

THIS CIRCULAR IS IMPORTANT AND REQUIRES YOUR IMMEDIATE ATTENTION

If you are in any doubt as to any aspect of this circular or as to the action you should take, you should consult your licensed securities dealer or registered institution in securities, bank manager, solicitor, professional accountant or other professional adviser.

If you have sold or transferred all your shares in Nan Nan Resources Enterprise Limited, you should at once hand this circular and the accompanying form of proxy to the purchaser or the transferee or to the bank manager, licensed securities dealer or registered institution in securities or other agent through whom the sale was effected for transmission to the purchaser or the transferee.

Hong Kong Exchanges and Clearing Limited and The Stock Exchange of Hong Kong Limited take no responsibility for the contents of this circular, make no representation as to its accuracy or completeness and expressly disclaim any liability whatsoever for any loss howsoever arising from or in reliance upon the whole or any part of the contents of this circular.



NAN NAN RESOURCES ENTERPRISE LIMITED
南南資源實業有限公司

(Incorporated in Bermuda with limited liability)

(Stock Code: 1229)

VERY SUBSTANTIAL ACQUISITION
ACQUISITION OF NEW MINING RIGHT IN XINJIANG

Financial Adviser



BAOQIAO PARTNERS CAPITAL LIMITED

PRECAUTIONARY MEASURES FOR THE SPECIAL GENERAL MEETING

In view of the ongoing coronavirus disease (COVID-19) pandemic, the Company will implement the following precautionary measures at the SGM to protect attending shareholders, staff and stakeholders from the risk of infection including, without limitation:

- (1) Compulsory temperature checks
- (2) Submission of health declaration form
- (3) Compulsory wearing of surgical face mask
- (4) No provision of refreshments or drinks
- (5) No distribution of corporate gift

Any person who does not comply with the precautionary measures, is with a body temperature above 37.2 degree Celsius, has any of the symptoms stated in the health declaration form or is subject to any Hong Kong Government prescribed quarantine may be denied entry into the meeting venue. The Company reminds Shareholders that they may appoint the chairman of the meeting as their proxy to vote on the relevant resolutions at the SGM as an alternative to attending the SGM in person. Subject to the development of COVID-19, the Company may implement further changes and precautionary measures and may issue further announcement on such measures as appropriate.

A letter from the Board is set out on pages 6 to 17 of this circular.

A notice convening the SGM to be held at United Conference Centre, 10th Floor, United Centre, 95 Queensway, Admiralty, Hong Kong on Wednesday, 9 September 2020 at 11:30 a.m. is set out on pages SGM-1 to SGM-2 of this circular. A form of proxy for use at the SGM is enclosed. Whether or not you intend to attend and vote at the SGM in person, you are requested to complete and return the accompanying proxy form to the branch share registrar of the Company in Hong Kong, Union Registrars Limited, at Suites 3301-04, 33/F, Two Chinachem Exchange Square, 338 King's Road, North Point, Hong Kong in accordance with the instructions printed thereon as soon as possible but in any event not later than 48 hours before the time scheduled for the SGM (or any adjournment thereof). Completion and return of the proxy form will not preclude you from attending and voting in person at the SGM (or any adjournment thereof) should you so wish.

19 August 2020

CONTENTS

	<i>Page</i>
Definitions	1
Letter from the Board	6
Appendix I — Financial Information of the Group	I-1
Appendix II — Competent Person’s Report and Valuation Report	II-1
Appendix III — General Information	III-1
Notice of SGM	SGM-1

DEFINITIONS

In this circular, unless the context indicates otherwise, the following expressions have the following meanings:

“Beishan Company”	Xinjiang Beishan Mining Company Limited* (新疆北山礦業有限公司), a company established in the PRC with limited liability and an Independent Third Party
“Board”	the board of Directors
“Changji Land Bureau”	the Land and Resources Bureau of Changji Hui Autonomous Prefecture* (昌吉回族自治州國土資源局) of Xinjiang, the PRC
“Circular”	the circular containing all the information about the Transaction as required under the Listing Rules to be despatched to Shareholders
“Company”	Nan Nan Resources Enterprise Limited, a company incorporated in Bermuda with limited liability whose Shares are listed and traded on the Main Board of the Stock Exchange (Stock Code: 1229)
“Competent Person”	has the meaning ascribed thereto under the Listing Rules
“Competent Person’s Report”	has the meaning ascribed thereto under the Listing Rules
“connected person(s)”	has the meaning ascribed thereto under the Listing Rules
“Consideration”	RMB160,978,000, being the consideration payable by Kaiyuan Company to the Transferor for the sale and purchase of the New Mining Right in accordance to the terms and conditions of the Transfer Agreement
“controlling shareholder(s)”	has the same meaning ascribed to it under the Listing Rules
“Director(s)”	the director(s) of the Company
“Enlarged Kaiyuan Mine”	Kaiyuan Mine with an enlarged mining area (including the original mining area) from an original mining area of approximately 1.1596 km ² to 4.1123 km ² under the New Mining Right

DEFINITIONS

“Estimated Coal Resources”	the estimated total coal resources (可動用儲量) of 121.01 million tonnes of the Kaiyuan Expansion Area of the Enlarged Kaiyuan Mine stated in the Verification Report, which are subject to the independent review and report on the coal resources estimation in compliance with the JORC Code by the Competent Person as required under Chapter 18 of the Listing Rules
“Group”	the Company and its subsidiaries
“HK\$”	Hong Kong dollars, the lawful currency of Hong Kong
“Hong Kong”	the Hong Kong Special Administrative Region of the PRC
“Independent Third Party(ies)”	third party(ies) independent of and not connected with the Company and its connected persons
“Jinneng Company”	Xinjiang Jinneng Mining Company Limited* (新疆金能礦業有限公司), a company established in the PRC with limited liability and an Independent Third Party
“JORC Code”	the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (2012 Edition) produced by the Australasian Joint Ore Reserves Committee
“Kaiyuan Company”	Mulei County Kai Yuan Coal Company Limited* (木壘縣凱源煤炭有限責任公司), a company established in the China with limited liability and an indirect wholly-owned subsidiary of the Company
“Kaiyuan Expansion Area”	the expansion mining area of the Enlarged Kaiyuan Mine from the original of approximately 1.1596 km ² to 4.1123 km ² under the New Mining Right
“Kaiyuan Mine”	an open pit coal mine situated at Zhundong Economic and Technological Development Zone, Xinjiang, the PRC* (中華人民共和國新疆准東經濟技術開發區), with an original mining area of approximately 1.1596 km ² , the mining right of which owned by Kaiyuan Company was expired and superseded following the grant of the New Mining Right by the Transferor to Kaiyuan Company

DEFINITIONS

“Latest Practicable Date”	means 14 August 2020, being the latest practicable date for ascertaining certain information in this circular
“Listing Rules”	the Rules Governing the Listing of Securities on the Stock Exchange
“New Mining Permit”	the mining permit in respect of the New Mining Right issued to Kaiyuan Company
“New Mining Right”	the new mining right of the Enlarged Kaiyuan Mine for 30 years from August 2019 to August 2049 to conduct mining activities at the Enlarged Kaiyuan Mine by Kaiyuan Company under the Transfer Agreement
“Nov 15 Announcement”	an announcement of the Company dated 15 November 2019 regarding, among others, the grant of the New Mining Permit
“Optimization and Upgrading Plan”	the government restructuring proposals regarding the optimization and upgrading plan to restructure the mining area within the Zhundong Meitian Xiheishan Coal Mining Area* (淮東煤田西黑山煤炭礦區), where the Group’s coal mining business is located
“Peak Vision”	Peak Vision Mining Alliance Limited, being the Competent Person engaged by the Company to prepare the Competent Person’s Report (including the valuation report) in accordance with the requirements under Chapter 18 of the Listing Rules
“PRC”	the People’s Republic of China
“RMB”	Renminbi, the lawful currency of the PRC
“SGM”	the special general meeting of the Company to be convened and held for the Shareholders to consider and, if thought fit, pass the relevant resolution(s) in approving and ratifying the Transaction
“Share(s)”	ordinary share(s) of HK\$0.10 in the share capital of the Company
“Shareholder(s)”	the holder(s) of the Shares
“Stock Exchange”	The Stock Exchange of Hong Kong Limited

DEFINITIONS

“Transaction”	the acquisition of the New Mining Right by Kaiyuan Company from the Transferor pursuant to the terms of the Transfer Agreement
“Transfer Agreement”	the transfer agreement entered into between the Transferor and Kaiyuan Company in respect of the New Mining Right, dated 2 December 2019
“Transferor” or “Xinjiang Natural Resources Department”	the Department of Natural Resources of Xinjiang Uygur Autonomous Region* (新疆維吾爾自治區自然資源廳) of the PRC
“Upgrading Plan Announcements”	the announcements published by the Company dated 11 November 2011, 12 March 2012, 21 March 2012, 15 June 2012, 21 March 2014, 15 August 2017, 28 March 2018, 14 December 2018, 31 December 2018, 15 May 2019, 31 May 2019, 4 November 2019 and 15 November 2019, respectively, regarding the progress update on the Optimization and Upgrading Plan of the Group’s coal mining business and the New Mining Right
“Valuation Assessment”	the valuation assessment of the New Mining Right prepared by the designated valuer engaged by the Transferor
“Valuation Report”	has the meaning ascribed thereto under the Listing Rules
“Verification Report”	the mineral resources verification report* (儲量核實報告) to ascertain the coal reserves of the Enlarged Kaiyuan Mine prepared by Xinjiang Bureau of Geo-Exploration and Mineral Development* (新疆維吾爾自治區地質礦產勘查開發局) directly operated under government authority and submitted to the Transferor as required for the application of the New Mining Right
“Xinjiang”	Xinjiang Uygur Autonomous Region* (新疆維吾爾自治區) of the PRC
“Zexu Company”	Qitai County Zexu Trading Company Limited* (奇台縣澤旭商貿有限責任公司), a company established in the PRC with limited liability and an indirect wholly-owned subsidiary of the Company

DEFINITIONS

“Zexu Mine”	an open pit mine situated at Qitai County, Changji Hui Autonomous Prefecture, Xinjiang, the PRC* (中華人民共和國新疆昌吉回族自治州奇台縣) with a mining area of approximately 2.879 km ² , in which the Group was granted with the exploration permit (the “ Zexu Exploration Permit ”) to conduct exploration activities until the Zexu Exploration Permit became invalid in 2017 under the Optimization and Upgrading Plan
“km ² ” or “square kilometre”	square kilometre
“%”	per cent.

* All English translation of the Chinese names is for illustration purpose only



NAN NAN RESOURCES ENTERPRISE LIMITED
南南資源實業有限公司

(Incorporated in Bermuda with limited liability)

(Stock Code: 1229)

Executive Directors:

Mr. Kwan Man Fai (*Chairman and Managing Director*)
Mr. Wang Xiangfei (*with Mr. Wang Xiaoyao as alternate*)
Mr. Wong Sze Wai

Registered Office:

Clarendon House
2 Church Street
Hamilton HM11
Bermuda

Independent non-executive Directors:

Dr. Wong Man Hin Raymond
Mr. Chan Yiu Fai Youdey
Mr. Pak Wai Keung Martin

Principal Place of

Business in Hong Kong:
8/F., Tower 2
Admiralty Centre
18 Harcourt Road
Admiralty, Hong Kong

19 August 2020

To the Shareholders

Dear Sir or Madam,

VERY SUBSTANTIAL ACQUISITION
ACQUISITION OF NEW MINING RIGHT IN XINJIANG

INTRODUCTION

Reference is made to the announcement of the Company dated 6 December 2019 in relation to the acquisition of the New Mining Right by Kaiyuan Company (as the transferee), an indirect wholly-owned subsidiary of the Company, from the Xinjiang Natural Resources Department (as the transferor), at a cash Consideration of RMB160,978,000 pursuant to the terms of the Transfer Agreement.

The purpose of this circular is to provide you with, among others, (i) further details of the Transfer Agreement and the transactions contemplated thereunder; (ii) the Competent Person's Report and the Valuation Report; (iii) a notice of SGM at which resolution(s) will be proposed to consider, if thought fit, pass the relevant resolution(s) in approving and ratifying the Transaction; and (iv) other information as required under the Listing Rules to enable you to make an informed decision on whether to vote for or against the resolution(s) proposed for voting at the SGM.

LETTER FROM THE BOARD

THE TRANSFER AGREEMENT

The principal terms of the Transfer Agreement are as follows:

- Date: 2 December 2019 *(Note)*
- Parties: (i) Kaiyuan Company as the transferee; and
(ii) Xinjiang Natural Resources Department as the transferor

To the best of the Directors' knowledge, information and belief having made all reasonable enquiries, the Transferor and its ultimate beneficial owner(s) are third parties independent of and not connected with the Company and its connected person(s).

Note: The Transfer Agreement was dated 2 December 2019 but it was officially passed by the Transferor to Kaiyuan Company on 6 December 2019.

Assets to be acquired

Pursuant to the terms of the Transfer Agreement, the Transferor agrees to sell, and Kaiyuan Company agrees to purchase, the New Mining Right of the Enlarged Kaiyuan Mine for a term of 30 years from August 2019 to August 2049. Under the Transfer Agreement, the estimated coal resources of the Kaiyuan Expansion Area of the Enlarged Kaiyuan Mine is 41.6433 million tonnes for the mining life of 30 years.

Consideration

The Consideration is RMB160,978,000, which shall be settled in cash and paid by Kaiyuan Company to the Transferor in fifteen instalments:

- (i) the first instalment (the "**First Instalment**") in an amount of RMB32,200,000 shall be paid within 30 days upon signing of the Transfer Agreement;
- (ii) the second to fourteenth instalments in an amount of RMB9,200,000 each shall be paid before 20 November of every year from 2020 to 2032; and
- (iii) the last instalment in an amount of RMB9,178,000 shall be paid before 20 November 2033.

Kaiyuan Company has paid to the Transferor the First Instalment through its internal resources.

The Consideration was determined by the Transferor based on the Valuation Assessment prepared by the designated valuer engaged by the Transferor with reference to, among others, the Estimated Total Coal Resources of 121.01 million tonnes for the mining life of 87.17 years stated in the Verification Report and the Valuation Assessment and the term of the New Mining Right of 30 years.

LETTER FROM THE BOARD

In assessing the fairness and reasonableness of the Consideration, the Directors have reviewed the Verification Report and the Valuation Assessment, which the Directors considered that both the reports were prepared by qualified professionals in Xinjiang, the PRC and were reported on by adopting the applicable standards issued by the Chinese government and the professional associations.

As disclosed in the Announcement, in compliance with the requirements of Chapter 18 of the Listing Rules, the Company has appointed Peak Vision to issue a Competent Person's Report together with the Valuation Report (the text of which is set out in Appendix II to this circular) (collectively known as the "**CP Report**") to provide the estimated amounts of resources and reserves in respect of the Kaiyuan Expansion Area of the Enlarged Kaiyuan Mine in accordance with the JORC Code. The team members comprised of Antonio Loschiavo P.Eng., Mining Engineer; Ting Lu, P.Eng., Process Engineer; and Greg Mosher, P.Geo., Geologist. All three are Competent Persons for their respective portions of the Report in the context of the JORC Code and in the context of Chapter 18 of the Listing Rules. The brief resumes of the team members outlining their experiences are set out on page II-45 of Appendix II to this circular.

As disclosed in the CP Report as set out in Appendix II to this circular, the valuation of the New Mining Right as at 31 March 2020 was in the range between RMB148,903,000 and RMB215,435,000 determined by the Competent Persons by way of income approach. In addition, the technical value of the New Mining Right at Completion (i.e. 6 December 2019) was in a range between RMB159,908,000 and RMB226,096,000 as disclosed in the CP Report.

The Group intends to finance the Consideration by its internal resources.

The Directors are of the view that the Consideration is fair and reasonable and commensurate with the CP Report.

Conditions

The Transfer Agreement is unconditional. Completion of the Transfer Agreement took place immediately upon signing of the Transfer Agreement by the Transferor and Kaiyuan Company.

Supplemental Resources Fee

Based on the Verification Report and the Valuation Assessment, the accumulated output of Kaiyuan Mine was 23.65 million tonnes as at the end of 2017, of which resources fee of 3.8819 million tonnes of coal ("**Paid Output**") was paid by Kaiyuan Company.

LETTER FROM THE BOARD

As part of the Transfer Agreement, Kaiyuan Company is required to pay and has paid a supplemental resources fee of RMB76,502,500 (the “**Supplemental Resources Fee**”) to the Transferor within 30 days from signing of the Transfer Agreement for the unpaid output of 19.8 million tonnes (representing approximately the difference between the accumulated output of 23.65 million tonnes and the Paid Output of 3.8819 tonnes) of coal of Kaiyuan Mine. No such fee has been charged for the mined output of Kaiyuan Mine for 2018, 2019 and 2020 (up to the Latest Practicable Date).

Based on the advice given by the legal adviser of the Company as to the law of the PRC, other than the payment of the one-off Supplemental Resources Fee, Kaiyuan Company will not be subject to any fee/charges relating to the Kaiyuan Mine pursuant to the terms of the Transfer Agreement.

INFORMATION OF THE GROUP AND KAIYUAN COMPANY

The Group is principally engaged in (i) mining and sales of coal (the “**Coal Mining Business**”); (ii) the provision of renewable energy solutions and services; and (iii) the provision of information technology outsourcing, consultancy and technical services.

Kaiyuan Company is an indirect wholly-owned subsidiary of the Company and is principally engaged in the operation and management of the Enlarged Kaiyuan Mine.

INFORMATION OF THE COAL MINING BUSINESS AND THE NEW MINING RIGHT

Kaiyuan Mine

Kaiyuan Mine is an open pit mine and the only operating coal mine of the Group situated at Zhudong Economic and Technological Development Zone, Xinjiang, the PRC* (中華人民共和國新疆准東經濟技術開發區) with an original mining area of approximately 1.1596 km². As disclosed in the announcement of the Company dated 4 November 2019, the mining permit of Kaiyuan Mine at a designed capacity of 90,000 tonnes per annum was expired on 3 November 2019 and has been superseded following the grant of the New Mining Right by the Transferor to Kaiyuan Company under the Transfer Agreement.

Enlarged Kaiyuan Mine

Optimization and Upgrading Plan

The Enlarged Kaiyuan Mine is the result of the Optimization and Upgrading Plan. As disclosed in the Upgrading Plan Announcements, the Group has been in negotiation with the Xinjiang Natural Resources Department and other relevant government authorities in relation to the Optimization and Upgrading Plan to restructure the mining area within the Zhudong Meitian Xiheishan Coal Mining Area* (准東煤田西黑山煤炭礦區), where both Kaiyuan Mine and Zexu Mine ^(Note) are located.

The restructuring proposals under the Optimization and Upgrading Plan relating to Kaiyuan Mine and Zexu Mine as announced by the Company on 15 June 2012 include:

1. Kaiyuan Mine would be restructured and upgraded, and the Zexu Exploration Permit granted to the Group would be terminated; and

LETTER FROM THE BOARD

2. the mining area of Kaiyuan Mine was proposed to be increased from 1.1596 km² to 4.12 km², with the estimated coal resources of approximately 131.18 million tonnes.

Note: Zexu Mine has never commenced mining nor generated any revenue for the Group and the Zexu Exploration Permit became invalid in 2017 under the Optimization and Upgrading Plan.

On 15 August 2017, as requested by the Changji Land Bureau, a subordinate administrative unit of the Xinjiang Natural Resources Department, the Group entered into four undisputed agreements with the relevant parties in relation to the Optimization and Upgrading Plan:

1. Zexu Mine Undisputed Agreements

Zexu Company, a subsidiary of the Company, entered into two undisputed agreements (together, the “**Zexu Mine Undisputed Agreements**”) with Jinneng Company and Beishan Company, pursuant to which, each of Jinneng Company and Beishan Company shall (i) occupy an area of 0.297 km² and 2.582 km² within Zexu Mine (together representing the entire area of Zexu Mine) respectively; and (ii) apply to the Xinjiang Natural Resources Department to delineate the scope of such mining area regarding the reorganisation of the mining area. An aggregate compensation of approximately RMB4,900,000, which was determined by the Changji Land Bureau, has been received by the Group under the Zexu Mine Undisputed Agreements.

The Zexu Mine Undisputed Agreements has been completed. Following completion of the Zexu Mine Undisputed Agreements, the Zexu Exploration Permit became invalid.

2. Kaiyuan Mine Undisputed Agreements

Kaiyuan Company entered into two undisputed agreements (together, the “**Kaiyuan Mine Undisputed Agreements**”) with Jinneng Company and Beishan Company, pursuant to which Kaiyuan Company shall (i) occupy an area of 1.292 km² within the exploration area of the mine of Jinneng Company (the “**First Extended Area**”) and 0.016 km² within the mining area of the mine of Beishan Company (the “**Second Extended Area**”) and (ii) apply to the Xinjiang Natural Resources Department to delineate the scope of such mining area regarding the reorganisation of the mining area.

Pursuant to the Kaiyuan Mine Undisputed Agreements, compensations amounted to approximately RMB2,200,000 and RMB27,216 were paid by the Group to Jinneng Company and Beishan Company respectively and such amounts were recognized as non-refundable deposits paid by the Group in 2017 and subsequently transferred to intangible assets upon execution of the Transfer Agreement.

LETTER FROM THE BOARD

The First Extended Area and Second Extended Area are located next to Kaiyuan Mine and have not yet commenced mining. The Company was required to go through official procedures with the relevant land and resources departments to obtain the mining right in respect of these extended areas.

According to the Optimization and Upgrading Plan, the mining area of Kaiyuan Mine was proposed to be increased from 1.1596 km² to 4.12 km² and following completion of the Kaiyuan Mine Undisputed Agreement, the area of Kaiyuan Mine has been extended to cover the First Extended Area and the Second Extended Area (subject to obtaining the mining permit) to approximately 2.4676 km². The outstanding mining area (the “**Outstanding Mining Area**”) of approximately 1.6524 km² located next to Kaiyuan Mine was owned by the Chinese government and the Group would require to go through official procedures with the relevant land and resources departments to obtain the mining right of such area.

As announced by the Company on 14 December 2018, Kaiyuan Company (as transferee) entered into an Exploration Right Transfer Agreement* (探礦權出讓合同書) with the Xinjiang Natural Resources Department (as transferor) in respect of the exploration right of the Outstanding Mining Area after winning the bid, auction and listing-for-sale governed by the Chinese government authority(ies). The transfer price of the exploration right in respect of the Outstanding Mining Area is RMB67,200. On 10 May 2019, the Group received a notification dated 8 April 2019 regarding the grant of exploration right for the Outstanding Mining Area with an area of 1.68 km² by the Xinjiang Natural Resources Department for a period of 3 years from 8 April 2019 to 8 April 2022.

The Transfer Agreement, the New Mining Right and the New Mining Permit

On 17 December 2018, Kaiyuan Company filed an application for the New Mining Right of the Enlarged Kaiyuan Mine with the Xinjiang Natural Resources Department and such application was approved on 21 December 2018 together with the New Mining Permit for a term of 1 year from 21 December 2018 to 21 December 2019. As disclosed in the Announcement, the New Mining Permit was kept by the Transferor and had not been formally granted to Kaiyuan Company until November 2019 pending (i) completion of the relevant procedures (the “**Relevant Procedures**”) as required by the Xinjiang Natural Resources Department, including the formal submission and filing of the review opinion of Verification Report, the Valuation Assessment, the resources development and use scheme* (資源開發利用方案) and the evaluation report on environmental impact on the mining area* (礦界範圍內的環境影響評價報告) to the registration authority(ies); and (ii) entering into the Transfer Agreement between Kaiyuan Company and the Transferor.

As disclosed in the Nov 15 Announcement, (i) the New Mining Permit was granted to Kaiyuan Company, which is valid for 1 year from 21 December 2018 to 21 December 2019, which covers a mining area of approximately 4.1123 km² with designed capacity of 0.9 million tonnes per annum; (ii) according to the New Mining Permit, the estimated coal resources of the New Mining Right for the mining life of 30 years are 41.6433 million tonnes; (iii) the assessed value of the New Mining Right by the Xinjiang Natural Resources Department is RMB160,978,000 (i.e. the Consideration); and (iv) Kaiyuan Company was requested, upon receiving official approval of the Transfer Agreement from the Transferor, to enter into the Transfer Agreement with the Transferor, which set out the rights and obligations of the respective parties in respect of the New Mining Right.

LETTER FROM THE BOARD

The designed capacity of the New Mining Right is 0.9 million tonnes per annum. Based on the opinion given by the Company's legal adviser as to the law of the PRC after making enquires with the Development and Reform Commission of Xinjiang Uygur Autonomous Region* (新疆維吾爾自治區發展和改革委員會) and with reference to the Approval on the Production Capacity of the Coal Mine of Mulei County Kai Yuan Coal Company Limited* (《關於木壘縣凱源煤炭有限責任公司煤礦生產能力核定的批復》新煤行管發【2013】195號) issued by Bureau of Coal Industry Administration of Xinjiang Uygur Autonomous Region* (新疆維吾爾自治區煤炭工業管理局) to Kaiyuan Company, the approved production capacity for Kaiyuan Company is 1.2 million tonnes.

The Company notes that the New Mining Right under the Transfer Agreement is valid for 30 years but the New Mining Permit is valid for 1 year (which could be up to a maximum of 20 years for the Enlarged Kaiyuan Mine (i.e. a medium-sized coal mine) in accordance with the Notice on Adjusting the Standards for Production and Construction Scale of Some Minerals* (《關於調整部分礦種生產建設規模標準的通知》(國土資發【2004】208號)) and the Measures on Mineral Resources Mining Registration Management* (《礦產資源開採登記管理辦法》). The Company's legal adviser as to the law of PRC has made enquiries with the Transferor and was informed that Kaiyuan Company has the right to apply for the renewal of New Mining Permit for the remaining period of the New Mining Right under the Transfer Agreement.

Renewal of the New Mining Permit, temporary suspension and update on resumption of mining operations and sale at the Enlarged Kaiyuan Mine

As disclosed in the announcements of the Company dated 20 December 2019 and 16 March 2020, the sales and operation of the Enlarged Kaiyuan Mine has been temporarily suspended since 21 December 2019 (the "**Temporary Suspension**") due to the expiry of the New Mining Permit on 21 December 2019 and the delay in renewal of the New Mining Permit.

The New Mining Permit was renewed in March 2020 for the period from 21 December 2019 to 21 December 2021 and the resumption application was approved by the Production Safety Supervision and Administration Bureau* (安全生產監督管理局) of the Xinjiang Zhundong Economic and Technological Development Zone* (新疆准東經濟技術開發區) on 2 August 2020 ("**Resumption Approval**").

Kaiyuan Company is allowed to resume the mining operations and sale upon receipt of the Resumption Approval. However, due to the recent rebound of COVID-19 cases in Xinjiang and the temporary lockdown for epidemic prevention in Xinjiang since July 2020, Kaiyuan Company is unable to immediately resume its mining operation and sale at the Enlarged Kaiyuan Mine following the approval on the Resumption Application. The Company will closely monitor the situation and it is planned that Kaiyuan Company will resume production and sale of coal products at the Enlarged Kaiyuan Mine as soon as possible after the relaxation of relevant lockdown restrictions in Xinjiang.

OPERATING INFORMATION OF KAIYUAN MINE AND THE ENLARGED KAIYUAN MINE

Sales of Coal

As disclosed in the annual report of the Company for the year ended 31 March 2020, Kaiyuan Company sold approximately 1.04 million tonnes and 1.76 million tonnes of coal with total sales of approximately HK\$73,910,000 and HK\$75,234,000 for the years ended 31 March 2020 and 31 March 2019, respectively.

As abovementioned, the sales and operation of the Enlarged Kaiyuan Mine has been temporarily suspended since 21 December 2019.

LETTER FROM THE BOARD

Information of Coal Resources and Reserves of the Enlarged Kaiyuan Mine

Coal Resources and Reserves

Expansion Mining Area

There are 9 coal seams with mining potential in the Kaiyuan Expansion Area and set out below are the Coal Resources and Coal Reserves estimation under JORC Code as at 31 March 2020:

Coal Resources

– *Indicated Resources* 66.27 million tonnes

Coal Reserves

– *Probable Reserves* 63.481 million tonnes

For details on the reserves and resources of the Kaiyuan Expansion Area of Enlarged Kaiyuan Mine, please refer to the CP Report as set out in Appendix II to this circular.

The difference in tonnage between the resource and reserve estimates is largely attributable to the fact that the reserve estimate would have included mining losses and the resource estimate did not.

Original Mining Area

The estimated remaining proved/probable coal reserves are approximately 5.11 million tonnes in the Original Mining Area as at 31 March 2020 as disclosed in the company's annual report for the year ended 31 March 2020.

Other operating information

Mining operations

The Enlarged Kaiyuan Mine is an open pit mine and similar to the Kaiyuan Mine, the mining continues to be a conventional truck-and-excavator operation.

The coal of the Enlarged Kaiyuan Mine is characterized as a low-rank bituminous, with no coking abilities, and is classified as non-coking coal BN31 according to the Chinese classification system. The Kaiyuan Mine has been in operation since 2008 and has an established thermal coal sales market in the PRC.

The designed capacity of the New Mining Right is 0.9 million tonnes per annum. Based on the opinion given by the Company's legal adviser as to the law of the People's Republic of China after making enquires with the Development and Reform Commission of Xinjiang Uygur Autonomous Region* (新疆維吾爾自治區發展和改革委員會) and with reference to the Approval on the Production Capacity of the Coal Mine of Mulei County Kai Yuan Coal Company Limited* (《關於木壘縣凱源煤炭有限責任公司煤礦生產能力核定的批復》新煤行管發【2013】195號) issued by Bureau of Coal Industry Administration of Xinjiang Uygur Autonomous Region* (新疆維吾爾自治區煤炭工業管理局) to Kaiyuan Company, the approved annual production capacity for Kaiyuan Company is 1.2 million tonnes. Taking into account the permitted mining rate of 1.2 million tonnes per year and 30 years of mining rights under the Transfer Agreement, the maximum output will be 36 million tonnes of coal.

LETTER FROM THE BOARD

It is currently estimated by the Company that Kaiyuan Company will require approximately 2 years to complete all necessary construction and commissionary work for the Enlarged Kaiyuan Mine. It is expected that the Enlarged Kaiyuan Mine will achieve its full annual capacity of 1.2 million tonnes by March 2022. As disclosed in the CP Report, the estimated total capital cost to accommodate the production capacity of 1.2 million tonnes is approximately RMB370 million, which will be financed by the internal resources of and the banking facilities available to the Group.

The Enlarged Kaiyuan Mine is not subject to any royalties, back-in rights, payments or other agreements other than taxes payable on sales of coal and an environmental tax.

Environmental studies, permitting and social impacts

The mining business of Kaiyuan Company is subject to environmental protection law and regulations in the PRC. Based on the PRC legal opinion of the Company as disclosed in the CP Report as set out in Appendix II to this circular, the planned and implemented environmental protection measures of the Enlarged Kaiyuan Mine have been approved by competent government authorities and the continuing compliance with the environmental protection measures can adequately satisfy the need for environmental protection.

The Enlarged Kaiyuan Mine is not subject to any known environmental liabilities.

So far as the Company is aware, the Enlarged Kaiyuan Mine is in general compliance with all applicable environmental laws and regulations.

Major Permits and Licences of the Enlarged Kaiyuan Mine

The permits which are required for Kaiyuan Company to carry on its mining activities are a mining licence and a safety production permit, both of which are in place. The mining licence is normally renewable every year or two years and the safety production permit is renewable every three years.

There are no known risk factors that may affect access, title, or the right or ability to perform works on the Enlarged Kaiyuan Mine.

Legal compliance

As at the Latest Practicable Date, the Company was not aware of:

- (a) any circumstances that would on reasonable grounds be expected to give rise to any civil, criminal or administrative action or other proceeding or suit under any environmental law applicable to the Enlarged Kaiyuan Mine, which is or may be materially prejudicial to the current financial position of Kaiyuan Company;
- (b) any material unremedied breach of the material licences and permits required for the operations of the Enlarged Kaiyuan Mine;

LETTER FROM THE BOARD

- (c) save for the Temporary Suspension, any circumstances which may likely to cause any of the material licences and permits required for the operations of the Enlarged Kaiyuan Mine to be suspended, revoked, materially varied or terminated; and
- (d) any litigation, claim or arbitration of material importance in respect of the Company and the Enlarged Kaiyuan Mine.

The Competent Person has confirmed that there has been no material change of the mineral resources estimate of the Kaiyuan Expansive Area of the Enlarged Kaiyuan Mine since the effective date of the Competent Person's Report.

INFORMATION OF THE TRANSFEROR

The Transferor is a governmental authority of the PRC and the seller of the New Mining Right in Xinjiang.

REASONS FOR AND BENEFITS OF THE TRANSACTION

The Coal Mining Business is the principal operation of the Group which accounted for approximately 58%, 99% and 100% of the Group's revenue for the years ended 31 March 2020, 31 March 2019 and 31 March 2018, respectively. As disclosed in the Upgrading Plan Announcements, the Group has been actively proceeding with the Optimization and Upgrading Plan since 2011 as part of the government restructuring proposals to consolidate smaller mines as well as an expansion and development of the Coal Mining Business of the Group, which will substantially enlarge its coal resources and increase the annual production volume to a range of 0.9 million tonnes to 1.2 million tonnes, ten times or more of the existing production capacity of Kaiyuan Mine. The Directors consider that the Transaction is in line with the business development strategy and planning of the Group, enabling futures results and investment return to blossom.

The Directors consider the entering into of the Transfer Agreement is in the Group's ordinary and usual course of business and the Transaction is in the interests of the Company and the Shareholders as a whole, and the terms of the Transfer Agreement are fair and reasonable.

FINANCIAL EFFECTS OF THE TRANSACTION

As disclosed in the annual report for the year ended 31 March 2020, as a result of the Acquisition, the Group reported increases in intangible assets of mining right of approximately HK\$110.4 million and mining right payables of approximately HK\$83.5 million and decreases in non-refundable deposits of approximately HK\$2.4 million and bank balances and cash of approximately HK\$108.7 million in relation to payment of the first instalment of the Consideration and the supplemental resources fee. In addition, the supplemental resources fee was recognised in profit and loss in the Group's accounts for the year ended 31 March 2020.

LETTER FROM THE BOARD

LISTING RULES IMPLICATIONS

Since the highest percentage ratio in respect of the Transaction is more than 100%, the entering into of the Transfer Agreement constitutes a very substantial acquisition for the Company under Chapter 14 of the Listing Rules, and is subject to reporting, announcement, circular and Shareholders' approval requirements under Chapter 14 of the Listing Rules.

APPLICATION FOR WAIVER FROM STRICT COMPLIANCE WITH RULE 14.49 OF THE LISTING RULES

As the Transaction constitutes a very substantial acquisition for the Company under the Listing Rules and pursuant to Rule 14.49 of the Listing Rules, the Transaction must be made conditional on approval by Shareholders in general meeting. No written Shareholders' approval will be accepted in lieu of holding a general meeting. The Stock Exchange will require any Shareholder and his close associates to abstain from voting at the relevant general meeting on the relevant resolution(s) if such Shareholder has a material interest in the Transaction.

The Company has applied to the Stock Exchange for a waiver from strict compliance with Rule 14.49 of the Listing Rules which requires that a very substantial acquisition must be made conditional on approval by Shareholders in general meeting. However, such waiver has not been granted by the Stock Exchange and the Company, at the time of entering into the Transfer Agreement, did not comply with the requirement set out in Rule 14.49 of the Listing Rules with respect to the Transaction.

THE SGM

The SGM will be convened and held at United Conference Centre, 10th Floor, United Centre, 95 Queensway, Admiralty, Hong Kong on Wednesday, 9 September 2020 at 11:30 a.m. for the Shareholders to consider and, if thought fit, pass the relevant resolution(s) in approving and ratifying the Transaction. The notice of the SGM is set out on pages SGM-1 to SGM-2 of this circular. To the best of the Directors' knowledge, information and belief having made all reasonable enquiries, no Shareholder has a material interest in the Transaction which is different from other Shareholders, and therefore no Shareholder is required to abstain from voting on the relevant resolution(s) in respect of the Transaction.

Ascent Goal Investments Limited, the controlling shareholder of the Company holding 569,616,589 Shares, representing approximately 74.42% of the issued share capital of the Company as at the Latest Practicable Date has given an undertaking to the Company to vote for the resolution(s) in approving and ratifying the Transaction at the SGM.

LETTER FROM THE BOARD

A form of proxy for use at the SGM is enclosed with this circular and such form is also published on the website of the Stock Exchange at www.hkex.com.hk. Whether or not you are able to attend the SGM, you are requested to complete the accompanying form of proxy in accordance with the instruction printed thereon and return the same to the Company's Hong Kong branch share registrar, Union Registrars Limited, at Suites 3301-04, 33/F., Two Chinachem Exchange Square, 338 King's Road, North Point, Hong Kong as soon as possible but in any event not less than 48 hours before the time appointed for the holding of the SGM or any adjournment thereof. Completion and return of the form of proxy will not preclude you from attending and voting in person at the SGM or any adjournment thereof should you so wish.

In order to attend the SGM to be held on Wednesday, 9 September 2020, all transfer of shares, accompanied by the relevant share certificates and transfer forms, must be lodged with the Company's branch share registrar in Hong Kong, Union Registrars Limited, Suites 3301-04, 33/F., Two Chinachem Exchange Square, 338 King's Road, North Point, Hong Kong for registration not later than 4:00 p.m. on Thursday, 3 September 2020.

RECOMMENDATION

The Directors consider that the terms of the Transfer Agreement are fair and reasonable and in the interests of the Shareholders and the Company as a whole, therefore they recommend the Shareholders to vote in favour of the proposed ordinary resolution(s) as set out in the notice of the SGM to approve and ratify the Transfer Agreement and the transactions contemplated thereunder.

ADDITIONAL INFORMATION

Your attention is also drawn to the information set out in the appendices to this circular.

Yours faithfully,
By order of the Board
Nan Nan Resources Enterprise Limited
Kwan Man Fai
Chairman and Managing Director

1. FINANCIAL INFORMATION

Financial information on the Group for the year ended 31 March 2018, the year ended 31 March 2019 and the year ended 31 March 2020 are set out in the annual reports of the Company for the year ended 31 March 2018, for the year ended 31 March 2019 and for the year ended 31 March 2020, respectively, which are published on both the website of the Stock Exchange (<http://www.hkex.com.hk>) and the website of the Company (<http://www.nannanlisted.com/hk/>) respectively:

- (i) the audited consolidated financial information of the Group for the year ended 31 March 2018 is disclosed in the annual report of the Company for the year ended 31 March 2018 published on 18 July 2018 from pages 93 to 207 (<https://www1.hkexnews.hk/listedco/listconews/sehk/2018/0718/ltn20180718657.pdf>);
- (ii) the audited consolidated financial information of the Group for the year ended 31 March 2019 is disclosed in the annual report of the Company for the year ended 31 March 2019 published on 16 July 2019 from pages 104 to 239 (<https://www1.hkexnews.hk/listedco/listconews/sehk/2019/0716/ltn20190716147.pdf>); and
- (iii) the audited consolidated financial information of the Group for the year ended 31 March 2020 is disclosed in the annual report of the Company for the year ended 31 March 2020 published on 21 July 2020 from pages 77 to 234 (<https://www1.hkexnews.hk/listedco/listconews/sehk/2020/0721/2020072100607.pdf>);

2. INDEBTEDNESS

Borrowings and other payables

At the close of business on 30 June 2020, being the latest practicable date for the purpose of preparing this indebtedness statement, the Group had outstanding unguaranteed and secured interest-bearing borrowings of approximately HK\$65,047,000. As at 30 June 2020, the interest-bearing borrowings of approximately HK\$65,047,000 are unguaranteed and secured by the Group's pledged bank deposits of approximately HK\$73,821,000.

At the close of business on 30 June 2020, being the latest practicable date for the purpose of preparing this indebtedness statement, the Group had unguaranteed and unsecured zero-coupon convertible bonds with aggregate principal amount of HK\$200,000,000 due on 13 March 2023.

At the close of business on 30 June 2020, being the latest practicable date for the purpose of preparing this indebtedness statement, the Group had a unguaranteed and unsecured promissory note with principal amount of HK\$2,400,000 issued on 23 April 2019. The promissory note shall be due within 15 business days after the audited consolidated statements of comprehensive income are issued by the auditors of the subsidiaries for the year ending 31 December 2020.

At the close of business on 30 June 2020, being the latest practicable date for the purpose of preparing this indebtedness statement, the Group had unguaranteed and unsecured payables for construction-in-progress of approximately HK\$1,990,000. The remaining contract sum of approximately HK\$9,012,000 shall be due according to milestones as stipulated in the contract.

Lease liabilities

As at 30 June 2020, the Group had outstanding lease liabilities (including both current and non-current portions) of approximately HK\$2,760,000.

	At 30 June 2020 HK\$'000 (Unaudited)
Amounts payable	2,878
Less: future finance charges	<u>(118)</u>
	<u><u>2,760</u></u>

Contingent liabilities

At the close of business on 30 June 2020, the Group had neither any guarantee nor any other contingent liabilities in existence.

Save as aforesaid and apart from intra-group liabilities and normal trade payables in the ordinary course of business, at the close of business on 30 June 2020, the Group did not have any other loan capital issued and outstanding or agreed to be issued, bank overdrafts, loans or other similar indebtedness, liabilities under acceptances (other than normal trade bills) or acceptance credits, debentures, mortgages, charges, hire purchase commitments, guarantees or other material contingent liabilities.

3. WORKING CAPITAL

Taking into account the internal financial resources and the available credit facilities of the Group, and considering the effect of the Transaction, the Directors, after due and careful enquiry, are of the opinion that the Group has sufficient working capital for 125% of the Group's present requirements, that is for at least 12 months from the date of this circular.

4. FINANCIAL AND TRADING PROSPECTS OF THE GROUP

Below is an extract from the annual report of the Company for the year ended 31 March 2020.

The Group has been actively proceeding with the Optimization and Upgrading Plan since 2011 in relation to the New Mining Right of the Enlarged Kaiyuan Mine. The acquisition of the New Mining Right of the Enlarged Kaiyuan Mine in December 2019 has substantially enlarged the Group's coal resources and will allow the Group to increase the annual production volume to a range of 0.9 million tonnes to 1.2 million tonnes, ten times or more of the existing production capacity of Kaiyuan Mine. The Directors consider that the transaction is in line with the Group's strategy to expand the coal mining business of the Group.

In the coming year, there will be a reasonable expected amount of expenditure in capital assets, in particular for the new plants and machines for the environmental protection remedial works. Sources of funding are expected to come primarily from the coal sales revenue and also external banking facilities of the Group.

In addition to coal mining, the Group has been exploring new markets and seeking to extend its business coverage on technological and renewable energy sectors, in particular, the acquisition of Harbour Group Holdings limited and its subsidiaries in 2019 and NEFIN Leasing Technologies Limited and its wholly-owned subsidiary, NEFIN Technologies (Malaysia) Sdn. Bhd. in 2018. It is one of the objectives of the Group to diversify its business portfolio into sectors offering higher growth momentum.

Due to the recent social and political instability in Hong Kong and the outbreak of coronavirus disease (COVID-19) worldwide, we are facing the most difficult business environment, which negatively impact the growth of our business, in particular IT services business in Hong Kong is expected to be hit hard by the prolonged social unrest in Hong Kong.

The Board will continue to keep track of the latest development of the COVID-19 and will use its best endeavors to manage the Group's business portfolio with a view to improve the Group's financial performance and enhance shareholders' value.

5. MANAGEMENT DISCUSSIONS AND ANALYSIS OF THE GROUP

Reproduced below is the discussion and analysis of the operations of the Group for the three years ended 31 March 2018, 2019 and 2020, which are extracted from the annual reports of the Company for the year ended 31 March 2018, 2019 and 2020. Capitalised terms used in this section shall have the same meaning as those defined in the respective annual reports. These extracted materials below were prepared prior to the date of this circular and speak as of the date they were originally published, representing the opinion and beliefs made by the then Directors at such time when the related annual report was issued.

(1) For the year ended 31 March 2018**SEGMENT INFORMATION****Business segment**

The Group's operating segment, based on information reported to the chief operating decision maker who is also the executive Director, for the purposes of resources allocation and performance assessment, is more specifically focused on the types of goods delivered and services provided by the Group's operating divisions.

Coal mine business is the only reportable operating segment, from which the Group derived its revenue from sale of coal. Accordingly, no further segment information is provided.

Segment revenue and results

Coal mining is the sole business of the Group at present. It contributed a revenue of approximately HK\$182,445,000 for the Year (2017: approximately HK\$73,024,000), representing an approximately 150% increase as compared with last year.

Sales and Production of Coals

During the Year, the Group sold approximately 3.18 million tonnes of coals (2017: approximately 1.07 million tonnes) with total sales income of approximately HK\$182,445,000 (2017: approximately HK\$73,024,000). Details of coal sales in tonnes are listed in the below table:

	Year ended 31 March	
	2018	2017
Coal sales	3,183,450 tonnes	1,065,662 tonnes

Coal Sales (tonnes) and Percentage of Coal Sales

	Coal Sales (tonnes)	Coal Sales in %
Large Coal	26,122	0.82
Middle Coal	81,670	2.57
Small Medium Coal	118,829	3.73
36 Coal	230,397	7.24
38 Coal	133,989	4.21
Slack Coal	1,207,194	37.92
Weathered Coal	1,385,249	43.51
Total Sales	<u>3,183,450</u>	<u>100.00</u>

Reserves and Resources

The Group owns a Mining Right, which is located in Xinjiang. The estimated remaining coal reserve in Kaiyuan Mine was approximately 7.90 million tonnes as at 31 March 2018 (2017: approximately 9.71 million tonnes). During the Year, there were approximately 1.81 million tonnes of coal being extracted (2017: approximately 0.68 million tonnes). The Group also owns an Exploration Permit, which is also located in Xinjiang. The original Exploration Permit had expired on 5 April 2017 and a renewal of the permit from 16 May 2017 to 16 May 2019 was granted by the Xinjiang Land Department. The following tables are the estimated coal reserves for the Kaiyuan Mine and estimated coal resources for the Zexu Mine as of 31 March 2010 conducted by John T. Boyd Company in June 2010.

Estimated coal reserves for the Kaiyuan Mine:

Seam	Average Mineable Seam Thickness (m) Total (Coal/Parting)	Marketable Reserves (million tonnes) As of 31 March 2010			% of Total
		Proved	Probable	Total	
North of Current Pit (Potentially Oxidized)					
B ₂	13.1	-	4.58	4.58	100.00
Mine Plan Area					
B ₃	10.8	3.57	-	3.57	25.00
B ₂	19.6	10.86	-	10.86	75.00
		<u>14.43</u>	<u>-</u>	<u>14.43</u>	<u>100.00</u>
Total					
B ₃	10.8	3.57	-	3.57	19.00
B ₂	17.7	10.86	4.58	15.44	81.00
		<u>14.43</u>	<u>4.58</u>	<u>19.01</u>	<u>100.00</u>

Approximately 75% of the total reserves are classified as “Proved”.

Coal Reserve as at 31 March 2018 = Coal Reserve as at 31 March 2017 – Amount of coal extracted by the Group during 1 April 2017 to 31 March 2018.

Estimated coal resources for the Zexu Mine totalling 119.38 Mt, are summarized below:

Seam	Average Mineable Seam Thickness (m)	Marketable Resources (million tonnes)			% of Resources
		Measured	Indicated	Total	
B ₇	8.5	10.23	10.46	20.69	17
B ₆	3.9	2.77	3.98	6.75	6
B ₅	6.3	5.80	10.42	16.22	14
B ₄ ¹	1.8	0.29	0.01	0.30	1
B ₄	6.1	6.85	10.21	17.06	14
B ₃	6.3	8.06	8.03	16.09	13
B ₂	21.1	22.58	19.69	42.27	35
Total		56.58	62.80	119.38	100

Geographical segment

The geographical location of customers is determined based on the location where the goods are delivered. The Group’s revenue and results from operations are mainly derived from activities in the PRC. Activities outside the PRC are insignificant. The principal assets of the Group are also located in the PRC. Accordingly, no geographical segment information is provided.

SIGNIFICANT INVESTMENTS HELD, MATERIAL ACQUISITIONS AND DISPOSALS OF SUBSIDIARIES, AND FUTURE PLANS FOR MATERIAL INVESTMENTS OR CAPITAL ASSETS

Save as otherwise disclosed, there were neither significant investments held as at 31 March 2018 nor material acquisitions and disposals of subsidiaries during the Year.

The Group does not have any future plans for material investments. There will, however, be a reasonable expected amount of expenditure in capital assets, in particular for the new plants and machines for the environmental protection remedial works and renewable energy and environmental engineering. Sources of funding are expected to come primarily from the coal sales revenue of the Group.

LIQUIDITY AND FINANCIAL RESOURCES

As at 31 March 2018, the Group had:

- net current assets of approximately HK\$374,179,000 (2017: approximately HK\$334,244,000).
- cash and cash equivalents of approximately HK\$440,437,000 (2017: approximately HK\$331,606,000) which were the major components of the Group's current assets of approximately HK\$451,867,000 (2017: approximately HK\$395,046,000).
- current liabilities of approximately HK\$77,688,000 (2017: approximately HK\$60,802,000) which comprised mainly trade and other payables of approximately HK\$69,798,000 (2017: approximately HK\$56,524,000).
- non-current liabilities of approximately HK\$250,316,000 (2017: approximately HK\$272,335,000) which comprised mainly convertible bond designated as financial liabilities at fair value through profit or loss of approximately HK\$247,242,000 (2017: approximately HK\$261,616,000).

GEARING RATIO

The Group's gearing ratio was approximately 1.49 (2017: approximately 2.27). The computation is based on total debt (convertible bond designated as financial liabilities at fair value through profit or loss) divided by total equity.

CAPITAL STRUCTURE

The capital of the Group comprises only ordinary shares.

As at 31 March 2018, there were 765,373,584 ordinary shares of the Company in issue.

Zero coupon convertible bonds of the Company with an aggregate principal amount of HK\$200,000,000 were issued on 14 March 2008 the maturity date of which was approved to be further extended for 36 months to 13 March 2020 by the shareholders of the Company on 7 March 2017.

TREASURY POLICIES

Apart from the issuance of Convertible Bond at their face value of HK\$200,000,000, the Group finances its operation mainly by internal generated resources.

CHARGES ON GROUP'S ASSETS

As at 31 March 2018, none of the Group's assets was under charges (2017: Nil).

EMPLOYEES

As at 31 March 2018, the Group had 73 employees (2017: 74) spreading between Hong Kong and the PRC. Total staff costs (excluding Directors' emoluments) for the Year amounted to approximately HK\$10,266,000 (2017: approximately HK\$10,041,000). Employment relationship has been well maintained by the Group with its employees. The Group has adopted an extensive training policy for its employees. It has also sponsored senior executives for higher education programmes.

FOREIGN EXCHANGE EXPOSURE

The Group mainly earns revenue in Renminbi ("RMB") and incurs costs in RMB and Hong Kong dollars. The Group is exposed to foreign exchange risk based on fluctuations between Hong Kong dollars and RMB arising from its core operation in the PRC. The currency exchange risk for the Year is mainly derived from the net exchange gain on convertible bond designated as financial liabilities at fair value through profit or loss, which is a result from the sustained depreciation of RMB against Hong Kong dollars. In order to minimise the foreign currency risk exposure between these two currencies, the Group maintained cash balances in both currencies that are sufficient to meet three to four months' operating cash flows requirements of the Group.

CONTINGENT LIABILITIES

As at 31 March 2018, the Group did not have any material contingent liabilities.

PROSPECTS

The Board considers that the coal business is full of challenges and endeavors to achieve our goal of bringing maximum values for shareholders by strengthening management of the Company, controlling the cost of coal mining, cooperating with the national policies of developing economy in the western region, seizing new chances, exploring new markets, and seeking for investment opportunities in renewable energy and environmental engineering sectors.

Being cognizant of the impact of coal mining operations on the environment, we are committed to the implementation of environment management in compliance with laws and regulations. As coal mining inevitably generates emissions, the Group will increase investment in upgrading eco-friendly equipment, striving to mitigate dust dispersion in the production and storage process.

