



**SYRAH** RESOURCES

# Q4 2022 Quarterly Activities Report

31 January 2023

Shaun Verner – Managing Director & CEO

# Important notice and disclaimer

This presentation is for information purposes only. Neither this presentation nor the information contained in it constitutes an offer, invitation, solicitation or recommendation in relation to the purchase or sale of shares in any jurisdiction. This presentation may not be distributed in any jurisdiction except in accordance with the legal requirements applicable in such jurisdiction. Recipients should inform themselves of the restrictions that apply in their own jurisdiction. A failure to do so may result in a violation of securities laws in such jurisdiction. This presentation does not constitute financial product advice and has been prepared without taking into account the recipient's investment objectives, financial circumstances or particular needs and the opinions and recommendations in this presentation are not intended to represent recommendations of particular investments to particular persons. Recipients should seek professional advice when deciding if an investment is appropriate. All securities transactions involve risks, which include (among others) the risk of adverse or unanticipated market, financial or political developments.

Certain statements contained in this presentation, including information as to the future financial or operating performance of Syrah Resources Limited (Syrah Resources) and its projects, are forward-looking statements. Such forward-looking statements: are necessarily based upon a number of estimates and assumptions that, whilst considered reasonable by Syrah Resources, are inherently subject to significant technical, business, economic, competitive, political and social uncertainties and contingencies; involve known and unknown risks and uncertainties that could cause actual events or results to differ materially from estimated or anticipated events or results reflected in such forward-looking statements; and may include, among other things, Statements regarding targets, estimates and assumptions in respect of metal production and prices, operating costs and results, capital expenditures, ore reserves and mineral resources and anticipated grades and recovery rates, and are or may be based on assumptions and estimates related to future technical, economic, market, political, social and other conditions. Syrah Resources disclaims any intent or obligation to update publicly any forward looking statements, whether as a result of new information, future events or results or otherwise. The words “believe”, “expect”, “anticipate”, “indicate”, “contemplate”, “target”, “plan”, “intends”, “continue”, “budget”, “estimate”, “may”, “will”, “schedule” and other similar expressions identify forward-looking statements. All forward-looking statements made in this presentation are qualified by the foregoing cautionary statements. Investors are cautioned that forward-looking statements are not guarantees of future performance and accordingly investors are cautioned not to put undue reliance on forward-looking statements due to the inherent uncertainty therein.

Syrah Resources has prepared this presentation based on information available to it at the time of preparation. No representation or warranty, express or implied, is made as to the fairness, accuracy or completeness of the information, opinions and conclusions contained in the presentation. To the maximum extent permitted by law, Syrah Resources, its related bodies corporate (as that term is defined in the *Corporations Act 2001 (Cth)*) and the officers, directors, employees, advisers and agents of those entities do not accept any responsibility or liability including, without limitation, any liability arising from fault or negligence on the part of any person, for any loss arising from the use of the Presentation Materials or its contents or otherwise arising in connection with it.

## Investor Relations

Viren Hira

T: +61 3 9670 7264

E: [v.hira@syrahresources.com.au](mailto:v.hira@syrahresources.com.au)

## Media Enquiries

### NWR Communications

Nathan Ryan

T: 0420 582 887

E: [nathan.ryan@nwrcommunications.com.au](mailto:nathan.ryan@nwrcommunications.com.au)

## Syrah Contact Information

Level 7, 477 Collins Street

Melbourne VIC 3000

T: +61 3 9670 7264

E: [enquiries@syrahresources.com.au](mailto:enquiries@syrahresources.com.au)

W: [www.syrahresources.com.au](http://www.syrahresources.com.au)

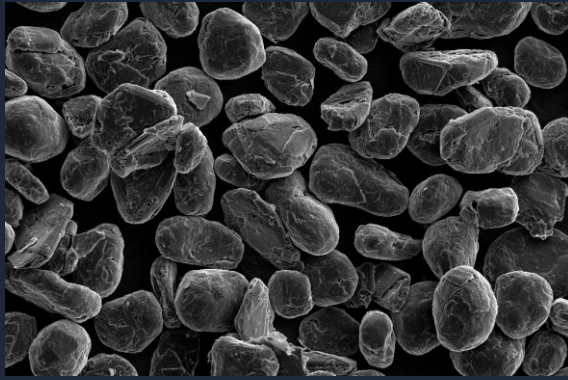


# Our Position

Syrah is a major ex-China natural graphite and active anode material (AAM) supplier for global customers, with upstream and downstream expansion potential underpinned by its world-class Balama resource



Natural graphite and AAM demand will increase four and seven times, respectively, over the next 10 years<sup>1</sup>



Syrah is the only operating vertically integrated natural graphite AAM supplier outside of China



Balama is a 350ktpa graphite producer in Mozambique supplying global battery anode and industrial customers since 2017



Syrah is building an 11.25ktpa AAM facility at Vidalia in the US with commercial sales arrangements in place with tier 1 customers

1. Source: Benchmark Minerals Intelligence Flake Graphite Forecast, Q4 2022. Note: AAM demand is for natural graphite AAM.

# Our Value Proposition



## Vertical Integration

- AAM from Vidalia for battery makers and auto OEMs
- Natural graphite from Balama for AAM producers



## Operating and Development

- Largest integrated natural graphite operation globally
- First vertically integrated natural graphite AAM supplier outside of China



## Cost Position

- Cost competitive AAM supply from Vidalia
- Sustainable and low cost curve position at Balama with project development capital already fully invested



## ESG Position

- Leading ESG standards and sustainability frameworks
- Low greenhouse gas emissions footprint
- Single chain of custody offers full auditability and transparency



## Expansion Potential

- Significant downstream expansion potential at Vidalia and in Europe
- Upstream brownfield expansion potential at Balama

