

# CASTLE



## West African Graphite & Gold

ASX: CDT

June 2024

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**Competent Person Statement:** The scientific and technical information in this release that relates to the geology of the deposits and exploration results is based on information compiled by Mr Stephen Stone, who is Managing Director of Castle. Mr Stone is a Member 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 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Stone is the Qualified Person overseeing Castle's exploration projects and has reviewed and approved the disclosure of all scientific or technical information contained in this release that relates to the geology of the deposits and exploration.

Information in this presentation relates to the geological interpretation and Mineral Resources is based on information compiled by Jamie Logan, a full time employee of Palaris Australia Pty Ltd, under the direction and supervision of Dr Allan John Parker. Dr Parker is a Member of the Australasian Institute of Geoscientists, an employee of Palaris Australia Pty Ltd, Director of Geosurveys Australia Pty Ltd, a Non-Executive Director of Centrex Limited and was formerly Managing Director of Lincoln Minerals Limited. Dr Parker has sufficient experience relevant to the styles of mineralisation and to the activities which are being presented to qualify as a Competent Person as defined by the JORC code, 2012. Dr Parker consents to the release of the information compiled in this release in the form and context in which it appears.

Information in this presentation that relates to metallurgical test work managed by Independent Metallurgical Operations Pty Ltd ("IMO") is based on, and fairly represents, information and supporting documentation compiled and/or reviewed by Mr Peter Adamini BSc (Mineral Science and Chemistry) who is a member of The Australasian Institute of Mining and Metallurgy (AusIMM). Mr Adamini is a full-time employee of IMO who has been engaged by Castle Minerals Ltd to provide metallurgical consulting services. Mr Adamini consents to the inclusion in this release of the matters based on his information in the form and context in which it appears. Mr Adamini advises that information in this release that relates to metallurgical test work undertaken or supervised by ProGraphite GmbH is based on, and fairly represents, information and supporting documentation provided by ProGraphite GmbH and/or its subcontractors. In all cases Mineral Resources are estimated and reported in accordance with the "Australasian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves" (the JORC Code. Mineral Resources reported in accordance with the 2012 Edition (Kandia 8000 Zone and Kpali) were prepared by Castle Minerals Limited and reviewed by Runge Limited.

The Company confirms that all material assumptions underpinning the Mineral Resources and any forecast information continue to apply and have not materially changed. Further information on Castle and its Ghana projects and Minerals Resources can be found on its website at [www.castleminerals.com](http://www.castleminerals.com) which contains copies of all continuous disclosure documents to ASX, Competent Persons' Statements and Corporate Governance Statement and Policies.

**Market and industry Data:** This presentation includes market share information and industry data and forecasts which have been obtained from independent industry publications. Although these sources are believed to be reliable, no independent verification of the data has been made nor the underlying economic assumptions relied upon therein ascertained. Third-party sources generally indicate that they have obtained their information from sources believed to be reliable, but do not guarantee the accuracy and completeness of such information. It is believed that the market and industry data presented throughout this presentation is accurate, but no assurance as to the accuracy or completeness thereof is provided. Castle cannot and does not provide any assurance as to the accuracy or completeness of such included information. Market forecasts, in particular, are likely to be inaccurate, especially over long periods of time.

**Please refer to ASX and company website [www.castleminerals.com](http://www.castleminerals.com) for ASX releases pertaining to the contents of this presentation**

# Why Castle? Two Growth Projects. Two In-Demand Commodities



**KAMBALE**  
GRAPHITE

**WaGoldProject**

Evaluating long-term production of graphite concentrates and lithium-ion battery precursor products for application in the fast-growing EV and battery storage markets.

To be delivered into a hungry market transitioning away from China supply dependence.

Resource evaluation, metallurgical and battery performance test work completed.

Development option study underway.

Evaluating multiple gold discoveries in a fertile, geologically and structurally favourable exploration camp situated at the convergence of two greenstone belts and three regional structures associated with major gold deposits in prospective Birimian terrane – host to a majority of West Africa's major gold deposits.

Multi-phase RC drill programme planned for early commencement.

Same region. Same HQ. Same technical crew. Established ESG credentials. Excellent infrastructure.

# Castle Minerals Corporate



**Michael Atkins**  
Non-Executive Chair  
(Corporate & Finance)



**David Renner<sup>1</sup>**  
Non-Executive Director - KGL  
(Geology, Operations & Corporate)



**Stephen Stone<sup>1,2</sup>**  
Managing Director  
(Corporate & Geology)  
Executive Director - KGL



**George Asomoah Boadu**  
Manager Geology



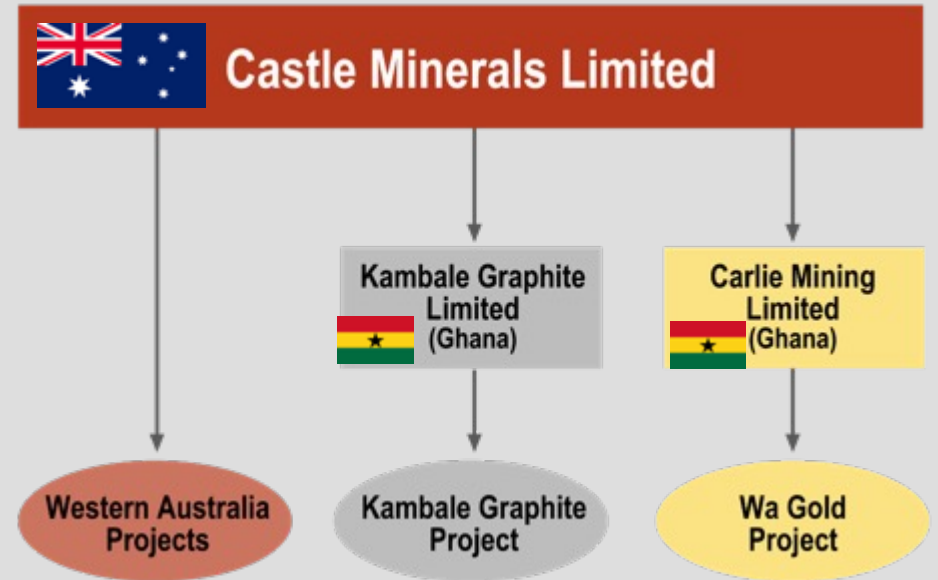
**James Guy**  
Non-Executive Director  
(Geology and Mining)



**Hector Nyinaku<sup>2</sup>**  
Non-Executive Director – CML  
(Admin, Finance & Logistics)

<sup>1</sup> Directors: Kambale Graphite Limited

<sup>2</sup> Directors: Carlie Mining Limited



Share Register	
George Bonney	5.0%
Stephen Stone	4.0%
1215 / Ignite	3.7%
Top 20	24.0%
Directors	4.8%

**1,224.5M**

Ordinary Listed Shares (CDT)

**A\$7.3M**

Market Cap (\$0.006/share)

**205.8M**

Options Listed (CDTO & CDTOA)

