

# Arrow accelerates Scoping Study on DSO operation at Niagara Bauxite Project

With shallow high-grade mineralisation outlined over 14sqkm, Niagara looks ideally placed to capitalise on premium pricing being achieved for Guinea bauxite

## **Niagara Project Highlights**

- Scoping Study is being rapidly advanced ahead of SRK's Mineral Resource estimate
- Arrow is progressing all work streams which do not initially require the Mineral Resource
- Under this expedited strategy, the Mineral Resource estimate will be completed by the end of March 2025, and the Scoping Study will be finished by end of June 2025
- Outstanding drilling results and preliminary analysis suggests Niagara has strong potential to host a conventional Direct Shipping Ore (DSO) operation
- A potential DSO operation would enable Arrow to capitalise on the strong demand for Guinea bauxite in a timely and cost-efficient manner
- Following the drilling of 180 holes (on 800 by 800 metres spacings) by Vale in 2007,
  Arrow has defined nine priority bauxite exploration target areas and has drilled three of these, intersecting high-grade bauxite over an area of 14km²
- Results confirm substantial thickness of bauxite mineralisation at an average of 4 to 5 metres
- Offtake and strategic partnership discussions are ongoing
- Guinea is the world's largest producer of bauxite, typically attracting a premium for its high alumina and low silica content
- Record high bauxite prices US\$130/t¹ (CIF China) for Guinea bauxite at 45% Al<sub>2</sub>O<sub>3</sub> and 3% SiO<sub>2</sub>
- Niagara is located within trucking distance to the Trans-Guinean Railway, currently under construction to service the Simandou Project
- Guinea Mining Code provides a legal framework for third-party access to infrastructure, and as such there are a number of examples in the bauxite industry of third-party access to transport logistics infrastructure

Arrow Minerals Limited (ASX: **AMD**) (**Arrow** or the **Company**) is pleased to provide an overview of work being undertaken at its Niagara Bauxite Project in Guinea as part of the Company's strategy to expedite a Scoping Study on a DSO operation.

The Company has previously reported an Exploration Target estimate for the Niagara Bauxite Project of approximately 170-340Mt at an average grade in the range of approximately 40-46% Al<sub>2</sub>O<sub>3</sub>, and 1-4% SiO<sub>2</sub>.<sup>2</sup>

Cautionary Statement: The potential, quantity and grade of the Exploration Target is conceptual in nature. The Company has not yet completed sufficient work to estimate and report a Mineral Resource. The Company's Independent Consultants SRK Consulting (UK) Ltd (SRK) have however commenced work with the intent of estimating a Mineral Resource at the time of this announcement.

<sup>&</sup>lt;sup>1</sup> Source: CBIX Index Prices, January 2025, CM Group

<sup>&</sup>lt;sup>2</sup> Refer to ASX Announcement dated 7 August 2024 titled "Exploration Target Estimate for Niagara Bauxite Project."

## Arrow Managing Director, David Flanagan, said:

"In parallel to resource estimation work, we have started some of the key work streams associated with the Scoping Study, which will evaluate Niagara as a potential standard DSO project."

"The decision to advance the resource and the study at the same time was taken in light of the highly successful drilling program we have just completed. Given that the project is showing all the signs of being a Tier 1 mineral deposit, we are not waiting until resource modelling is complete to progress the work we can. Everything that can be done in advance is underway. The study is likely to focus on the thickest and largest areas of high-grade mineralisation drilled to date."

"Potential customers have already provided clear guidance on product specifications. We are well positioned to take advantage of the premium pricing which can be achieved for Guinea bauxite, which is widely recognised for its favourable specifications."

"The Niagara project is within trucking distance of the Simandou (Trans-Guinean) multi-user railway and work has commenced to assess potential haulage solutions."

"We are at a time of record alumina and bauxite prices, and we fully intend to move as quickly as possible to deliver resources, scoping and feasibility studies, achieve regulatory approvals and secure product sales."

#### **NIAGARA BAUXITE PROJECT**

Arrow is focused on two projects in Guinea, West Africa. The Simandou North Iron Project (**Simandou North, SNIP**) and the Niagara Bauxite Project (**Niagara, Niagara Project**)<sup>3</sup>. Arrow's strategy is to develop and execute "starter" projects that have the potential for expansion into larger mines once in production<sup>4</sup>. Both Niagara and Simandou North are located within trucking distance to the Trans-Guinean Railway (**TGR**) that is currently under construction by Winning Consortium Simandou. The location of the Niagara Project relative to the TGR provides significant benefits to the development of the project as a result of multi-user access to rail and port infrastructure (Figure 1).

Historical work completed on the project by various mining companies since the 1960's including assays from 180 holes drilled by Vale in 2007 was used to guide Arrow's 2024 drilling program, which commenced in late October 2024 and completed in late November 2024. With the guidance of SRK, this drilling campaign was designed with the intention of estimating sufficient Indicated and Inferred Mineral Resources at three targets, sufficient to support a Scoping Study for the project. The program was comprised of a total of 184 holes for 2,166 metres of drilling on 300 x 300m spacings. The program included twinning previous Vale holes, a program of shallow pitting in areas of mineralisation, as well as all the required quality control sampling, and value in use ore characterisation work required to comply with modern resource reporting standards.

