Sekoko Coal and/or Firestone, by reference to publicly available or independently obtained information.

Our valuation is based on current economic, regulatory, market as well as other conditions. Subsequent developments may affect this valuation, and we are under no obligation to update, review or re-affirm our valuation based on such developments.

## 10.8. Key Risks

The contributing properties represent early- to advanced-stage projects, and are therefore, inherently exposed to normal operational risks associated with exploration and development projects.

The success of the projects depend largely on successful prospecting programmes and competent management. Profitability and asset values can be affected by unforeseen changes in operating circumstances and technical issues.

While the contributing properties are located in an emerging coal exploration and mining hub, there are significant infrastructural challenges to overcome. Lack of adequate water and rail infrastructure are identified as major challenges to the future development of the region.

Certain licences have expired and renewals have been applied for. There is no guarantee that these will be awarded in their entirety or in part, and licence applications and renewals are currently experiencing considerable delays. Sekoko Coal are however confident that their tenure over the farms is secure, and have done, and are currently in the process of securing full and final ownership of same.

The coal qualities are amenable to the production of large quantities of coal that could meet power station specifications. However any successful coal operation in the Waterberg Coalfield would be highly dependent on its ability to supply existing and future power stations in the area, and securing take-off agreements with such power stations or other external markets. In this regard a memorandum of understanding (MoU) with power utility Eskom on a 30-year supply agreement has recently been signed. In terms of the MoU, the project would commence delivering 2Mtpa of coal to Eskom in 2014, to be ramped up to 10Mtpa by 2019.

Factors such as political and industrial disruption, currency fluctuation and interest rates could have an impact on future operations, and potential revenue streams can also be affected by these factors. The majority of these factors are, and will be, beyond the control of any operating entity.

The Going Concern assumption is the assumption that an entity will continue to operate for the foreseeable future. Where there is a reasonable expectation that a company will be unable to meet its current obligations as they become due, the Going Concern assumption may not apply. The ability of Sekoko Coal and Firestone to continue operations as going concerns and the recoverability of their respective retained losses are dependent upon the existence of economically recoverable reserves in the future, and continued support from the respective parent companies and/or investors and/or financiers. It is assumed that sufficient working capital will be obtainable from internal and/or external financing to meet their respective companies' liabilities and commitments as they become due, however there is a risk that additional financing will not be available on a timely basis or on terms acceptable to the respective companies.

The valuation presented herein represents the mean values achieved through the combination of value ranges within each method applied. The valuation of exploration assets is, by nature, both subjective and uncertain. The placing of a specific monetary value on historical exploration can be misleading, and the reader is advised to consider the full range in which each mineral asset has been evaluated, and to further consider the technical merits of each mineral asset and form an opinion regarding its prospectivity on the basis of the data presented in this report.

It must be noted that this valuation has been carried out based on an assessment of values that could reasonably be expected in view of recent market comparisons and valuations placed on coal producers and explorers by the market. Venmyn Deloitte have provided their view on the unit comparisons having performed a review of the contributing mineral assets. Valuations that consider the timing of extraction, exchange rates fluctuations and views on market trends may arrive at materially different values.

This report contains forward-looking statements. These forward-looking statements are based on the opinions and estimates at the date the statements were made. They are subject to a number of known and unknown risks, uncertainties and other factors that may cause actual results to differ materially from those anticipated in the forward-looking statements. Factors that could cause such differences include changes in world coal markets, equity markets, costs and supply of materials relevant to the projects, and changes to regulations affecting them. Although Venmyn Deloitte believes the expectations reflected in its forward-looking statements to be reasonable, Venmyn Deloitte does not guarantee future results, levels of activity, performance or achievements.

## 11. Conclusions

This report has investigated the techno-economic merits of the contributing properties of the Sekoko Coal-Firestone JV Waterberg Coal Project. A full range of values was calculated, but this report fully describes each coal asset so as not to be misleading.

Venmyn Deloitte established an Intrinsic/Technical Value range of between ZAR1,247m and ZAR1,437m, with a preferred Intrinsic/Technical Value of ZAR1,344m.

Our assessment suggests that it would be appropriate to apply a discount to the Intrinsic/Technical Value of the mineral assets, in terms of the requirements of VALMIN, 2005 in assessing Fair Value. In this case, Venmyn Deloitte consider that a discount of 21% is appropriate.

This results in a Fair Value of ZAR1,068m. If a value range is required, we would consider it appropriate to apply the ~21% discount to the technical valuation range which would provide a value range of ZAR991m and ZAR1,142m.

The prospectivity of the Sekoko Coal-Firestone JV Waterberg Coal Project is enhanced by its proximity to the operating Grootegeluk Colliery as well as its proximity to water, electrical, road and rail infrastructure. Furthermore the coal is thick, relatively shallow and is considered opencastable. Notably, the Waterberg Coal Project is also within 40km of Eskom's Matimba Power Station.

This valuation has been carried out as an indicative assessment of values that could reasonably be expected in view of recent market comparisons and valuations placed on the coal resources by the market. Venmyn Deloitte has its view on the unit comparisons having performed a high level review of the contributing properties. Valuations that consider the timing of extraction, exchange rate fluctuations, and views on the coal markets may, therefore, arrive at different values depending on the purpose of the valuation and prevailing market conditions.

This valuation is dated to the extent that it is valid at that time and will change if more information is made available or market conditions change.

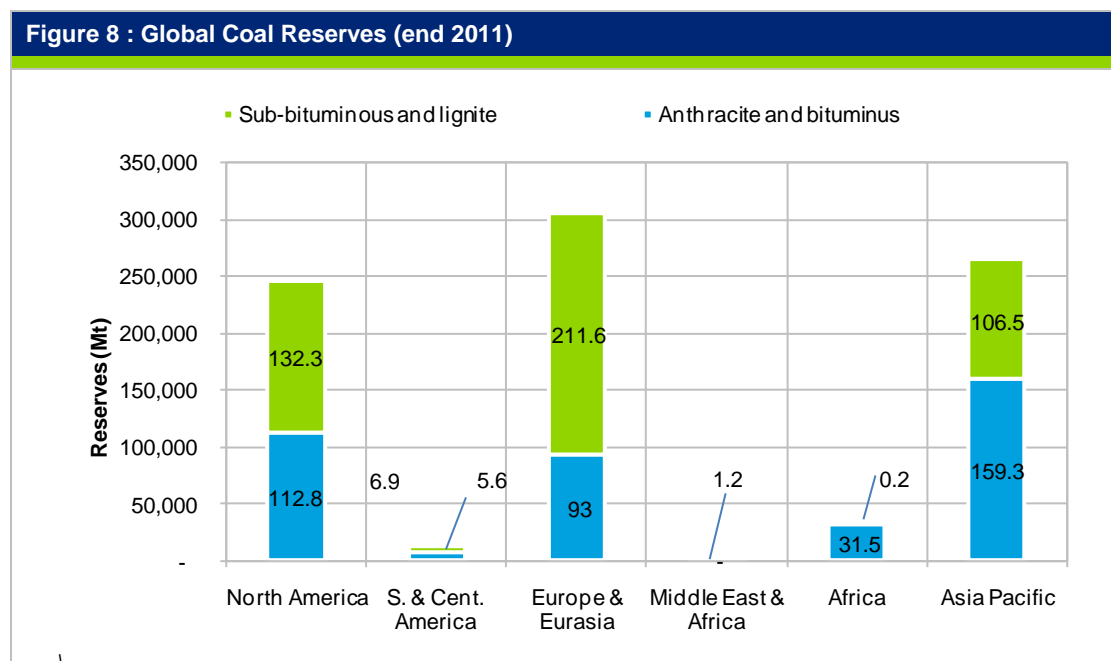
The valuation of exploration assets is, by nature, both subjective and uncertain. The reader is advised to consider the full ranges in which each property has been evaluated, and to further consider the technical merits of each project area and form an opinion regarding its prospectivity on the basis of the data presented in this report.

## 12. Global Coal Market Review

Coal is mined commercially in over 50 countries and used in more than 70 countries worldwide. Coal is readily available from a wide variety of sources in a well-supplied worldwide market and it can be transported to demand centres quickly, safely and easily by ship and rail. A large number of suppliers are active in the international coal market, ensuring competitive behaviour and efficient functioning.

### 12.1. Reserves

Venmyn Deloitte is not aware of any calculation of global coal resources. British Petroleum (BP) provides a list of coal reserves globally (Figure 8, Table 12), although whether these reserves are defined in terms of the Committee for Mineral Reserves International Reporting Standards (CRIRSCO) Codes is uncertain.