Regarding the Updated Optimization and Upgrading Plan, as explained above, Kaiyuan Company and Zexu Company have already followed the request from the Changji Land Department to enter into the Four Undisputed Agreements respectively to dispose of Zexu Mine and acquire the Kaiyuan Extended Area. The Company is now going through official procedures to apply for the exploration right and mining right in respect of the extended areas. The Company will make further announcement(s) as and when appropriate to keep shareholders posted of any further development of the Updated Optimization and Upgrading Plan.

(2) For the year ended 31 March 2019

SEGMENT INFORMATION

Business segment

Information reported to the executive Directors, being identified as the chief operating decision makers (the “CODM”), for the purposes of resource allocation and assessment of segment performance focuses on types of goods delivered or services rendered. No operating segments identified by the CODM have been aggregated in arriving at the reportable segments of the Group.

Specifically, the Group’s reportable and operating segments are as follows:

- (1) Coal mining business segment: mining and sales of coal mine in the PRC;
- (2) Renewable energy business segment: service income from renewable energy services in Malaysia.

Segment revenue and results

Segment revenue represents revenue derived from (i) coal mining business and (ii) renewable energy business.

(i) Coal Mining Business

Coal mining is the major business of the Group at present. It contributed a revenue of approximately HK\$75,234,000 for the Year (2018: approximately HK\$182,445,000), representing an approximately 59% decrease as compared with last year.

Sales and Production of Coals

During the Year, the Group sold approximately 1.76 million tonnes of coals (2018: approximately 3.18 million tonnes) with total sales income of approximately HK\$75,234,000 (2018: approximately HK\$182,445,000). Details of sales of coals in tonnes are listed in the below table:

	Year ended 31 March	
	2019	2018
Sales of coals	1,764,591 tonnes	3,183,450 tonnes

Coal Sales (tonnes) and Percentage of Coal Sales

	Coal Sales (tonnes)	Coal Sales in %
36 Coal	125	0
38 Coal	66	0
Mixed Coal	169,644	9.61
Slack Coal	62,882	3.56
Weathered Coal	<u>1,531,874</u>	<u>86.83</u>
Total	<u><u>1,764,591</u></u>	<u><u>100.00</u></u>

(ii) Renewable Energy Business

Service income from renewable energy services contributed a revenue of approximately HK\$391,000 for the Year (2018: Nil).

Reserves and Resources

The Group owns a Mining Right, which is located in Xinjiang. The estimated remaining coal reserve in Kaiyuan Mine was approximately 6.20 million tonnes as at 31 March 2019 (2018: approximately 7.90 million tonnes). During the Year, there were approximately 1.70 million tonnes of coal being extracted (2018: approximately 1.81 million tonnes). The Group also owns an Exploration Permit, which is also located in Xinjiang. The original Exploration Permit had expired on 5 April 2017 and a renewal of the permit from 16 May 2017 to 16 May 2019 was granted by the Xinjiang Land Department. Please refer to the Progress of the Optimization and Upgrading Plan and the Updated Optimization and Upgrading Plan in relation to the latest status. The following tables are the estimated coal reserves for the Kaiyuan Mine and estimated coal resources for the Zexu Mine as of 31 March 2010 conducted by John T. Boyd Company in June 2010.

Estimated coal reserves for the Kaiyuan Mine:

Seam	Average Mineable Seam Thickness (m) (Coal/Parting)	Marketable Reserves (million tonnes) As of 31 March 2010				% of Total
		Proved	Probable	Total		
North of Current Pit (Potentially Oxidized)						
B ₂	13.1	-	4.58	4.58	100.00	
Mine Plan Area						
B ₃	10.8	3.57	-	3.57	25.00	
B ₂	19.6	10.86	-	10.86	75.00	
		<u>14.43</u>	<u>-</u>	<u>14.43</u>	<u>100.00</u>	
Total						
B ₃	10.8	3.57	-	3.57	19.00	
B ₂	17.7	10.86	4.58	15.44	81.00	
		<u>14.43</u>	<u>4.58</u>	<u>19.01</u>	<u>100.00</u>	

Approximately 75% of the total reserves are classified as “Proved”.

Coal Reserve as at 31 March 2019 = Coal Reserve as at 31 March 2018 – Amount of coal extracted by the Group during the period from 1 April 2018 to 31 March 2019.

Estimated coal resources for the Zexu Mine totalling 119.38 Mt, are summarised below:

Seam	Average Mineable Seam Thickness (m)	Marketable Resources (million tonnes)			% of Resources
		Measured	Indicated	Total	
B ₇	8.5	10.23	10.46	20.69	17
B ₆	3.9	2.77	3.98	6.75	6
B ₅	6.3	5.80	10.42	16.22	14
B ₄ ¹	1.8	0.29	0.01	0.30	1
B ₄	6.1	6.85	10.21	17.06	14
B ₃	6.3	8.06	8.03	16.09	13
B ₂	21.1	22.58	19.69	42.27	35
Total		<u>56.58</u>	<u>62.80</u>	<u>119.38</u>	<u>100</u>

Geographical segment

The geographical location of customers is determined based on the location where the goods are delivered or services are rendered. The Group's revenue and results from operations are mainly derived from activities in the PRC. Activities outside the PRC are insignificant. The principal assets of the Group are located in the PRC and Malaysia.

SIGNIFICANT INVESTMENTS HELD, MATERIAL ACQUISITIONS AND DISPOSALS OF SUBSIDIARIES, AND FUTURE PLANS FOR MATERIAL INVESTMENTS OR CAPITAL ASSETS

Save as otherwise disclosed, there were neither significant investments held as at 31 March 2019 nor material acquisitions and disposals of subsidiaries during the Year.

Save as otherwise disclosed, the Group does not have any future plans for material investments. There will, however, be a reasonable expected amount of expenditure in capital assets, in particular for the new plants and machines for the environmental protection remedial works. Sources of funding are expected to come primarily from the coal sales revenue and also external banking facilities of the Group.

LIQUIDITY AND FINANCIAL RESOURCES

As at 31 March 2019, the Group had:

- net current assets of approximately HK\$84,255,000 (2018: approximately HK\$374,179,000).
- cash and cash equivalents of approximately HK\$416,662,000 (2018: approximately HK\$440,437,000) which comprised financial assets measured at fair value through profit or loss of approximately HK\$60,236,000 and restricted bank balances of approximately HK\$77,612,000 and the bank balances were the major components of the Group's current assets of approximately HK\$432,459,000 (2018: approximately HK\$451,867,000).
- current liabilities of approximately HK\$348,204,000 (2018: approximately HK\$77,688,000) which comprised mainly trade and other payables of approximately HK\$58,794,000 (2018: approximately HK\$69,798,000), interest-bearing borrowings of approximately HK\$68,345,000 (2018: Nil) and convertible bond designated as financial liabilities at fair value through profit or loss of approximately HK\$217,869,000 (2018: Nil).
- non-current liabilities of approximately HK\$3,257,000 (2018: approximately HK\$250,316,000) which comprised mainly convertible bond designated as financial liabilities at fair value through profit or loss of approximately HK\$247,242,000).

GEARING RATIO

The Group's gearing ratio was approximately 1.55 (2018: approximately 1.49). The computation is based on total debt (convertible bond designated as financial liabilities at fair value through profit or loss and interest-bearing borrowings) divided by total equity.

CAPITAL STRUCTURE

The capital of the Group comprises only ordinary shares.

As at 31 March 2019, there were 765,373,584 ordinary shares of the Company in issue.

Zero coupon convertible bonds of the Company with an aggregate principal amount of HK\$200,000,000 were issued on 14 March 2008 the maturity date of which was approved to be further extended for 36 months to 13 March 2020 by the shareholders of the Company on 7 March 2017.

TREASURY POLICIES

Apart from the issuance of convertible bond at their face value of HK\$200,000,000, the Group finances its operation mainly by internal generated resources.

CHARGES ON GROUP'S ASSETS

As at 31 March 2019, the Group had pledged restricted bank balances with carrying amount of approximately HK\$77,612,000 (2018: Nil) to the bank as a security for interest-bearing borrowings.

EMPLOYEES

As at 31 March 2019, the Group had 82 employees (2018: 73) spreading amongst Hong Kong, Malaysia and the PRC. Total staff costs (excluding Directors' emoluments) for the Year amounted to approximately HK\$10,913,000 (2018: approximately HK\$10,266,000). Employment relationship has been well maintained by the Group with its employees. The Group has adopted an extensive training policy for its employees. It has also sponsored senior executives for higher education programmes.

FOREIGN EXCHANGE EXPOSURE

The Group mainly earns revenue in Renminbi (“RMB”) and incurs costs in RMB and Hong Kong dollars. The Group is exposed to foreign exchange risk based on fluctuations between Hong Kong dollars and RMB arising from its core operation in the PRC. The currency exchange risk for the Year is mainly derived from the net exchange gain on convertible bond designated as financial liabilities at fair value through profit or loss, which is a result from the sustained depreciation of RMB against Hong Kong dollars. In order to minimise the foreign currency risk exposure between these two currencies, the Group maintained cash balances in both currencies that are sufficient to meet three to four months’ operating cash flows requirements of the Group.

CONTINGENT LIABILITIES

As at 31 March 2019, the Group did not have any material contingent liabilities.

PROSPECTS

The Board considers that the coal business is full of challenges and endeavors to achieve our goal of bringing maximum values for shareholders by strengthening management of the Company, controlling the cost of coal mining, cooperating with the national policies of developing economy in the western region, seizing new chances, exploring new markets, and seeking for investment opportunities.

Being cognizant of the impact of coal mining operations on the environment, we are committed to the implementation of environment management in compliance with laws and regulations. As coal mining inevitably generates emissions, the Group will increase investment in upgrading eco-friendly equipment, striving to mitigate dust dispersion in the production and storage process.

Regarding the Updated Optimization and Upgrading Plan, as explained above, Kaiyuan Company and Zexu Company have already followed the request from the Changji Land Department to enter into the Four Undisputed Agreements respectively to dispose of Zexu Mine and acquire the Kaiyuan Extended Area. The Company is now going through official procedures to apply for the exploration right and mining right in respect of the extended areas. The Company will make further announcement(s) as and when appropriate to keep shareholders posted of any further development of the Updated Optimization and Upgrading Plan.

The Group has been exploring new markets and seeking to extend its business coverage on technological and renewable energy sector. The Board is of the view that the acquisition of NEFIN Group will further enhance the Group's expansion of innovative and renewable energy business. There will be a reasonable expected amount of expenditure in capital assets, in particular for the new plants and machines for the environmental protection remedial works. Sources of funding are expected to come primarily from the coal sales revenue and also external banking facilities of the Group.

(3) For the year ended 31 March 2020

SEGMENT INFORMATION

Business segment

Information reported to the executive Directors, being identified as the chief operating decision makers (the "CODM"), for the purposes of resource allocation and assessment of segment performance focuses on types of goods delivered or services rendered. No operating segments identified by the CODM have been aggregated in arriving at the reportable segments of the Group.

Specifically, the Group's reportable and operating segments are as follows:

- (1) Coal mining business segment: mining and sales of coal mine in the Xinjiang of the PRC;
- (2) Renewable energy business segment: service income from renewable energy services in Malaysia; and
- (3) IT services business segment: provision of information technology outsourcing, consultancy and technical services in Hong Kong, Singapore, Malaysia and the UK.

Segment revenue and results

Segment revenue represents revenue derived from (i) coal mining business, (ii) renewable energy business and (iii) IT services business.

(i) Coal Mining Business

Coal mining is the major business of the Group at present. It contributed a revenue of approximately HK\$73,910,000 for the Year (2019: approximately HK\$75,234,000), representing an approximately 1.76% decrease as compared with last year.

Sale and Production of Coals

During the Year, the Group sold approximately 1,037,492 tonnes of coals (2019: approximately 1,764,591 tonnes) with total sales income of approximately HK\$73,910,000 (2019: approximately HK\$75,234,000). Details of sales of coals in tonnes are listed in the below table:

	2020	2019
Sales of coals	<u>1,037,492 tonnes</u>	<u>1,764,591 tonnes</u>

Coal Sales (tonnes) and Percentage of Coal Sales

	Coal Sales (tonnes)	Coal Sales in %
Slack Coal	754,201	72.69
Weathered Coal	<u>283,291</u>	<u>27.31</u>
Total	<u>1,037,492</u>	<u>100.00</u>

(ii) Renewable Energy Business

Service income from renewable energy business contributed a revenue of approximately HK\$775,000 for the Year (2019: approximately HK\$391,000).

(iii) IT Services Business

Service income from IT services business contributed a revenue of approximately HK\$53,304,000 for the Year (2019: Nil).

Reserves and Resources

The Group owns a mining right, which is located in Xinjiang. The mining right of the original Kaiyuan Mine was expired on 3 November 2019. Pursuant to the terms of the Transfer Agreement on 2 December 2019 entered into between the Department of Natural Resources of Xinjiang Uygur Autonomous Region of the PRC (the “**Transferor**”) and Kaiyuan Company in respect of the new mining right with an enlarged mining area including the original mining area of Kaiyuan Mine of approximately 1.1596 km² for a term of 30 years from August 2019 to August 2049, the Transferor agreed to sell and Kaiyuan Company agreed to purchase, the mining permit in respect of the Enlarged Kaiyuan Mine, at an aggregate consideration of RMB160,978,000, which shall be settled in cash and paid by Kaiyuan Company to the Transferor in fifteen instalments. The estimated coal resources of the Enlarged Kaiyuan Mine are 41.6433 million tonnes for the mining life of 30 years under the Transfer Agreement. It should be noted that the estimated coal resources are subject to the independent review and report on the coal resources estimation in compliance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (2012 Edition) produced by the Australasian Joint Ore Reserves Committee (the “**JORC Code**”) by the Competent Person (as defined in the Listing Rules) to be included in the Competent Person’s Report (as defined in the Listing Rules) as required under Chapter 18 of the Listing Rules. As at the date of this announcement, the Group has engaged a Competent Person (as defined in the Listing Rules) and in the progress to prepare the Competent Person’s Report (as defined in the Listing Rules) in accordance with the requirements under Chapter 18 of the Listing Rules. Details of independent coal resources estimation of the Enlarged Kaiyuan Mine in compliance with the JORC Code will be disclosed in the circular to be despatched by the Company in relation to the Acquisition.

On 6 December 2019, the Transfer Agreement was duly executed by the Transferor and Kaiyuan Company.

As disclosed in the announcement dated 16 March 2020, Kaiyuan Company successfully renewed and received the renewed mining permit (the “**Renewed Mining Permit**”) issued by the Xinjiang Natural Resources Department. According to the Renewed Mining Permit, the mining permit of the Enlarged Kaiyuan Mine is renewed for a period of 2 years from 21 December 2019 to 21 December 2021.

Estimated coal reserves for the original Kaiyuan Mine:

Seam	Average Mineable Seam Thickness (m) (Coal/Parting)	Marketable Reserves (million tonnes) As of 31 March 2010			
		Proved	Probable	Total	% of Total
North of Current Pit (Potentially Oxidized)					
B ₂	13.1	-	4.58	4.58	100.00
Mine Plan Area					
B ₃	10.8	3.57	-	3.57	25.00
B ₂	19.6	10.86	-	10.86	75.00
		14.43	-	14.43	100.00
Total					
B ₃	10.8	3.57	-	3.57	19.00
B ₂	17.7	10.86	4.58	15.44	81.00
		14.43	4.58	19.01	100.00

Approximately 75% of the total reserves are classified as “Proved”.

The estimated remaining coal reserve in the original Kaiyuan Mine was approximately 5.11 million tonnes as at 31 March 2020 (2019: approximately 6.20 million tonnes). During the Year, there were approximately 1.09 million tonnes of coal being extracted (2019: approximately 1.70 million tonnes).

Coal Reserve as at 31 March 2020 = Coal Reserve as at 31 March 2019 – Amount of coal extracted by the Group during the period from 1 April 2019 to 31 March 2020.

Geographical segment

The geographical location of customers is determined based on the location where the goods are delivered or services are rendered. The Group’s revenue and results from operations are mainly derived from activities in the PRC, Hong Kong, Singapore, the UK and Malaysia. Activities outside these five locations are insignificant. The principal assets of the Group are located in the PRC, Hong Kong and Malaysia.

SIGNIFICANT INVESTMENTS HELD, MATERIAL ACQUISITIONS AND DISPOSALS OF SUBSIDIARIES, AND FUTURE PLANS FOR MATERIAL INVESTMENTS OR CAPITAL ASSETS

Save as otherwise disclosed, there were neither significant investments held as at 31 March 2020 nor material acquisitions and disposals of subsidiaries during the Year.

Save as otherwise disclosed, the Group does not have any future plans for material investments. There will, however, be a reasonable expected amount of expenditure in capital assets, in particular for the new plants and machines for the environmental protection remedial works. Sources of funding are expected to come primarily from the coal sales revenue and also external banking facilities of the Group.

LIQUIDITY AND FINANCIAL RESOURCES

As at 31 March 2020, the Group had:

- net current assets of approximately HK\$127,070,000 (2019: approximately HK\$84,255,000).
- cash and cash equivalents of approximately HK\$235,126,000 (2019: approximately HK\$416,662,000) which comprised restricted bank balances of approximately HK\$73,760,000 (2019: approximately HK\$77,612,000) and the bank balances were the major components of the Group's current assets of approximately HK\$259,694,000 (2019: approximately HK\$432,459,000).
- current liabilities of approximately HK\$132,624,000 (2019: approximately HK\$348,204,000) which comprised mainly trade and other payables of approximately HK\$54,929,000 (2019: approximately HK\$58,794,000) and interest-bearing borrowings of approximately HK\$65,345,000 (2019: approximately HK\$68,345,000).
- non-current liabilities of approximately HK\$233,637,000 (2019: approximately HK\$3,257,000) which comprised convertible bond designated as financial liabilities at fair value through profit or loss of approximately HK\$146,426,000 and non-current portion payable of approximately HK\$80,155,000 related to mining right payables.

GEARING RATIO

The Group's gearing ratio was approximately 1.98 (2019: approximately 1.55). The computation is based on total debt (convertible bond designated as financial liabilities at fair value through profit or loss, mining right payables, promissory notes, lease liabilities and interest-bearing borrowings) divided by total equity.

CAPITAL STRUCTURE

The capital of the Group comprises only ordinary shares.

As at 31 March 2020, there were 765,373,584 ordinary shares of the Company in issue.

Zero coupon convertible bond of the Company with an aggregate principal amount of HK\$200,000,000 were issued on 14 March 2008 the maturity date of which was approved to be further extended for 36 months to 13 March 2023 by the shareholders of the Company on 11 March 2020.

TREASURY POLICIES

Apart from the issuance of convertible bond at their face value of HK\$200,000,000, the Group finances its operation mainly by internal generated resources.

CHARGES ON GROUP'S ASSETS

As at 31 March 2020, the Group had pledged restricted bank balances with carrying amount of approximately HK\$73,760,000 (2019: approximately HK\$77,612,000) to the bank as a security for interest-bearing borrowings.

EMPLOYEES

As at 31 March 2020, the Group had 126 employees (2019: 82) spreading amongst Hong Kong, Malaysia, Singapore, the UK and the PRC. Total staff costs (excluding directors' emoluments) for the Year amounted to approximately HK\$50,609,000 (2019: approximately HK\$10,913,000). Employment relationship has been well maintained by the Group with its employees. The Group has adopted an extensive training policy for its employees. It has also sponsored senior executives for higher education programmes.

FOREIGN EXCHANGE EXPOSURE

The Group mainly earns revenue in RMB and Hong Kong dollars and incurs costs in RMB and Hong Kong dollars. The Group is exposed to foreign exchange risk based on fluctuations between Hong Kong dollars and RMB arising from its core operation in the PRC. The currency exchange risk for the Year is mainly derived from the net exchange gain on convertible bond designated as financial liabilities at fair value through profit or loss, which is a result from the sustained depreciation of RMB against Hong Kong dollars. In order to minimise the foreign currency risk exposure between these two currencies, the Group maintained cash balances in both currencies that are sufficient to meet three to four months' operating cash flows requirements of the Group.

CONTINGENT LIABILITIES

As at 31 March 2020, the Group did not have any material contingent liabilities.

PROSPECTS

The Group has been actively proceeding with the Optimization and Upgrading Plan since 2011 in relation to the New Mining Right of the Enlarged Kaiyuan Mine. The acquisition of the New Mining Right of the Enlarged Kaiyuan Mine in December 2019 has substantially enlarged the Group's coal resources and will allow the Group to increase the annual production volume to a range of 0.9 million tonnes to 1.2 million tonnes, ten times or more of the existing production capacity of Kaiyuan Mine. The Directors consider that the transaction is in line with the Group's strategy to expand the coal mining business of the Group.

In the coming year, there will be (i) a reasonable expected amount of expenditure in capital assets, in particular for the new plants and machines for the environmental protection remedial works and (ii) substantial expenditure for works required by the Production Safety Supervision and Administration Bureau to improve safety standard of our coal mine. Sources of funding are expected to come primarily from the coal sales revenue and also external banking facilities of the Group.

In addition to coal mining, the Group has been exploring new markets and seeking to extend its business coverage on technological and renewable energy sectors, in particular, the acquisition of Harbour Group in 2019 and NEFIN Group in 2018. It is one of the objectives of the Group to diversify its business portfolio into sectors offering higher growth momentum.

Due to the recent social and political instability in Hong Kong and the outbreak of Coronavirus Disease 2019 (“COVID-19”) worldwide, we are facing the most difficult business environment, which negatively impact the growth of our business. In particular IT services business in Hong Kong is expected to be hit hard by the prolonged social unrest and subsistence of the coronavirus disease in Hong Kong.

The Board will continue to keep track of the latest development of the COVID-19 and will use its best endeavors to manage the Group's business portfolio with a view to improving the Group's financial performance and enhance shareholders' value.



Unit 702, 7th Floor, Capital Centre
No. 151 Gloucester Road
Wan Chai, Hong Kong

Tel (852) 2187 2238
Fax (852) 2187 2239

INDEPENDENT COMPETENT PERSON'S REPORT AND VALUATION REPORT FOR NAN NAN RESOURCES ENTERPRISE LIMITED

1 SUMMARY

1.1 Introduction

Peak Vision Mining Alliance Ltd. (PVMA), has been retained by Nan Nan Resources Enterprise Limited (Nan Nan or Company) to prepare an Independent Technical Report (ITR, or Report) on its Kaiyuan open-pit coal mine property (Property) located in Qitai County, Xinjiang Uyghur Autonomous Region of the People's Republic of China. The ITR is required to be compliant with the requirements of the Stock Exchange of Hong Kong Limited (Stock Exchange or HKEx) for a very substantial transaction.

This ITR comprises (1) an independent mineral resource estimate for the coal resources contained within the Property, and (2) a review of the Feasibility Study Report (FS) for the proposed expansion of the Kaiyuan mining operation to 900,000 tonnes per year, that was prepared by the Xinjiang Coal Design and Research Institute Co., Ltd. in August 2019. The Safety Production Permit for the mine is rated for 1.2 million tonnes of coal production per year so the mine plan, economic model and related costs and revenues produced for this ITR have been projected to the annual production rate of 1.2 million tonnes from the base production rate of 900,000 tonnes. Information used in the preparation of this report is listed in Section 27 and where appropriate, is referenced elsewhere in the report.

1.2 Reporting Standard

This Report has been prepared in accordance with the JORC (Joint Ore Reserve Committee) Code (2012). The effective date of this Report is 1 July 2020. There has been no material change of the Mineral Resource estimate since the effective date of this Report.

1.3 Reliance on Other Experts

PVMA has relied upon Nan Nan for information regarding the legal description of the Property and the nature and status of permits that are held or required by Nan Nan to carry out their current and planned operations within the Property.

1.4 Property Description and Location

The Property is located in Qitai County, northeastern Xinjiang Uyghur Autonomous Region, PRC, near the border with Mongolia, at approximately 90°24' east longitude and 44°32' north latitude. The straight-line distance from Urumqi, the capital city of Xinjiang, to the Property is approximately 200 kilometers (km).

The Property is comprised of one Mining Licence, Certificate Number C6500002018121110148841, that is 4.1123 km in area and grants the right to mine between 727 and 575 meters above sea level. The Mining Licence is valid from 21 December 2019 to 21 December 2022 and is renewable for a period of 30 years.

The Mining Licence is held by Mulei County Kaiyuan Coal Co. Ltd. (Kaiyuan), a wholly foreign-owned enterprise approved by the Autonomous Region Foreign Trade and Economic Cooperation Bureau and the Industrial and Commercial Bureau of the Autonomous Region. Kaiyuan is a wholly owned subsidiary of Nan Nan Resources Enterprise Limited.

1.5 Accessibility, Climate, Local Resources, Infrastructure and Physiography

The Property is readily accessible: a recently completed freeway extends from Urumqi approximately 150 km east to Qitai and from Qitai, the Property is reached by travelling approximately 20 km east on Provincial Road S303 then 50 km north on Provincial Road S228 at which point Provincial Road S327 branches to the northeast and passes within several kilometers of the Property. Roads within the Property are maintained but unpaved. A railway, parallel to Highway S327, is currently under construction.

The Property is located on the southern margin of the Junggar Basin near the border with Mongolia at an elevation of approximately 700 meters above sea level and has a dry, continental climate. Vegetation is scarce. On average, annual rainfall is about 165 mm. Average January temperatures in the Junggar Basin are about -15°C; the average temperature in July varies from 21°C in the north to 24°C in the south. Mining activities are conducted on a year-round basis.

The Property is relatively remote and other than several other coal mines, is not close to any significant infrastructure, although the existence of a well-developed coal mining industry means that all necessary services are available in the region. The Property has sufficient surface rights for mining operations, waste disposal and processing plant sites. Electrical power is supplied to the Property from the Kitayama 35 kV substation, 10 km to the southwest. Water for industrial use is obtained locally but potable water must be transported to the Property from Penghu, 35 km to the southwest.

1.6 History

During the period 2006-2009, the Ninth Geological Brigade of the Xinjiang Geology and Minerals Bureau and the Shandong Taishan Geological Exploration Company carried out several exploration and drilling programs that defined the coal resources within the Property. Those resources were verified in 2018 by the Ninth Brigade. In 2019, a Feasibility Study, dated 31 August 2019, was completed by the Xinjiang Coal Design and Research Institute Co., Ltd. That Feasibility Study is reviewed in this report.

Mining of the original Kaiyuan Mine in the northern part of the Property began in 2008. To date, approximately ten million tonnes of coal have been produced from the Property.

1.7 Regional and Local Geology

The Junggar Basin originated south of the Siberian Craton during the late Paleozoic as a remnant ocean basin in which 3,000 to 4,000 m of marine volcanoclastic sediments were deposited. Early Permian and younger rocks are non-marine and were deposited in a subsiding basin formed by the uplift of the ancestral Tian Shan mountains. During Late Permian time, the basin transformed into an intercontinental basin and during the Early Triassic, the area became a shallow lacustrine basin. Coal beds are abundant and extensive in Lower to Middle Jurassic strata. Individual beds are up to tens of meters thick and are interbedded with lacustrine and fluvial sandstone and mudrock.

The Property area is underlain by rocks of Lower to Middle Jurassic age. The oldest rocks encountered in drilling belong to the Lower Jurassic Sangonghe Formation comprised of approximately 90 m of grey-green siltstone, fine-grained sandstone, and argillaceous siltstone. The Sangonghe Formation does not contain coal beds. The Sangonghe Formation is conformably overlain by the Xishanyao Formation of Middle Jurassic age that is comprised of basal conglomerate and coarse sandstone, grey to light-grey siltstone, mudstone and sandstone with coal seams. The Formation has an average thickness of approximately 125 m and is nearly flat-lying, with dips of 3° to 5° to the south. Jurassic strata are unconformably overlain by basal conglomerate and brown, yellow and red-yellow mudstone, siltstone and argillaceous siltstone that belong to the Upper Pliocene Dushanzi Formation.

The Property contains nine (9) coal seams of potential economic interest. From oldest to youngest these are labelled B₇, B₈, B₉, B₁₃, B₁₄, B₁₅, B₁₆, B₁₇, and B₁₈, and they have an aggregate thickness of approximately 50 m. (Table 1.1) All seams are contained within the Middle Jurassic-age Xishanyao Formation and are essentially parallel, strike east-west, and dip approximately five (5) degrees to the south.

Seams B₇ and B₉ are the most continuous; seam B₈, between B₇ and B₉, is restricted to the southern part of the expansion area. The remaining seams are generally continuous, but because they dip to the south, are progressively truncated to the north.

Table 1.1 Kaiyua Coal Seam Thickness

Coal Seam	Average Thickness (m)	Minimum Thickness (m)	Maximum Thickness (m)
B18	4.0	1.9	7.0
B17	4.1	2.8	6.6
B16	1.5	0.5	2.8
B15	4.1	0.7	13.4
B14	4.5	0.6	9.5
B13	5.4	0.1	10.0
B9	10.0	5.1	12.9
B8	1.4	0.5	1.8
B7	21.2	12.5	24.5

Various chemical and physical characteristics of the coal seams were measured and are summarized in Table 1.2. Most of the tests were conducted on samples from the major seams B7, B9, B13, and B14 but all seams have similar characteristics and quality.

Table 1.2 Kaiyuan Coal Seam Characteristics

Characteristic	Low (%)	High (%)	Average (%)	Comment
Moisture (Mad)	9.68	12.3		All seams
Ash (Ad)	6.85	22.53	13.69	Diminishes with depth
Volatiles (Wdaf)	31.91	34.41	32.91	Based on Seams B7, 9, 14, 13
Sulphur (S)	0.37	0.67	0.49	Based on Seams B7, 9, 14, 13
Phosphorous (P)	0.003	0.016		
Chlorine (Cl)	0.017	0.313		
Arsenic (As)				1 to 2 ppm
Calorific Value (MJ/Kg)	25.74	28.33	27.2	Based on Seams B7, 9, 14, 13; Increases with depth

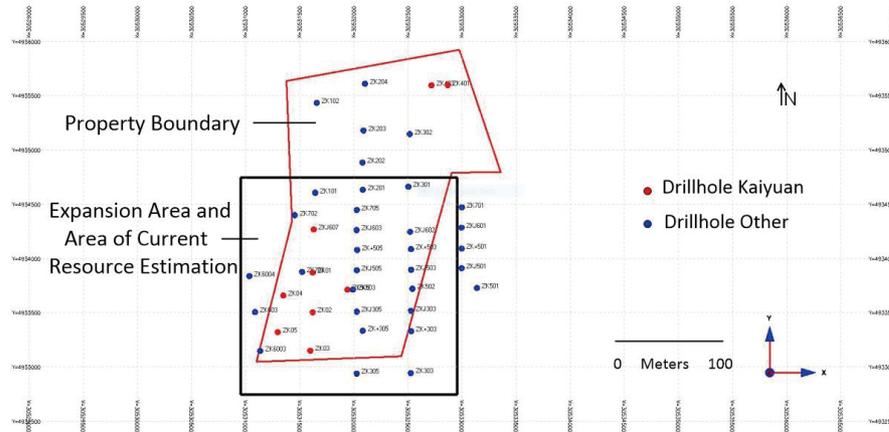
1.8 Exploration

Other than drilling described in Section 10 of this report, Kaiyuan has done no exploration of the Property. Exploration done by previous operators and government agencies is described in Section 6 History.

1.9 Drilling

Kaiyuan has drilled nine (9) holes within the Property, two (2) in the north-eastern portion of the Property and seven (7) within the expansion area. (Figure 1.1) Four holes (ZK401, 403, 505 and ZKJ607 were drilled in 2018 and five holes (ZK01, 02, 03, 04, and 05) were drilled in 2019.

Figure 1.1 Kaiyuan Drillhole Location Map



The Property and immediate area have been tested by an additional 33 holes, five (5) of which are within the area of the current pit and 10 of which are located outside the current Property boundary.

1.10 Mineral Processing and Metallurgical Testing

Several testwork programs have been conducted on Kaiyuan coal samples since 2017. The most recent is a preliminary coal property analysis campaign carried out in 2020 by SGS-CSTS Standards Technical Services (SGS Tianjin) in Tianjin, China on samples collected from drillholes ZK-01 to ZK-05 inclusive. Previous to that, the Ninth Geological Brigade of the Xinjiang Geology and Minerals Bureau (NGB) reported the results of a comprehensive coal property analysis in their 2018 reserve verification report. Preliminary coal washability test results were included in the 2018 reserve verification report as well as in the 2019 PEA report. Major findings were:

- Kaiyuan coal is a low-rank bituminous coal with no coking abilities and is classified as non-coking coal BN31 according to the Chinese classification system. This is equivalent to the Sub-bituminous B coal class according to the American Society for Testing Materials (ASTM D-388).

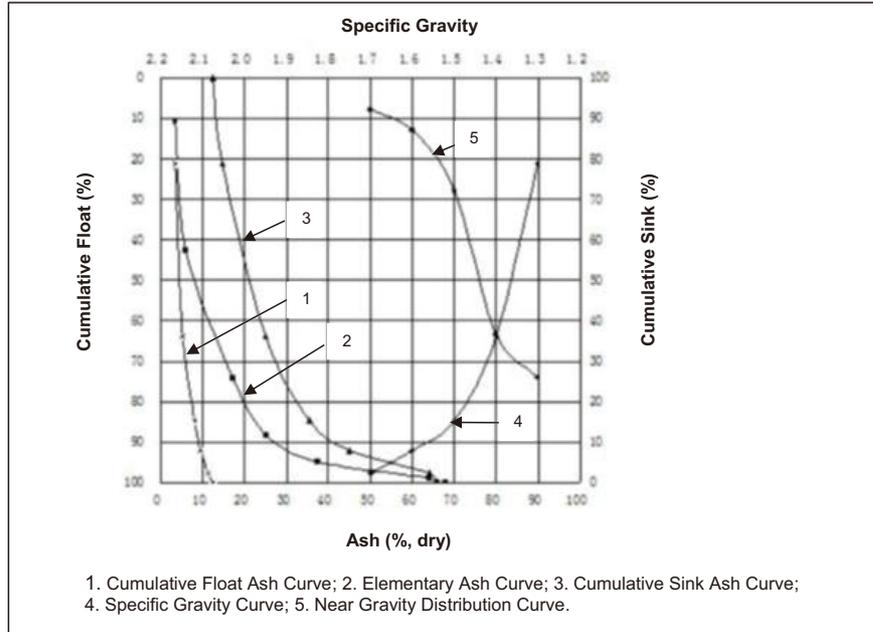
- Kaiyuan coal is low in ash with stable moisture and volatile matter, especially for the major coal seams B7, B9, B13 and B14 (Table 1.3). The average ash content for these seams is in the range of 7.0% to 17.5% on a dry basis.

Table 1.3 Combined Proximate Analysis Results in 2018 and 2020 on Cores w/o Float

Kaiyuan Coal Seam	Moisture		Ash		Volatile Matter		Fixed
	M (% <i>ad</i>)		A (% <i>d</i>)		V (% <i>daf</i>)		Carbon
	Range	Average	Range	Average	Range	Average	(% <i>daf</i>) Average
B18	7.1-18.2	10.6	6.9-22.5	12.9	29.0-39.2	31.2	68.8
B17	4.1-14.2	10.3	6.8-40.7	17.6	27.0-38.3	32.6	67.4
B16	3.4-15.2	9.5	7.6-27.6	15.7	28.0-38.8	32.3	67.7
B15	4.8-15.1	9.7	5.1-27.1	16.9	28.0-36.6	33.5	66.5
B14	2.9-15.7	9.0	9.7-33.8	17.5	29.9-45.5	33.3	66.7
B13	3.4-15.3	9.6	6.5-42.0	12.8	25.3-39.6	32.3	67.7
B9	4.0-15.8	10.5	5.1-34.0	10.4	30.3-55.2	34.1	65.9
B8	7.4-15.9	12.3	2.8-11.8	7.3	31.0-36.5	33.1	66.9
B7	2.2-14.3	10.5	4.2-12.5	7.0	30.0-45.2	32.6	67.4

- Kaiyuan coal has low concentrations of deleterious elements of sulphur (S), phosphorous (P), fluorine (F), and arsenic (AS). Some samples from Seams B₇ and B₉ had a chlorine content of more than 0.3%. Kaiyuan float samples have a lower sulphur content, while the distribution of P is consistent.
- Kaiyuan coal can be used as thermal coal because of its high heating values. However, the high concentration of the alkali elements will affect the fusibility and cause slagging during combustion. Kaiyuan coal has no coking properties. It may be used for coal gasification.
- Medium levels of humic acids were identified from the weathering zone as reported in the 2018 and 2020 reserve verification reports. The potential economic values of the weathered coals have been discussed in the 2018 PEA and 2019 FS reports.
- Washability tests on core samples indicate that Kaiyuan coal has a low degree of separation difficulty based on Chinese criteria. Washability tests on raw coal samples from nearby coal mines confirm this observation.

Figure 1.2 Washability Curves of Kaiyuan Drillhole ZK603 Core Samples from Seam B14 (2018)



The Kaiyuan mine has been in operation since 2008, producing as-mined coal which is screened to various sizes for the local thermal coal market. PVMA has reviewed production data for the period 2017 to 2019 inclusive, quality data of recent coal core samples, the operation of adjacent coal mines, and coal quality projections based on the current resource estimate. It was concluded that as-mined raw coal meets the quality requirements for the life of mine. The projected raw coal quality for the life of mine is shown in Table 1.4.

Table 1.4 Kaiyuan Raw Coal Quality Projection (2020-2072)

Total Production (million t)	Annual Production (million t/a)	Raw Coal	Qnet (MJ/kg)	M (%, ad)	A (%, d)	V (%, daf)
63.5	1.2	Average	25.99	10.55	10.42	32.39
		Range	23.21-27.85	9.53-11.18	6.25-16.47	31.83-33.36

Production data for the period 2017 through 2019 are listed in Table 17.1 together with fine coal product quality data. The ash content is low, in the range of 5.4% to 8.4% and the net heating values for 2017 and 2018 are higher than the required 18 MJ/kg. According to Kaiyuan, the low-quality coal production in 2019 was the result of mining of low-quality coal Seam XB2 that has been almost completely mined out.

Table 1.5 Kaiyuan Coal Production and Fine Coal Quality Data (2017-2019)

Kaiyuan	Coal Sample (t/a)	M (%, ad)	A (%, d)	V (%, daf)	St (%, d)	Q _{gross} (MJ/kg)	Q _{net} (MJ/kg)	K ₂ O in Ash (%)	Na ₂ O in Ash (%)
2017	2,090,439 No. 2 Coal	8.63	5.41	30.38	0.40	24.89	23.91	1.31	12.22
2018	2,077,855 No. 2 Coal	10.26	8.44	42.26	0.60	19.16	18.59	n/a	n/a
2019	1,441,269 XB2-Zhong	11.28	8.40	44.56	0.91	17.68	15.07	n/a	n/a
	XB2-Xia	13.04	5.66	42.92	0.11	17.48	15.86	n/a	n/a

1.11 Mineral Resource Estimate

PVMA has carried out an estimate of coal resources within the southern (expansion) portion of the Property on the basis of drillhole data provided by Kaiyuan that included drillhole collar locations, depth of coal seams, surface topography as of September 2019, and ash content (Ad%), moisture (Mad%), volatile content (Vadf), and net calorific value of dry coal (Q_{net,d} (MJ/Kg)). Geological strip logs were available for several of the drillholes but most collar, seam depth and thickness information were extracted from information plotted on geological long sections through the Property. Coal quality data were obtained from the 2019 resource verification report.

Location and coal seam interval data was obtained for 42 drillholes of which 26 holes were inside the expansion area and were used to estimate the quantity of coal. The dataset includes 191 coal seam intercepts of which 115 are located within the expansion area of the mining licence. Of the 332 coal quality analyses, 221 are located within the boundaries of the mining licence.

All seams were modelled as south-dipping sheets using the vertical, intersected thicknesses from each of the drillholes located within the boundaries of the Property.

Coal intercepts were assigned an indicator value of one (1) and all waste had a value of minus one (-1). Coal quality data were entered into the model using sample lengths given in the resource verification report. Samples were then segregated by coal seam and composited to three (3) meters length.

One hundred fifteen (115) bulk density measurements were carried out on all nine major coal seams by the Xinjiang Bureau of Geology and Mineral Resources and reported in the 2018 Resource Verification Report. The average for all measurements is 1.34 g/cm³.

Although the seams are more extensive than the limits of the Property, they have been modelled only to the limits of the Property boundary because the Company is allowed to mine only within the boundaries of the Property and to a depth of 575 meters above sea level, therefore the existence of any coal measures beyond those boundaries is irrelevant to the exercise of resource estimation.

The volume of the coal seams was estimated using a search ellipse with a diameter of 500 meters, thickness of 50 meters, and a south dip of five degrees. The size ensured that the ellipse would capture holes on two adjacent north-south lines and the dip ensured that the ellipse would honour the dip of the seams. Coal quality was estimated using inverse distance squared (ID²). Coal quality was estimated within each of the seams using data for that seam only.

Block model parameters are given in Table 1.3.

Table 1.6 Kaiyuan Block Model Parameters

Axis	Origin*	Size (m)		Number
X	30531000	100	Columns	91
Y	4932800	100	Rows	91
Z	477.5	5	Levels	63

* Minimum X, Y, and Z Model is not rotated

The coal indicator (value of 1) was interpolated into the blocks in a single pass. In order for a value to be interpolated into a block it was necessary that a minimum of two (2) and a maximum of four (4) intercepts be located within the volume of the search ellipse. As each seam in each drillhole was represented by a single indicator, the minimum requirement of two intercepts means that each block was informed by a minimum of two drillholes.

Because at least some of the coal seams extend to surface and all of the seams will be exploited by open pit mining methods, it is necessary to constrain the resource estimate by a design pit that is based on reasonable cost and revenue values. A design, break-even pit was constructed using a current mining cost of RMB64 per tonne and a selling price of RMB140 per tonne. Processing cost was assumed to be zero, mining dilution was assumed to be zero and mining recovery 100 percent. An overall pit slope of 38 degrees, the same as the current mining operation, was used to define the ultimate pit walls.

Because drillholes are generally 200 meters or less apart on lines that are at most 500 meters apart, and the coal seams are exposed in active open pit mines on the east, north and west sides of the expansion area, there is very strong evidence for the continuity of the coal seams within the expansion area. For this reason, all resources have been classified as Indicated.

The pit-constrained resource estimate for the expansion area is set out in Table 1.4. The resource has been estimated only to 575 meters above sea level, the minimum elevation of the mining licence.

Table 1.7 Kaiyuan Expansion Area Mineral Resource Estimate Above 575 Meters Elevation

Seam	Classification	Dry				Q _{net} (MJ/kg)	Tonnes
		Density (g/cm ³)	Ad (%)	Mad (%)	Vda (%)		
B18	Indicated	1.2500	9.70	10.63	28.94	26.84	410,000
B17	Indicated	1.2500	8.54	13.20	31.17	26.89	890,000
B16	Indicated	1.2500	13.01	10.01	31.74	25.08	1,210,000
B15	Indicated	1.2500	28.74	10.02	38.09	20.39	1,170,000
B14	Indicated	1.2500	16.24	9.05	33.60	22.33	8,100,000
B13	Indicated	1.2500	13.13	10.03	31.98	25.41	9,770,000
B09	Indicated	1.2500	9.99	11.24	32.93	26.44	19,830,000
B08	Indicated	1.2500	9.13	11.13	33.83	26.91	110,000
B07	Indicated	1.2500	6.28	10.87	32.11	27.99	<u>24,780,000</u>
						Total	<u><u>66,270,000</u></u>

1.12 Mineral Reserve Estimate

The summary of open pit coal reserves is shown in Table 15.1. Note that the coal reserves are rounded up to nearest 100,000 and above elevation 575 as per the mining licence. The reserves only are reported for the South region of the mining license. These reserves do not include the North region of the current active mining area.

Table 1.8 Kaiyuan Open Pit Coal Reserves

Coal Seams	Classification	Tonnes
Total	Probable	63,481,000

Source: PVMA (2020)

The reserves are all considered Probable as all the estimated resources are classified as Indicated.

The mineral reserves have been determined using costs set out in Table 1.9.

Table 1.9 Kaiyuan Coal Mine Operating Cost Summary Estimate

Parameters	Value
Mining	CNY 58.46*/tonne coal
Coal Preparation & General Administration	CNY 7.81/tonne coal
Overall Wall Slope	38 deg.
Coal Price	CNY 140/tonne coal
Coal Production Rate	900,000 tpa

Source: PVMA (2020)

* Operating Costs exclude amortization, depreciation and interest expense of 0.16, 9.49 & 0.5 CNY/t, respectively.

The mining, coal preparation and general administration costs are referenced from the 2019 FS. The mining costs are based on CNY per tonne coal, which equates to CNY9.9 per tonne of material. The basis for the mineral reserve estimate is used in the following Lerch-Grossman optimization. Also, the operating cost summary is based on a 900,000 tpa, which is conservative compared to the 1,200,000 tpa allowable coal release. Since there is a 33% increase in coal production, the operation should realize a lower operating cost over the life of mine.

A percentage block model developed for Section 14, was transferred into the Maptex Vulcan™ software. A Lerch-Grossman (LG) Pit Shell optimization was conducted to validate the mineral reserve estimate. The parameters for the optimization used are set out in Table 15.2.

The LG optimization shell resulted in a pit-constrained reserve of 69.5 million tonnes with an overall strip ratio of 5.44:1 (waste tonnes: coal tonnes). The reserves shown in Tables 1.8 and 1.10 are constrained by the lower limit of the mining licence (575 masl) in addition to the pitshell and total 63.5 million tonnes with an overall strip ratio of 5.91:1. Dilution factor of 0.5% and Mining Losses average 5.4%. These are reasonable for this type of estimate.

The coal reserves by seam are shown in Table 1.10. Note that the coal reserves are rounded up to nearest 1,000 and above elevation 575 m as per mining licence.

Table 1.10 Kaiyuan Coal Mine Probable Reserves by Seam to Elevation 575 meters

Coal Seam	Classification	Tonnes
B07	Probable	21,986,000
B08	Probable	78,000
B09	Probable	17,673,000
B13	Probable	9,912,000
B14	Probable	8,617,000
B15	Probable	1,363,000
B16	Probable	1,225,000
B17	Probable	1,229,000
B18	Probable	1,398,000
	Total	<u>63,481,000</u>

Source: PVMA (2020)

1.13 Mining Methods

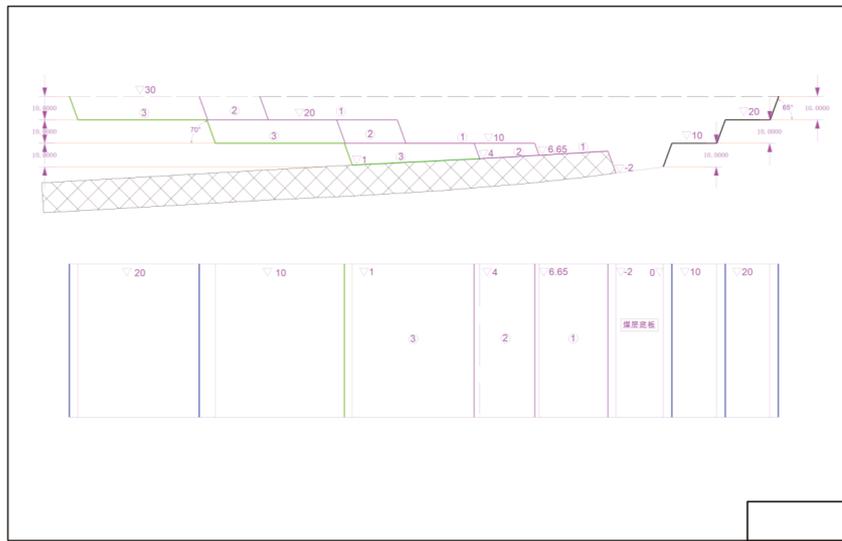
Mining will be a conventional truck-and-excavator operation. The mining rate will be approximately 1,200,000 tonnes per annum and is planned over an approximately 54-year project life, including pre-stripping. Pre-stripping took place in Year -1 (2022), and production commenced in Year 1 (2023). Table 1.11 shows the key results from the Life of Mine (LOM) plan.

Table 1.11 Kaiyuan Coal LOM Plan Key Results

Description	Unit	Value
Coal Reserves	tonne	63,481,000
Caloric Value (Q_{net})	MJ/Kg	25.99
Moisture ($M_{ad, air\ dry}$)	%	10.55
Ash ($A_d, dry\ basis$)	%	10.42
Volatile Matter ($V_{daf, dry\ and\ ash-free}$)	%	32.39
Overburden & Rock Stripping	tonne	374,904,000
Strip Ratio	waste:coal (t:t)	5.91
Coal Processing Rate	t/d (t/year)	3,600 (1,200,000)
Project Life	years	54

The mine design is defined by the mining license issued by the Autonomous Region Foreign Trade and Economic Cooperation Bureau and the Industrial and Commercial Bureau of the Autonomous Region for an operation of 900,000 tonnes per year of coal mining. The Mining Licence is held by Mulei County Kaiyuan Coal Co. Ltd. (Kaiyuan) a wholly-owned subsidiary of Nan Nan Resources Enterprise Limited. The safety production permit allows for 1,200,000 tonnes per coal mining which is also held by Kaiyuan. Mine Design Parameters Mining will be carried out by stripping overburden and rock material down dip at a declining angle between 3 and 8 degrees to a maximum bench height of 10 meters to release the coal ore. A typical cross-section showing mining sequence shown in Figure 1.3.

Figure 1.3 Typical Cross-section of Mining sequence



Source: Xinjiang Coal Design and Research Institute Co., Ltd. (2018)

The phasing for the mine will be split into two main stripping phases. The current mining activity is in the north area of the mining lease (i.e: Existing mine area). The first mining phase will be in the middle of the mining lease and will operate over a period of approximately 24 years. The final phase, (Ercai District), in the south end of the mining lease will be mined over the next 29 years.

The first mining phase will be split into two sub-phased activity areas, the East and West, as shown in Figure 1.4. Also shown are the current mining activities, dumps and facility locations. Total mining activity will be over a mine life of 53 years plus one year of pre-stripping.

The total in-pit Probable Reserves, which include dilution and mining loss are tabulated by bench to elevation 575 m in Table 1.12.

Table 1.12 Kaiyuan Coal In-Pit Diluted Reserves by Bench to Elevation 575 m

Bench	(tonnes)	In-Pit Reserves				Waste Stripping (tonnes)	Total Material (tonnes)	S.R. (w:o)
		Q_{net}	$Mad^{\circ}\%$	$Ad^{\circ}\%$	$Vdaf^{\circ}\%$			
+715 m	1,317	25.28	9.98	13.06	31.82	1,394,000	1,395,000	1,058
+705 m	176,000	25.14	9.93	13.21	31.90	16,261,000	16,437,000	92.3
+695 m	792,000	23.76	9.50	14.59	32.61	39,031,000	39,823,000	49.3
+685 m	2,188,000	23.46	9.47	15.25	32.86	41,529,000	43,717,000	19.0
+675 m	4,021,000	24.28	9.92	14.20	32.26	37,001,000	41,023,000	9.2
+665 m	5,683,000	25.07	10.47	12.69	32.19	32,879,000	38,562,000	5.8
+655 m	5,459,000	25.12	10.60	12.54	32.58	32,531,000	37,990,000	6.0
+645 m	4,423,000	24.67	10.34	13.61	33.09	33,332,000	37,755,000	7.5
+635 m	4,802,000	25.39	10.35	11.60	32.68	31,845,000	36,648,000	6.6
+625 m	6,745,000	26.16	10.48	9.84	32.37	26,948,000	33,693,000	4.0
+615 m	7,034,000	26.59	10.60	9.01	32.26	23,048,000	30,082,000	3.3
+605 m	6,001,000	27.08	10.80	8.07	32.20	20,423,000	26,424,000	3.4
+595 m	5,446,000	27.27	10.92	7.65	32.23	16,841,000	22,287,000	3.1
+585 m	5,494,000	27.29	10.95	7.59	32.25	12,611,000	18,106,000	2.3
+575 m	5,215,000	27.35	10.94	7.46	32.23	9,230,000	14,445,000	1.8
Total	63,481,000	25.99	10.55	10.42	32.39	374,904,000	438,385,000	5.9

Source: PVMA (2020)

Notes: tonnes are reported to the nearest thousand. Rounding as required by reporting guidelines may result in apparent summation differences; t = tonnes; w:o = stripping ratio of waste to coal ore

Figure 1.4 Kaiyuan Coal Existing Mine, First Mining and Final (Ercai District) Phases



Source: Xinjiang Coal Design and Research Institute Co., Ltd. (2018)

The mining production schedule is based on a mining rate of approximately 3600 t/d (1,200,000 t/year). The project life is approximately 54 years, including pre-stripping. Table 1.13 and Figure 1.5 outline the mine production schedule by year for the first 20 years.