<sup>&</sup>lt;sup>3</sup> Refer to ASX Announcement dated 1 August 2024 entitled "Arrow Expands Bulks Presence with Major Bauxite Transaction."

<sup>&</sup>lt;sup>4</sup> Refer to Company's website for "Investor Presentation October 2024" dated 29 October 2024.

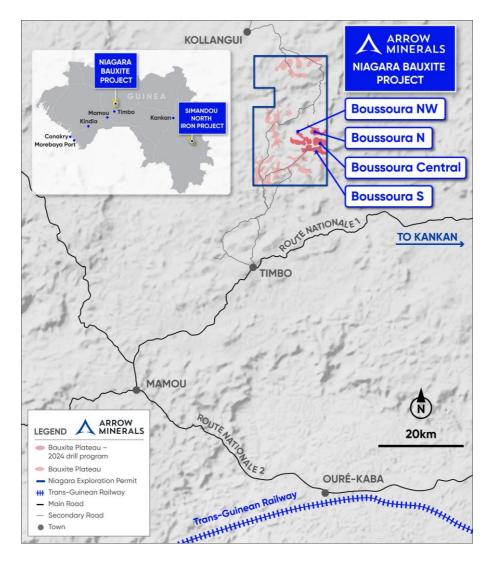


Figure 1. Niagara Bauxite Project location showing Boussoura prospect areas tested in Arrow's maiden drilling program

## **NIAGARA EXPLORATION RESULTS**

The Company has now reported all drilling results for all 184 holes completed in the 2024 drill program<sup>5</sup> (Figure 2). The results have delineated five distinct bauxite areas within the Boussoura plateau complex, contributing to a combined area of approximately 14 square kilometres of bauxite mineralisation with grades in a range of 40 to 54% total Al<sub>2</sub>O<sub>3</sub>. In addition, the results of a further 11 scout holes have also identified the presence of high-grade bauxite mineralisation at the South-West/Vale prospect along strike to the South-West quadrant of the Niagara permit. Drilling results by target area are summarised below.

 $<sup>^{\</sup>rm 5}$  Refer to ASX Announcement dated 13 January 2025 titled "Niagara Resource Estimation Underway."

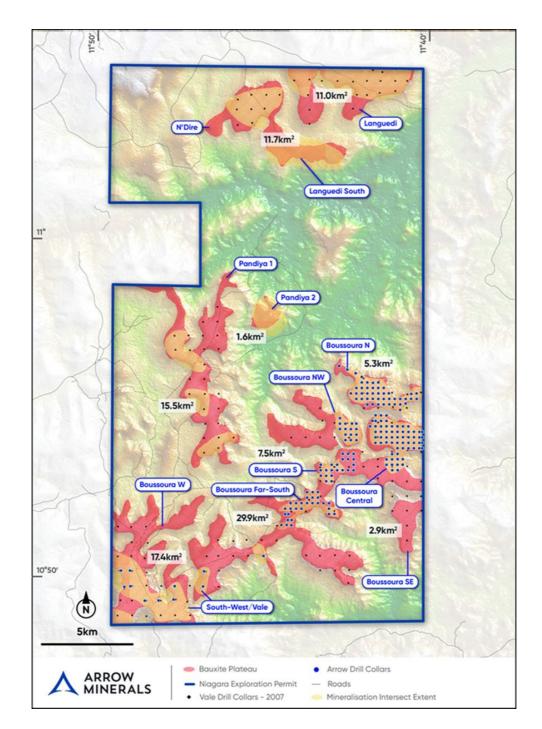


Figure 2. Location map of Niagara Project showing Boussoura prospect areas tested in Arrow's first campaign of drilling.

# **Drilling Results by Target**

Key statistics for the drill program, by target area and according to  $Al_2O_3$  cut-off are shown in Table 1 and Table 2. Figure 2 shows a general location map of Niagara Project showing Boussoura prospect areas tested in Arrow's first campaign of drilling, along with areas of prospectivity yet to be tested.

Table 1. Bauxite intersections by target area for the 2024 Niagara drill program

Target	Total Samples	Number of samples per deposit				
		>37% Al <sub>2</sub> O <sub>3</sub>	>38% Al <sub>2</sub> O <sub>3</sub>	>40% Al <sub>2</sub> O <sub>3</sub>	>41% Al <sub>2</sub> O <sub>3</sub>	>42% Al <sub>2</sub> O <sub>3</sub>
Central	779	310	284	236	206	175
North	501	275	262	231	215	197
North West	202	138	126	101	89	81
South	232	51	39	28	25	23
Far South	331	127	117	96	88	80
SW/Vale	118	62	59	49	44	37
Totals	2,163	963	887	741	667	593

Table 2. Average bauxite thickness per hole drilled by target area for the 2024 Niagara drill program

Torget	Average	Average Intercept Thickness (m)		
Target	Hole Depth (m)	>37% Al <sub>2</sub> O <sub>3</sub>	>40% Al <sub>2</sub> O <sub>3</sub>	
Central	12.4	4.3	3.4	
North	11.1	5.8	4.4	
North West	13.5	7.8	6.6	
South	10.5	2.9	2	
Far South	11.8	4.9	4.3	
SW/Vale	10.7	4.5	4.3	
Average	11.8 (12)	4.9 (5)	3.9 (4)	

The thicknesses achieved at each target area shown in Table 2 are considered appropriate for the use of surface miners, which are able to mine undulating surfaces to a minimum thickness of 0.3 metres.