**A\$0.6M**

Working Capital

**75.0M**

Options Unlisted

**A\$6.7M**

Enterprise Value

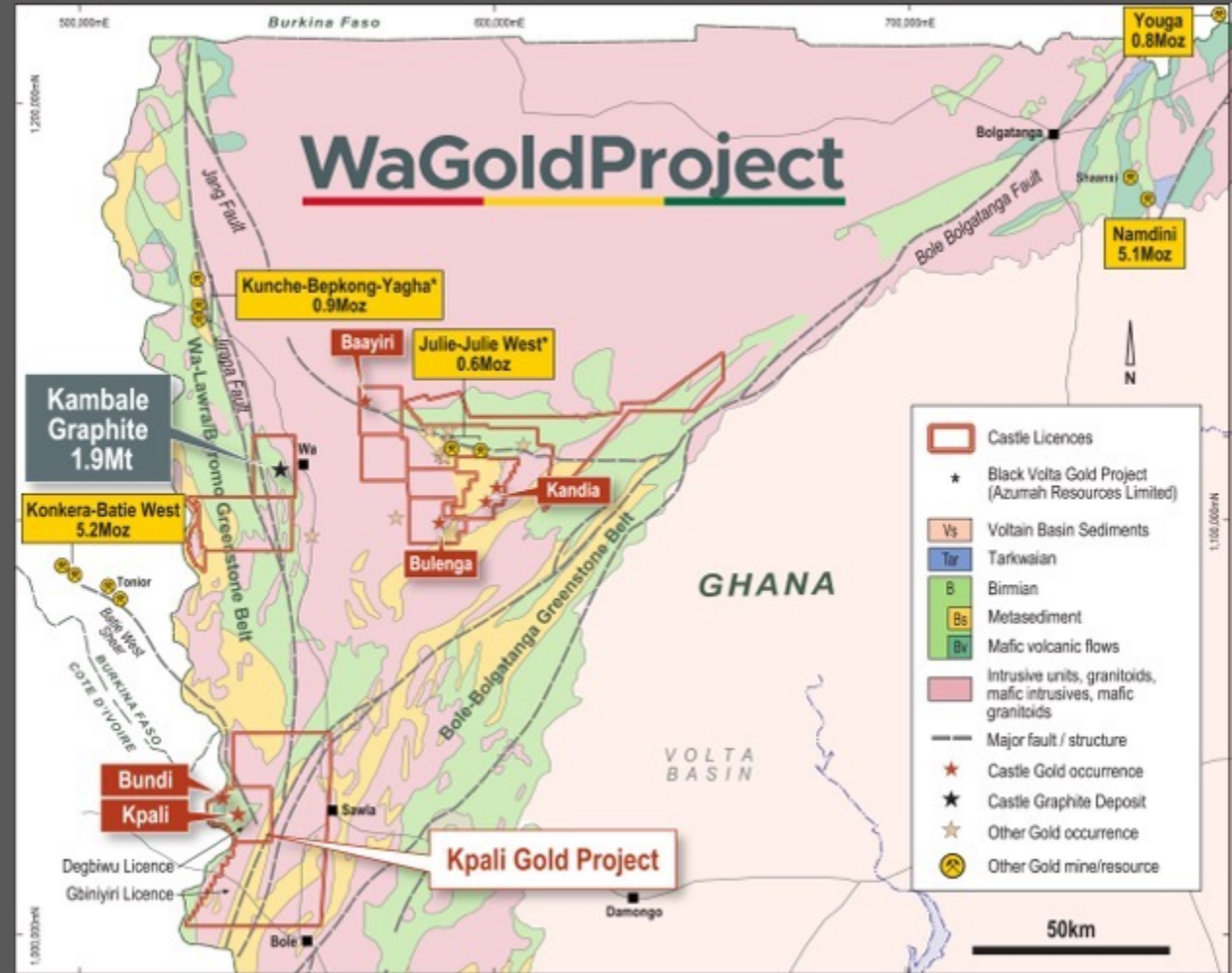


# WaGoldProject

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# Wa Gold Project: Regional-Scale Upside

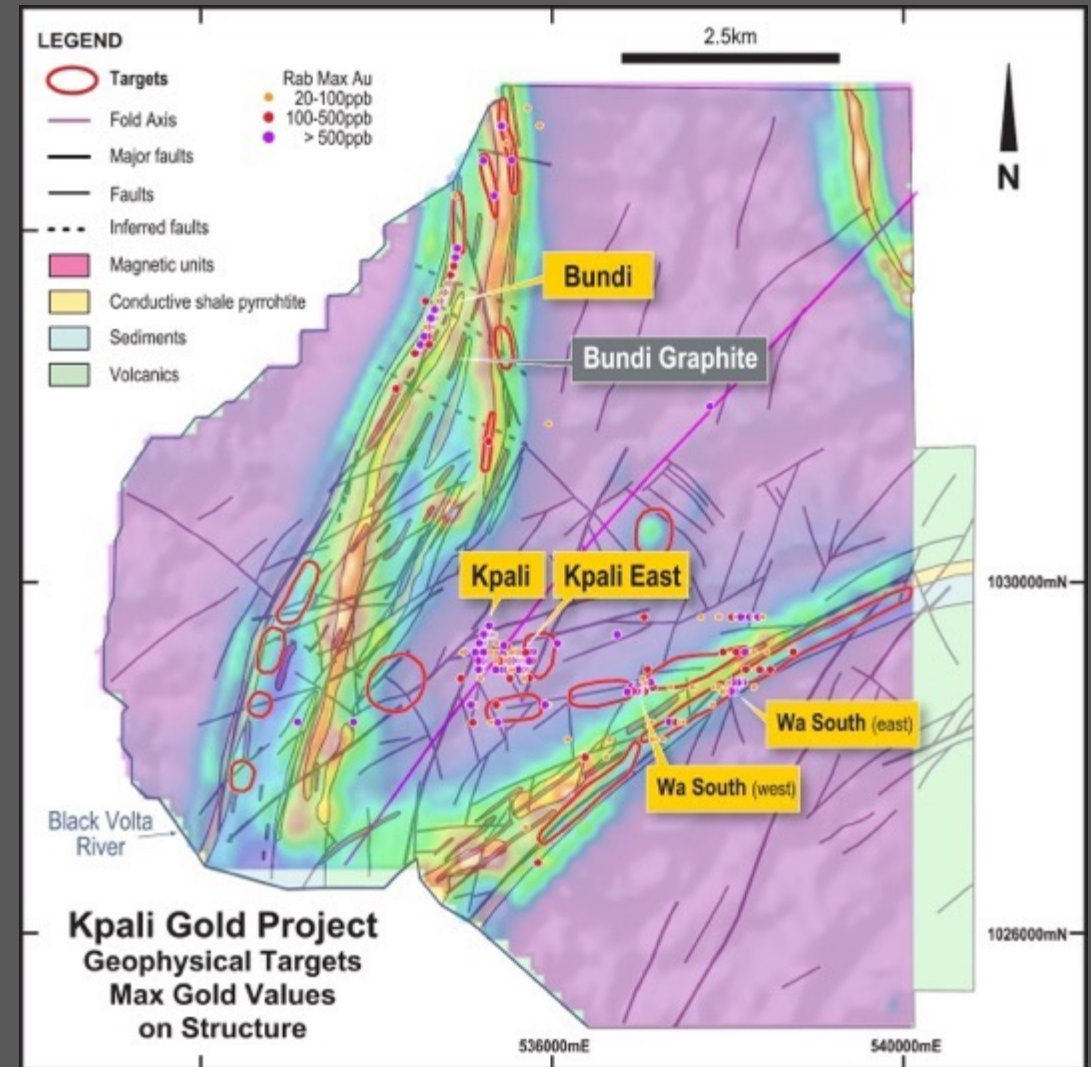
- Wa Gold Project owned 100% by Carlie Mining Limited ("Carlie"), a wholly owned subsidiary of Castle.  
(Kpali Gold Project is a sub-project of Wa Gold Project).
- Large strategic holding in Ghana's emerging Upper West region (9 licences, 2,686km<sup>2</sup>).
- Extensive tracts of Birimian greenstones, the rocks that host majority of Ghana's and West Africa's World-Class deposits.
- Several advanced and/or drill-ready targets (Kpali and Bundi, Kandia, Baayiri, Bulenga).
- Kpali area to be focus of next drill programme.
- Proximal to 1.4Moz Au Ore Reserve / 2.8Moz Mineral Resource, pre-development, Black Volta Gold Project (Azumah Resources Limited).



Ghana's Upper West Region and geology (After WAXI) showing Castle's 9-licence x 2,686km<sup>2</sup> Wa Gold Project and key prospects. The Kpali Gold Project comprises the Degbiwu and Gbiniyiri licences inclusive of the Kpali and Bundi prospects and the convergence of the Wa-Lawra and Bole-Bolgatanga greenstone belts and three major structures associated with several major gold deposits in the Upper West region.

# Kpali: An Emerging Exploration Camp

- Convergence of two greenstone belts and three regional-scale structures individually associated with several major gold deposits (Konkere/Batie West, Black Volta, Namdini, Youga).
  - 30km of Batie West Shear, host to 3.3Moz Konkera deposit.
  - 15km of Wa-Lawra shear zone / Jirapa Fault, host to 1.4Moz Kunche/Bepkong/Yagha deposits.
  - 53km of Bole-Bolgatanga shear zone, host to 7Moz Namdini deposit and 1.3Moz Youga deposit.
- Castle intercepts include (refer ASX release 11 June 2024):
  - 22m at 2.85 g/t Au fm 87m incl.  
17m at 3.40 g/t Au fm 89m and  
7m at 6.03 g/t Au fm 90m (13SWRC049);
  - 10m at 2.84 g/t Au fm 92m (13SWRC053);
  - 14m at 2.29 g/t Au fm 98m incl.  
5m at 4.53 g/t Au fm 99m (13SWRC054);
  - 16m at 3.23 g/t Au fm 9m (13SWRC057);
  - 10m at 2.01 g/t Au fm 22m and  
10m at 1.45 g/t Au fm 49m (13SWRC059).
- Collectively the Kpali, nearby Kpali East, Bundi and Wa South prospects infer the possibility of a new West African exploration camp.