# Syrah is uniquely positioned with market evolution, battery supply chain development and electric vehicle adoption

- Balama is a “market-critical” natural graphite operation
- Vidalia is the first ex-China integrated AAM production
- Global anode material production increased by 94% in 2022 year on year
- Negative impacts on Balama production and sales in 2022 were primarily external; improved position for 2023
- Start of production of 11.25ktpa AAM facility at Vidalia this year
- DFS for accelerated expansion of Vidalia to 45ktpa AAM being completed
- Commercial arrangements in place with tier 1 Vidalia AAM customers underpinning development and funding
  - Tesla binding offtake agreement and option
  - Ford+SKOn MOU
  - LG Energy Solution MOU
- US DOE loan (US\$102m) and grant (US\$220m) selection demonstrate criticality of Vidalia
- Syrah to have compelling natural graphite and AAM costs and margins as the market evolves and production volumes increase





# Our ESG Profile



## Leading ESG standards

- ✓ ISO:45001 and ISO:14001 certification at Balama
- ✓ ISO:9001 certification at Vidalia
- ✓ Vidalia expansion project being developed in line with best practice health, safety and environmental standards
- ✓ Critical Risk Management Framework embedded across the Group
- ✓ Robust strategies for employee relations, community development and stakeholder engagement



## Best practice sustainability frameworks

- ✓ Sustainability frameworks guided by the Global Reporting Initiative (GRI), United Nations Sustainable Development Goals (SDGs), International Council on Mining and Metals (ICMM) and Initiative for Responsible Mining Assurance (IRMA)



## Low carbon footprint

- ✓ Independent life cycle assessment (LCA) completed
- ✓ Lower carbon emissions footprint (life cycle) of natural versus synthetic graphite
- ✓ Lower carbon emissions footprint (life cycle) versus Chinese supply routes
- ✓ Implementing initiatives to lower carbon footprint further



## Auditable back to source

- ✓ Fully integrated by Syrah from mine to customer
- ✓ Vidalia products will have a single chain of custody back to the source

# Q4 2022 Highlights

## Health & Safety

## Balama & Vidalia

0.7

Balama TRIFR

35<sub>kt</sub>

Balama production

\$709<sub>/t</sub>

Balama C1 cash costs  
(FOB Nacala/Pemba)

28<sub>kt</sub>

Natural graphite sold  
and shipped

\$716<sub>/t</sub>

Weighted average  
sales price (CIF)

- Balama production, C1 cash costs and sales impacted by unplanned operational interruptions<sup>1</sup>
- Balama plant recovery at 78% for quarter
- 19kt produced at 80% recovery in December with uninterrupted operations and logistics movements
- Final AAM specifications agreed with Tesla, fulfilling a key condition of the 8ktpa AAM offtake obligation<sup>2</sup>
- Option exercised by Tesla to increase offtake to 25ktpa from a 45ktpa AAM facility at Vidalia<sup>2</sup> – key customer commitment for the expansion of Vidalia to a 45ktpa AAM production capacity (“Vidalia Further Expansion”)
- MOU with LG Energy Solution to evaluate AAM supply from Vidalia<sup>3</sup>
- Detailed engineering and procurement substantially completed for Vidalia’s initial expansion to 11.25ktpa AAM production capacity (“Vidalia Initial Expansion”)
- Construction of the Vidalia Initial Expansion project advancing within schedule and budget with a targeted to start of production in Q3 2023
- Definitive Feasibility Study (“DFS”) on the Vidalia Further Expansion project nearing completion

## Market & Corporate

- Global EV sales in Q4 2022 up 63% versus Q4 2021 to ~3.7 million units<sup>4</sup>
- Global EV sales in 2022 nearly 11 million units<sup>4</sup>
- Chinese anode production in 2022 up 94% versus 2021<sup>5</sup>
- US Inflation Reduction Act benefits Vidalia with direct tax credits and heightened customer demand as a qualified source of critical minerals
- Closed US\$102m loan from US Department of Energy (“DOE”) to support the financing for the Vidalia Initial Expansion project<sup>6</sup>
- Progressing negotiation of DOE grant of US\$220m to fund a significant proportion of the Vidalia Further Expansion project<sup>7</sup>
- Progressing US International Development Finance Corporation (“DFC”) debt financing for Balama
- Quarter end cash balance of US\$90m

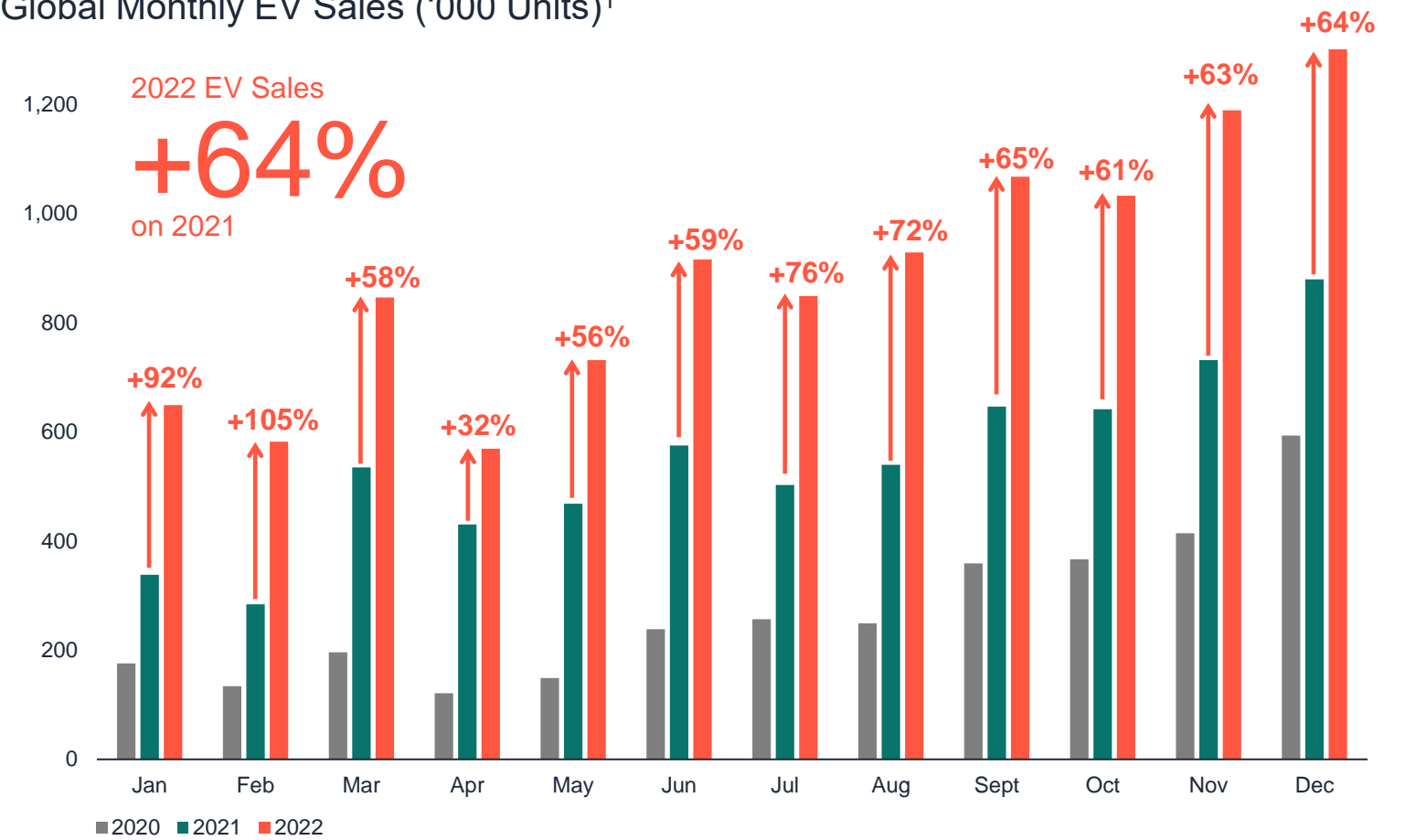
1. Refer ASX releases 26 September 2022, 11 October 2022, 20 October 2022, 27 October 2022 and 14 November 2022.  
2. Refer ASX release 23 December 2022.  
3. Refer ASX release 20 October 2022.

