26<sup>th</sup> November 2019



# Positive Scoping Study for Canyon Resources Minim Martap Bauxite Project

# Scoping study highlights

- **Positive Scoping Study** supports a simple and effective stand-alone project (**Stage-1** of 2), technically sound and financially robust, exporting through **Douala Port**.
- **Stage 2** of the Project, potentially exporting higher volumes through **Kribi Port**, is well advanced and is expected to be presented in the **Pre-Feasibility Study** due for release in 1H2O2O.
- Scoping Study subordinates to the capacity of the existing rail and port infrastructure.
- The Study is underpinned by a **Total Mineral Resource estimate of 892Mt at 45.1% Al<sub>2</sub>O<sub>3</sub>, 2.8% SiO<sub>2</sub>** (Cut-off Grade 35% Al<sub>2</sub>O<sub>3</sub>), which includes a **high-grade** (Cut-off Grade 45% Al<sub>2</sub>O<sub>3</sub>) **total resource of 431Mt at 48.8%** Al<sub>2</sub>O<sub>3</sub>, **2.6% SiO<sub>2</sub>** (total) containing **substantial zones of >50% Al<sub>2</sub>O<sub>3</sub>** with very low contaminants.<sup>1</sup>
- Environmental and social considerations integrated from outset; ESG gap analysis and Summary ESIA for the exploration program completed, and commencement of longer lead-time baseline studies for Detailed ESIA.

Canyon Resources Limited (**Canyon** or the **Company**) is pleased to report the outcomes of the Scoping Study (the **Study**) for Stage-1 of the Minim Martap Bauxite Project (the **Project**) located in Cameroon, West Africa. The Project is 100% owned by Canyon.

The Study represents an interim milestone in the Minim Martap Pre-Feasibility Study (**PFS**) which was initiated in 2019 and is anticipated to be presented as a 2-Stage, 2-Port development opportunity in the first half of 2020.

The Study was supported by a variety of leading consultants including Ausenco, Mining Plus and Wood Mackenzie and draws on a wealth of industry knowledge in rail and port operations, bauxite mining and bulk commodities.

The Study demonstrates Stage-1 of the Minim Martap Project as a robust, stand-alone, project with significant upside potential via a longer mine life underpinned by a high grade, large volume resource thought to be the only Guineastyle bauxite deposit outside of Guinea The current resource still only represents approximately 50% of the available target bauxite plateaux on the Project area.

Canyon is planning the development of the Project in a 2-Stage, 2-Port execution programme with initial production exported though the port of Douala utilising the existing rail and port infrastructure. As the Study demonstrates, Stage-1 is expected to be a self-supporting bauxite project with a simple, low cost and fast track path to operations. Stage-2 is anticipated to unlock higher export volumes and lower operating cost.

Stage-2, which is being investigated as part of the PFS currently underway, will focus on the improvement of Stage-1, and the transition from Stage-1 to Stage-2, via the installation of the Kribi rail extension allowing for higher production rates through the existing deep-water port of Kribi.

<sup>&</sup>lt;sup>1</sup> Please refer to the ASX announcement released by the Company on 27 September 2019. The Company is not aware of any new information or data that materially affects the information included in that announcement and all material assumptions and technical parameters underpinning the Mineral Resource estimates in that announcement continue to apply and have not materially changed.

# Cautionary statement

The Scoping Study referred to in this announcement has been undertaken to determine the potential viability of direct shipping of high quality bauxite ore from the Minim Martap Project in Cameroon through the Cameroon port of Douala representing Stage 1 of a potential 2-stage project where Stage 2 is represented by shipping higher volumes through the port of Kribi. It is a preliminary technical and economic study of the potential viability of the Minim Martap Bauxite Project. It is based on preliminary technical and economic assessments that are not sufficient to support the estimation of ore reserves. Further, evaluation work and appropriate studies are required before Canyon will be in a position to estimate any ore reserves or to provide any assurance of an economic development case.

The Scoping Study is based on the material assumptions outlined in this announcement, including assumptions about the availability of funding. While Canyon considers all of the material assumptions to be based on reasonable grounds, there is no certainty that they will prove to be correct or that the range of outcomes indicated by the Scoping Study will be achieved.

To achieve the range of outcomes indicated in the Scoping Study, funding of in the order of US\$80 million in development capital will likely be required. Investors should note that there is no certainty that Canyon will be able to raise that amount of funding when needed. It is also likely that such funding may only be available on terms that may be dilutive to or otherwise affect the value of Canyon's existing shares.

It is also possible that Canyon could pursue other 'value realisation' strategies such as a sale, partial sale or joint venture of the Project. If it does, this could materially reduce Canyon's proportionate ownership of the Project.

Given the uncertainties involved, investors should not make any investment decisions based solely on the results of this Scoping Study.

Approximately 94% of the total Mineral Resources at the Project, and approximately 99% of the total ore scheduled for mining in the Scoping Study for the first 20 years is underpinned by Indicated Mineral Resources. Thus approximately 6% of the total Mineral Resources at the Project, and approximately 1% of the total ore scheduled for mining in the Scoping Study for the first 20 years is underpinned by Inferred Mineral Resources. It must be noted that there is a low level of geological confidence associated with Inferred Mineral Resources. There is no certainty that further exploration work will result in upgrading the Inferred material to Indicated status or that the production target itself will be realised.



Figure 1 - The top of a plateau in one of the initial mining areas proposed.

# Minim Martap Bauxite Project

#### Key Scoping Study outcomes

Financial evaluation of Stage-1 suggests the potential for a robust project leveraging existing infrastructure and high-quality product. All figures provided in this Scoping Study are real as of October 2019. The key economic modelling outcomes are shown in Table 1.

Table 1 - Key economic outcomes.

Production			Avg - Yr	
Production rate	Mt		3	
Capital				
Total	USD 000		78,000	
Capital intensity	USD/t capacity		26	
Operating Costs				
C1 costs	USD/t		43	
Product Grade		Pricing benchmark	Avg - 20Yr	
Available alumina grade	%	44.0	49.9	
Reactive silica grade	%	3.0	1.4	
Ore moisture content	%	10.0	10.0	
Realised Price			Avg -20Yr	
Realised price	USD/t FOB		58	
Cashflow				
Cumulative undiscounted free cash flows	USD 000		542,000	
Average annual undiscounted free cash flows	USD 000		27,000	
Valuation	Discount	NPV (USD 000)	IRR	Payback
Project return -pre tax	10.00%	211,000	47%	-
Project return -post tax	10.00%	171,000	46%	3 Yr(s)
Tax and Royalty		Duration	Rate	
State royalty: Holiday		5.00 Yr(s)	-	
State royalty: Nominal		-	5.00%	
Corporate tax: Holiday		5.00 Yr(s)	-	
Corporate tax: Nominal		-	30.00%	

#### Notes:

- All figures are on a 100% project basis.
- Available alumina calculated by subtracting reactive silica from total alumina. Reactive silica calculated as 60% of total silica.
- Tax and Royalty holidays consistent with in-country mining agreements.
- 20-year economic modelling period.
- For a summary of the material assumptions associated with the above economic outcomes, please refer to page 17 of this announcement.
- Numbers rounded to reflect appropriate levels of confidence
- Economic outcomes are based on cost assumptions with an accuracy range of ±35%, consistent with a Class 5 estimate as defined by the Association for the Advancement of Cost Engineering (AACE)

#### Project overview

The 100% owned Minim Martap Bauxite project is a pre-feasibility stage<sup>2</sup> direct shipping ore (DSO) project development opportunity. The Project is located in central Cameroon and situated within 30km of the main rail line linking the region to the Atlantic port of Douala. The rail line is currently underutilised and coupled with the existing port of Douala, represents a low capex, low opex solution to deliver high grade, low contaminant, seaborne bauxite to market to support the large and growing aluminium industry.