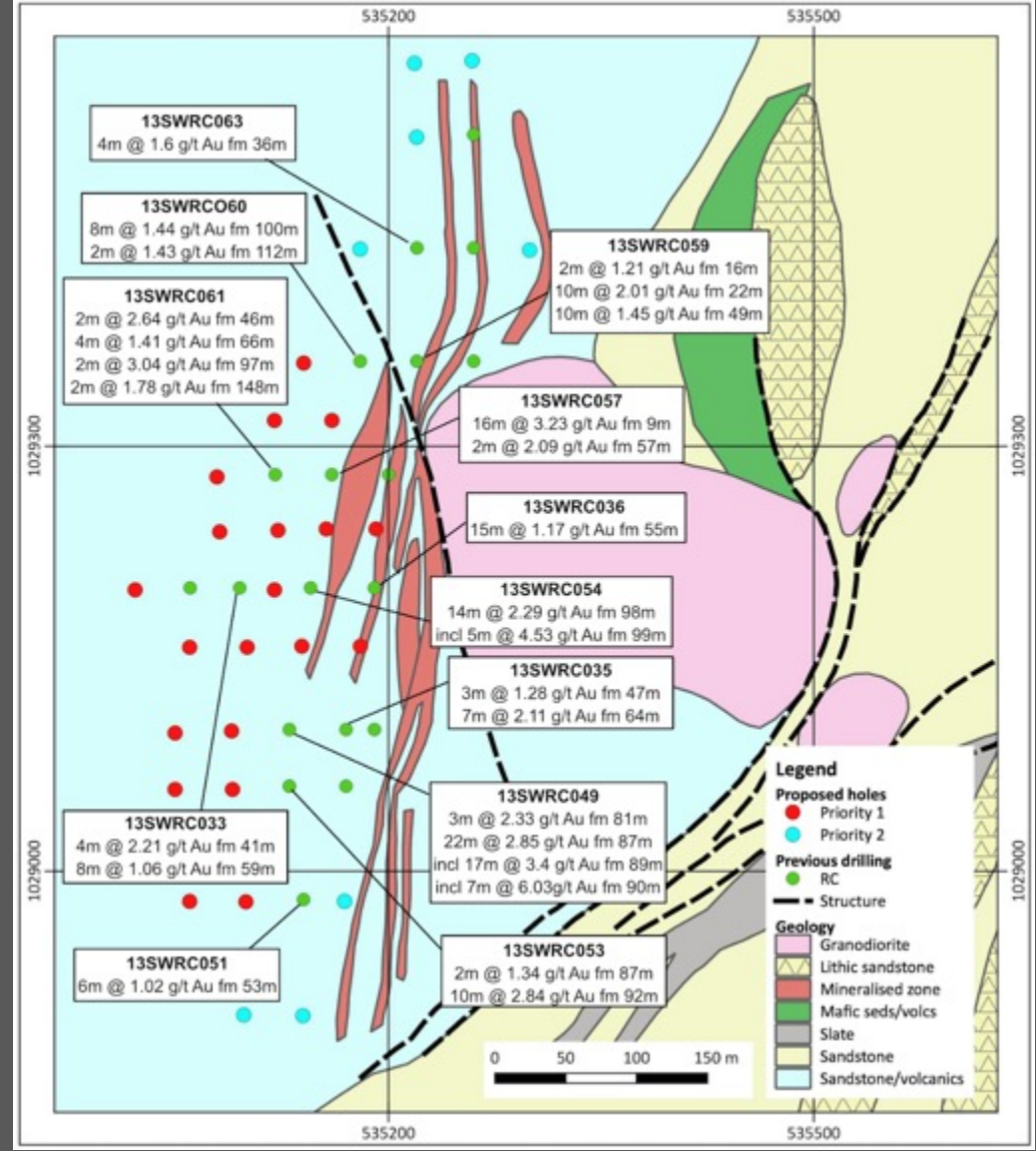
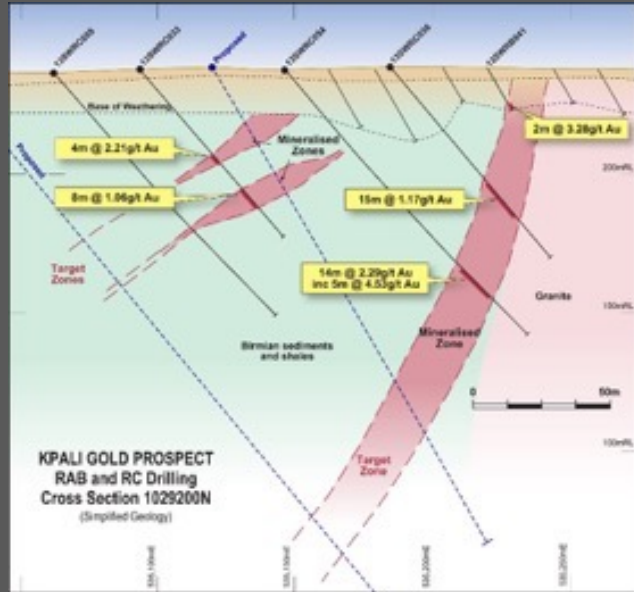
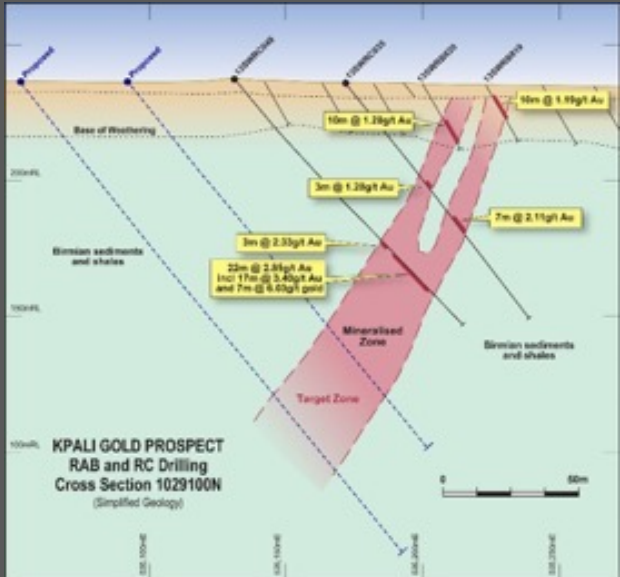


Reprocessing and interpretation by geophysical consultants, Terra Resources P/L, of Castle ground magnetic and VTEM data superimposed with max-gold values in drill holes highlights the strong structural association of mineralisation at the Kpali Gold Project

# Kpali: Proposed Drilling



- 24-hole, 3,500m phased RC drill programme planned.
- Phase 1 to extend the open-ended, lode-style Kpali gold deposit.
- Subsequent phases to expand Bundi & Kpali East and test other prospects and new targets from reprocessed geophysics.