4. Source: LMC.  
5. Source: ICCSino.  
6. Refer ASX release 28 July 2022.

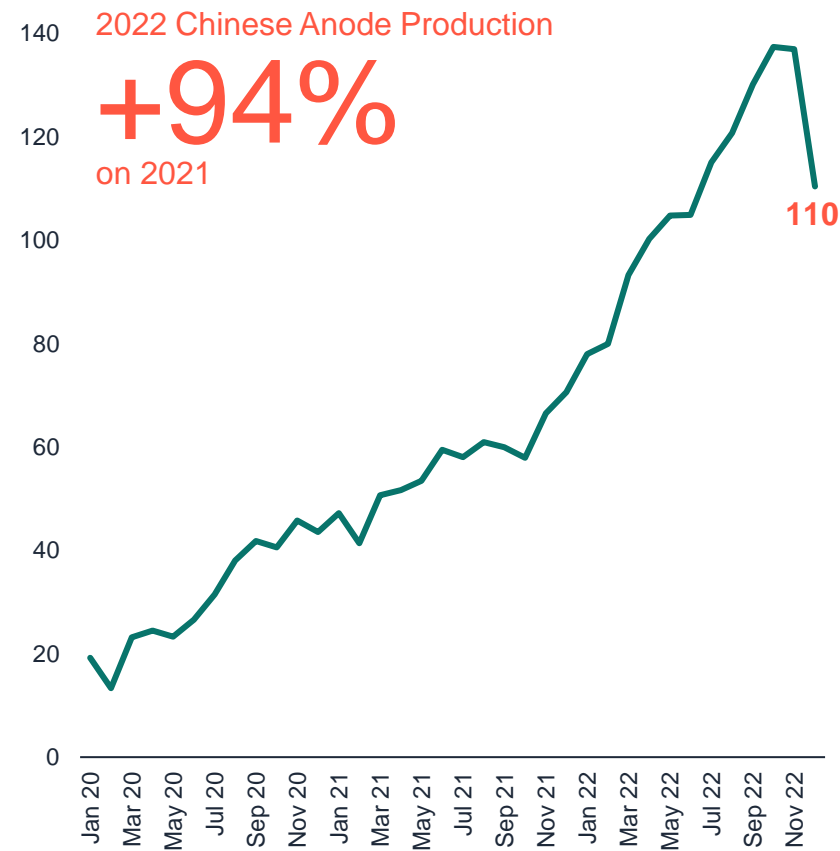
7. Refer ASX release 20 October 2022.