# **Boussoura Central Target**

Bauxite at Boussoura Central is well developed with average thicknesses of mineralisation reported being 3.4m using a 40%  $Al_2O_3$  cut-off, and 4.3m using a 37%  $Al_2O_3$  cut-off. The mineralisation at Central shows strong lateral continuity across the plateau. The standout intercept at the Central deposit is in hole BS000075 where the Company achieved 13 metres at 43.1%  $Al_2O_3$ .

Better results for Boussoura Central include:

- o BS000075, 15m at 43.08% Al<sub>2</sub>O<sub>3</sub>, 3.7% SiO<sub>2</sub> from surface
- o BS000160, 7m at 48.9% Al<sub>2</sub>O<sub>3</sub>, 3.8% SiO<sub>2</sub> from surface
- o BS000097, 2m at 54.6% Al<sub>2</sub>O<sub>3</sub>, 2.2% SiO<sub>2</sub> from surface
- BS000168, 12m at 43.8% Al<sub>2</sub>O<sub>3</sub>, 1.7% SiO<sub>2</sub> from surface
- o BS000096, 4m at 50.3% Al<sub>2</sub>O<sub>3</sub>, 3.1% SiO<sub>2</sub> from surface
- BS000173, 11m at 43.9% Al<sub>2</sub>O<sub>3</sub>, 2.9% SiO<sub>2</sub> from surface
- BS000117, 11m at 43.6% Al<sub>2</sub>O<sub>3</sub>, 0.8% SiO<sub>2</sub> from surface

#### **Boussoura North Target**

Bauxite is very well developed at Boussoura North, with average intercept thicknesses of mineralisation reported being 4.4m using a 40%  $Al_2O_3$  cut-off, and 5.8m using a 37%  $Al_2O_3$  cut-off. The bauxite mineralisation at Boussoura North shows strong lateral continuity across the plateau. The standout intercept at Boussoura North is in hole BS000104 where the Company achieved 13 metres at 53.8 %  $Al_2O_3$ .

Better results for Boussoura North include:

- o BS000104, 13m at 53.8% Al<sub>2</sub>O<sub>3</sub>, 4.3% SiO<sub>2</sub> from surface
- o BS000100, 11m at 55.8% Al<sub>2</sub>O<sub>3</sub>, 1.2% SiO<sub>2</sub> from 3m
- o BS000068, 12m at 46.2% Al<sub>2</sub>O<sub>3</sub>, 2.6% SiO<sub>2</sub> from surface
- o BS000054, 5m at 51% Al<sub>2</sub>O<sub>3</sub>, 1.6% SiO<sub>2</sub> from surface
- BS000040, 5m at 49.5% Al<sub>2</sub>O<sub>3</sub>, 3% SiO<sub>2</sub> from surface
- o BS000048, 3m at 52.3% Al<sub>2</sub>O<sub>3</sub>, 1.7% SiO<sub>2</sub> from surface
- o BS000062, 3m at 51.7% Al<sub>2</sub>O<sub>3</sub>, 1.2% SiO<sub>2</sub> from surface
- o BS000102, 3m at 51.1% Al<sub>2</sub>O<sub>3</sub>, 2.5% SiO<sub>2</sub> from surface

# **Boussoura North-West Target**

Bauxite is very well developed at Boussoura North-West, with average intercept thicknesses of mineralisation reported being 6.6m using a 40% Al<sub>2</sub>O<sub>3</sub> cut-off, and 7.8m using a 37% Al<sub>2</sub>O<sub>3</sub> cut-off. These represent the thickest average accumulations of bauxite encountered in the 2024 drill program.

Better results for Boussoura North-West include:

- o BS000137, 12m at 46.4% Al<sub>2</sub>O<sub>3</sub>, 4.2% SiO<sub>2</sub> from surface
- o BS000121, 11m at 44.9% Al<sub>2</sub>O<sub>3</sub>, 2.1% SiO<sub>2</sub> from surface
- o BS000120, 10m at 44.9% Al<sub>2</sub>O<sub>3</sub>, 2.4% SiO<sub>2</sub> from surface
- o BS000124, 9m at 44.5% Al<sub>2</sub>O<sub>3</sub>, 2.7% SiO<sub>2</sub> from surface
- $\circ$  BS000125, 8m at 42.4% Al<sub>2</sub>O<sub>3</sub>, 4.3% SiO<sub>2</sub> from 3m
- o BS000138, 5m at 51.0% Al<sub>2</sub>O<sub>3</sub>, 3.4% SiO<sub>2</sub> from surface

# **Boussoura South Target**

Bauxite mineralisation at Boussoura South shows strong lateral continuity and attractive grades, albeit at modest thickness across the south-west quadrant of the area tested by drilling. Average intercept thicknesses of mineralisation reported are 2.0m using a 40%  $Al_2O_3$  cut-off, and 2.9m using a 37%  $Al_2O_3$  cut-off. The standout intercept at the south deposit is in hole BS00020 where the Company achieved 7 metres at 49.4 %  $Al_2O_3$ .