Source: BP Statistical Review of World Energy June 2012

**Table 12 : Global Coal Reserves (end 2011)**

REGION/COUNTRY	ANTHRACITE & BITUMINOUS (Mt)	SUB-BITUMINOUS & LIGNITE (Mt)	TOTAL (Mt)	R/P RATIO
US	108,501	128,794	237,295	239
Canada	3,474	3,108	6,582	97
Mexico	860	351	1,211	77
<b>TOTAL NORTH AMERICA</b>	<b>112,835</b>	<b>132,253</b>	<b>245,088</b>	<b>228</b>
Brazil	-	4,559	4,559	*
Colombia	6,366	380	6,746	79
Venezuela	479	-	479	55
Other S. & Cent. America	45	679	724	*
<b>TOTAL SOUTH &amp; CENTRAL AMERICA</b>	<b>6,890</b>	<b>5,618</b>	<b>12,508</b>	<b>124</b>
Bulgaria	2	2,364	2,366	64
Czech Republic	192	908	1,100	19
Germany	99	40,600	40,699	216
Greece	-	3,020	3,020	53
Hungary	13	1,647	1,660	174
Kazakhstan	21,500	12,100	33,600	290
Poland	4,338	1,371	5,709	41
Romania	10	281	291	8
Russia	49,088	107,922	157,010	471
Spain	200	330	530	81
Turkey	529	1,814	2,343	30
Ukraine	15,351	18,522	33,873	390
United Kingdom	228	-	228	12

REGION/COUNTRY	ANTHRACITE & BITUMINOUS (Mt)	SUB-BITUMINOUS & LIGNITE (Mt)	TOTAL (Mt)	R/P RATIO
Other Europe & Eurasia	1,440	20,735	22,175	238
<b>TOTAL EUROPE &amp; EURASIA</b>	<b>92,990</b>	<b>211,614</b>	<b>304,604</b>	<b>242</b>
South Africa	30,156	-	30,156	118
Zimbabwe	502	-	502	202
Other Africa	860	174	1,034	*
Middle East	1,203	-	1,203	*
<b>TOTAL MIDDLE EAST &amp; AFRICA</b>	<b>32,721</b>	<b>174</b>	<b>32,895</b>	<b>126</b>
Australia	37,100	39,300	76,400	184
China	62,200	52,300	114,500	33
India	56,100	4,500	60,600	103
Indonesia	1,520	4,009	5,529	17
Japan	340	10	350	275
New Zealand	33	538	571	115
North Korea	300	300	600	19
Pakistan	-	2,070	2,070	*
South Korea	-	126	126	60
Thailand	-	1,239	1,239	58
Vietnam	150	-	150	3
Other Asia Pacific	1,583	2,125	3,708	88
<b>TOTAL ASIA PACIFIC</b>	<b>159,326</b>	<b>106,517</b>	<b>265,843</b>	<b>53</b>
<b>TOTAL WORLD</b>	<b>404,762</b>	<b>456,176</b>	<b>860,938</b>	<b>112</b>

Source: BP Statistical Review of World Energy 2012

Notes: Proved reserves of coal – Generally taken to be those quantities that geological and engineering information indicates with reasonable certainty can be recovered in the future from known deposits under existing economic and operating conditions.

Reserves-to-production (R/P) ratio – If the reserves remaining at the end of the year are divided by the production in that year, the result is the length of time that those remaining reserves would last if production were to continue at that rate.

Although coal deposits are widely distributed, 75% of the world's recoverable Coal Reserves were located in five countries at the end of 2011: the United States (27.6%), Russia (18.2%), China (13.3%), Australia (8.9%) and India (7.0%).

Anthracite and bituminous coal accounted for 47% of the world's estimated recoverable coal reserves (on a tonnage basis) in 2011, while sub-bituminous and lignite accounted for 53% in 2011.

Regionally, Europe and Eurasia, with 35.4% of recoverable coal reserves, accounted for the largest quantity of proved coal. The Middle East, with the world's largest oil deposits, contains the least coal reserves in the world (0.1%). Africa, meanwhile, accounts for 3.7% of recoverable coal reserves (Table 12).

## 12.2. Supply

The most significant producers of coal in 2011 are shown in Table 13, which indicates that China was the largest coal producer in 2011 by tonnage, followed by the US, India, Australia, Indonesia and Russia (BP, 2012).

**Table 13 : Selected Coal Producers –2011 Production**

COUNTRY	PRODUCTION (Mt)
China	3,520
US	993
India	588
Australia	415
Russian Federation	334
Indonesia	325
South Africa	255

Source: BP Statistical Review of World Energy 2012

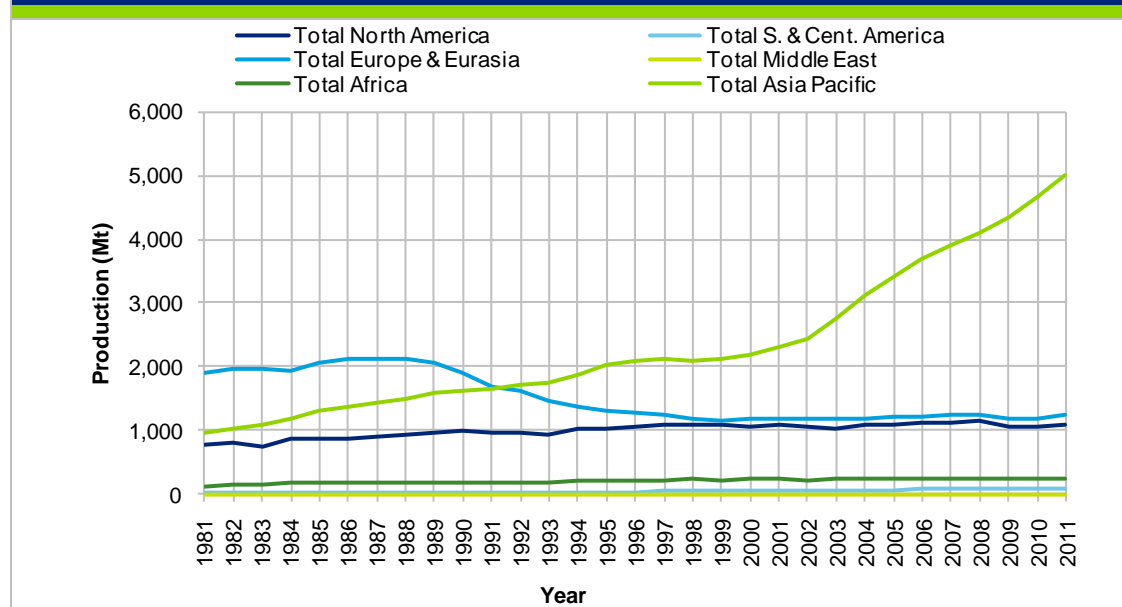
The Asia Pacific region was the largest coal producing region in 2011 and accounted for 5Bt of coal produced, or ~68% of coal produced (Figure 9 and Figure 10). China, India, Australia and Indonesia were the dominant producers, but China was the most significant producer, producing more than 70% of Asia Pacific coal in 2011.



Several countries' production was influenced by floods and heavy rains, among other factors. The Asia-Pacific countries that showed a drop in coal production in 2011 as compared to the previous period included Australia, New Zealand and Pakistan. Heavy rains at the beginning of 2012 had again resulted in coal mine closures, with four Australian coal mines closed in eastern Australia in March 2012 (The Huffington Post, 2012).

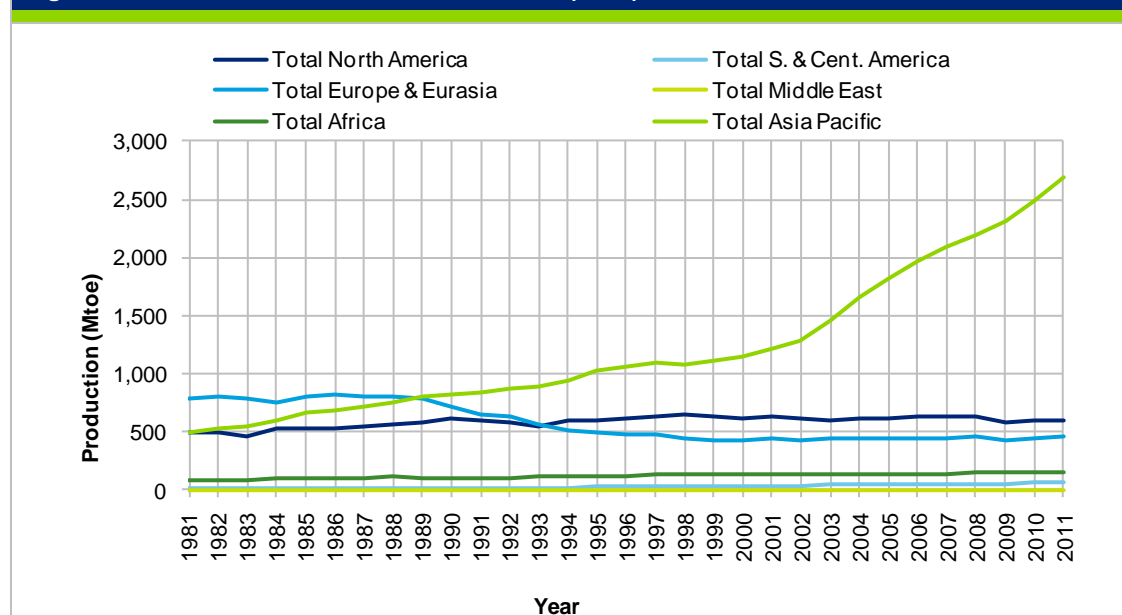
After the Asia Pacific region, North America produces the next highest amount of coal by energy value, although it produces less coal in volume terms than Europe and Eurasia. Africa, South and Central America and the Middle East are the next largest coal producers by volume and energy values. This pattern is observed in consolidated global figures for 2011 (Figure 9 and Figure 10).