The Project is underpinned by a large, shallow resource dominated by Gibbsite with minor Boehmite, and low levels of reactive silica. The resource is hosted in a series of plateaux (example in Figure 1). Limited digestion test work has shown the bauxite to be very reactive<sup>3</sup> when treated at lower temperature levels in the Bayer Process.

The Total Mineral Resource<sup>4</sup> estimate, which remains open in all directions, is stated as:

**892 Mt** at **45.1**% Al<sub>2</sub>O<sub>3</sub>, **2.8**% SiO<sub>2</sub> (Cut-off Grade 35% Al<sub>2</sub>O<sub>3</sub>)

The estimate contains a high-grade Indicated portion of the resource at:

410 Mt at 48.9% Al<sub>2</sub>O<sub>3</sub>, 2.6% SiO<sub>2</sub> (Cut-off Grade 45% Al<sub>2</sub>O<sub>3</sub>)

Substantial zones within the resource present at greater than 50% Al<sub>2</sub>O<sub>3</sub> with very low contaminants.

The Study highlights the potential for a DSO mining and logistics operation to deliver three million tonnes of seaborne product per annum from shallow open cut mines. The plateau hosted, at surface, deposit is highly amenable to surface mining extraction methods where the DSO can be mined at low average strip ratios. An 80km product haulage road is proposed to link the mining operations with the inland rail facility (IRF) at the rail station of Makor. A rail owner-operator supplied fleet of train sets will transport the ore on the existing rail line to the Atlantic port of Douala where bulk stockpiles will store sufficient material to load a Cape-size ocean going vessel. Ship loading will be conducted via traditional transhipment at a deep-water anchorage approximately 50 km from Douala.

The global supply demand dynamics for bauxite suggest a growing, balanced market. The price achievable on an FOB basis for a given operation depends on the grade and contaminant level of the bauxite product and demand and competition of the wider global supply peer group. Bauxite is not a homogenous commodity and ore grades and distance from market vary by project and location. Therefore, achievable FOB prices will vary from project to project. An FOB price can be derived from a value in use-adjusted marginal tonne supply curve on a delivered basis to the end use market. The largest and growing end use market is China.

China currently imports 100 million tonnes per annum, representing two thirds of the global seaborne bauxite supply of 150 million tonnes. 50% of global supply is Guinea bauxite. The proportion of Guinean imports to China is growing and the need for source diversification is considered an industry priority. The dependency of China on imported bauxite is expected to increase from 52% in 2019 to 69% by 2035. As a result, future bauxite supply is firmly in the hands of the seaborne market<sup>5</sup>.

The Company believes that the Minim Martap Project has the potential to be the highest-grade bauxite project development opportunity of all currently known large undeveloped bauxite projects globally. If operating today the

<sup>&</sup>lt;sup>2</sup> Pre-Feasibility Study anticipated 1H2019.

<sup>&</sup>lt;sup>3</sup> High reactivity tends to suggest high conversion ratios of total alumina to available alumina.

<sup>&</sup>lt;sup>4</sup> Please refer to the ASX announcement released by the Company on 27 September 2019. The Company is not aware of any new information or data that materially affects the information included in that announcement and all material assumptions and technical parameters underpinning the Mineral Resource estimates in that announcement continue to apply and have not materially changed.

<sup>&</sup>lt;sup>5</sup> Source: Wood Mackenzie

Project could potentially produce at an average product quality<sup>6</sup> ranked 2<sup>nd</sup> globally and 1<sup>st</sup> in Africa<sup>7</sup>. The Study assesses a modelling period of twenty (20) years, based on the 2019 Mineral Resource<sup>8</sup> and supported by third party pricing agency bauxite cost models. However, assuming no materially adverse changes occur to the 2019 Mineral Resource or the bauxite cost models, Stage 1 of the Project has the potential to continue production for a total of 60 years on a stand-alone basis based on the strategic schedule.

#### Production rate

The Study is focused on Stage 1 of the Project only and is therefore based on producing three million tonnes of product per annum, through the port of Douala, utilising current rail and port infrastructure. The rate was determined by subordinating to the current, government owned, infrastructure capacity following rail and port assessments by leading consultants. Three million tonnes per annum (Mtpa) represents five trains in circuit, containing 45 wagons each, at any one time and is consistent with the fixed and mobile rail and port infrastructure currently available.

Stage-2, which is being planned as part of the PFS currently underway. The PFS includes investigating the improvement of Stage-1, and the transition from Stage-1 to Stage-2, via the installation of the Kribi rail extension (the Kribi-Link) allowing for higher production rates through the existing deep-water port of Kribi. Stage-2 is anticipated to unlock higher export volumes and lower operating cost.

#### Development approach

The objective of the Study was to determine the minimum-viable initial development solution to deliver a standalone bauxite mine with robust economics to act as Stage-1 of a potential 2-Stage, 2-Port overall solution. This approach maximises the opportunity to develop the first large-scale commercial mine in Cameroon whilst preparing for significant upside potential of the Stage-2 development.

Significant upside potential in volume, mine life and cost exist with the installation of a rail extension to the deepwater port of Kribi. The Kribi-Link definitive feasibility study has been completed by the Cameroon Ministry of Transport and the funding and execution plan is underway. The Kribi-Link provides the case for Stage-2 of the 2-Stage, 2-Port development plan that is being developed in the PFS.

The Project has the potential to be operational in approximately 24 to 36 months. Development timelines are subject to variable external influences however an approximate execution schedule is indicated in Figure 2.

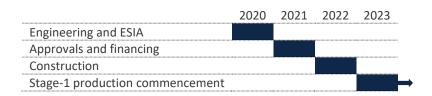


Figure 2 - Approximate development timeline

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<sup>&</sup>lt;sup>6</sup> Available alumina calculated by subtracting reactive silica from total alumina. Reactive silica calculated as 60% of total silica.