Better results for Boussoura South include:

- o BS000020, 7m at 49.4% Al<sub>2</sub>O<sub>3</sub>, 0.7% SiO<sub>2</sub> from surface
- BS000008, 4m at 39.3% Al<sub>2</sub>O<sub>3</sub>, 1.7% SiO<sub>2</sub> from surface incl.
- o BS000008, 2m at 42.8% Al<sub>2</sub>O<sub>3</sub>, 2.3% SiO<sub>2</sub> from surface
- o BS000021, 1m at 53.0% Al<sub>2</sub>O<sub>3</sub>, 1.8% SiO<sub>2</sub> from surface
- o BS000009, 2m at 46.7% Al<sub>2</sub>O<sub>3</sub>, 2.0% SiO<sub>2</sub> from 1m
- BS000019, 2m at 46.7% Al<sub>2</sub>O<sub>3</sub>, 3.6% SiO<sub>2</sub> from surface
- BS000016, 2m at 46.5% Al<sub>2</sub>O<sub>3</sub>, 1.0% SiO<sub>2</sub> from surface
- BS000018, 2m at 44.8% Al<sub>2</sub>O<sub>3</sub>, 1.2% SiO<sub>2</sub> from surface
- o BS000018, 2m at 42.9% Al<sub>2</sub>O<sub>3</sub>, 2.0% SiO<sub>2</sub> from 3m

#### **Boussoura Far-South Target**

Bauxite is well developed at Boussoura Far-South, with average intercept thicknesses of mineralisation reported being 4.3m using a 40%  $Al_2O_3$  cut-off, and 4.9m using a 37%  $Al_2O_3$  cut-off. The bauxite mineralisation shows good lateral continuity across the extent of the plateau tested by drilling.

Better results for Boussoura Far-South include:

- o BS000151, 9m at 50.2% Al<sub>2</sub>O<sub>3</sub>, 4.0% SiO<sub>2</sub> from surface
- o BS000153, 7m at 54.4% Al<sub>2</sub>O<sub>3</sub>, 3.4% SiO<sub>2</sub> from surface
- BS000134, 7m at 49.7% Al<sub>2</sub>O<sub>3</sub>, 3.9% SiO<sub>2</sub> from surface
- o BS000150, 7m at 49.6% Al<sub>2</sub>O<sub>3</sub>, 4.3% SiO<sub>2</sub> from surface
- BS000143, 7m at 45.1% Al<sub>2</sub>O<sub>3</sub>, 3.2% SiO<sub>2</sub> from surface

# **Boussoura South West / Vale Target**

On completion of the planned drill program, the Company completed a final 11 holes for 118 metres of drilling, to twin holes drilled by Vale in 2007. The additional holes confirmed the presence of the bauxite over an area approximately 3,500 metres by 2,000 metres, albeit with reduced drill density compared to the 300m spaced main drill program. Bauxite is well developed in the holes tested, with average thicknesses of mineralisation intersected being 4.3m using a 40% Al<sub>2</sub>O<sub>3</sub> cut-off, and 4.5m using a 37% Al<sub>2</sub>O<sub>3</sub> cut-off.

The standout intercept is in hole BS00178 where the Company achieved 10 metres at 44.4 % Al<sub>2</sub>O<sub>3</sub>.

Better results for the Boussoura South-West/Vale area include:

- o BS000178, 10m at 44.4% Al<sub>2</sub>O<sub>3</sub>, 2.3% SiO<sub>2</sub> from surface
- BS000176, 7m at 45.9% Al<sub>2</sub>O<sub>3</sub>, 2.1% SiO<sub>2</sub> from surface
- BS000183, 6m at 42.3% Al<sub>2</sub>O<sub>3</sub>, 7.1% SiO<sub>2</sub> from surface
- o BS000177, 4m at 47.8% Al<sub>2</sub>O<sub>3</sub>, 5.5% SiO<sub>2</sub> from surface
- o BS000182, 4m at 47.2% Al<sub>2</sub>O<sub>3</sub>, 3.8% SiO<sub>2</sub> from surface
- o BS000181, 4m at 45.0% Al<sub>2</sub>O<sub>3</sub>, 2.9% SiO<sub>2</sub> from surface
- BS000179, 4m at 44.9% Al<sub>2</sub>O<sub>3</sub>, 1.5% SiO<sub>2</sub> from surface

The area presents as a substantial resource target for testing this year.