Table 1.13 Kaiyuan Coal Mine Annual Production Schedule and Coal Quality

Year	Annual Production					Waste	Total	S.R. (w:o)
	(tonnes)	Q_{net}	$Mad\%$	$Ad\%$	$Vdaf\%$	Stripping (tonnes)	Material (tonnes)	
2022 (-1)	-	-	-	-	-	10,038,000	10,038,000	-
2023 (1)	1,200,000	23.96	9.56	14.40	32.51	8,800,000	10,000,000	7.33
2024 (2)	1,200,000	24.18	9.63	14.18	32.40	8,800,000	10,000,000	7.33
2025 (3)	1,200,000	25.87	10.70	11.21	32.40	8,800,000	10,000,000	7.33
2026 (4)	1,200,000	26.31	11.18	9.94	32.77	6,833,000	8,033,000	5.69
2027 (5)	1,200,000	26.31	11.18	9.94	32.77	5,335,000	6,535,000	4.45
2028 (6)	1,200,000	26.46	11.15	9.57	32.69	6,731,000	7,931,000	5.61
2029 (7)	1,200,000	27.09	11.00	8.07	32.35	4,073,000	5,273,000	3.39
2030 (8)	1,200,000	27.43	10.92	7.24	32.17	3,773,000	4,973,000	3.14
2031 (9)	1,200,000	27.68	10.86	6.66	32.04	3,581,000	4,781,000	2.98
2032 (10)	1,200,000	27.83	10.82	6.30	31.96	3,023,000	4,223,000	2.52
2033 (11)	1,200,000	27.85	10.82	6.25	31.95	3,054,000	4,254,000	2.55
2034 (12)	1,200,000	27.85	10.82	6.25	31.95	3,042,000	4,242,000	2.54
2035 (13)	1,200,000	27.85	10.82	6.25	31.95	2,867,000	4,067,000	2.39
2036 (14)	1,200,000	27.85	10.82	6.25	31.95	2,757,000	3,957,000	2.30
2037 (15)	1,200,000	26.80	10.48	8.10	32.23	2,955,000	4,155,000	2.46
2038 (16)	1,200,000	23.96	9.59	14.32	32.58	3,496,000	4,696,000	2.91
2039 (17)	1,200,000	26.02	10.85	10.81	32.51	6,644,000	7,844,000	5.54
2040 (18)	1,200,000	26.39	11.16	9.74	32.72	7,522,000	8,722,000	6.27
2041 (19)	1,200,000	27.07	11.00	8.12	32.36	7,612,000	8,812,000	6.34
2042 (20)	1,200,000	27.62	10.87	6.80	32.07	7,721,000	8,921,000	6.43
~	~	~	~	~	~	~	~	~
2075 (53)	1,081,000	27.26	10.96	7.66	32.27	2,019,000	3,100,000	1.8
Total	63,481,000	25.99	10.55	10.42	32.39	374,904,000	438,385,000	5.9

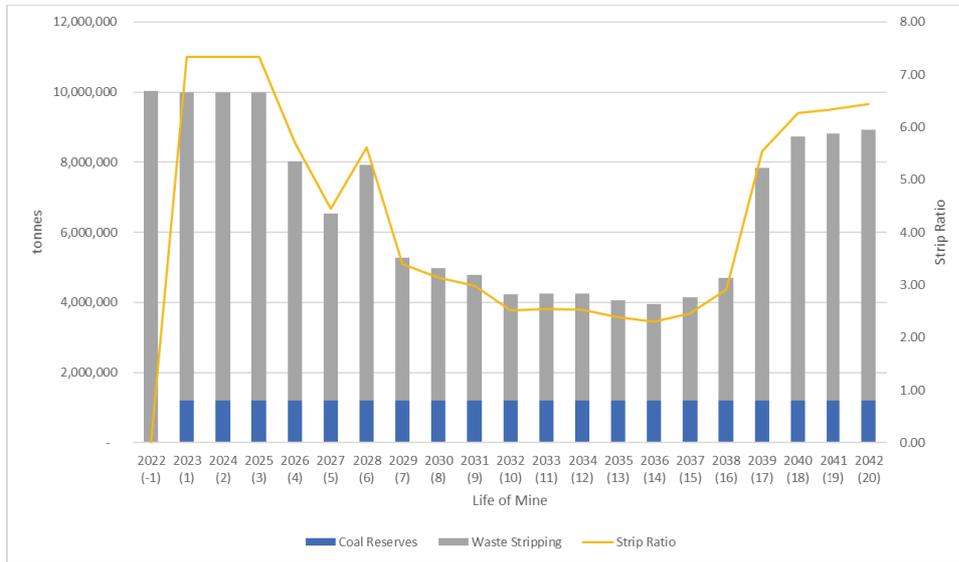
Source: PVMA (2020)

Notes: tonnes are reported to the nearest thousand. Rounding as required by reporting guidelines may result in apparent summation differences; t = tonnes; w:o = stripping ratio of waste to coal ore

The mine production schedule from the FS was based on 900,000 tonnes per year. The increase is due to the Safety Production Permit allowing the coal output to increase to 1.2 million tonnes per year. During the period 2017 to 2019, coal output was 2.09, 2.08 and 1.441 million tonnes per year. Since there is no coal release in this latest production schedule during pre-production, this gives the mine significant time to allow stripping to be performed without coal release disturbance. Coal release will continue in the north portion of the mining lease during stripping.

The coal quality data presented in the annual mine plan is based on coal release presented in the year of mining and blended based on the seams that are exposed. The calorific values, volatile matter, moisture and ash content indicates that the coal falls within the limits of marketable coal, therefore requiring no washing. The coal preparation plant will be required as function of the coal contracts.

Figure 1.5 Kaiyuan Coal Mine Production Schedule and Strip Ratio



Source: PVMA (2020)

To increase coal production to 1.2 million tonnes per year, adjustments to waste material removal had to be increased in the first seven years. Pre-stripping shows approximately 10 million tonnes of material in year 2022. During years 2023 to 2025, waste stripping increases to 8.8 million tonnes per annum, then reduces gradually during years 2026 to 2038 to approximately 6 million tonnes and 3 million tonnes, respectively. It then increases up to approximately 8 million tonnes from 2036 to 2039. Pre-stripping will also release approximately 1.2 million tonnes of coal ore in year 2023 and for the life-of-mine. The strip ratio will average 5.9 over the life-of-mine.

Over the life of mine, the mine will produce approximately 374.9 million tonnes of waste rock and overburden material. The mine has two dumping locations; the internal in-pit dump located North of the First phase mining area and the Northern Outer (Beiwai) dump site located on the North side of the mining lease and outside of the pit (ex-pit).

All mining activities on site will be completed by a combination of owner and local contractors. The descriptions in this section provide general information on the size and/or capacity of the selected equipment. This operation is a conventional truck-and-excavator operation. Track-mounted blasthole drills, either rotary drilling or down-the-hole (DTH), are used. All equipment on site is and will be diesel powered.

The owner and contractors will operate three 8-hour shifts per day (24 hours/day), 330 days/year. The remaining days are allocated to legal holidays, equipment maintenance and productivity lost because of weather. This gives approximately 7,920 gross operating hours per year.

Table 1.14 lists major mine equipment to be provided.

Table 1.14 Kaiyuan Coal Major Mine Equipment Requirements

Equipment Type	Life-of-Mine
Track Mounted Down-the-hole hammer drill, 150 mm dia.	2
5.0 m ³ hydraulic excavator	4 (3 + 1 additional units)
2.5 m ³ hydraulic excavator	3
3.5 m ³ wheel loader (ZL50)	2
45-tonne class haul trucks	19 (11 + 8 additional units)
25-tonne class highway trucks (offsite coal transportation)	Variable
220HP Track Dozer	3
Grader – G170B	1
Water Truck – 30,000 liters	2
Fuel Truck – 20,000 liters	1

Source: PVMA (2020)

Notes: m³ = cubic metres; mm = millimetre; dia. = diameter

The increase to 1.2 million tonnes per year of coal production from the originally planned 900,000 tonnes per year, also increased the total number of excavators by one to a total of four and 45-tonne trucks by eight units to a total of 19 to meet the additional material movement requirements. Remaining equipment will be sufficient to manage the 1.2 million tonnes per year of coal release. The 25-tonne class highway truck is for the transportation of coal to market. The number of trucks is variable due to the number of contract sales which varies year to year and is also depended on location for delivery.

Overburden and rock stripping will require blasting which is managed by the contractor. Blast designs are based on 10-m benches and 1-m sub-drill, using a powder factor of approximately 0.33 kg/m³ for rock and 0.22 for coal kg/m³. Over the life of mine, the project will use approximately 1.1 million kg per year of bulk ammonia-nitrate and fuel-oil explosive. The project will use conventional blasting products: non-electric detonating cords, delays and boosters. Blasting considerations of explosive timing and quantity of down-the-hole product will be adjusted for blasting near facilities.

Management staff will be owner-represented and will comprise 11 personnel. Personnel was increased to accommodate the 1.2 million tonnes per year coal production and will be comprised of 232 production staff, 9 service personnel, 9 other personnel, 6 safety personnel and 6 outsourcing staff, totalling 259 mine workers.

Over the life of mine, the project will consume approximately 10.0 million liters of diesel fuel per year.

1.14 Recovery Methods

The Kaiyuan coal mine has been in operation since 2008, producing as-mined coal which is screened to various sizes for the local thermal coal market. The as-mined raw coal meets quality requirements for the life of mine.

Kaiyuan coal is low rank bituminous. Tested coal core samples from the 2018 and 2020 sampling programs indicate that in general, Kaiyuan coal contains low ash as well as low concentrations of deleterious elements including total sulphur, phosphorous, fluorine and arsenic. Some core samples from Seam B9 have a chlorine content higher than the threshold level 0.3%, although most of the measurements are lower than this. The heating values of the core samples are high, in the range of 25.6 to 28.4 MJ/kg without processing. These properties indicate that the run-of-mine coal can meet thermal coal market requirements.

Large samples collected from the nearby mines confirmed the low ash and sulphur content as well as the high heating value of the coal as seen from the coal washability test results of Heishantou and Beishan samples. The raw coal ash on a dry basis was reported as 5.4% and 10.2% for Beishan and Heishantou, respectively.

The average coal quality during the life of mine was estimated by PVMA for the Property of the basis of proximal analyses included in the 2019 resource verification report. The average and range data are listed in Table 1.15. During the proposed life of mine, about 63.5 million tonnes raw coal will be produced, which will have an average net heating value of 26 MJ/kg and an ash content of 10.4% on a dry basis. The lowest net heating value of the raw coal was projected as 23 MJ/kg, which is above the lowest heating value regulated by local authority and meets the regional thermal coal market requirements.

Table 1.15 Kaiyuan Raw Coal Quality Projection (2020-2072)

Total Production (million t)	Annual Production (million t/a)	Raw Coal	Q_{net} (MJ/kg)	M (%, ad)	A (%, d)	V (%, daf)
63.5	1.2	Average	25.99	10.55	10.42	32.39
		Range	23.21-27.85	9.53-11.18	6.25-16.47	31.83-33.36

1.15 Project Infrastructure

The location of the mine provides with easy access to provincial roads and highways. The mine has an open pit production system and auxiliary facilities including maintenance shop, office building, and dormitories. These facilities are currently located to the south of the mine but will be relocated to the north-east for future mining. A new screening plant has been constructed on site and is also located in the same area.

Kaiyuan will use dual power supplies. One existing power supply is provided by the 35 kV Beishan transformer station. A second power source will be provided by the proposed 110 kV substation of the Jinneng Mine via a 4 km, 10 kV powerline. Three diesel generators are also available as an emergency power supply. The highest daily water consumption was estimated to be 701 m³/d for operation, as well as potable and sanitation water uses and will be provided using both reclaimed and fresh water.

1.16 Market Studies and Contracts

Kaiyuan as-mined coal is screened to various sizes and sold on a ROM basis to the local thermal coal market. The mine has an established thermal coal sales market with low risk for future sales. Typical coal products are shown in Table 1.16.

Table 1.16 Typical Kaiyuan Coal Products (2010, JTB)

Products	Size (mm)	% of Saleable Product	Customers
Large Coal	> 150	30	Thermal Coal Domestic and Industry
Medium Coal	80 – 150	30	Thermal Coal Domestic and Industry
Small Coal	30 – 80		
Fine Coal	< 30	40	Third-Party to Power Plants

1.17 Environmental Studies, Permitting and Social Impacts

Currently, appropriate environmental permits have been approved for Kaiyuan's operation by the Environmental Protection Bureau of Mulei County. The planned and implemented environmental protection measures can adequately satisfy the need for environmental protection.

1.18 Capital and Operating Costs

All capital and operating cost estimates are reported in Renminbi (CNY) unless stated otherwise. Note that the initial study was based on a production rate of 900,000 tonnes per year coal production as per the mining permit. The safety production permit allows coal production to increase to 1.2 million tonnes per year. The capital therefore has been updated by the author to reflect the purchase of additional equipment required to accommodate the 1.2 million tonnes per year production plan. Operating costs were not updated and therefore the use of the 900,000 tonne per year operating costs for the 1.2 million tonne per year operation should result in lower costs is considered to be a conservative evaluation.

The capital cost estimate is summarized in Table 1.17.

Table 1.17 Capital Cost Summary Table

Project Capital Estimate	Estimated Value (CNY)
Mining Construction Engineering (Pre-Stripping)	93,522,000
Civil Works Engineering	16,490,000
Purchase of equipment and tools	50,028,000
Installation work	15,657,000
Other fees	18,370,000
Engineering contingency reserve	11,644,000
Coal preparation plant investment	57,604,000
Interest during construction	5,980,000
Original investment in open pit mine	100,000,000
Start-up Working capital	<u>4,433,000</u>
Total Capital Costs	<u><u>373,728,000</u></u>

Source: PVMA (2020)

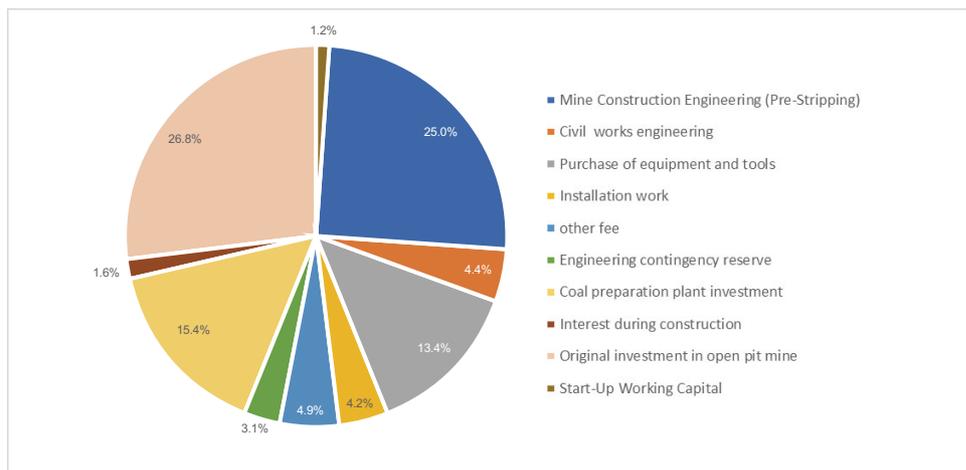
Notes: CNY are reported to the nearest thousand

The capital cost estimate had been updated to reflect the production rate of 1.2 million tonnes per year and is summarized into 10 major groups: Mining engineering, civil works engineering, purchase of equipment and tools, installation work, other fee, engineering working capital, interest during construction, coal preparation plant, original investment in open mine and working capital.

The total capital cost summary estimate by project groups is detailed below and shown in Figure 1.6.

- (1) Mining construction engineering: CNY93.522 million, accounting for 25% of the total capital cost;
- (2) Civil works engineering: CNY16.490 million, accounting for 4.4% of the total capital cost;
- (3) Purchase of equipment's and tools: CNY50.028 million, accounting for 13.4% of the total capital cost;
- (4) Installation work: CNY15.657 million, accounting for 4.2% of the total capital cost;
- (5) Other fee: CNY18.370 million, accounting for 4.9% of the total capital cost;
- (6) Engineering contingency reserve: CNY11.644 million, accounting for 3.1% of the total capital cost;
- (7) Coal Preparation Plant: CNY57.604 million, accounting for 15.4% of the total capital cost;
- (8) Interest during construction: CNY5.980 million, accounting for 1.6% of the total capital cost;
- (9) Original investment in open pit mine: CNY100.0 million, accounting for 26.8% of the total capital cost;
- (10) Start-up Working Capital: CNY4.433 million, accounting for 1.2% of the total capital costs

Figure 1.6 Kaiyuan Coal Summary of Capital Cost by Project Groups



Source: PVMA (2020)

The mining capital cost estimate was updated to reflect the coal production increase to 1.2 million tonnes per year. The estimate is split into 14 major categories; pre-stripping work, geotechnical works, excavation works, ground production systems, dredging drainage works, communication systems, power supply systems, outdoor water supply and heating systems, maintenance, warehouse facility, administrative facilities, environmental protection and other construction costs as shown in Table 1.18.

Table 1.18 Kaiyuan Coal Mine Capital Cost Estimate

Engineering Cost Name	Mine		Estimated Value (CNY)			Total
	Construction Engineering	Civil Works Engineering	Purchase of equipment's and tools	Installation work	Other Fee	
Pre-Stripping work	93,522,000	-	8,690,000	-	-	102,212,000
Mining & Mineral work	-	5,570,000	9,994,000	-	-	15,563,000
Excavation works	-	-	4,345,000	-	-	4,345,000
Ground production system	-	-	-	-	-	-
Dredging and Drainage works	-	-	152,000	309,000	-	461,000
Communication Systems	-	-	9,044,000	4,658,000	-	13,702,000
Power supply system	-	381,000	5,077,000	7,780,000	-	13,238,000
Outdoor water supply and heating systems	-	3,045,000	242,000	2,168,000	-	5,455,000
Maintenance	-	594,000	6,022,000	501,000	-	7,117,000
Warehouse facility	-	1,191,000	1,147,000	209,000	-	2,547,000
Administrative facilities	-	3,909,000	2,553,000	-	-	6,462,000
Environmental protection	-	1,801,000	2,763,000	31,000	-	4,595,000
Other construction costs	-	-	-	-	18,370,000	18,370,000
Sub-Total	93,522,000	16,490,000	50,028,000	15,657,000	18,370,000	194,067,000
Engineering Contingency (6%)					11,644,000	11,644,000
Total Mining	93,522,000	16,490,000	50,028,000	15,657,000	30,014,000	205,711,000

Source: PVMA (2020)

Notes: CNY are reported to the nearest thousand

The total mining capital cost estimate is CNY205.711 million. The contingency capital is estimated at CNY11.644 million, approximately 6% of the mining capital.

The coal preparation plant capital costs estimate is summarized in Table 1.19.

Table 1.19 Kaiyuan Coal Preparation Plant Capital Cost Estimate

Engineering Cost Name	Estimated Value (CNY)					Total
	Mine Construction Engineering	Civil Works Engineering	Purchase of equipment's and tools	Installation work	Other Fee	
Coal preparation plant	-	29,322,000	16,294,000	4,527,000	7,462,000	57,605,000
Total Coal Preparation Plantc	-	29,322,000	16,294,000	4,527,000	7,462,000	57,605,000

Source: Xinjiang Coal Design and Research Institute Co., Ltd. (2018)

Notes: CNY are reported to the nearest thousand

The annual mine plan indicates that the coal quality data falls within the limits of marketable coal and requires no washing, but due to the current wash plant construction on site the capital costs will be maintained in the cashflow model. The coal preparation plant will be required as a function of the coal contracts.

The investment capital cost estimate is split into three areas, construction investment loan, the original investment and start-up working capital as shown in Table 1.10.

Table 1.20 Kaiyuan Coal Mine Investment Capital Cost Estimate

Engineering Cost Name	Estimated Value (CNY)					Total
	Mine Construction Engineering	Civil Works Engineering	Purchase of equipment's and tools	Installation work	Other Fee	
Construction investment loan interest	-	-	-	-	5,980,000	5,980,000
Original investment	40,000,000	40,000,000	-	20,000,000	-	100,000,000
Start-up working capital	-	-	-	-	4,433,000	4,433,000
Total Other Capital	40,000,000	40,000,000	-	20,000,000	10,413,000	110,413,000

Source: Xinjiang Coal Design and Research Institute Co., Ltd. (2018)

Notes: CNY are reported to the nearest thousand

The operating cost estimate summary for the Kaiyuan Coal Feasibility Project is, in the author's opinion appropriate for a PFS level of study and is summarized in Table 21.5.

Table 1.21 Kaiyuan Coal Mine Operating Cost Summary Estimate

Item	Unit Cost per tonne coal (CNY)
Mining	58.46*
Coal Preparation	7.81
Total Operating Cost	66.27*

Source: Xinjiang Coal Design and Research Institute Co., Ltd. (2018)

* Operating Costs excludes amortization, depreciation and interest expense

Overall operating costs excludes amortization, depreciation and interest expense of 0.16, 9.49 & 0.5 CNY/t, respectively, which equates to CNY76.42/t coal.

Mining operating costs are detailed in Table 21.6.

Table 1.22 Kaiyuan Coal Mining Operating Cost Estimate

Item	Name	Unit Cost
1	Mining Operating cost	52.77
(a)	material	1.02
(b)	power	17.70
(c)	employee's salary	21.61
(d)	Repair fee	2.70
(e)	Land reclamation fee	0.50
(f)	Other expenses	3.00
(g)	Outsourcing Blasting Fee	6.21
2	Depreciation	9.49
3	Maintenance/Replacement fee	8.50
4	Security costs	5.00
5	Amortization fee	0.16
6	Interest expense	0.5
	Total Mine Operating Costs per tonne of Coal	<u>76.42*</u>

Source: Xinjiang Coal Design and Research Institute Co., Ltd. (2018)

* Operating cost include interest, depreciation, amortization

The mining costs are a fixed cost based on annual mining of 900,000 tonnes of coal per year of operation due to the mining permit. The safety production permit allows coal production to increase to 1.2 million tonnes per year. Operating costs were not updated and should be realized at a lower cost and therefore the 900,000 tonnes per day operating costs is used as a conservative evaluation and within the limits of this study.

The total cost of CNY76.42/t coal includes interest, depreciation and amortization. Excluding interest, depreciation and amortization, mining operating costs are estimated at CNY58.46/t coal.

Processing and G&A operating costs are detailed in Table 1.23.

Table 1.23 Kaiyuan Coal Preparation and G&A Operating Costs Estimate

Item	Name	Unit Cost
1	Power fee	1.19
2	employee's salary	4.62
3	Repair fee	1.00
4	other expenses	1.00
Total Coal Preparation Operating Costs		7.81

Source: Xinjiang Coal Design and Research Institute Co., Ltd. (2018)

The coal preparation and G&A costs are a fixed cost and are based on annual processing of 900,000 tonnes of coal per year of operation. The total coal preparation operating cost is estimated at CNY7.81/t coal.

The calorific values, volatile matter, moisture and ash content presented in the annual mine plan indicate that the coal falls within marketable limits, requiring no washing. Therefore, these operating costs are excluded from the cashflow model. The coal preparation plant will be required as function of the coal contracts.

Labour personnel will be a combination of owner and contractors as shown in Table 1.24.

Table 1.24 Kaiyuan Coal Summary Labour Estimate

Unit and Job title	One Class	Two Class	Three Class	Total	Labour Factor	Registered Personnel
Production workers	49	75	52	176	1.26	221
Managers	3	5	3	11	1	11
Service personnel	2	4	3	9	1	9
Labours	1	3	2	6	1	6
Outsourced Blasters	2	2	2	6	1	6
Mine First Aid Safety Staff	1	3	2	6		6
Total open-pit mine labour capacity	58	92	64	214		259
Coal Preparation Plant Capacity	18	17	5	40		53
All personnel	76	109	69	254		312

Source: PVMA (2020)

1.19 Economic Analysis

All values are reported in Renminbi (CNY). The initial study was based on 900,000 tonnes per year coal production as per the mining permit. The safety production permit allows coal production to increase to 1.2 million tonnes per year. The economic analysis has been updated by the author to reflect additional equipment purchases necessary to accommodate the 1.2 million tonnes per year production plan. Operating costs were not updated and should be realized at lower cost and therefore the 900,000 tonnes per day operating costs is used as a conservative evaluation. Table 1.25 shows the economic analysis summary.

Table 1.25 Kaiyuan Coal Economic Analysis Summary

Item	Amount (Yuan)
Total investment in open-pit projects	205,711,000
Mine Construction engineering (Pre-Stripping)	93,522,000
Civil Construction Engineering	16,490,000
Purchase of equipment and tools	50,028,000
Installation work	15,657,000
Other fees	18,370,000
Engineering contingency reserve	11,644,000
Coal processing plant investment	57,604,000
Interest expense during construction period	5,980,000
Open-pit Mine original Investment	100,000,000
Initial (start-up) working capital	4,433,000
Total construction investment	373,728,000
Coal investment per metric ton	311.44
 Financial Evaluation Index	
Project investment financial internal rate of return (%)	
– After Tax	17.53
Project investment financial internal rate of return (%)	
– Before Tax	22.53
Project investment payback period (year) – After Tax	5.48
Project investment payback period (year) – Before Tax	4.36
Project investment net present value – After Tax	207,288,000
Project investment net present value – Before Tax	355,625,000
Discount Rate (%)	10

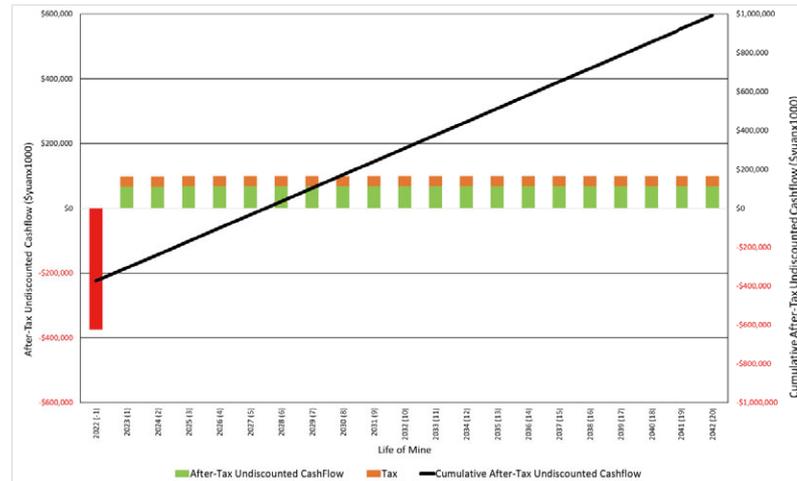
Source: PVMA (2020)

Notes: CNY are reported to the nearest thousand

The assumptions used in the financial estimate are based on an annual coal production rate of 1.2 million tonnes per year and a selling price of 140 yuan/metric ton of coal. Contingency and working capital is estimated at CNY11.644 million and 4.433 million which is approximately 3.1% and 1.2% and of total capital, respectively.

The feasibility study before-tax, after-tax cash flow and tax forecast is shown in Figure 1.7. As the cashflow model is completed over a twenty-year operation and the Life-of-Mine is over 54 years, the discounted cash flow model has little impact on the Net Present Value (NPV) after twenty years.

Figure 1.7 Kaiyuan Coal After-Tax, Tax and Cumulative After-Tax Undiscounted Cash Flow



Source: PVMA (2020)

As indicated in the chart, the payback period is approximately 5.5 years. Pre-production capital is estimated to be CNY373.728 million with a working capital of CNY4.433 million required for the first year of operation.

This Project has been evaluated on a post-tax basis in order to provide a more indicative, but still approximate, value of the potential Project economics. A tax model was reproduced by PVMA using the 2018 Xinjiang Coal Design and Research Institute Co., Ltd Feasibility report, "Kaiyuan Coal Opencast Preliminary Design". The tax model contains the following assumptions:

- No royalties;
- Value-Added Tax Total is 1.3% (13% \times 5% \times 5%)
 - o VAT is 13%
 - o Urban Construction Tax is 5%
 - o Education Surcharge is 5%
- Resource Tax is 6% of Revenue
- Corporate Income Tax is 25%
- Depreciation is CNY9.49/t of coal ore

- Amortization is CNY0.16/t of coal ore
- Interest is CNY0.50/t of coal ore

Total taxes for the Project amount to CNY601.629 million over a twenty-year operation.

NPV and IRR values are shown in Table 1.27. Table 1.28 shows the Discount Rate sensitivities, with Figures 22.2 and 22.3 showing visual representations of risk levels.

Table 1.26 Kaiyuan Coal After-Tax Net Present Value and Internal Rate of Return Sensitivity Analysis

Uncertainties Indicator Name	Indicator After Tax Name	Uncertainty Change Rate (%)								
		-20%	-15%	-10%	-5%	0%	5%	10%	15%	20%
Coal Price	%IRR	10.3%	12.2%	14.0%	15.8%	17.5%	19.2%	20.9%	22.5%	24.2%
	NPV (CNYx1000)	8,404	58,125	107,846	157,567	207,288	257,009	306,730	356,451	406,172
Production Rate	%IRR	13.4%	14.5%	15.5%	16.5%	17.5%	18.5%	19.5%	20.5%	21.4%
	NPV (CNYx1000)	91,085	120,136	149,186	178,237	207,288	236,339	265,390	294,440	323,491
Operating Costs	%IRR	22.9%	21.7%	20.4%	19.0%	17.5%	16.0%	14.3%	12.5%	10.5%
	NPV (CNYx1000)	366,450	329,976	291,290	250,395	207,288	161,971	114,443	64,705	12,756
Capital Costs	%IRR	22.4%	21.0%	19.7%	18.6%	17.5%	16.6%	15.7%	14.9%	14.1%
	NPV (CNYx1000)	282,034	263,347	244,661	225,974	207,288	188,602	169,915	151,229	132,542

Source: PVMA (2020)

Table 1.27 Discount Rate Post-Tax Sensitivity

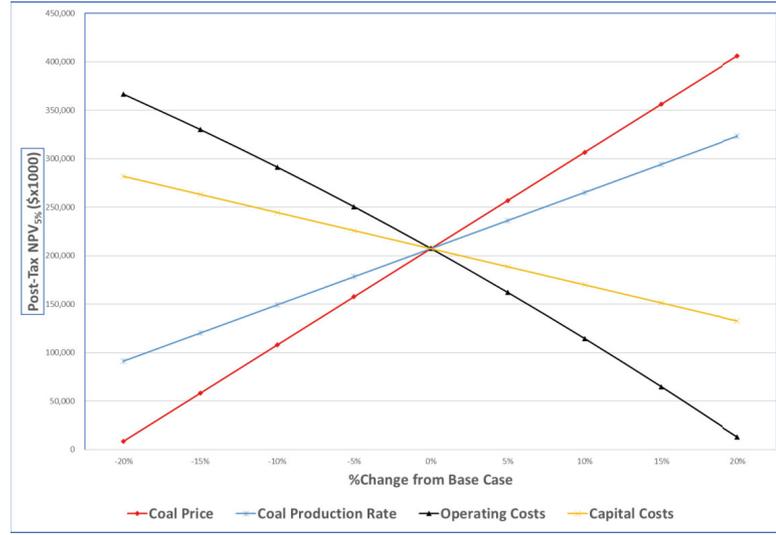
Discount Rate	After-Tax NPV (CNYx1000)
0%	992,431
5%	477,174
8%	296,451
10%	207,288
12%	135,931
15%	53,236

Source: PVMA (2020)

Notes: NPV = net present value; % = percent

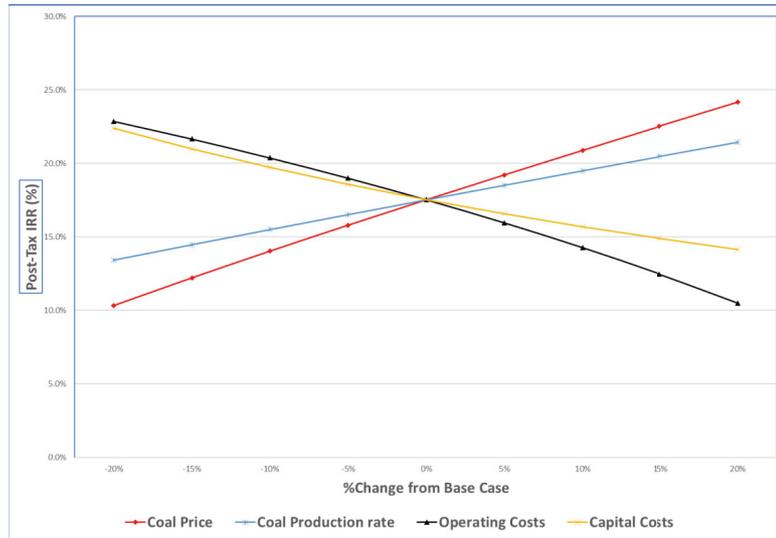
A sensitivity analysis was performed on the Base Case coal price of CNY140/t of coal cost scenarios to determine which factors most affected post-tax economics for both NPV and IRR. The analysis revealed that the project is most sensitive to coal price and operating cost, the project also shows a moderate level of sensitivity to capital and production rate.

Figure 1.8 Kaiyuan Coal After-Tax Net Present Value Sensitivity Analysis



Source: PVMA (2020)

Figure 1.9 Kaiyuan Coal After-Tax Internal Rate of Return Sensitivity Analysis



Source: PVMA (2020)

1.20 Risk Assessment

The only project risk that is regarded as currently significant is the current mine closure that was imposed because of the delay in obtaining the approval of resumption application from the Production Safety Supervision and Administration Bureau of local government as a result of coronavirus pandemic. This closure is of unknown duration and if persistent, may delay the mine development schedule as planned.

CONTENTS

1	Summary	II-1
1.1	Introduction	II-1
1.2	Reporting Standard	II-1
1.3	Reliance on Other Experts	II-1
1.4	Property Description and Location	II-2
1.5	Accessibility, Climate, Local Resources, Infrastructure and Physiography	II-2
1.6	History	II-3
1.7	Regional and Local Geology	II-3
1.8	Exploration	II-4
1.9	Drilling	II-5
1.10	Mineral Processing and Metallurgical Testing	II-5
1.11	Mineral Resource Estimate	II-8
1.12	Mineral Reserve Estimate	II-10
1.13	Mining Methods	II-12
1.14	Recovery Methods	II-19
1.15	Project Infrastructure	II-20
1.16	Market Studies and Contracts	II-20
1.17	Environmental Studies, Permitting and Social Impacts	II-20
1.18	Capital and Operating Costs	II-21
1.19	Economic Analysis	II-27
1.20	Risk Assessment	II-30
2	Introduction	II-43
2.1	Purpose of Report	II-43
2.2	Scope of Report	II-43
2.3	Reporting Standard	II-44
2.4	Work Program	II-44
2.5	Project Team	II-44
2.6	Project Team Expertise	II-45

3	Competent Persons Qualifications and Reliance on Other Experts	II-46
3.1	Mineral Resources and Ore Reserves	II-46
3.2	Stock Exchange Requirements	II-46
3.3	Reliance on Other Experts	II-47
3.4	Consents	II-47
4	Property Description and Location	II-48
5	Accessibility, Climate, Local Resources, Infrastructure and Physiography .	II-50
6	History	II-51
7	Geological Setting and Mineralization	II-51
7.1	Regional Stratigraphy	II-51
7.2	Property Stratigraphy	II-52
7.3	Mineralization	II-54
8	Deposit Types	II-56
9	Exploration	II-57
10	Drilling	II-57
11	Sample Preparation, Analyses and Security	II-60
12	Data Verification	II-61
13	Mineral Processing and Metallurgical Testing	II-61
13.1	Samples Description	II-62
13.1.1	2020 Kaiyuan Coal Samples	II-62
13.1.2	2018 Kaiyuan Coal Samples and Beishan Coal Samples	II-62
13.1.3	2018 Heishantou Coal Samples	II-62
13.2	Major Characteristics of Kaiyuan Coal	II-63
13.2.1	Kaiyuan Coal Ranking	II-63
13.2.2	Proximate Analysis	II-63
13.2.3	Ultimate Analysis	II-65

13.2.4	Deleterious Elemental Analysis	II-66
13.2.5	Coal Utilization Tests	II-67
13.2.5.1	Carbonization Testing	II-67
13.2.5.2	Combustion Testing	II-67
13.2.5.3	Coal Conversion Testing	II-69
13.2.6	Other Properties	II-69
13.3	Processing Properties	II-69
13.3.1	Physical Properties	II-69
13.3.2	Coal Washing Ability Test	II-70
13.3.2.1	Kaiyuan Core Samples Washability Testing	II-70
13.3.2.2	Beishan Pit Samples Washability Testing	II-71
13.3.2.3	Heishantou Pit Samples Washing Ability Testing ...	II-72
13.4	Major Characteristics of Kaiyuan Weathering Coal	II-73
14	Mineral Resource Estimates	II-74
14.1	Introduction	II-74
14.2	Drillhole Data	II-74
14.3	Composites	II-75
14.4	Bulk Density	II-75
14.5	Geological Interpretation	II-75
14.6	Measures of Spatial Continuity	II-75
14.7	Block Model	II-75
14.8	Interpolation Plan	II-76
14.9	Reasonable Prospects of Eventual Economic Extraction	II-77
14.10	Mineral Resource Classification	II-77
14.11	Mineral Resource Tabulation	II-77
14.12	Block Model Validation	II-78
14.13	Comparison With Previous Estimates	II-78

15	Mineral Reserve Estimates	II-78
15.1	Summary Coal Reserves	II-79
15.2	Basis for Mineral Reserves Estimate	II-79
15.2.1	Lerchs-Grossmann (LG) Pit Shell Optimization	II-80
15.3	Cut-off Calculation	II-80
15.4	Dilution and Mining Losses	II-81
15.5	Coal Reserves by Seams	II-81
16	Mining Methods	II-81
16.1	Overview	II-81
16.2	Geotechnical	II-82
16.2.1	Hydrogeology	II-83
16.3	Mine Design	II-83
16.3.1	Mine Design Parameters	II-83
16.3.2	Haul Ramp Design	II-84
16.3.3	Final Design and Phasing	II-84
16.3.4	In-Pit Diluted Probable Reserves by Bench	II-85
16.4	Mine Production Schedule	II-87
16.5	Waste Material Management Plan	II-90
16.6	Mine Equipment	II-91
16.6.1	Mine Equipment Parameters	II-92
16.6.2	Mine Equipment Requirements	II-92
16.7	Explosives	II-93
16.8	Mine Personnel	II-93
16.9	Mine Fuel	II-93
16.10	Competent Person's View	II-93
17	Recovery Methods	II-93
17.1	Kaiyuan Coal Previous Production and Quality	II-94
17.2	Kaiyuan Coal Core Samples Quality Data 2018-2020	II-94
17.3	Raw Coal Quality of Nearby Coal Mines	II-94
17.4	Kaiyuan Raw Coal Quality Projection	II-95

18	Project Infrastructure	II-95
18.1	Site General Arrangement	II-95
18.2	Site Roads	II-96
18.3	Power Supply	II-97
18.4	Water Supply	II-97
18.5	On-site Structures/Facilities	II-97
18.5.1	Raw Coal Handling and Screening Plant	II-97
18.5.2	Auxiliary Facilities	II-98
19	Market Studies and Contracts	II-99
20	Environmental Studies, Permitting and Social or Community Impact	II-100
21	Capital and Operating Costs	II-100
21.1	Capital Cost Summary	II-101
21.1.1	Mine Capital Costs	II-103
21.1.2	Coal Preparation Plant Capital Costs	II-104
21.1.3	Investment and Start-up Working Capital Costs	II-104
21.2	Operating Cost Summary Estimate	II-105
21.2.1	Mining Operating Cost	II-105
21.2.2	Coal Preparation, General and Administration (G&A) Operating Costs	II-106
21.2.3	Labour	II-107
21.3	Competent Person's View	II-107
22	Economic Analysis	II-107
22.1	Summary of Economic Analysis	II-108
22.2	After-Tax Cash Flow and Tax Forecast	II-109
22.3	Taxes, Royalties and Other Interests	II-110
22.4	NPV & IRR Sensitivity	II-112
22.5	Competent Person's View	II-113

23	Adjacent Properties	II-114
24	Project Risk Assessment	II-114
25	Interpretation and Conclusions	II-116
	25.1 Geology and Mineral Resources	II-116
	25.2 Mining and Mineral Reserves	II-117
	25.3 Mineral Processing and Metallurgical Testing	II-119
	25.4 Recovery Methods	II-119
	25.5 Project Infrastructure	II-120
	25.6 Market Studies and Contracts	II-120
	25.7 Environmental Studies, Permitting and Social Impacts	II-120
	25.8 Economic Analysis	II-120
	25.9 Risk Assessment	II-122
26	Recommendations	II-122
	26.1 Geology and Mineral Resources	II-122
	26.2 Mining and Mineral Reserves	II-122
	26.3 Metallurgy and Processing/Recovery Methods	II-122
	26.4 Environmental Studies, Permitting and Social Impacts	II-122
27	References	II-123
28	Appendix 1: Valuation Report	II-125
29	Appendix 2: JORC Table 1	II-142

TABLES

Table 1.1	Kaiyua Coal Seam Thickness	II-4
Table 1.2	Kaiyuan Coal Seam Characteristics	II-4
Table 1.3	Combined Proximate Analysis Results in 2018 and 2020 on Cores w/o Float	II-6
Table 1.4	Kaiyuan Raw Coal Quality Projection (2020-2072)	II-7
Table 1.5	Kaiyuan Coal Production and Fine Coal Quality Data (2017-2019) .	II-8
Table 1.6	Kaiyuan Block Model Parameters	II-9
Table 1.7	Kaiyuan Expansion Area Mineral Resource Estimate Above 575 Meters Elevation	II-10
Table 1.8	Kaiyuan Open Pit Coal Reserves	II-10
Table 1.9	Kaiyuan Coal Mine Operating Cost Summary Estimate	II-11
Table 1.10	Kaiyuan Coal Mine Probable Reserves by Seam to Elevation 575 meters	II-12
Table 1.11	Kaiyuan Coal LOM Plan Key Results	II-12
Table 1.12	Kaiyuan Coal In-Pit Diluted Reserves by Bench to Elevation 575 m	II-14
Table 1.13	Kaiyuan Coal Mine Annual Production Schedule and Coal Quality	II-16
Table 1.14	Kaiyuan Coal Major Mine Equipment Requirements	II-18
Table 1.15	Kaiyuan Raw Coal Quality Projection (2020-2072)	II-19
Table 1.16	Typical Kaiyuan Coal Products (2010, JTB)	II-20
Table 1.17	Capital Cost Summary Table	II-21
Table 1.18	Kaiyuan Coal Mine Capital Cost Estimate	II-23
Table 1.19	Kaiyuan Coal Preparation Plant Capital Cost Estimate	II-24
Table 1.20	Kaiyuan Coal Mine Investment Capital Cost Estimate	II-24
Table 1.21	Kaiyuan Coal Mine Operating Cost Summary Estimate	II-25
Table 1.22	Kaiyuan Coal Mining Operating Cost Estimate	II-25
Table 1.23	Kaiyuan Coal Preparation and G&A Operating Costs Estimate ...	II-26

Table 1.24	Kaiyuan Coal Summary Labour Estimate	II-26
Table 1.25	Kaiyuan Coal Economic Analysis Summary	II-27
Table 1.26	Kaiyuan Coal After-Tax Net Present Value and Internal Rate of Return Sensitivity Analysis	II-29
Table 1.27	Discount Rate Post-Tax Sensitivity	II-29
Table 2.1	Responsibilities for Preparation of This Report	II-44
Table 4.1	Kaiyuan Mining Licence Boundary Coordinates	II-49
Table 7.1	Kaiyuan Coal Seam Thickness	II-54
Table 7.2	Kaiyuan Coal Seam Characteristics	II-55
Table 10.1	Kaiyuan Drillholes 2018 and 2019	II-58
Table 10.2	Kaiyuan Drillholes Pre-2018	II-58
Table 13.1	Proximate Analysis Results in 2018 on Cores w/o Float	II-64
Table 13.2	Proximate Analysis Results in 2020 on Cores w/o Float	II-64
Table 13.3	Combined Proximate Analysis Results in 2018 and 2020 on Cores w/o Float	II-64
Table 13.4	Average Ultimate Analysis Results 2018	II-65
Table 13.5	Regulated Deleterious Elemental Levels of Commodity Coal in China	II-66
Table 13.6	Average Deleterious Analysis Results 2018	II-66
Table 13.7	Coal Ash Chemical Analysis Results 2018	II-67
Table 13.8	B/A Results 2018	II-68
Table 13.9	Screening Test Results of Kaiyuan Core Samples 2018	II-70
Table 13.10	Screening Test Results of Beishan Pit Samples 2018	II-71
Table 13.11	Screening and Float-Sink Test Results of Heishantou Pit Samples 2018	II-72
Table 14.1	Kaiyuan Bulk Density Measurements	II-75
Table 14.2	Kaiyuan Block Model Parameters	II-76

Table 14.3	Kaiyuan Expansion Area Mineral Resource Estimate Above 575 Meters Elevation	II-77
Table 15.1	Kaiyuan Open Pit Coal Reserves	II-79
Table 15.2	Kaiyuan Coal Mine Operating Cost Summary Estimate	II-79
Table 15.3	Kaiyuan Coal Mine Probable Reserves by Seam to Elevation 575 meters	II-81
Table 16.1	Kaiyuan Coal LOM Plan Key Results	II-82
Table 16.2	Kaiyuan Coal Recommended Overall Wall Slope Design Parameters	II-82
Table 16.3	Kaiyuan Coal Open Pit Design Parameters	II-83
Table 16.4	Kaiyuan Coal In-Pit Diluted Reserves by Bench to Elevation 575 m	II-85
Table 16.5	Kaiyuan Coal Mine Annual Production Schedule and Coal Quality	II-88
Table 16.6	Kaiyuan Coal Dump Design Parameters	II-90
Table 16.7	Kaiyuan Coal Mine Waste Management Dump Plan	II-91
Table 16.8	Kaiyuan Coal Major Mine Equipment Requirements	II-92
Table 17.1	Kaiyuan Coal Production and Fine Coal Quality Data (2017-2019) .	II-94
Table 17.2	Kaiyuan Raw Coal Quality Projection (2020-2072)	II-95
Table 19.1	Typical Kaiyuan Coal Products (2010, JTB)	II-99
Table 19.2	Kaiyuan Coal Product Contracts Examples (2020, Kaiyuan)	II-99
Table 21.1	Capital Cost Summary Table	II-101
Table 21.2	Kaiyuan Coal Mine Capital Cost Estimate	II-103
Table 21.3	Kaiyuan Coal Preparation Plant Capital Cost Estimate	II-104
Table 21.4	Kaiyuan Coal Mine Investment Capital Cost Estimate	II-104
Table 21.5	Kaiyuan Coal Mine Operating Cost Summary Estimate	II-105
Table 21.6	Kaiyuan Coal Mining Operating Cost Estimate	II-105
Table 21.7	Kaiyuan Coal Preparation and G&A Operating Costs Estimate . . .	II-106

Table 21.8	Kaiyuan Coal Summary Labour Estimate	II-107
Table 22.1	Kaiyuan Coal Economic Analysis Summary	II-108
Table 22.2	Kaiyuan Coal Financial Plan Cash Flow Statement (CNYx1,000) ..	II-111
Table 22.3	Kaiyuan Coal After-Tax Net Present Value and Internal Rate of Return Sensitivity Analysis	II-112
Table 22.4	Discount Rate Post-Tax Sensitivity	II-113
Table 24.1	Kaiyuan Risk Assessment	II-115
Table 25.1	Kaiyuan Coal Seam Thickness	II-116
Table 25.2	Kaiyuan Expansion Area Mineral Resource Estimate Above 575 Meters Elevation	II-117
Table 25.3	Kaiyuan Coal Mine Probable Reserves by Seam to Elevation 575 meters	II-118
Table 25.4	Kaiyuan Coal LOM Plan Key Results	II-118
Table 25.5	Kaiyuan Coal Economic Analysis Summary	II-121

FIGURES

Figure 1.1	Kaiyuan Drillhole Location Map	II-5
Figure 1.2	Washability Curves of Kaiyuan Drillhole ZK603 Core Samples from Seam B14 (2018)	II-7
Figure 1.3	Typical Cross-section of Mining sequence	II-13
Figure 1.4	Kaiyuan Coal Existing Mine, First Mining and Final (Ercai District) Phases	II-15
Figure 1.5	Kaiyuan Coal Mine Production Schedule and Strip Ratio	II-17
Figure 1.6	Kaiyuan Coal Summary of Capital Cost by Project Groups	II-22
Figure 1.7	Kaiyuan Coal After-Tax, Tax and Cumulative After-Tax Undiscounted Cash Flow	II-28
Figure 1.8	Kaiyuan Coal After-Tax Net Present Value Sensitivity Analysis ..	II-30
Figure 1.9	Kaiyuan Coal After-Tax Internal Rate of Return Sensitivity Analysis	II-30
Figure 4.1	Kaiyuan General Location Map	II-48
Figure 4.2	Kaiyuan Mining Plan Boundary	II-49
Figure 7.1	Stratigraphic Column Mesozoic Junggar Basin	II-53
Figure 7.2	Kaiyuan Coal Seams Plan View	II-54
Figure 7.3	Kaiyuan Coal Seams Long Section View Looking East	II-55
Figure 10.1	Kaiyuan Drillholes 2018–2019	II-57
Figure 10.2	Kaiyuan Drillhole ZK01 Core from Depth Interval	II-59
Figure 13.1	Washability Curves of Kaiyuan Drillhole ZK603 Core Samples from Seam B14 (2018)	II-71
Figure 13.2	Washability Curves of Heishantou Pit Samples (2018)	II-73
Figure 14.1	Kaiyuan Drillholes	II-74

Figure 15.1	Typical Cross-Section of LG Pit Shell and Coal Seams Outlines . . .	II-80
Figure 16.1	Typical Cross-section of Mining sequence	II-84
Figure 16.2	Kaiyuan Coal Existing Mine, First Mining and Final (Ercai District) Phases	II-86
Figure 16.3	Kaiyuan Coal Final Mine Design to Elevation 575m	II-87
Figure 16.4	Kaiyuan Coal Mine Production Schedule and Strip Ratio	II-89
Figure 18.1	Kaiyuan Coal Mine General Arrangement	II-96
Figure 18.2	Kaiyuan Screening Plant	II-98
Figure 21.1	Kaiyuan Coal Summary of Capital Cost by Project Groups	II-102
Figure 22.1	Kaiyuan Coal After-Tax, Tax and Cumulative After-Tax Undiscounted Cash Flow	II-109
Figure 22.2	Kaiyuan Coal After-Tax Net Present Value Sensitivity Analysis . . .	II-113
Figure 22.3	Kaiyuan Coal After-Tax Internal Rate of Return Sensitivity Analysis	II-114

2 INTRODUCTION

2.1 Purpose of Report

Peak Vision Mining Alliance Ltd. (PVMA), has been retained by Nan Nan Resources Enterprise Limited (Nan Nan or Company) to prepare an Independent Technical Report (ITR, or Report) on its Kaiyuan open-pit coal mine property (Property) located in Qitai County, Xinjiang Uyghur Autonomous Region of the People's Republic of China. The ITR is required to be compliant with the requirements of the Stock Exchange of Hong Kong Limited (Stock Exchange or HKEx) for a very substantial transaction.