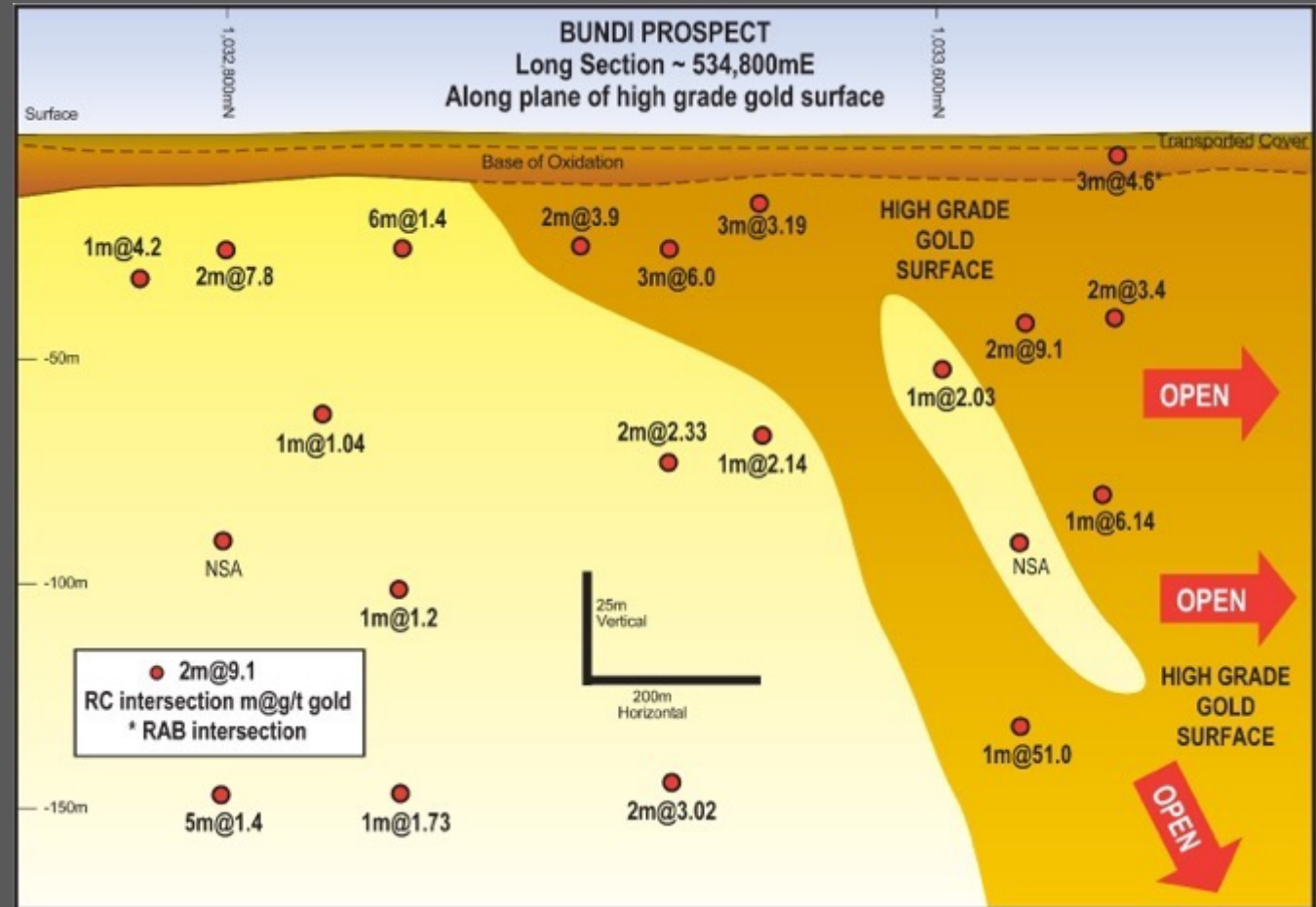


Kpali cross-sections 1029100N and 1029200N and drill hole plan showing RAB and RC drill holes on simplified geology (refer ASX releases 11 June 2024, 18 February 2014 and 2 July 2014) plus trace of planned holes. NB: High-grade mineralised shoots tend to plunge off section. Planned holes subject to change.



# Bundi: Intriguing Au-Zn Association (VMS?)

- 2013 grassroots discovery with intriguing zinc association defined to 1.4km strike auger and RAB drilling.
- Wa-Lawra/ Boromo belt hosts the Perkoa zinc deposit (6.3Mt at 14.5% Zn) where it extends north into Burkina Faso.
- RC drilling intersected up to 51g/t Au with 16 of the 20 holes reporting mineralisation (refer Castle ASX release 17 June 2013 and 29 April 2014).
  - 4m at 2.57g/t Au fm 24m (13SWRC026);
  - 6m at 3.32g/t Au fm 37m (13SWRC027);
  - 8m at 2.16g/t Au fm 40m (13SWRC028);
  - 2m at 9.09g/t Au fm 68m (13SWRC032); and
  - 5m at 1.40g/t Au fm 209m (14SWRC066)
- Hosted within altered Birimian shales and sediments with associated sericite alteration and disseminated sulphides including sphalerite (Zn), chalcopyrite (Cu), pyrite, pyrrhotite.



# Other Wa Gold Project Prospects: Kandia, Baayiri, Bulenga

## Kandia:

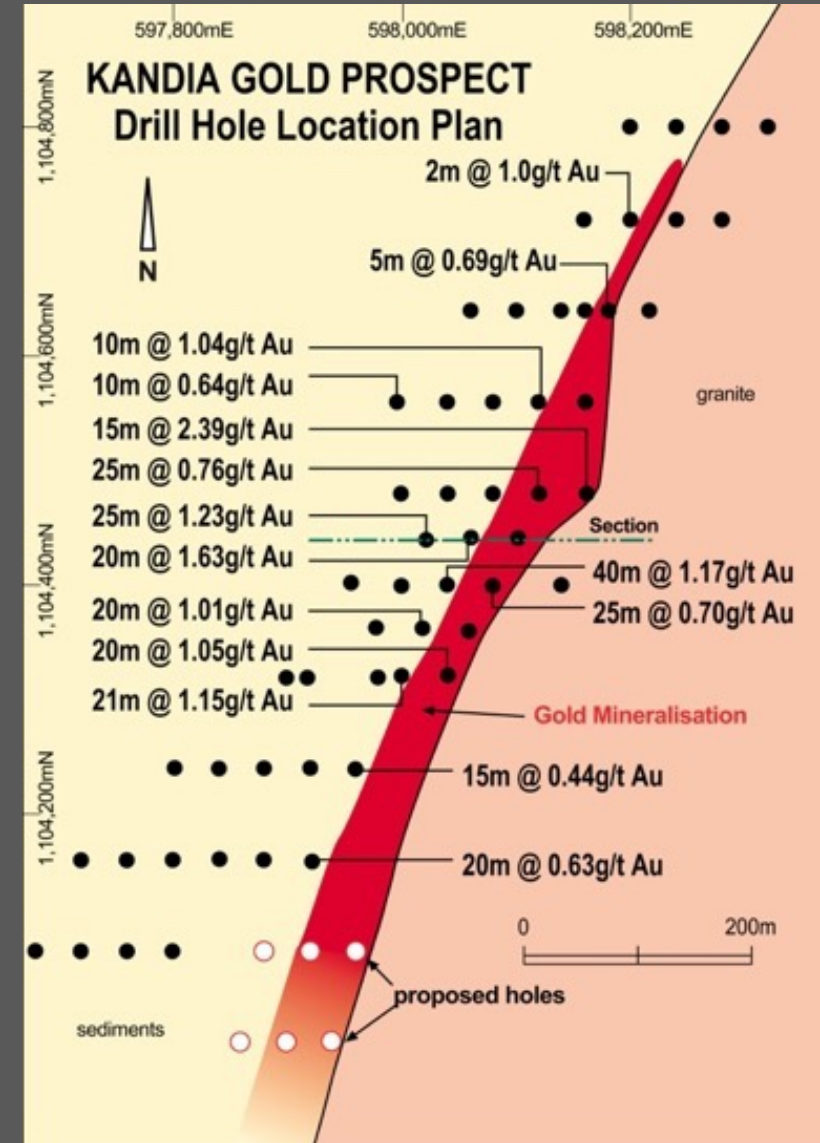
- Three zones of artisanal workings over 600m.
- Altered Birimian metasediments and schists along a NE-trending regional high-strain zone that locally demarcates a sheared granite – greenstone contact that can be traced within Carlie’s licenses for at least 25km.
- Zone parallels the Bole – Bolgatanga Greenstone Belt trend (Namdini, Youga deposits) .
- Nine gold anomalies over 12km strike identified in soil geochemistry.
- Drilling returned encouraging near-surface intercepts:
- Minimal work has been conducted on the southern extension.

## Baayiri:

- Mineralisation occurs in north striking, steeply dipping alteration zone, 2m-10m true width, hosted in granodiorite. Best results from initial RC drilling include (refer ASX releases 11 June 2011 and 13 September 2011):
  - 5m at 6.64g/t Au fm surface (11BARC002);
  - 20m at 0.55g/t Au fm 10m (11BAR006);
  - 55m at 1.82g/t Au fm 15m (11BARC007);
  - 20m at 1.08g/t Au fm 20m (11BARC036); and
  - 15m at 2.73g/t Au fm 30m (11BARC052);

## Bulenga:

- Early exploration has identified a 3km long NW trending gold in soil anomaly.
- Trenching returned a mineralised zone of 19m at 1.14g/t.