# EV sales and anode production volumes continue to strengthen

Global Monthly EV Sales ('000 Units)<sup>1</sup>



Chinese Anode Production (kt per Month)<sup>2</sup>



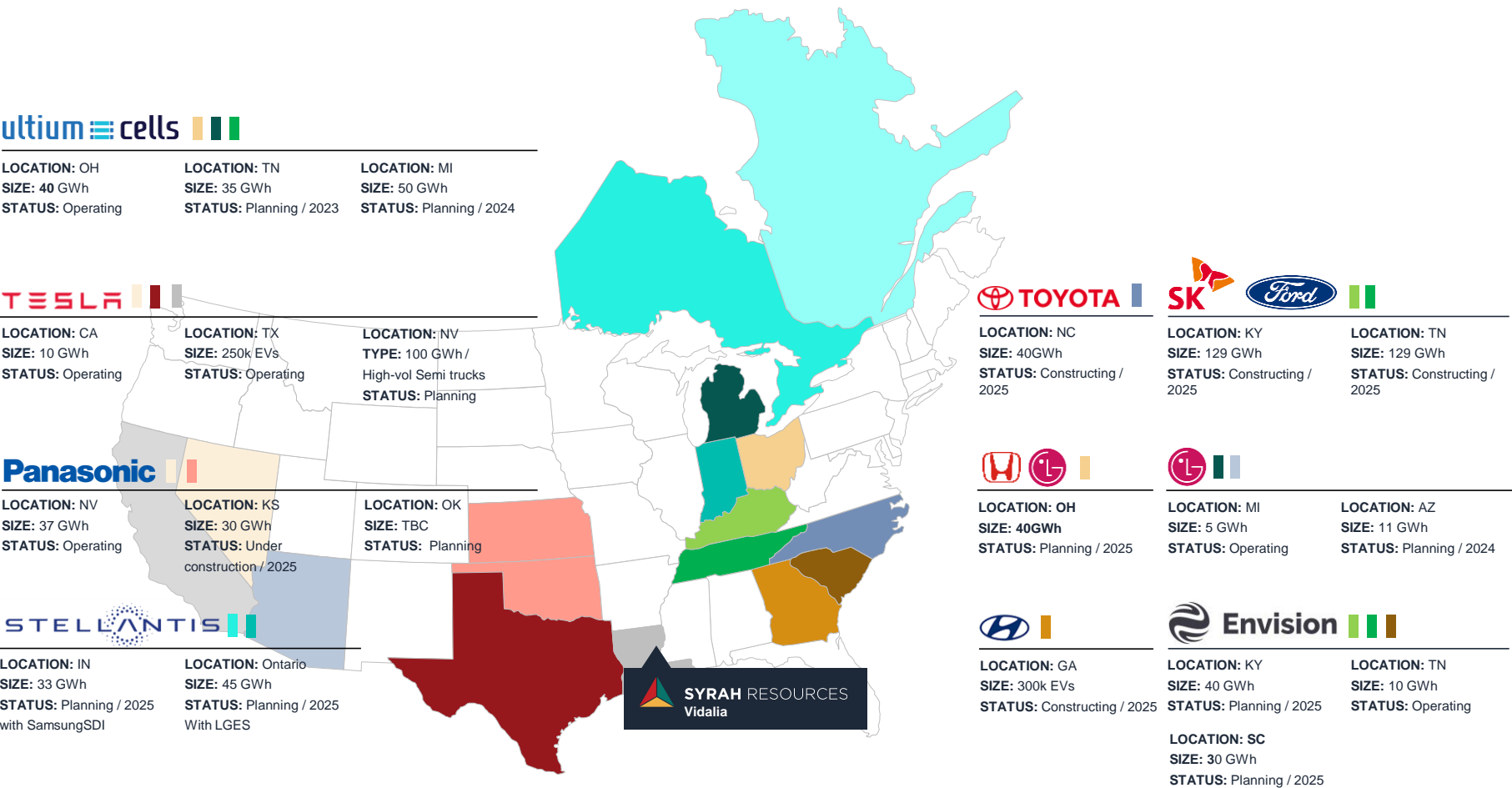
1. Source: LMC.  
2. Source: ICCSino.