<sup>&</sup>lt;sup>7</sup> Analysis on 20-year average, calculated, available Al<sub>2</sub>O<sub>3</sub> compared to current and probable projects from Wood Mackenzie 3Q2019 pricing model.

<sup>&</sup>lt;sup>8</sup> Please refer to the ASX announcement released by the Company on 27 September 2019. The Company is not aware of any new information or data that materially affects the information included in that announcement and all material assumptions and technical parameters underpinning the Mineral Resource estimates in that announcement continue to apply and have not materially changed.

# Key components of the Scoping Study

#### **Project summary**

Stage-1 of the Minim Martap Bauxite Project will consist of well understood operating methodologies and simple technical solutions whilst utilising existing rail and port infrastructure. The following elements summarise the Project's key components:

- A series of sequential open cut mines extracting DSO bauxite from discrete plateaux in a sub-horizontal mining approach.
- Supporting infrastructure near the mine site including run-of-mine (ROM) blending stockpiles, workshop, warehouse and fuel farm, offices and administration, laboratory, power generation and accommodation camp.
- An upgraded road linking the mining area to the inland rail facility (IRF) at Makor railway station.
- A train loadout facility including stockpiles and train loading infrastructure.
- Port facilities including train un-loading, stockpiling and transhipment.

#### Scoping Study project team

The Study has been led by Ausenco, Mining Plus and Canyon Resources with support from industry specialists. Supporting consultants specialise in areas including rail operations, bauxite mining, bulk commodities and socioenvironmental sustainability. A list of key consulting parties is shown in Table 2.

Table 2 - Scoping Study supporting consultants.

Principle Area	Main Consultant(s)
Geology (resource modelling)	Mining Plus
Mineral Resource Competent Person	Mark Gifford
Mining	Mining Plus
Mining	Minemax
	Ausenco
Infrastructure	Beacop
	SGS
	Environmental and Social Sustainability
Detailed ESIA (2019)	Ramboll
	Rainbow Environment Consult
Summary FSIA (2010)	Environmental and Social Sustainability
Summary ESIA (2019)	Andal and Synergy
ESIA Gap Analysis	Moore Stephens
FCIA (2010)	VIMTA Labs Limited
ESIA (2010)	Rainbow Environment Consult
Marketing	Wood Mackenzie
Financial Modelling	Mazars

#### Project location and access

The Minim Martap Bauxite project is located in central Cameroon in the Adamawa region. The Project comprises of three tenements referred to as Minim Martap, Makan, and Ngaoundal all located within the Vina and Djerem Departments of the Adamawa region. The potential mining areas of the Minim Martap and Makan tenements sit within 50km of the railway station of Makor, whereas the town and railway station of Ngaoundal sits within the Ngaoundal tenement putting the potential mining areas within 5km of the rail head. Access to the proposed mining areas of the Minim Martap tenement is via an 80km public road from the railway village of Makor including a short spur into the plateaux before the town of Martap (Figure 3).

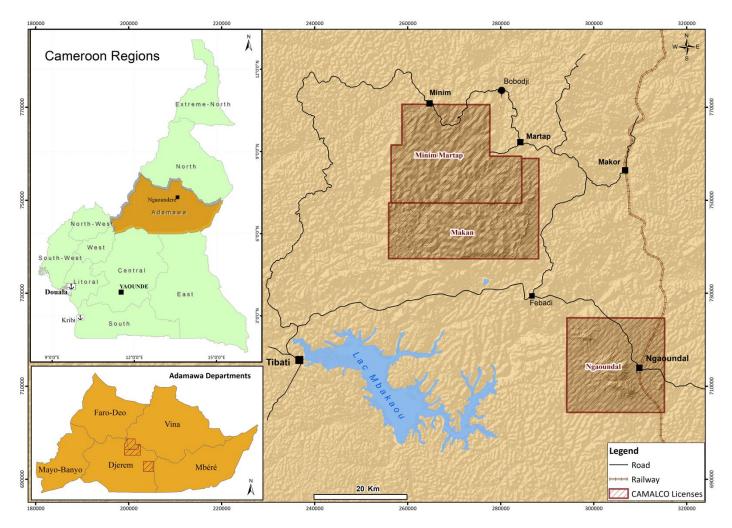


Figure 3 - Project location.

#### Company structure and ownership

The Project is 100% owned by Camalco SA, a wholly owned subsidiary of Canyon Resources Limited an Australian company listed on the Australian Securities Exchange (ASX: CAY). At the granting of a Mining License, in accordance with Section 59 of the Mining Code, the state will be granted 10% free-carry ownership of Camalco. Up to an additional 25% may be acquired under terms and conditions mutually consented by the parties, and with the same rights and obligations as the other shareholders.

#### Leases and permits

The Project is made up of three tenements referred to as Minim Martap, Makan, and Ngaoundal. These are all located within the Vina and Djerem Departments of the Adamawa Region. The three, three-year duration, tenements were granted on the 11<sup>th</sup> July 2018 with standard reporting to be completed bi-annually and annually. To maintain the tenements the exploration company (Camalco SA) is to complete a minimum work program whilst maintaining compliance to the environmental and social licence conditions. Currently all conditions have been met and Canyon continue to plan to meet all tenement conditions.

A mining permit requires an approved definitive feasibility study and ESIA. Canyon is on track to deliver the prerequisites for a mining convention (agreement) by 2021. The mining convention is a pre-requisite for the granting of an industrial mining permit which is exclusive entitlement to mineral exploitation for an initial period of twenty years, renewable for an unlimited succession of ten-year periods. Under the mining permit provisions are applicable for land use, water abstraction and infrastructure access. The mining permit requires development to begin within two years and operations within five.

#### Geology and resources

**Exploration completed between 2009 and 2019 has estimated a significant bauxite resource.** The resource presents within the mineralised Plateaux of Northern Cameroon and is referred to as the Cameroon Bauxite Resource. There is no current bauxite mining in Cameroon, however this resource is of significance due to high grades and low silica and could provide a further option to alumina processors seeking West and Central African high-grade bauxite feed stocks.

Resource estimation work completed upon the bauxite ores shows all of the bauxite is at or near surface and contains minimal levels of lower grade bauxite as overburden or intraburden material. It was noted by the Competent Person that all results to date in all areas indicated quantifiably that the bauxite present was of a high grade and quality, and that the estimation volumes and grades presented were robust. This is despite some issues with regards to the accuracy of the surveyed ground surface, incompleteness of drilling to depth for estimation purposes (esp. within high-grade areas on Minim Martap), and preliminary test work completed on density, digestibility and mineralogy of the bauxite ores,

The JORC code 2012 compliant Mineral Resource estimate is 892Mt at 45.1%  $Al_2O_3$  and 2.8%  $SiO_2$ . The resource has been estimated using ordinary kriging, and a total resource (above 35% $Al_2O_3$  cut-off grade) with its higher-grade component (at above 45%  $Al_2O_3$  cut-off grade), has been classified as shown in Table 39.