**Figure 9 : Coal Global Production 1981 – 2011 (Mt)**



Source: BP Statistical Review of World Energy 2012

**Figure 10 : Coal Global Production 1981 – 2011 (Mtoe)**



Source: BP Statistical Review of World Energy 2012

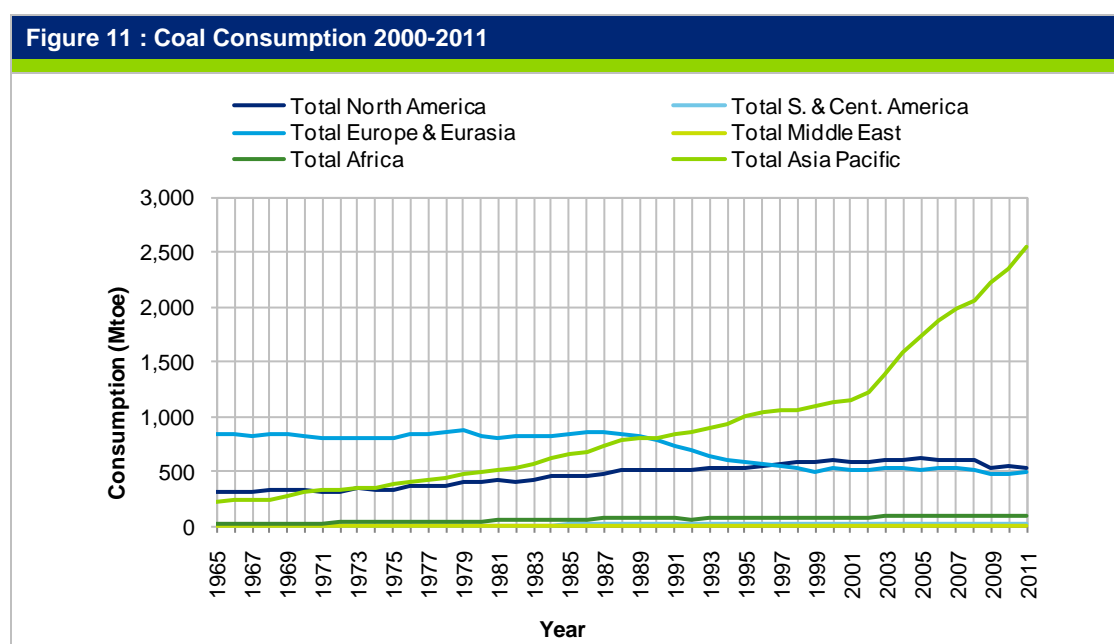
Coal production quantities in North America and Africa had not significantly changed between 1981 and 2008, but production dropped in 2009 in every region, except in the Asia Pacific and Middle East regions, reducing by 9.1% in North America, 7.1% in Central and South America, 6.9% in Europe and Eurasia, and 0.7% in Africa. All regions reversed this trend between 2009 and 2010, and are again increasing their coal production volumes.

### 12.3. Demand

2011 has shown a global increase in demand for coal. Among the most significant users of coal was China, which increased its year-on-year consumption (in energy terms) by 9.7%, and India, which increased its consumption by 9.2% (BP, 2012).

In line with this increased demand from China and India, as well as other emerging Asian nations, Asia Pacific demand is growing, whilst growth in coal demand from other regions, and particularly from the US, is subdued or even negative.

The Asia Pacific region accounted for the bulk of coal demand by energy value in 2011, with 69%, or 2,553Mtoe, of global consumption stemming from this region in 2011 (Figure 11).



Source: BP Statistical Review of World Energy 2012

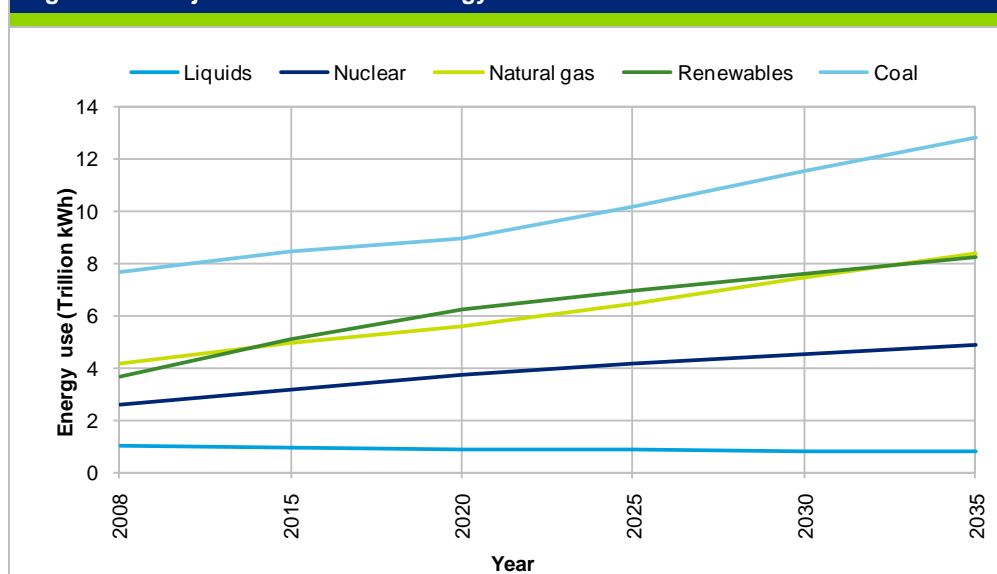
North America was the next largest contributor to consumption by region, at 14.3%, or 534Mtoe, of global demand, followed by Europe and Eurasia, at 13.4% of global demand, or 499Mtoe, in 2011. All regions, with the exception of the Middle East and Asia Pacific, experienced a drop in coal consumption, in energy terms, in 2009, but all of the regions showed an increase in consumption, in energy terms, between 2010 and 2011 (Figure 11).

### 12.4. Future Demand

The demand for thermal coal in the future will largely depend on the extent of global reliance on coal for electricity production, while the demand for coking coal will depend on the growth in steel production.

#### 12.4.1. Thermal Coal

Thermal coal demand is expected to increase significantly, especially on the back of increases in power and industrial production (Figure 12).

**Figure 12 : Projected Demand for Energy**

Source: U.S. Energy Information Administration

While coal's share of global electricity generation capacity is expected to grow (in terms of the number of kWhs or GWs produced (Figure 11 and Figure 12)) in most regions, in some regions, notably Europe, there will be a reduction in the amount of electricity produced by coal, because of environmental concerns. The predicted coal-fired generating capacity by region is shown in Table 14.

Unsurprisingly, given many of the Asian countries' high future coal-fired electricity consumption levels (Table 14) and limited domestic supplies of coal, many of the top importers of thermal coal are expected to be from the continent in future.

**Table 14 : Predicted World Coal-fired Generating Capacity by Country and Region (GW)**

REGION / COUNTRY	HISTORY		PROJECTIONS				AVERAGE ANNUAL % CHANGE 2007-2035
	2007	2015	2020	2025	2030	2035	
<b>NORTH AMERICA</b>	<b>340</b>	<b>345</b>	<b>346</b>	<b>347</b>	<b>352</b>	<b>363</b>	<b>0.2</b>
United States	313	325	326	327	330	337	0.3
Canada	21	14	14	14	15	16	-0.8
Mexico	7	6	6	6	7	10	1.4
<b>OECD EUROPE</b>	<b>200</b>	<b>189</b>	<b>182</b>	<b>176</b>	<b>174</b>	<b>177</b>	<b>-0.4</b>
<b>NON-OECD EUROPE AND EURASIA</b>	<b>98</b>	<b>97</b>	<b>95</b>	<b>96</b>	<b>103</b>	<b>118</b>	<b>0.7</b>
Russia	44	44	44	44	50	61	1.1
Other	54	52	51	51	53	57	0.2
<b>ASIA</b>	<b>729</b>	<b>859</b>	<b>990</b>	<b>1,170</b>	<b>1,381</b>	<b>1,622</b>	<b>3.7</b>
Japan	45	42	41	40	39	39	-0.5
South Korea	23	22	23	27	33	41	2.1
Australia/New Zealand	31	30	31	31	32	33	0.3
China	496	625	750	901	1,062	1,233	3.3
India	84	86	89	98	113	135	1.7
Other Asia	50	53	57	72	102	141	3.8
<b>MIDDLE EAST</b>	<b>6</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>-0.4</b>
<b>AFRICA</b>	<b>41</b>	<b>41</b>	<b>43</b>	<b>47</b>	<b>56</b>	<b>70</b>	<b>1.9</b>
<b>CENTRAL AND SOUTH AMERICA</b>	<b>10</b>	<b>10</b>	<b>9</b>	<b>9</b>	<b>9</b>	<b>11</b>	<b>0.1</b>
Brazil	2	2	2	2	2	3	0.8
Other Central and South America	8	8	7	7	7	8	-0.1
<b>TOTAL WORLD</b>	<b>1,425</b>	<b>1,545</b>	<b>1,671</b>	<b>1,849</b>	<b>2,080</b>	<b>2,366</b>	<b>1.8</b>

Note: Totals may not equal sum of components due to independent rounding.