2.2 Scope of Report

This ITR comprises (1) an independent mineral resource estimate for the coal resources contained within the Property, and (2) a review of the Feasibility Study Report (FS) for a proposed expansion of the Kaiyuan mining operation to 900,000 tonnes per year, that was prepared by the Xinjiang Coal Design and Research Institute Co., Ltd. in August 2019. The Safety Production Permit for the mine is rated for 1.2 million tonnes of coal production per year so the mine plan, economic model and related costs and revenues produced for this ITR have been projected to the annual production rate of 1.2 million tonnes from the base production rate of 900,000 tonnes.

The Scope of Work for this ITR includes the completion or review and reporting of the following technical aspects:

- Geology;
- Mineral Resource Estimate;
- Mining Methods and Ore Reserves;
- Mineral Processing;
- Environment, Permitting and Social Impacts;
- Capital and Operating Costs;
- Marketing; and
- Risk Assessment.

Information used in the preparation of this report is listed in Section 27 and where appropriate, is referenced elsewhere in the report.

2.3 Reporting Standard

This Report has been prepared in accordance with the JORC (Joint Ore Reserve Committee) Code (2012). The effective date of this Report is 1 July 2020. There has been no material change of the Mineral Resource estimate since the effective date of this Report.

2.4 Work Program

The work programme of this report included:

- Review of the information supplied by the Company;
- Site visit by Greg Mosher, P.Geo., Ting Lu., P.Eng., and Antonio Loschiavo to the site on 18 and 19 October 2019;
- Site visit by Greg Mosher on 6 January 2020;
- Preparation of this ITR.

2.5 Project Team

The project team is comprised of Antonio Loschiavo P.Eng., Mining Engineer; Ting Lu, P.Eng., Process Engineer; and Greg Mosher, P.Geo., Geologist. All three are Competent Persons for their respective portions of the Report in the context of the JORC 2012 Code and in the context of Chapter 18 of the Listing Rules of the Hong Kong Stock Exchange. Responsibilities for preparation of the ITR are as follows:

Table 2.1 Responsibilities for Preparation of This Report

Consultant	Responsibility
Antonio Loschiavo, P.Eng.	Mining, Capital and Operating Costs, Economic Analysis
Ting Lu, P.Eng.	Mineral Processing, Infrastructure, Environment, Permitting, Social Impact
Greg Mosher, P.Geo.	Project Management, Geology and Mineral Resources

2.6 Project Team Expertise

The following brief resumes outline the experience of the team members.

Antonio Loschiavo, P.Eng. Mining Engineer

Tony has over 20 years of practical experience in both mining operations and consulting, specializing in open pit mine design and planning, ore resource/reserve evaluation, and economic analysis, and is well recognized as a Principal Mining engineer. Tony has worked on projects in Canada, Europe, Russia, Central and South America and has held senior positions with several mining companies.

Ting Lu, P. Eng. Process Engineer

Ting is a senior metallurgical engineer with over 20 years of experience in mineral processing and project management with gold, silver, base metals, coal and industrial minerals. Ting has worked on multiple projects as project manager, lead processing engineer and Qualified/Competent Person. Ting worked as a coal processing engineer in western Canada prior to becoming a consultant.

Greg Mosher, P. Geo., Resource Estimation Geologist

Greg has over 40 years of mining experience with field locations across North America, South America, China, Greenland, North Africa, and Europe. His work has included co-operative efforts with mining, metallurgical, chemical and civil engineering disciplines. Consulting contracts have included technical and economic evaluation of mining operations and mineral properties, participation in feasibility analyses, mineral resource estimations, data synthesis, and management of geological exploration programs. Since 2003, Greg has specialized in mineral resource estimation. Greg has conducted resource estimates for coal projects in China and Mongolia.

All three Competent Persons, Loschiavo, Lu and Mosher, have been retained by PVMA as independent consultants with the specific mandate to prepare and complete this ITR.

3 COMPETENT PERSONS QUALIFICATIONS AND RELIANCE ON OTHER EXPERTS

3.1 Mineral Resources and Ore Reserves

The information in this Report that relates to Mineral Resources is based on work done by Greg Mosher who is a Competent Person in the context of the JORC Code (2012) and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration, and to the activity being undertaken, to qualify as a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code, 2012). Greg Mosher consents to the inclusion in this Report of the matters based on the information in the form and context in which it appears.

3.2 Stock Exchange Requirements

Antonio Loschiavo:

- Is a member in good standing of the Engineers and Geoscientists of British Columbia (Canada);
- Has more than five years' experience relevant to the style of mineralisation and type of deposit under consideration;
- Is independent of the issuer applying all of the tests in sections 18.21 and 18.22 of the listing rules of HKEx;
- Does not have any economic or beneficial interest (present or contingent) in any of the reported asset;
- Has not received a fee dependent on the findings outlined in the ITR;
- Is not an officer, employee of proposed officer for the issuer or any group, holding or associated company of the issuer.

Ting Lu:

- Is a member in good standing of the Engineers and Geoscientists of British Columbia (Canada);
- Has more than five years' experience relevant to the style of mineralisation and type of deposit under consideration;
- Is independent of the issuer applying all of the tests in sections 18.21 and 18.22 of the listing rules of HKEx;
- Does not have any economic or beneficial interest (present or contingent) in any of the reported asset;
- Has not received a fee dependent on the findings outlined in the ITR;

- Is not an officer, employee of proposed officer for the issuer or any group, holding or associated company of the issuer.

Greg Mosher:

- Is a member in good standing of the Engineers and Geoscientists of British Columbia (Canada);
- Has more than five years' experience relevant to the style of mineralisation and type of deposit under consideration;
- Is independent of the issuer applying all of the tests in sections 18.21 and 18.22 of the listing rules of HKEx;
- Does not have any economic or beneficial interest (present or contingent) in any of the reported asset;
- Has not received a fee dependent on the findings outlined in the ITR;
- Is not an officer, employee of proposed officer for the issuer or any group, holding or associated company of the issuer and takes overall responsibility for this ITR.

Peak Vision Mining Alliance Ltd.:

- Is independent of the issuer applying all of the tests in sections 18.21 and 18.22 of the listing rules of HKEx;
- Does not have any economic or beneficial interest (present or contingent) in any of the reported asset;
- Has not received a fee dependent on the findings outlined in the ITR.

3.3 Reliance on Other Experts

PVMA has relied on Nan Nan for information regarding the legal description of the Property and the nature and status of permits that are required by Nan Nan to carry out their current and planned operations within the Property.

3.4 Consents

PVMA consents to this Report being included, in full, in the prospectus of Nan Nan, in relation to its proposed transaction on the HKEx, in the form and context in which the technical assessment is provided, and not for any other purpose.

PVMA further consents to any part of this Report being cited or otherwise referred to in the prospectus and/or any replies to questions from the Hong Kong Stock Exchange and/or the Securities and Futures Commission in connection with the proposed listing on the Hong Kong Stock Exchange.

4 PROPERTY DESCRIPTION AND LOCATION

The Property is located in Qitai County, in northeastern Xinjiang Uyghur Autonomous Region, PRC, near the border with Mongolia at approximately 90°24' east longitude and 44°32' north latitude. The straight-line distance from Urumqi, the capital city of Xinjiang, and the Property is approximately 200 kilometres (km). (Figure 4.1)

Figure 4.1 Kaiyuan General Location Map



The Property is comprised of one Mining Licence, Certificate Number C6500002018121110148841, that is 4.1123 km in area and grants the right to mine between 727 and 575 meters above sea level. The Mining Licence is valid from 21 December 2019 to 21 December 2021 and is renewable for a period of 30 years.

The Mining Licence is held by Mulei County Kaiyuan Coal Co. Ltd. (Kaiyuan) a wholly foreign-owned enterprise approved by the Autonomous Region Foreign Trade and Economic Cooperation Bureau and the Industrial and Commercial Bureau of the Autonomous Region. Kaiyuan is a wholly-owned subsidiary of Nan Nan Resources Enterprise Limited.

The boundary of the mining licence is defined by the inflection points set out in Table 4.1 and shown in Figure 4.2. The locations of the inflection points are taken from the current Mining Licence and are expressed based on the Xi'an 80 coordinate system.

Table 4.1 Kaiyuan Mining Licence Boundary Coordinates

Inflection Point	1980 Xi'an Coordinate System	
	X	Y
1	4935612	30531354
2	4935896	30532950
3	4934770	30533330
4	4934768	30532882
5	4933075	30532412
6	4933026	30531079
7	4934324	30531402

Figure 4.2 Kaiyuan Mining Plan Boundary

Kaiyuan has the right of access to and use of the Property but does not own the surface rights which are retained by the government.

The Property is not subject to any royalties, back-in rights, payments or other agreements with the exception of taxes payable on sales of coal and an environmental tax.

The Property is not subject to any known environmental liabilities.

The only permits which are required for Kaiyuan to carry on their mining activities are a Mining Licence and a Safety Production Permit, both of which are in place. The mining licence is renewable every year or two years and the safety production permit is renewable every three years.

There are no known risk factors that may affect access, title, or the right or ability to perform work on the Property.

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

The Property is located on the southern margin of the Junggar Basin in northeastern Xinjiang Autonomous Region, near the border with Mongolia, but is readily accessible: A recently completed freeway extends from Urumqi approximately 150 km east to Qitai. From Qitai, the Property is reached by travelling approximately 20 km east on Provincial Road S303 then 50 km north on Provincial Road S228 at which Provincial Road S327 branches to the northeast and passes within several kilometers of the Property. Roads within the Property are maintained but unpaved. A railway is under construction parallel to Highway S327.

The Junggar Basin is bordered by the Altai Mountains on the north and by the Borohoro and Eren Habirga Mountains immediately north of the Tianshan Mountains on the south. The area is remote from any marine climatic influences and therefore has a dry, continental climate. Precipitation not only is scanty but also fluctuates widely from year to year. On average, annual rainfall is about 165 mm. Average January temperatures in the Junggar Basin are about -15°C and average temperatures in summer vary from 21°C in the north to 24°C in the south. Mining activities are conducted on a year-round basis.

The Property is at an elevation of approximately 700 meters above sea level (masl) and the terrain is essentially flat. Vegetation is scarce and is limited to scattered grasses and bushes where intermittent water flow is sufficient to support their existence.

The Property is relatively remote and other than several other coal mines, is not close to any significant infrastructure although the existence of a well-developed coal mining industry means that all necessary services are available in the region. Qitai County, in which the Property is located, has a population of approximately 250,000. The town of Qital, the county capital, is approximately 50 km south of the Property and offers basic services and all other supplies and services are available in Urumqi, approximately 200 km to the southwest.

The Property has sufficient surface rights for mining operations, waste disposal and processing plant sites. Electrical power is supplied to the Property from the Kitayama 35 kV substation, 10 km to the southwest. Water for industrial use is obtained locally but potable water must be transported to the Property from Penghu, 35 km to the southwest.

6 HISTORY

The documented history of coal exploration of the Property area dates from 2006-2007, when the Ninth Geological Brigade of the Xinjiang Geology and Minerals Bureau conducted a coal exploration program on the Mingjia Kaiyuan Open-pit Coal Mine that included a topographic survey, prospecting and a hydrological test.

During 2007-2008, the Shandong Taishan Geological Exploration Company carried out an exploration program at the Heshantou Coal Mine where they carried out a topographic survey, geological mapping, trenching and 6,686 meters of drilling in 34 holes. This work was done for Zijin Mining Group Co. Ltd.

During 2008-2009, the Ninth Geological Brigade of the Xinjiang Geology and Minerals Bureau worked on the Beishan Coal Mine, to the west of the Property, on behalf of Xinjiang Beishan Mining Co. Ltd. This program included topographic and geological and hydrogeological mapping, prospecting and 2,050 meters of drilling in 14 holes.

In 2018, the Ninth Brigade of the Xinjiang Geological and Mineral Bureau prepared a reserve verification report on the Kaiyuan Mine.

In 2019, the Xinjiang Coal Design and Research Institute Co., Ltd. completed a Feasibility Study, dated 31 August 2019, that was based on the 2018 resource verification report. The current ITR is based on a review of the 2019 Feasibility Study.

The portion of the Property into which the mining operation is expanding (expansion area) was previously owned by two companies, Jinneng and Beishan.

Mining of the original Kaiyuan Mine in the northern part of the Property began in 2008. To date, approximately ten million tonnes of coal have been produced from the Property.

7 GEOLOGICAL SETTING AND MINERALIZATION

7.1 Regional Stratigraphy

The Junggar basin formed south of the Siberian Craton during late Paleozoic time as a remnant ocean basin that was bounded by emergent volcanic arcs. A regressive sedimentary sequence comprising 3,000 to 4,000 m of marine volcanoclastic rocks was deposited in this basin. Devonian-age sandstones are entirely volcanoclastic which suggests that the basin is underlain by oceanic crust. Early Permian and younger rocks are non-marine and were deposited in a subsiding basin formed in response to the uplift of the ancestral Tian Shan mountains.

More than 2,000 meters (m) of shallow-marine arenite and mudrock were deposited in the southeastern margin of the Junggar Basin during Early Permian time. During Late Permian time, the basin transformed into an intercontinental basin and during the Early Triassic, in response to repeated uplift and subsidence, the area became a shallow lacustrine basin. During the Middle and Late Triassic, approximately 1,200 m of mudstone and sandstone were deposited in the southeastern part of the basin.

Coal beds are abundant and extensive in Lower to Middle Jurassic strata. Individual beds are up to tens of meters thick and are interbedded with lacustrine and fluvial sandstone and mudrock.

The Lower to Middle Jurassic Xishanyao Formation was variably eroded and unconformably overlain by the upper Middle Jurassic Toutunhe Formation.

Cretaceous-aged rocks are over 3,000 m thick and are comprised of basal conglomerate and interbedded sandstone and mudstone. During the Paleogene, more than 1,500 m of mudrock, sandstone and conglomerate were deposited in the south-central Junggar Basin. The Paleocene-Eocene age Ziniquanzi Formation is composed of sandstone and intercalated mudstone with common lateral facies changes. The middle portion of the Eocene-Oligocene age Anjihiathe Formation is composed of thick shale beds intercalated with limestone and the upper and lower parts are comprised of interbedded mudstone and sandstone that were deposited in a littoral lacustrine environment.

From Miocene to Quaternary time, sediments were deposited in depressions formed by northward thrusting and loading of the northern Tianshan mountains caused by collision of the Indian and Eurasian plates. Miocene deposits are mostly fluvial-lacustrine mudstone intercalated with sandstone, conglomerate and limestone. Pliocene deposits are mainly alluvial fan to fluvial mudstone and sandstone interbedded with conglomerate. Quaternary deposits are alluvial fan to fluvial conglomerate and sandstone.

Figure 7.1 is a stratigraphic column showing the formations, lithologies, and fossils that make up the Mesozoic strata in the southern Junggar Basin. (*From Li et al, 2014*)

7.2 Property Stratigraphy

The Property area is underlain by rocks of Lower to Middle Jurassic age. The oldest rocks encountered in drilling belong to the Lower Jurassic Sangonghe Formation. Rock types include grey-green siltstone, fine-grained sandstone, and argillaceous siltstone and are approximately 90m thick. The Sangonghe Formation does not contain coal beds. Regionally, the Sangonghe Formation is described as being comprised of coarsening-upward cycles that represent multiple delta progradations along basin margins. The thin-bedded, fine-grained and well-sorted sandstones with wide lateral extent are indicative of wave-dominated delta systems. Adjacent to the Property, the Sangonghe Formation contains conglomerate beds which may be indicative of fluvial channels.

The southern part of the Property is overlain by Quaternary-age sand and gravel that is up to 12 meters thick.

7.3 Mineralization

Within the Property, all coal seams are contained within the Middle Jurassic-age Xishanyao Formation. There are nine seams of coal of sufficient thickness to be recoverable and they have an aggregate thickness of approximately 50m. The seams are listed in Table 7.1 together with their average, minimum, and maximum thickness.

Table 7.1 Kaiyuan Coal Seam Thickness

Coal Seam	Average Thickness (m)	Minimum Thickness (m)	Maximum Thickness (m)
B18	4.0	1.9	7.0
B17	4.1	2.8	6.6
B16	1.5	0.5	2.8
B15	4.1	0.7	13.4
B14	4.5	0.6	9.5
B13	5.4	0.1	10.0
B9	10.0	5.1	12.9
B8	1.4	0.5	1.8
B7	21.2	12.5	24.5

The seams dip to the south at approximately five (5) degrees. Seams B₇ and B₉ are the most continuous; seam B₈, between B₇ and B₉, is restricted to the southern part of the expansion area. The remaining seams are generally consistent in thickness and distribution, but because they dip to the south, they are progressively truncated to the north. See Figure 7.2, a plan view of the seams and Figure 7.3 for a long section view.

Figure 7.2 Kaiyuan Coal Seams Plan View

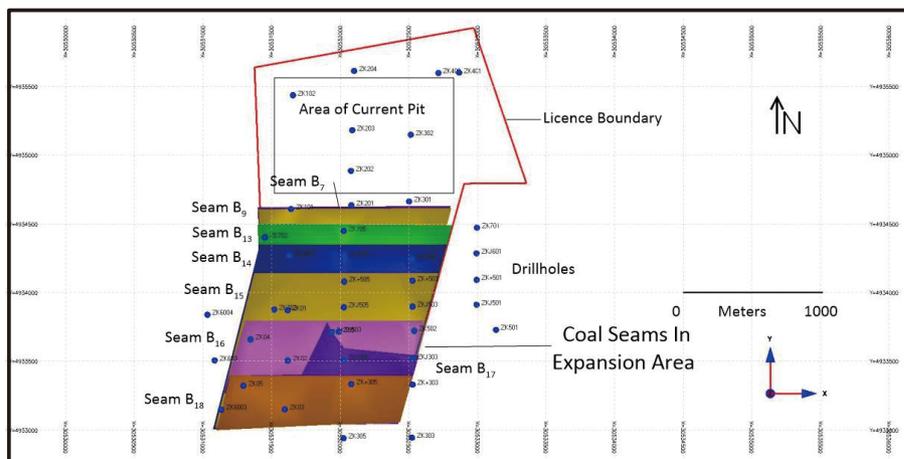
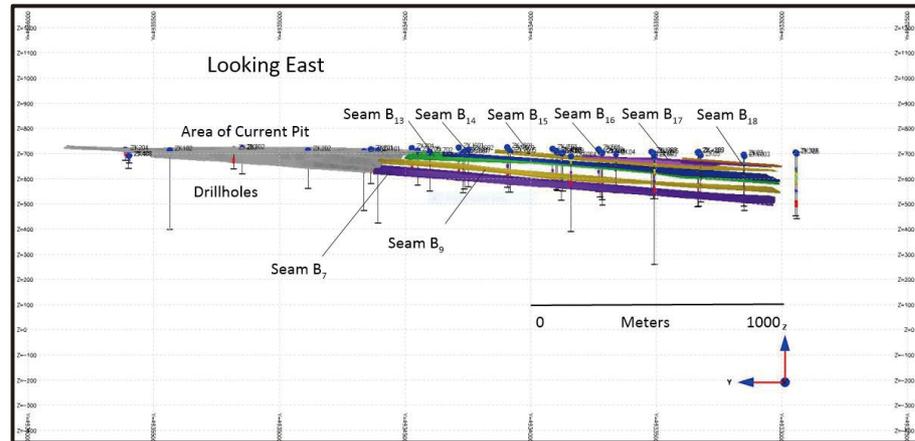


Figure 7.3 Kaiyuan Coal Seams Long Section View Looking East



Various chemical and physical characteristics of the coal seams have been measured, some for each seam but most for the major seams B₇, B₉, B₁₃, and B₁₄. These characteristics are summarized in Table 7.2

Table 7.2 Kaiyuan Coal Seam Characteristics

Characteristic	Low (%)	High (%)	Average (%)	Comment
Moisture (Mad)	9.68	12.3		All seams
Ash (Ad)	6.85	22.53	13.69	Diminishes with depth
Volatiles (Wdaf)	31.91	34.41	32.91	Based on Seams B ₇ , 9, 14, 13
Sulphur (S)	0.37	0.67	0.49	Based on Seams B ₇ , 9, 14, 13
Phosphorous (P)	0.003	0.016		
Chlorine (Cl)	0.017	0.313		
Arsenic (As)				1 to 2 ppm
Calorific Value (MJ/Kg)	25.74	28.33	27.2	Based on Seams B ₇ , 9, 14, 13; Increases with depth

8 DEPOSIT TYPES

The Kaiyuan Property contains seams of thermal coal. A general description of thermal coal deposits follows.

Geological characteristics: Seams of black to brown coal hosted by clastic sedimentary rocks. The coal is banded dull and bright and generally hard. The texture of the original vegetation is sometimes partially preserved.

Tectonic setting: Stable continental basins; shelves on the trailing edge of continents; foreland basins; back-arc basins.

Depositional environment: An area of slow sedimentation in fresh water with few or no marine incursions, most commonly a river delta; shoreline swamp; raised swamp; lake; floating vegetation mats.

Age of mineralization: Often Tertiary but can be older.

Host/Associated rock types: Sedimentary rocks exhibiting evidence of non-marine deposition. Carbonaceous mudstones, siltstones and sandstones are the most common, commonly with cross-stratification and other shallow-water sedimentary structures.

Deposit form: Coal seams generally conform with regional bedding; sometimes seams are deposited in areas of local subsidence, such as fault-controlled blocks or sink holes in karst topography, in which case deposits may be lens shaped. Occasionally seams can be thickened/deformed by surface slump, glacial drift or faulting. Seams may pinch out or split on a local or regional scale.

Texture/Structure: Sub-bituminous coal is usually composed mostly of clarain and vitrain. Footwall sediments are commonly penetrated by roots or weathered to clay.

Coal seams/Associated mineral matter: Sub-bituminous coal can contain up to 30 % moisture. It usually contains a high proportion of vitrinite and lesser amounts of fusinite and liptinite. Mineral matter is in the coal as rock bands, as finely intermixed material of authigenic or detrital origin and as secondary material deposited in fractures and open spaces. Authigenic mineral matter includes pyrite, siderite and kaolinite.

Weathering: Weathering of sub-bituminous coal reduces the calorific value by oxidizing the carbon-hydrogen complexes. Minerals in the mineral matter will also oxidize. Pyrite oxidizes to sulphates. Secondary carbonates are formed.

9 EXPLORATION

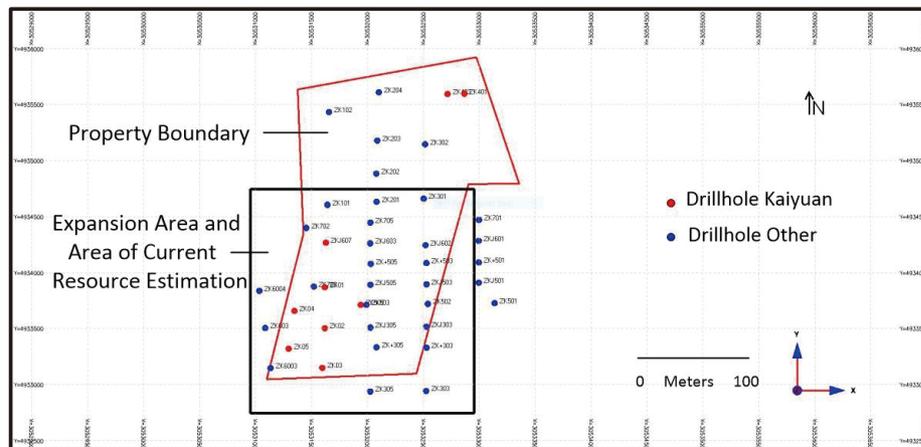
Other than drilling described in Section 10, Kaiyuan has done no exploration of the Property. Exploration done by previous operators and government agencies is described in Section 6 History.

10 DRILLING

Kaiyuan has drilled nine (9) holes within the Property, two (2) in the north-eastern portion of the Property and seven (7) within the expansion area. (Figure 10.1) Four holes (ZK401, 403, 505 and ZKJ607 were drilled in 2018 and five holes (ZK01, 02, 03, 04, and 05) were drilled in 2019.

The Property and immediate area have been tested by an additional 33 holes, five (5) of which are within the area of the current pit and ten (10) of which are located outside the current Property boundary. (Figure 10.1)

Figure 10.1 Kaiyuan Drillholes 2018-2019



The drill programs in both 2018 and 2019 were carried out by the 4th Division of the 9th Geological Brigade of the Xinjiang Bureau of Geology and Mineral Resources. This group was responsible for all aspects of the drill program including surveying hole locations, drilling, core logging and sampling as well as security.

The location and length of holes drilled by the XGMR are shown in Table 10.1. The location and length of holes drilled prior to 2018 are shown in Table 10.2. The coordinate system is 1980 X'ian.

Table 10.1 Kaiyuan Drillholes 2018 and 2019

Hole Name	Northing	Easting	Elevation (masl)	Length (m)
ZK01	4933874.38	30531613.26	705.60	184.09
ZK02	4933508.30	30531613.75	699.29	50.96
ZK03	4933154.48	30531592.13	697.99	30.25
ZK04	4933663.30	30531342.57	700.43	207.30
ZK05	4933325.93	30531291.02	694.85	158.84
ZK401	4935603.28	30532862.22	719.88	175.50
ZK403	4935600.14	30532711.66	719.79	204.36
ZK505	4933716.70	30531935.68	704.89	153.60
ZKJ607	4934271.82	30531624.15	705.71	151.75
Total Length (m)				1,316.65

Table 10.2 Kaiyuan Drillholes Pre-2018

Hole Name	Easting	Northing	Elevation (masl)	Length (m)
ZK+303	30532523.58	49333333.99	708.73	215.71
ZK+305	30532076.90	49333337.86	706.38	215.71
ZK+501	30532990.59	4934095.68	727.09	159.95
ZK+503	30532522.82	4934090.27	717.20	167.55
ZK+505	30532025.38	4934083.42	710.01	161.55
ZK101	30531637.41	4934610.44	713.95	286.64
ZK102	30531651.77	4935438.45	714.60	313.05
ZK201	30532077.24	4934638.20	718.22	135.82
ZK202	30532074.43	4934888.41	714.59	151.06
ZK203	30532083.61	4935184.13	718.91	78.18
ZK204	30532097.75	4935615.25	717.06	42.04
ZK301	30532498.20	4934665.88	710.23	233.55
ZK302	30532510.19	4935150.78	722.59	101.42
ZK303	30532519.36	4932948.26	706.58	251.14
ZK305	30532020.61	4932943.45	702.83	258.58
ZK501	30533131.57	4933732.62	719.12	167.17
ZK502	30532535.83	4933725.55	710.25	181.05
ZK503	30531986.26	4933718.24	705.05	187.02
ZK6003	30531128.88	4933152.09	692.00	215.15
ZK6004	30531028.81	4933841.96	692.00	300.00
ZK603	30531081.57	4933510.09	692.04	430.02
ZK701	30532992.73	4934475.60	724.25	110.69
ZK702	30531447.66	4934403.85	708.71	156.59
ZK703	30531514.94	4933880.36	704.33	188.50
ZK705	30532021.29	4934452.11	713.70	137.96
ZKJ303	30532521.28	4933521.76	709.09	173.71
ZKJ305	30532021.77	4933514.54	704.21	180.71
ZKJ501	30532989.89	4933915.23	720.90	146.55
ZKJ503	30532523.19	4933901.06	712.16	151.55
ZKJ505	30532022.20	4933896.56	708.08	152.55
ZKJ601	30532989.36	4934288.84	726.18	130.65
ZKJ602	30532513.79	4934250.45	716.96	145.75
ZKJ603	30532019.31	4934266.51	709.69	147.12
Total Length (m)				6,074.69

The following description of drilling procedures pertains to the holes drilled on behalf of Kaiyuan. A description of procedures followed during the drilling of earlier holes is not available but, as all drilling procedures must adhere to government regulations, it is reasonable to assume that they closely followed the Kaiyuan procedures. Drilling was carried out using a truck-mounted drill. Holes had an outside diameter of 110 mm and an inside (core) diameter of 56 mm. Collar locations were located using GPS with millimeter accuracy and were tied into national grid benchmarks. All holes were drilled vertically so that intersected thicknesses are essentially true thicknesses. Hole depth, core recovery and water level in the hole were monitored on a regular basis during drilling.

Drillholes were surveyed geophysically to determine the depth and thickness of coal-bearing intervals, density of rock, as well as to monitor the location and diameter of the hole. Downhole logging tests included: Density, Natural Gamma, Resistivity, Self-potential, Sound velocity, Down-hole direction, Hole diameter and Well temperature. Graphic logs of the surveys were produced for each hole.

All processing of drillcore took place at the drillsite. When core was removed from the core tube it was placed into wooden core boxes. Figure 10.2 shows boxes of core from hole ZK01. This interval includes a unit of coal.

Figure 10.2 Kaiyuan Drillhole ZK01 Core from Depth Interval



All core was photographed after being placed in the core box and was measured for core recovery. The core was then described, and intervals were identified for sampling. Core recovery was approximately 97% and met government requirements for all holes.

The entire core was taken for analysis therefore no archival samples of coal seams remain. Thinner coal seams were collected as a single sample; for thicker seams, samples were up to three meters in length. Samples were placed into labelled double plastic bags which were then placed into sealed plastic boxes for shipping. Samples were sent by train to SGS in Tianjin for analysis. The drillcore that remained after sampling of the coal seams was stored in a locked building and was inspected during the site inspection in January 2020.

The drillsite and all samples were secured and supervised at all times by personnel of the Xinjiang Bureau of Geology and Mineral Resources.

When the drillholes were complete, they were sealed, and the location was marked with a cement monument that identified the number of the hole as well as the start and completion dates.

11 SAMPLE PREPARATION, ANALYSES AND SECURITY

Sampling of the drillcore was done at the drillsite and the coal seam intercepts in each drillhole were sampled in their entirety. In total, 84 samples were collected from the five holes drilled in 2009.

After the core was taken out of the borehole, it was put into the core box in order, photographed, then described. Samples were taken after the core was logged. For those coal seams less than three meters in thickness, the seam was collected as a single sample; otherwise, samples were collected in three-meter increments.

Core samples were placed in plastic bags that were closed with tape. Each sample bag was numbered, and the bags were placed in boxes for shipping. The boxes of samples were shipped by China Railway Express to SGS Mineral Energy Laboratory in Tianjin. SGS is an internationally recognized, ISO-certified analytical laboratory. Secure chain of custody of samples was maintained at all times from the drill to the laboratory.

No quality control samples were submitted with the core samples but SGS maintains a rigorous program of internal QA/QC for all their analytical processes and because the Property is an operating mine and the quality of the coal is well-understood and the SGS analyses are consistent with the known quality of the coal, the absence of quality control samples is not regarded as a deficiency.

The author (Mosher) is of the opinion that the sample preparation, security and analytical procedures are appropriate and adequate for the results to be used for the resource estimate described in Section 14 of this report.

12 DATA VERIFICATION

The author (Mosher) took the following steps to verify the data from the 2019 drill campaign:

- (1) Site inspection during which each of the drillhole locations was inspected and the coordinates recorded;
- (2) Inspection of the drillcore remaining from holes ZK-01 to 05;
- (3) Discussions with the Xinjiang Bureau of Geology and Mineral Resources manager of the drill program regarding drilling protocols and procedures;
- (4) Review of analytical data from all holes used for the resource estimate.

No samples were collected as (a) the coal-bearing intervals from holes ZK01 through 05 were sampled in their entirety and submitted for analysis and (b) several of the seams (B₇ and B₉) are exposed in the wall of the adjacent open pit so their existence is obvious and as these seams have been exploited for a number of years, their characteristics are well established.

The author is satisfied that the data was collected and documented according to standards that are adequate for the purpose of the resource estimation that is described in Section 14 of this Technical Report.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

Several testwork programs have been conducted on Kaiyuan coal samples since 2017.

- The most recent work is a preliminary coal property analysis campaign carried out in 2020 by SGS-CSTS Standards Technical Services (SGS Tianjin) in Tianjin, China on samples obtained from the 2019 drill program.
- In 2018, the Ninth Geological Brigade of the Xinjiang Geology and Minerals Bureau (NGB) reported the results of a comprehensive coal property analysis in their 2018 reserve verification report. A preliminary coal washability test, based on both 2019 drill samples and a production sample from the nearby Beishan Coal Mine (Beishan), was also included in the report.

- Additional coal washability test results, based on the production coal samples from the nearby coal Heishantou Coal Mine, were reported by the Xinjiang Coal Design and Research Institute in their 2018 Preliminary Economic Assessment (PEA) report). The test was conducted by Xinjiang Uyghur Autonomous Coal Science Research and the results were used as the design basis for the Kaiyuan coal preparation plant in the PEA report.

PVMA reviewed the 2020 SGS test reports and the 2018 Xinjian Coal Science Research report, together with the processing test results reported in the 2018 reserve verification report and in the 2018 PEA report. The major test results and the review comments are summarised as follows:

13.1 Samples Description

13.1.1 2020 Kaiyuan Coal Samples

A total of 84 drill core and composite samples from holes ZK-1 to ZK-5, drilled in 2019, (Figure 10.1) were assayed in the 2020 SGS coal property analysis test program, including 69 drill core samples and 15 composite samples for proximate analysis. Float clean coal samples were further produced from each sample and tested for the same analyses.

13.1.2 2018 Kaiyuan Coal Samples and Beishan Coal Samples

As described in the 2018 reserve verification report by NGB, both drill samples and pit samples were tested for coal property and washability.

- Drill coal samples were composited across the four drill holes (ZK401, ZK403, ZK505 and ZKJ607) from the nine coal seams (B7 to B9 and B13 to B18). The drill hole location can be found in Figure 10.1 of this report.
- A large-scale sampling program was conducted by collecting pit samples from Beishan Coal Mine to evaluate coal washability characteristics of Kaiyuan coal. Coal samples of 20 tonnes from seam B9 and of 17 tonnes from seam B7 were obtained for washability studies.

13.1.3 2018 Heishantou Coal Samples

Samples as described in the 2018 PEA report were obtained from the Heishantou Coal Mine to represent the future Kaiyuan coal for a large-scale coal washability test. The total weight of the raw coal samples was approximately 10 tonnes from coal seam B6.

13.2 Major Characteristics of Kaiyuan Coal

Coal properties are critical in evaluating potential coal uses, which can be either metallurgical, thermal for combustion, or new fuel materials via coal liquefaction and coal gasification. The 2020 SGS test was focused on basic proximate and ultimate analyses; the 2018 test as reported by NGM is more comprehensive, covering the fundamental tests plus coal carbonization, combustion, and conversion tests.

13.2.1 Kaiyuan Coal Ranking

Based on test results from petrological and microscopic examination (maceral groups), Kaiyuan coal is low-rank bituminous with no coking abilities and is classified as non-coking coal BN31 according to the Chinese classification system, equivalent to the Subbituminous B coal class according to the American Society for Testing Materials (ASTM D-388).

The major observations from microscopic examination are as follows:

- High organic components are found in all the coal seams and averaged from 90% to 94%, with vitrinite and inertinite as major components and exinite as a minor component.
- Inorganic components mainly include clay minerals, carbonates, sulphides, and oxides. The average content of inorganic components is between 5.6% and 9.1%.
- Maximum reflectance of the vitrinite component is between 0.4% to 0.5% and indicates that Kaiyuan coal belongs to a low-rank coal category according to Chinese standard MT/T 1158-2011 (Classification of coalification degree by vitrinite reflectance).

13.2.2 Proximate Analysis

Proximate analysis is the most widely used coal analysis to determine moisture, ash, and volatile matter contents. Fixed carbon can also be obtained by difference. The 2018 analysis data are given in Table 13.1. The average moisture (Mad) ranged from 9.7% to 12.3%; the average ash (Ad) content is between 6.9% and 16.3%; the average volatile matter content ranged from 30.5 to 33.8 %. The 2020 analysis data is shown in Table 13.2, with a lower average moisture between of 5.6 to 8.8%, but a higher ash content from 5.8% to 23.8%. In the opinion of PVMA, for the major coal seams B7, B9, B13 and B14, the tested samples are low in ash with stable moisture and volatile matter as can be seen from the combined proximate results (Table 13.3).

Table 13.1 Proximate Analysis Results in 2018 on Cores w/o Float

Kaiyuan Coal Seam	Moisture		Ash		Volatile Matter		Fixed
	M (% <i>ad</i>)		A (% <i>d</i>)		V (% <i>daf</i>)		Carbon
	Range	Average	Range	Average	Range	Average	(% <i>daf</i>) Average
B18	7.6-18.2	11.5	6.9-22.5	13.7	28.9-39.1	30.5	69.5
B17	10.1-14.2	12.1	6.9-23.0	12.0	27.0-35.1	30.6	69.4
B16	8.2-15.2	11.6	7.6-17.9	9.7	28.0-34.2	31.4	68.6
B15	7.5-15.1	10.0	5.1-27.1	16.3	28.0-36.6	33.2	66.8
B14	2.9-14.5	9.7	9.7-27.4	15.3	29.9-35.7	33.1	66.9
B13	3.4-15.3	10.6	6.5-19.5	11.0	25.3-35.1	32.2	67.8
B9	3.5-15.8	10.8	5.1-34.0	10.2	31.7-55.2	33.8	66.2
B8	7.4-15.9	12.3	2.8-11.8	7.3	31.0-36.5	33.8	66.2
B7	2.2-14.3	10.7	4.2-12.5	6.9	30.0-46.2	33.1	66.9

Table 13.2 Proximate Analysis Results in 2020 on Cores w/o Float

Kaiyuan Coal Seam	Moisture		Ash		Volatile Matter		Fixed
	M (% <i>ad</i>)		A (% <i>d</i>)		V (% <i>daf</i>)		Carbon
	Range	Average	Range	Average	Range	Average	(% <i>daf</i>) Average
B18	7.0-8.0	7.3	7.0-13.8	10.9	29.7-31.7	30.4	69.6
B17	4.1-4.9	4.5	38.9-40.7	39.8	34.4-38.3	36.4	63.6
B16	4.4-9.2	6.6	14.2-27.3	21.5	32.3-38.8	35.0	65.0
B15	3.3-4.8	4.1	18.4-59.1	38.7	32.3-48.8	40.5	59.5
B14	4.8-7.2	5.9	10.3-33.8	17.9	29.1-36.7	33.5	66.5
B13	4.7-8.9	6.1	6.8-42.0	18.8	31.9-39.6	34.3	65.7
B9	5.1-13.3	7.6	5.8-29.9	13.0	28.9-35.9	32.8	67.2
B8	n/a	n/a	n/a		n/a		n/a
B7	3.4-11.1	6.8	4.0-42.0	9.7	27.5-38.3	31.7	68.3

Table 13.3 Combined Proximate Analysis Results in 2018 and 2020 on Cores w/o Float

Kaiyuan Coal Seam	Moisture		Ash		Volatile Matter		Fixed
	M (% <i>ad</i>)		A (% <i>d</i>)		V (% <i>daf</i>)		Carbon
	Range	Average	Range	Average	Range	Average	(% <i>daf</i>) Average
B18	7.1-18.2	10.6	6.9-22.5	12.9	29.0-39.2	31.2	68.8
B17	4.1-14.2	10.3	6.8-40.7	17.6	27.0-38.3	32.6	67.4
B16	3.4-15.2	9.5	7.6-27.6	15.7	28.0-38.8	32.3	67.7
B15	4.8-15.1	9.7	5.1-27.1	16.9	28.0-36.6	33.5	66.5
B14	2.9-15.7	9.0	9.7-33.8	17.5	29.9-45.5	33.3	66.7

Kaiyuan Coal Seam	Moisture		Ash		Volatile Matter		Fixed
	M (% , ad)		A (% , d)		V (% , daf)		Carbon
	Range	Average	Range	Average	Range	Average	(% , daf) Average
B13	3.4-15.3	9.6	6.5-42.0	12.8	25.3-39.6	32.3	67.7
B9	4.0-15.8	10.5	5.1-34.0	10.4	30.3-55.2	34.1	65.9
B8	7.4-15.9	12.3	2.8-11.8	7.3	31.0-36.5	33.1	66.9
B7	2.2-14.3	10.5	4.2-12.5	7.0	30.0-45.2	32.6	67.4

13.2.3 Ultimate Analysis

The chemical composition analysis was conducted on coal samples, including the determinations of carbon (C), hydrogen (H), nitrogen (N), oxygen (O) plus sulphur (S).

The chemical elemental analysis results are shown in Table 13.4, which indicate all the samples have stable distributions of t C, H, N and O+S.

- The 2018 core samples from coal seams B7 to B18 have a stable distribution of carbon, hydrogen, nitrogen, and oxygen plus sulphur. The average contents of the core samples varied from 71% to 88% for C, 3.6% to 4.4% for H, 0.8% to 0.9% for N, and 14% to 17% for O+S.
- Similar trends were observed for the 2018 float coal samples produced from drill core samples. The reported contents for float coal samples are between 73% to 80% for C, 2.7% to 5.1% for H, 0.3% to 1.0% for N, and 11% to 16% for O+S.

Table 13.4 Average Ultimate Analysis Results 2018

Kaiyuan Coal Seam	C (% , daf)		H (% , daf)		N (% , daf)		O + S (% , daf)	
	Cores	Float	Cores	Float	Cores	Float	Cores	Float
B18	80.4	80.1	3.6	3.6	0.9	0.8	13.9	15.5
B17	71.0	73.5	4.1	3.7	0.8	0.8	15.3	15.3
B16	73.8	73.0	4.2	3.9	0.9	0.9	14.8	16.3
B15	74.4	73.9	4.4	4.1	0.9	0.9	17.0	16.1
B14	73.3	72.8	4.4	4.3	0.8	0.7	15.6	11.1
B13	77.4	77.5	4.3	4.2	0.8	0.9	14.7	14.0
B9	77.6	77.9	4.4	4.4	0.9	0.9	14.9	13.0
B8	78.3	79.8	4.0	4.4	0.9	0.9	16.8	14.9
B7	79.0	79.0	4.1	4.2	0.9	0.8	13.9	12.3

13.2.4 Deleterious Elemental Analysis

Coal contains varying amounts of deleterious elements. According to the latest coal quality management regulation in China, Interim Measures on the Quality Management of Commodity Coal (effective since 2015), total sulphur (St), mercury (Hg), arsenic (As), phosphorous (P), chlorine (Cl) and fluorine (F), must meet the regulated levels for activities involved in production, processing, storage and transportation, as well as domestic sales shown in Table 13.5 Regulated Deleterious Elemental Levels of Commodity Coal in China.

Table 13.5 Regulated Deleterious Elemental Levels of Commodity Coal in China

Coal	St (%, d)	P (%, daf)	Cl (%, daf)	F ($\mu\text{g/g}$, daf)	As ($\mu\text{g/g}$, daf)	Hg ($\mu\text{g/g}$, daf)
Lignite	≤ 1.5	≤ 0.15	≤ 0.3	≤ 200	≤ 80	≤ 0.6
Other Coal	≤ 3.0					

Kaiyuan coal samples were investigated to determine the levels of the deleterious elements including St, P, Cl, F and As. The results are given in Table 13.6. In general, the Kaiyuan core samples have low concentrations of the measured elements except for chlorine. The chlorine content is between 0.17% from seam B8 to 0.31% from seam B9. Kaiyuan float samples have a lower sulphur content, likely due to the observation that sulphides are major sulphur bearing minerals, while the distribution of P is consistent between the core and float samples.

Table 13.6 Average Deleterious Analysis Results 2018

Kaiyuan Coal Seam	St (% <i>, daf</i>)		P (% <i>, daf</i>)		Cl (% <i>, daf</i>)	F ($\mu\text{g/g}$, <i>daf</i>)	As ($\mu\text{g/g}$, <i>daf</i>)
	Cores	Float	Cores	Float	Cores	Cores	Cores
B18	0.77	0.14	0.05	0.06	0.19	87.5	2.0
B17	0.52	0.11	0.04	0.02	0.27	79.8	2.0
B16	0.77	0.14	0.02	0.01	0.30	63.0	1.0
B15	0.74	0.21	0.04	0.05	0.19	93.6	2.0
B14	0.67	0.19	0.03	0.03	0.27	85.9	2.0
B13	0.54	0.17	0.16	0.02	0.28	62.1	1.0
B9	0.47	0.16	0.01	0.01	0.31	43.7	1.0
B8	0.30	0.14	0.003	0.002	0.17	26.7	1.0
B7	0.37	0.11	0.03	0.02	0.27	45.8	1.0

13.2.5 Coal Utilization Tests

The utilisation possibilities of Kaiyuan coal were investigated and reported in the 2018 Reserve Verification report. The test work includes coal carbonization, combustion, and conversion tests as summarised as follows.

13.2.5.1 Carbonization Testing

Carbonization tests or caking tests are conducted to understand the coking ability of the tested coal to identify if the coal can be used to produce metallurgical coke. The reported Caking Index (G), which is referred to as the Rogan Index, is zero for all the core samples from each coal seam, with a low char residue characteristic index (CRC) between 1 and 2. The results indicate that Kaiyuan coal is not a coking coal.

13.2.5.2 Combustion Testing

Combustions tests determine calorific values, coal ash-fusibility, and coal ash composition.

The reported calorific value of Kaiyuan Coal core samples is between 25.6 and 28.4 MJ/kg, based on the gross calorific value or higher heating value. Considering a concentration of hydrogen of 5% and a 15% moisture, the net heating value is estimated to be approximately 24.2 to 27.0 MJ/kg, which is above the required net heating value of 18 MJ/kg as stipulated in local regulations. The tested calorific values indicate that Kaiyuan coal can be used as thermal coal.

The coal ash-fusibility testing results show that the softening temperature of Kaiyuan coal ash is between 1,077 and 1,125°C, which belongs to a low softening temperature class.

The coal ash composition of Kaiyuan core samples are presented in Table 13.7. The results indicate that Kaiyuan coal are high in basic oxides, Fe₂O₃, CaO, MgO, Na₂O and K₂O.

Table 13.7 Coal Ash Chemical Analysis Results 2018

Kaiyuan Coal Seam	SiO ₂ (%)		Al ₂ O ₃ (%)		Fe ₂ O ₃ (%)		CaO (%)		MgO (%)		SO ₃ (%)	
	Range	Ave	Range	Ave	Range	Ave	Range	Ave	Range	Ave	Range	Ave
B18	16.9-28.9	24.3	7.8-12.8	11.1	19.3-24.0	20.9	11.7-19.5	14.9	3.2-7.3	5.5	11.2-13.6	12.3
B17	11.2-31.2	22.6	7.8-12.8	11.1	14.6-54.3	29.4	10.8-14.0	12.7	2.0-3.7	3.1	10.1-13.5	11.7
B16	11.1-46.1	25.2	3.8-15.3	10.3	8.5-29.2	20.9	9.8-16.7	14.0	2.9-3.8	3.5	8.2-25.7	16.5
B15	35.0-51.1	45.6	13.9-21.4	17.8	4.2-18.1	12.2	4.9-10.9	7.5	1.5-2.4	1.9	2.2-8.3	5.1
B14	27.2-38.0	34.8	10.1-17.7	14.6	12.0-40.2	22.3	5.4-7.9	6.7	2.0-3.0	2.4	2.3-14.2	7.2
B13	20.5-41.7	31.1	9.1-16.1	11.8	13.6-34.5	24.4	6.0-12.7	8.2	2.8-5.6	3.5	1.7-17.9	8.8
B9	11.1-47.5	29.0	3.7-18.8	11.1	12.3-54.2	27.8	4.7-12.4	8.2	2.5-7.7	4.6	0.9-14.9	8.3
B8	34.9-43.0	39.2	14.2-19.2	17.0	15.0-16.4	15.7	6.6-10.0	7.8	4.7-6.2	5.2	5.7-6.2	5.9
B7	17.5-42.6	26.5	9.5-17.7	13.0	11.2-21.7	18.2	9.5-17.8	13.9	4.1-8.1	6.4	4.0-15.6	10.2

Kaiyuan Coal Seam	TiO ₂ (%)		K ₂ O (%)		Na ₂ O (%)		MnO (%)		P ₂ O ₅ (%)	
	Range	Ave	Range	Ave	Range	Ave	Range	Ave	Range	Ave
B18	0.5-0.5	0.5	0.6-0.9	0.7	5.9-7.1	6.5	0.2-0.4	0.3	1.0-2.6	1.8
B17	0.3-0.5	0.5	0.4-1.1	0.9	3.4-7.2	5.4	0.1-0.7	0.4	0.7-1.7	1.1
B16	0.3-0.7	0.5	0.5-1.5	0.9	4.9-6.9	6.0	0.1-0.4	0.2	0.4-0.7	0.5
B15	0.6-0.9	0.8	0.8-1.8	1.3	2.4-8.2	4.5	0.1-0.3	0.2	0.2-1.8	0.9
B14	0.5-1.0	0.8	0.7-1.6	1.0	3.1-15.2	7.3	0.2-0.4	0.3	0.2-1.6	0.9
B13	0.4-0.8	0.6	0.5-1.5	0.9	4.0-13.4	7.5	0.2-0.5	0.3	0.2-1.1	0.6
B9	0.4-1.1	0.6	0.5-1.7	1.0	3.5-11.2	6.9	0.2-0.6	0.4	0.1-1.0	0.3
B8	0.7-0.9	0.8	0.9-1.5	1.1	4.6-6.6	5.5	0.1-0.2	0.2	0.1-0.2	0.1
B7	0.5-1.3	0.8	0.1-0.9	0.5	4.4-9.9	6.9	0.3-0.4	0.3	0.4-1.6	0.9

The base (B)/Acid (A) ratio has been developed as an indicator to predict the relative performance of coal ash in the furnace. The B/A results are presented in Table 13.8. Kaiyuan coal samples have a high B/A ratio, in the range of 0.4-1.5, which is higher than the high B/A criteria in China.

Table 13.8 B/A Results 2018

Kaiyuan Coal Seam	B/A ¹ Ave	Slagging Rating ²
B18	1.35	High
B17	1.51	High
B16	1.26	High
B15	0.43	High
B14	0.79	High
B13	1.02	High
B9	1.19	High
B8	0.62	High
B7	1.14	High

Notes:

1. $B = \text{Fe}_2\text{O}_3 + \text{CaO} + \text{MgO} + \text{Na}_2\text{O} + \text{K}_2\text{O}$; $A = \text{SiO}_2 + \text{Al}_2\text{O}_3 + \text{TiO}_2$
2. Slagging Rating Criteria: High Potential B/A >0.400; Medium Potential $0.206 < B/A < 0.400$; Low Potential B/A <0.206

Kaiyuan coal samples are high in alkali metals, namely sodium and potassium, with a Na₂O range from 4.5% to 7.5%, and K₂O from 0.5% to 1.3%. The high alkaline content will impact the fusibility and slagging potential in coal combustion. According to the 2018 reserve verification report, the equivalent alkaline metals contents of Kaiyuan core samples is between 0.38% to 0.95% (K + Na), which is classified as a medium level for samples from Seams B7, 8, and 16 and as a high level in samples from Seams B9, 13 to 15, 17 to 18.

13.2.5.3 Coal Conversion Testing

Preliminary coal gasification testing was conducted on Kaiyuan core samples as reported in the 2018 reservation verification report. The core samples present the following properties. Further testwork is required to confirm the gasification properties.

- Medium to high resistance to breakage of the larger sizes of coal samples (>25 mm);
- Low to medium thermal stability;
- Weak slagging tendencies;
- High reactivity with CO₂.

13.2.6 Other Properties

Other test work reported in the 2018 reserve verification report include the determinations of (1) the concentration of the humic acids, (2) grindability, and (3) the liability of materials associated with coal seams to breakdown on agitation in water (Andreasen Pipette Sedimentation Tests). The major results are summarized as follows:

- Low content of humic acids with an average between 3.4% to 8.1%;
- Ease for grinding with an average Hardgrove grindability index (HGI) 85 to 90;
- Long settlement time from 5 to 24 hours with no sieving data reported.

13.3 Processing Properties

13.3.1 Physical Properties

Both the true and apparent densities were determined for coal samples. The average of the true density of the coal samples is between 1.49 and 1.64 g/cm³; the apparent density average is between 1.30 and 1.43 g/cm³. The true density is the mass divided by the volume occupied by the actual, pore-free solid in coal. The apparent density of coal is the mass divided by the overall sample volume.