Table 3 -	2019	Mineral	Resource	estimate.

	Tonnes (Mt) ore	Alumina	Silica
Total	892	45.1% Al <sub>2</sub> O <sub>3</sub>	2.8% SiO <sub>2</sub>
Indicated	839	45.2% Al <sub>2</sub> O <sub>3</sub>	2.8% SiO <sub>2</sub>
Inferred	53	43.8% Al <sub>2</sub> O <sub>3</sub>	3.1% SiO <sub>2</sub>
High Grade Resource (45%	6 Al₂O₃ CoG)		
	Tonnes (Mt) ore	Alumina	Silica
Total	431	48.8% Al <sub>2</sub> O <sub>3</sub>	2.6% SiO <sub>2</sub>
Indicated	410	48.9% Al <sub>2</sub> O <sub>3</sub>	2.6% SiO <sub>2</sub>
Inferred	21	47.4% Al <sub>2</sub> O <sub>3</sub>	2.0% SiO <sub>2</sub>

#### Mining

The high-grade ore and near surface deposit lead to simple, low cost mining with low strip ratios. The Project is proposed to comprise of a series of open-cut mines extracting ore from nominated bauxite plateaux as optimised through strategic mine scheduling. Typically, between one and three mining plateaux will be operating at any given time. Mining is anticipated to be conducted by mining contractors using conventional mechanised equipment including surface-miners, bull dozers, front end loaders and haul trucks.

No drill and blast is required for mining. The surface miners are expected to extract thirty to fifty-centimetre (30-50cm) cuts along the highly homogenous and sub-horizontal orebody and deposit 75mm top size milled material in windrows along the mining bench. Front end loaders (FELs) will load mining trucks which will dump at plateau specific ROM pads, stockpiled in accordance to grade profiles. This method eliminates the need for blasting and decouples the on-plateau mining equipment from the road haulage trucks whilst minimising rehandle.

Structural geotechnical risk is low due to the plateau style of deposit and open-pit, edge-to-edge mining method proposed. Investigations to date have been limited to in-field assessments. The bauxite will be mined from the tops of plateaux and as such the development of significant pit walls is not expected. As such it is not anticipated that

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<sup>&</sup>lt;sup>9</sup> Please refer to the ASX announcement released by the Company on 27 September 2019. The Company is not aware of any new information or data that materially affects the information included in that announcement and all material assumptions and technical parameters underpinning the Mineral Resource estimates in that announcement continue to apply and have not materially changed.

significant structural geotechnical investigations or pit slope stability analysis will be required for this project. Mining productivity has been based on benchmarked data and equipment manufacturer input. In order to inform surface-miner productivity and operating cost estimates, rock strength data will be collected for the PFS. Hydrogeological assumptions have been made for the assessment of pit dewatering methodologies. Current investigations<sup>10</sup> suggest perched water tables within the plateau with the bauxite mostly remaining above the zone of saturation. It is intended to advance dewater plateaux immediately prior to mining. Hydrogeological assessments are ongoing as part of the ESIA and PFS.

No beneficiation, washing or screening of the ore is required to generate product. Test-work conducted with bulk samples on wet and dry washing processes<sup>11</sup> indicate the mine can produce direct shipping ore (DSO) with world class grades. Ongoing material handling test work is anticipated to confirm that the bauxite ore requires no beneficiation and the Project will continue to be defined on this basis.

The strategic mining schedule utilised the Mineral Resource models and scoping level cost assumptions on five-metre-deep, grade composited, resource blocks. The appropriate minimum block size was determined by geostatistical analysis and although this reduces the ability to demonstrate higher grade layers within the resource it is considered appropriate for the current level of project definition. The PFS will explore opportunity for improvement.

The strategic schedule demonstrated high quality ore production over significant durations. Annualised product grade outputs from the strategic schedule show 20 years at approximately 50% available alumina and less than 2% reactive silica (Figure 4).

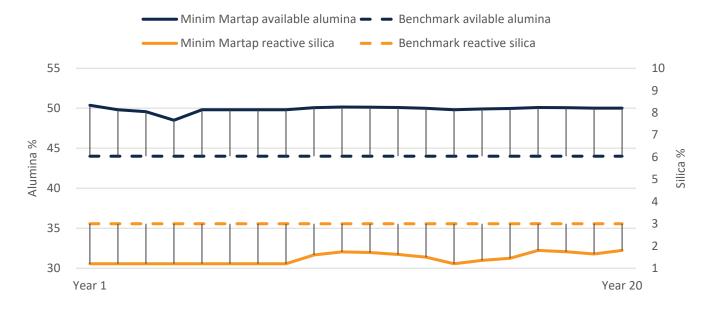


Figure 4 - Product specification<sup>12</sup> annualised profile derived from strategic schedule for Stage-1 at 3Mtpa over 20-years, with the potential to extend, subject to the material assumptions set out in this announcement remaining unchanged. If Stage-2 were to be introduced allowing higher production volumes, this grade profile would change.

Mining execution will be supported by consolidated infrastructure proximate to the cluster of initial plateaux. The infrastructure will include workshops, warehouse, offices, fuel farm, washdown and power generations. Power will be generated from remote diesel generators. Nearby to the mining services area a camp will be developed to

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<sup>&</sup>lt;sup>10</sup> Source: 2010 Minim Martap ESIA, Cameroon Alumina.

<sup>&</sup>lt;sup>11</sup> Source: 2019 Beneficiation test work programme, BHM.

<sup>&</sup>lt;sup>12</sup>Available alumina calculated by subtracting reactive silica from total alumina. Reactive silica calculated as 60% of total silica.

accommodate company employees. A laboratory will be included to support exploration, grade control and product blending at the mine and product analysis throughout the supply chain.

Greater than 99% of the 20-year product tonnes are sourced from Indicated Mineral Resource. Less than 1% is sourced from Inferred Mineral Resources. No proportion of the production target is underpinned by Ore Reserves or Exploration Targets. Canyon is satisfied that the proportion of inferred mineral resource is not a determining factor in project viability and the inferred resources do not feature as a significant portion in the early mine plan (Figure 5).

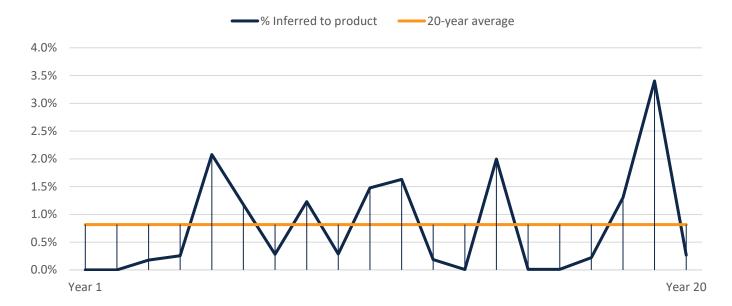


Figure 5 - Inferred Mineral Resource included in DSO product by year for Stage-1 at 3Mtpa over 20-years, with the potential to extend, subject to the material assumptions set out in this announcement remaining unchanged. Classification of remaining material in DSO is Indicated Mineral Resource. If Stage-2 were to be introduced allowing higher production volumes, this classification profile would change.