(Refer ASX release 26 May 2011)

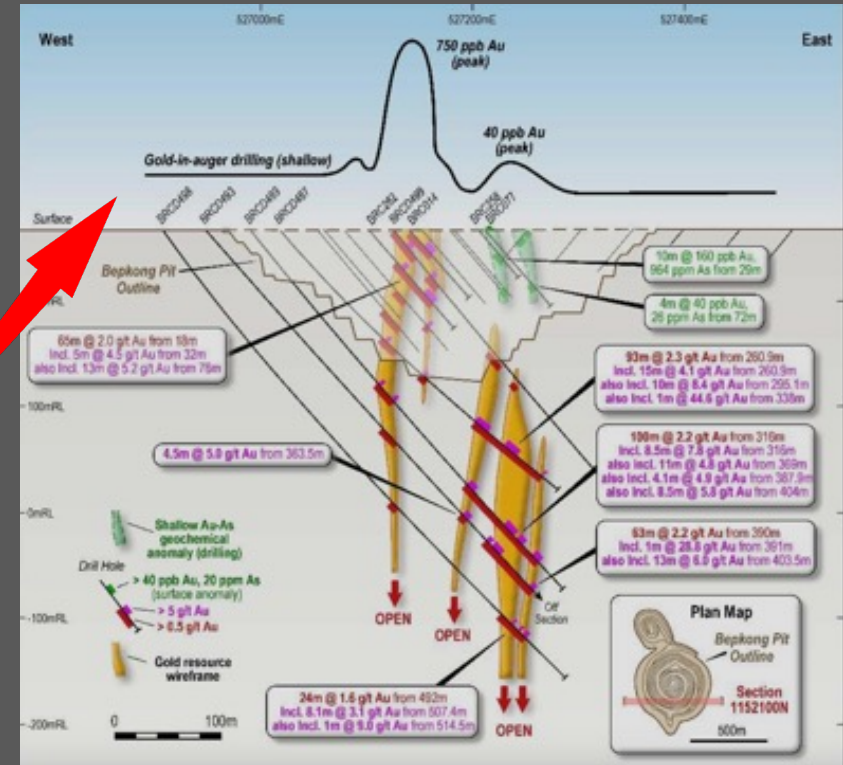
# Black Volta Project: Major Discoveries Below Subtle Anomalism



- Castle MD, Stephen Stone, as former MD of Azumah Resources Limited (now a wholly owned subsidiary of Ibaera Capital Limited) grew the renamed Black Volta Gold Project (in the same region as the Wa Gold Project) from a single, minimal prospect to a series of major, mainly non-outcropping discoveries. These now stand at a combined<sup>1</sup>:

**2.8Moz Mineral Resources at 1.7g/t Au: and  
1.37Moz Ore Reserves at 1.8g/t Au.**

- Primary gold was delineated below often very subtle or single point geochemical anomalies in a regolith environment with minimal supergene dispersion.
- Systematic, multi-element geochemical sampling using power augers in areas of favourable structure and geology was instrumental in discovery.
- The 934km<sup>2</sup> BVGP is earmarked for development as an 11yr +150,000oz/yr operation from two main open-cuts, Kunche and Julie with u/g also likely at Bepkong.
- Several Castle licences are adjacent and strategically located to the Azumah deposits and proposed mining operation.

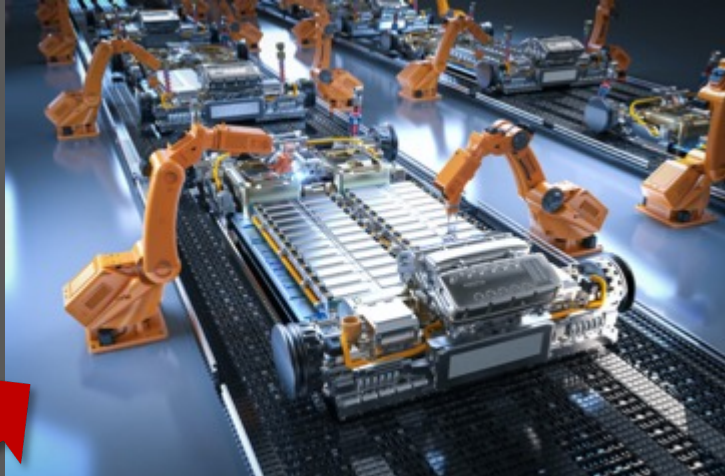
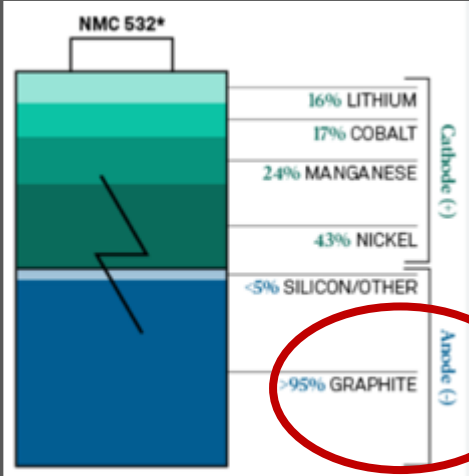


<sup>1</sup><https://ibaera.com/project-news/black-volta-gold-project-ghana/>



**KAMBALE**  
**GRAPHITE**

# Graphite: Growing Li-Ion Battery Demand



240 gigafactories operational worldwide and more planned.

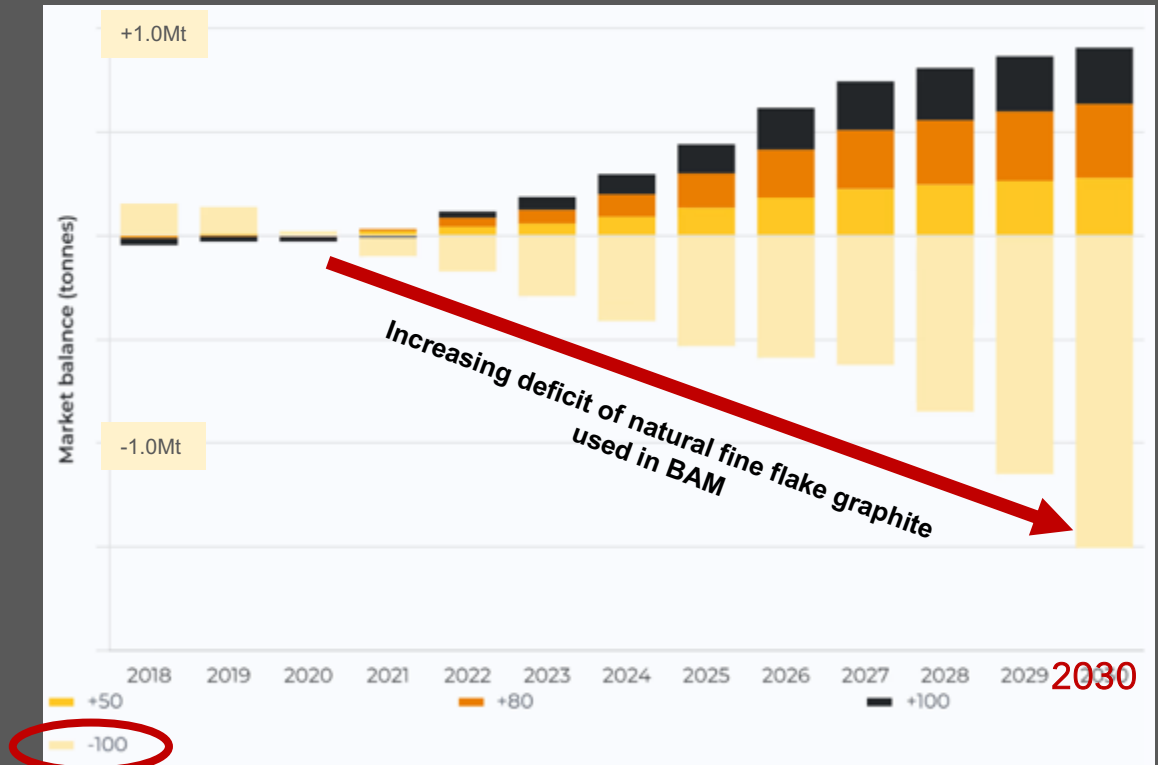


“ Where will all the graphite come from? ”

Commentary sources: Bloomberg. Fastmarkets. McKinsey. Macquarie. Benchmark. Reuters. International Energy Agency. S&P Global.

# Graphite: Supply Chain Bottlenecks

- EV battery anodes manufactured using natural fine flake graphite or synthetic (Not larger flake sizes).
- Kambale is favourably almost entirely fine flake.
- Only natural fine flake forecast to move into deficit.
- Battery “gigafactories” are much faster to build than mines are to find, assess, permit, finance and develop.
- Over reliance on China (~90% BAM production) by USA, EU and other EV producers.
- Recent China export licence controls increase supply chain stress for non-China battery, EV producers.
- Billions US\$ (IRA\*) and Euros (CRMA\*) being directed to ensure critical minerals supply chain security.
- Import tariffs recently imposed by USA on many China origin graphite products.



-100 mesh natural fine flake graphite deficit forecast to grow

<sup>1</sup>Source: Benchmark Intelligence Natural Graphite Forecast Q2 2023

Commentary sources:

Bloomberg. Fastmarkets. McKinsey. Macquarie. Benchmark. Reuters. International Energy Agency. S&P Global.