13.3.2 Coal Washing Ability Test

Screening tests as well as float-sink tests were carried out using Kaiyuan drill core samples and pit samples from the Beishan Mine and Heishantou Mine. The test results are summarised as follows.

13.3.2.1 Kaiyuan Core Samples Washability Testing

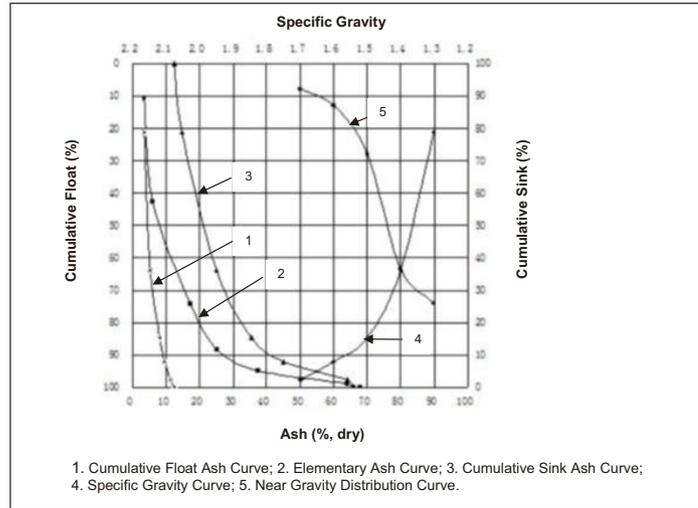
Core samples from Seams B7, 9, 13 and 14 were collected for screening and float-sink testing. Screening was conducted at 0.5 mm, 3 mm, 6 mm, and 13 mm, and float-sink testing was carried out on the combined materials coarser than 0.5 mm. The screening test results are shown in Table 13.9. The overall ash content of each core sample is from 3.9% to 11.9% on a dry basis, which meets the minimum thermal coal ash quality as defined in local regulations (< 40% Ash, dry).

Table 13.9 Screening Test Results of Kaiyuan Core Samples 2018

Kaiyuan Coal Seam	Core #	13 – 6 mm		6 – 3 mm		3 – 0.5 mm		–0.5 mm		Total	
		Wt%	A,d%	Wt%	A,d%	Wt%	A,d%	Wt%	A,d%	Wt%	A,d%
B14	ZK603	34.95	13.56	25.43	10.32	20.33	10.23	19.29	12.63	100	11.88
B13	ZK603	31.66	7.78	24.36	9.01	22.75	9.03	21.23	8.86	100	8.59
B9	ZK603	42.33	5.11	22.63	6.8	18.92	5.67	16.13	6.77	100	5.87
B7	ZK603	26.92	6.46	27.31	6.26	25.75	6.3	20.02	6.98	100	6.47
B7	ZK203	43.61	5.22	28.14	4.62	20.17	4.91	8.09	5.31	100	5.00
B7	ZK+303	50.00	3.82	23.46	5.46	19.14	4.83	7.41	6.71	100	4.61
B7	ZK305	58.46	5.49	22.56	5	18.97	5.76	0.01	6.46	100	5.43
B7	ZK+505	58.02	6.67	24.07	6.4	17.9	6.85	0.01	7.59	100	6.64
B7	ZK705	63.33	3.82	22.08	3.86	14.58	4.14	0.01	5.68	100	3.88

Assuming the float clean coal product has an ash content of 10.0% or less dry, no processing will be required for the Seams 7, 9 and 13 due to the low head ash content levels of up to 8.6% dry. For Seam 14, as shown in Figure 13.1, theoretically a gravity separation at a SG of 1.65 will produce over 90% clean coal yield with a dry basis ash of 10.0%. In this case, the near gravity material (+/-0.1 SG) is approximately 10% that indicates a low theoretical degree of separation difficulty based on Chinese criteria.

Figure 13.1 Washability Curves of Kaiyuan Drillhole ZK603 Core Samples from Seam B14 (2018)



13.3.2.2 Beishan Pit Samples Washability Testing

The Beishan Coal Mine is located to the west of the Property. Beishan pit samples from Seams B7 and B9 were collected and tested for size distribution and washability to simulate Kaiyuan coal properties. The combined raw coal sample has a very low ash of 5.4%, dry, that is typical for the coals mined in the area. The weight distribution and ash content of each size fraction are presented in Table 13.10. The results indicate that Beishan pit samples have a coarse size distribution with 58% larger than 300 mm. The in-situ fines (<0.5 mm) content is low at about 0.2% by weight. For the target utility industry market, coal processing is not required.

Table 13.10 Screening Test Results of Beishan Pit Samples 2018

Raw Coal Fractions	Wt%	A,d%
> 300 mm	58.47	5.21
300 – 100 mm	18.51	5.27
100 – 50 mm	8.06	6.12
> 50 mm Subtotal	85.03	5.31
50 – 25 mm	5.56	6.03
25 – 13 mm	2.41	5.49
13 – 6 mm	3.38	5.91
6 – 3mm	1.20	5.52
3 – 1mm	2.15	6.91
1 – 0.5 mm	0.12	11.65
< 0.5 mm	0.15	13.37
< 50 mm Subtotal	14.97	6.12
Total Raw Coal	100.00	5.43

13.3.2.3 Heishantou Pit Samples Washability Testing

The Heishantou Coal Mine is located to the southeast of the Property. Pit samples from Heishantou were tested for size distribution and washability to simulate Kaiyuan coal properties. The overall test results of Heishantou are summarized in Table 13.11.

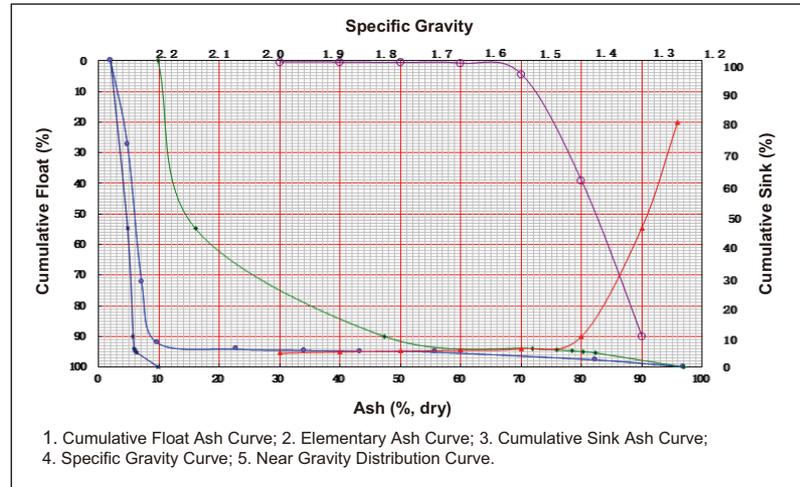
Table 13.11 Screening and Float-Sink Test Results of Heishantou Pit Samples 2018

SG	50 – 25 mm		25 – 13 mm		13 – 6 mm		6 – 3 mm		3 – 0.5 mm		50 – 0.5 mm	
	Wt%	A,d%	Wt%	A,d%	Wt%	A,d%	Wt%	A,d%	Wt%	A,d%	Wt%	A,d%
Assayed	49.55	10.71	15.12	9.85	11.47	10.70	6.80	12.18	12.80	12.46	95.73	10.91
< 1.3	34.87	5.20	9.09	4.32	3.74	3.85	2.26	3.31	1.83	2.77	51.79	4.78
1.3 – 1.4	11.96	10.32	4.99	7.07	6.52	5.11	3.52	7.11	6.44	3.37	33.44	7.14
1.4 – 1.5	0.54	20.58	0.21	20.08	0.30	14.80	0.21	16.58	2.44	5.05	3.70	9.62
1.5 – 1.6	0.09	26.90	0.04	27.42	0.06	24.89	0.07	25.06	0.18	18.05	0.44	22.77
1.6 – 1.7	0.04	35.03	0.05	39.70	0.05	31.63	0.05	31.72	0.11	33.53	0.30	34.11
1.7 – 1.8	0.10	41.32	0.02	49.86	0.03	39.11	0.02	39.46	0.06	47.57	0.23	43.25
1.8 – 2.0	0.10	61.99	0.04	64.19	0.06	51.14	0.05	44.79	0.11	54.95	0.37	55.78
> 2.0	1.75	86.00	0.63	86.65	0.61	83.68	0.53	77.59	0.85	73.33	4.37	82.28
Subtotal*	49.46	9.72	15.07	9.29	11.37	9.72	6.72	12.48	12.03	9.77	94.65	9.85
Slimes	0.10	53.67	0.04	21.30	0.10	23.84	0.08	41.13	0.77	35.84	1.09	36.16
Total*	49.55	9.81	15.12	9.33	11.47	9.84	6.80	12.81	12.80	11.34	95.73	10.15

Notes: * Calculated ash content from each SG products

The average coal ash content of the fraction 50 to 0.5 mm is approximately 10.15% on a dry basis, which accounts for over 95% fraction of the overall samples (50 to 0 mm). About 50% of the coal was between 50 and 25 mm with an average ash content of 10.7%, dry. The washability curves based on the Heishantou data are presented in Figure 13.2. At a separation SG of 1.5, the theoretical clean coal ash is about 5.87% dry, with a clean coal theoretical yield of 94%. The resulting near gravity material content is less than 4.4%, which indicates a simple gravity separation method can effectively separate clean coal from gangue materials.

Figure 13.2 Washability Curves of Heishantou Pit Samples (2018)



However, for the target coal market in the utility industry, the raw coal samples from Heishantou can meet the quality requirements without any treatment. This can be concluded from the low ash content in Table 13.11, as well as the high calorific values and low sulphur content. The gross calorific value was measured as 27 MJ/kg for raw coal samples larger than 50 mm and 26 MJ/kg for coal samples less than 50 mm. The total sulphur content is about 0.5% and 0.8% on a dry basis for the >50 mm and the < 50 mm raw coal samples, respectively.

13.4 Major Characteristics of Kaiyuan Weathering Coal

Humic acids were identified from the weathered zone of the Kaiyuan coal seams as reported in the 2018 and 2020 reserve verification reports. The average content of humic acids is approximately 39.7% which is classified as medium humic acid coal according to the local regulations. The potential economic values of the weathered coals have been discussed in the 2018 PEA and 2019 FS reports.

14 MINERAL RESOURCE ESTIMATES

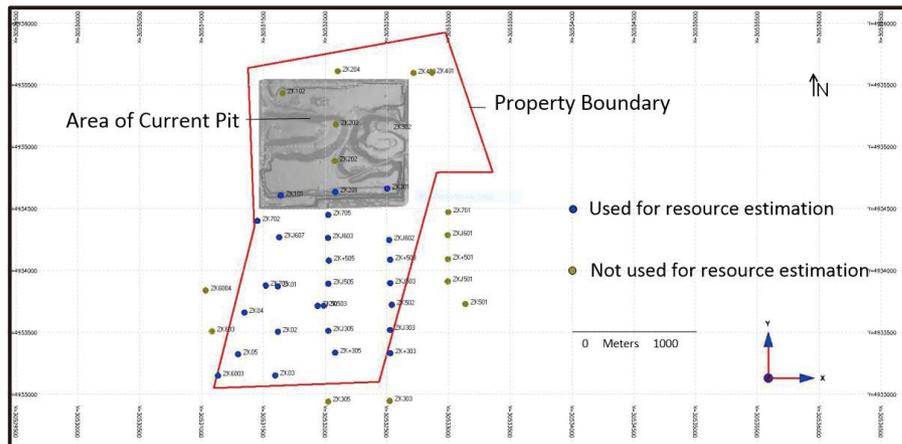
14.1 Introduction

PVMA has carried out an estimate of coal resources within the southern (expansion area) portion of the Property on the basis of drillhole data provided by Kaiyuan. The data included drillhole collar locations, depth of coal seams, surface topography as of September 2019, and ash content (Ad%), moisture (Mad%), volatile content (Vadf), and net calorific value of dry coal ($Q_{net,d}$ (MJ/Kg)). Geological strip logs were available for several of the drillholes but most collar, seam depth and thickness information was extracted from information plotted on geological long sections through the Property. Coal quality data were obtained from the 2019 resource verification report.

14.2 Drillhole Data

Location, coal seam interval and quality data were obtained for 42 drillholes (Figure 14.1). Only the 26 holes inside the Property boundary were used to estimate the quantity of coal.

Figure 14.1 Kaiyuan Drillholes



The dataset also includes 191 coal seam intercepts of which 115 are located within the boundaries of the mining licence. Of the 332 coal quality analyses, 221 are located within the boundaries of the mining licence.

The coal seams were modelled in the basis of the documented top and bottom intercepts. All coal intercepts were assigned an indicator value of one (1) and all waste had a value of minus one (-1). Because the coal quality intervals do not always match exactly with the intervals determined for the coal seams, the volumes of the modelled seams were estimated first and then the coal quality parameters were estimated for those modelled volumes.

14.3 Composites

The intersected thickness of the coal seams was used in the construction of the resource model so there was no compositing of coal intercepts. The coal quality samples were composited to a thickness of three (3) meters which was the most common sample length in the dataset.

14.4 Bulk Density

Bulk density measurements were carried out on all nine major coal seams by the Xinjiang Bureau of Geology and Mineral Resources and reported in the 2018 Resource Verification Report. It is assumed that these measurements contain moisture. A bulk density value of 1.34 g/cm³ was used for the resource estimate.

Table 14.1 Kaiyuan Bulk Density Measurements

Seam	Minimum (g/cm³)	Maximum (g/cm³)	Average (g/cm³)	Number
B ₁₈	1.31	1.47	1.35	8
B ₁₇	1.31	1.35	1.33	6
B ₁₆	1.30	1.38	1.34	4
B ₁₅	1.32	1.52	1.43	8
B ₁₄	1.29	1.55	1.39	14
B ₁₃	1.27	1.46	1.33	19
B ₉	1.27	1.39	1.32	23
B ₈	1.27	1.34	1.31	4
B ₇	1.23	1.33	1.30	29
	1.29	1.42	1.34	115

14.5 Geological Interpretation

The Property contains nine (9) coal seams of potential economic interest. From oldest to youngest these are labelled B₇, B₈, B₉, B₁₃, B₁₄, B₁₅, B₁₆, B₁₇, and B₁₈. All seams are essentially parallel, strike east-west, and dip approximately five (5) degrees to the south. All seams were modelled as south-dipping sheets using the vertical, intersected thicknesses from each of the drillholes located within the boundaries of the Property. Although the seams are more extensive than the limits of the Property, they have been modelled only to the limits of the Property because the Company is constrained to mine only within the boundaries of the Property and therefore the existence of any coal measures beyond those boundaries is irrelevant to the exercise of resource estimation.

14.6 Measures of Spatial Continuity

The existence and identity of the seams are well documented in drillholes and, for seams B₇ and B₉, by mining in the active pit to the immediate north of the expansion area. Drillholes are spaced at north-south distances of 200 meters or less, on lines that are approximately 500 meters apart east-west. Further, some if not all, of the seams are being mined in adjacent mines to the immediate east and west of the Property. Therefore, there is a high level of confidence in the continuity of seams within the Property and it was considered unnecessary to assess spatial continuity of the seams by variographic analysis because of the abundance of evidence of spatial continuity. Instead, a search ellipse was constructed with a diameter of 500 meters, thickness of 50 meters, and a south dip of five degrees. The size ensured that the ellipse would capture holes on two adjacent north-south lines and the dip ensured that the ellipse would honour the dip of the seams.

The coal quality estimates were obtained by inverse distance squared (ID²) interpolation using a search ellipse measuring 800 meters north-south by 600 meters east-west, by 10 meters vertical, with a dip of five (5) degrees to the south.

14.7 Block Model

Block model parameters are given in Table 14.2.

Table 14.2 Kaiyuan Block Model Parameters

Axis	Origin*	Size (m)		Number
X	30531000	100	Columns	91
Y	4932800	100	Rows	91
Z	477.5	5	Levels	63

* Minimum X, Y, and Z Model is not rotated

14.8 Interpolation Plan

The coal indicator (value of 1) was interpolated into the blocks in a single pass. In order for a value to be interpolated into a block it was necessary that a minimum of two (2) and a maximum of four (4) intercepts be located within the volume of the search ellipse. As each seam in each drillhole was represented by a single indicator, the minimum requirement of two intercepts means that each block was informed by a minimum of two drillholes.

Coal quality was interpolated in a single pass using inverse distance squared (ID²) weighting. In order for a value to be interpolated into a block it was necessary that a minimum of one (1) and a maximum of six (6) composites were located within the volume of the search ellipse.

14.9 Reasonable Prospects of Eventual Economic Extraction

Because at least some of the coal seams extend to surface and all of the seams will be exploited by open pit mining methods, it is necessary to constrain the resource estimate by a design pit that is based on reasonable cost and revenue values. A design, break-even pit was constructed using a current mining cost of RMB64 per tonne and a sales value of RMB140 per tonne. No cost was allocated for processing and mining dilution was assumed to be zero and mining recovery 100 percent. An overall pit slope of 38 degrees, the same as the current mining operation, was used to define the ultimate pit walls.

14.10 Mineral Resource Classification

Because drillholes are generally 200 meters or less apart on lines that are at most 500 meters apart, and the coal seams are exposed in active open pit mines on the east, north and west sides of the expansion area, there is very strong evidence for the continuity of the coal seams within the expansion area. For this reason, all resources have been classified as Indicated.

14.11 Mineral Resource Tabulation

The pit-constrained resource estimate for the expansion area is set out in Table 14.3. The resource has been estimated from surface to 575 meters above sea level, the minimum elevation of the mining licence.

Table 14.3 Kaiyuan Expansion Area Mineral Resource Estimate Above 575 Meters Elevation

Seam	Classification	Dry					Tonnes
		Density (g/cm ³)	Ad (%)	Mad (%)	Vda (%)	Q _{net} (MJ/kg)	
B18	Indicated	1.2500	9.70	10.63	28.94	26.84	410,000
B17	Indicated	1.2500	8.54	13.20	31.17	26.89	890,000
B16	Indicated	1.2500	13.01	10.01	31.74	25.08	1,210,000
B15	Indicated	1.2500	28.74	10.02	38.09	20.39	1,170,000
B14	Indicated	1.2500	16.24	9.05	33.60	22.33	8,100,000
B13	Indicated	1.2500	13.13	10.03	31.98	25.41	9,770,000
B09	Indicated	1.2500	9.99	11.24	32.93	26.44	19,830,000
B08	Indicated	1.2500	9.13	11.13	33.83	26.91	110,000
B07	Indicated	1.2500	6.28	10.87	32.11	27.99	24,780,000
						Total	66,270,000

14.12 Block Model Validation

The block model was validated by visually checking that the wireframes honour the coal seam intercepts in the drillholes, that the wireframes do not project above the topographic surface, and that the blocks in the model are constrained by the wireframes. No discrepancies were noted.

14.13 Comparison With Previous Estimates

In 2018, the 9th Brigade of the Xinjiang Geological and Mineral Bureau completed a resource estimate for the expansion area. The resources were classified as 331, 332, and 333, the Chinese resource classification categories that are approximately equivalent to the measured, indicated and inferred categories used by JORC and other western resource classification systems, and included 68.5 million tonnes in the 331 category, 36.2 million tonnes in the 332 category and 16.2 million tonnes in the 333 category. This estimate was not constrained by a design pit nor by the minimum elevation of the mining licence and extends to the full limits of the licence within the expansion area.

The 331 resources are largely confined to seams 7 and 9, with the exception of the southwest portion of the licence area where drillholes were not as closely spaced as elsewhere and where resources were classified as 332. Resources in seams 8, 15, 16, 17 and 18 were classified as 333. Therefore, the two estimates are not directly comparable although the 331 resource of 68.5 million tonnes is similar to the current resource estimate of 61.8 million tonnes and both estimates largely cover the same portion of the resource.

15 MINERAL RESERVE ESTIMATES

The mineral reserve estimate described in this section is based on the resource model detailed in Section 14 of this Report. The coal resources used in this report are based on the Indicated resource category. This CPR is considered to be of the level a Pre-Feasibility Study (PFS) report and is based on a 0.9 million tonnes per annum production rate as per mining license and the 2019 Feasibility Study (FS) report. The 'safety production permit' allows for production to be carried out at 1.2 million tonnes per annum and Nan Nan has authorized the author (Loschiavo) to scale up the mine plan to 1.2 million tonne production rate on the basis of the original 0.9 million tonnes per annum FS. The final design and mine plan are therefore the work of this author work and are considered to be reasonable for the Kaiyuan Coal mine.

15.1 Summary Coal Reserves

The summary of open pit coal reserves are shown in Table 15.1. Note that the coal reserves are rounded up to nearest 100,000 and above elevation 575 as per mining licence. The reserves only are reported for the South region of the mining license. These reserves do not include the North region of the current active mining area.

Table 15.1 Kaiyuan Open Pit Coal Reserves

Coal Seams	Classification	Tonnes
Total	Probable	63,481,000

Source: PVMA (2020)

The reserves are all considered Probable as all the estimated resources are classified as Indicated. The accuracy of the reserve estimate is, in part, a function of the quality and quantity of available data and of engineering and geological interpretation and judgement. Given the data available at the time this report was prepared, the estimate presented herein is considered to be reasonable. However, the reserve estimate should be accepted with the understanding that possible additional data and analysis that might become available in the future may necessitate revision. These revisions may be material. There is no guarantee that all or any part of the estimated reserves may be recoverable. Mineral resources are not mineral reserves and there is no assurance that any additional mineral resource that is not already classified as reserves will ultimately be reclassified as proven or probable reserves. Mineral resources which are not mineral reserves do not demonstrate economic viability.

15.2 Basis for Mineral Reserves Estimate

The mineral reserves has been determined using costs set out in Table 15.2.

Table 15.2 Kaiyuan Coal Mine Operating Cost Summary Estimate

Parameters	Value
Mining	CNY 58.46*/tonne coal
Coal Preparation & General Administration	CNY 7.81/tonne coal
Overall Wall Slope	38 deg.
Coal Price	CNY 140/tonne coal
Coal Production Rate	900,000 tpa

Source: PVMA (2020)

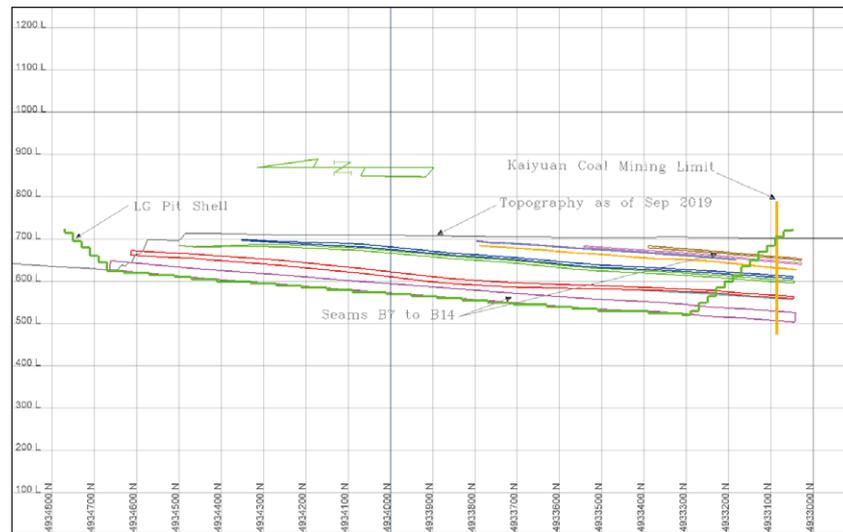
* Operating Costs exclude amortization, depreciation and interest expense of 0.16, 9.49 & 0.5 CNY/t, respectively.

The mining, coal preparation and general administration costs are referenced from the 2019 FS. The mining costs are based on CNY per tonne coal, which equates to CNY9.90 per tonne of material using a 5.91:1 strip ratio. The basis for the mineral reserve estimate is used in the following Lerch-Grossman optimization. Also, the operating cost summary is based on a 900,000 tpa, which is conservative compared to the 1,200,000 tpa allowable coal release. Since there is a 33% increase in coal production, the operation should realize a lower operating cost over the life of mine.

15.2.1 Lerchs-Grossmann (LG) Pit Shell Optimization

A percentage block model developed for Section 14, was transferred into the Maptek Vulcan™ software. A Lerch-Grossman (LG) Pit Shell optimization was conducted to validate the mineral reserve estimate. The parameters for the optimization used are set out in Table 15.2. A typical cross section of the LG Pit shell and coal seams is shown in Figure 15.1

Figure 15.1 Typical Cross-Section of LG Pit Shell and Coal Seams Outlines



Source: PVMA (2020)

The LG optimization shell resulted in a pit-constrained reserve of 69.5 million tonnes with an overall strip ratio of 5.44:1 (waste tonnes: coal tonnes). The reserves shown in Table 15.1 are constrained by the lower limit of the mining licence (525 masl) in addition to the pitshell and totalled 63.5 with an overall strip ratio of 5.91:1. Comparing the LG optimization shell with the pit design, the material difference in reserves is 9.5%, which is reasonable for this type of estimate.

15.3 Cut-off Calculation

No cut-off calculation is required.

15.4 Dilution and Mining Losses

Dilution factor of 0.5% and Mining Losses average 5.4%. These are reasonable for this type of estimate.

15.5 Coal Reserves by Seams

The coal reserves by seam is shown in Table 15.3 and has been derived by PVMA using dilution factors and mining losses outlined in Section 15.4. Note that the coal reserves are rounded up to nearest 1,000 and above elevation 575 m as per mining licence.

Table 15.3 Kaiyuan Coal Mine Probable Reserves by Seam to Elevation 575 meters

Coal Seam	Classification	Tonnes
B07	Probable	21,986,000
B08	Probable	78,000
B09	Probable	17,673,000
B13	Probable	9,912,000
B14	Probable	8,617,000
B15	Probable	1,363,000
B16	Probable	1,225,000
B17	Probable	1,229,000
B18	Probable	1,398,000
	Total	63,481,000

Source: PVMA (2020)

16 MINING METHODS

The design and planning outlined for the Kaiyuan Coal is based on the resource model detailed in Section 14 of this Report. The coal resources used in this report are based on Indicated resources for the southern portion of the mining lease. This CPR is considered to be of the level of a Pre-Feasibility Study (PFS) report and is reasonable for the Kaiyuan Coal mine. The author of this section of the ITR is Antonio Loschiavo.

16.1 Overview

Mining will be a conventional truck-and-excavator operation. The mining rate will be approximately 1,200,000 tonnes per annum and is planned over an approximately 54-year project life, including pre-stripping. Pre-stripping took place in Year -1 (2022), and production commenced in Year 1 (2023).

Table 16.1 shows the key results from the Life of Mine (LOM) plan.

Table 16.1 Kaiyuan Coal LOM Plan Key Results

Description	Unit	Value
Coal Reserves	tonne	63,481,000
Caloric Value (Q_{net})	MJ/Kg	25.99
Moisture ($M_{ad, air\ dry}$)	%	10.55
Ash ($A_d, dry\ basis$)	%	10.42
Volatile Matter ($V_{daf, dry\ and\ ash-free}$)	%	32.39
Overburden & Rock Stripping	tonne	374,904,000
Strip Ratio	waste:coal (t:t)	5.91
Coal Processing Rate	t/d (t/year)	3,600 (1,200,000)
Project Life	years	54

Source: PVMA (2020)

Notes: m^3 = cubic meters; % = percent; t/d = metric tons per day; w:o = waste; coal ore, tonnes rounded to 1,000

16.2 Geotechnical

Pit wall slope recommendations were provided in the 2018 Xinjiang Coal Design and Research Institute Co., Ltd. Feasibility report, "Kaiyuan Coal Opencast Preliminary Design" as shown in Figure 16.2.

Table 16.2 Kaiyuan Coal Recommended Overall Wall Slope Design Parameters

Design Sector	Overall Slope Angle
South Wall	38 deg.
North Wall	38 deg.
West Wall	38 deg.
East Wall	38 deg.

Source: Xinjiang Coal Design and Research Institute Co., Ltd. (2018)

The safety factor used for the overall design wall angles ranged between 1.32 and 1.33.

Slope monitoring recommendations are typical ground displacement monitoring, manual visual inspections and ground water monitoring.

16.2.1 Hydrogeology

Minor quantities of ground water are present in the main coal layers. The climate is essentially dry. Water from precipitation (rain and/or snow) which will seep into the underlying ground will typically evaporate. Based on the hydrological conditions and the local climate, water drainage, collection and removal from the open pit are deemed acceptable as outline in the 2018 report.

16.3 Mine Design

The mine design is defined by the mining license issued by the Autonomous Region Foreign Trade and Economic Cooperation Bureau and the Industrial and Commercial Bureau of the Autonomous Region for an operation of 900,000 tonnes per year of coal mining. The Mining Licence is held by Mulei County Kaiyuan Coal Co. Ltd. (Kaiyuan) a wholly-owned subsidiary of Nan Nan Resources Enterprise Limited. The safety production permit allows for 1,200,000 tonnes per coal mining which is also held by Kaiyuan. The area designated for coal mining is indicated by the X and Y coordinates outlined in Table 4.1 (1980 Xi'an coordinate system) and is shown in Figure 4.2.

16.3.1 Mine Design Parameters

Mining will be carried out by stripping overburden and rock material down dip at a declining angle between 3 and 8 degrees to a maximum bench height of 10 meters to release the coal ore. The final mine design parameters are shown in Table 16.3 with a typical cross-section showing mining sequence shown in Figure 16.1.

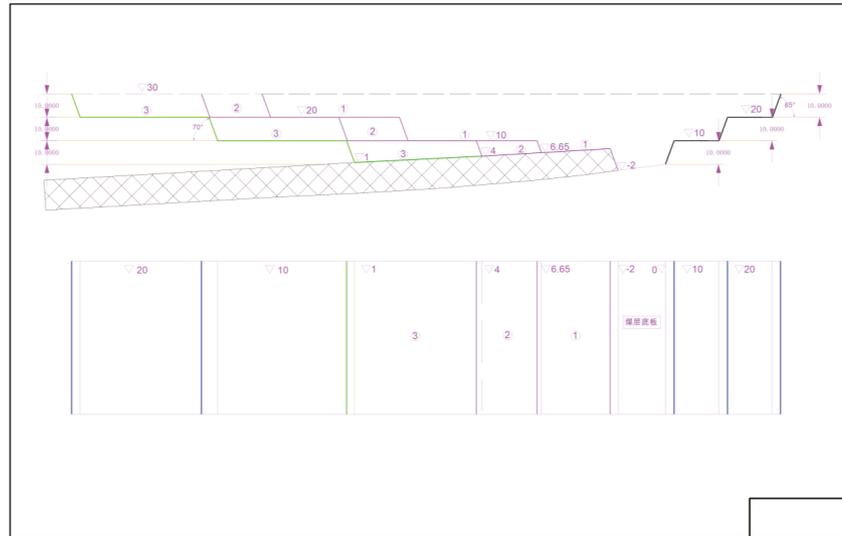
Table 16.3 Kaiyuan Coal Open Pit Design Parameters

Parameter	Value
Bench Height	10 m
Catchment Width	6m (East Wall)/ 9m (North, South and West Walls)
Ramp Gradient	8%
Ramp Width	20 m
Bench Face Angle (Rock/Weathered & Soils)	70 degrees/65 degrees (above 575 Elev)
Minimum Mining Width (Rock/Weathered & Soils)	45m/43m

Source: PVMA (2020)

Notes: m = meters; % = percent

Figure 16.1 Typical Cross-section of Mining sequence



Source: Xinjiang Coal Design and Research Institute Co., Ltd. (2018)

16.3.2 Haul Ramp Design

The ramp design width follows the guidelines set out in China. The current design uses 45-tonne articulated haul trucks as the largest vehicle traveling on the ramp; the main road will be 20.0 meters wide with an 8% ramp grade.

16.3.3 Final Design and Phasing

The final design was completed by the author, which is required by JORC to determine reserves as shown in Figure 16.3. The design was completed to a lower elevation of 575 masl as per the mining license.

The phasing for the mine will be split into two main stripping phases. The current mining activity is in the north area of the mining lease (i.e: Existing mine area). The first mining phase will be in the middle of the mining lease and will operate over a period of approximately 24 years. The final phase, (Ercai District), in the south end of the mining lease will be mined over the next 29 years.

The first mining phase will be split into two sub-phased activity areas, the East and West, as shown in Figure 16.2. Also shown are the current mining activities, dumps and facility locations. Total mining activity will be over a mine life of 53 years plus one year of pre-stripping.

16.3.4 In-Pit Diluted Probable Reserves by Bench

The total in-pit Probable Reserves, which include dilution and mining loss are tabulated by bench to elevation 575 m in Table 16.4.

Table 16.4 Kaiyuan Coal In-Pit Diluted Reserves by Bench to Elevation 575 m

Bench	In-Pit Reserves					Waste	Total	S.R. (w:o)
	(tonnes)	Q_{net}	Mad%	Ad%	Vdaf%	Stripping (tonnes)	Material (tonnes)	
+715 m	1,317	25.28	9.98	13.06	31.82	1,394,000	1,395,000	1,058
+705 m	176,000	25.14	9.93	13.21	31.90	16,261,000	16,437,000	92.3
+695 m	792,000	23.76	9.50	14.59	32.61	39,031,000	39,823,000	49.3
+685 m	2,188,000	23.46	9.47	15.25	32.86	41,529,000	43,717,000	19.0
+675 m	4,021,000	24.28	9.92	14.20	32.26	37,001,000	41,023,000	9.2
+665 m	5,683,000	25.07	10.47	12.69	32.19	32,879,000	38,562,000	5.8
+655 m	5,459,000	25.12	10.60	12.54	32.58	32,531,000	37,990,000	6.0
+645 m	4,423,000	24.67	10.34	13.61	33.09	33,332,000	37,755,000	7.5
+635 m	4,802,000	25.39	10.35	11.60	32.68	31,845,000	36,648,000	6.6
+625 m	6,745,000	26.16	10.48	9.84	32.37	26,948,000	33,693,000	4.0
+615 m	7,034,000	26.59	10.60	9.01	32.26	23,048,000	30,082,000	3.3
+605 m	6,001,000	27.08	10.80	8.07	32.20	20,423,000	26,424,000	3.4
+595 m	5,446,000	27.27	10.92	7.65	32.23	16,841,000	22,287,000	3.1
+585 m	5,494,000	27.29	10.95	7.59	32.25	12,611,000	18,106,000	2.3
+575 m	5,215,000	27.35	10.94	7.46	32.23	9,230,000	14,445,000	1.8
Total	63,481,000	25.99	10.55	10.42	32.39	374,904,000	438,385,000	5.9

Source: PVMA (2020)

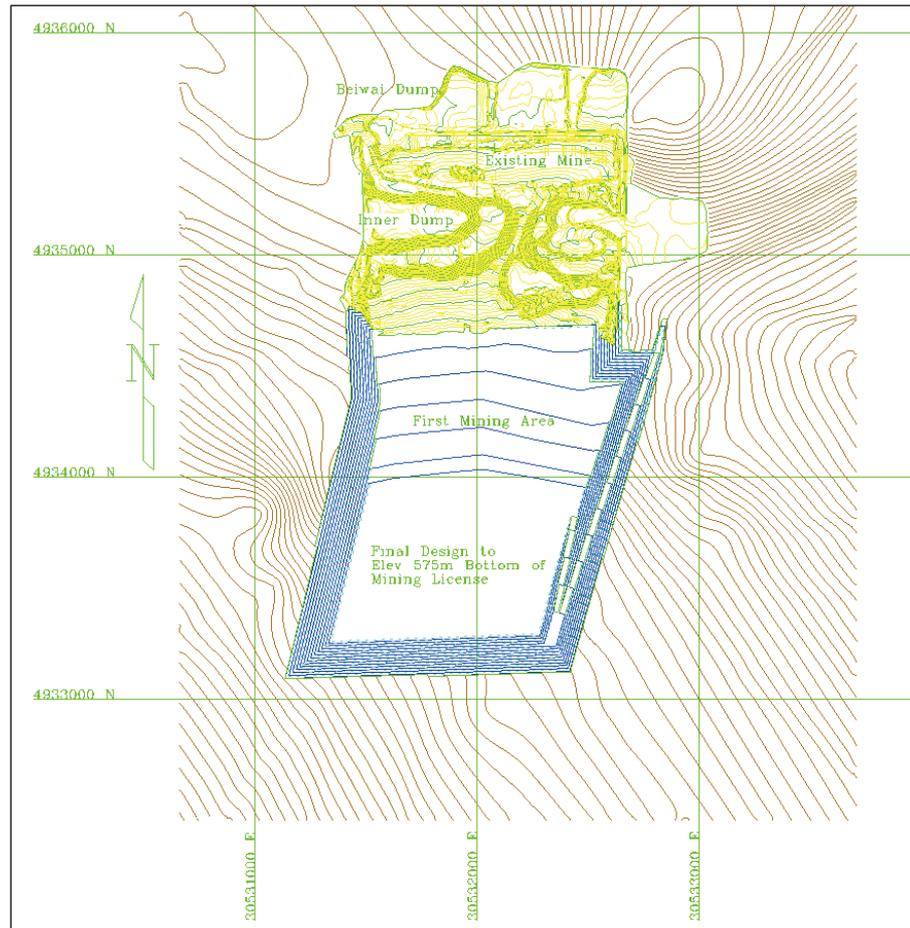
Notes: tonnes are reported to the nearest thousand. Rounding as required by reporting guidelines may result in apparent summation differences; t = tonnes; w:o = stripping ratio of waste to coal ore

Figure 16.2 Kaiyuan Coal Existing Mine, First Mining and Final (Ercai District) Phases



Source: Xinjiang Coal Design and Research Institute Co., Ltd. (2018)

Figure 16.3 Kaiyuan Coal Final Mine Design to Elevation 575 m



Source: PVMA (2020)

16.4 Mine Production Schedule

The mining production schedule is based on a mining rate of approximately 3600 t/d (1,200,000 t/year). The project life is approximately 54 years, including pre-stripping. Table 16.5 and Figure 16.4 outline the mine production schedule by year for the first 20 years.

Table 16.5 Kaiyuan Coal Mine Annual Production Schedule and Coal Quality

Year	Annual Production					Waste	Total	S.R. (w:o)
	(tonnes)	Q_{net}	Mad%	Ad%	Vdaf%	Stripping (tonnes)	Material (tonnes)	
2022 (-1)	-	-	-	-	-	10,038,000	10,038,000	-
2023 (1)	1,200,000	23.96	9.56	14.40	32.51	8,800,000	10,000,000	7.33
2024 (2)	1,200,000	24.18	9.63	14.18	32.40	8,800,000	10,000,000	7.33
2025 (3)	1,200,000	25.87	10.70	11.21	32.40	8,800,000	10,000,000	7.33
2026 (4)	1,200,000	26.31	11.18	9.94	32.77	6,833,000	8,033,000	5.69
2027 (5)	1,200,000	26.31	11.18	9.94	32.77	5,335,000	6,535,000	4.45
2028 (6)	1,200,000	26.46	11.15	9.57	32.69	6,731,000	7,931,000	5.61
2029 (7)	1,200,000	27.09	11.00	8.07	32.35	4,073,000	5,273,000	3.39
2030 (8)	1,200,000	27.43	10.92	7.24	32.17	3,773,000	4,973,000	3.14
2031 (9)	1,200,000	27.68	10.86	6.66	32.04	3,581,000	4,781,000	2.98
2032 (10)	1,200,000	27.83	10.82	6.30	31.96	3,023,000	4,223,000	2.52
2033 (11)	1,200,000	27.85	10.82	6.25	31.95	3,054,000	4,254,000	2.55
2034 (12)	1,200,000	27.85	10.82	6.25	31.95	3,042,000	4,242,000	2.54
2035 (13)	1,200,000	27.85	10.82	6.25	31.95	2,867,000	4,067,000	2.39
2036 (14)	1,200,000	27.85	10.82	6.25	31.95	2,757,000	3,957,000	2.30
2037 (15)	1,200,000	26.80	10.48	8.10	32.23	2,955,000	4,155,000	2.46
2038 (16)	1,200,000	23.96	9.59	14.32	32.58	3,496,000	4,696,000	2.91
2039 (17)	1,200,000	26.02	10.85	10.81	32.51	6,644,000	7,844,000	5.54
2040 (18)	1,200,000	26.39	11.16	9.74	32.72	7,522,000	8,722,000	6.27
2041 (19)	1,200,000	27.07	11.00	8.12	32.36	7,612,000	8,812,000	6.34
2042 (20)	1,200,000	27.62	10.87	6.80	32.07	7,721,000	8,921,000	6.43
~	~	~	~	~	~	~	~	~
2075 (53)	1,081,000	27.26	10.96	7.66	32.27	2,019,000	3,100,000	1.8
Total	63,481,000	25.99	10.55	10.42	32.39	374,904,000	438,385,000	5.9

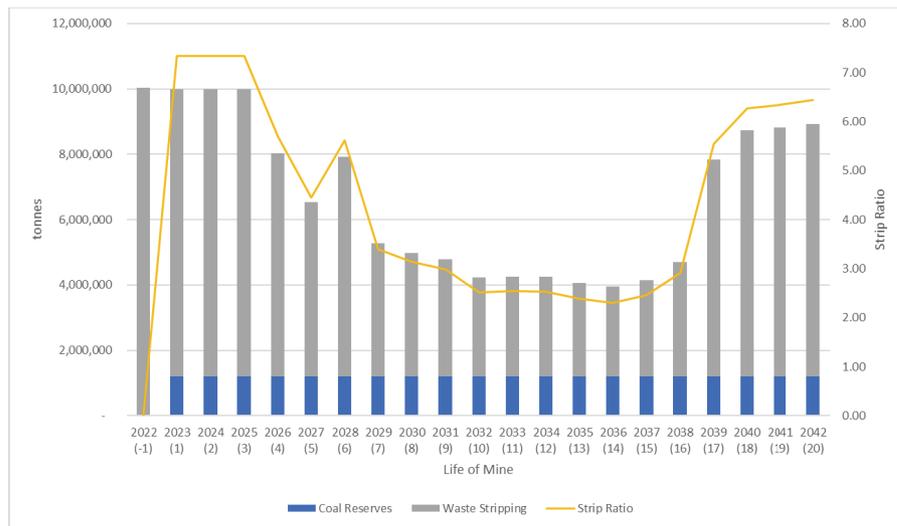
Source: PVMA (2020)

Notes: tonnes are reported to the nearest thousand. Rounding as required by reporting guidelines may result in apparent summation differences; t = tonnes; w:o = stripping ratio of waste to coal ore

The mine production schedule from the FS was based on 900,000 tonnes per year. The increase is due to the ‘Safety Production Permit’ allowing the coal output to increase to 1.2 million tonnes per year. During the period 2017 to 2019, coal output was 2.09, 2.08 and 1.441 million tonnes per year. Since there is no coal release in this latest production schedule during pre-production, this gives the mine significant time to allow stripping to be performed without coal release disturbance. Coal release will continue in the north portion of the mining lease during stripping.

The coal quality data presented in the annual mine plan is based on coal release presented in the year of mining and blended based on the seams that are exposed. The calorific values, volatile matter, moisture and ash content indicates that the coal falls within the limits of marketable coal, therefore requiring no washing. The coal preparation plant will be required as function of the coal contracts.

Figure 16.4 Kaiyuan Coal Mine Production Schedule and Strip Ratio



Source: PVMA (2020)

To increase coal production to 1.2 million tonnes per year, adjustments to waste material removal had to be increased in the first seven years. Pre-stripping shows approximately 10 million tonnes of material in year 2022. During years 2023 to 2025, waste stripping increases to 8.8 million tonnes per annum, then reduces gradually during years 2026 to 2038 to approximately 6 million tonnes and 3 million tonnes, respectively. It then increases up to approximately 8 million tonnes from 2039 to 2042. Pre-stripping will also release approximately 1.2 million tonnes of coal ore in year 2023 and for the life-of-mine. The strip ratio will average 5.9 over the life-of-mine.

16.5 Waste Material Management Plan

Over the life of mine, the mine will produce approximately 374.9 million tonnes of waste rock and overburden material. The mine has two dumping locations; the internal in-pit dump located North of the First phase mining area and the Northern Outer (Beiwai) dump site located on the North side of the mining lease and outside of the pit (ex-pit), as shown in Figure 16.2. Dump designs parameters for the outer and inner dump locations are outlined in Table 16.6.

Table 16.6 Kaiyuan Coal Dump Design Parameters

Parameter	Inner Dump	Outer Dump (Beiwai)
Final Dump Height	+740 m	+760 m
Number of Lifts	10	3
Bench Height	20 m	10 m
Catchment Width	20 m	20 m
Ramp Gradient	8%	8%
Ramp Width	20 m	20 m
Dump Face Angle	33 degrees	33 degrees
Overall Slope Angle	22 degrees	22 degrees
	(2.5:1 Horizontal: Vertical)	(2.5:1 Horizontal: Vertical)

Source: Xinjiang Coal Design and Research Institute Co., Ltd. (2018)

Notes: m = meters; % = percent

During the first 20 years of mining operation, approximately 87 and 31 million tonnes of waste material will be placed on the inner and outer dumps, respectively. After the 8th year of operation all waste material will be placed in the inner dump location to the end-of-mine-life as shown in Table 16.7.

Table 16.7 Kaiyuan Coal Mine Waste Management Dump Plan

Year <i>Mtonnes</i>	Annual Stripping Plan	Annual Dump Plan		Cumulative Total <i>Mtonnes</i>
	In-Pit <i>Mtonnes</i>	Inner Dump <i>Mtonnes</i>	Outer Dump <i>Mtonnes</i>	
2022 (-1)	10.04	10.04	-	10.04
2023 (1)	10.00	2.69	6.11	18.84
2024 (2)	10.00	2.69	6.11	27.64
2025 (3)	10.00	2.69	6.11	36.44
2026 (4)	8.03	2.09	4.75	43.27
2027 (5)	6.54	1.63	3.70	48.61
2028 (6)	7.93	4.06	2.67	55.34
2029 (7)	5.27	2.46	1.62	59.41
2030 (8)	4.97	3.77	-	63.18
2031 (9)	4.78	3.58	-	66.76
2032 (10)	4.22	3.02	-	69.79
2033 (11)	4.25	3.05	-	72.84
2034 (12)	4.24	3.04	-	75.88
2035 (13)	4.07	2.87	-	78.75
2036 (14)	3.96	2.76	-	81.51
2037 (15)	4.16	2.96	-	84.46
2038 (16)	4.70	3.50	-	87.96
2039 (17)	7.84	6.64	-	94.60
2040 (18)	8.72	7.52	-	102.12
2041 (19)	8.81	7.61	-	109.74
2042 (20)	8.92	7.72	-	117.46
Total	117.46	86.39	31	117.46

Source: PVMA (2020)

The competent person reviewed the waste dump volumes, and the inner and outer dumps are capable of containing more material than the dump plan has allocated. There is confidence in waste material placement matching the in-pit material stripping plan. A recommendation for the next level of study is to complete waste dump designs for the inner and outer waste dumps.

16.6 Mine Equipment

All mining activities on site will be completed by a combination of owner and local contractors. The descriptions in this section provide general information on the size and/or capacity of the selected equipment.

This operation is a conventional truck-and-excavator operation. Track-mounted blasthole drills, either rotary drilling or down-the-hole (DTH), are used. All equipment on site is and will be diesel powered.

16.6.1 Mine Equipment Parameters

The owner and contractors will operate three 8-hour shifts per day (24 hours/day), 330 days/year. The remaining days are allocated to legal holidays, equipment maintenance and productivity lost because of weather. This gives approximately 7,920 gross operating hours per year.

16.6.2 Mine Equipment Requirements

Table 16.8 lists major mine equipment to be provided.

Table 16.8 Kaiyuan Coal Major Mine Equipment Requirements

Equipment Type	Life-of-Mine
Track Mounted Down-the-hole hammer drill, 150 mm dia.	2
5.0 m ³ hydraulic excavator	4 (3 + 1 additional units)
2.5 m ³ hydraulic excavator	3
3.5 m ³ wheel loader (ZL50)	2
45-tonne class haul trucks	19 (11 + 8 additional units)
25-tonne class highway trucks (offsite coal transportation)	Variable
220HP Track Dozer	3
Grader – G170B	1
Water Truck – 30,000 liters	2
Fuel Truck – 20,000 liters	1

Source: PVMA (2020)

Notes: m³ = cubic metres; mm = millimetre; dia. = diameter

The increase to 1.2 million tonnes per year of coal production from the originally planned 900,000 tonnes per year, also increased the total number of excavators by one to a total of four and 45-tonne trucks by eight units to a total of 19 to meet the additional material movement requirements. Remaining equipment will be sufficient to manage the 1.2 million tonnes per year of coal release.

The 25-tonne class highway truck is for the transportation of coal to market. The number of trucks is variable due to the number of contract sales which varies year to year and is also depended on location for delivery.

16.7 Explosives

Overburden and rock stripping will require blasting which is managed by the contractor.

Blast designs are based on 10-m benches and 1-m sub-drill, using a powder factor of approximately 0.33 kg/m³ for rock and 0.22 for coal kg/m³. Over the life of mine, the project will use approximately 1.1 million kg per year of bulk ammonia-nitrate and fuel-oil explosive. The project will use conventional blasting products: non-electric detonating cords, delays and boosters. Blasting considerations of explosive timing and quantity of down-the-hole product will be adjusted for blasting near facilities.

16.8 Mine Personnel

Management staff will be owner-represented and will comprise 11 personnel. Personnel was increased to accommodate the 1.2 million tonnes per year coal production and will be comprised of 232 production staff, 9 service personnel, 9 other personnel, 6 safety personnel and 6 outsourcing staff, totalling 259 mine workers.

16.9 Mine Fuel

Over the life of mine, the project will consume approximately 10.0 million liters of diesel fuel per year.

16.10 Competent Person's View

This competent person is of the opinion that the mine plan and production schedule is, in part, a function of the quality and quantity of available data and of engineering and geological interpretation and judgement. Given the data available at the time of this report was prepared, the estimate presented herein are considered adequate and reasonable for this level of study.

17 RECOVERY METHODS

The Kaiyuan coal mine has been in operation since 2008, producing as-mined coal which is screened to various sizes for the local thermal coal market. This Section presents as-mined coal quality data which includes production data for the period 2017 to 2019 inclusive, a summary of the quality data of the recent coal core sample tests, the nearby coal mine operations, and a coal quality projection by PVMA. It was concluded that the as-mined raw coal meets quality requirements for the life of mine.

17.1 Kaiyuan Coal Previous Production and Quality

Production data for the period 2017 to 2019 inclusive are listed in Table 17.1. The fine coal product quality data are also presented in the same table. The ash content is low, in the range of 5.4% to 8.4% and the net heating values for the 2017 and 2018 data are higher than the required 18 MJ/kg. The lower heating value reported for 2019 relates to the mining of Seam XB2 which is of inferior quality but is nearly mined out. In addition, the alkaline elements potassium and sodium are high in the ash which will have a negative impact on combustion. Conventional coal preparation cannot remove these impurities.

Table 17.1 Kaiyuan Coal Production and Fine Coal Quality Data (2017-2019)

Kaiyuan	Coal	Sample	M	A	V	St	Q _{gross}	Q _{net}	K ₂ O in Ash	Na ₂ O in Ash
	(t/a)		(%, ad)	(%, d)	(%, daf)	(%, d)	(MJ/kg)	(MJ/kg)	(%)	(%)
2017	2,090,439	No. 2 Coal	8.63	5.41	30.38	0.40	24.89	23.91	1.31	12.22
2018	2,077,855	No. 2 Coal	10.26	8.44	42.26	0.60	19.16	18.59	n/a	n/a
2019	1,441,269	XB2-Zhong	11.28	8.40	44.56	0.91	17.68	15.07	n/a	n/a
		XB2-Xia	13.04	5.66	42.92	0.11	17.48	15.86	n/a	n/a

17.2 Kaiyuan Coal Core Samples Quality Data 2018-2020

Kaiyuan coal is low rank bituminous. The tested coal core samples from the 2018 and 2020 sampling programs indicate that in general, Kaiyuan coal contains low ash as well as low concentrations of deleterious elements including total sulphur, phosphorous, fluorine and arsenic. Some core samples from Seam B9 have a chlorine content higher than the threshold level 0.3%, although most of the measurements are lower than this. The heating values of the core samples are high, in the range of 25.6 to 28.4 MJ/kg without processing. These properties indicate that the run-of-mine coal can meet thermal coal market requirements.