#### Logistics

The use of an upgraded existing road provides the link between the mine and the inland rail facility. The road will be refurbished to support the truck haulage fleet. Significant quantities of road construction material have been identified by the Canyon team in the region and quarry locations have been considered in the assessment. The use of the existing road results in an 80km haul to the proposed IRF at Makor. The existing roads have been assumed to be widened and refurbished to manage the additional traffic. Improved transport corridors are being assessed for integration with the PFS including solutions on mitigating adverse local impacts.

Bulk road going trucks will be loaded from the ROM to haul DSO to the inland rail facility. Front end loaders will reclaim from the ROM pad into the haulage fleet and will be supported by a grade control function to ensure product grade categories are adhered to (Figure 6). The road haulage fleet is anticipated as an owner-operator operation and will be supported by a dedicated road maintenance team and equipment. The bulk haulage double side tipping trucks will haul to the town of Makor which hosts an existing railway station with sidings.

**DSO** will be side tipped onto stockpiles adjacent to the existing rail siding. DSO will be stockpiled in product grade categories. Bull dozers and front-end loaders will maintain the stockpiles. Stockpile space has been nominated on the east of the rail line on an area of un-occupied land (Figure 7). Expansion potential exists by extending the rail siding allowing for longer trains.

Trains with specialised container boxes on flatbed wagons will be loaded by front end loaders. The Project proposes to supply the specialised containers and utilise a portion of the current fleet of 700 flatbed wagons and locomotives available from the rail operator. Financial analysis suggests an attractive investment case if the rail operator was

required to purchase the equipment. Specialised containers allow for simple train unloading whilst integrating with the container dominant logistics infrastructure in the country.

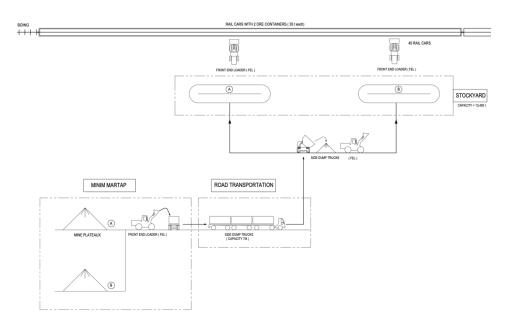


Figure 6 - Process flow diagram of the inland rail facility.

Ore trains will operate on the under-utilised existing rail network in its current configuration. The Project assessment has been subordinated to the existing, government owned, rail infrastructure minimising economical, development and other third-party risks. Sufficient existing rail sidings are present between the mine and Douala port to facilitate effective rail scheduling, supported by the low rate of rail utilisation. Field assessments have been conducted by consultants and supported by the current rail operators, Camrail, a company predominantly owned by Bollore.



Figure 7 - Proposed train inland rail facility at Makor. Also demonstrating stockyard expansion potential to the left (North).

#### Port and shipping

The rail line from the mine site area terminates on the quay of the Atlantic port of Douala. The port is predominantly a container and timber facility importing approximately 7Mtpa and exporting approximately 3Mtpa. Though currently well utilised it is considered viable that the port can be configured to facilitate the export of product. Stock yard space has been identified in five areas at the port, all adjacent to current rail lines, and in an additional area in-land at the

main Douala rail facility. Storage requirements have been subordinated to Cape-size vessels resulting in storage capacity requirements of 130 – 150kt.

Trains arriving at the port stockpile will be offloaded utilising conventional container handling equipment. Forklifts and reach stackers are proposed to offload the train by rotating the full container of DSO onto the stockpile and return the empty container to the rail wagon for return to the project site.

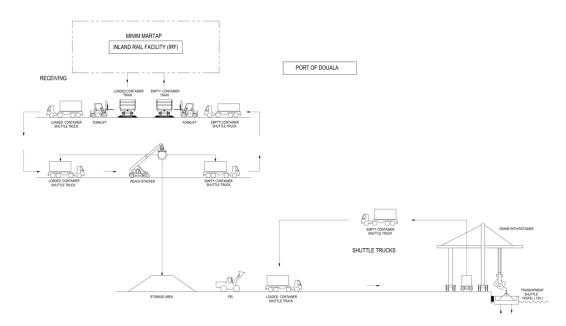


Figure 8 - Process flow diagram of indicative port logistics solution.

Ship loading will utilise existing port infrastructure and traditional transhipment operations. The stockpiles will be reclaimed with front end loaders which will feed a shuttle fleet to transport the product to the quayside in specialised containers. Exiting port cranes are anticipated to load barges in bulk by rotating the containers (Figure 8). Barges will tranship product to a capesize vessel transhipment location approximately 50km form the port.

#### Environmental and social

The Minim Martap project has integrated environmental and social considerations from the outset in accordance with the Equator Principles and relevant World Bank and IFC requirements. Canyon are currently undertaking baseline environmental assessments that will form part of the Detailed Environmental and Social Impact Assessment (ESIA) for the project, which is anticipated for approval by the Cameroon government in early 2021 in line with the tenement licensing requirements. The scope of work for the ESIA is based on a gap analysis conducted in 2018 and the subsequent Summary ESIA for exploration. The gap analysis examined key environmental documentation including the 2010 Environmental and Social Impact Assessment (ESIA), the current environmental and social context, and existing and planned activities, based on information received from Canyon and Camalco as well as a three-day site visit to the mine permit areas. The Summary ESIA supplemented the gap analysis and obtained more in-depth stakeholder feedback and expectations, as well as potential fauna and flora risk areas for additional investigation. The longer lead baseline assessments are currently underway with the full scope commencing in 2020.

The Project will integrate with the impact assessments to balance project requirements whilst minimising adverse impacts and optimising to realise beneficial outcomes for the community and environment. Alternate technical solutions will be assessed on social and environmental grounds to achieve an appropriate infrastructure arrangement and development approach.

#### Market and pricing

Bauxite is the primary input used in the Aluminium manufacturing process and the market is strong and expected to grow. Current production of seaborne bauxite is approximately 150 million tonnes per annum. China is a large and growing consumer of bauxite, currently demanding two-thirds of the world's seaborne material. 50% of global seaborne supply is sourced from Guinea where the typically high grades demand a quality premium. Concentrated supply and reserve grade degradation present significant long-term risks to bauxite customers and there has been significant interest in bauxite projects to supply the market.