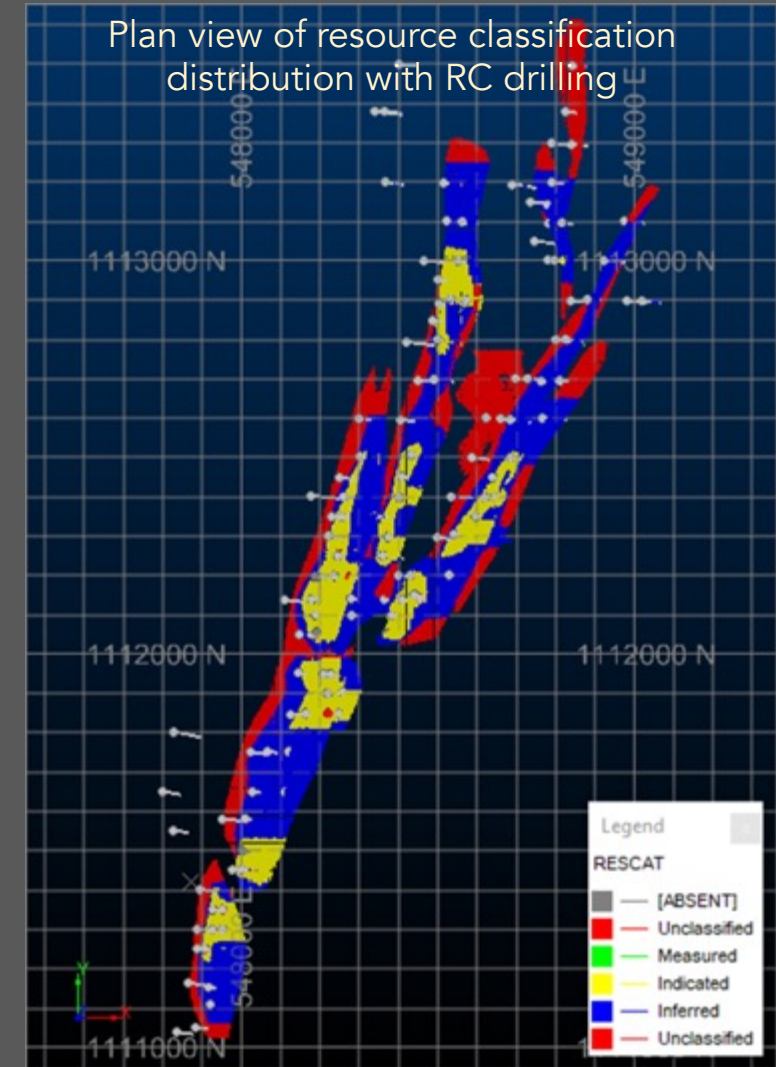
\* Inflation Reduction Act and Critical Raw Materials Act

# Kambale: Large Resource to Underpin Long Life Operation

- **Size:** 1.9Mt contained graphite <sup>2,3</sup>.

Classification (5% TGC Cut-Off)	Tonnes (kt)	Contained TGC (kt)	TGC	%
Indicated	9,556	843	8.8%	43%
Inferred	12,872	1,096	8.5%	57%
<b>Total</b>	<b>22,438</b>	<b>1,939</b>	<b>8.6%</b>	

- **Confidence:** 43% in higher confidence 'Indicated' JORC classification.
- **Geometry:** Shallow, multiple, thick, sub-vertical, consistently mineralised graphitic lens conducive to lower-cost open-cut mining.
- **Upside:** Resource estimated to 120m below surface. Drill intercepts confirm extends to 150m and remains open.
- **Regional upside:** Priority targets infer possible additional deposits.
- **Local EV hub:** Ghana looking to establish an African battery manufacturing and EV hub (seven in-country car assembly plants).



1. 23 October 2023 MRE based on 424-hole, 21,600m database
2. Undertaken by independent consultants, Palarris (Australia) Pty Ltd ( Refer ASX release 23 October 2023).
3. Independent JORC Code 2012 Mineral Resource Estimate





# Kambale: 99.97% Concentrate Purity Achieved

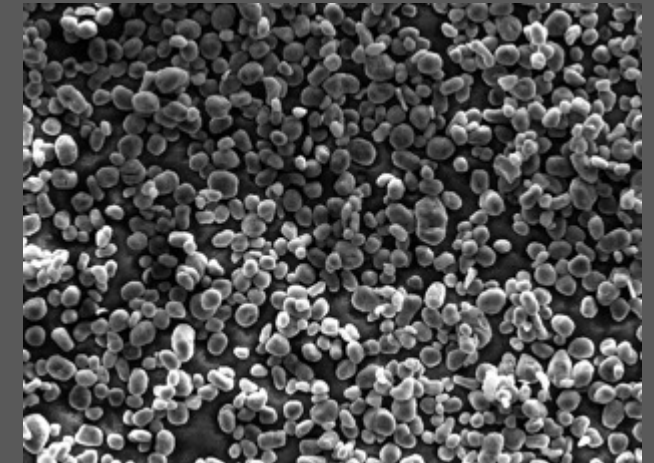
- **95.1% LOI** bulk fine flake graphite concentrate produced using conventional grind-flotation circuit.
- Successfully upgraded to **99.97% LOI** purity following micronisation, spheronisation and purification.
- Purification used safe alkaline, caustic soda-based process (Highly toxic HF acid preferred in China).
- No impurities of concern.
- Purity exceeds the high-level benchmark required by the manufacturers of lithium-ion battery anodes.



Drill core samples awaiting compositing in Perth laboratory.



Flotation cell test work underway.



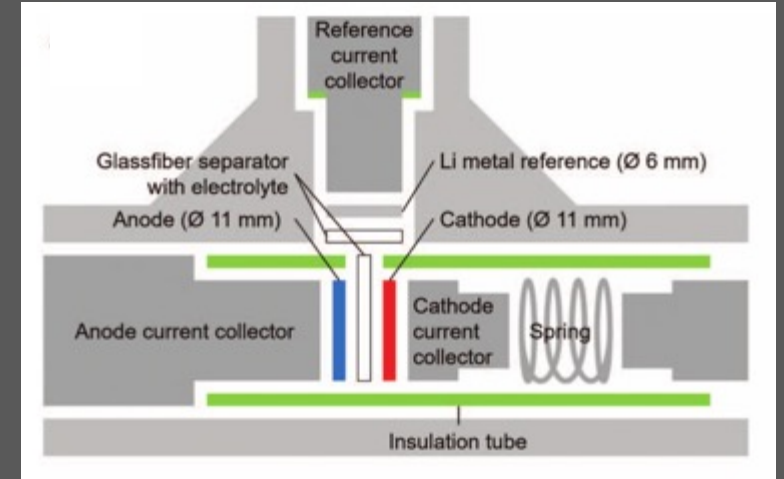
SEM image of micronised and spheronised Kambale graphite concentrate.

# Kambale: Suitability For Li-Ion Battery Manufacture Confirmed



- Electrochemical and other physical tests confirm suitability for manufacture of lithium-ion and other battery formats.
- Key charging, durability, reversible capacity, stability and other performance benchmarks achieved (uncoated SPG used in tests).

*“Castle has confirmed a large, high-grade resource and in quick succession successfully completed concentration, micronisation, spheronisation, purification and electrochemical test work.”*



Swagelok T-cell configuration used to test electrochemical performance of Kambale SPG (uncoated).



Mining



Concentration



Micronising



Spheronising



Purification  
(Battery Anode  
Material)