#### **Orebody Knowledge and Product Characterisation**

In addition to the drilling program, the Company has completed 6 pits excavated manually using jackhammers. The pits are between 5m and 6m deep and approximately 1.2m by 1.2m. Bulk samples have been collected and submitted for a range of testwork including particle size distribution and assay by size. Physical tests include moisture, bulk density, loosening coefficient, abrasion coefficient and LA abrasion test, impact strength, compressive strength, and tensile strength.

The Company has also selected sample composites from drilling and bulk samples for submission for ore characterisation testwork including the determination of Available Alumina and Reactive Silica using low and high temperature laboratory Bayer digestion, along with mineralogy by X-Ray Diffraction, Total Carbon, Total Organic Carbon, Gallium, and Rare Earth Elements.

#### **Further Exploration - Next Steps**

The 2024 Arrow drilling program has successfully confirmed the Niagara Project is host to high grade bauxite mineralisation across large areas. From the program of 184 holes drilled, 154 holes returned 887 metres grading above 40%  $Al_2O_3$  from a total of 2,163 metres sampled. The Company is delighted with this outcome, and looks forward to advancing the project with the Mineral Resource estimate that is now underway. The Company further expects that with improving understanding of the project geology that further success will follow.

Future drilling will test for extensions to mineralisation discovered in this recent program along with testing additional targets including those defined by Vale in 2007. Priority areas will include Boussoura SW/Vale, Pandiya, Languedi and N'Dire (Figure 2). These are substantial areas of

mineralisation and given the improved understanding of the geology of the project, the Company expects to achieve further encouraging drilling results.

The Company's Independent Consultants, SRK, have commenced work on Mineral Resource estimation, and are scheduled to conduct a prerequisite site visit to Niagara in mid January 2025 as part of this process. Subject to the mineral resource estimate, the Company is planning for completion of a Scoping Study in the June 2025 quarter.

#### **SCOPING STUDY**

In line with the Company's development strategy<sup>4</sup>, the objective of the Scoping Study will be to focus on a "starter project" that stands on its own merits with attractive risk/reward attributes, while also offering potential for expansion once production begins. The basis of a smaller-scale starter project is to reduce capital expenditure and shorten project and approval timelines to production and cash flows, by simplifying the project.

The Scoping Study is currently in a planning phase in terms of consultant selection, confirming the scope of work and identifying work packages that can commence prior to an estimate of the mineral resource being completed. The Company is anticipating a favourable outcome from Mineral Resource estimation work, and as such, some early Scoping Study work packages have commenced, including environmental and social studies, and investigative work on potential haulage solutions.

Whilst the study will cover all the typical inclusions to a Scoping Study, the main areas of relevance and work for Niagara, at this Scoping Study phase, will be in the areas of:

- mine planning;
- mine infrastructure;
- product transport logistics; and
- product characterisation.

Fundamentally, the objective of the Company is to complete a Scoping Study for Niagara that demonstartes the viability of a typical Guinea bauxite mining operation in terms of production processes at a "starter project" scale, that can potentially be expanded once in production (as discussed above).

#### **BACKGROUND ON GUINEA BAUXITE**

A typical commercially viable Guinea plateau bauxite deposit is flat with a thickness that varies on average from 1 to 10 metres, and will have 44 to 46% alumina and silica levels typically averaging 2 to 3%. Mineralisation is often thickest along the edges of plateaux coinciding with subtle changes in gradient of 1 to 3 degrees, where meteoric waters, over geological time, have enhanced grade and removed deleterious elements.

The application of surface miners to bauxite mining is now common throughout the industry, negating the need for drill and blast, and crushing and screening. The ability to excavate consolidated material (i.e. no drill and blast) and mine a minimum mining thickness of approximately 300mm using reliable high precision GPS machine guidance makes the surface miner well suited to plateau bauxite mining in Guinea.

The Company has visited bauxite mining operations, inspected various mining equipment and met with several contractors with current operating experience in bauxite mines in Guinea. The information collected during these visits, combined with the results from the current drilling

campaign, allows the Company to start to define important operating parameters that will ultimately be fed into a planned Scoping Study, subject to the estimation of sufficient Mineral Resources.

In the case of surface miners, the excavated bauxite ore is then transported as bauxite product for shipping. There is no additional crushing or beneficiation for that matter. A significant proportion of bauxite exported from Guinea has not undergone any form of beneficiation processing after mining.

Product transport logistics typically involve haulage followed by rail transport and transhipment to a vessel at anchorage by barge, or haulage followed directly by transhipment to a vessel at anchorage.

#### **BAUXITE MARKET**

Discussions with potential bauxite customers are ongoing. These interactions have focused on understanding technical requirements in regard to product specifications, building relationships, and gathering market intelligence with a view to future sales agreements. The Company has also had discussions with relevant parties on various customer related funding options. These discussions are non-binding, preliminary in nature and subject to a number of conditions precedent including resource estimation, feasibility studies and satisfying various regulatory and compliance requirements.