# North American battery market is maturing rapidly

Vidalia will support a large-scale EV manufacturing base in the region

Location of Planned Battery Manufacturing Capacity in North America



North American battery manufacturing capacity<sup>1</sup>

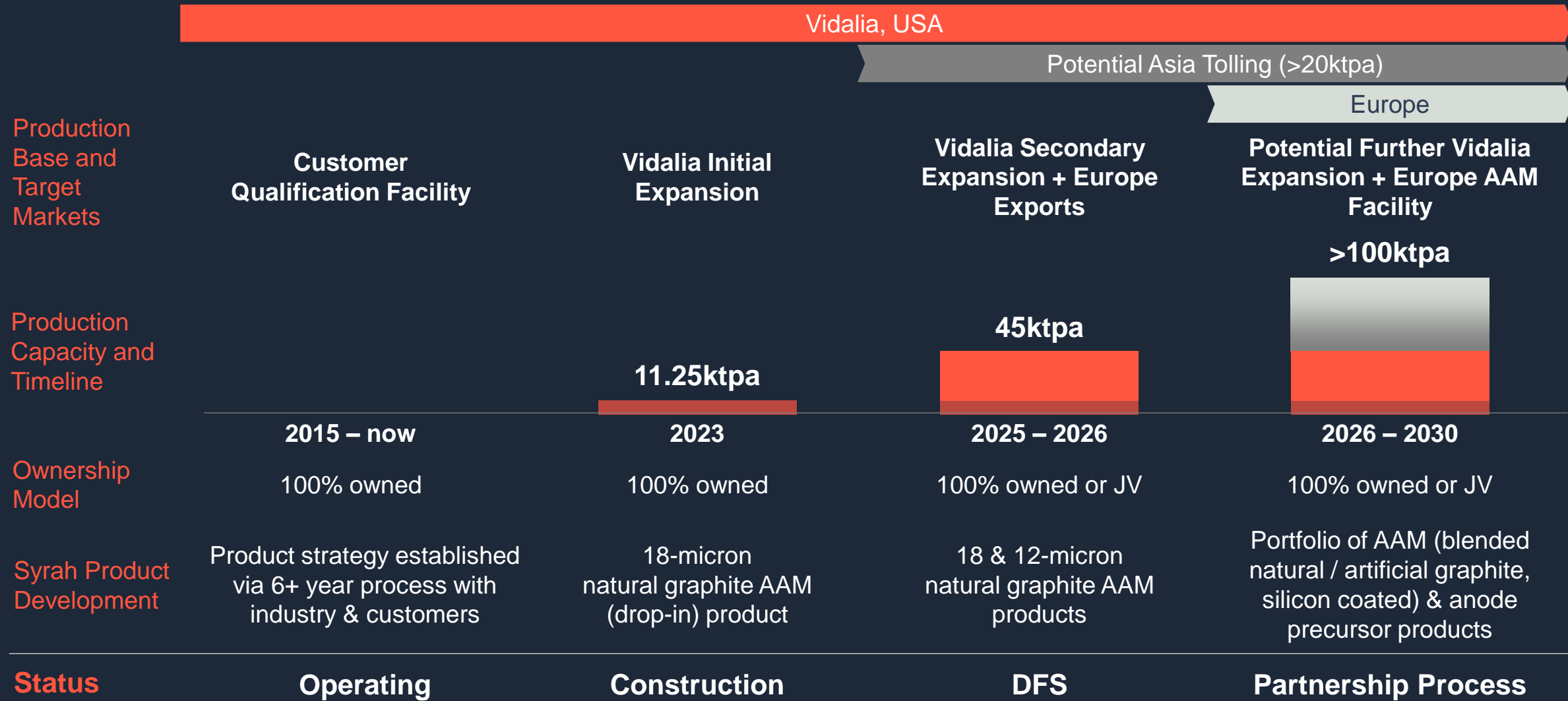


1. Source: Benchmark Mineral Intelligence Battery Megafactory Assessment, October 2022.

# Syrah aims to become a leading supplier of anode products



Our expansion strategy is underpinned by Balama’s world-class resource



# Q4 2022: Balama Production and Operations

- 35kt natural graphite produced at 78% recovery during Q4 2022
  - Impacted by the timing and sequence of operational interruptions caused by illegal industrial action in October<sup>1</sup> and a precautionary security measure in November<sup>2</sup>
- Good operational performance in December with uninterrupted operations and logistics movements
  - 19kt produced with a 25kt per month maximum daily production run-rate
  - Product quality and recovery consistent with Q3 2022
- C1 cash costs (FOB Nacala/Pemba) of US\$709/t
  - US\$89/t attributed to fixed costs incurred through operational interruptions and US\$86/t attributed to diesel price escalation since March 2022
- C1 cash costs (FOB Nacala/Pemba) guidance is US\$430–480/t at a 20kt per month production rate
  - Cost guidance assumes the diesel price normalises below prevailing levels and the solar and battery system is operating at full capacity
  - C1 cash costs are expected to reduce further as production rate increases beyond 20kt per month and as improvement initiatives continue to be embedded
- Balama solar and battery system is expected to be commissioned in Q2 2023
- Company Level Agreement (“CLA”) was successfully renewed with improvement in conditions for all employees covered under the CLA

1. Refer ASX releases 26 September 2022, 11 October 2022, 20 October 2022 and 27 October 2022.  
2. Refer ASX release 14 November 2022.