Coating



Coated Purified  
Spherical Graphite



Active Anode  
Material

# Kambale: Development Advantages

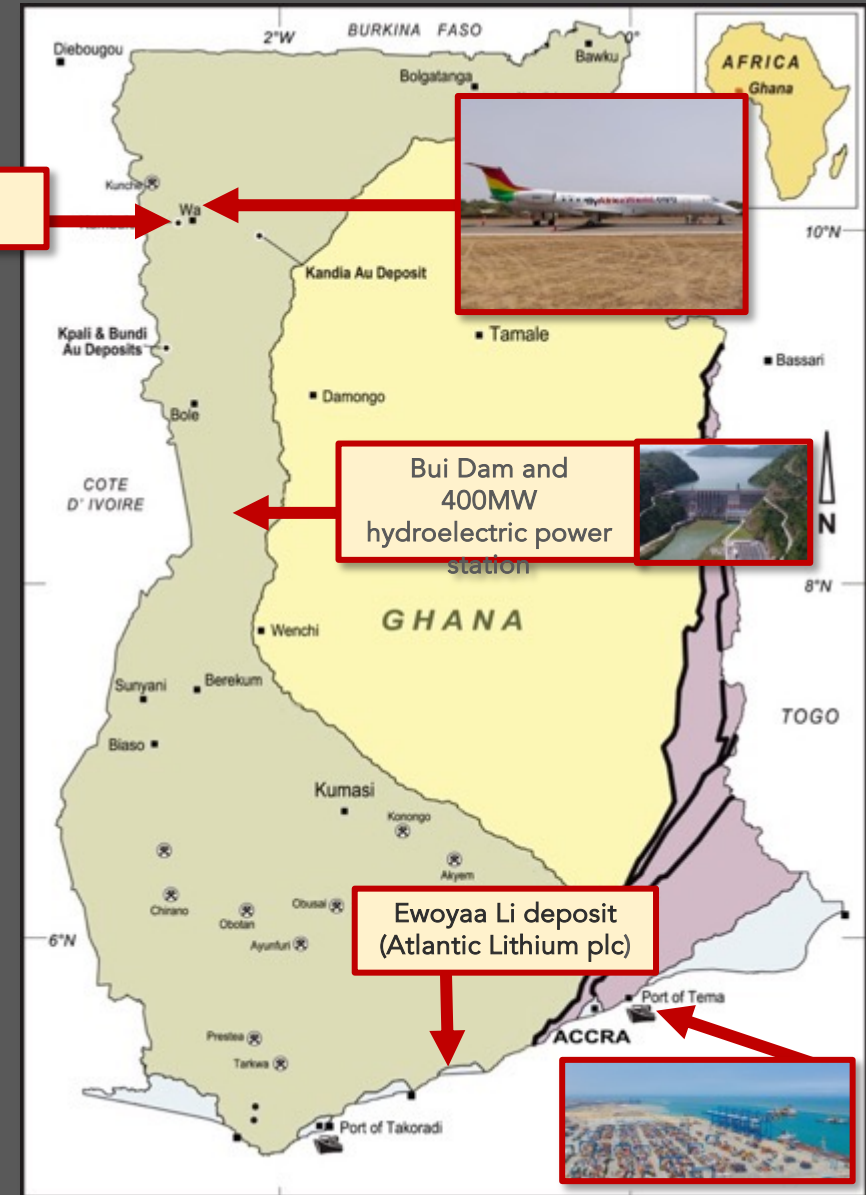
- **In-place critical infrastructure reduces capital requirements:**

- ✓ Largely green-grid power from 400MW Bui hydro dam.
- ✓ 161kV line 5km from site
- ✓ 4km from national highway.
- ✓ Excellent local and regional roads.
- ✓ Daily commercial flights from Accra to nearby Wa.

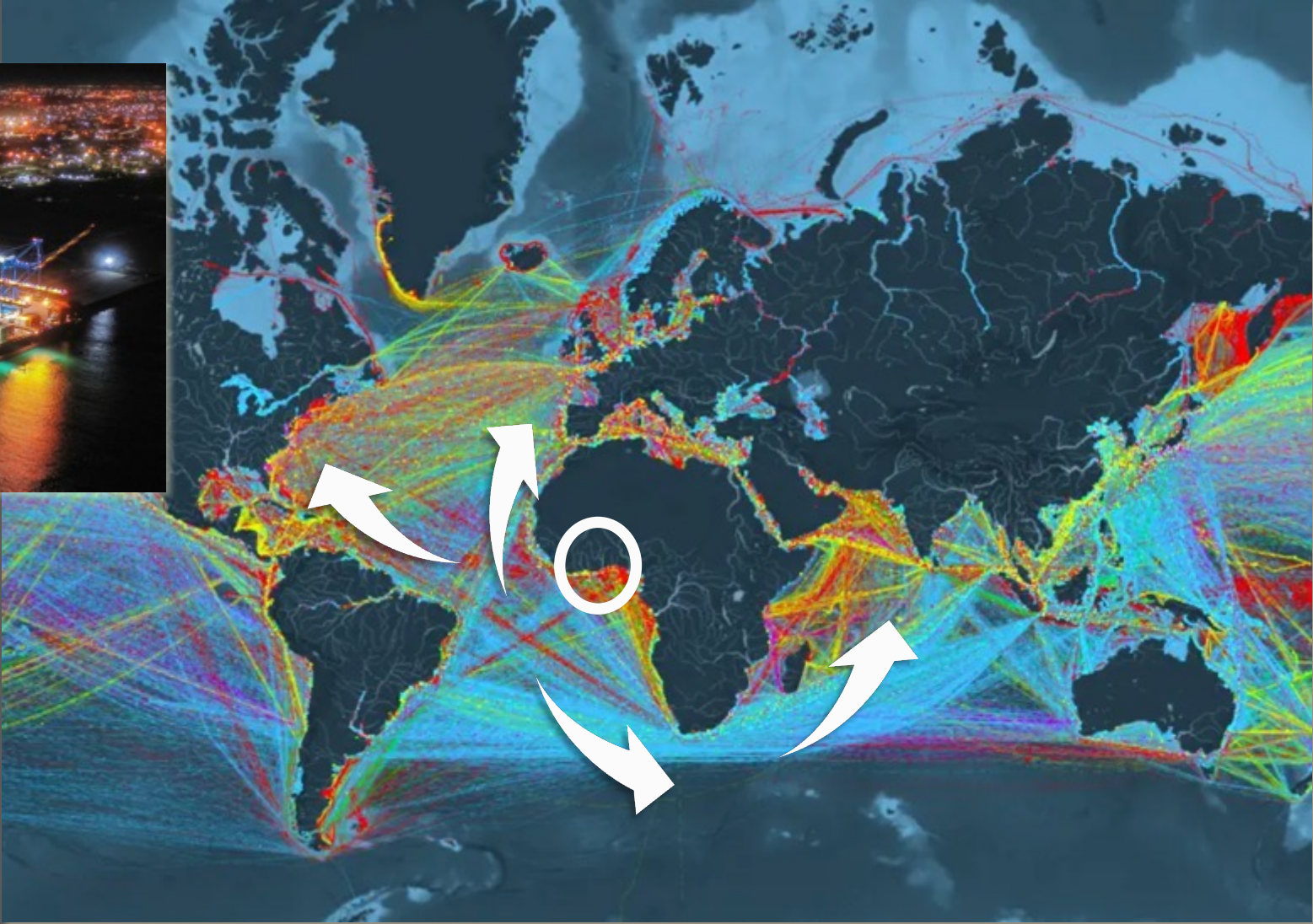
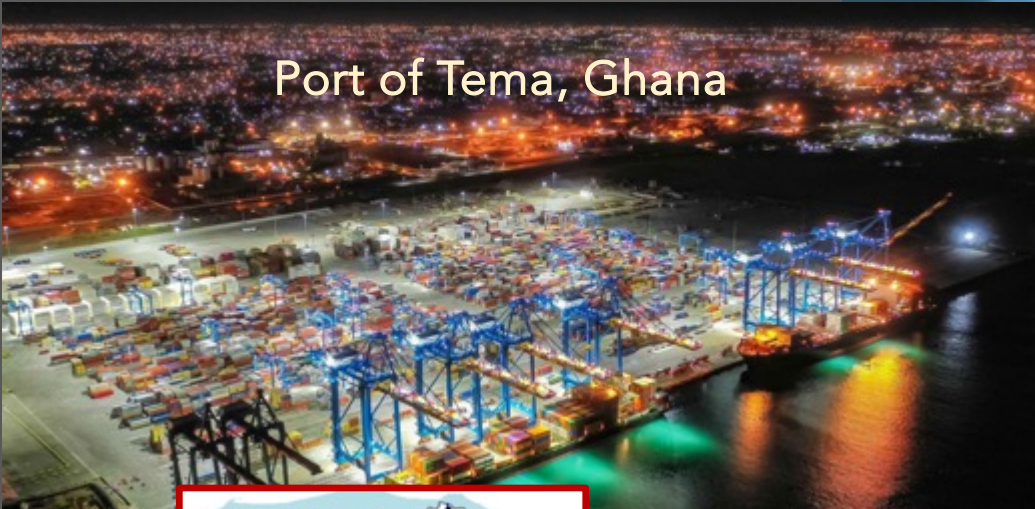
- **Strategic importance:**

- ✓ Only sizable graphite project in Ghana and one of only two in West Africa.
- ✓ Uncommitted production.
- ✓ Excellent national highways to international ports of Tema and Takoradi, providing direct access to US, European, Asian and other markets.
- ✓ Ghana evaluating establishing a Sub-Sahara battery and EV hub.