Sources: History: Derived from EIA, International Energy Statistics database (as of November 2009), web site [www.eia.doe.gov/emeu/international](http://www.eia.doe.gov/emeu/international). Projections: EIA, Annual Energy Outlook 2010, DOE/EIA-0383 (2010) (Washington, DC, April 2010), AEO2010 National Energy Modelling System, run AEO2010R.D111809A, web site [www.eia.doe.gov/oaia/aio](http://www.eia.doe.gov/oaia/aio); and World Energy Projection System Plus (2010).

However, coal's share of net electricity generation stood at 40% globally in 2008, but will decrease to 35% of world electricity generation by fuel by 2020 only to increase to 37% by 2035 (Figure 12). This is according to the EIA (2011b), which has predicted that the share of net electricity generation by fuel type of various other energy fuels will increase. The EIA anticipates that renewables will increase their share of net electricity generation by fuel from 19% in 2008 to reach a high of 25% in 2020, followed by a reduction in share of net generation by fuel in 2035 to 23%. The EIA anticipates that natural gas's share of net electricity generation by fuel will similarly increase, rising from 22% in 2008 to 24% in 2035.

Coal's significant share of net electricity generation by fuel, as well as expectations that other energy fuels will not increase their share of net electricity generation so dramatically, suggests that coal's future is secure. Indeed, even if coal's share of electricity generation by fuel falls, in volume terms coal demand is likely to increase.

Predictors of the eventual demand for various fuel types typically have a reference case and then various other cases, and the influence of the green economy and environmental concerns is an important differentiator between the various energy futures that are being outlined by analysts. Coal's future, as a result, might not look so positive if there is a more wide-scale embracing of alternative energy types.

#### 12.4.2. Coking Coal

Those that have been traditionally large consumers of coking coal, including Japan, the European Union (EU) and Korea, are likely to continue to be so, and their year-on-year imports are expected to grow significantly as will India and China's imports (Metalreal, 2010).

Lower-than-expected growth levels out of various countries, however, suggest that coking coal demand will be more subdued than it would have been had economic growth been higher.

### 12.5. Future Supply

Coal supply currently appears to exceed demand, in line with:-

- a reduction in GDP growth and growth expectations in China and India;
- the debt crisis in the Eurozone; and
- changes to substitute fuels in the power generation market.

The reduction of once-anticipated GDP growth in China and India has had the most significant impact on the global coal market since it has resulted in a supply glut as coal producers had been producing coal that could not be consumed at current levels of growth.

This had led to power plants and other consumers in China, in particular, not accepting any more coal, despite there sometimes being 'take-or-pay' agreements in place, and cargoes being left at Chinese ports. It had also led to the situation that Chinese power plants were reported to have full inventories and that coal traders were wary of buying coal, since they were uncertain that the price would not fall further (Cooper, 2012).

The Eurozone debt crisis also continues to affect global demand for coal, since growth from this region has become sluggish. The reduced demand for coal from the Eurozone was not considered significant when China and India's growth was at a high; however, the Eurozone crisis is exacerbating the situation of reduced growth from India and China and contributing to depressed coal prices.

Other regions that are contributing to a coal supply glut are those in which coal is being replaced by substitute energy fuels in power stations. Such is the case in the US, where natural gas power plants are being built and coal-fired power plants are being converted to gas plants, leading some to prophesy that it is the end of King Coal (Balassi, 2012). US coal producers have responded by redirecting their coal to other regions of the world, contributing to the supply glut and the lower coal prices, or by closing their operations.

However, some believe that the global supply glut will end, as more marginal producers stop production due to the lower prices that they have to be content with obtaining and as they accept the lower growth forecasts for China and India do not support the significant increases in coal production.

## 13. South African Coal Mining Industry

South Africa has a well-established, low-risk coal mining industry, which has reputable participants, including Anglo Coal, BHP Billiton Energy Coal South Africa (BECSA), Xstrata Coal, Exxaro Resources, and Sasol Mining. There are also an increasingly large number of junior mining companies as a result of their investing in greenfield projects and brownfield projects, divested by the larger mining companies wishing to secure BEE credits and to sell mines that do not fit into their coal portfolios (Ryan, 2011).

Coal is one of South Africa's most important export minerals. The bulk of the exports, particularly when freight charges are low, go to Asia (Economist Intelligence Unit, 2010).

South Africa was the seventh-largest global producer of coal in energy and volume terms in 2011. South Africa's coal reserves rank ninth in the world with a reported 30.2Bt of economically recoverable coal reserves. The country has historically been known for its low-cost, readily-available coal, which makes it a very competitive industry.

### 13.1. Reserves

The country is currently implementing a review of the national resources and reserves and hopes to have a firmer foundation for national estimates of coal resources and reserves. This should assist in reducing the doubt that surrounds estimates of South Africa's coal reserves. In the current South African Minerals Industry (DMR, 2010a) Handbook, the Department of Mineral Resources (DMR) states that the 2007 South African reserves total 27.9Bt. This contrasts with a higher estimate, given by BP in its 2012 Statistical Review of World Energy, of 30.2Bt of reserves, and the much lower estimate implied by US geologist Mr King Hubert, who estimates that the whole continent of Africa has ~15Bt (Hartnady, 2009).

### 13.2. Supply

The South African coal-mining industry is highly concentrated, with three companies, namely BECSA, Anglo Coal and Exxaro Resources Limited (Exxaro), dominating production.

South Africa's coal production accounted for 95.2% of Africa's coal production in 2011 (BP, 2012). South Africa's coal sales have been increasing since 1900, but this pattern was broken in 2009, when South Africa's sales dropped from 254.9Mt to 245.2Mt between 2008 and 2009. South Africa's export tonnages, similarly, dropped in 2009, to 60.4Mt, as a result of shortfalls in delivery from Transnet Freight Rail (Ryan 2010, DMR, 2010b and 2010a).

In 2011 South Africa produced 255.1Mt of coal and thus passed 2008 year-on-year production levels. Of this production, 65.7Mt were exported from the Richard Bay Coal Terminal (RBCT) in 2011, marking a significant improvement on 2009 export tonnages (RBCT, 2011).

There are numerous South African coalfields, with the Witbank and Highveld Coalfields being the most economically important, as they produce the highest percentage of South Africa's saleable coal. However, given that these have been mined for many decades, many are looking to the Limpopo Province for South Africa's future production.

### 13.3. Demand

According to South African Minerals Industry (DMR, 2010a), the main markets for South African coal are:-

- the export market, which took up ~24% of total production in 2009; and
- the domestic market, which consists of:-
  - electricity generation, which consumes 63.7% of coal in the domestic market;
  - petrochemical companies, primarily Sasol, which consume 17.8% of coal in the domestic market;

- general industry, which consumes 7.5% of coal in the domestic market;
- metallurgical industry, primarily ArcelorMittal, Highveld Steel and Columbus Steel, which consumes 4% of coal in the domestic market; and
- about 6.8% of coal for the domestic market which is purchased by merchants, and sold locally for the household market or exported, among other users.

### 13.3.1. The Export Market

South Africa has the capacity to export 91Mt of coal from the Richards Bay Coal Terminal (RBCT), but it is exporting significantly lower volumes, having exported slightly more than 60Mt in 2009. There has since been an increase in exports, however, with exports reaching 66.4Mt in 2010 and 65.7Mt in 2011 (DMR, 2011; RBCT, 2011).

An alternative option for exporting South African coal is to export via the Matola Coal Terminal, in Maputo, Mozambique.

Another alternative is the Durban Bulk Connection (DBC), which currently has a capacity of 2Mtpa for sized coal exports.

### 13.3.2. The Domestic Market

South Africa dominates the subregion in its maximum electricity demand, its total electricity capacity and its proportional dependency on coal as part of the possible electricity generation mix that is available to it (Table 15) – and this has significant implications for its current and future use of coal, which finds its dominant domestic use in electricity production.

**Table 15 : Electricity Generation Mix in Selected Southern African Countries (MW)**

COUNTRY	MAXIMUM DEMAND (MW)	CAPACITY BY TYPE (MW)					TOTAL CAPACITY
		COAL	DIESEL	GAS	HYDRO	NUCLEAR	
Botswana	434	132					132
Mozambique	285		127		2,385		2,512
South Africa	33,461	39,863	296	342	600	1,840	42,941
Swaziland	172	10			41		51
Zimbabwe	2,066	1,225			750		1,975

Source: Zhou et al (2009)

This is for a number of reasons, including that:-

- South Africa is the regional economic superpower, and its electricity consumption per capita reflects this dominance;
- South Africa's power stations have been built on the back of the country's abundant coal resources;
- South Africa's power stations were built in the country's apartheid era, which required the country to attract investors into its mining, chemical and agricultural sectors using low-cost power which was created through significant investment into coal-fired power stations capacity (Malzbender, 2005).