Global demand for aluminium is growing faster than any other mining commodity. Consumption in 2018 was 3.6% higher than the previous year. From 2019 to 2025 the consumption for primary aluminium is expected to grow by 3.5% compound annual growth rate (Figure 10). The major driver of this growth is Asia, with Chinese consumption growing at 4.4% CAGR from 2019-25 and the rest of Asia growing at 3.0% CAGR over the same period<sup>13</sup>. In China, which accounts for 73% of anticipated global growth by 2025, the transport sector is expected to see the largest volume gain in aluminium demand driven by the increase in vehicle production and the increase in aluminium component use per vehicle. The packaging and consumer goods sectors follow. Construction will see strong growth to 2025, but these may decline again out to 2035 partly due to increasing use of secondary aluminium.

Future bauxite supply is firmly in the hands of the seaborne market. Chinese aluminium smelters are primarily supplied by domestically produced alumina from refineries which are heavily dependent on the import market for bauxite supply (Figure 9). Chinese alumina production is expected to grow from 75 Mt in 2019 to 93 Mt by 2035 (Figure 10) while the dependency on imported bauxite is expected to increase from 52% in 2019 to 69% by 2035. As a result, future bauxite supply is firmly in the hands of the seaborne market.



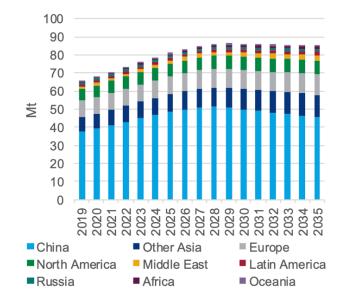


Figure 9 - China bauxite sources. Source: Wood Mackenzie.

Figure 10 - Global primary aluminium consumption. Source: Wood Mackenzie.

Supply in the pacific region has not been sufficient to meet demand since 2014. This is as a result of Indonesia's bauxite export ban. This deficit is expected to widen from 30 Mt in 2018 to 85 Mt by 2030.

Greenfield projects with better quality are expected to benefit from China's growing bauxite requirement.

Product pricing is driven by the quality and location of the Project. Component based pricing methodologies as defined by Wood Mackenzie value-in-use modelling was used to determine the product premiums for high alumina and low silica relative to benchmark product grades and prices. Additionally, moisture and iron content premiums and

<sup>&</sup>lt;sup>13</sup> Source: Wood Mackenzie

penalties contributed to the pricing formula. It has been assumed that though China have demand for the quality of the expected product, it would be more suited for Atlantic basin, European and Arabian offtakers and net-back freight adjustments reflected this configuration.

#### Capital cost

Capital cost estimates have been compiled from first principles, quotations and database pricing. The Project has been divided into elements as part of the work breakdown structure (WBS) which will be the basis of cost estimation through the current and future studies (Table 4). Each element has been assessed and estimated to a level commensurate to a Scoping Study and is in the accuracy range of  $\pm 35\%$ , consistent with a Class 5 estimate as defined by the Association for the Advancement of Cost Engineering (AACE).

Table 4 - Capital cost summary rounded to reflect appropriate levels of confidence.

WBS	Cost Element	Capital inc. Growth (USD '000)	Split (%)
1000-2000	Mine-site	20,000	25%
3000-5000	Mine-site to Inland Rail Facility	20,000	25%
6000-8000	Rail and Port	12,000	16%
9000-11000	Execution and Owners costs	12,000	15%
12000	Contingency	14,000	18%
	Total	78,000	100%

The capital estimate includes significant contingency allocation. Growth contingency, nominally 15%, has been applied as a factor of the installed capital estimate (direct and indirect) and an overall contingency of 25% has been applied on the pre-growth direct costs including construction management costs. In addition to direct and in-direct capital, provision has been allowed for owner's project management, 3<sup>rd</sup> party engineering, procurement and construction management (EPCM) and owners costs inclusive of operational readiness, labour, first fills, insurance and working capital.

**Sustaining capital allocations have been applied**. Factored estimates for equipment replacements have been integrated within the capex assumptions (Table 5).

Table 5 - Sustaining capital summary rounded to reflect appropriate levels of confidence.

Sustaining Capital Period	Sustaining Capital (USD '000)
First 5-years	15,000
Total over 20-year modelling period	61,000

#### Operating cost

Operating costs have been compiled for the economic modelling period of 20 years. Operating costs have been prepared by activity and cost element and further between fixed and variable categories (Table 6). Estimations are considered to have an accuracy range of  $\pm 35\%$ , consistent with a Class 5 estimate as defined by AACE and have been validated in reference to first principle estimations, quotations and database pricing. All costs have been prepared on an owner operated basis with the exceptions of mining, rail haulage and transhipment.

Table 6 - Operating cost summary rounded to reflect appropriate levels of confidence.

WBS	Cost Element	Opex (USD/t Product)
1000-2000	Mine and mine-site infrastructure	5
3000-5000	Mine-site to Inland Rail Facility	1
6000-8000	Rail and Port	28
9000-11000	Execution and Owners costs	9
	Total	43

#### **Funding**

The primary aim of the Study has been to demonstrate that the Project has positive economics and strong potential to become a large-scale, long-life producer. To achieve the range of outcomes indicated in the Scoping Study, funding of in the order of US\$80 million in development capital will likely be required.

All sustaining capital will be funded from free cashflows. By maintaining an appropriate minimum cash, no additional equity requirements for cashflow shortfalls are anticipated to be required over the 20-year modelled period.

The Company currently believes that there are reasonable grounds to assume that the Project can be financed as **envisaged in this announcement**, on the following basis:

- Various groups have expressed interest in development and support funding for the Project. However, funding discussions are at an early stage and ongoing. As such the assumed funding structure for the purpose of financial modelling is 100% equity funded.
- The Project economics are expected to be improved following completion of the PFS (which is also expected to
  incorporate Stage 2). The Company also believes that the PFS has the potential to establish a maiden JORC Ore
  Reserve estimate for the Project.
- Canyon's board believes that the funding requirements for the Project are manageable (US\$80 million) in relation to the Company's current market capitalisation (A\$93 million).

#### Financial analysis

Financial evaluation has been completed using a discounted cash flow model developed by a specialist consultant with Cameroon fiscal regime experience. The financing assumptions have been included in the economic evaluation, and modelling is consistent to the applicable fiscal regime. All figures provided in this Scoping Study release are real as of October 2019. The economic modelling outcomes are shown in Table 7.

Sensitivity analysis shows key sensitivity by order of hierarchy: Opex (highest), Price, Capex (lowest). The sensitivity outcomes (Figure 11, Figure 12) suggest the Project can carry additional capex with manageable valuation impact and is sensitive to operating costs. These properties will be further reviewed during the PFS where additional capital deployment in return for lower operating costs will be investigated.