Since 2007 the bauxite price has more than tripled and global bauxite consumption has more than doubled from 210Mtpa<sup>6</sup> to 440Mtpa<sup>7</sup>. China currently dominates world bauxite trade and this is expected to increase as more of its refineries switch to the processing of imported bauxites in response to depleting domestic bauxite reserves and grades, and growing environmental regulatory pressures (Figure 3). China accounts for more than 90% of the global third party traded bauxite market.

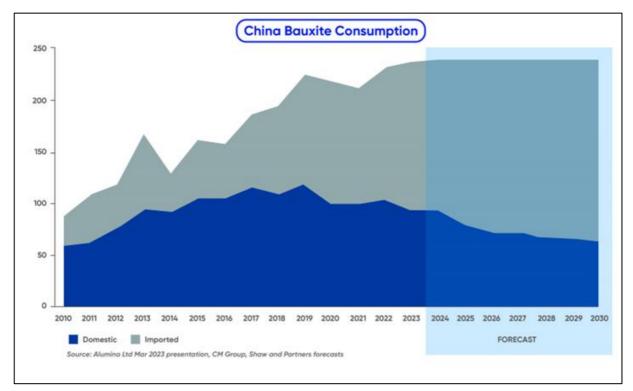


Figure 3. China's significant growth in Bauxite demand and the shift to Imported Bauxite8

<sup>&</sup>lt;sup>6</sup> US Geological Survey Commodities data 2008

<sup>&</sup>lt;sup>7</sup> Mining Technology, Growing demand for bauxite highlights risks of dependence on Guinea's supplies, June 2024

<sup>&</sup>lt;sup>8</sup> Alumina Ltd Mar 2023 presentation, CM Group, Shaw and Partners forecasts

Currently the three main regions of supply for imported bauxite to China are Guinea, Australia, and Indonesia, with Guinea the largest supplier of the three (Figure 4). Guinea has the largest bauxite endowment in the world, and its bauxite is typically considered to be of a high quality, with relatively high total available alumina and low reactive silica.

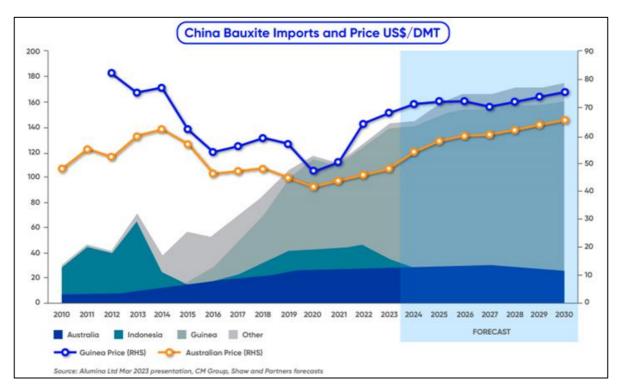


Figure 4. Main regions supplying China with imported bauxite 8

The market has recently experienced a sharp upward trend in bauxite prices with the price for LT Guinean Standard Bauxite reaching approximately US\$130/t over the Christmas New Year period of 2024/2025 (Figure 5).

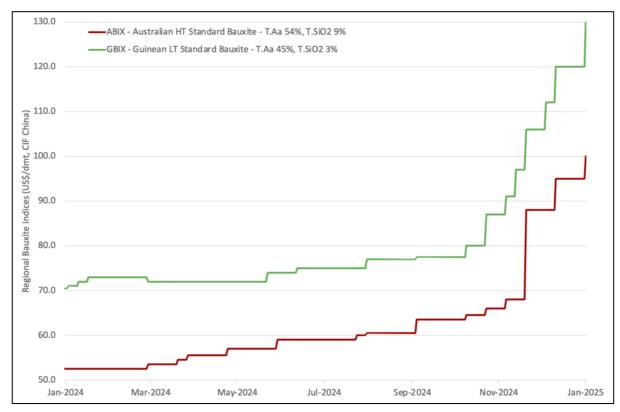


Figure 5. 2024 Bauxite CM Index Price for Australian and Guinean Standard Bauxite to January 2025 9

At this time of substantial demand growth out of China, the median cost of bauxite on a China delivered basis is forecast to be approximately US\$50/t (CIF Shandong) in 2026 (Figure 6). It is possible that the recent increase in bauxite price to as high as US\$130/t will induce higher cost producers into the market. High cost producers potentially provide medium term pricing support at around US\$90-95/t for "Guinea Premium" ores. Anecdotally, there are reports of infrastructure congestion in various parts of the world, suggesting that infrastructure in some jurisdictions is approaching limits or at least reaching levels that attract cost penalties. This further supports a greater portion of higher cost production. It is expected that spot market pricing metrics will be an important feature in future bauxite contracts.