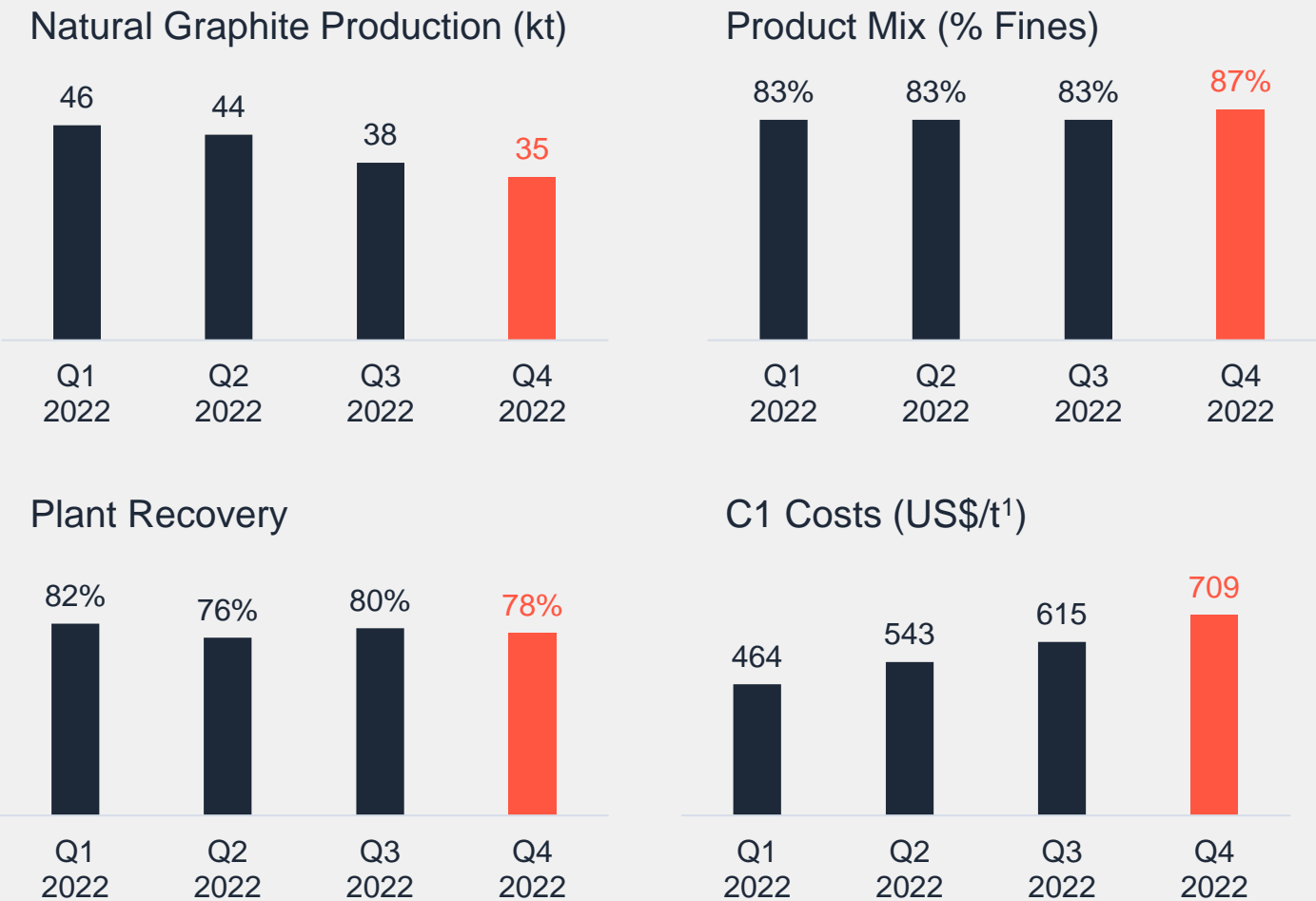


**35<sub>kt</sub>**  
Balama production

**\$709<sub>/t</sub>**  
Balama C1 cash  
costs (FOB  
Nacala/Pemba)



# Q4 2022: Balama Production and Operations

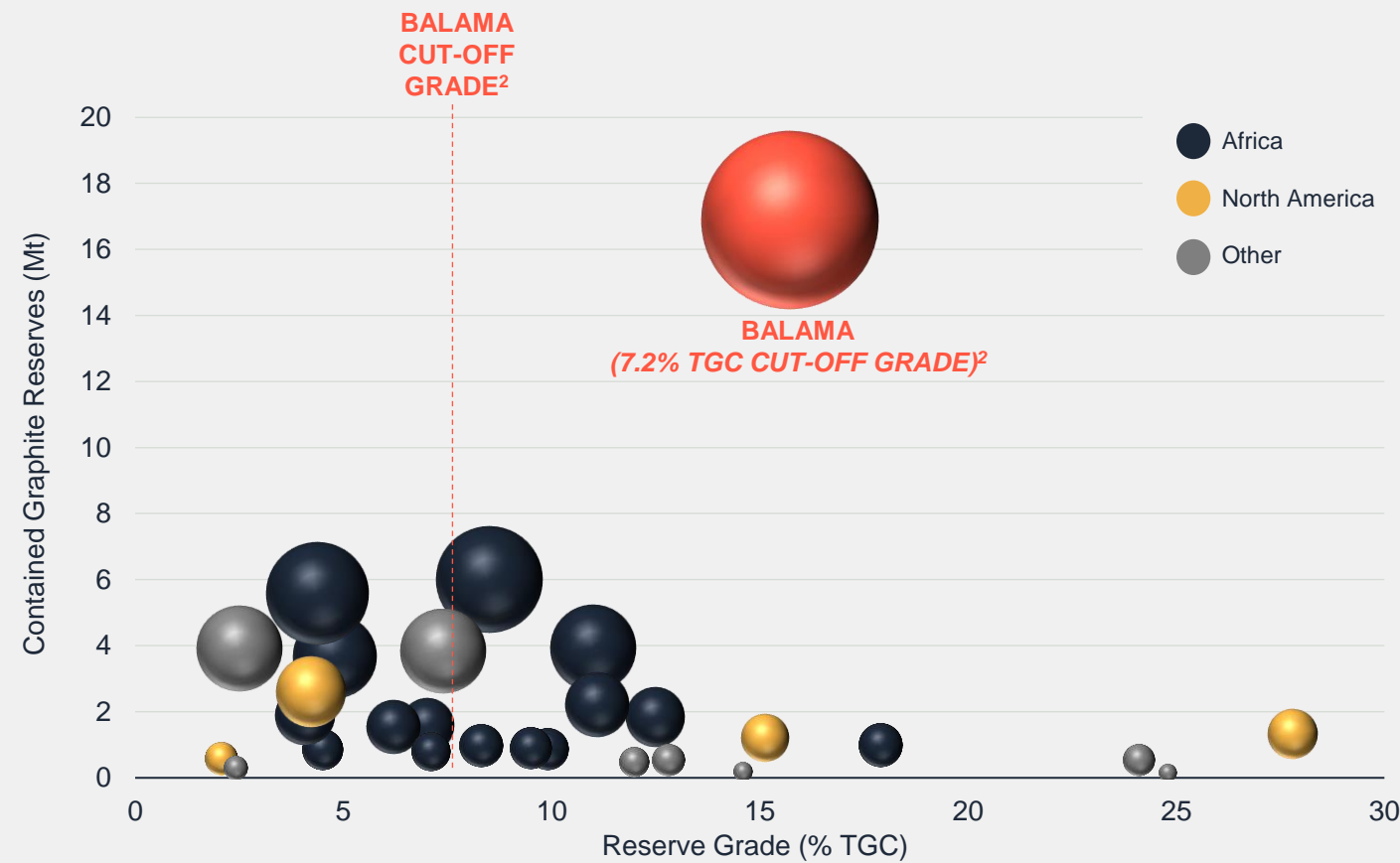


1. FOB Nacala/Pemba.



# Balama is the largest natural graphite mining & processing operation globally

Ex-China Natural Graphite Reserves and Reserve Grade<sup>1</sup>



1. Source: Company filings; Notes: Selected ASX / TSX-listed graphite projects with declared Reserves only and excludes Chinese producers. Bubble size reflects contained graphite reserves.

2. As at 31 December 2021. The Ore Reserve is based on, and fairly represents, Syrah's ASX announcement dated 24 March 2022 (Annual Report 2021), which was prepared by competent persons, Mr Jon Hudson and Mr Christopher Hull. The Mineral Resource is based on, and fairly represents, Syrah's ASX announcement dated 24 March 2022 (Annual Report 2021), which was prepared by competent person, Mr Jonathon Abbot.

3. Life of Mine based on Ore Reserves being depleted at 2Mt per annum of mill throughput.



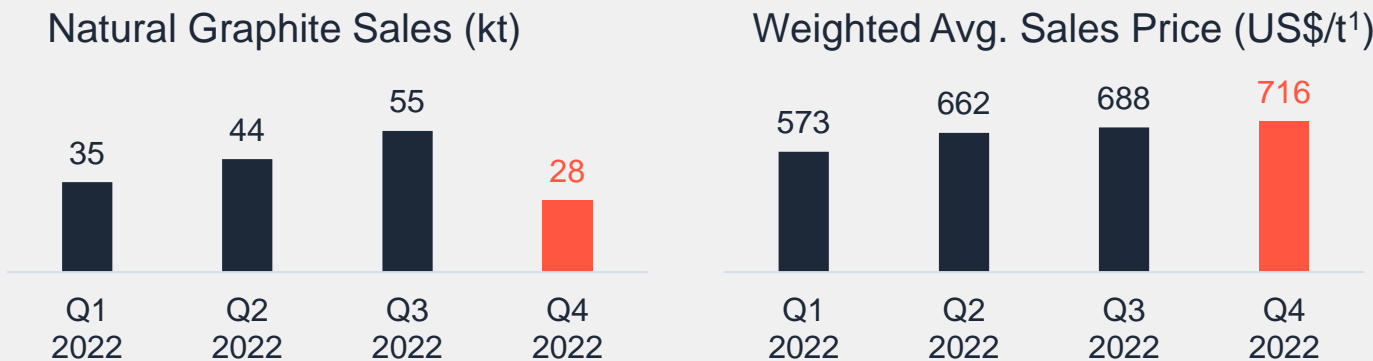
## Asset Overview

Location	Southern Cabo Delgado Province, Mozambique
Reserve & Resource <sup>2</sup>	107Mt (16% TGC) Graphite Ore Reserve 1,421Mt (10% TGC) Graphite Mineral Resource
Life of Mine <sup>3</sup>	~50 years
Mining	Simple open pit mining, low strip ratio
Processing	Conventional – includes crushing, grinding, flotation, filtration, drying, screening and bagging
Plant Capacity	2Mtpa ore throughput yielding ~350ktpa 342kt produced since 2018
Product	94% to 98% fixed carbon graphite concentrate
C1 Cost	Forecast US\$430-480/t at 20kt per month production rate