17.3 Raw Coal Quality of Nearby Coal Mines

Large samples collected from the nearby mines confirmed the low ash and sulphur content as well as the high heating value of the coal as seen from the coal washability test results of Heishantou and Beishan samples. The raw coal ash on a dry basis was reported as 5.4% and 10.2% for Beishan and Heishantou, respectively.

17.4 Kaiyuan Raw Coal Quality Projection

The average coal quality during the life of mine was estimated by PVMA for the Property of the basis of proximal analyses included in the 2019 resource verification report. The average and range data are listed in Table 17.2. During the proposed life of mine, about 63.5 million tonnes raw coal will be produced, which will have an average net heating value of 26 MJ/kg and an ash content of 10.4% on a dry basis. The lowest net heating value of the raw coal was projected as 23 MJ/kg, which is above the lowest heating value regulated by local authority and meets the regional thermal coal market requirements.

Table 17.2 Kaiyuan Raw Coal Quality Projection (2020-2072)

Total Production (million t)	Annual Production (million t/a)	Raw Coal	Q_{net} (MJ/kg)	M (%, ad)	A (%, d)	V (%, daf)
63.5	1.2	Average	25.99	10.55	10.42	32.39
		Range	23.21-27.85	9.53-11.18	6.25-16.47	31.83-33.36

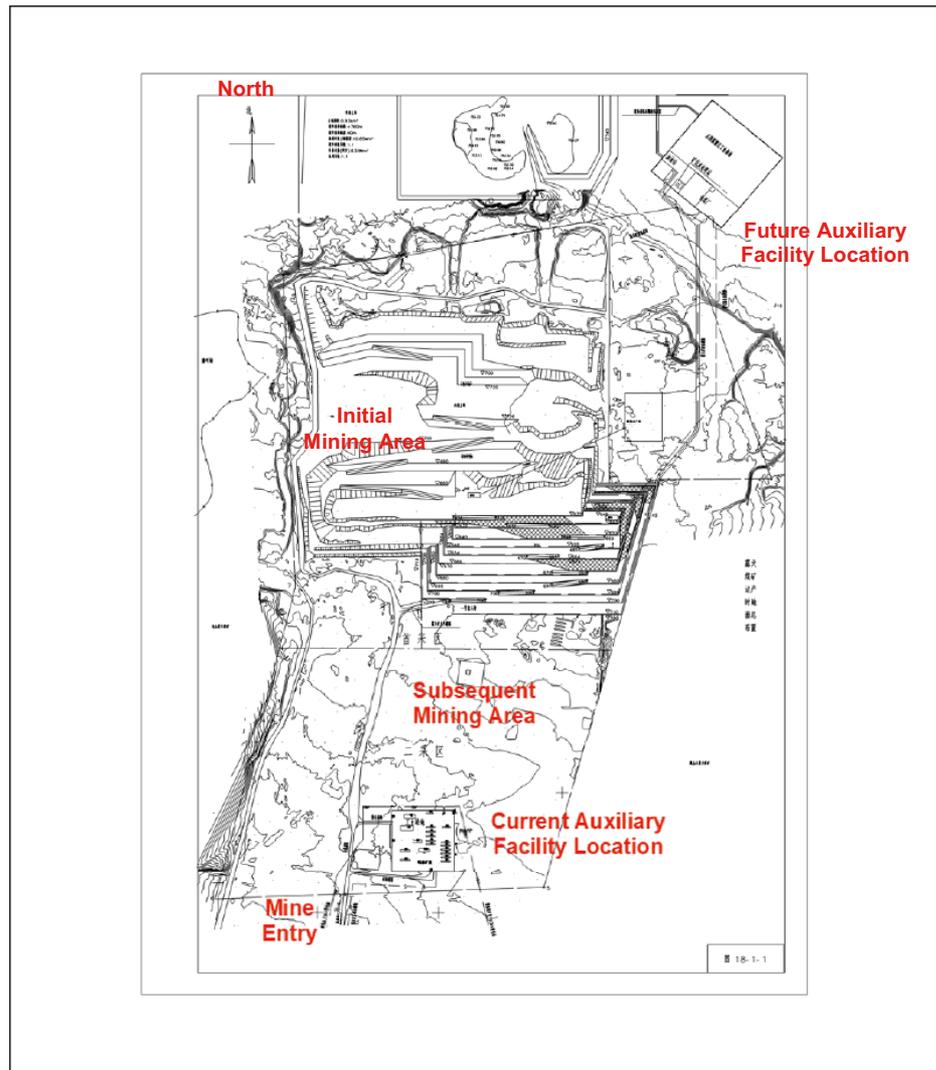
18 PROJECT INFRASTRUCTURE

18.1 Site General Arrangement

The Kaiyuan coal mine is currently in operation with an open pit production system and auxiliary facilities.

Figure 18.1 shows the general arrangement of the mine site reprinted from the 2019 feasibility report. The auxiliary facilities including maintenance shop, office building, and dormitories that are currently located in the south of the mine site, but which will be relocated to the north-east of the site during the planned expansion. The screening plant is also located in the north-east area.

Figure 18.1 Kaiyuan Coal Mine General Arrangement



18.2 Site Roads

The location provides easy access to provincial roads and highways. The major access road connecting the mine site to Provincial Road S327 is cement-concrete paved and is approximately 7.0 m wide and 2.5 km long. Other site roads are gravel surfaced with a total length of over 6 km.

18.3 Power Supply

To meet mining power requirements, Kaiyuan will use dual power supplies. One existing power supply is provided by the 35 kV Beishan transform station which is located about 13.8 km southeast of the Property. A 10 kV substation is installed at the mine site to distribute power. Additional power will be provided by the proposed 110 kV substation of the Jinneng Mine via a 4 km-long, 10 kV powerline. Three diesel generators are also available as emergency power supply at levels of 75 kW, 50 kW and 25 kW.

18.4 Water Supply

Limited ground water is available at the site because of local hydrology and arid climate. The highest daily water consumption was estimated to be 701 m³/d for the mining operation as well as potable and sanitation water uses. These needs will be met by using both reclaimed and fresh water.

- Reclaimed water will mainly from the treated pit water and wastewater. The estimated pit water is about 244 m³/d, which can be purified and used for dedusting. Treated wastewater was estimated to be about 190 m³/d which can be used for dedusting and production.
- The estimated fresh water will be 396 m³/d considering a 1.5 factor that will be provided via an existing 38 km-long water pipeline from Jijihu County to the mine site water reservoir with a capacity of 300 m³.

Fire water is stored in three water tanks including one existing fire water tank of 300 m³ in the south of the mine site, and two proposed tanks, each of 400 m³, in the north of the mine site.

18.5 On-site Structures/Facilities

18.5.1 Raw Coal Handling and Screening Plant

The ROM coal mined from the open pit will be trucked to a raw coal hopper and crushed to less than 300 mm. The crushed raw coal will be conveyed to a 12 m diameter raw coal silo with a capacity of 1,800 t. Coal from the raw coal silo will be fed via belt feeders to the screening plant to produce various sized products.

A new screening plant has been constructed on site to further classifying the crushed raw coal into different-size products. PVMA visited the new screening plant during the site visit. (Figure 18.2).

Figure 18.2 Kaiyuan Screening Plant



18.5.2 Auxiliary Facilities

The following auxiliary facilities are located at the mine site or will be constructed to support the mine operation:

- A two-storey office building with an area of 1,192.6 m² (existing);
- A camp facility to host 259-employees including a dining hall and dormitories (existing);
- A wastewater treatment facility (existing);
- A pit water treatment facility;
- A maintenance shop with an area of 720 m² (existing);
- A new truck wash bay with an area of 216 m² (existing);
- A coal sample preparation and assay lab with an area of 372 m²;
- Other facilities include a warehouse of 450 m² and a new fuel storage of 170 m³.

19 MARKET STUDIES AND CONTRACTS

The Kaiyuan mine has been in operation since 2008. Recent production data including coal quality properties have been described in Section 17.1. The company has an established thermal coal market with a low risk to future sales.

Kaiyuan as-mined coal is screened to various sizes and sold on a ROM coal basis to the local thermal coal market. A new screening plant has been constructed but has not been put into operation. The existing screening systems at the pit site were still in operation to produce raw coal products. As described in the 2010 Competent Persons Report by JTB, four typical sized coal products are produced from the mine site as shown in Table 19.1.

Table 19.1 Typical Kaiyuan Coal Products (2010, JTB)

Products	Size (mm)	% of Saleable Product	Customers
Large Coal	> 150	30	Thermal Coal Domestic and Industry
Medium Coal	80 – 150	30	Thermal Coal Domestic and Industry
Small Coal	30 – 80		
Fine Coal	< 30	40	Third-Party to Power Plants

Nanan provided three typical sales contracts of Kaiyuan fine coal products to the thermal coal market. Information pertaining to the three contracts are given in Table 19.2.

Table 19.2 Kaiyuan Coal Product Contracts Examples (2020, Kaiyuan)

Contracts Number	Customer	Year	Coal Product	Tonnage
MJKY-2017-S023	Changji Jiuyuan Construction Engineering Limited Company	2017	Fine Coal (<4 cm)	100,000
			2# Fine Coal	Unlimited
			Coal Gangue	Unlimited
MJKY-2018-S004	Qitai County Younghe Coal Trading Limited Company	2018	2# Fine Coal	800,000
			Coal Gangue	Unlimited
MJKY-2019-S074	Xinjiang Jinjiang Trading Limited Company	2019	2# Fine Coal	10,000

20 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

Currently, appropriate environmental permits have been approved for Kaiyuan's operation by the Environmental Protection Bureau of Mulei County. The planned and implemented environmental protection measures can adequately satisfy the need for environmental protection.

The physical environment of the Kaiyuan open pit coal mine is flat Gobi terrain with few inhabitants. Surface elevations range from 670 to 720 m. Major environmental impacts of the mining activities by Kaiyuan include overburden removal, noise, dust, pit water, and wastewater generation during mining, and greenhouse gas discharge during transportation. These pollutants are prevented or mitigated with the following measures:

- Pit water and wastewater will be treated and reused on site for dedusting and other operation purposes. Two emergency water discharge ponds were proposed for pit water and wastewater.
- Raw coal and gauge materials are stored in silos to prevent dusting issues caused by outdoor storage.
- Dust collection systems will be installed in the silos, and in the screening plant to further capture coal dusts to meet the national standard (GB20426-2006).

Additional measures and recommendations were proposed in the feasibility study for Kaiyuan to implement the mine site environmental protection program, which mainly include:

- Noise control methodologies;
- A comprehensive site reclamation plan; and
- A long-term environmental monitoring program.

21 CAPITAL AND OPERATING COSTS

All capital and operating cost estimates are reported in Renminbi (CNY) unless stated otherwise. The author of this section of the ITR is Antonio Loschiavo. The capital and operating cost estimates are, in the author's opinion, appropriate for a Pre-Feasibility Study (PFS) level of study and are reasonable for the Kaiyuan Coal mine. Note that the initial study was based on a production rate of 900,000 tonnes per year coal production as per the mining permit. The safety production permit allows coal production to increase to 1.2 million tonnes per year. The capital therefore has been updated by the author to reflect the purchase of additional equipment required to accommodate the 1.2 million tonnes per year production plan. Operating costs were not updated and therefore the use of the 900,000 tonne per year operating costs for the 1.2 million tonne per year operation should be result in lower costs is considered to be a conservative evaluation.

21.1 Capital Cost Summary

The capital cost estimate is summarized in Table 21.1.

Table 21.1 Capital Cost Summary Table

Project Capital Estimate	Estimated Value (CNY)
Mining Construction Engineering (Pre-Stripping)	93,522,000
Civil Works Engineering	16,490,000
Purchase of equipment and tools	50,028,000
Installation work	15,657,000
Other fee	18,370,000
Engineering contingency reserve	11,644,000
Coal preparation plant investment	57,604,000
Interest during construction	5,980,000
Original investment in open pit mine	100,000,000
Start-up Working capital	4,433,000
	<hr/>
Total Capital Costs	<u><u>373,728,000</u></u>

Source: PVMA (2020)

Notes: CNY are reported to the nearest thousand

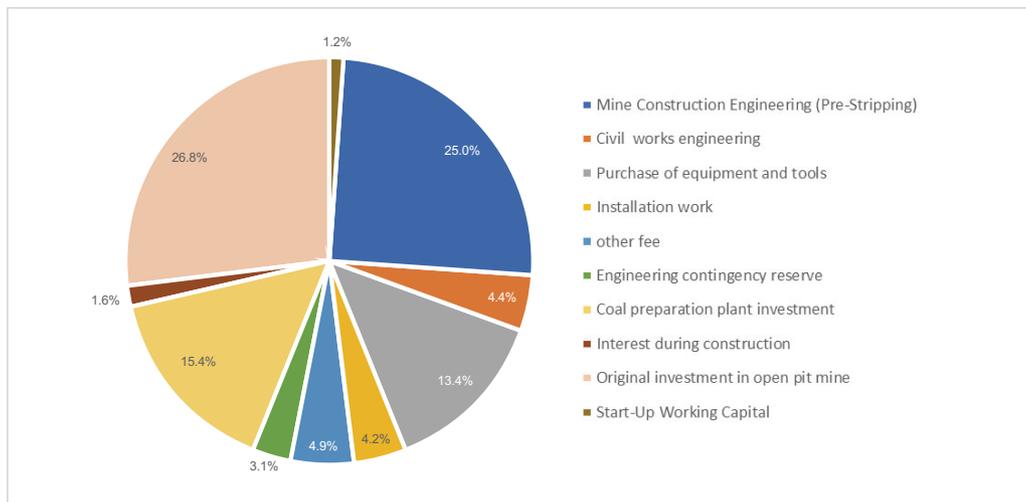
The capital cost estimate had been updated to reflect the production rate of 1.2 million tonnes per year and is summarized into to 10 major groups: Mining engineering, civil works engineering, purchase of equipment and tools, installation work, other fee, engineering working capital, interest during construction, coal preparation plant, original investment in open mine and working capital.

The total capital cost summary estimate by project groups is detailed below and shown in Figure 21.1.

- (1) Mining construction engineering: CNY93.522 million, accounting for 25% of the total capital cost;
- (2) Civil works engineering: CNY16.490 million, accounting for 4.4% of the total capital cost;
- (3) Purchase of equipment's and tools: CNY50.028 million, accounting for 13.4% of the total capital cost;
- (4) Installation work: CNY15.657 million, accounting for 4.2% of the total capital cost;

- (5) Other fee: CNY18.370 million, accounting for 4.9% of the total capital cost;
- (6) Engineering contingency reserve: CNY11.644 million, accounting for 3.1% of the total capital cost;
- (7) Coal Preparation Plant: CNY57.604 million, accounting for 15.4% of the total capital cost;
- (8) Interest during construction: CNY5.980 million, accounting for 1.6% of the total capital cost;
- (9) Original investment in open pit mine: CNY100.0 million, accounting for 26.8% of the total capital cost;
- (10) Start-up Working Capital: CNY4.433 million, accounting for 1.2% of the total capital costs

Figure 21.1 Kaiyuan Coal Summary of Capital Cost by Project Groups



Source: PVMA (2020)

21.1.1 Mine Capital Costs

The mining capital cost estimate was updated to reflect the coal production increase to 1.2 million tonnes per year. The estimate is split into 14 major categories; pre-stripping work, geotechnical works, excavation works, ground production systems, dredging drainage works, communication systems, power supply systems, outdoor water supply and heating systems, maintenance, warehouse facility, administrative facilities, environmental protection and other construction costs as shown in Table 21.2

Table 21.2 Kaiyuan Coal Mine Capital Cost Estimate

Engineering Cost Name	Estimated Value (CNY)					Total
	Mine Construction Engineering	Civil Works Engineering	Purchase of equipment's and tools	Installation work	Other Fee	
Pre-Stripping work	93,522,000	-	8,690,000	-	-	102,212,000
Mining & Mineral work	-	5,570,000	9,994,000	-	-	15,563,000
Excavation works	-	-	4,345,000	-	-	4,345,000
Ground production system	-	-	-	-	-	-
Dredging and Drainage works	-	-	152,000	309,000	-	461,000
Communication Systems	-	-	9,044,000	4,658,000	-	13,702,000
Power supply system	-	381,000	5,077,000	7,780,000	-	13,238,000
Outdoor water supply and heating systems	-	3,045,000	242,000	2,168,000	-	5,455,000
Maintenance	-	594,000	6,022,000	501,000	-	7,117,000
Warehouse facility	-	1,191,000	1,147,000	209,000	-	2,547,000
Administrative facilities	-	3,909,000	2,553,000	-	-	6,462,000
Environmental protection	-	1,801,000	2,763,000	31,000	-	4,595,000
Other construction costs	-	-	-	-	18,370,000	18,370,000
Sub-Total	93,522,000	16,490,000	50,028,000	15,657,000	18,370,000	194,067,000
Engineering Contingency (6%)					11,644,000	11,644,000
Total Mining	93,522,000	16,490,000	50,028,000	15,657,000	30,014,000	205,711,000

Source: PVMA (2020)

Notes: CNY are reported to the nearest thousand

The total mining capital cost estimate is CNY205.711 million. The contingency capital is estimated at CNY11.644 million, approximately 6% of the mining capital.

21.1.2 Coal Preparation Plant Capital Costs

The coal preparation plant capital costs estimate is summarized in Table 21.3.

Table 21.3 Kaiyuan Coal Preparation Plant Capital Cost Estimate

Engineering Cost Name	Mine		Estimated Value (CNY)			Total
	Construction Engineering	Civil Works Engineering	Purchase of equipment's and tools	Installation work	Other Fee	
Coal preparation plant	-	29,322,000	16,294,000	4,527,000	7,462,000	57,605,000
Total Coal Preparation Plant	-	29,322,000	16,294,000	4,527,000	7,462,000	57,605,000

Source: Xinjiang Coal Design and Research Institute Co., Ltd. (2018)

Notes: CNY are reported to the nearest thousand

The annual mine plan indicates that the coal quality data falls within the limits of marketable coal and requires no washing, but due to the current wash plant construction on site the capital costs will be maintained in the cashflow model. The coal preparation plant will be required as a function of the coal contracts.

21.1.3 Investment and Start-up Working Capital Costs

The investment capital cost estimate is split into three areas, construction investment loan, the original investment and start-up working capital as shown in Table 21.4.

Table 21.4 Kaiyuan Coal Mine Investment Capital Cost Estimate

Engineering Cost Name	Mine		Estimated Value (CNY)			Total
	Construction Engineering	Civil Works Engineering	Purchase of equipment's and tools	Installation work	Other Fee	
Construction investment loan interest	-	-	-	-	5,980,000	5,980,000
Original investment	40,000,000	40,000,000	-	20,000,000	-	100,000,000
Start-up working capital	-	-	-	-	4,433,000	4,433,000
Total Other Capital	40,000,000	40,000,000	-	20,000,000	10,413,000	110,413,000

Source: Xinjiang Coal Design and Research Institute Co., Ltd. (2018)

Notes: CNY are reported to the nearest thousand

21.2 Operating Cost Summary Estimate

The operating cost estimate summary for the Kaiyuan Coal Feasibility Project is, in the author's opinion appropriate for a PFS level of study and is summarized in Table 21.5.

Table 21.5 Kaiyuan Coal Mine Operating Cost Summary Estimate

Item	Unit Cost per tonne coal (CNY)
Mining	58.46*
Coal Preparation	7.81
Total Operating Cost	66.27*

Source: Xinjiang Coal Design and Research Institute Co., Ltd. (2018)

* Operating Costs exclude amortization, depreciation and interest expense.

Overall operating costs excludes amortization, depreciation and interest expense of 0.16, 9.49 & 0.5 CNY/t, respectively, which equates to CNY76.42/t coal.

21.2.1 Mining Operating Cost

The mining operating costs are detailed in Table 21.6.

Table 21.6 Kaiyuan Coal Mining Operating Cost Estimate

Item	Name	Unit Cost
1	Mining Operating cost	52.77
(a)	material	1.02
(b)	power	17.70
(c)	employee's salary	21.61
(d)	Repair fee	2.70
(e)	Land reclamation fee	0.50
(f)	Other expenses	3.00
(g)	Outsourcing Blasting Fee	6.21
2	Depreciation	9.49
3	Maintenance/Replacement fee	8.50
4	Security costs	5.00
5	Amortization fee	0.16
6	Interest expense	0.5
Total Mine Operating Costs per tonne of Coal		76.42*

Source: Xinjiang Coal Design and Research Institute Co., Ltd. (2018)

* Operating cost include interest, depreciation, amortization

The mining costs are a fixed cost based on annual mining of 900,000 tonnes of coal per year of operation. due to the mining permit. The safety production permit allows coal production to increase to 1.2 million tonnes per tonne per year. Operating costs were not updated and should be realized at a lower cost and therefore the 900,000 tonnes per day operating costs is used as a conservative evaluation and within the limits of this study.

The total cost of CNY76.42/t coal includes interest, depreciation, and amortization. Excluding interest, depreciation, and amortization, mining operating costs are estimated at CNY58.46/t coal.

21.2.2 Coal Preparation, General and Administration (G&A) Operating Costs

Processing and G&A operating costs are detailed in Table 21.7.

Table 21.7 Kaiyuan Coal Preparation and G&A Operating Costs Estimate

Item	Name	Unit Cost
1	Power fee	1.19
2	employee's salary	4.62
3	Repair fee	1.00
4	other expenses	1.00
	Total Coal Preparation Operating Costs	7.81

Source: *Xinjiang Coal Design and Research Institute Co., Ltd. (2018)*

The coal preparation and G&A costs are a fixed cost and are based on annual processing of 900,000 tonnes of coal per year of operation. The total coal preparation operating cost is estimated at CNY7.81/t coal.

The calorific values, volatile matter, moisture and ash content presented in the annual mine plan indicate that the coal falls within marketable limits, requiring no washing. Therefore, these operating costs are excluded from the cashflow model. The coal preparation plant will be required as function of the coal contracts.

21.2.3 Labour

Labour personnel will be a combination of owner and contractors as shown in Table 21.8.

Table 21.8 Kaiyuan Coal Summary Labour Estimate

Unit and Job title	One Class	Two Class	Three Class	Total	Labour Factor	Registered Personnel
Production workers	49	75	52	176	1.26	221
Managers	3	5	3	11	1	11
Service personnel	2	4	3	9	1	9
Labours	1	3	2	6	1	6
Outsourced Blasters	2	2	2	6	1	6
Mine First Aid Safety Staff	1	3	2	6		6
Total open-pit mine						
labour capacity	58	92	64	214		259
Coal Preparation Plant Capacity	18	17	5	40		53
All personnel	76	109	69	254		312

Source: PVMA (2020)

21.3 Competent Person's Opinion

The competent person is of the view that the capital and operating costs are, in part, a function of the quality and quantity of available data and of engineering and geological interpretation and judgement. Given the data available at the time of this report was prepared, the estimate presented herein are considered adequate and reasonable for this level of study.

22 ECONOMIC ANALYSIS

All currency is reported in Renminbi (CNY) unless stated otherwise. The author of this section of the ITR is Antonio Loschiavo. The economic analysis is, in the author's opinion, appropriate for a Pre-Feasibility Study (PFS) level of study and are reasonable for the Kaiyuan Coal mine.

The initial study was based on 900,000 tonnes per year coal production as per the mining permit. However, the safety production permit allows coal production to increase to 1.2 million tonnes per year. The economic analysis is therefore has been updated by the author to reflect the additional equipment purchase to accommodate the 1.2 million tonnes per year production plan. Operating costs were not updated and should be realized at lower cost and therefore the 900,000 tonnes per day operating costs is used as a conservative evaluation.

22.1 Summary of Economic Analysis

Table 22.1 shows the economic analysis summary.

Table 22.1 Kaiyuan Coal Economic Analysis Summary

Item	Amount (Yuan)
Total investment in open-pit projects	205,711,000
Mine Construction engineering (Pre-Stripping)	93,522,000
Civil Construction Engineering	16,490,000
Purchase of equipment and tools	50,028,000
Installation work	15,657,000
Other fees	18,370,000
Engineering contingency reserve	11,644,000
Coal processing plant investment	57,604,000
Interest expense during construction period	5,980,000
Open-pit Mine original Investment	100,000,000
Initial (start-up) working capital	4,433,000
Total construction investment	373,728,000
Coal investment per metric ton	311.44
 Financial Evaluation Index	
Project investment financial internal rate of return (%)	
– After Tax	17.53
Project investment financial internal rate of return (%)	
– Before Tax	22.53
Project investment payback period (year) – After Tax	5.48
Project investment payback period (year) – Before Tax	4.36
Project investment net present value – After Tax	207,288,000
Project investment net present value – Before Tax	355,625,000
Discount Rate (%)	10

Source: PVMA (2020)

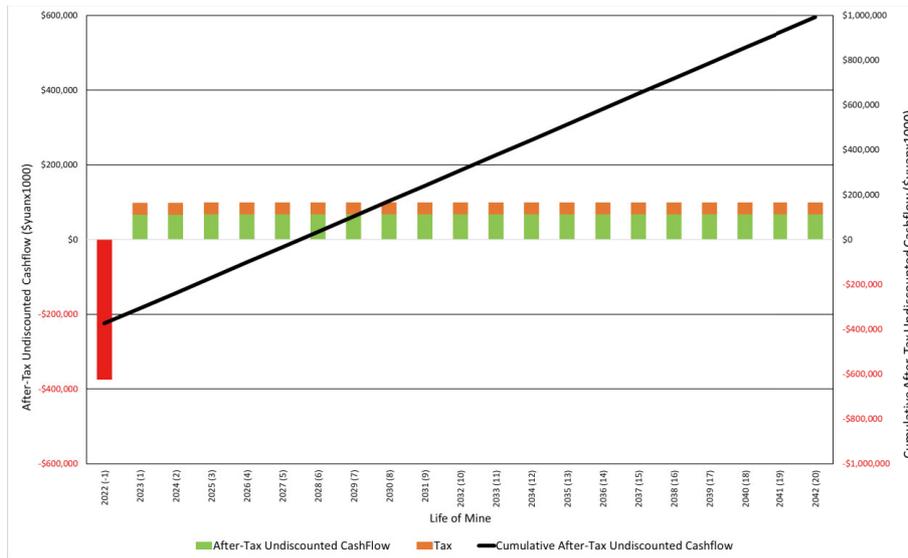
Notes: CNY are reported to the nearest thousand

The assumptions used in the financial estimate is based on an annual coal production of 1.2 million tonnes per year and priced at 140 yuan/metric ton of coal. Contingency and working capital is estimated at CNY11.644 million and 4.433 million which is approximately 3.1% and 1.2% and of total capital, respectively. It’s this author opinion that the contingency and working capital appropriate for this coal mine.

22.2 After-Tax Cash Flow and Tax Forecast

The feasibility study before-tax, after-tax cash flow and tax forecast is shown on Table 22.2 and Figure 22.1 shows the after-tax, tax and cumulative after-tax undiscounted cash flow graphically. Although the mine life is 54 years, the cashflow model covers a twenty-year operation. However, the discounted cash flow model has little impact to the Net Present Value (NPV) after twenty years.

Figure 22.1 Kaiyuan Coal After-Tax, Tax and Cumulative After-Tax Undiscounted Cash Flow



Source: PVMA (2020)

As indicated in the chart, the payback period is approximately 5.5 years. Pre-production capital is estimated to be CNY373.728 million with a working capital of CNY4.433 million required for the first year of operation.

22.3 Taxes, Royalties and Other Interests

This Project has been evaluated on a post-tax basis in order to provide a more indicative, but still approximate, value of the potential Project economics. A tax model was reproduced by PVMA using the 2018 Xinjiang Coal Design and Research Institute Co., Ltd Feasibility report, "Kaiyuan Coal Opencast Preliminary Design". The tax model contains the following assumptions:

- No royalties;
- Value-Added Tax Total is 1.3% (13% \times 5% \times 5%)
 - o VAT is 13%
 - o Urban Construction Tax is 5%
 - o Education Surcharge is 5%
- Resource Tax is 6% of Revenue
- Corporate Income Tax is 25%
- Depreciation is CNY9.49/t of coal ore
- Amortization is CNY0.16/t of coal ore
- Interest is CNY0.50/t of coal ore

Total taxes for the Project amount to CNY601.629 million over a twenty-year operation.

22.4 NPV & IRR Sensitivity

The Kaiyuan coal project After-Tax Net Present Value (NPV) and Internal Rate of Return (IRR) sensitivities were re-produced by PVMA using the 2018 Xinjiang Coal Design and Research Institute Co., Ltd Feasibility report, "Kaiyuan Coal Opencast Preliminary Design". The sensitivities are based on the following parameters:

- Coal Price
- Production Rate
- Operating Costs
- Capital Costs

Shown on Table 22.3 are NPV and IRR values, Table 22.4 shows the Discount rate sensitivities, with Figures 22.2 and 22.3 showing visual representations of risk levels

Table 22.3 Kaiyuan Coal After-Tax Net Present Value and Internal Rate of Return Sensitivity Analysis

Uncertainties Indicator Name	Indicator After Tax Name	Uncertainty Change Rate (%)								
		-20%	-15%	-10%	-5%	0%	5%	10%	15%	20%
Coal Price	%IRR	10.3%	12.2%	14.0%	15.8%	17.5%	19.2%	20.9%	22.5%	24.2%
	NPV (CNYx1000)	8,404	58,125	107,846	157,567	207,288	257,009	306,730	356,451	406,172
Production Rate	%IRR	13.4%	14.5%	15.5%	16.5%	17.5%	18.5%	19.5%	20.5%	21.4%
	NPV (CNYx1000)	91,085	120,136	149,186	178,237	207,288	236,339	265,390	294,440	323,491
Operating Costs	%IRR	22.9%	21.7%	20.4%	19.0%	17.5%	16.0%	14.3%	12.5%	10.5%
	NPV (CNYx1000)	366,450	329,976	291,290	250,395	207,288	161,971	114,443	64,705	12,756
Capital Costs	%IRR	22.4%	21.0%	19.7%	18.6%	17.5%	16.6%	15.7%	14.9%	14.1%
	NPV (CNYx1000)	282,034	263,347	244,661	225,974	207,288	188,602	169,915	151,229	132,542

Source: PVMA (2020)

Table 22.4 Discount Rate Post-Tax Sensitivity

Discount Rate	After-Tax NPV (CNYx1000)
0%	992,431
5%	477,174
8%	296,451
10%	207,288
12%	135,931
15%	53,236

Source: PVMA (2020)

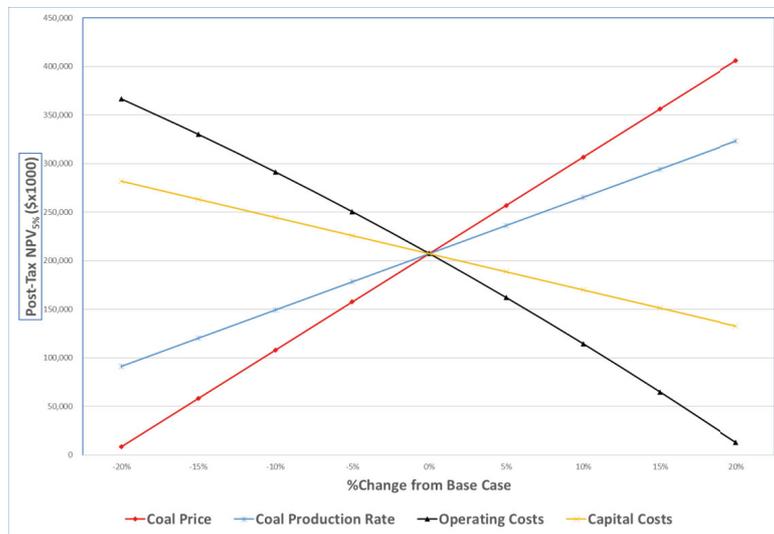
Notes: NPV = net present value; % = percent

A sensitivity analysis was performed on the Base Case coal price of CNY140/t of ore cost scenarios to determine which factors most affected the Project post-tax economics for both NPV and IRR graphs. The analysis revealed that the project is most sensitive to coal price and operating cost, the project also shows the moderate level of sensitivity to capital and production rate.

22.5 Competent Person’s View

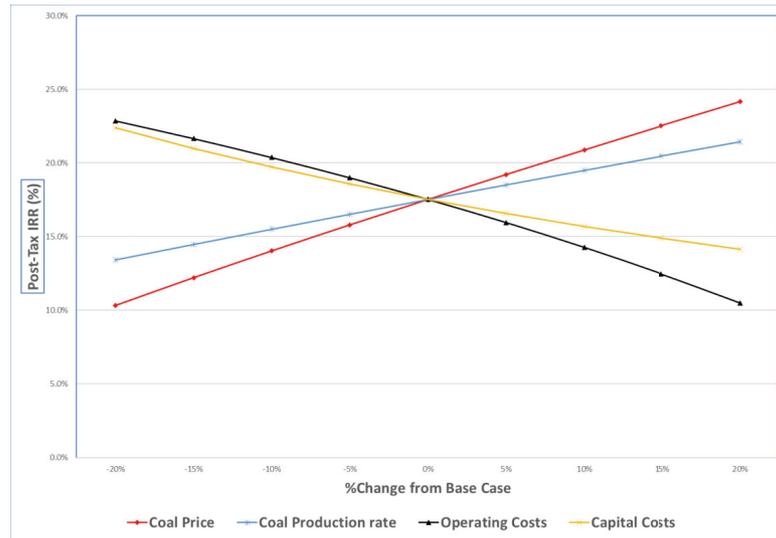
It is this competent person view that the economic analysis is, in part, a function of the quality and quantity of available data and of engineering and geological interpretation and judgement. Given the data available at the time of this report was prepared, the estimate presented herein are considered adequate and reasonable for this level of study.

Figure 22.2 Kaiyuan Coal After-Tax Net Present Value Sensitivity Analysis



Source: PVMA (2020)

Figure 22.3 Kaiyuan Coal After-Tax Internal Rate of Return Sensitivity Analysis



Source: PVMA (2020)

23 ADJACENT PROPERTIES

There are operating coal mines immediately to both the east and west of the Property, but it was not considered necessary to describe these mines as the coal resources within the Property are fully documented.

24 PROJECT RISK ASSESSMENT

Table 24.1 summarizes the risk assessment for major project components. There is only one risk that is regarded by PVMA as of high likelihood: the current mine closure that was imposed because of the delay in obtaining the approval of resumption application from the Production Safety Supervision and Administration Bureau of local government as a result of Coronavirus pandemic. This closure is temporary but of unknown duration so PVMA regards it as of moderate effect and because it is already in effect, is highly likely in likelihood of occurrence.

There are no geological or mining factors that are regarded as being of high risk. The deposit is well defined, and the anticipated mining operation is an extension of an existing mining operation so there should be very little risk of unexpected technical issues.

In common with most, if not all, mining projects, the economics of the Kaiyuan mine are sensitive to commodity price. Changes in the price of coal are impossible to predict and are dependent on many factors beyond the control of the Company. Regardless, a drop in the market price of coal could have a major impact on the viability of the mining operation.

Table 24.1 Kaiyuan Risk Assessment

Hazard/Risk Issue	Likelihood	Rating	Risk
Geological			
Lack of Significant Resource	Unlikely	Major	Low
Loss of Significant Reserve	Unlikely	Major	Low
Significant Unexpected Faulting	Unlikely	Major	Low
Significant Subsidence	Unlikely	Minor	Low
Unexpected Groundwater Ingress	Unlikely	Minor	Low
Mining			
Significant Production Shortfalls	Possible	Major	Low
Production Pumping System Adequacy	Unlikely	Minor	Low
Significant Geological Structures	Unlikely	Moderate	Low
Processing/Handling			
Lower Yields	Possible	Moderate	Low
Lower Plant Production Levels	Unlikely	Moderate	Low
Higher Plant Production Costs	Possible	Moderate	Low
Plant Reliability	Unlikely	Moderate	Low
Handling System	Possible	Moderate	Low
Environmental			
Water Discharge Non-Compliance	Unlikely	Minor	Low
Regulatory Consent/Variation Delays	Unlikely	Moderate	Low
Capital and Operating Costs			
Project Timing Delays	Likely	Major	High
Mine Management Plan	Unlikely	Minor	Low
Capital Cost Increases: Startup	Possible	Minor	Low
Capital Costs: Ongoing	Unlikely	Minor	Low
Operating Costs Underestimated	Possible	Moderate	Low
Marketing			
Availability of Market	Unlikely	Major	Low
Commodity Prices	Possible	Major	Low
Project Implementation			
Critical Path Delays	Unlikely	Moderate	Low

It must be recognized that the project risk profile will change over the life of the operation and therefore risks that are currently regarded as low may rise in significance. Alternatively, other risks may diminish.

25 INTERPRETATION AND CONCLUSIONS

25.1 Geology and Mineral Resources

The Property area is underlain by rocks of Lower to Middle Jurassic age. The oldest rocks encountered in drilling belong to the Lower Jurassic Sangonghe Formation. Rock types include grey-green siltstone, fine-grained sandstone, and argillaceous siltstone and are approximately 90 m thick. The Sangonghe Formation does not contain coal beds. Regionally, the Sangonghe Formation is described as being comprised of coarsening-upward cycles that represent multiple delta progradations along basin margins. The thin-bedded, fine-grained and well-sorted sandstones with wide lateral extent are indicative of wave-dominated delta systems. Adjacent to the Property, the Sangonghe Formation contains conglomerate beds which may be indicative of fluvial channels.

The Sangonghe Formation is conformably overlain by the Xishanyao Formation of Middle Jurassic age. The Xishanyao Formation is comprised of basal conglomerate and coarse sandstone, grey to light-grey siltstone, mudstone and sandstone with coal seams. The Formation has an average thickness of approximately 125 m and is nearly flat-lying, with dips of 3° to 5° to the south.

The Property contains nine (9) coal seams of potential economic interest. From oldest to youngest these are labelled B₇, B₈, B₉, B₁₃, B₁₄, B₁₅, B₁₆, B₁₇, and B₁₈, and they have an aggregate thickness of approximately 50 m. (Table 25.1) All seams are contained within the Middle Jurassic-age Xishanyao Formation and are essentially parallel, strike east-west, and dip approximately five (5) degrees to the south.

Seams B₇ and B₉ are the most continuous; seam B₈, between B₇ and B₉, is restricted to the southern part of the expansion area. The remaining seams are generally continuous, but because they dip to the south, are progressively truncated to the north.

Table 25.1 Kaiyuan Coal Seam Thickness

Coal Seam	Average Thickness (m)	Minimum Thickness (m)	Maximum Thickness (m)
B18	4.0	1.9	7.0
B17	4.1	2.8	6.6
B16	1.5	0.5	2.8
B15	4.1	0.7	13.4
B14	4.5	0.6	9.5
B13	5.4	0.1	10.0
B9	10.0	5.1	12.9
B8	1.4	0.5	1.8
B7	21.2	12.5	24.5

The pit-constrained resource estimate for the expansion area is set out in Table 25.2. The resource has been estimated only to 575 meters above sea level, the minimum elevation of the mining licence.

Table 25.2 Kaiyuan Expansion Area Mineral Resource Estimate Above 575 Meters Elevation

Seam	Classification	Dry	Ad (%)	Mad (%)	Vda (%)	Q _{net} (MJ/kg)	Tonnes
		Density (g/cm ³)					
B18	Indicated	1.2500	9.70	10.63	28.94	26.84	410,000
B17	Indicated	1.2500	8.54	13.20	31.17	26.89	890,000
B16	Indicated	1.2500	13.01	10.01	31.74	25.08	1,210,000
B15	Indicated	1.2500	28.74	10.02	38.09	20.39	1,170,000
B14	Indicated	1.2500	16.24	9.05	33.60	22.33	8,100,000
B13	Indicated	1.2500	13.13	10.03	31.98	25.41	9,770,000
B09	Indicated	1.2500	9.99	11.24	32.93	26.44	19,830,000
B08	Indicated	1.2500	9.13	11.13	33.83	26.91	110,000
B07	Indicated	1.2500	6.28	10.87	32.11	27.99	24,780,000
Total							66,270,000

25.2 Mining and Mineral Reserves

A Lerch-Grossman (LG) Pit Shell optimization was conducted to validate the mineral reserve estimate. The parameters for the optimization used are set out in Table 25.3.

The LG optimization shell resulted in a pit-constrained reserve of 69.5 million tonnes with an overall strip ratio of 5.44:1 (waste tonnes: coal tonnes). The reserves shown in Tables 1.8 and 1.10 are constrained by the lower limit of the mining licence (525 masl) in addition to the pitshell and total 63.5 million tonnes with an overall strip ratio of 5.91:1. Dilution factor of 0.5% and Mining Losses average 5.4%. These are reasonable for this type of estimate.

Table 25.3 Kaiyuan Coal Mine Probable Reserves by Seam to Elevation 575 meters

Coal Seam	Classification	Tonnes
B07	Probable	21,986,000
B08	Probable	78,000
B09	Probable	17,673,000
B13	Probable	9,912,000
B14	Probable	8,617,000
B15	Probable	1,363,000
B16	Probable	1,225,000
B17	Probable	1,229,000
B18	Probable	1,398,000
	Total	63,481,000

Source: PVMA (2020)

Mining will be a conventional truck-and-excavator operation. The mining rate will be approximately 1,200,000 tonnes per annum and is planned over an approximately 54-year project life, including pre-stripping. Pre-stripping took place in Year -1 (2022), and production commenced in Year 1 (2023). Table 25.4 shows the key results from the Life of Mine (LOM) plan.

Table 25.4 Kaiyuan Coal LOM Plan Key Results

Description	Unit	Value
Coal Reserves	tonne	63,481,000
Caloric Value (Q_{net})	MJ/Kg	25.99
Moisture ($M_{ad, air\ dry}$)	%	10.55
Ash ($A_d, dry\ basis$)	%	10.42
Volatile Matter ($V_{daf, dry\ and\ ash-free}$)	%	32.39
Overburden & Rock Stripping	tonne	374,904,000
Strip Ratio	waste:coal (t:t)	5.91
Coal Processing Rate	t/d (t/year)	3,600 (1,200,000)
Project Life	years	54

25.3 Mineral Processing and Metallurgical Testing

- Based on the results from recent testwork programs, Kaiyuan coal is characterized as a low-rank bituminous, with no coking abilities, and is classified as non-coking coal BN31 according to the Chinese classification system. This is equivalent to the Subbituminous B coal class according to the American Society for Testing Materials (ASTM D-388).
- Kaiyuan coal is low in ash with stable moisture content and volatile matter, especially for the major coal seams B7, B9, B13 and B14. The average ash content for these seams is in a range of 7.0% to 17.5% on a dry basis.
- Kaiyuan coal has low concentrations of deleterious elements of S, P, F and As. Some samples from Seam B9 and B9 have a chlorine content of more than 0.3%. Kaiyuan float samples have a lower sulphur content and the distribution of P is consistent.
- Kaiyuan coal can be used as thermal coal. However, the high concentration of alkali elements will impact fusibility and cause slagging during combustion. Kaiyuan coal shows no coking properties. It may be used for coal gasification.
- Washability tests indicate that Kaiyuan coal has a low degree of separation difficulty in theory based on Chinese criteria. Other washability tests on raw coal samples from nearby coal mines confirmed this observation.
- Medium levels of humic acids were identified from the weathered zones of Kaiyuan coal seams as reported in the 2018 and 2020 reserve verification reports. The potential economic values of the weathered coals have been discussed in the 2018 PEA and 2019 FS reports.

25.4 Recovery Methods

- Kaiyuan Coal mine has been in operation since 2008, producing as-mined coal which is screened to various sizes for the local thermal coal market. PVMA reviewed production data for the period 2017 to 2019, quality data of recent coal core samples, the operation of nearby coal mines op, and a coal quality projection by PVMA. It was concluded that the as-mined raw coal meets the quality requirements during the life of mine.

25.5 Project Infrastructure

- The Kaiyuan coal mine is an open pit operation with auxiliary facilities and is well located with easy access to provincial roads and highways.
- Auxiliary facilities including maintenance shop, office building, and dormitories are currently located in the south of the mine site but will be relocated to the north-east during the expansion. A new screening plant has been constructed on site and is also located in the same area.
- Kaiyuan will use two power supplies. Existing power is provided by the 35 kV Beishan transformer station. A second power supply will be provided by the proposed 110 kV substation of the Jinneng Mine via a 4 km-long, 10 kV powerline. Three diesel generators are also available as emergency power supply.
- The site highest daily water consumption was estimated to be 701 m³/d for mine operations, potable and sanitation water uses and will be provided by using both reclaimed and fresh water.

25.6 Market Studies and Contracts

Kaiyuan has an established thermal coal sales market with a low risk of future sale considering the local economy. Kaiyuan as-mined coal is screened to various sizes and sold on a ROM basis to the local thermal coal market.

25.7 Environmental Studies, Permitting and Social Impacts

Currently, appropriate environmental permits have been approved for Kaiyuan's operation by the Environmental Protection Bureau of Mulei County. The planned and implemented environmental protection measures can adequately satisfy the need for environmental protection.

25.8 Economic Analysis

All values are reported in Renminbi (CNY). The initial study was based on 900,000 tonnes per year coal production as per the mining permit. The safety production permit allows coal production to increase to 1.2 million tonnes per year. The economic analysis has been updated by the author to reflect additional equipment purchases necessary to accommodate the 1.2 million tonnes per year production plan. Operating costs were not updated and should be realized at lower cost and therefore the 900,000 tonnes per day operating costs is used as a conservative evaluation. Table 25.5 shows the economic analysis summary.

Table 25.5 Kaiyuan Coal Economic Analysis Summary

Item	Amount (Yuan)
Total investment in open-pit projects	205,711,000
Mine Construction engineering (Pre-Stripping)	93,522,000
Civil Construction Engineering	16,490,000
Purchase of equipment and tools	50,028,000
Installation work	15,657,000
Other fees	18,370,000
Engineering contingency reserve	11,644,000
Coal processing plant investment	57,604,000
Interest expense during construction period	5,980,000
Open-pit Mine original Investment	100,000,000
Initial (start-up) working capital	4,433,000
Total construction investment	373,728,000
Coal investment per metric ton	311.44
 Financial Evaluation Index	
Project investment financial internal rate of return (%)	
– After Tax	17.53
Project investment financial internal rate of return (%)	
– Before Tax	22.53
Project investment payback period (year) – After Tax	5.48
Project investment payback period (year) – Before Tax	4.36
Project investment net present value – After Tax	207,288,000
Project investment net present value – Before Tax	355,625,000
Discount Rate (%)	10

Source: PVMA (2020)

Notes: CNY are reported to the nearest thousand

The assumptions used in the financial estimate are based on an annual coal production rate of 1.2 million tonnes per year and a selling price of 140 yuan/metric ton of coal. Contingency and working capital is estimated at CNY11.644 million and 4.433 million which is approximately 3.1% and 1.2% and of total capital, respectively.

The feasibility study before-tax, after-tax cash flow and tax forecast is shown in Figure 1.7. As the cashflow model is completed over a twenty-year operation and the Life-of-Mine is over 54 years, the discounted cash flow model has little impact on the Net Present Value (NPV) after twenty years.

25.9 Risk Assessment

The only project risk that is regarded as currently significant is the current mine closure that was imposed because of the delay in obtaining the approval of resumption application from the Production Safety Supervision and Administration Bureau of local government as a result of coronavirus pandemic. This closure is of unknown duration and if persistent, may delay the mine development schedule as planned.

26 RECOMMENDATIONS

26.1 Geology and Mineral Resources

There are no recommendations for Geology and Mineral Resources.

26.2 Mining and Mineral Reserves

The only recommendation for mining is the completion of waste dump designs for the inner and outer waste dumps within the next five years or at the time of the next update of the feasibility study.

26.3 Metallurgy and Processing/Recovery Methods

- Kaiyuan coal contains low ash, low sulphur, and high heating values, which is good for the thermal coal market. Other potential markets including coal gasification should be investigated.
- Available information indicates that coal washing is not required. However, it is recommended to conduct a trade-off study to evaluate the benefits of producing washed coal especially when mining coal seams with relatively high ash content in future.
- Determination of mercury is recommended for Kaiyuan coal.

26.4 Environmental Studies, Permitting and Social Impacts

- A long-term environmental protection program should be in place to continuously monitor the pit water and wastewater treatment systems, air condition and soil quality at the mine site.

27 REFERENCES

Caroll, Alan; Liang, Yunhai; Graham, Stephan; Xiao, Xuchang; Hendrix, Marc; Chu, Jinchi; McKnight, Cleavy, 1990

China, N. S., 2007.

Chlorine-Classification for Content of Harmful Elements in Coal. GB/T 20475.2-2006.

Chuan Zhu, 2018

Clean Coal Technology, Vol. 24, No. 5, pp 20 – 22

John T. Boyd Company, 27 July 2010

Competent Person's Report Kaiyuan and Zexu Openpit Coal Mine Projects
Xinjiang Uygur Autonomous Region, People's Republic of China

Junggar Basin, Northwest China: Trapped Late Paleozoic Ocean

Tectonophysics, Volume 181, Issues 1 – 4, September 1990, pp 1 – 14

Li, Shun-Li; Yu, Ying-He; Tan, Cheng-Peng; Steel, Ronald, 2014

Jurassic sedimentary evolution of southern Junggar Basin: Implications for palaeoclimate changes in northern Xinjiang Uygur Autonomous Region, China
Journal of Paleogeography, 2014, Volume 3(2), pp 145 – 161

Miller, Bruce G., 2005

Coal Energy Systems

Nan Nan Resources Enterprise Limited, 2020

An Introduction of Kaiyuan Coal Mine and Nearby Coal Mines

Pirajno, Franco; Seltmann, Reimar; Yang, Yongqiang, 2011

A review of mineral systems and associated tectonic settings of northern Xinjiang, NW China

Geoscience Frontiers, Volume 2 (2), pp 157 – 185

Qi, Q., Hao, Y., & Liu, J. et al, 2008

Notes for Discharge of Flurone in Coal Combustion. Coal vol. 100.

Ryan, B. (1995): Sub-Bituminous Coal, in Selected British Columbia Mineral Deposit Profiles, Volume 1 – Metallics and Coal, Lefebure, D.V. and Ray, G.E., Editors, British Columbia Ministry of Employment and Investment, Open File 1995-20, pages 9 – 11. 1.

Shanghai Haihua Yongtai (Urumqi) Law Firm, 6 July 2020
Chinese legal opinion on issues related to the expansion of mining area and
production capacity
For Nan Nan Resources Enterprise Limited

The National Development and Reform Commission, the Ministry of Environmental
Protection, the Ministry of Commerce, the General Administration of Customs, the
State Administration for Industry and Commerce, and the State Administration of
Quality Supervision, Inspection and Quarantine of PRC, 2014
Interim Measures for Quality Management of Commodity Coal

Thomas, Larry, 2002
Coal Geology, published by John Wiley & Sons Ltd.

Xinjiang Coal Design Research Institute, December 2018
Kaiyuan Open Pit Coal Mine Resource Development Utilization Program

Xinjiang Coal Design Research Institute, 9 August 2019
Kaiyuan Open Pit Coal Mine Feasibility Study

Xinjiang Uygur Autonomous Region Geological and Mineral Exploration and
Development Bureau
9th Geological Brigade May 2020
Kaiyuan Open-pit Coal Mine, Xiheishan Mining Area, Qitai County, Xinjiang
Resource Reserve Verification Report

Yours faithfully,
For and on behalf of

Peak Vision Mining Alliance Limited

Antonio Loschiave
P. Eng. Mining Engineer

Gregory Zale Mosher
*P. Geo., Resource Estimation
Geologist*

Ting Lu
P. Eng. Process Engineer

28 APPENDIX 1: VALUATION REPORT**Introduction**

We have conducted a valuation of a mining right of 30 years (the “**Mining Right**” or the “**Intangible Asset**”) of an open pit coal mine (“**Kaiyuan Coal Mine**”) situated at Zhundong Economic and Technological Development Zone, Xinjiang, the People’s Republic of China (the “**PRC**”) as at 31 March 2020 (the “**Valuation Date**”).