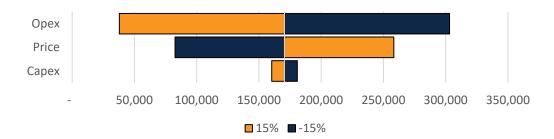


Figure 11 - NPV sensitivity post-tax.

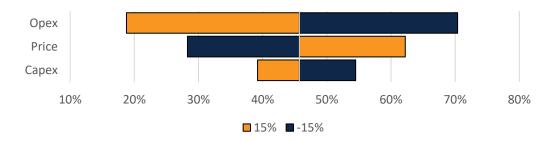


Figure 12 - IRR sensitivity post-tax.

**Canyon Resources Limited** 

Table 7 - Detailed economic outcomes.

Production		Avg - Yr
Production rate	Mt	3
Ore mined	Mt	5
Waste mined	Mt	1
Strip ratio W:O	X	0.2x
Production period modelled		20.00 Yr(s)
Capital		
Development Capital	USD 000	78,000
Financing Fees, Interest & DSRA	USD 000	-
Total	USD 000	78,000
Capital intensity	USD/t capacity	26

Operating Costs		
C1 costs	USD/t	43
C2 costs	USD/t	46
C3 costs	USD/t	48

Product Grade		Benchmark	Avg - 20Yr	
Alumina ore grade	%	-	51.3	
Available alumina grade	%	44.00	49.9	
Reactive silica grade	%	3.00	1.4	
Ore moisture content	%	10.00	10.0	

Realised Price		Avg - 20Yr
Realised price	USD/t FOB	58

Cashflow		
Cumulative undiscounted free cash flows	USD 000	542,000
Average annual undiscounted free cash flows	USD 000	27,000

Valuation	Discount	NPV (USD 000)	IRR	Payback
Project return -pre tax	10.00%	211,000	47%	-
Project return -post tax	10.00%	171,000	46%	3 Yr(s)

Tax and Royalty	Duration	Rate	
State royalty: Holiday	5.00 Yr(s)	-	
State royalty: Nominal	-	5.00%	
Corporate tax: Holiday	5.00 Yr(s)	-	
Corporate tax: Nominal	-	30.00%	

#### Notes:

- All figures are on a 100% project basis.
- Available alumina calculated by subtracting reactive silica from total alumina. Reactive silica calculated as 60% of total silica.
- Tax and Royalty holidays consistent with in-country mining agreements.
- 20-year economic modelling period.
- For a summary of the material assumptions associated with the above economic outcomes, please refer to page 17 of this announcement.
- C1 (fixed & variable).
- C2 (fixed & variable + depreciation).
- C3 (fixed & variable + depreciation + royalties + interest).
- Numbers rounded to reflect appropriate levels of confidence.
- Economic outcomes are based on cost assumptions with an accuracy range of ±35%, consistent with a Class 5 estimate as defined by the Association for the Advancement of Cost Engineering (AACE).

# Material assumptions

Material assumptions used in the Scoping Study which determined the production target and financial outcomes presented in this announcement are summarised below.

Criteria	Explanation
Mineral Resources	The Mineral Resource estimate announced on 27 <sup>th</sup> September 2019 was used for the Study. These Mineral Resources have been prepared by a Competent Person in accordance with the requirements of the 2012 JORC Code as advised in the Competent Person's Statement included within this announcement. The Company is not aware of any new information or data that materially affects the information included in that announcement and all material assumptions and technical parameters underpinning the Mineral Resource estimates in that announcement continue to apply and have not materially changed.
Site visits	The site has been visited by the Canyon and Camalco leadership teams including the Scoping Study report author and by external consultants including, the Resource Competent Person, mining PFS study lead and project manager, infrastructure supporting partners, and Environmental and Social baseline study leads and ESIA project managers.
Study status	This announcement is based upon the November 2019 Scoping Study.  The Scoping Study has been developed as a component of the Pre-Feasibility Study which is approximately 50% complete.  Modifying Factors (mining, infrastructure, environment, legal, social and commercial) have been considered in the Scoping Study.
Cut-off parameters	A mining cut-off was not applied in the modelling: All bauxite within the resource was considered as potential product across a range of potential product grade profiles. Each product grade profile was assigned an FOB (Cameroon) price based on marketing, pricing and end-user data from Wood Mackenzie. Pit optimisation scheduling determined an extraction schedule based on the economics of individual product grade blocks defined from the resource block model. The product grades included in the strategic schedule were for the following total alumina and total silica grades:  52%TAI, 2%TSi 52%TAI, 3%TSi 51%TAI, 2%TSi 50%TAI, 2%TSi 49%TAI, 3%TSi 49%TAI, 2%TSi 49%TAI, 3%TSi 48%TAI, 3%TSi 47%TAI, 2%TSi 47%TAI, 3%TSi 46%TAI, 3%TSi
Mining factors or assumptions	Pit optimisation was completed for this Scoping Study utilising cost assumptions for the supply chain (materially the same as those underpinning the economics presented within this document) and pricing scenarios across a range of product specifications which determined an extraction schedule based on the economics of individual product grade blocks defined from the resource block model.  Optimisation software identified the most value accretive extraction and product schedules based on the resource block model generated as part of the Mineral Resource estimate announced on 27 <sup>th</sup> September 2019.  Detailed pit designs were not completed for the Scoping Study due to the low risk of geotechnical and hydrogeological constraints and the simple mine designs where the plateaux are mined sub-horizontally in progressive increments utilising the full width of the resource and not resulting in pit walls. Pit designs are being developed for the Pre-Feasibility Study currently underway.  Conventional surface mining methodologies and costings were used in this Study and included utilising industry benchmarking and material testing to determine equipment productivity.  Inferred mineral resources have been included in the calculation of the Production Target: Less than 1% of the 20-year product tonnes are sourced from inferred geology. Canyon is satisfied that the proportion of inferred mineral resource is not a determining factor in project viability and the inferred resources do not feature as a significant portion in the early mine plan.