# Q4 2022: Balama Sales and Marketing

- 28kt natural graphite sold and shipped
  - Timing of operational interruptions at Balama impacted the availability of finished product for shipment, with most inventory only available at port in December
  - Sales were unconstrained by Nacala container shipments with 10kt shipped in December
  - No breakbulk shipments were completed during quarter with inventory unavailable at port until December
- East Africa shipping market conditions improving with availability increasing and freight rates declining
- Weighted average sales price increased to US\$716/t (CIF)
- Fines sales accounted for approximately 81% of overall product sales
- Softened near-term demand from historically high levels, despite continued growth in global EV sales, due to China Covid-19, New Year, and destocking of AAM inventory positions
- Customers remain concerned about the availability of Chinese natural graphite and market balance



1. CIF.



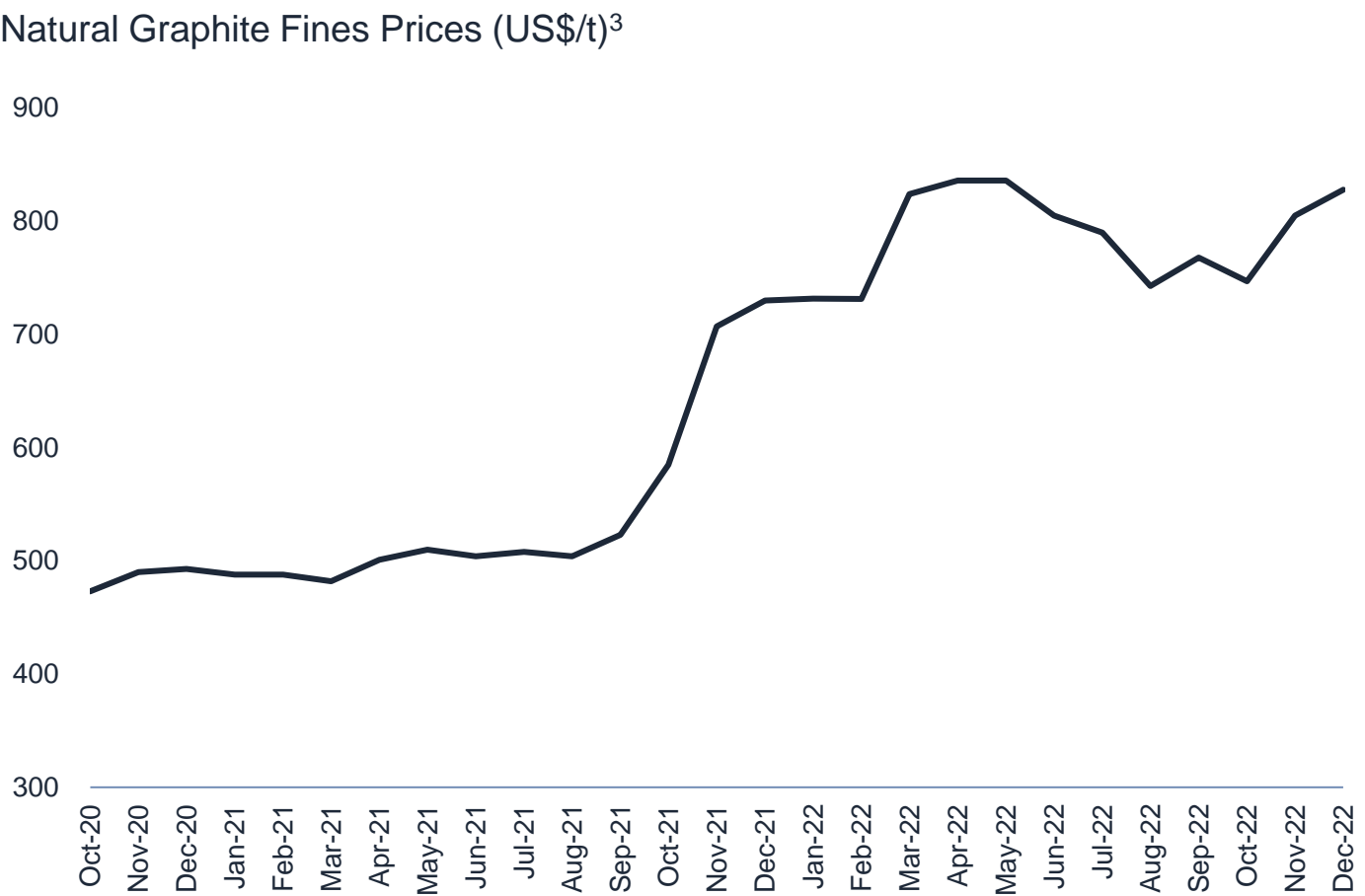
28<sub>kt</sub>  
Natural graphite sold  
and shipped

\$716<sub>/t</sub>  
Weighted average  
sales price (CIF)



# China graphite fines price stable with market balanced

- Strong demand and disrupted domestic supply supported increased China domestic graphite fines pricing in 2022
- Graphite fines demand
  - EV sales increased 64% in 2022<sup>1</sup>
  - Chinese anode production increased 94% in 2022<sup>2</sup>, outpacing EV sales growth
- Graphite supply in China
  - Seasonal Chinese production outage underway
  - Natural graphite imports into China required to meet primary demand and restock inventory positions
- Near-term demand weakness with destocking of excess inventory positions in the battery supply chain



1. Source: LMC.  
2. Source: ICCSino.  
3. Source: Benchmark Mineral Intelligence (Price Reporting Agency). China domestic prices for natural graphite fines (94-95% grade; -100mesh) are shown. Syrah's historical weighted average sales prices include sales under a mix of contract types and pricing mechanisms and are not necessarily representative of natural graphite spot prices nor consistent with the natural graphite price assessments of price reporting agencies. Furthermore, prices of China sales, within Syrah's historical weighted average sales prices, are exclusive of China VAT.