Because of its heavy dependence on coal-fired electricity, every year South African State electricity parastatal Eskom consumes more than 60% of domestically-sold coal from which it provides more than 90% of the country's electricity capacity.

Eskom's power stations have been specifically designed to burn low-grade coals which are abundant in South Africa (Table 16).

**Table 16 : Weighted Coal Qualities by Sector**

SECTOR	COAL TYPE	CV (MJ/kg)	Ash (%)	VOLATILE MATTER (%)
Electricity generation	Bituminous	21	25-33	20
Synfuels	Bituminous	20-22.64	20-29.7	21-26.9

Source:- Steyn, M, et al (2010)

There are, however, other uses of coal domestically, as already indicated.

Sasol, for instance, consumes approximately 17.8% of South Africa's annual domestically-consumed coal and operates coal mines to provide feedstock for synthetic fuels and chemical plants. The company primarily uses the coal mined by Sasol Mining to produce petrol, diesel and petrochemicals and power generation at the chemical plants.

Approximately 6.8% of local consumption also goes to the household market, with the suppliers largely being coal traders in formal and informal residential areas.

The metallurgical sector, in addition, consumes about 4% of the local coal production, with the major players in the industry including ArcelorMittal, Columbus Stainless and Highveld Steel.

Cement manufacturers have also emerged as significant consumers in the medium-term as infrastructure developments in southern Africa have gained momentum, creating demand for cement-based products.

Coking coal, meanwhile, has historically played a minor role in the South African coal industry. In 2006, less than 4Mt of coking coal was produced by Exxaro's Grooteegeluk and Tshikondeni Collieries, the former for export and the latter for ArcelorMittal's steel works in Vanderbijlpark. In 2010, less than 3Mt was sold by South African producers, and all of this was for domestic use but in 2011 exports of coking coal did occur. The lack of development historically has largely been a function of the Witbank/Highveld Coalfields' lower qualities which have been better suited to thermal applications.

## 13.4. Prices

### 13.4.1. Thermal Coal

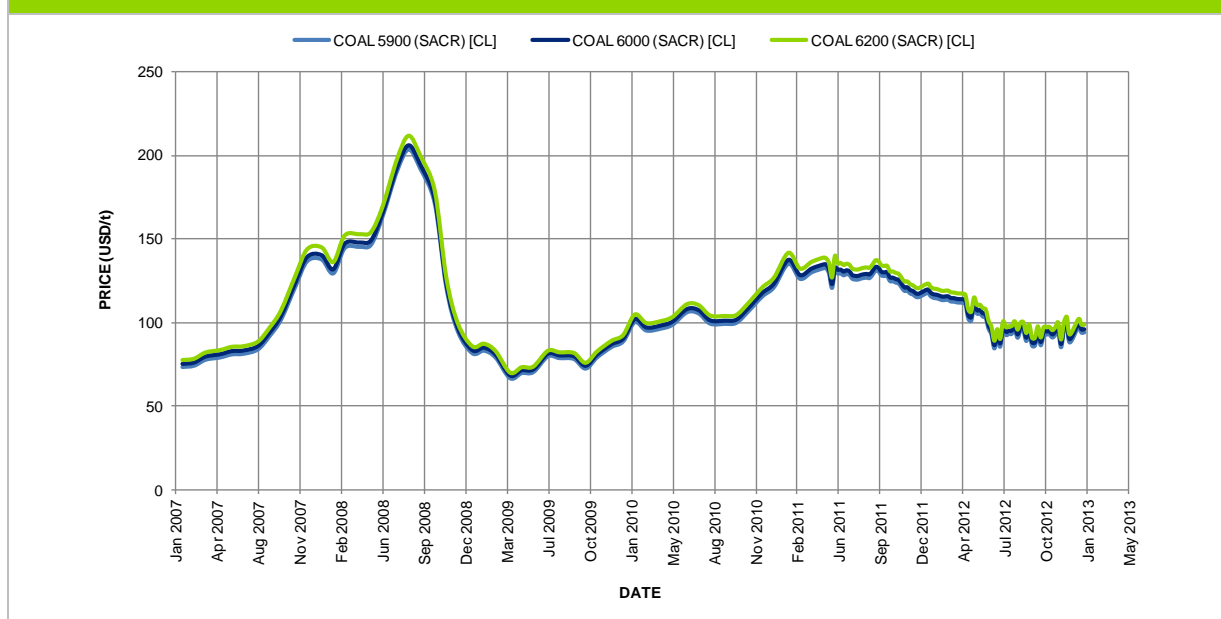
The South African export prices of steam coal are determined by their calorific value. The typical export specification for South African coal, RB1, varies between 5,850kcal/kg and 6,000kcal/kg (Steyn et al, 2010). INet Bridge also supplies prices for steam coal described as Coal 5900, Coal 6000 and Coal 6200. The number in the label refers to the number of kcal/kg, with Coal 6000 referring to a coal with a CV of 6,000kcal/kg or 25MJ/kg on a net as received (NAR) basis (or 27.5MJ/kg on a gross specific energy basis) (Steyn et al, 2010). Figure 13 shows prices for Coal 5900, Coal 6000 and Coal 6200.

Prices as at the end of June 2012 demonstrated a low point for month-end coal prices, with coal grade prices ranging between USD85.87/t for Coal 5900 and USD87.3/t for Coal 6200. By the end of October coal grade prices ranged between USD93.17/t for Coal 5900 and USD97.32/t for Coal 6200.

Coal prices have shown a generally decreasing price trend in 2012 although it must be acknowledged that there has been a slight uptick in prices between since June 2012.

However, the generally decreasing prices observed 2012 do not bode well for South African coal exporters who, at present, are also faced with a challenging labour environment, which has seen labour unrest, calls for above-inflation wage increases and damage to mine property, in some cases. This has resulted in costs increasing while the price obtained for coal has been generally showing a decreasing price trend.



**Figure 13 : Coal Price History from July 2002 to March 2011 (USD)**

Source: INet Bridge

Note: Coal 5900 CL, 6000 CL and 6200 CL are different grades of coal, with the number referring to the calorific value of the different coal grades.

In the South African market, low grade coal is predominantly used in Eskom operated power stations. Low grade coal prices are based on contracts and are rarely reported in the public domain. The pricing mechanism is usually based on a cost plus basis, where the price of the coal covers cost plus a margin. However, Eskom is considering a new pricing model for its purchases of coal, called the efficiency-cost-plus-fair-return model. Venmyn Deloitte is uncertain what this model will involve but analysts believe that this will increase the price paid for coal by the utility (Creamer, 2011).

### 13.4.2. Coking Coal

South Africa did not export coking coal in 2009, but did sell ~1.9Mt in 2009 domestically at an average local coking coal price of ZAR871/t (DMR, 2010b).

In 2010, South Africa, similarly, did not export any coking coal, but did produce ~3.4Mt locally and sell 2.4Mt of bituminous coking coal to the domestic market. The average unit value of domestic coal sales for 2010 was ZAR764/t.

Between November 2010 and October 2011, South Africa sold 2.3Mt of bituminous coking coal locally and exported 474,223t. The average unit value of domestic bituminous coal sales ranged between ZAR785/t and ZAR1,020/t over this period, while the average unit value of export sales ranged between ZAR512/t and ZAR1,161/t.

The DMR has not provided Venmyn Deloitte with monthly provisional mineral production and sales statistics for December 2011 or for the months that follow.

### 13.5. Outlook

Export sales and sales to Eskom are the most important sources of demand, and the outlook for these sales avenues are the most important to consider for any new entrant into the coal sector.

### 13.5.1. Sales to Eskom

South Africa's energy resource base is dominated by coal. Approximately 93% of South Africa's primary energy needs are provided by coal. This is unlikely to change significantly in the next two decades, owing to the relative lack of suitable alternatives to coal as an energy source.

The State utility has re-commissioned three mothballed power stations and has constructed or is constructing additional power stations. Eskom predicts a requirement of 141Mt of coal to feed its power stations by 2018. Some analysts believe that there is not enough coal in South Africa to meet this demand while others believe that the industry is still growing and has not reached peak coal growth.

The Waterberg is key to many of Eskom's plans. It is currently constructing the Medupi power station, which was to become operational in 2012. Medupi Phase 2 is intended to expand the new power station by an additional 2,100MW, and this power is expected to come on stream by around 2016.

However, while coal will remain an important fuel source in South Africa it is likely that its share of the electricity generation market will drop if the Integrated Resource Plan for Electricity 2010, which was approved by Cabinet in March 2011, takes effect.

This is because it is proposed that coal will provide the feed for 15% of South Africa's new power stations coming on stream in the next 20 years, compared to renewable energy and nuclear energy, which will supply 42% and 23%, respectively, of South Africa's electricity that comes from new power stations (Reuters and Sapa, 2011).

However, it is known that there is a large gap between South African electricity policy and how it is implemented, and it is possible that there will not be as significant a change in the electricity supply mix as policy documents suggest, owing to the historical poor implementation of infrastructure-related policy.