Purpose of Valuation

This report is being prepared solely for the use of the directors and management (the “**Management**”) of Nan Nan Resources Enterprise Limited (the “**Company**”). The Company is listed on the Main Board of The Stock Exchange of Hong Kong Limited (“**SEHK**”). This report is being prepared for incorporation into the circular of the Company in relation to the acquisition (the “**Acquisition**”) of the Mining Right. This report describes the basis of valuation, valuation methodologies considered and applied, our analysis, limiting conditions and presents our opinion of value.

We acknowledge that this report may be used by the Company as one of the sources of information for the Acquisition. The Acquisition is the result of negotiations between the transacting parties. The Management should be responsible for determining the consideration of the Acquisition, in which we are not involved in the negotiation and have no comment on the agreed consideration. We assume no responsibility whatsoever to any person other than the Management of the Company in respect of, or arising out of, the contents of this report. If others choose to rely in any way on the contents of this report they do so entirely on their own risk.

Statement of Compliance

This report is prepared in conformance with SEHK Listing Rules Chapter 18 and the Australasian Code for Public Reporting of Technical Assessments and Valuations of Mineral Assets, 2015 edition (the “**VALMIN Code (2015)**”) prepared by the VALMIN Committee. The VALMIN Code (2015) provides a set of fundamental principles and supporting recommendations regarding good professional practice to assist the preparation of the valuation of mineral assets. This report is also based on accepted valuation procedures and practices that rely substantially on the use of numerous assumptions and consideration of various factors that are relevant to the operation of the Company.

Basis of Value

The basis of value is a statement of the fundamental measurement assumptions of a valuation. The VALMIN Code primarily uses the terms Market Value and Technical Value.

According to VALMIN Code (2015), **Market Value** is defined to mean “the estimated amount (or the cash equivalent of some other consideration) for which the mineral asset should exchange on the date of valuation between a willing buyer and a willing seller in an arm’s length transaction after appropriate marketing where the parties had each acted knowledgeably, prudently and without compulsion.”

According to VALMIN Code (2015), **Technical Value** is defined to mean “an assessment of a mineral asset’s future net economic benefit at the valuation date, under a set of assumptions deemed most appropriate by a practitioner, excluding any premium or discount to account for market considerations.”

The basis of value used in this report is the Technical Value. Market Value is not used because Market Value also does not specifically reflect the projected economic benefits attributable to the Company derived from the Mining Right. The Technical Value is more representative of the value because the Company has been principally engaged in the coal mine business and the value of the Mining Right is expected to be recovered from the operations of Kaiyuan Coal Mine will be placed into production in the near term in accordance with the production plan as advised by the Management.

Sources of Information

In the course of our valuation, we have had discussion with the Management on the Mining Right and the development of Kaiyuan Coal Mine. We have also relied on the following major documents and information in the valuation analysis. Some of the information and materials are furnished by the Management. Other information is extracted from public sources such as government sources, Thomson Reuters, Duff & Phelps LLC, etc.

The major documents and information include the following:

- Exploration Report “木壘縣凱源煤炭有限責任公司凱源露天煤礦及配套選煤廠初步設計(修改)” dated April 2020 (the “**Exploration Report**”);
- Relevant copies of permit(s) and license(s) in relation to Kaiyuan Coal Mine;
- Circular(s) and/or announcement(s) made by the Company in relation to the acquisition and the development of Kaiyuan Coal Mine;
- Projections of Kaiyuan Coal Mine prepared by the Management; and
- Industry and economic data.

General Valuation Approaches and Methods

In conducting the valuation, we have considered three generally accepted approaches to obtain the value of a mineral project:

- Market Approach
- Cost Approach; and
- Income Approach.

Under each approach, a number of methods are available which can be used to assess the value of a subject. Each method uses a specific procedure to determine the value.

Market Approach

The Market Approach values an intangible asset by comparison of the prices at which other similar intangible assets or interests changed hands in arm's length transactions. The underlying theory of this approach is that one would not pay more than one would have to pay for an equally desirable alternative. By adopting this approach, we will first look for an indication of value from the prices of other similar intangible assets that were sold recently.

The right transactions employed in analyzing for indications of value need to be sold at an arm's length basis, assuming that the buyers and sellers are well informed and have no special motivations or compulsions to buy or to sell.

Where evidence of prices is available, it will often be necessary to make adjustments to these to reflect differences between the subject asset and those involved in the transactions.

Cost Approach

The Cost Approach values an intangible asset by using the historical cost which relates to the actual cost to create or develop an intangible asset. There are two fundamental types of cost quantified in Cost Approach valuation methods: reproduction cost and replacement cost. At the inception of the cost approach analysis, we decide which type of cost will be estimated and will be used.

Reproduction cost is the estimated cost to construct, at current prices as of the date of the analysis, an exact duplicate or replica of the subject intangible asset, using the same production standards, design, layout and quality of workmanship as the subject intangible asset. The reproduction intangible asset will include the same inadequacies, super adequacies, and obsolescence as the subject intangible asset.

Replacement cost is the estimated cost to construct, at current prices as of the date of the analysis, an intangible asset with equivalent utility to the subject intangible asset, using modern materials, production standards, design, layout and quality of workmanship. The replacement intangible asset will exclude all curable inadequacies, super adequacies and obsolescence that are present in the subject intangible asset.

Income Approach

The Income Approach focuses on the economic benefits generated by the income producing capability of an intangible asset. The underlying theory of this approach is that the value of an intangible asset can be measured by the present worth of the economic benefits to be received over the useful life of the intangible asset.

Based on this valuation principle, the Income Approach estimates the future economic benefits and discounts these benefits to its present value using a discount rate appropriate for the risks associated with realizing those benefits.

Alternatively, this can be calculated by capitalizing the economic benefits to be received in the next period at an appropriate capitalization rate. This is subject to the assumption that the intangible asset will continue to maintain stable economic benefits and growth rate.

The principal valuation methods under the Income Approach used in the valuation of intangible assets are:

- relief-from-royalty method;
- with-and-without method;
- excess earnings method; and
- greenfield method.

Valuation Approach

In the process of valuing the Mining Right, we have considered its nature and discussed with the Management on its effect and benefits to the business. Given the nature of the valuation subject and the development status of the business project, it would be appropriate and reasonable to adopt the Income Approach to value the Mining Right. The excess earnings method determines the value of an intangible asset as the present value of the cash flows attributable to the subject intangible asset after excluding the proportion of cash flows that are attributable to other contributory assets.

The Market Approach is not appropriate as there is not enough publicly available information on recent transactions comparable to the Mining Right of Kaiyuan Coal Mine and also does not precisely reflect the projected economic benefits specifically attributable to the Company derived from the Mining Right. The Cost Approach is not appropriate as it ignores the future economic benefits of the Intangible Asset. We have therefore solely relied on the Income Approach in determining our opinion of value.

We have derived a discount cash flow (DCF) valuation of Kaiyuan Coal Mine based on the net profit value (NPV) of the pre-debt, post-tax discounted cash flows with production projected for approximately 29 years commencing from 31 March 2022 to 31 August 2049. The model is expressed in real terms and is based on financial years ending 31 March. The financial model has been prepared with due regard to the Exploration Report and the production schedule for Kaiyuan Coal Mine as advised by the Company.

In this valuation, identified contributory assets include the fixed assets, the assembled workforce and the non-cash working capital.

Valuation Input Basis and Assumptions

The valuation of the Mining Right requires a number of assumptions such as coal price, operating cost, resource or reserve amount and capital expenditure, etc. In the course of our valuation, we have made reference to the aforesaid information provided by the Management and relied on the below assumptions and data enclosed;

- The Exploration Report states all material information in relation to the technical, development, mining, and financial aspects of Kaiyuan Coal Mine, and has not withheld any material information and that information is accurate in all material aspects;
- The financial and operational information provided by in the Exploration Report has been prepared on a reasonable basis, reflecting estimates that have been arrived at after due and careful consideration;
- Coal supply and demand, both domestically and internationally, will not differ materially from those forecasted;
- All reports and other documents provided by the Company correctly and accurately record the result of all geological and other technical activities and testwork conducted to date in relation to Kaiyuan Coal Mine;
- The estimated value does not include consideration of any extraordinary financing or income guarantees, special tax considerations or any other atypical benefits which may influence the value;

- The Mining Right of Kaiyuan Coal Mine will not be infringed in any manner which would materially affect the profitability of Kaiyuan Coal Mine;
- The relevant permit(s) and license(s) are able to be obtained and renewed in order to achieve the planned exploitation and development of Kaiyuan Coal Mine;
- We have assumed the Company has free and uninterrupted rights to use or assign the interest of Kaiyuan Coal Mine for the whole of the unexpired terms as granted and any mining right(s) premiums/ administrative costs payable have already been fully paid unless otherwise specified in our report;
- The Company using the Mining Right shall have uninterrupted rights to operate its business during the unexpired term of its authorized enterprise operation period;
- The Management has adopted reasonable and necessary security measures and has developed risk management plans against any disruption (such as fire, change of government policy, labour dispute, implementation of stringent statutory mining safety measures, unplanned geological structures, soil erosion and other types of unexpected accidents or natural disasters or catastrophes) to the scheduled operations;
- As part of its going concern business, the Company will successfully carry out all necessary activities for the completion and development of Kaiyuan Coal Mine;
- The Management will implement financial and operational strategies that will maximize the efficiency of the operation of the business;
- The Company would maintain sufficient working capital to implement the scheduled operations;
- There exists reliable and adequate transportation network and capacity for the mining products;
- Future mining schedule for Kaiyuan Coal Mine will conform to those forecasted;
- Capital expenditure, coal price, revenue, cost, and profit margin will conform to those forecasted in accordance with the Exploration Report and as advised by the Management;

- Market trends and conditions where the Company using the Mining Right operates will not deviate significantly from the economic forecasts in general;
- Key management, competent personnel, and technical staff will all be retained to support the ongoing mining and exploration activities;
- The availability of finance will not be a constraint on the forecast development of Kaiyuan Coal Mine in accordance with the projections;
- There will be no material changes in the operating strategy of the Company using the Mining Right;
- Interest rates and exchange rates in the localities for the operations of the Company using the Mining Right will not differ materially from those presently prevailing;
- All required licenses, certificates, consents, or other legislative or administrative authorities from any local, provincial, or national government or private entity or organization have been or can readily be obtained or renewed by the Management on which the valuation contained in our report are based;
- There will not be material changes in government policies or political, legal (including legislation or regulations or rules), fiscal (including interest rate and exchange rate), market or economic conditions, the bases or rates of taxation in the PRC, where Kaiyuan Coal Mine is situated;
- Management has adopted reasonable and appropriate contingency measures against any human disruption such as fraud, corruption and strike, and the occurrence of any such disruption will not significantly affect the operation of the business.

Limitations and Reliance On Information

We have no reason to believe that any material facts have been withheld from us, however, we do not warrant that our investigations have revealed all of the matters which an audit or more extensive examination might disclose.

This report is based upon financial and other information provided by the Management. We have made reference to or reviewed the above information and data and assumed such information and data are true and accurate without independent verification except as expressly described herein. We have made reasonable enquiries and exercised our judgment on the reasonable use of such information and found no reason to doubt the accuracy or reliability of the information.

Preparation of this report does not imply that we have audited in any way the financial information or other records of the Company and Kaiyuan Coal Mine. It is understood that the financial information that provided is prepared in accordance with generally accepted accounting principles and have been prepared in a manner which truly and accurately reflects the financial performances and positions of Kaiyuan Coal Mine as at the respective financial statement dates.

In arriving at our opinion of value, it is assumed that the projections provided to us are based on the assumptions reflecting the best available estimates, judgment and knowledge of the Management in relation to the proposed operations and are reasonable, reflecting market conditions and economic fundamentals. However, we do not express any opinion regarding the accuracy of the projections provided by the Management.

We do not express an opinion as to whether the actual results of the operations of Kaiyuan Coal Mine will approximate the projections applied in our valuation because assumptions regarding future events by their nature are not capable of independent substantiation. We are making no representation that the operations of Kaiyuan Coal Mine will be successful, or that market growth and penetration will be realized.

Investigation and Analysis

Our investigation included discussion with the Management in relation to the prospect of the coal mining industry in the PRC, and the development and operations of the Company using the Mining Right, and other relevant information of Kaiyuan Coal Mine. In addition, we have made relevant inquiries and obtained such further information including financial and business information, and statistical figures from other sources as we consider necessary for the purpose of this valuation. As part of our analysis, we have made reference to the Exploration Report, financial information, projections and other pertinent data concerning Kaiyuan Coal Mine provided to us by the Management.

The valuation of Kaiyuan Coal Mine requires consideration of all relevant factors affecting the technical value of Kaiyuan Coal Mine. The factors considered in this valuation include the following:

- Terms and conditions of the relevant permit(s) and license(s) such as Kaiyuan Coal Mine;
- Expected economic income from the Company using the Mining Right;
- Proposed business development in respect of the Company using the Mining Right;
- Regulations and rules of coal mining and processing industries in the PRC;
- Economic and industry data affecting the coal mining industry and other dependent industries;

- Market-derived investment return(s) of similar business; and
- General global economic outlook.

Valuation Analysis

Existing Status of Kaiyuan Coal Mine

No production activities had been carried out on Kaiyuan Coal Mine as at the Valuation Date.

Mine Design

As advised by the Management, Kaiyuan Coal Mine is designed to be an open pit mine with a full mining capacity of 1.2 million tonnes of coal per annum.

Dilution factor and mining losses average are estimated to be 0.5% and 5.4% respectively. Excavators will be used for exploitation and dumping. The coal extracted will be stored on-site temporarily before selling to customers.

Production Schedule

The cash flow projections are based on the production schedule represented by the Management. Kaiyuan Coal Mine will require approximately 2 years to complete all necessary construction and commissioning work for the mine, and thus the development is expected to be completed by March 2022. It is expected that Kaiyuan Coal Mine will achieve its full mining capacity at 1.2 million tonnes per annum in the financial year ending 31 March 2022.

Coal Price and Revenue

Pursuant to the Exploration Report, the coal price is estimated to be approximately RMB140 per tonne during the projection period. Based on the mining output of 1.2 million tonnes per annum, revenue generated from Kaiyuan Coal Mine is approximately RMB168 million per annum at full mining capacity.

Production Costs

The unit production cost is estimated to be approximately RMB68.61 per tonne of coal inclusive of mining operating cost (RMB58.46/t) depreciation (RMB9.49/t), amortization (RMB0.16/t) and interest (RMB0.5/t). As advised by the Management, no processing is required for the production of coal and therefore relevant processing costs will not be incurred.

Capital Expenditure

The total capital expenditure for the development of Kaiyuan Coal Mine is approximately RMB373.7 million, which is mainly employed for the development mine construction, civil engineering, equipment, installation and others.

Income Tax

We have adopted a tax rate of 25.0%, which is the corporate income tax rate of the PRC as at the Valuation Date.

Contributory Asset Charges

The contributory assets to the Mining Right include fixed assets, assemble workforce and working capital with after-tax contributory asset charges of approximately 10.20%, 9.15% and 5.52% as at the Valuation Date respectively, the basis of each are tabulated as follows:

Fixed assets	=	Average of cost of equity and the cost of debt as referenced to the benchmark short term borrowing rate quoted by the People's Bank of China
Assemble workforce	=	Intangible asset discount rate
Working capital	=	Cost of debt

Resources Tax

Pursuant to the Exploration Report, the statutory resources tax is 6% of revenue.

Non-cash Working Capital Requirement

By referring to research performed by Aswath Damodaran, the non-cash working capital to sale of the mining industry is estimated to be approximately 13.64%.

Discount Rate

To adopt the Income Approach, we must first obtain the weighted average cost of capital (“WACC”) of the Company operating Kaiyuan Coal Mine as a basic discount rate. It is the minimum required return that a valuation subject must earn to satisfy its various capital providers including shareholders and debtholders. The WACC is calculated taking into account the relative weights of each component of the capital structure. In the course of our analysis, we have applied other specific risk premiums to the WACC such that the discount rate adopted in our valuation follows the formula:

$$\text{Discount rate} = W_e \times R_e + W_d \times R_d \times (1 - T) + R_s$$

in which

$$R_e = \text{cost of equity}$$

$$R_d = \text{cost of debt}$$

$$W_e = \text{portion of equity value to enterprise value}$$

$$W_d = \text{portion of debt value to enterprise value}$$

$$T = \text{corporate tax rate}$$

$$R_s = \text{other specific risk premiums}$$

Cost of equity

From modern portfolio management perspective, typical investors are risk-averse and rational. They make all investment decisions based on risk and return of an investment opportunity. The cost of equity, therefore, should account for the risk premium, which is the required additional return over the risk free rate. Additional risk premiums such as country risk premium and size premium are added to reflect the other risk factors concerning the Company operating Kaiyuan Coal Mine. All the estimates are supported by public sources such as Thomson Reuters and Duff & Phelps, LLC. The capital asset pricing model (“CAPM”) is used to determine the appropriate cost of equity of the Intangible Asset.

$$\text{Cost of equity} = \text{risk free rate} + \text{equity beta} \times \text{market risk premium} + \text{size premium} + \text{country risk premium}$$

The CAPM states that the required return of an asset is based on the non-diversifiable risk, as represented by the beta, and the market return and the risk free rate. In estimating the beta, we have identified comparable companies based on the criteria that they are engaged in the coal mining industry in the PRC. The 22 comparable companies are listed as follows:

Thomson Reuters stock code	Name
600395.SS	Guizhou Panjiang Refined Coal Co., Ltd.
600508.SS	Shanghai Datun Energy Resources Co., Ltd.
900948.SS	Inner Mongolia Yitai Coal Co., Ltd.
000780.SZ	Inner Mongolia PingZhuang Energy Resources Co., Ltd.
600121.SS	Zhengzhou Coal Industry & Electric Power Co., Ltd.
000552.SZ	Gansu Jingyuan Coal Industry and Electricity Power Co., Ltd.
600123.SS	Shanxi Lanhua Sci-Tech Venture Co., Ltd.
000983.SZ	Shanxi Xishan Coal and Electricity Power Co., Ltd.
600397.SS	Anyuan Coal Industry Group Co., Ltd.
600348.SS	Yang Quan Coal Industry Group Co., Ltd.
600403.SS	Henan Dayou Energy Co., Ltd.
600997.SS	Kailuan Energy Chemical Co., Ltd.
600971.SS	Anhui Hengyuan Coal Industry and Electricity Power Co., Ltd.
601001.SS	Datong Coal Industry Co., Ltd.
601699.SS	Shanxi LuAn Environmental Energy Dev Co., Ltd.
601666.SS	Pingdingshan Tianan Coal Mining Co., Ltd.
601898.SS	China Coal Energy Co., Ltd.
601101.SS	Beijing Haohua Energy Resource Co., Ltd.
601225.SS	Shaanxi Coal Industry Co., Ltd.
002128.SZ	Huolinhe Opencut Coal Industry Corp Ltd. of Inner Mongolia
601088.SS	China Shenhua Energy Co., Ltd.
601918.SS	China Coal Xinji Energy Co., Ltd.

The 22 comparable companies above are mainly engaged in the coal mining business in the PRC, and as such, these comparable companies are confronting similar industry risks and rewards as the Company operating Kaiyuan Coal Mine.

Cost of equity calculation:

(1) Risk free rate	0.67%
(2) Equity beta	0.97%
(3) Market risk premium	7.15%
(4) Size premium	4.99%
(5) Country risk premium	0.69%
Cost of equity	13.31%

* Figures above are subject to rounding

Notes :

- (1) This is the 10-year yield based on the United States Government Bond Benchmark Yield Curve, which is a mature market risk free rate.
- (2) This is the adjusted beta by making reference to publicly listed companies with comparable business nature and operation, which are sourced from Thomson Reuters.
- (3) Market risk premium = market rate of return – risk free rate. To derive a long-term, equity risk premium, we refer to the long-horizon expected equity risk premium for the United States (based on historical data), published by Duff & Phelps, LLC. A mature market equity risk premium is used since we derive a stable, long-term discount rate adopted in the valuation; therefore we have adopted the expected market return of the United States instead of one from developing equity markets. The country risk premium (in Note 5 below) reflects the expected operating location of the Company operating Kaiyuan Coal Mine.
- (4) Based on the research published by Duff & Phelps, LLC, the CAPM does not fully account for the higher returns of smaller company stocks.

According to their research data of historical returns from 1926 – 2019 of micro-cap companies, the size premium (returns in excess of those predicted by CAPM) is 4.99%.

- (5) This is the increased risk with operating in the PRC, where the risk profile is different to the market premium applied in our analysis, including business risk, financial risk, liquidity risk, exchange rate risk & country risk. We refer to the data and methodology derived on Damodaran Online (<http://pages.stern.nyu.edu/~adamodar/>), updated for 2020, in determining the country risk premium for the Company operating Kaiyuan Coal Mine.

Damodaran Online is prepared by Aswath Damodaran, who is currently a Professor of Finance at the Stern School of Business at New York University. Mr. Damodaran has published several books, including four books on equity valuation and two on corporate finance. He has also published papers in the Journal of Financial and Quantitative Analysis, the Journal of Finance, the Journal of Financial Economics and the Review of Financial Studies.

Given the above variables, we have derived the cost of equity of 13.31%.

(i) Cost of debt

The cost of debt represents the estimated required return of debt financing for the Company operating Kaiyuan Coal Mine when borrowing or issuing debt (such as corporate bonds). As at the Valuation Date, the cost of debt, taking into account of the China Above 5 Years Benchmark Lending Rate was 4.90%.

(ii) Weight of debt

To stay competitive in the industry, it is reasonable to assume that the Company should achieve a debt level toward the average of the weight of debt of its industry comparables. Through the analysis of the industry comparables, the weight of debt is estimated as 42%.

(iii) Weight of equity

The weight of equity is estimated as 58% by adopting the same basis as above.

(iv) Other specific risk premiums

We have applied a 2.0% specific risk premium to reflect the specific risk of Kaiyuan Coal Mine.

A further 1.0% intangible asset risk premium is added to reflect the higher risk of the Intangible Asset which has higher risk compared to other assets held by comparable companies such as fixed assets and monetary assets, the appropriate discount rate should be higher than the WACC.

Based our foregoing analysis, the nominal discount rate adopted for the valuation of the Intangible Asset as at the Valuation Date is illustrated as follows:

$$\begin{aligned} \text{Discount rate} &= 58\% \times 13.31\% + 42\% \times 4.90\% \times (1 - 25.0\%) + 2\% + 1\% \\ &\approx 12.23\% \end{aligned}$$

* Figures above are subject to rounding

Since the revenue and cost projections are estimated as at the Valuation Date, without projected future inflation, the resulting cash flows are stated in real terms. Therefore, we have adjusted the nominal discount rate for inflation to determine the real discount rate.

We have estimated an inflation rate of 2.83% based on the average China inflation rate projected by the International Monetary Fund.

Based on the nominal discount rate of 12.23% and the inflation rate of 2.83%, the estimated real discount rate is 9.15% which is applied to real ungeared after tax cash flows.

Sensitivity Analysis

As part of our analysis, we have performed a sensitivity analysis of our technical value derived from the Income Approach. We have tested the sensitivity of the technical value of the Intangible Asset to changes in selling price, total production cost and discount rate, which are key risk exposures of Kaiyuan Coal Mine. The results are presented as follows:

Changes in Parameter	Changes in Technical Value (RMB'000)
Unit selling price	
3% increase in unit selling price	+33,266
3% decrease in unit selling price	-33,266
Unit production cost	
3% increase in unit production cost	-15,073
3% decrease in unit production cost	+15,073
Discount rate	
3% increase in discount rate	-4,487
3% decrease in discount rate	+4,671

* Figures above are subject to rounding

The above sensitivity analysis is for reference only and it is intended to show the possible outcome under different market conditions. Due to the existence of other uncertainties, the actual result could exceed the ranges shown above.

Limiting Conditions

Our conclusion of the technical value is derived from generally accepted valuation procedures and practices that rely substantially on the use of various assumptions and the consideration of many uncertainties, not all of which can be easily quantified or ascertained.

This valuation reflects facts and conditions existing as at the Valuation Date. Subsequent events have not been considered and we are not required to update our report for such events and conditions.

To the best of our knowledge, all data set forth in this report is reasonable and accurately determined. The data, opinions, or estimates identified as being furnished by others, which have been used in formulating this analysis, are gathered from reliable sources, however, no guarantee is made nor liability assumed for the accuracy.

We have relied to a considerable extent on the information provided by the Management in arriving at our opinion of value. We are not in the position to verify the accuracy of all information provided to us. However, we have had no reason to doubt the truth and accuracy of the information provided to us and to doubt that any material facts have been omitted from the information provided. No responsibility for the operational and financial information that has not been provided to us is accepted.

We have not investigated the title to or any legal liabilities against of the Company, Kaiyuan Coal Mine and the Intangible Asset and have assumed no responsibility for the title to the Company, Kaiyuan Coal Mine, and the Intangible Asset. In forming our opinion, we have assumed that matters such as title, compliance with laws and regulations and contracts in place are in good standing and will remain so and that there are no material legal proceedings, other than as publicly disclosed.

To the extent that there are legal issues relating to assets, properties, or business interests or issues relating to compliance with applicable laws, regulations, and policies, we assume no responsibility and offers no legal opinion or interpretation on any issue.

In accordance with our standard practices, we must state that this report is for the exclusive use of the party to whom it is addressed and for the specific purpose stated above. Furthermore, the report and conclusion of value are not intended by the author, and should not be construed by the reader, to be investment advice in any manner whatsoever. The conclusion of value represents the consideration based on information furnished by the Company/engagement parties and other sources. No responsibility is accepted to any third party for the whole or any part of its contents.

Actual transactions involving the subject assets/business might be concluded at a higher or lower value, depending upon the circumstances of the transaction and the business, and the knowledge and motivation of the buyers and sellers at that time.

We would particularly point out that our valuation is based on the information such as company background, business nature, market share, future prospect as well as the projections of Kaiyuan Coal Mine provided to us.

Remarks

Our valuation has been prepared based on economic, market and other conditions as they existed on, and information made available to us as of the Valuation Date only. It has come to our attention that since the Valuation Date, the outbreak of Coronavirus Disease (COVID-19) has caused significant disruption to economic activities around the world. It is uncertain how long the disruption will last and to what extent it will affect the economy and it may cause volatility and uncertainty that the input parameters and assumptions adopted in our valuation may change significantly and unexpectedly over short period of time. It should therefore be noted that any market violation, policy, geopolitical and social changes or other circumstances after the Valuation Date may affect the value of the Mining Right after the Valuation Date.

Unless otherwise stated, all monetary amounts stated in this valuation report are in Renminbi (RMB).

The Management has reviewed and confirmed the factual content and has agreed to the assumptions and limiting conditions of this report.

We hereby confirm that we have no material connection or involvement with the Intangible Asset, Kaiyuan Coal Mine, the Company and its subsidiaries and associated companies, or the value reported herein and that we are in a position to provide an objective and unbiased valuation.

Opinion of Value

Based on the investigation and analysis stated above and on the valuation method employed and key assumptions appended above, we are of the opinion that the technical value of the Mining Right as at the Valuation Date was in the range between **RMB148,903,000 (RENMINBI ONE HUNDRED AND FORTY EIGHT MILLION NINE HUNDRED AND THREE THOUSAND ONLY)** and **RMB215,435,000 (RENMINBI TWO HUNDRED AND FIFTEEN MILLION FOUR HUNDRED AND THIRTY FIVE THOUSAND ONLY)**.

* For reference purpose, our opinion of the technical value of the Mining Right as at 6 December 2019 was in the range between RMB159,908,000 and RMB226,096,000

Yours faithfully,
For and on behalf of
Peak Vision Mining Alliance Limited
Gregory Zale Mosher
P. Geo., Resource Estimation Geologist

Note: Gregory Zale Mosher takes the role of Competent Evaluator under Chapter 18 of the Listing Rules for this valuation.

29 APPENDIX 2: JORC TABLE 1

29.1 Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> Nature and quality of sampling 	<p>Kaiyuan has drilled nine (9) holes within the Property, two (2) in the north-eastern portion of the Property and seven (7) within the expansion area. (Figure 10.1) Four holes (ZK401, 403, 505 and ZKJ607 were drilled in 2018 and five holes (ZK01, 02, 03, 04, and 05) were drilled in 2019.</p> <p>The Property and immediate area have been tested by an additional 33 holes, five (5) of which are within the area of the current pit and ten (10) of which are located outside the current Property boundary. The dataset also includes 191 coal seam intercepts of which 115 are located within the boundaries of the mining licence. Of the 332 coal quality analyses, 221 are located within the boundaries of the mining licence.</p>
Drilling techniques	<ul style="list-style-type: none"> Drill type 	<p>All drillholes were cored with a core diameter of 56mm. All holes were drilled vertically so that intersected thicknesses are essentially true thicknesses. Hole depth, core recovery and water level in the hole were monitored on a regular basis during drilling.</p> <p>Drillholes were surveyed geophysically to determine the depth and thickness of coal-bearing intervals, density of rock, as well as to monitor the location and diameter of the hole. Downhole logging tests included: Density, Natural Gamma, Resistivity, Self-potential, Sound velocity, Down-hole direction, Hole diameter and Well temperature. Graphic logs of the surveys were produced for each hole.</p>

Criteria	JORC Code explanation	Commentary
Drill sample recovery		<ul style="list-style-type: none"> Core recovery was within government requirements
Logging		<ul style="list-style-type: none"> All core was measured, photographed and logged at the drillsite
Sub-sampling techniques and sample preparation		<ul style="list-style-type: none"> All coal seams were sampled in their entirety and submitted for analysis
Quality of assay data and laboratory tests		Coal samples were submitted to SGS in Tianjin for proximate and ultimate analyses. SGS is an ISO-certified international assay laboratory. Proximate analyses included moisture, ash, and volatile matter content; ultimate analyses included chemical composition analysis was conducted on coal samples, including the determinations of carbon (C), hydrogen (H), nitrogen (N), oxygen (O) plus sulphur (S).
Verification of sampling and assaying		<ul style="list-style-type: none"> No specific verification sampling was done although several of the holes drilled in 2019 were close to previous holes and confirmed the results obtained from those previous holes.
Location of data points	<ul style="list-style-type: none"> Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. Specification of the grid system used. Quality and adequacy of topographic control. 	<ul style="list-style-type: none"> Drillhole locations were surveyed with centimeter accuracy. All holes were surveyed downhole for deviation and hole diameter. Surface topography was tied into the national grid.

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> Data spacing for reporting of Exploration Results. Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. Whether sample compositing has been applied. 	<ul style="list-style-type: none"> Drillholes are spaced at north-south distances of 200 meters or less, on lines that are approximately 500 meters apart east-west. This spacing is adequate to demonstrate continuity of the seams and to support the resource estimate. Within the coal seams samples were composited to three meter lengths.
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. 	<ul style="list-style-type: none"> Drillholes were all vertical and coal seams are almost flat-lying. Therefore seam intercepts are essentially true thicknesses.
Sample security	<ul style="list-style-type: none"> The measures taken to ensure sample security. 	<ul style="list-style-type: none"> Drill core and samples obtained from the core were under security at all times.
Audits or reviews	<ul style="list-style-type: none"> The results of any audits or reviews of sampling techniques and data. 	<ul style="list-style-type: none"> Sampling techniques and data were reviewed and found to be adequate for the purpose of resource estimation.

29.2 Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul style="list-style-type: none"> The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area. 	<p>The Property is comprised of one Mining Licence, Certificate Number C6500002018121110148841, that is 4.1123 km in area and grants the right to mine between 727 and 575 meters above sea level. The Mining Licence is valid from 21 December 2019 to 21 December 2021 and is renewable for a period of 30 years.</p>

Criteria	JORC Code explanation	Commentary
Exploration done by other parties	<ul style="list-style-type: none"> Acknowledgment and appraisal of exploration by other parties. 	<p>Kaiyuan has drilled nine (9) holes within the Property, two (2) in the north-eastern portion of the Property and seven (7) within the expansion area. (Figure 10.1) Four holes (ZK401, 403, 505 and ZKJ607 were drilled in 2018 and five holes (ZK01, 02, 03, 04, and 05) were drilled in 2019.</p> <p>The Property and immediate area have been tested by an additional 33 holes, five (5) of which are within the area of the current pit and ten (10) of which are located outside the current Property boundary.</p>
Geology	<ul style="list-style-type: none"> Deposit type, geological setting and style of mineralisation. 	<p>The Kaiyuan Property contains seams of thermal coal. A general description of thermal coal deposits follows.</p> <p>Geological characteristics: Seams of black to brown coal hosted by clastic sedimentary rocks. The coal is banded dull and bright and generally hard. The texture of the original vegetation is sometimes partially preserved.</p> <p>Tectonic setting: Stable continental basins; shelves on the trailing edge of continents; foreland basins; back-arc basins.</p> <p>Depositional environment: An area of slow sedimentation in fresh water with few or no marine incursions, most commonly a river delta; shoreline swamp; raised swamp; lake; floating vegetation mats.</p> <p>Age of mineralization: Often Tertiary but can be older.</p> <p>Host/Associated rock types: Sedimentary rocks exhibiting evidence of non-marine deposition. Carbonaceous mudstones, siltstones and sandstones are the most common, commonly with cross-stratification and other shallow-water sedimentary structures.</p>

Criteria	JORC Code explanation	Commentary
		<p>Deposit form: Coal seams generally conform with regional bedding; sometimes seams are deposited in areas of local subsidence, such as fault-controlled blocks or sink holes in karst topography, in which case deposits may be lens shaped. Occasionally seams can be thickened/deformed by surface slump, glacial drift or faulting. Seams may pinch out or split on a local or regional scale.</p>
		<p>Texture/Structure: Sub-bituminous coal is usually composed mostly of clarain and vitrain. Footwall sediments are commonly penetrated by roots or weathered to clay.</p>
		<p>Coal seams/ Associated mineral matter: Sub-bituminous coal can contain up to 30 % moisture. It usually contains a high proportion of vitrinite and lesser amounts of fusinite and liptinite. Mineral matter is in the coal as rock bands, as finely intermixed material of authogenic or detrital origin and as secondary material deposited in fractures and open spaces. Authogenic mineral matter includes pyrite, siderite and kaolinite.</p>
		<p>Weathering: Weathering of sub-bituminous coal reduces the calorific value by oxidizing the carbon-hydrogen complexes. Minerals in the mineral matter will also oxidize. Pyrite oxidizes to sulphates. Secondary carbonates are formed.</p>

Criteria	JORC Code explanation	Commentary																																																																																																																																																																															
Drill hole Information	<ul style="list-style-type: none"> A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: <ul style="list-style-type: none"> easting and northing of the drill hole collar elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar dip and azimuth of the hole down hole length and interception depth hole length. If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case. 	Kaiyuan Drillholes 2018 and 2019																																																																																																																																																																															
		<table border="1"> <thead> <tr> <th>Hole Name</th> <th>Northing</th> <th>Easting</th> <th>Elevation (masl)</th> <th>Length (m)</th> </tr> </thead> <tbody> <tr><td>ZK01</td><td>4933874.38</td><td>30531613.26</td><td>705.60</td><td>184.09</td></tr> <tr><td>ZK02</td><td>4933508.30</td><td>30531613.75</td><td>699.29</td><td>50.96</td></tr> <tr><td>ZK03</td><td>4933154.48</td><td>30531592.13</td><td>697.99</td><td>30.25</td></tr> <tr><td>ZK04</td><td>4933663.30</td><td>30531342.57</td><td>700.43</td><td>207.30</td></tr> <tr><td>ZK05</td><td>4933325.93</td><td>30531291.02</td><td>694.85</td><td>158.84</td></tr> <tr><td>ZK401</td><td>4935603.28</td><td>30532862.22</td><td>719.88</td><td>175.50</td></tr> <tr><td>ZK403</td><td>4935600.14</td><td>30532711.66</td><td>719.79</td><td>204.36</td></tr> <tr><td>ZK505</td><td>4933716.70</td><td>30531935.68</td><td>704.89</td><td>153.60</td></tr> <tr><td>ZKJ607</td><td>4934271.82</td><td>30531624.15</td><td>705.71</td><td>151.75</td></tr> <tr> <td colspan="4" style="text-align: right;">Total Length (m)</td> <td><u>1,316.65</u></td> </tr> </tbody> </table>	Hole Name	Northing	Easting	Elevation (masl)	Length (m)	ZK01	4933874.38	30531613.26	705.60	184.09	ZK02	4933508.30	30531613.75	699.29	50.96	ZK03	4933154.48	30531592.13	697.99	30.25	ZK04	4933663.30	30531342.57	700.43	207.30	ZK05	4933325.93	30531291.02	694.85	158.84	ZK401	4935603.28	30532862.22	719.88	175.50	ZK403	4935600.14	30532711.66	719.79	204.36	ZK505	4933716.70	30531935.68	704.89	153.60	ZKJ607	4934271.82	30531624.15	705.71	151.75	Total Length (m)				<u>1,316.65</u>																																																																																																																								
Hole Name	Northing	Easting	Elevation (masl)	Length (m)																																																																																																																																																																													
ZK01	4933874.38	30531613.26	705.60	184.09																																																																																																																																																																													
ZK02	4933508.30	30531613.75	699.29	50.96																																																																																																																																																																													
ZK03	4933154.48	30531592.13	697.99	30.25																																																																																																																																																																													
ZK04	4933663.30	30531342.57	700.43	207.30																																																																																																																																																																													
ZK05	4933325.93	30531291.02	694.85	158.84																																																																																																																																																																													
ZK401	4935603.28	30532862.22	719.88	175.50																																																																																																																																																																													
ZK403	4935600.14	30532711.66	719.79	204.36																																																																																																																																																																													
ZK505	4933716.70	30531935.68	704.89	153.60																																																																																																																																																																													
ZKJ607	4934271.82	30531624.15	705.71	151.75																																																																																																																																																																													
Total Length (m)				<u>1,316.65</u>																																																																																																																																																																													
		Kaiyuan Drillholes Pre-2018																																																																																																																																																																															
		<table border="1"> <thead> <tr> <th>Hole Name</th> <th>Easting</th> <th>Northing</th> <th>Elevation (masl)</th> <th>Length (m)</th> </tr> </thead> <tbody> <tr><td>ZK+303</td><td>30532523.58</td><td>4933333.99</td><td>708.73</td><td>215.71</td></tr> <tr><td>ZK+305</td><td>30532076.90</td><td>4933337.86</td><td>706.38</td><td>215.71</td></tr> <tr><td>ZK+501</td><td>30532990.59</td><td>4934095.68</td><td>727.09</td><td>159.95</td></tr> <tr><td>ZK+503</td><td>30532522.82</td><td>4934090.27</td><td>717.20</td><td>167.55</td></tr> <tr><td>ZK+505</td><td>30532025.38</td><td>4934083.42</td><td>710.01</td><td>161.55</td></tr> <tr><td>ZK101</td><td>30531637.41</td><td>4934610.44</td><td>713.95</td><td>286.64</td></tr> <tr><td>ZK102</td><td>30531651.77</td><td>4935438.45</td><td>714.60</td><td>313.05</td></tr> <tr><td>ZK201</td><td>30532077.24</td><td>4934638.20</td><td>718.22</td><td>135.82</td></tr> <tr><td>ZK202</td><td>30532074.43</td><td>4934888.41</td><td>714.59</td><td>151.06</td></tr> <tr><td>ZK203</td><td>30532083.61</td><td>4935184.13</td><td>718.91</td><td>78.18</td></tr> <tr><td>ZK204</td><td>30532097.75</td><td>4935615.25</td><td>717.06</td><td>42.04</td></tr> <tr><td>ZK301</td><td>30532498.20</td><td>4934665.88</td><td>710.23</td><td>233.55</td></tr> <tr><td>ZK302</td><td>30532510.19</td><td>4935150.78</td><td>722.59</td><td>101.42</td></tr> <tr><td>ZK303</td><td>30532519.36</td><td>4932948.26</td><td>706.58</td><td>251.14</td></tr> <tr><td>ZK305</td><td>30532020.61</td><td>4932943.45</td><td>702.83</td><td>258.58</td></tr> <tr><td>ZK501</td><td>30533131.57</td><td>4933732.62</td><td>719.12</td><td>167.17</td></tr> <tr><td>ZK502</td><td>30532535.83</td><td>4933725.55</td><td>710.25</td><td>181.05</td></tr> <tr><td>ZK503</td><td>30531986.26</td><td>4933718.24</td><td>705.05</td><td>187.02</td></tr> <tr><td>ZK6003</td><td>30531128.88</td><td>4933152.09</td><td>692.00</td><td>215.15</td></tr> <tr><td>ZK6004</td><td>30531028.81</td><td>4933841.96</td><td>692.00</td><td>300.00</td></tr> <tr><td>ZK603</td><td>30531081.57</td><td>4933510.09</td><td>692.04</td><td>430.02</td></tr> <tr><td>ZK701</td><td>30532992.73</td><td>4934475.60</td><td>724.25</td><td>110.69</td></tr> <tr><td>ZK702</td><td>30531447.66</td><td>4934403.85</td><td>708.71</td><td>156.59</td></tr> <tr><td>ZK703</td><td>30531514.94</td><td>4933880.36</td><td>704.33</td><td>188.50</td></tr> <tr><td>ZK705</td><td>30532021.29</td><td>4934452.11</td><td>713.70</td><td>137.96</td></tr> <tr><td>ZKJ303</td><td>30532521.28</td><td>4933521.76</td><td>709.09</td><td>173.71</td></tr> <tr><td>ZKJ305</td><td>30532021.77</td><td>4933514.54</td><td>704.21</td><td>180.71</td></tr> <tr><td>ZKJ501</td><td>30532989.89</td><td>4933915.23</td><td>720.90</td><td>146.55</td></tr> <tr><td>ZKJ503</td><td>30532523.19</td><td>4933901.06</td><td>712.16</td><td>151.55</td></tr> <tr><td>ZKJ505</td><td>30532022.20</td><td>4933896.56</td><td>708.08</td><td>152.55</td></tr> <tr><td>ZKJ601</td><td>30532989.36</td><td>4934288.84</td><td>726.18</td><td>130.65</td></tr> <tr><td>ZKJ602</td><td>30532513.79</td><td>4934250.45</td><td>716.96</td><td>145.75</td></tr> <tr><td>ZKJ603</td><td>30532019.31</td><td>4934266.51</td><td>709.69</td><td>147.12</td></tr> <tr> <td colspan="4" style="text-align: right;">Total Length (m)</td> <td><u>6,074.69</u></td> </tr> </tbody> </table>	Hole Name	Easting	Northing	Elevation (masl)	Length (m)	ZK+303	30532523.58	4933333.99	708.73	215.71	ZK+305	30532076.90	4933337.86	706.38	215.71	ZK+501	30532990.59	4934095.68	727.09	159.95	ZK+503	30532522.82	4934090.27	717.20	167.55	ZK+505	30532025.38	4934083.42	710.01	161.55	ZK101	30531637.41	4934610.44	713.95	286.64	ZK102	30531651.77	4935438.45	714.60	313.05	ZK201	30532077.24	4934638.20	718.22	135.82	ZK202	30532074.43	4934888.41	714.59	151.06	ZK203	30532083.61	4935184.13	718.91	78.18	ZK204	30532097.75	4935615.25	717.06	42.04	ZK301	30532498.20	4934665.88	710.23	233.55	ZK302	30532510.19	4935150.78	722.59	101.42	ZK303	30532519.36	4932948.26	706.58	251.14	ZK305	30532020.61	4932943.45	702.83	258.58	ZK501	30533131.57	4933732.62	719.12	167.17	ZK502	30532535.83	4933725.55	710.25	181.05	ZK503	30531986.26	4933718.24	705.05	187.02	ZK6003	30531128.88	4933152.09	692.00	215.15	ZK6004	30531028.81	4933841.96	692.00	300.00	ZK603	30531081.57	4933510.09	692.04	430.02	ZK701	30532992.73	4934475.60	724.25	110.69	ZK702	30531447.66	4934403.85	708.71	156.59	ZK703	30531514.94	4933880.36	704.33	188.50	ZK705	30532021.29	4934452.11	713.70	137.96	ZKJ303	30532521.28	4933521.76	709.09	173.71	ZKJ305	30532021.77	4933514.54	704.21	180.71	ZKJ501	30532989.89	4933915.23	720.90	146.55	ZKJ503	30532523.19	4933901.06	712.16	151.55	ZKJ505	30532022.20	4933896.56	708.08	152.55	ZKJ601	30532989.36	4934288.84	726.18	130.65	ZKJ602	30532513.79	4934250.45	716.96	145.75	ZKJ603	30532019.31	4934266.51	709.69	147.12	Total Length (m)				<u>6,074.69</u>
Hole Name	Easting	Northing	Elevation (masl)	Length (m)																																																																																																																																																																													
ZK+303	30532523.58	4933333.99	708.73	215.71																																																																																																																																																																													
ZK+305	30532076.90	4933337.86	706.38	215.71																																																																																																																																																																													
ZK+501	30532990.59	4934095.68	727.09	159.95																																																																																																																																																																													
ZK+503	30532522.82	4934090.27	717.20	167.55																																																																																																																																																																													
ZK+505	30532025.38	4934083.42	710.01	161.55																																																																																																																																																																													
ZK101	30531637.41	4934610.44	713.95	286.64																																																																																																																																																																													
ZK102	30531651.77	4935438.45	714.60	313.05																																																																																																																																																																													
ZK201	30532077.24	4934638.20	718.22	135.82																																																																																																																																																																													
ZK202	30532074.43	4934888.41	714.59	151.06																																																																																																																																																																													
ZK203	30532083.61	4935184.13	718.91	78.18																																																																																																																																																																													
ZK204	30532097.75	4935615.25	717.06	42.04																																																																																																																																																																													
ZK301	30532498.20	4934665.88	710.23	233.55																																																																																																																																																																													
ZK302	30532510.19	4935150.78	722.59	101.42																																																																																																																																																																													
ZK303	30532519.36	4932948.26	706.58	251.14																																																																																																																																																																													
ZK305	30532020.61	4932943.45	702.83	258.58																																																																																																																																																																													
ZK501	30533131.57	4933732.62	719.12	167.17																																																																																																																																																																													
ZK502	30532535.83	4933725.55	710.25	181.05																																																																																																																																																																													
ZK503	30531986.26	4933718.24	705.05	187.02																																																																																																																																																																													
ZK6003	30531128.88	4933152.09	692.00	215.15																																																																																																																																																																													
ZK6004	30531028.81	4933841.96	692.00	300.00																																																																																																																																																																													
ZK603	30531081.57	4933510.09	692.04	430.02																																																																																																																																																																													
ZK701	30532992.73	4934475.60	724.25	110.69																																																																																																																																																																													
ZK702	30531447.66	4934403.85	708.71	156.59																																																																																																																																																																													
ZK703	30531514.94	4933880.36	704.33	188.50																																																																																																																																																																													
ZK705	30532021.29	4934452.11	713.70	137.96																																																																																																																																																																													
ZKJ303	30532521.28	4933521.76	709.09	173.71																																																																																																																																																																													
ZKJ305	30532021.77	4933514.54	704.21	180.71																																																																																																																																																																													
ZKJ501	30532989.89	4933915.23	720.90	146.55																																																																																																																																																																													
ZKJ503	30532523.19	4933901.06	712.16	151.55																																																																																																																																																																													
ZKJ505	30532022.20	4933896.56	708.08	152.55																																																																																																																																																																													
ZKJ601	30532989.36	4934288.84	726.18	130.65																																																																																																																																																																													
ZKJ602	30532513.79	4934250.45	716.96	145.75																																																																																																																																																																													
ZKJ603	30532019.31	4934266.51	709.69	147.12																																																																																																																																																																													
Total Length (m)				<u>6,074.69</u>																																																																																																																																																																													

Criteria	JORC Code explanation	Commentary
Data aggregation methods		<ul style="list-style-type: none"> Not applicable
Relationship between mineralisation widths and intercept lengths		<ul style="list-style-type: none"> Intersected thickness of coal seams are true thicknesses.
Other substantive exploration data	<ul style="list-style-type: none"> Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances. 	<p>Several testwork programs have been conducted on Kaiyuan coal samples since 2017.</p> <ul style="list-style-type: none"> The most recent work is a preliminary coal property analysis campaign carried out in 2020 by SGS-CSTS Standards Technical Services (SGS Tianjin) in Tianjin, China on samples obtained from the 2019 drill program. In 2018, the Ninth Geological Brigade of the Xinjiang Geology and Minerals Bureau (NGB) reported the results of a comprehensive coal property analysis in their 2018 reserve verification report. A preliminary coal washability test, based on both 2019 drill samples and a production sample from the nearby Beishan Coal Mine (Beishan), was also included in the report. Additional coal washability test results, based on the production coal samples from the nearby coal Heishantou Coal Mine, were reported by the Xinjiang Coal Design and Research Institute in their 2018 Preliminary Economic Assessment (PEA) report). The test was conducted by Xinjiang Uyghur Autonomous Coal Science Research and the results were used as the design basis for the Kaiyuan coal preparation plant in the PEA report.

Criteria	JORC Code explanation	Commentary
Further work	<ul style="list-style-type: none"> The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling). Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive. 	<ul style="list-style-type: none"> No further exploration work is planned.

29.3 Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	<ul style="list-style-type: none"> Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes. Data validation procedures used. 	<ul style="list-style-type: none"> The locations of 2019 drillholes were verified by field measurement. Analytical data was checked against original laboratory certificates.
Site visits	<ul style="list-style-type: none"> Comment on any site visits undertaken by the Competent Person and the outcome of those visits. If no site visits have been undertaken indicate why this is the case. 	<p>The work programme of this report included: Site visit by Greg Mosher, P.Geo., Ting Lu., P.Eng., and Antonio Loschiavo to the site on 18 and 19 October 2019;</p> <ul style="list-style-type: none"> Site visit by Greg Mosher on 6 January 2020;

Criteria	JORC Code explanation	Commentary
Geological interpretation		<p>Coal seams were modelled using drillhole intercepts to create 3D wireframes and were compared to existing sectional and plan interpretations. The Property contains nine (9) coal seams of potential economic interest. From oldest to youngest these are labelled B₇, B₈, B₉, B₁₃, B₁₄, B₁₅, B₁₆, B₁₇, and B₁₈. All seams are essentially parallel, strike east-west, and dip approximately five (5) degrees to the south. All seams were modelled as south-dipping sheets using the vertical, intersected thicknesses from each of the drillholes located within the boundaries of the Property. Although the seams are more extensive than the limits of the Property, they have been modelled only to the limits of the Property because the Company is constrained to mine only within the boundaries of the Property and therefore the existence of any coal measures beyond those boundaries is irrelevant to the exercise of resource estimation.</p>
Dimensions	<ul style="list-style-type: none"> • The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource. 	<ul style="list-style-type: none"> • Coal seams have been tested by drilling within a north-south distance of approximately 1,500 meters, an east-west distance of approximately 1,200 meters and over a vertical depth of 300 meters.