Metallurgical factors	Although there is incompleteness of drilling to depth for complete estimation purposes (esp. within high-grade areas on the Minim Martap licence), and incompleteness in the preliminary test work on density, digestibility and mineralogy of the bauxite ores, it is noted by the Competent Person that all results to date in all areas indicated quantifiably that the bauxite present was of a high grade and quality, and that the estimation volumes and grades presented are robust relative to their resource classification. Further work, currently underway, will support and aid in confirming the metallurgical factors for the PFS.
Social and Environmental	The 2010 Environmental and Social Impact Assessment (ESIA) completed on behalf of the former owner of the Project has been used as a basis, along with additional assessments underway for the 2020 ESIA currently in progress. The Project design presented in the Scoping Study, and which will present in the Pre-Feasibility Study, utilises information derived from prior social and environmental definition and aims to minimise any adverse impact.  Community engagement has been ongoing with a dedicated team of community liaison officers to ensure the Company understands the priorities and concerns of the communities. Feedback is overwhelmingly positive.  The ESIA is required to be completed and submitted to the Government of Cameroon in 2021. Closure costs have been excluded from this assessment.
Infrastructure	The mine site is accessible by road and rail from the capital Yaounde.  The Project will develop the majority of the infrastructure in the mining area including accommodation, power, water, administration and maintenance facilities.  The work force is anticipated to be a mixture of expatriates and Cameroonians housed at the mine camp with local Cameroon employees who will commute daily to the project site.  The existing rail network passes within 50km of all potential mining areas. The exiting road will be refurbished to link the mining areas to the rail. The rail currently connects to the port of Douala and will potentially connect to the port of Kribi subject to the completion of a 140km rail link.  Douala and Kribi ports are currently operating. The Project will develop stockpiling and ship loading infrastructure at the port of Douala to facilitate the loading of cape-size ocean-going vessels. All infrastructure required to be constructed for the technical solutions outlined in the Scoping Study have been costed within the economics of the Project.
Capital costs	Capital costs are supported by inputs from consultants Ausenco (infrastructure and rail), Mining Plus (mining) and Braemar ACM (shipping). Capital costs have been based on equivalent project costs, benchmarked data, industry knowledge and first principle estimates.  Cost estimates are made in October 2019 US Dollars (USD).
Operating costs	Operating costs are supported by inputs from consultants Ausenco (infrastructure and rail), Mining Plus (mining) and Braemar ACM (shipping). Operating costs have been based on equivalent project costs, database pricing, industry knowledge and first principle estimates.  The Cameroon government retains a 5% royalty tax and 30% corporate tax. A 5-year tax and royalty holiday has been assumed consistent with industry knowledge in the country.  Cost estimates are made in October 2019 US Dollars (USD).
Revenue factors	Product pricing has been determined from the product grades and is based on the 3Q2019 Wood Mackenzie pricing and forecasting model for the period 2019-2040. The Cameroon FOB price has been derived from a value in use-adjusted marginal tonne supply curve on a delivered basis to the end use market.  The value-in-use (VIU) adjustment recognises product grades which have been determined by assuming available alumina is the total alumina % less 60% of the total silica %. VIU pricing includes recognition of the grade and the lower than average, and beneficial, iron content and the average moisture content. More accurate metallurgical data is being gathered as part of the Pre-Feasibility programme of work. It is noted by the Competent Person the Mineral Resource estimate dated 27 <sup>th</sup> September 2019 that all metallurgical and elemental results to date in all areas indicated quantifiably that the bauxite present was of a high grade and quality, and that the estimation volumes and grades presented are robust relative to their resource classification.

Market assessment	Wood Mackenzie have supported Canyon in market analysis, future demand and product pricing. The market is forecast to remain a balanced and rational market for the foreseeable future with strong demand to support the growing aluminium industry being balanced by new and expanding projects with premiums attached to higher grade products. The largest and growing end use market is China. China import two thirds of the global seaborne bauxite supply (150 million tonnes) importing 100 million tonnes per annum, 50% of which is from Guinea. The proportion of Guinean imports to China is growing and the need for source diversification is an industry priority. Bauxite demand into China is forecast to continue to grow rapidly for another decade at least.
Economic	The financial model for the Project was prepared by Mazars.  A discount rate of 10% has been used for the financial analysis, and the inflation rate has been assumed at 0% with fixed costs and product prices through the life of mine. As such all costs and prices are real. Sensitivity of the Project to changes in the key drivers of sale price, operating cost and capex was carried out and showed the Project NPV and IRR to be most sensitive to changes in operating cost, and least sensitive to changes in capex.  The Study has been completed using pre-tax figures and on a 100% Project ownership basis for the financial assessment.
Other	This Scoping Study has confined itself to determining the economic viability of developing the Project, and its potential material impacts on the environment and community.  Canyon holds 3 current Exploration Licences over the area, within which the Mineral Resource is calculated. Canyon also has interests in the surrounding areas. Access to the site is not subject to any restrictions.  Project development funding will be required and would occur after completion of the final bankable Feasibility Study, along with tendering for suitable contractors to construct the mine and associated infrastructure.  A range of standard governmental agreements and licences are required prior to the decision to commence construction can be made, in particular the Mining Agreement and the rail and port access agreements.
Classification	The underlying Mineral Resource classification consists of Indicated and Inferred Mineral Resources. Inferred mineral resources have been included in the calculation of the Production Target: Less than 1% of the 20-year product tonnes are sourced from inferred geology. Canyon is satisfied that the proportion of inferred mineral resource is not a determining factor in project viability and the inferred resources do not feature as a significant portion in the early mine plan.
Audits or reviews	Expert external consultants have contributed to this Study and the various elements of the contributing data and reports have been internally reviewed, but no external audits or independent peer reviews have been completed.  The Study author is an employee of the Company and is a mining and mechanical engineer with twelve years of bulk commodity mining experience in large operating assets and in project development in Australia and Africa.
Study accuracy	The estimates in this Study are based on a ±35% level of accuracy in technical studies and costings.

# Competent Person's statement

The information in this announcement that relates to mineral resources is based on information compiled or reviewed by Mr Mark Gifford, an independent Geological expert consulting to Canyon Resources Limited. Mr Mark Gifford is a Fellow of the Australian Institute of Mining and Metallurgy and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the December 2012 edition of the Australasian Code of Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code).

Mr Gifford consents to the inclusion in the announcement of the matters based on his information in the form and context in which it appears.

# Forward looking statements

All statements other than statements of historical fact included in this announcement including, without limitation, statements regarding future plans and objectives of Canyon, are forward-looking statements. When used in this announcement, forward-looking statements can be identified by words such as 'anticipate", "believe", "could", "estimate", "expect", "future", "intend", "may", "opportunity", "plan", "potential", "project", "seek", "will" and other similar words that involve risks and uncertainties.

These statements are based on an assessment of present economic and operating conditions, and on a number of assumptions regarding future events and actions that are expected to take place. Such forward-looking statements are not guarantees of future performance and involve known and unknown risks, uncertainties, assumptions and other important factors, many of which are beyond the control of the Company, its directors and management of Canyon that could cause Canyon's actual results to differ materially from the results expressed or anticipated in these statements.

Canyon cannot and does not give any assurance that the results, performance or achievements expressed or implied by the forward-looking statements contained in this announcement will actually occur and investors are cautioned not to place undue reliance on these forward-looking statements. Canyon does not undertake to update or revise forward-looking statements, or to publish prospective financial information in the future, regardless of whether new information, future events or any other factors affect the information contained in this announcement, except where required by applicable law and stock exchange listing requirements.

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Phillip Gallagher – Managing Director

Emmanuel Correia - Non-executive Director

Steven Zaninovich - Non-executive Director

John Lewis - Company Secretary

James Durrant – Director of Projects