#### 13.5.1.1. The Impact of the SAPP

Southern Africa continues to develop the Southern African Power Pool (SAPP), a community of 12 countries which were to sell surplus electricity to each other (Musaba, 2010). Historically, the DRC and Zambia, Zambia and Zimbabwe, and Mozambique and South Africa have had transmission lines linking the countries, but the intention is to invest USD5.6b in transmission projects to construct transmission networks between several countries which have not had transmission networks linking them in the past (Musaba, 2010).

This bodes well for those in the energy sector that can produce electricity for the region, whose electricity demand is growing at an average of 3% a year.

In the north of the SAPP community, hydropower dominates the energy supply mix, with Tanzania, Angola, Zambia, Zimbabwe, Malawi, Mozambique and, most importantly, the DRC having considerable hydropower potential. In the south of the SAPP community, meanwhile, thermal power is integral, with Namibia, Botswana, South Africa, Lesotho, Swaziland and arguably also Mozambique, in the next few years, increasingly building coal-fired power stations or being dependent on them for a large portion of their energy production (Musaba, 2010).

The SAPP community has the potential to change the way that power is generated and transmitted throughout the region and could offer the opportunity for a diverse array of generating possibilities, including additional hydropower and coal-fired generation possibilities for private or national investors. This could result in an increase in the number of coal-fired generators that exist in the sub-region or, if the massive Inga hydropower project, in the DRC, takes off, result in imported hydropower-derived electricity being the dominant form of power generation in the whole SAPP community.

However, the timeframes for the introduction of various power initiatives is still uncertain as is the likely power supply mix for the sub-region in the medium and long term. This indeterminate future for the SAPP community is underscored by the fact that the Inga Project has yet to get off the ground because of its significant cost of USD8bn to USD10bn and its battle to get an anchor project in the DRC to use its electricity, with BHP Billiton indicating in February 2012 that it has decided to abandon its plans for an aluminium smelter (Legalbrief, 2012; Reuters, 2012).

### 13.5.2. Export Sales

Some 65.7Mt of coal was exported from South Africa from the RBCT in 2011, with additional coal tonnages from South Africa having gone through the ports of Durban and Maputo.

Export tonnages through RBCT are said to be limited by a lack of rail capacity and operational underperformance, which has included derailments in the past. Exports through the Matola Coal Terminal, meanwhile, have also not been helped by limited rail infrastructure, increasing freight tariffs, and lower throughput capacity through the Matola Terminal (McKay, 2012).

South African rail utility Transnet is considering large infrastructure projects in the Limpopo Province to increase rail capacity for coal produced in the Waterberg and Limpopo regions. It is undertaking a pre-feasibility study for the upgrade of the ZAR8bn line between Groenbult (60km north-east of Polokwane) and the Mozambican port of Maputo and considering a new line between Groenbult and the Waterberg. From Lephalale via Groenbult, the rail distance to Maputo is approximately 148km less than to RBCT. These projects, if they are completed, bode well for the exporting of coal from the Waterberg.

However, the costs of freight rail remain an obstacle. Freight charges, which became effective on the 1st of April 2011, have resulted in increases of 30% and will increase the tariff from ZAR90/t – ZAR100/t to ZAR117/t – ZAR130/t for exports on the Richards Bay line and increases of 17% will increase freight tariffs from ZAR160/t to ZAR190/t on the Matola line to Mozambique (Ryan, 2011b).

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## 15. Certificates of Competent Persons

**Name of Staff:** Neil Mc Kenna  
**Position:** Director – Mining Advisory  
**Name of Firm:** Venmyn Deloitte, a subsidiary of Deloitte Consulting South Africa (Pty) Ltd  
**Address:** 1<sup>st</sup> Floor, Block G, 173 Rivonia Road, Sandton, 2146  
**Profession:** Geologist  
**Date of Birth:** 05 June 1977  
**Years with Firm/Entity:** 5  
**Nationality:** South African

### Membership in Professional Societies:

CLASS	PROFESSIONAL SOCIETY	YEAR OF REGISTRATION
Member	Australasian Institute of Mining and Metallurgy	2011
Member	Geological Society of South Africa	2002
Member	South African Institute of Mining and Metallurgy	2007
Member	South African Council for Natural Scientific Professions	2002
Member	Investment Analyst Society of South Africa	2009
Member	South African Institute of Directors	2009

### Detailed Tasks Assigned:

YEAR	CLIENT	COMMODITY	PROJECT DESCRIPTION
2012	PriceWaterhouseCoopers	Coal	Valuation of a South African Coal Project
	Coal of Africa Limited	Coal	Competent Persons Report and Valuation on their South African Assets
	PriceWaterhouseCoopers	Uranium	Valuation of nickel assets in Burundi
	Umcebo Mining	Coal	Valuation of certain South African coal assets
	Miranda Minerals	Coal	Valuation of certain South African coal assets
	Rio Tinto Exploration	Coal	Valuation of certain South African coal assets
	Central Rand Gold	Gold	Competent Persons Report and Valuation on their South African Gold Assets
	Gem Diamonds	Diamonds	Competent Persons Report and Valuation of their Principle Mineral Assets
	Namakwa Diamonds	Diamonds	Mineral Reseource Update
	PriceWaterhouseCoopers	Gold	Valuation of certain African Gold Projects
	Coal of Africa Limited	Coal	Valuation of certain South African coal assets
	Coal of Africa Limited	Coal	Exploration Project Assurance for their GSP Project in South Africa.
	Kibo Mining Plc	Gold, Coal, Uranium	Competent Persons Report for Kibo Mining's Mineral Assets.
	Sekoko Coal	Coal	Valuation of Sekoko Coal's Mineral Assets
	Razita Mining	Gold, Base Metals, Coal	Prospectivity reviews for Mineral Rights Applications.
	Coal of Africa Limited	Coal	Technical Statement on the Coal of Africa's Greater Soutpansberg Project.
	Metmar	Coal	Technical Due dilligence and Valuation of a Coal Project in Kwa-Zulu Natal.
2011	Coal of Africa Limited	Coal	Competent Persons Report and Valuation of Coal of Africa Limited's Coal Assets.
	Kibo Mining Plc	Gold	Competent Persons Report and Valuation of Kibo's Mineral Assets in Tanzania.
	Sishen Iron Ore Company	Coal	Due Diligence and Valuation of Continental Coal's Mineral Assets in South Africa.
	Tanzanian Royalty Exploration Corporation	Gold	Updated Mineral Resource Statement for the Kigosi Gold Project in Tanzania.
	Sew Trident	Coal	Technical Review and Valuation of the Ikoti Coal Project.
	Sekoko Resources	Coal	Valuation of Sekoko's Coal Assets in the Thuli Coalfield of South Africa.
	Namane Resources	Coal	Update of Competent Persons Report and Valuation on Namane's Waterberg Coal Project.
	Gem Diamonds	Diamonds	Competent Persons Report and Valuation of Gem Diamonds' Mineral Assets.
	Mzuri Capital	Coal and Uranium	Competent Persons Report on the Mineral Assets of Pinewood Resources.
	Gem Diamonds	Diamonds	Mineral Resource update.