<sup>&</sup>lt;sup>9</sup> CBIX Index Prices, 12 months trailing January 2025, CM Group

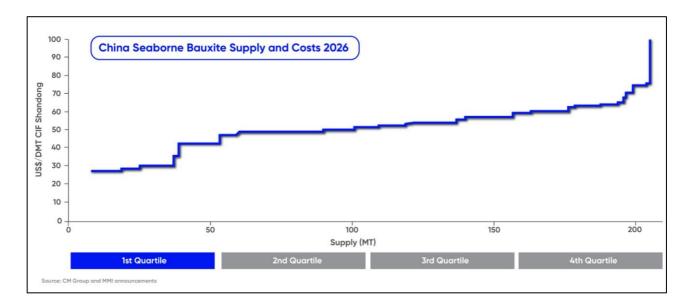


Figure 6. China Seaborne bauxite Supply and Costs 2026 10

## **Product Quality**

Product quality of bauxite is essentially linked to its content of alumina  $(Al_2O_3)$  and silica  $(SiO_2)$ . Higher quality bauxite will have a relatively high percentage of available alumina and relatively low percentage of reactive silica. Reactive silica consumes both alumina and the caustic soda used in the refinery process that produces alumina (alumina being the precursor to aluminium smelting which makes aluminium). The higher the level of reactive silica in bauxite, the more negative the effect on economics of the alumina refining process as a result of reduced alumina recovery and increased consumption in caustic soda.

### THIRD PARTY ACCESS TO RAIL AND PORT INFRASTUCTURE

#### **Infrastructure Mutualisation**

As is the case with certain other countries of West Africa, the Government of Guinea has a general policy that encourages the shared use of mining infrastructure, to both encourage mining investment and to maximise the economic returns of mining for the benefit of Guinea. The Guinea Mining Code provides a legal framework for third-party access to infrastructure. The code specifies that mining infrastructure projects (which includes road, rail, port, airport and ancillary facilities) must comply with the master plan for transport infrastructure, which guarantees third-party access to the infrastructure.

This legal provision establishes the principle of shared use of mining infrastructure between the company that owns the infrastructure and third-party users. As such, road, rail and port infrastructure developed by a mining company within or outside its mining tenure may be used by Government and the public or third parties upon request, provided there is no substantial obstruction or inconvenience to the mining company, and following the conclusion of an agreement between the parties that defines the terms of use and associated costs.

In Guinea, the shared use of mining infrastructure is primarily managed by either the Strategic Committee for the Simandou Project (representing the Guinea Government regarding the codevelopment of Simandou Project infrastructure), the National Agency for Mining Infrastructure (ANAIM; government entity responsible for development of mining infrastructure to facilitate mining), or the Interministerial Committee for the Monitoring of Integrated Mining Projects.

<sup>&</sup>lt;sup>10</sup> CM Group and MMI Announcements

By way of an example, in the Boke region of Guinea, the Guinean State owns key mining infrastructure including railway and port facilities. This infrastructure is subject to a concession agreement that defines principles of shared use and regulation for the efficient use of the railway and port infrastructure.

The concession agreement is between the Guinean State (represented by ANAIM and the Ministry of Mines and Geology) and the bauxite mining company, CBG. CBG is jointly owned by Halco Mining Inc. (45% Rio Tinto, 45% Alcoa, 10% Dadco Investments) and the Guinean Government. Whilst CBG has a priority right to utilise the infrastructure, it is also committed to allowing third parties to use the infrastructure. As such there exists a multi-user operations contract that sees CBG provide railway services to GAC and COBAD (both mining bauxite in Guinea).

# Niagara's proximity to the TGR

Niagara is located within trucking distance to the Trans-Guinean Railway (TGR) that is currently under construction by Winning Consortium Simandou (WCS). There are several existing rural and national roads which link the project to the TGR which is being co-developed (Figure 1 and Figure 8) with the two mines covering Blocks 1 to 4 of Simandou. The TGR is being funded by a large consortium in a joint venture which includes the Government of Guinea as a 15% part owner. Members of the consortium include Baosteel, Chinalco, WCS, Rio Tinto, Hongqiao and the Government of Guinea. The TGR will be operated by a management company La Compagnie du TransGuinéen (CTG) that will provide priority ore haulage services to the two large mines at Simandou, followed by other third parties.

Arrow has previously signed a Memorandum of Understanding (**MOU**) with Baosteel<sup>11</sup>. This MOU, subject to the Company delivering a fully permitted mining project, contemplates concluding a binding mine gate sale agreement for iron ore from Arrow's Simandou North project. Commissioning of the TGR is targeted for late 2025.

The Company intends to take full advantage of the multi-user obligations of the TGR to underpin the development of the Niagara Project for the benefit of shareholders and the people of Guinea. The TGR is a critical piece of infrastructure, and without it the project would likely remain undeveloped for many years. It is also important to recognise that the historical absence of suitable logistics infrastructure has contributed to the preservation of this high-quality project.

Against a backdrop of currently record high bauxite prices, the drilling results at Niagara have so far delivered high-grade intercepts from surface in several drill holes across a substantial lateral extent. Given the location is within trucking distance to the TGR, the Company is very encouraged at the prospect of a potential development project.

<sup>&</sup>lt;sup>11</sup> Refer to ASX Announcement 21 October 2024 titled "Baosteel and Arrow sign Iron Ore Development MoU."