Criteria	JORC Code explanation	Commentary
Estimation and modelling techniques	<ul style="list-style-type: none"> <li>• The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used. <li>• The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data. <li>• The assumptions made regarding recovery of by-products. <li>• Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation). 	<p>The coal indicator (value of 1) was interpolated into the blocks in a single pass. In order for a value to be interpolated into a block it was necessary that a minimum of two (2) and a maximum of four (4) intercepts be located within the volume of the search ellipse. As each seam in each drillhole was represented by a single indicator, the minimum requirement of two intercepts means that each block was informed by a minimum of two drillholes.</p> <p>Coal quality was interpolated in a single pass using inverse distance squared (ID²) weighting. In order for a value to be interpolated into a block it was necessary that a minimum of one (1) and a maximum of six (6) composites were located within the volume of the search ellipse.</p>

Criteria	JORC Code explanation	Commentary																
	<ul style="list-style-type: none"> In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed. 	<p>Kaiyuan Block Model Parameters</p> <table border="1"> <thead> <tr> <th>Axis</th> <th>Origin*</th> <th>Size (m)</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>X</td> <td>30531000</td> <td>100 Columns</td> <td>91</td> </tr> <tr> <td>Y</td> <td>4932800</td> <td>100 Rows</td> <td>91</td> </tr> <tr> <td>Z</td> <td>477.5</td> <td>5 Levels</td> <td>63</td> </tr> </tbody> </table> <p>* Minimum X, Y, and Z Model is not rotated</p>	Axis	Origin*	Size (m)	Number	X	30531000	100 Columns	91	Y	4932800	100 Rows	91	Z	477.5	5 Levels	63
Axis	Origin*	Size (m)	Number															
X	30531000	100 Columns	91															
Y	4932800	100 Rows	91															
Z	477.5	5 Levels	63															
	<ul style="list-style-type: none"> Any assumptions behind modelling of selective mining units. 	<p>Because at least some of the coal seams extend to surface and all of the seams will be exploited by open pit mining methods, it is necessary to constrain the resource estimate by a design pit that is based on reasonable cost and revenue values. A design, break-even pit was constructed using a current mining cost of RMB64 per tonne and a sales value of RMB140 per tonne. No cost was allocated for processing and mining dilution was assumed to be zero and mining recovery 100 percent. An overall pit slope of 38 degrees, the same as the current mining operation, was used to define the ultimate pit walls.</p>																
	<ul style="list-style-type: none"> Any assumptions about correlation between variables. 																	
	<ul style="list-style-type: none"> Description of how the geological interpretation was used to control the resource estimates. 																	
	<ul style="list-style-type: none"> Discussion of basis for using or not using grade cutting or capping. 																	
	<ul style="list-style-type: none"> The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available. 	<p>Because drillholes are generally 200 meters or less apart on lines that are at most 500 meters apart, and the coal seams are exposed in active open pit mines on the east, north and west sides of the expansion area, there is very strong evidence for the continuity of the coal seams within the expansion area. For this reason, all resources have been classified as Indicated.</p>																

Criteria	JORC Code explanation	Commentary
Moisture	<ul style="list-style-type: none"> Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content. 	<p>In 2018, the 9th Brigade of the Xinjiang Geological and Mineral Bureau completed a resource estimate for the expansion area. The resources were classified as 331, 332, and 333, the Chinese resource classification categories that are approximately equivalent to the measured, indicated and inferred categories used by JORC and other western resource classification systems, and included 68.5 million tonnes in the 331 category, 36.2 million tonnes in the 332 category and 16.2 million tonnes in the 333 category. This estimate was not constrained by a design pit nor by the minimum elevation of the mining licence and extends to the full limits of the licence within the expansion area.</p> <p>The 331 resources are largely confined to seams 7 and 9, with the exception of the southwest portion of the licence area where drillholes were not as closely spaced as elsewhere and where resources were classified as 332. Resources in seams 8, 15, 16, 17 and 18 were classified as 333. Therefore, the two estimates are not directly comparable although the 331 resource of 68.5 million tonnes is similar to the current resource estimate of 61.8 million tonnes and both estimates largely cover the same portion of the resource.</p> <ul style="list-style-type: none"> Tonnages are estimated with natural moisture.
Cut-off parameters	<ul style="list-style-type: none"> The basis of the adopted cut-off grade(s) or quality parameters applied. 	<ul style="list-style-type: none"> Not applicable

Criteria	JORC Code explanation	Commentary												
Mining factors or assumptions	<ul style="list-style-type: none"> Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made. 	<p>Kaiyuan Coal Mine Operating Cost Summary Estimate</p> <table border="1"> <thead> <tr> <th>Parameters</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Mining</td> <td>CNY 58.46*/tonne coal</td> </tr> <tr> <td>Coal Preparation & General Administration</td> <td>CNY 7.81/tonne coal</td> </tr> <tr> <td>Overall Wall Slope</td> <td>38 deg.</td> </tr> <tr> <td>Coal Price</td> <td>CNY140/tonne coal</td> </tr> <tr> <td>Coal Production Rate</td> <td>900,000 tpa</td> </tr> </tbody> </table> <p>Source: PVMA (2020)</p> <p>* Operating Costs exclude amortization, depreciation and interest expense of 0.16, 9.49 & 0.5 CNY/t, respectively.</p> <p>The mining, coal preparation and general administration costs are referenced from the 2019 FS. The mining costs are based on CNY per tonne coal, which equates to CNY9.90 per tonne of material using a 5.91:1 strip ratio. The basis for the mineral reserve estimate is used in the following Lerch-Grossman optimization. Also, the operating cost summary is based on a 900,000 tpa, which is conservative compared to the 1,200,000 tpa allowable coal release. Since there is a 33% increase in coal production, the operation should realize a lower operating cost over the life of mine.</p>	Parameters	Value	Mining	CNY 58.46*/tonne coal	Coal Preparation & General Administration	CNY 7.81/tonne coal	Overall Wall Slope	38 deg.	Coal Price	CNY140/tonne coal	Coal Production Rate	900,000 tpa
Parameters	Value													
Mining	CNY 58.46*/tonne coal													
Coal Preparation & General Administration	CNY 7.81/tonne coal													
Overall Wall Slope	38 deg.													
Coal Price	CNY140/tonne coal													
Coal Production Rate	900,000 tpa													

Criteria	JORC Code explanation	Commentary
Metallurgical factors or assumptions	<ul style="list-style-type: none"> The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made. 	<p>The Kaiyuan coal mine has been in operation since 2008, producing as-mined coal which is screened to various sizes for the local thermal coal market. This Section presents as-mined coal quality data which includes production data for the period 2017 to 2019 inclusive, a summary of the quality data of the recent coal core sample tests, the nearby coal mine operations, and a coal quality projection by PVMA. It was concluded that the as-mined raw coal meets quality requirements for the life of mine.</p>

Criteria	JORC Code explanation	Commentary
Environmental factors or assumptions	<ul style="list-style-type: none"> Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made. 	<p>Currently, appropriate environmental permits have been approved for Kaiyuan's operation by the Environmental Protection Bureau of Mulei County. The planned and implemented environmental protection measures can adequately satisfy the need for environmental protection.</p> <p>The physical environment of the Kaiyuan open pit coal mine is flat Gobi terrain with few inhabitants. Surface elevations range from 670 to 720 m. Major environmental impacts of the mining activities by Kaiyuan include overburden removal, noise, dust, pit water, and wastewater generation during mining, and greenhouse gas discharge during transportation. These pollutants are prevented or mitigated with the following measures:</p> <ul style="list-style-type: none"> Pit water and wastewater will be treated and reused on site for dedusting and other operation purposes. Two emergency water discharge ponds were proposed for pit water and wastewater. Raw coal and gauge materials are stored in silos to prevent dusting issues caused by outdoor storage. Dust collection systems will be installed in the silos, and in the screening plant to further capture coal dusts to meet the national standard (GB20426-2006).

Criteria	JORC Code explanation	Commentary																																																							
Bulk density	<ul style="list-style-type: none"> Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples. The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit. Discuss assumptions for bulk density estimates used in the evaluation process of the different materials. 	<p>Bulk density measurements were carried out on all nine major coal seams by the Xinjiang Bureau of Geology and Mineral Resources and reported in the 2018 Resource Verification Report. It is assumed that these measurements contain moisture. A bulk density value of 1.34 g/cm³ was used for the resource estimate.</p> <p>Kaiyuan Bulk Density Measurements</p> <table border="1"> <thead> <tr> <th>Seam</th> <th>Minimum (g/cm³)</th> <th>Maximum (g/cm³)</th> <th>Average (g/cm³)</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>B₁₈</td> <td>1.31</td> <td>1.47</td> <td>1.35</td> <td>8</td> </tr> <tr> <td>B₁₇</td> <td>1.31</td> <td>1.35</td> <td>1.33</td> <td>6</td> </tr> <tr> <td>B₁₆</td> <td>1.30</td> <td>1.38</td> <td>1.34</td> <td>4</td> </tr> <tr> <td>B₁₅</td> <td>1.32</td> <td>1.52</td> <td>1.43</td> <td>8</td> </tr> <tr> <td>B₁₄</td> <td>1.29</td> <td>1.55</td> <td>1.39</td> <td>14</td> </tr> <tr> <td>B₁₃</td> <td>1.27</td> <td>1.46</td> <td>1.33</td> <td>19</td> </tr> <tr> <td>B₉</td> <td>1.27</td> <td>1.39</td> <td>1.32</td> <td>23</td> </tr> <tr> <td>B₈</td> <td>1.27</td> <td>1.34</td> <td>1.31</td> <td>4</td> </tr> <tr> <td>B₇</td> <td>1.23</td> <td>1.33</td> <td>1.30</td> <td>29</td> </tr> <tr> <td></td> <td>1.29</td> <td>1.42</td> <td>1.34</td> <td>115</td> </tr> </tbody> </table>	Seam	Minimum (g/cm ³)	Maximum (g/cm ³)	Average (g/cm ³)	Number	B ₁₈	1.31	1.47	1.35	8	B ₁₇	1.31	1.35	1.33	6	B ₁₆	1.30	1.38	1.34	4	B ₁₅	1.32	1.52	1.43	8	B ₁₄	1.29	1.55	1.39	14	B ₁₃	1.27	1.46	1.33	19	B ₉	1.27	1.39	1.32	23	B ₈	1.27	1.34	1.31	4	B ₇	1.23	1.33	1.30	29		1.29	1.42	1.34	115
Seam	Minimum (g/cm ³)	Maximum (g/cm ³)	Average (g/cm ³)	Number																																																					
B ₁₈	1.31	1.47	1.35	8																																																					
B ₁₇	1.31	1.35	1.33	6																																																					
B ₁₆	1.30	1.38	1.34	4																																																					
B ₁₅	1.32	1.52	1.43	8																																																					
B ₁₄	1.29	1.55	1.39	14																																																					
B ₁₃	1.27	1.46	1.33	19																																																					
B ₉	1.27	1.39	1.32	23																																																					
B ₈	1.27	1.34	1.31	4																																																					
B ₇	1.23	1.33	1.30	29																																																					
	1.29	1.42	1.34	115																																																					
Classification	<ul style="list-style-type: none"> The basis for the classification of the Mineral Resources into varying confidence categories. Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data). Whether the result appropriately reflects the Competent Person's view of the deposit. 	<p>Because drillholes are generally 200 meters or less apart on lines that are at most 500 meters apart, and the coal seams are exposed in active open pit mines on the east, north and west sides of the expansion area, there is very strong evidence for the continuity of the coal seams within the expansion area. For this reason, all resources have been classified as Indicated.</p>																																																							

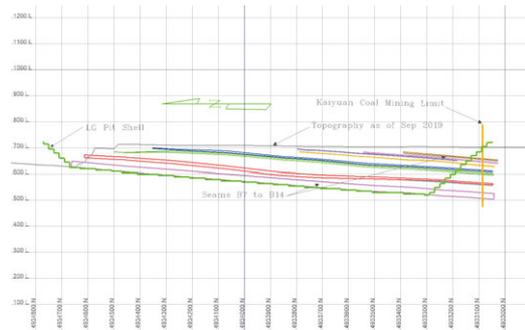
Criteria	JORC Code explanation	Commentary
Audits or reviews	<ul style="list-style-type: none"> The results of any audits or reviews of Mineral Resource estimates. 	<ul style="list-style-type: none"> Not applicable
Discussion of relative accuracy/confidence	<ul style="list-style-type: none"> Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate. The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available. 	<ul style="list-style-type: none"> The mineral resource is a global estimate. Confidence levels have not been estimated beyond the rationale for resource classification.

29.4 Section 4 Estimation and Reporting of Ore Reserves

(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	<ul style="list-style-type: none"> Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve. Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves. 	<p>Lerchs-Grossmann (LG) Pit Shell Optimization</p> <p>A percentage block model developed for Section 14, was transferred into the Maptek Vulcan™ software. A Lerch-Grossman (LG) Pit Shell optimization was conducted to validate the mineral reserve estimate. The parameters for the optimization used are set out in Table 15.2. A typical cross section of the LG Pit shell and coal seams is shown in the following figure.</p>

Typical Cross-Section of LG Pit Shell and Coal Seams Outlines



Source: PVMA (2020)

Criteria	JORC Code explanation	Commentary
Site visits	<ul style="list-style-type: none"> • Comment on any site visits undertaken by the Competent Person and the outcome of those visits. • If no site visits have been undertaken indicate why this is the case. 	<p>The LG optimization shell resulted in a pit-constrained reserve of 69.5 million tonnes with an overall strip ratio of 5.44:1 (waste tonnes:coal tonnes). The reserves shown in Table 15.1 are constrained by the lower limit of the mining licence (525 masl) in addition to the pitshell and totalled 63.5 with an overall strip ratio of 5.91:1. Comparing the LG optimization shell with the pit design, the material difference in reserves is 9.5%, which is reasonable for this type of estimate.</p> <p>No cut-off calculation is required.</p> <p>Dilution factor of 0.5% and Mining Losses average 5.4%. These are reasonable for this type of estimate.</p> <p>A site visit was conducted by A Loschiavo, P.Eng, on 18 and 19 October 2019.</p>
Study status	<ul style="list-style-type: none"> • The type and level of study undertaken to enable Mineral Resources to be converted to Ore. • Reserves. • The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered. 	<p>The design and planning outlined for the Kaiyuan Coal is based on the resource model detailed in Section 14 of this Report. The coal resources used in this report are based on Indicated resources for the southern portion of the mining lease. This CPR is considered to be of the level of a Pre-Feasibility Study (PFS) report and is reasonable for the Kaiyuan Coal mine. The author of this section of the ITR is Antonio Loschiavo.</p>

Criteria	JORC Code explanation	Commentary												
Cut-off parameters	<ul style="list-style-type: none"> The basis of the cut-off grade(s) or quality parameters applied. 	<ul style="list-style-type: none"> Not applicable 												
Mining factors or assumptions	<ul style="list-style-type: none"> The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design). The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc. The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling. The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate). The mining dilution factors used. The mining recovery factors used. Any minimum mining widths used. 	<p>Kaiyuan Coal Mine Operating Cost Summary Estimate</p> <table border="1"> <thead> <tr> <th>Parameters</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Mining</td> <td>CNY58.46*/tonne coal</td> </tr> <tr> <td>Coal Preparation & General Administration</td> <td>CNY7.81/tonne coal</td> </tr> <tr> <td>Overall Wall Slope</td> <td>38 deg.</td> </tr> <tr> <td>Coal Price</td> <td>CNY140/tonne coal</td> </tr> <tr> <td>Coal Production Rate</td> <td>900,000 tpa</td> </tr> </tbody> </table> <p>Source: PVMA (2020)</p> <p>* Operating Costs exclude amortization, depreciation and interest expense of 0.16, 9.49 & 0.5 CNY/t, respectively</p> <p>A percentage block model developed for Section 14, was transferred into the Maptek Vulcan™ software. A Lerch-Grossman (LG) Pit Shell optimization was conducted to validate the mineral reserve estimate.</p>	Parameters	Value	Mining	CNY58.46*/tonne coal	Coal Preparation & General Administration	CNY7.81/tonne coal	Overall Wall Slope	38 deg.	Coal Price	CNY140/tonne coal	Coal Production Rate	900,000 tpa
Parameters	Value													
Mining	CNY58.46*/tonne coal													
Coal Preparation & General Administration	CNY7.81/tonne coal													
Overall Wall Slope	38 deg.													
Coal Price	CNY140/tonne coal													
Coal Production Rate	900,000 tpa													

Criteria	JORC Code explanation	Commentary
Metallurgical factors or assumptions	<ul style="list-style-type: none"> <li>• The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion. <li>• The infrastructure requirements of the selected mining methods. <li>• The metallurgical process proposed and the appropriateness of that process to the style of mineralisation. <li>• Whether the metallurgical process is well-tested technology or novel in nature. <li>• The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied. 	<p>The Kaiyuan coal mine has been in operation since 2008, producing as-mined coal which is screened to various sizes for the local thermal coal market. This Section presents as-mined coal quality data which includes production data for the period 2017 to 2019 inclusive, a summary of the quality data of the recent coal core sample tests, the nearby coal mine operations, and a coal quality projection by PVMA. It was concluded that the as-mined raw coal meets quality requirements for the life of mine.</p>

Criteria	JORC Code explanation	Commentary
Environmental	<ul style="list-style-type: none"> The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported. 	<p>Currently, appropriate environmental permits have been approved for Kaiyuan's operation by the Environmental Protection Bureau of Mulei County. The planned and implemented environmental protection measures can adequately satisfy the need for environmental protection.</p> <p>The physical environment of the Kaiyuan open pit coal mine is flat Gobi terrain with few inhabitants. Surface elevations range from 670 to 720 m. Major environmental impacts of the mining activities by Kaiyuan include overburden removal, noise, dust, pit water, and wastewater generation during mining, and greenhouse gas discharge during transportation. These pollutants are prevented or mitigated with the following measures:</p> <ul style="list-style-type: none"> Pit water and wastewater will be treated and reused on site for dedusting and other operation purposes. Two emergency water discharge ponds were proposed for pit water and wastewater. Raw coal and gauge materials are stored in silos to prevent dusting issues caused by outdoor storage. Dust collection systems will be installed in the silos, and in the screening plant to further capture coal dusts to meet the national standard (GB20426-2006).

Criteria	JORC Code explanation	Commentary
Infrastructure	<ul style="list-style-type: none"> The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed. 	<p>The Kaiyuan coal mine is currently in operation with an open pit production system and auxiliary facilities. The auxiliary facilities including maintenance shop, office building, and dormitories that are currently located in the south of the mine site, but which will be relocated to the north-east of the site during the planned expansion. The screening plant is also located in the north-east area.</p> <p>The location provides easy access to provincial roads and highways. The major access road connecting the mine site to Provincial Road S327 is cement-concrete paved is approximately 7.0 m wide and 2.5 km long. Other site roads are gravel surfaced with a total length of over 6 km.</p> <p>To meet mining power requirements, Kaiyuan will use dual power supplies. One existing power supply is provided by the 35 kV Beishan transform station which is located about 13.8 km southeast of the Property. A 10 kV substation is installed at the mine site to distribute power. Additional power will be provided by the proposed 110 kV substation of the Jinneng Mine via a 4 km-long, 10 kV powerline. Three diesel generators are also available as emergency power supply at levels of 75 kW, 50 kW and 25 kW.</p> <p>Limited ground water is available at the site because of local hydrology and arid climate. The highest daily water consumption was estimated to be 701 m³/d for the mining operation as well as potable and sanitation water uses. These needs will be met by using both reclaimed and fresh water.</p>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> • Reclaimed water will mainly from the treated pit water and wastewater. The estimated pit water is about 244 m³/d, which can be purified and used for dedusting. Treated wastewater was estimated to be about 190 m³/d which can be used for dedusting and production. • The estimated fresh water will be 396 m³/d considering a 1.5 factor that will be provided via an existing 38 km-long water pipeline from Jijihu County to the mine site water reservoir with a capacity of 300 m³.
		<p>Fire water is stored in three water tanks including one existing fire water tank of 300 m³ in the south of the mine site, and two proposed tanks, each of 400 m³, in the north of the mine site.</p>
		<p>The ROM coal mined from the open pit will be trucked to a raw coal hopper and crushed to less than 300 mm. The crushed raw coal will be conveyed to a 12 m diameter raw coal silo with a capacity of 1,800 t. Coal from the raw coal silo will be fed via belt feeders to the screening plant to produce various sized products.</p>
		<p>A new screening plant has been constructed on site to further classifying the crushed raw coal into different-size products.</p>

Criteria	JORC Code explanation	Commentary
Costs	<ul style="list-style-type: none"> The derivation of, or assumptions made, regarding projected capital costs in the study. The methodology used to estimate operating costs. Allowances made for the content of deleterious elements. The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products. The source of exchange rates used in the study. Derivation of transportation charges. The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc. The allowances made for royalties payable, both Government and private. 	<p>All capital and operating cost estimates are reported in Renminbi (CNY) unless stated otherwise. The author of this section of the ITR is Antonio Loschiavo. The capital and operating cost estimates are, in the author's opinion, appropriate for a Pre-Feasibility Study (PFS) level of study and are reasonable for the Kaiyuan Coal mine. Note that the initial study was based on a production rate of 900,000 tonnes per year coal production as per the mining permit. The safety production permit allows coal production to increase to 1.2 million tonnes per year. The capital therefore has been updated by the author to reflect the purchase of additional equipment required to accommodate the 1.2 million tonnes per year production plan. Operating costs were not updated and therefore the use of the 900,000 tonne per year operating costs for the 1.2 million tonne per year operation should result in lower costs is considered to be a conservative evaluation.</p> <p>The capital cost estimate is summarized in the following table.</p> <p>Capital Cost Summary Table</p>

Project Capital Estimate	Estimated Value (CNY)
Mining Construction	93,522,000
Engineering (Pre-Stripping)	
Civil Works Engineering	16,490,000
Purchase of equipment and tools	50,028,000
Installation work	15,657,000
Other fee	18,370,000
Engineering contingency reserve	11,644,000
Coal preparation plant investment	57,604,000
Interest during construction	5,980,000
Original investment in open pit mine	100,000,000
Start-up Working capital	4,433,000
Total Capital Costs	373,728,000

Source: PVMA (2020)

Notes: CNY are reported to the nearest thousand

Criteria	JORC Code explanation	Commentary
		<p>The capital cost estimate had been updated to reflect the production rate of 1.2 million tonnes per year and is summarized into to 10 major groups: Mining engineering, civil works engineering, purchase of equipment and tools, installation work, other fee, engineering working capital, interest during construction, coal preparation plant, original investment in open mine and working capital.</p>
		<p>The total capital cost summary estimate by project groups is detailed below and shown in Figure 21.1.</p>
		<p>(1) Mining construction engineering: CNY93.522 million, accounting for 25% of the total capital cost;</p>
		<p>(2) Civil works engineering: CNY16.490 million, accounting for 4.4% of the total capital cost;</p>
		<p>(3) Purchase of equipment's and tools: CNY50.028 million, accounting for 13.4% of the total capital cost;</p>
		<p>(4) Installation work: CNY15.657 million, accounting for 4.2% of the total capital cost;</p>
		<p>(5) Other fee: CNY18.370 million, accounting for 4.9% of the total capital cost;</p>
		<p>(6) Engineering contingency reserve: CNY11.644 million, accounting for 3.1% of the total capital cost;</p>
		<p>(7) Coal Preparation Plant: CNY57.604 million, accounting for 15.4% of the total capital cost;</p>
		<p>(8) Interest during construction: CNY5.980 million, accounting for 1.6% of the total capital cost;</p>

Criteria	JORC Code explanation	Commentary
Revenue factors		<p>(9) Original investment in open pit mine: CNY100.0 million, accounting for 26.8% of the total capital cost;</p> <p>(10) Start-up Working Capital: CNY4.433 million, accounting for 1.2% of the total capital costs</p> <ul style="list-style-type: none"> • The selling price of coal was obtained from Kaiyuan.
Market assessment	<ul style="list-style-type: none"> • The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future. • A customer and competitor analysis along with the identification of likely market windows for the product. • Price and volume forecasts and the basis for these forecasts. • For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract. 	<p>The Kaiyuan mine has been in operation since 2008. Recent production data including coal quality properties have been described in Section 17.1. The company has an established thermal coal market with a low risk to future sales. Kaiyuan as-mined coal is screened to various sizes and sold on a ROM coal basis to the local thermal coal market. A new screening plant has been constructed but has not been put into operation. The existing screening systems at the pit site were still in operation to produce raw coal products.</p>

Criteria	JORC Code explanation	Commentary
Economic	<ul style="list-style-type: none"> The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc. NPV ranges and sensitivity to variations in the significant assumptions and inputs. 	<p>The mining capital cost estimate was updated to reflect the coal production increase to 1.2 million tonnes per year. The estimate is split into 14 major categories; pre-stripping work, geotechnical works, excavation works, ground production systems, dredging drainage works, communication systems, power supply systems, outdoor water supply and heating systems, maintenance, warehouse facility, administrative facilities, environmental protection and other construction costs as shown in the following table.</p>

Kaiyuan Coal Mine Capital Cost Estimate

Engineering Cost Name	Estimated Value (CNY)					
	Mine		Purchase of			Total
	Construction Engineering	Civil Works Engineering	equipment's and tools	Installation work	Other Fee	
Pre-Stripping work	93,522,000	-	8,690,000	-	-	102,212,000
Mining & Mineral work	-	5,570,000	9,994,000	-	-	15,563,000
Excavation works	-	-	4,345,000	-	-	4,345,000
Ground production system	-	-	-	-	-	-
Dredging and Drainage works	-	-	152,000	309,000	-	461,000
Communication Systems	-	-	9,044,000	4,658,000	-	13,702,000
Power supply system	-	381,000	5,077,000	7,780,000	-	13,238,000
Outdoor water supply and heating systems	-	3,045,000	242,000	2,168,000	-	5,455,000
Maintenance	-	594,000	6,022,000	501,000	-	7,117,000
Warehouse facility	-	1,191,000	1,147,000	209,000	-	2,547,000
Administrative facilities	-	3,909,000	2,553,000	-	-	6,462,000
Environmental protection	-	1,801,000	2,763,000	31,000	-	4,595,000
Other construction costs	-	-	-	-	18,370,000	18,370,000
Sub-Total	93,522,000	16,490,000	50,028,000	15,657,000	18,370,000	194,067,000
Engineering Contingency (6%)					11,644,000	11,644,000
Total Mining	93,522,000	16,490,000	50,028,000	15,657,000	30,014,000	205,711,000

Source: PVMA (2020)

Notes: CNY are reported to the nearest thousand

Criteria	JORC Code explanation	Commentary																																													
		The mining operating costs are detailed in the following table.																																													
		Kaiyuan Coal Mining Operating Cost Estimate																																													
		<table border="1"> <thead> <tr> <th>Item</th> <th>Name</th> <th>Unit Cost</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Mining Operating cost</td> <td>52.77</td> </tr> <tr> <td></td> <td>material</td> <td>1.02</td> </tr> <tr> <td></td> <td>power</td> <td>17.70</td> </tr> <tr> <td></td> <td>employee's salary</td> <td>21.61</td> </tr> <tr> <td></td> <td>Repair fee</td> <td>2.70</td> </tr> <tr> <td></td> <td>Land reclamation fee</td> <td>0.50</td> </tr> <tr> <td></td> <td>Other expenses</td> <td>3.00</td> </tr> <tr> <td></td> <td>Outsourcing Blasting Fee</td> <td>6.21</td> </tr> <tr> <td>2</td> <td>Depreciation</td> <td>9.49</td> </tr> <tr> <td>3</td> <td>Maintenance/ Replacement fee</td> <td>8.50</td> </tr> <tr> <td>4</td> <td>Security costs</td> <td>5.00</td> </tr> <tr> <td>5</td> <td>Amortization fee</td> <td>0.16</td> </tr> <tr> <td>6</td> <td>Interest expense</td> <td>0.5</td> </tr> <tr> <td></td> <td>Total Mine Operating Costs per tonne of Coal</td> <td>76.42*</td> </tr> </tbody> </table>	Item	Name	Unit Cost	1	Mining Operating cost	52.77		material	1.02		power	17.70		employee's salary	21.61		Repair fee	2.70		Land reclamation fee	0.50		Other expenses	3.00		Outsourcing Blasting Fee	6.21	2	Depreciation	9.49	3	Maintenance/ Replacement fee	8.50	4	Security costs	5.00	5	Amortization fee	0.16	6	Interest expense	0.5		Total Mine Operating Costs per tonne of Coal	76.42*
Item	Name	Unit Cost																																													
1	Mining Operating cost	52.77																																													
	material	1.02																																													
	power	17.70																																													
	employee's salary	21.61																																													
	Repair fee	2.70																																													
	Land reclamation fee	0.50																																													
	Other expenses	3.00																																													
	Outsourcing Blasting Fee	6.21																																													
2	Depreciation	9.49																																													
3	Maintenance/ Replacement fee	8.50																																													
4	Security costs	5.00																																													
5	Amortization fee	0.16																																													
6	Interest expense	0.5																																													
	Total Mine Operating Costs per tonne of Coal	76.42*																																													

Source: Xinjiang Coal Design and Research Institute Co., Ltd.
(2018)

* Operating cost include interest, depreciation, amortization

Criteria	JORC Code explanation	Commentary																																												
		The following table shows the economic analysis summary.																																												
		Kaiyuan Coal Economic Analysis Summary																																												
		<table border="1"> <thead> <tr> <th>Item</th> <th>Amount (Yuan)</th> </tr> </thead> <tbody> <tr> <td>Total investment in open-pit projects</td> <td>205,711,000</td> </tr> <tr> <td>Mine Construction engineering (Pre-Stripping)</td> <td>93,522,000</td> </tr> <tr> <td>Civil Construction Engineering</td> <td>16,490,000</td> </tr> <tr> <td>Purchase of equipment and tools</td> <td>50,028,000</td> </tr> <tr> <td>Installation work</td> <td>15,657,000</td> </tr> <tr> <td>Other fees</td> <td>18,370,000</td> </tr> <tr> <td>Engineering contingency reserve</td> <td>11,644,000</td> </tr> <tr> <td>Coal processing plant investment</td> <td>57,604,000</td> </tr> <tr> <td>Interest expense during construction period</td> <td>5,980,000</td> </tr> <tr> <td>Open-pit Mine original Investment</td> <td>100,000,000</td> </tr> <tr> <td>Initial (start-up) working capital</td> <td>4,433,000</td> </tr> <tr> <td>Total construction investment</td> <td>373,728,000</td> </tr> <tr> <td>Coal investment per metric ton</td> <td>311.44</td> </tr> <tr> <td colspan="2">Financial Evaluation Index</td> </tr> <tr> <td>Project investment financial internal rate of return (%) – After Tax</td> <td>17.53</td> </tr> <tr> <td>Project investment financial internal rate of return (%) – Before Tax</td> <td>22.53</td> </tr> <tr> <td>Project investment payback period (year) – After Tax</td> <td>5.48</td> </tr> <tr> <td>Project investment payback period (year) – Before Tax</td> <td>4.36</td> </tr> <tr> <td>Project investment net present value – After Tax</td> <td>207,288,000</td> </tr> <tr> <td>Project investment net present value – Before Tax</td> <td>355,625,000</td> </tr> <tr> <td>Discount Rate (%)</td> <td>10</td> </tr> </tbody> </table>	Item	Amount (Yuan)	Total investment in open-pit projects	205,711,000	Mine Construction engineering (Pre-Stripping)	93,522,000	Civil Construction Engineering	16,490,000	Purchase of equipment and tools	50,028,000	Installation work	15,657,000	Other fees	18,370,000	Engineering contingency reserve	11,644,000	Coal processing plant investment	57,604,000	Interest expense during construction period	5,980,000	Open-pit Mine original Investment	100,000,000	Initial (start-up) working capital	4,433,000	Total construction investment	373,728,000	Coal investment per metric ton	311.44	Financial Evaluation Index		Project investment financial internal rate of return (%) – After Tax	17.53	Project investment financial internal rate of return (%) – Before Tax	22.53	Project investment payback period (year) – After Tax	5.48	Project investment payback period (year) – Before Tax	4.36	Project investment net present value – After Tax	207,288,000	Project investment net present value – Before Tax	355,625,000	Discount Rate (%)	10
Item	Amount (Yuan)																																													
Total investment in open-pit projects	205,711,000																																													
Mine Construction engineering (Pre-Stripping)	93,522,000																																													
Civil Construction Engineering	16,490,000																																													
Purchase of equipment and tools	50,028,000																																													
Installation work	15,657,000																																													
Other fees	18,370,000																																													
Engineering contingency reserve	11,644,000																																													
Coal processing plant investment	57,604,000																																													
Interest expense during construction period	5,980,000																																													
Open-pit Mine original Investment	100,000,000																																													
Initial (start-up) working capital	4,433,000																																													
Total construction investment	373,728,000																																													
Coal investment per metric ton	311.44																																													
Financial Evaluation Index																																														
Project investment financial internal rate of return (%) – After Tax	17.53																																													
Project investment financial internal rate of return (%) – Before Tax	22.53																																													
Project investment payback period (year) – After Tax	5.48																																													
Project investment payback period (year) – Before Tax	4.36																																													
Project investment net present value – After Tax	207,288,000																																													
Project investment net present value – Before Tax	355,625,000																																													
Discount Rate (%)	10																																													

Source: PVMA (2020)

Notes: CNY are reported to the nearest thous

Criteria	JORC Code explanation	Commentary
Social	<ul style="list-style-type: none"> The status of agreements with key stakeholders and matters leading to social licence to operate. 	<ul style="list-style-type: none"> All necessary agreements are in place
Other	<ul style="list-style-type: none"> To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves: <ul style="list-style-type: none"> Any identified material naturally occurring risks. The status of material legal agreements and marketing arrangements. The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent. 	<p>The following table summarizes the risk assessment for major project components. There is only one risk that is regarded by PVMA as of high likelihood: the current mine closure that was imposed because of the delay in obtaining the approval of resumption application from the Production Safety Supervision and Administration Bureau of local government as a result of Coronavirus pandemic. This closure is temporary but of unknown duration so PVMA regards it as of moderate effect and because it is already in effect, is highly likely in likelihood of occurrence.</p> <p>There are no geological or mining factors that are regarded as being of high risk. The deposit is well defined, and the anticipated mining operation is an extension of an existing mining operation so there should be very little risk of unexpected technical issues.</p> <p>In common with most, if not all, mining projects, the economics of the Kaiyuan mine are sensitive to commodity price. Changes in the price of coal are impossible to predict and are dependent on many factors beyond the control of the Company. Regardless, a drop in the market price of coal could have a major impact on the viability of the mining operation.</p>

Criteria	JORC Code explanation	Commentary			
		Kaiyuan Risk Assessment			
		Hazard/Risk Issue	Likelihood	Rating	Risk
		Geological			
		Lack of Significant Resource	Unlikely	Major	Low
		Loss of Significant Reserve	Unlikely	Major	Low
		Significant Unexpected Faulting	Unlikely	Major	Low
		Significant Subsidence	Unlikely	Minor	Low
		Unexpected Groundwater Ingress	Unlikely	Minor	Low
		Mining			
		Significant Production Shortfalls	Possible	Major	Low
		Production Pumping System Adequacy	Unlikely	Minor	Low
		Significant Geological Structures	Unlikely	Moderate	Low
		Processing/Handling			
		Lower Yields	Possible	Moderate	Low
		Lower Plant Production Levels	Unlikely	Moderate	Low
		Higher Plant Production Costs	Possible	Moderate	Low
		Plant Reliability	Unlikely	Moderate	Low
		Handling System	Possible	Moderate	Low
		Environmental			
		Water Discharge Non-Compliance	Unlikely	Minor	Low
		Regulatory Consent/Variation Delays	Unlikely	Moderate	Low
		Capital and Operating Costs			
		Project Timing Delays	Likely	Major	High
		Mine Management Plan	Unlikely	Minor	Low
		Capital Cost Increases: Startup	Possible	Minor	Low
		Capital Costs: Ongoing	Unlikely	Minor	Low
		Operating Costs Underestimated	Possible	Moderate	Low
		Marketing			
		Availability of Market	Unlikely	Major	Low
		Commodity Prices	Possible	Major	Low
		Project Implementation			
		Critical Path Delays	Unlikely	Moderate	Low

Criteria	JORC Code explanation	Commentary
Classification	<ul style="list-style-type: none"> • The basis for the classification of the Ore Reserves into varying confidence categories. • Whether the result appropriately reflects the Competent Person's view of the deposit. • The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any). 	<p>It must be recognized that the project risk profile will change over the life of the operation and therefore risks that are currently regarded as low may rise in significance. Alternatively, other risks may diminish.</p> <ul style="list-style-type: none"> • Reserves are classified as probable.
Audits or reviews	<ul style="list-style-type: none"> • The results of any audits or reviews of Ore Reserve estimates. 	<ul style="list-style-type: none"> • There have been no reserve audits.
Discussion of relative accuracy/confidence	<ul style="list-style-type: none"> • Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence. 	<ul style="list-style-type: none"> • The ore reserve estimate is considered appropriate for this level of study. There have been no statistical tests applied to the reserve estimate.

1. RESPONSIBILITY STATEMENT

This circular, for which the Directors collectively and individually accept full responsibility, includes particulars given in compliance with the Listing Rules for the purpose of giving information with regard to the Company. The Directors, having made all reasonable enquiries, confirm that to the best of their knowledge and belief the information contained in this circular is accurate and complete in all material respects and not misleading or deceptive, and there are no other matters the omission of which would make any statement herein or this circular misleading.

2. DISCLOSURE OF INTERESTS

(a) Interests and short positions of the Directors and chief executives in the Company and its associated corporations

As at the Latest Practicable Date, the interests and short positions of the directors and chief executives of the Company in the Shares, underlying Shares and debentures of the Company and its associated corporations (within the meaning of Part XV of the Securities and Futures Ordinance (the “SFO”)) which (a) were required to be notified to the Company and the Stock Exchange pursuant to Divisions 7 and 8 of Part XV of the SFO (including interests and short positions which they have taken or were deemed to have taken under such provisions of the SFO); or (b) were required, pursuant to Section 352 of the SFO, to be entered in the register referred to therein; or (c) were required, pursuant to the Model Code for Securities Transactions by Directors of Listed Issuers (the “Model Code”), to be notified to the Company and the Stock Exchange, were as follows:

Interests in shares of an associated corporation of the Company

Name of Director	Name of associated corporation	Capacity	Number of shares interested	Approximate percentage of shareholding as at the Latest Practicable Date (%)
Mr. Wang Xiangfei	New Bright International Development Limited (“New Bright”)	Interest of spouse	3,000(L)	30%

(L) denotes as long position

Note: Mr. Wang Xiangfei is deemed to be interested in 3,000 shares of New Bright under the SFO, as he is the husband of Ms. Lo Fong Hung, who is interested in 3,000 shares in New Bright, representing 30% of the issued share capital of New Bright, which currently owns 70% shareholding interests in CSIL Limited (“CSIL”). CSIL is the holding company of Ascent Goal Investments Limited (“Ascent Goal”), the controlling shareholder of the Company. The shareholding interests of Ascent Goal in the Company is set out in the section headed “Substantial Shareholders’ interests in Shares and underlying Shares” in this appendix.

Save as disclosed above, to the best knowledge of the Directors as at the Latest Practicable Date, none of the Directors and chief executive of the Company had any interests or short positions in any Shares, underlying Shares or debentures of the Company or any of its associated corporations (within the meaning of Part XV of the SFO) which are required (i) to be notified to the Company and the Stock Exchange pursuant to Divisions 7 and 8 of Part XV of the SFO (including interests and short positions which he is taken or deemed to have under such provisions of the SFO); (ii) pursuant to section 352 of the SFO, to be entered in the register referred to therein; or (iii) pursuant to the Model Code to be notified to the Company and the Stock Exchange.

(b) Substantial Shareholders' interest in Shares and underlying Shares

As at the Latest Practicable Date, the following persons (other than directors or chief executive of the Company) had interests or short positions in the Shares or underlying Shares which would fall to be disclosed to the Company under the provisions of Divisions 2 and 3 of Part XV of the SFO, or which were recorded in the register required to be kept under Section 336 of the SFO:

Long positions in shares or underlying shares of the Company

Name of Shareholder	Notes	Nature of interest	Number of Shares held	Total number of Shares and underlying Shares held		Approximate percentage of the total number of Shares in issue ^(Note 6)
				Number of underlying Shares held	Number of underlying Shares held	
Ascent Goal	1, 4	Beneficial owner	569,616,589	1,000,000,000	1,569,616,589	205.08%
CSIL	2, 4	Interests of controlled corporation	569,616,589	1,000,000,000	1,569,616,589	205.08%
New Bright	2, 4	Interests of controlled corporation	569,616,589	1,000,000,000	1,569,616,589	205.08%
Ms. Fung Yuen Kwan Veronica	3, 4	Interests of controlled corporation	569,616,589	1,000,000,000	1,569,616,589	205.08%
Mr. Lev Leviev	5	Beneficial owner	1,000,000	-	1,000,000	0.13%
	5	Interests of controlled corporation	65,808,000	-	65,808,000	8.60%

Notes :

1. Ascent Goal was directly interested in 569,616,589 Shares and further 1,000,000,000 underlying Shares which may be fully allotted and issued if the convertible bond was converted at the conversion price of HK\$0.20 per Share. These 1,569,616,589 Shares were held by Ascent Goal directly as beneficial owner. They include (i) interests in 569,616,589 Shares and (ii) the convertible bond giving rise to an interest in 1,000,000,000 underlying Shares.
2. Since Ascent Goal is a wholly-owned subsidiary of CSIL which is beneficially owned as to 70% by New Bright, the interests of Ascent Goal are deemed to be the interests of CSIL and in turn the interests of New Bright under the SFO.
3. Ms. Fung Yuen Kwan Veronica is deemed to have interests in the Shares and underlying Shares through her 70% interests in New Bright.
4. The 569,616,589 Shares and 1,000,000,000 underlying Shares under the convertible bond represent approximately 74.42% and approximately 130.66% of the total number of issue Shares respectively, thus the total of 569,616,589 Shares and 1,000,000,000 underlying Shares represents approximately 205.08% of the total number of issued Shares. The conversion rights attaching to the convertible bond will not be exercised and the Company will not issue the conversion Shares if, immediately following the conversion, the Company would be unable to meet the public float requirement under the Listing Rules.
5. For the Shares held by Mr. Lev Leviev, 36,866,000 Shares were held by Africa Israel Investments Ltd., a company controlled by Mr. Lev Leviev through his approximately 48.13% interests in Africa Israel Investments Ltd.; 28,942,000 Shares were held by Memorand Management (1998) Ltd., a company controlled by Mr. Lev Leviev through his 100% interests in Memorand Ltd. which holds 100% interest in Memorand Management (1998) Ltd.; and 1,000,000 Shares were held by Mr. Lev Leviev directly.
6. The approximate percentage of shareholdings is based on 765,373,584 Shares as at the Latest Practicable Date, not the enlarged number of issued Shares upon full conversion of the convertible bond.

Save as disclosed above, the directors of the Company are not aware of any other persons who, as at the Latest Practicable Date, had interests or short positions in the Shares or underlying Shares which would fall to be disclosed to the Company under the provisions of Divisions 2 and 3 of Part XV of the SFO, or which were recorded in the register required to be kept under Section 336 of the SFO.

3. DIRECTORS' SERVICE CONTRACTS

As at the Latest Practicable Date, none of the Directors had entered into or proposed to enter into a service contract with any member of the Group which is not determinable by the Group within one year without payment of compensation, other than statutory compensation.

4. INTERESTS IN ASSETS AND CONTRACTS AND COMPETING INTERESTS

- (i) As at the Latest Practicable Date, so far as the Directors were aware, none of the Directors and their respective close associates had any interest in a business which competes or is likely to compete, whether directly or indirectly, with the business of the Group.

- (ii) As at the Latest Practicable Date, none of the Directors had any direct or indirect interest in any assets which had been acquired or disposed of by or leased to any member of the Group since 31 March 2020, being the date to which the latest published audited financial statements of the Group were made up, or were proposed to be acquired or disposed of by or leased to any member of the Group. None of the Directors is materially interested in any contract or arrangement subsisting at the Latest Practicable Date which is significant to the business of the Group taken as a whole.

5. MATERIAL ADVERSE CHANGE

Save as disclosed in the announcement of the Company dated 6 August 2020 regarding the Resumption Approval (as defined in the letter from the Board) and the delay in resumption of mining operations and sale at the Enlarged Kaiyuan Mine due to the recent rebound of COVID-19 cases in Xinjiang and the temporary lockdown for epidemic prevention in Xinjiang since July 2020, as at the Latest Practicable Date, the Directors were not aware of any material adverse change in the financial position or trading position of the Group since 31 March 2020, being the date to which the latest published audited financial statements of the Group were made up.

6. LITIGATION

As at the Latest Practicable Date, none of the members of the Group was engaged in any litigation or claim of material importance and no litigation or claim of material importance was known to the Directors to be pending or threatened against any member of the Group.

7. MATERIAL CONTRACTS

The Group has entered into the following contract (not being contract entered into in the ordinary course of business) within the two years preceding the date of this circular which is or may be material:

- (i) the sale and purchase agreement dated 10 August 2018 entered into between Radiant Day Holdings Limited, an indirect wholly-owned subsidiary of the Company, as purchaser, NEFIN Holding Limited, as Vendor, and Mr. Lim Hong Teo, as personal guarantor in relation to the acquisition of 90% of the issued share capital of NEFIN Leasing Technologies Limited and the shareholders' loans at a total consideration of US\$1,350,000;
- (ii) the sale and purchase agreement dated 11 March 2019 entered into between Mr. Li Ping and the Ample Talent Ventures Limited ("**Ample**"), an indirect wholly-owned subsidiary of the Company, in relation to the acquisition of 8,000 shares of Harbour Group Holdings Limited ("**Harbour Group**") at a consideration of HK\$35,712,000;

- (iii) the subscription agreement dated 11 March 2019 entered into between Ample and Harbour Group in relation to the subscription of 450 new shares of the Harbour Group to be issued by Harbour Group at an aggregate subscription price of HK\$2,008,800; and
- (iv) the 4th deed of amendment dated 3 February 2020 entered into between the Company and the Ascent Goal, in relation to the further extension of the conversion period and the maturity date for 36 months to 13 March 2023 of the outstanding and exercisable zero per cent convertible bond issued by the Company to Ascent Goal with an aggregate principal amount of HK\$200,000,000.

8. QUALIFICATION AND CONSENT OF EXPERT

The following is the qualification of the expert who has given advice, letter or opinion for incorporation and as contained in this circular:

Name	Qualification
Peak Vision	Competent Person and independent valuer

The above expert has given and has not withdrawn its written consent to the issue of this circular with the inclusion of its letter(s), report(s), certificate(s) and/or opinion(s) (as the case may be) and the references to its name included herein in the form and context in which it is respectively included.

The above expert confirmed that as at the Latest Practicable Date, it did not have any beneficial shareholding in any member of the Group or the right (whether legally enforceable or not) to subscribe for or to nominate persons to subscribe for securities in any member of the Group, nor did it have any direct or indirect interests in any assets which have since 31 March 2020 (being the date to which the latest published audited consolidated financial statements of the Group were made up) been acquired or disposed of by or leased to any member of the Group, or were proposed to be acquired or disposed of by or leased to any member of the Group.

9. GENERAL

- (i) The company secretary of the Company is Mr. Li Chun Fung, who is a member of the Hong Kong Institute of Certified Public Accountants.
- (ii) The registered office of the Company is situated at Clarendon House, 2 Church Street, Hamilton HM11, Bermuda.
- (iii) The head office and principal place of business of the Company in Hong Kong is 8/F., Tower 2, Admiralty Centre, 18 Harcourt Road, Admiralty, Hong Kong.
- (iv) The branch share registrar and transfer office of the Company in Hong Kong is Union Registrars Limited, at Suites 3301-04, 33/F., Two Chinachem Exchange Square, 338 King's Road, North Point, Hong Kong.
- (v) The English text of this circular, the accompanying form of proxy and the notice of SGM shall prevail over the Chinese translation in the case of inconsistency.

10. DOCUMENTS AVAILABLE FOR INSPECTION

A copy of each of the following documents will be available for inspection during normal business hours at the principal place of business of the Company in Hong Kong at 8/F., Tower 2, Admiralty Centre, 18 Harcourt Road, Admiralty, Hong Kong from the date of this circular up to and including the date of the SGM (save for Saturday and public holidays):

- (i) the memorandum of association and bye-laws of the Company;
- (ii) the Transfer Agreement;
- (iii) the annual reports of the Company for each of the three financial years ended 31 March 2018, 2019 and 2020;
- (iv) the Competent Person's Report and the Valuation Report prepared by Peak Vision, the text of which is set out in Appendix II to this circular;
- (v) the written consent referred to in the paragraph headed "Qualification and Consent of Expert" of this appendix;
- (vi) the material contracts referred to in the paragraph headed "Material Contracts" of this appendix; and
- (vii) this circular.

NOTICE OF SGM



NAN NAN RESOURCES ENTERPRISE LIMITED

南南資源實業有限公司

(Incorporated in Bermuda with limited liability)

(Stock Code: 1229)

NOTICE OF SPECIAL GENERAL MEETING

NOTICE IS HEREBY GIVEN that the special general meeting of Nan Nan Resources Enterprise Limited (the “**Company**”) will be held at United Conference Centre, 10th Floor, United Centre, 95 Queensway, Admiralty, Hong Kong on Wednesday, 9 September 2020 at 11:30 a.m. for the purposes of considering and, if thought fit, passing, with or without modifications, the following resolutions:

ORDINARY RESOLUTION

“THAT:

the entry into of the Transfer Agreement (as defined in the circular of the Company dated 19 August 2020, the “**Circular**”) and the Transaction (as defined in the Circular) contemplated thereunder be and are hereby approved, authorised, confirmed and ratified in all respects;

any one or more of the director(s) of the Company (the “**Director(s)**”) be and is/are hereby authorised for and on behalf of the Company to execute (and, if necessary, affix the common seal of the Company thereon) any such other documents, instruments and agreements and to do all such acts or things as may be deemed by him/her/them in his/her/their absolute discretion to be necessary or incidental to, ancillary to or in connection with the Transfer Agreement and the Transaction contemplated thereunder; and

any action(s) taken by any Director(s) in connection with or contemplated by the Transfer Agreement and the Transaction prior to the date of this resolution be and is(are) hereby approved, confirmed, ratified and adopted in all respects as fully as if such action(s) had been presented to for approval, and approved by, the shareholders of the Company (the “**Shareholders**”) prior to such action(s) being taken.”

By order of the Board
Nan Nan Resources Enterprise Limited
Kwan Man Fai
Chairman & Managing Director

Hong Kong, 19 August 2020

NOTICE OF SGM

Notes:

1. A member of the Company entitled to attend and vote at the SGM convened by the above notice (the “SGM”) is entitled to appoint a proxy or, if he is a holder of more than one share, proxies to attend and vote in his stead. A proxy need not be a member of the Company.
2. Where there are joint registered holders of any share of the Company, any one of such holders may vote at the SGM, either personally or by proxy, in respect of such share as if he were solely entitled thereto, but if more than one of such holders be present at the SGM personally or by proxy, that one of such holders so present whose name stands first on the register of members of the Company in respect of such share shall alone be entitled to vote in respect thereof.
3. In order to be valid, the form of proxy together with a power of attorney or other authority (if any) under which it is signed or a certified copy of that power or authority, must be deposited at the Company’s Hong Kong branch share registrar, Union Registrars Limited, at Suites 3301-04, 33/F., Two Chinachem Exchange Square, 338 King’s Road, North Point, Hong Kong not less than 48 hours before the time for the holding of the SGM or adjourned SGM.
4. In order to attend the SGM to be held on Wednesday, 9 September 2020, all transfer of shares, accompanied by the relevant share certificates and transfer forms, must be lodged with the Company’s branch share registrar in Hong Kong, Union Registrars Limited, Suites 3301-04, 33/F., Two Chinachem Exchange Square, 338 King’s Road, North Point, Hong Kong for registration not later than 4:00 p.m. on Thursday, 3 September 2020.
5. Completion and return of the form of proxy will not preclude you from attending and voting in person at the SGM (or any adjournment thereof) if you so wish and in such event, the instrument appointing a proxy shall be deemed to be revoked.
6. The ordinary resolution as set out above will be voted by way of poll.
7. If Typhoon Signal No. 8 or above, or a “black” rainstorm warning is in effect any time after 8:30 a.m. on the date of the SGM, the SGM will be postponed. The Company will post an announcement on the website of the Company at www.nannanlisted.com and on the website of the Stock Exchange at www.hkexnews.hk to notify its Shareholders of the date, time and place of the rescheduled SGM.

As at the date of this announcement, the Board comprises three executive directors, namely Mr. Kwan Man Fai, Mr. Wang Xiangfei and Mr. Wong Sze Wai; three independent non-executive directors, namely Dr. Wong Man Hin Raymond, Mr. Chan Yiu Fai Youdey and Mr. Pak Wai Keung Martin; and one alternate Director, namely Mr. Wang Xiaoyao (alternate to Mr. Wang Xiangfei).