YEAR	CLIENT	COMMODITY	PROJECT DESCRIPTION
2010	Mzuri Capital Limited	Gold	Mineral Assets Valuation of the gold assets of Morogoro Gold in Tanzania.
	Mzuri Capital Limited	Gold	Competent Persons Report on the Gold Assets of Morogoro Gold in Tanzania.
	Coal of Africa Limited	Coal	Mineral Assets Valuation of Noordgrens Landgoed's mineral assets foregone in 2004.
	Coal of Africa Limited	Coal	Mineral Asset Valuation of CoAL's mineral assets within South Africa.
	Trafigura	Base Metals and Gold	Mineral Asset Valuation of Proposed Greenfields project areas in Angola.
	ETA Star	Coal	Mineral Asset Valuation of certain Coal Assets in near Tete, Mozambique.
	Namakwa Diamonds	Diamonds	Mineral Resource update for Global Operations
	Namane Resources	Coal	Competent Persons Report and Valuation on Namane's Waterberg Coal Project.
	Namane Resources	Coal	Techno-economic assessment of Namane's Waterberg Coal Project.
	Sekoko Resources	Coal	Valuation of the Sekoko-Firestone JV coal assets in the Waterberg Coalfield
	Sekoko Resources	Coal	Resource update for the Sekoko-Firestone JV properties in the Waterberg Coalfield.
	Keldoron Mining	Coal	Valuation of Keldoron's Amajuba District Coal Project in South Africa
	Nyota Minerals	Gold	Mineral resource estimation of the Tulu Kapi Gold Project in Ethiopia.
	Namakwa Diamonds	Diamonds	Competent Persons Report and Valuation on Namakwa Diamonds' Mineral Assets.
	Miranda Mineral Holdings	Coal	Techno-economic assessment of Miranda's coal assets in South Africa.
	Nyota Minerals	Nickel	Mineral Experts Report on the Muremera Nickel Project in Burundi.
	Gem Diamonds	Diamonds	Mineral Resource Estimation for the Gope Project in Botswana.
	Ernst & Young Jordan	Gold and Base Metals	Valuation of Brinsley Enterprises Orshab Project in Sudan.
	Gem Diamonds	Diamonds	Mineral resource reporting audit at the Letseng Mine in Lesotho.
2009	Nyota Minerals	Gold	Scoping Study on the Tulu kapi Gold Project in Ethiopia.
	Kalagadi Manganese	Manganese	Techno-economic assessment of the Kalagadi's mineral assets in South Africa in the form of a CPR.
	VTB Bank Moscow	Uranium	Valuation of the Spitzkop Uranium Project in Namibia.
	Nyota Minerals	Gold	Drilling and sampling QA/QC audit at the Tulu Kapi Gold Project in Ethiopia.
	Leeuw Mining	Coal	Due Dilligence and Valuation of the Maloma Colliery in Swaziland.
	Metorex	Fluorspar	Fairness opinion on Metorex's disposal of the Vergenoeg project.
	Dwyka Resources	Gold	Valuation of the Otjikoto Gold Project in Namibia.
	Mike Scott & Associates	Copper	Peer review of the modelling and resource estimation of the Kitumba Copper Project, Zambia.
	Sylvania Resources	Platinum	Due Dilligence and Valuation of the mineral assets of Sylvania Resources.
	Nyota Minerals Limited	Gold	Valuation of the mineral assets of the Otjikoto Gold Project, Namibia.
	Coal of Africa Limited	Coal	Valuation of the coal assets of the Tshikunda Coal Project in South Africa.
	Rand Uranium	Uranium	Mineral Resource Modelling and Mineral Resource Classification of the Cooke Dump.
	Dwyka Resources	Gold	Prospectivity review of the Tulu Kapi Gold Project in Ethiopia
	Northam Platinum Limited	Platinum	Valuation of Micawber 278 (Pty) Limited.
	Herbert Agencies (Pty) Limited	Coal	Valuation of the coal assets of the Vischkuil Coal Project in South Africa.
	Coal of Africa Limited	Coal	Valuation of the Coal Assets of the Makhado Land Swap Transaction with Rio Tinto
	Ernst & Joung Jordan	Gold	Valuation of the Gold Assets of Brinsley Enterprises in Sudan
	Namakwa Diamonds	Diamonds	Mineral Resource and Mineral Reserve audit and update.
	Firestone Energy Limited	Coal	Valuation of the Coal Assets of the Sekoko Coal-Firestone JV Waterberg Coal Project, South Africa
	Trans Hex Group Limited	Diamonds	Valuation of the Diamond Assets of the Lower Orange River Operations, South Africa
	Bonaparte Diamond Mines NL	Diamonds	Valuation of the Diamond Assets of the Savanna Diamond Project, South Africa.
	Tanzanian Royalty Exploration Corporation	Gold	A National Instrument (NI-43-101) Technical Report on the Kigosi Gold Project, Tanzania.
	Mvelaphanda Resources Limited	Platinum	Valuation of the PGE Assets of the Booyseendal Project, South Africa.
	Xstrata South Africa (Pty) Limited	Coal	Valuation of the Coal Assets of the Zonnebloem 1 Project, South Africa.
	Anglo Platinum Limited	Platinum	Valuation of the PGE Assets of Micawber 278 (Pty) Limited.
	Sekoko Resources	Coal	Valuation Update of the Coal Assets of Sekoko's Waterberg Coal Project, South Africa.



YEAR	CLIENT	COMMODITY	PROJECT DESCRIPTION
2008	Johannesburg Stock Exchange Limited/ Metorex Limited	Multi-Commodity	Fair and Reasonable Opinion on the Rights offer by Metorex in December 2008. This involved the creation and issue of 242,538,403 shares at an issue price of 200cps resulting in a cash consideration of ZAR485,076,806.
	Minéro Mining Company	Zinc-Lead	Competent Persons Report and Valuation of the Pering Zinc-Lead Mine, in South Africa.
	Gem Diamonds	Diamonds	Minerals Resource Update of all Gem Diamonds Mineral Assets.
	BRC DiamondCore	Diamonds	Valuation of BRC DiamondCore's Silverstreams Project in South Africa.
	Sekoko Resources	Coal	Valuation of Sekoko's Coal Assets of the Waterberg Coal Project in South Africa.
	Tata Steel	Coal	Prospectivity report on certain properties within the Tuli and Soutpansberg Coalfields
	Universal Coal plc	Coal	Valuation of the Coal Assets of the Elof Coal Project in South Africa
	Anglo Platinum	Platinum	Valuation of The PGE Assets of the Booyendal Platinum Project
	Namakwa Diamonds	Diamonds	Resource Estimation and Update for Namakwa Diamonds South African and DRC Projects.
	Harmony Gold Mining Company	Gold	Resource Estimation and Classification of the Deelkraal Dump
	Pioneer Coal	Coal	Competent Persons Report and Valuation of the Coal Assets of Pioneer Coal
	Namakwa Diamonds	Diamonds	Technical Statement on the Doornhoek Alluvial Diamond Property, South Africa
	Pioneer Coal	Coal	Prospectivity Review for Pioneer Coal's Soutpansberg Coal Prospecting rights.
	Target Coal	Coal	Prospectivity Review of Various Coal Properties in the Ermelo region of South Africa.
	Lidongo Group Holdings	Diamonds	Prospectivity Review of Lidonga's Riet River Prospecting Rights.
	BRC DiamondCore	Diamonds	Technical Review of mineral resources and sampling programme at the Paardeburg East Diamond Project.
	BRC DiamondCore	Diamonds	Technical Review of mineral resources and sampling programme at the Silverstreams Alluvial Diamond Project.
	Namaqua Diamonds	Diamonds	Technical review of the London Project, North West, South Africa.
	Trans Hex Group	Diamonds	Competent persons Report and Techno-Economic Valuation of Trans Hex's Lower Orange River Mineral Assets.
	Ernst & Young	Platinum	Comparative Valuation of the Booyendal Platinum Project as part of the Fair and Reasonable Opinion on the Transaction between Northam and Mvelaphanda.
2007	Harmony Gold Mining Company	Gold	Annual Mineral Resource and Mineral Reserve Review and Update. Identification of Strategic Opportunities at the Free State Operations.
	Gem Diamonds Limited	Diamonds	Mineral Resources Review of Gem Diamonds' Global Operations.
	Worldwide Coal Carolina (Pty) Limited	Coal	Techno-economic valuation of Worldwide Coal Carolina's coal assets.
	Apic Atoll (Pty) Ltd	Ferro-manganese	National Instrument 43-101F technical Report on the Riders Ferro-manganese Slag Dump, Pennsylvania, United States of America.
	Signet Mining	Coal	High level independent review of the coal resource, reserve and technical operating parameters of Tuli Coal (Private) Limited's Special Grant Area in Southern Zimbabwe.
	Anglo Platinum Limited	Platinum	An independent comparable transaction valuation of the platinum group element mineral assets of the Booyendal Project.
	Gem Diamonds Limited	Diamonds	Techno-economic valuation of Kimberley Diamond Company NL
	Gem Diamonds Limited	Diamonds	Mineral Experts Report on Kimberley Diamond Company NL
	Gem Diamonds Limited	Diamonds	Competent Persons Report on the Go25 (Gope) kimberlite.
	International Development Corporation	Ferro-Magnesium	Assessment of the geological and resource/reserve data provided to the IDC on the Riders Ferro-magnesium Slag Dump, Pennsylvania, USA, by Apic Toll Treatment (Pty) Limited as part of their application for funding.
	Harmony Gold Mining Company	Gold and Uranium	Mineral Resource Statements for Harmony's surface dump resources of the Randfontein and Free State Operations in South Africa.
	Gem Diamonds Limited	Diamonds	SAMREC compliant Resource and Reserve Statements for the mineral assets of the Cempaka Diamond Mine in Indonesia for BDI Mining Corporation (Subsidiary of Gem Diamonds Limited).
	Gem Diamonds Limited	Diamonds	SAMREC compliant Resource Statement on the mineral assets of Gope Exploration Company (Pty) Limited (Gope Project) (Subsidiary of Gem Diamonds Limited)
	Mintek/Department of Minerals and Energy	N/A	Review and recommendations on the Kumba/Exxaro proposal for Environmental Provisioning.
	Rockwell Resources (Pty) Limited	Diamonds	Compilation of Technical Statement (NI-43101) for the Wouterspan Operation.
	Gem Diamonds Limited	Diamonds	High level valuation of Cullinan Diamond Mine
	JCI Limited	Uranium	Review of and Recommendations on JCI's Laingsburg Uranium Project
	Harmony Gold Mining Company Limited	Gold and Uranium	Sample trail Audit and Competent persons sign-off (SAMREC) on Dump Drilling and Sampling
	Magnum Resources Limited	Tantalum	High Level Due Diligence of the Tantalite Valley Project, Southern Namibia



2004	De Beers Consolidated Mines	Diamonds	A study of the Relationship Between the Micro- and Macro Diamonds from Finsch Diamond Mine.
	De Beers Consolidated Mines	Diamonds	A study of the Relationship Between the Micro- and Macro Diamonds from Snap Lake Diamond Mine.