#### MINE PERMITTING

Arrow has already completed first pass baseline environmental studies and community engagement. It has also started recruiting people from local communities to support the current operations.

Work on social and environmental impact assessment is underway. The Company remains committed to progressing this work and continuing to engage with all relevant stakeholders through the permitting processes to conclude them in a timely manner. No impediments to exploration or mining have been identified to date and the Company has established productive relationships with key community and government stakeholders.

The primary authorisation required to mine in Guinea is typically achieved through the award of an exploitation permit. This type of approval is designed for project scale less than US\$1Bn in capital investment. An exploitation permit provides similar rights and obligations to a mining license in Western Australia. In order to gain an exploitation permit, the Company, at the time of application is required to submit an environmental and social impact study and a feasibility study, both of which must include details regarding technical, environmental, and social criteria defined according to the Mining Code. The studies are then evaluated by the relevant technical and administrative bodies for compliance.



Figure 7. Boussoura North Plateau in November 2024

Approval timelines can vary, but in less sensitive areas, exploitation permits are often processed within a year, contingent on compliance with all regulatory requirements. In addition to this primary approval, as is the case in Western Australia, secondary permits are required where relevant (eg. authorisation to set up a landfill, authorisation to install a rainwater, wastewater or surface water management system, etc.) for the project of which some are granted for the life of the project, with others renewable annually or every three years. As shown in Figure 7 which depicts Boussoura North, the bauxite plateaus are often flat, with thin soils and devoid of vegetation.

On very large projects where the project capital cost is in excess of US\$1Bn, the Government will typically engage with the Company to conclude a mining concession agreement. Mining concessions typically require 24 to 36 months for documentation, negotiation and ultimate approval.

On award of a mining concession agreement or exploitation permit, it is normal for the government of Guinea to retain a free carried interest in the project of between 10 and 20%. The specific percentage is determined through negotiations and reflects the project's scale and national importance.

Announcement authorised for release by the Arrow Board.

For further information visit www.arrowminerals.com.au or contact: info@arrowminerals.com.au

#### **FOLLOW US**

Twitter: <a href="https://twitter.com/arrowminerals">https://twitter.com/arrowminerals</a>

LinkedIn: https://www.linkedin.com/company/arrow-minerals-limited

#### **About Arrow Minerals**

Arrow is focused on creating value for shareholders through the discovery and development of mineral deposits into producing mines. The Company's development strategy is to streamline a pathway to execution of a 'starter mine' that can later be expanded once in production<sup>12</sup>.

Arrow currently has two projects in Guinea, West Africa. The Simandou North Iron Project (**Simandou North, SNIP**) and the Niagara Bauxite Project<sup>13</sup> (**Niagara, Niagara Project**). Both Niagara and Simandou North are located within trucking distance to the Trans-Guinean Railway (TGR) that is currently under construction by Winning Consortium Simandou. The location of the Niagara Project relative to the TGR provides significant benefits to the development of the project as a result of multi-user access to rail and port infrastructure (Figure 8).

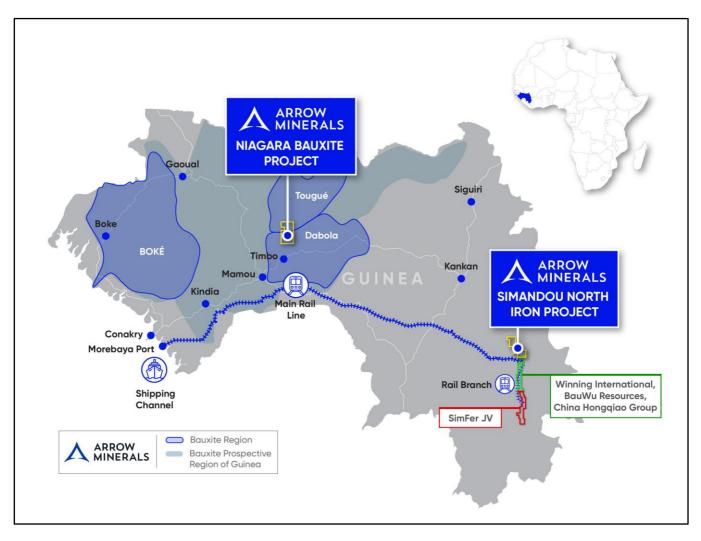


Figure 8. Arrow project locations

<sup>&</sup>lt;sup>12</sup> Refer to Company's website for "Investor Presentation October 2024" dated 29 October 2024.

<sup>13</sup> Refer to ASX Announcement dated 1 August 2024 entitled "Arrow Expands Bulks Presence with Major Bauxite Transaction."

## **Competent Person's Statement**

The information in this announcement that relates to Exploration Results and Exploration Targets is based on, and fairly represents, information and supporting documentation prepared by Marcus Reston, a Competent Person who is a Fellow of The Australasian Institute of Mining and Metallurgy. Mr Reston has sufficient experience that is 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'. Mr Reston is an employee of the Company and has performance incentives associated with the successful development of the Company's minerals project portfolio. Mr Reston consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.