Kambale



# Kambale: Access to USA, EU and Asian Markets



Kambale

Port of Takoradi

Port of Tema

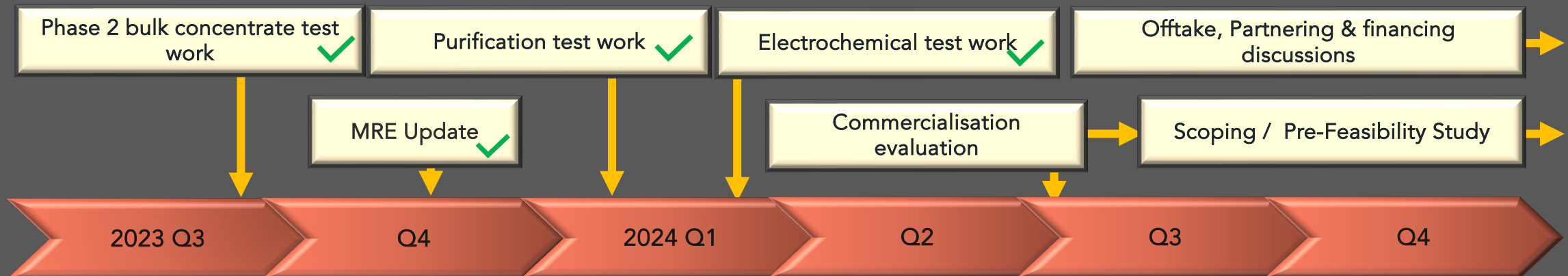
# Kambale: Foot Hard Down

## • What's Next?

- ✓ Initial economic assessment.
  - ✓ Market analysis and optimal development strategy.
  - ✓ Preliminary pit optimisation and schedules.
  - ✓ Logistics and infrastructure studies.
  - ✓ Indicative capital & operating costs estimates.
  - ✓ Preliminary financial modelling.
- ✓ Escalate community and stakeholder engagement.
- ✓ Environmental baseline benchmarking.
- ✓ Offtake, partnering and financing discussions.
- ✓ Ghana government & institutional participation framework
- ✓ Positioning for Ghana Stock Exchange listing.



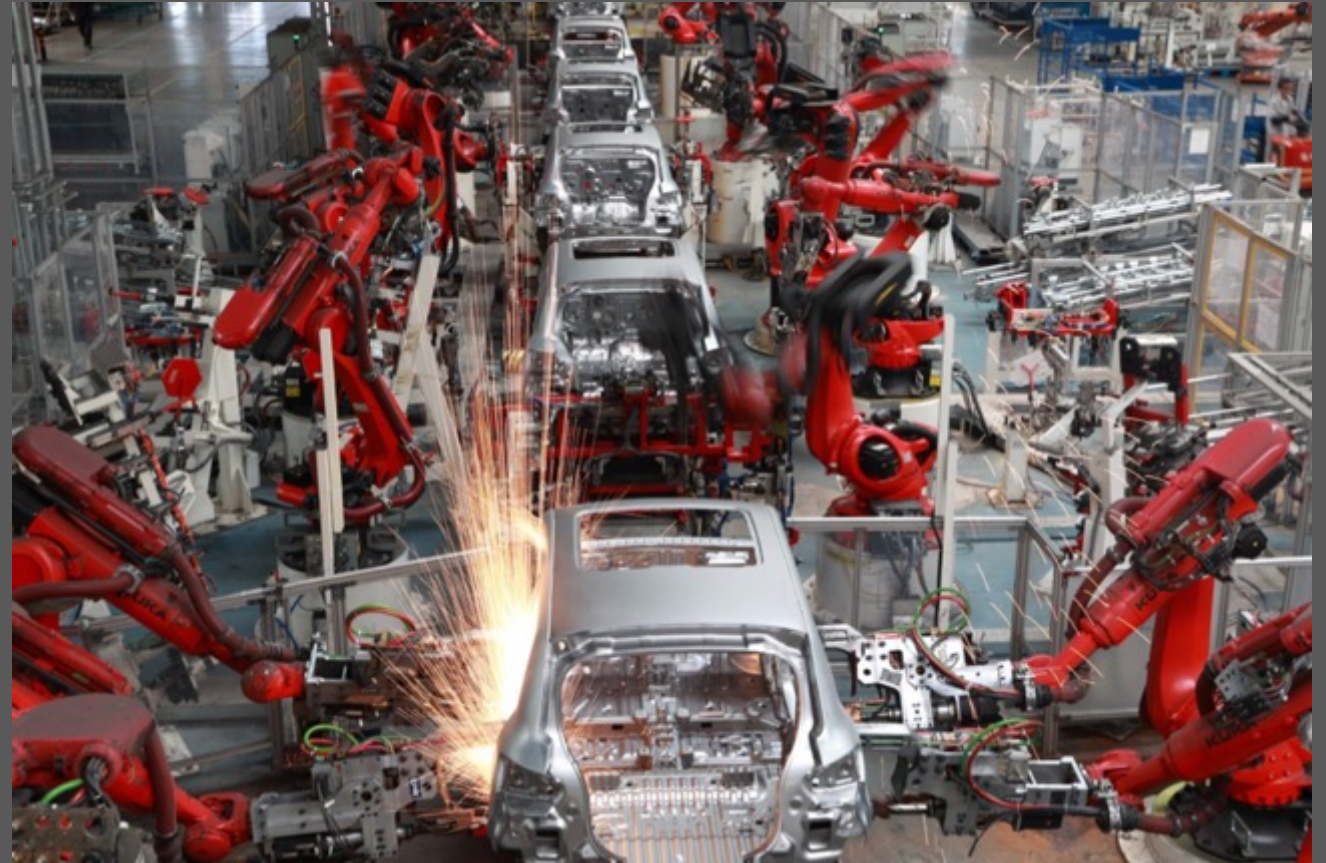
Porsche Taycan EV



# Kambale: Ghana's Only Commercial-Scale Graphite Project

*"The Kambale Graphite Project is rapidly emerging as a credible entrant into the Critical Minerals supply chain to coincide with forecasts of a major deficit of natural fine flake graphite used in EV battery manufacture and a move away from China dependency."*

*"Ghana already has a world-class lithium mine on the cards and several car assembly plants so is logically looking to establish an in-country EV battery manufacturing hub to supply its own and international markets."*



# Ghana: A Safe, Stable, Supportive Jurisdiction

- ✓ **Africa:** 54 countries. Not all the same!
- ✓ **Ghana:** A stable, democratic jurisdiction. Westminster-based government and English judicial system.
- ✓ **Africa's premier gold producer:** Established international Tier-1 mining industry – Newmont, Goldfields, AngloGold-Ashanti, Perseus etc.  
4Moz/yr Au. 30 operating mines (several commodities).
- ✓ **People:** Highly skilled, well-educated & trained, experienced managerial and operational work force.
- ✓ **Security:** Low to medium risk rating.
- ✓ **Fiscal:** 10% free carried interest. 5% Gross Royalty. 35% corporate tax.



Hon. Samuel A. Jinapor, Ghana's Minister for Lands and Natural Resources meets with H.E. Berenice Owen-Jones, Australia's High Commissioner to Ghana.

# Local Content

- 100% in-country management and technical team.
- 100% in-country procurement.
- 100% Ghanaian mining, construction and other services proposed.





# ESG & Social Licence to Operate

- Castle anagement has operated successful in the Wa region for 16 years and strongly believes in:
  - **Acting** respectfully, transparently, inclusively and constructively.
  - **Honouring** traditions, heritage and rural practices.
  - **Maximising** local content, local employment, youth and womens opportunities, training.
  - **Minimising** environmental impact and operational footprint, continuously rehabilitating and appropriately compensating.
  - **Complying** with Ghana’s statutory laws and regulations (i.e. EA 1999 I.I 1652) and stringent ESG regulations.
  - **Adhering** to internationally recognised guiding policies:
    - World Bank IFC Environmental and Social Framework Guidelines ESS10;
    - Equator Principles; and
    - International Labour Organisation recommendations



Meeting with community leaders and key stakeholders (May 2024)



Castle MD meeting with Chief and Elders of Jingu Village (November 2023) 25

# CASTLE



## Medaase!

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ASX: CDT



# APPENDIX: Strategically Located Australian Projects for Farm-Out / Sale

## Earaheedy Basin (zinc, lead, copper):

- **Withnell licence:** Strategically located adjacent to evolving Tier-1 scale, open-ended SEDEX and MVT-style zinc-lead-copper discovery by Rumble Resources Ltd (ASX: RTR) and north of the Strickland Metals Limited (ASX: STK) Iroquois prospect ; and
- **Terra Rossa licences:** Similar stratigraphy with additional prospectivity for copper.

## Beasley Creek (gold and lithium):

- Hosts extensive gold anomalism in a structurally controlled corridor and an intriguing zone of lithium anomalism adjacent to intrusive granite complex.

## Polelle & Wanganui (gold):

- Polelle, 7km SE of operating Bluebird gold mine, Meekatharra (Westgold), hosts a mainly obscured and minimally explored greenstone belt whilst the Wanganui project is prospective for down-plunge high-grade gold shoots. Both farmed-out to Great Boulder Resources Limited (ASX: GBR).

## Woodcutters (lithium):

- 25km south east of the Bald Hill lithium mine and 25km north west of the Buldania lithium deposit.

## Wilgee Springs (lithium):

- Application along strike from and within the same metamorphic belt as world-class Greenbushes lithium mine 25km south.