## Employment Record:

POSITION	COMPANY	JOB DESCRIPTION	DURATION
Director	Venmyn Deloitte (Pty) Ltd	Formed after Venmyn was acquired by professional services firm Deloitte, creating a new technical and economic minerals advisory business. The new business builds on the two companies' successful track records in minerals consulting, mining advisory services, audit, tax, risk advisory, consulting and corporate finance services to the mining industry. Venmyn Deloitte leverages off the global Deloitte network to enable a global value proposition for technical evaluation and the financial valuation of mineral assets.  Mr Mc Kenna's responsibilities continue to include mineral asset valuations, mineral projects reviews, public reporting as well as strategic leadership for the new business.	November 2012 - Present
Director	Venmyn Rand (Pty) Ltd	Venmyn Rand operated as a techno-economic consultancy for the resources industry on a world wide basis. Responsibilities at Venmyn included: <ul style="list-style-type: none"> <li>• Serving as Director of Venmyn and responsible for the company's strategic process and management of internal functions and governance;</li> <li>• Providing hands-on services to all the company's major clients;</li> <li>• Providing minerals projects assessments; and</li> <li>• Mr. Mc Kenna's expertise in financial valuation was particularly appropriate for ensuring market to market presentation of both the technical and financial issues of resources projects.</li> </ul>	February 2009 - November 2012
Minerals Industry Advisor	Venmyn Rand (Pty) Ltd	Venmyn Rand operates as a techno-economic consultancy for the resources industry on a world wide basis. Responsibilities at Venmyn include: <ul style="list-style-type: none"> <li>• Compiling technical and geological information into reports which are compliant with the SAMREC and JSE listing rules.</li> <li>• Production of techno-economic reports for clients.</li> </ul>	March 2006 – February 2009
Project Manager	De Beers, Finsch Mine	Responsible for the Mineral Resource Evaluation Drilling of the Block 5 Extension of the Finsch Diamond Mine, Northern Cape. This role included the following activities: <ul style="list-style-type: none"> <li>• Management of diamond core drilling for volume, geological, structural and grade determinations.</li> <li>• Co-ordination of drilling/sampling activities of four LM90 drill rigs on three underground levels (510, 650 and 888 levels).</li> <li>• Managing the capturing of all geological data in a Datamine drill-hole database.</li> <li>• Responsible for the managing of drilling contractors (Boart Longyear) and maintaining project schedules.</li> <li>• Responsible for the supervision and mentorship of approximately 10 subordinates (including senior and junior geologists, geological officers and geological assistants).</li> </ul>	October 2006 – March 2007
Technical Assistant	De Beers Group Exploration	<ul style="list-style-type: none"> <li>• Responsible for routine reporting, and ad-hoc reviews and requests by Group Managers Office.</li> <li>• Corporate governance of Resource Delivery Group.</li> <li>• Technical reviews of advanced stage projects and resource statements.</li> <li>• Compilation of position papers.</li> <li>• Ad-hoc reports and resource reviews.</li> <li>• Joint venture reporting.</li> </ul>	2005 - 2006
Technical Assistant	De Beers Africa Exploration	<ul style="list-style-type: none"> <li>• Responsible for routine reporting.</li> <li>• liaison between field operations and laboratories.</li> <li>• Ad-hoc technical reports and reviews.</li> <li>• Corporate governance of Africa Management team and HOD committee.</li> <li>• Active management of relationships and data for a Joint Venture in Madagascar.</li> <li>• Projects tracking.</li> <li>• Business plan management.</li> </ul>	2004 - 2005
Senior Geologist	De Beers Geoscience Centre	<ul style="list-style-type: none"> <li>• Industrial and exploration related diamond research</li> <li>• Responsible for diamond related service work and decision support</li> <li>• Supervision and mentoring for diamond related projects.</li> <li>• Providing exploration ventures with targeting and mineral chemistry interpretations and decision support.</li> </ul>	2003-2004
Staff Geologist	De Beers Group Exploration Services	Exposure to various aspects of exploration and mining geology over a 13 month training period. Competencies gained include: <ul style="list-style-type: none"> <li>• diamond indicator mineral identification and interpretation.</li> <li>• bulk sample evaluation.</li> <li>• laboratory practices.</li> <li>• stream and loam exploration sampling (both reconnaissance and follow-up sampling).</li> <li>• Underground geological mapping, density measurements, waste control, bulk sampling and grade determination studies.</li> </ul>	2002-2003

**Languages:**

English: Excellent

Afrikaans: Good

**Certification:**

I, the undersigned, certify that to the best of my knowledge and belief, these data correctly describe me, my qualifications, and my experience.



Date: 14 February 2013

Full name of staff member: Neil Mc Kenna

**Name of Staff:** Mr laan Myburgh  
**Position:** Mineral Industry Analyst  
**Name of Firm:** Venmyn Deloitte, a subsidiary of Deloitte Consulting South Africa (Pty) Ltd  
**Address:** 1<sup>st</sup> Floor, Block G, 173 Rivonia Road, Sandton, 2146  
**Profession:** Mathematician  
**Date of Birth:** 31<sup>th</sup> December 1984  
**Years with Firm/Entity:** 3  
**Nationality:** South African

### Membership in Professional Societies:

CLASS	PROFESSIONAL SOCIETY	YEAR OF REGISTRATION
Member	Geostatistical Association of South Africa	2012
Member	Investment Analyst Society of South Africa	2012

### Detailed Tasks Assigned:

YEAR	CLIENT	COMMODITY	PROJECT DESCRIPTION
2010	African Copper	Copper	Feasibility Study
2010	Miranda Mineral Holdings	Coal	Independent Project Valuations
2010	White Water Resources	Gold	Independent Project Valuations
2010	Chrometco Limited	Chromite	Independent Project Valuations
2010	Sekoko	Coal	Independent Project Valuations
2010	West Wits	Gold/Uranium	Statistical Analysis
2010	Central African Gold	Gold	Statistical Analysis
2010	Worldwide Mineral Strategists	Gold	Statistical Analysis
2010	Rooderand Chromite	Chrome	Valuation Statement
2010	African Copper	Copper	Valuation Statement
2010	Sekoko	Coal	Valuation Statement
2010	Chrometco	Chrome	Valuation Statement
2011	Xceed Capital	Coal	Techno Economic Valuation
2011	PSIL	Uranium	Techno Economic Valuation
2011	Wesizwe	Platinum	Techno Economic Valuation
2011	Gem Diamonds	Diamonds	Independent Project Valuations
2011	Lesego	Platinum	Statistical Analysis
2011	Sephaku	Fluorspar	Independent Project Valuations
2011	Xceed Capital	Coal	Valuation Statement
2011	Wesizwe	Platinum	Valuation Statement
2011	Namane Elandslaagte	Diamonds	Valuation Statement
2011	PSIL	Uranium	Valuation Statement
2011	Sudor Coal	Coal	Valuation Statement
2011	Realm Resources	Platinum	Valuation Statement
2011	AEMFC	Coal	Valuation Statement
2011	Lodestone Namibia	Iron Ore	Valuation Statement
2011	African Copper	Copper	Valuation Statement
2011	Karbochem	Power Generation	Valuation Statement
2011	Miranda Minerals	Coal	Valuation Statement
2011	Anglo Namibian Prospects	Base Metals	Valuation Statement
2011	Umcebo	Coal	Valuation Statement
2011	Gem Diamonds	Diamonds	CPR
2011	Banro	Gold	CPR
2011	Sephaku	Fluorspar	CPR
2011	Platmin	Platinum	CPR
2011	Harmony	Gold	CPR
2011	Lodestone Namibia	Iron Ore	Valuation Statement
2011	Karbochem	Power Generation	Valuation Statement
2011	Miranda Minerals	Coal	PEA and PFS
2011	Gravelotte	Gold	Valuation Statement
2011	Pan African Resources,BTRP	Gold	Fatal Flaws review
2011	Anglo Namibian Prospects	Base Metals	Valuation Statement
2012	Tanzania Royalty	PEA	PEA
2012	Frontier Rare Earths	PEA	PEA

2012	Umcebo	Coal	Valuation Statement
2012	NMIC	Gold	PFS
2012	Andulela Kilken	PGE	Valuation Statement
2012	Chrometco	Chrome	Valuation Statement
2012	Central Rand Gold	Gold	CPR
2012	Coal of Africa	Coal	Corporate Model

### Employment Record:

POSITION	COMPANY	JOB DESCRIPTION	DURATION
Mineral Industry Analyst	Venmyn Rand (Pty) Ltd	<p>Venmyn provides compliance and valuation reporting services to the minerals industry. Responsibilities at Venmyn include:-</p> <ul style="list-style-type: none"> <li>• Compiling technical and geological information into reports which are compliant with the SAMREC and JSE listing rules;</li> <li>• High level research for multiple facets of mineral projects;</li> <li>• Valuation of mineral projects; and</li> <li>• Background research of information for CPR's and Technical Statements.</li> </ul>	2010 – present

### Languages:

English: Excellent

Afrikaans: Excellent

### Certification:

I, the undersigned, certify that to the best of my knowledge and belief, these data correctly describe me, my qualifications, and my experience.



Date: 14 February 2013

Full name of staff member: Iaan Myburgh