# Q4 2022: Vidalia

## Customer Engagement and Product Qualification

- Offtake agreement with Tesla to supply 8ktpa AAM from Vidalia at a fixed price for an initial term of four years<sup>1</sup> – final AAM specifications agreed fulfilling a key offtake condition<sup>2</sup>
- Tesla option exercised for an additional 17ktpa AAM, for a total 25ktpa AAM, from a 45ktpa AAM Vidalia facility<sup>2</sup> – key customer commitment for the Vidalia Further Expansion project
- MOUs with Ford / SK On<sup>3</sup> and LG Energy Solution<sup>4</sup> to evaluate AAM supply from Vidalia and target binding offtake agreements in the near-term
- Qualification and iterative testing programs are progressing in parallel with commercial engagement – rapid iteration enabled by operational and laboratory capability

## Vidalia Initial Expansion (11.25ktpa AAM Facility)

- Detailed engineering 99% completed with Worley Group
- Contracts awarded for ~US\$150 million in total installed capital costs<sup>5</sup>
- Construction progressing within the planned schedule and budget under the management of integrated Syrah and Worley Group team
- Key construction activities during the quarter were completion of concrete foundations and slabs, steel erection for permanent buildings, equipment delivery & installation, mechanical & structural steel delivery, cable spool reels delivery and fabricated piping delivery
- All fabrication of critical equipment outside the USA is complete and deliveries are underway
- Targeting construction completion and start of production in Q3 2023

1. Refer ASX releases 23 December 2021 and 29 December 2021.

2. Refer ASX release 23 December 2023.

3. Refer ASX release 22 July 2022.

4. Refer ASX release 20 October 2022.

5. Includes a mix of fixed cost / lump-sum, unit rate and cost reimbursable contracts. Costs for unit rate and cost reimbursable contracts are estimates.



Commercial sales  
arrangements with  
tier 1 customers

Q3 2023

Start of production for  
11.25ktpa AAM  
Vidalia facility

# Q4 2022: Vidalia

## Vidalia Further Expansion (45ktpa AAM Facility)

- Demand for Vidalia AAM expected to significantly exceed 11.25ktpa
- DFS with Worley Group on expansion of Vidalia's production capacity to 45ktpa AAM, inclusive of 11.25ktpa AAM is nearing completion
- Detailed engineering, procurement and construction phases to follow sequentially, subject to Syrah Board approval and customer and financing commitments

## Construction Funding

- Vidalia Initial Expansion fully funded to start of production
- US\$102 million loan from US Department of Energy ("DOE")<sup>1</sup> to support financing for the Vidalia Initial Expansion project is effective and first advance expected in Q1 2023
- Progressing negotiation of DOE grant of US\$220m<sup>2</sup> to fund a significant proportion of the Vidalia Further Expansion project

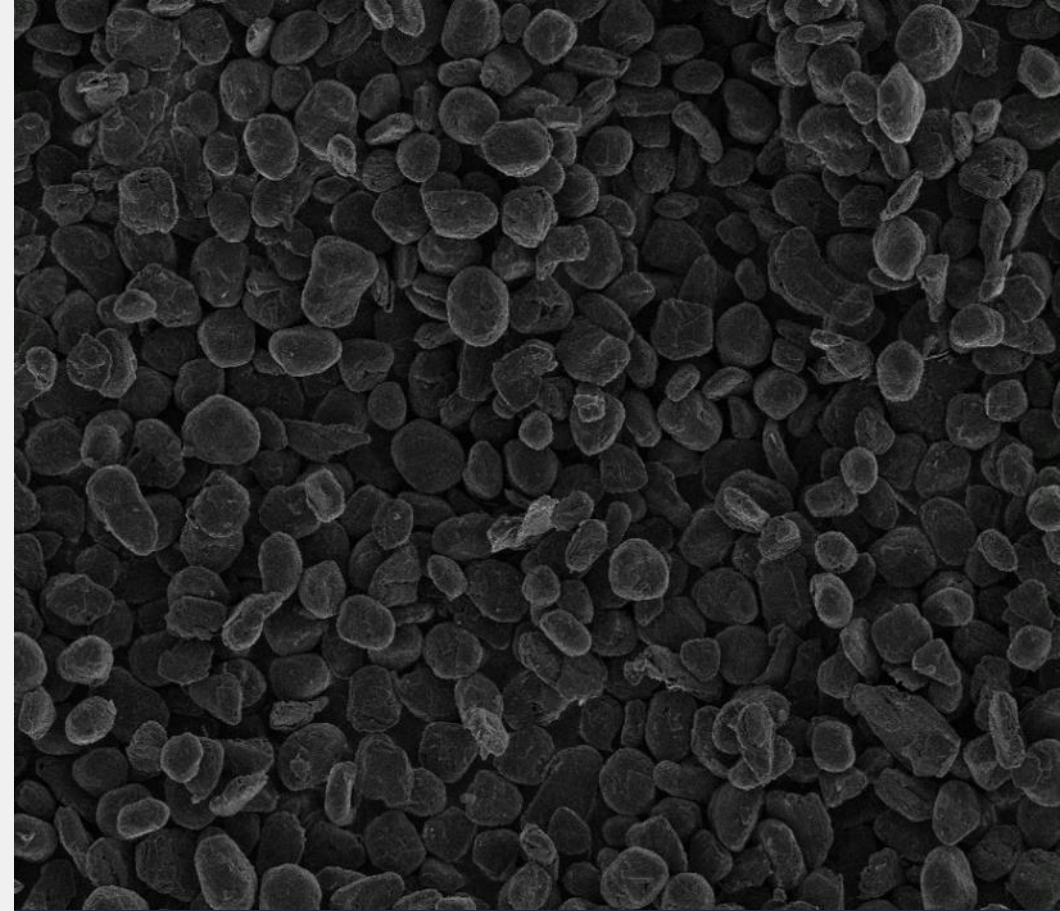
## Operations and Production

- Integrated spherical, purification and furnace operation is producing 18-micron and 12-micron AAM, using Balama natural graphite, as required for testing and qualification

## Product Development

- Base (drop-in) 18-micron AAM and premium 12-micron AAM products
- Partnering with customers, industry, laboratories and universities on product development

1. Refer ASX release 28 July 2022.  
2. Refer ASX release 20 October 2022.



**45** ktpa AAM

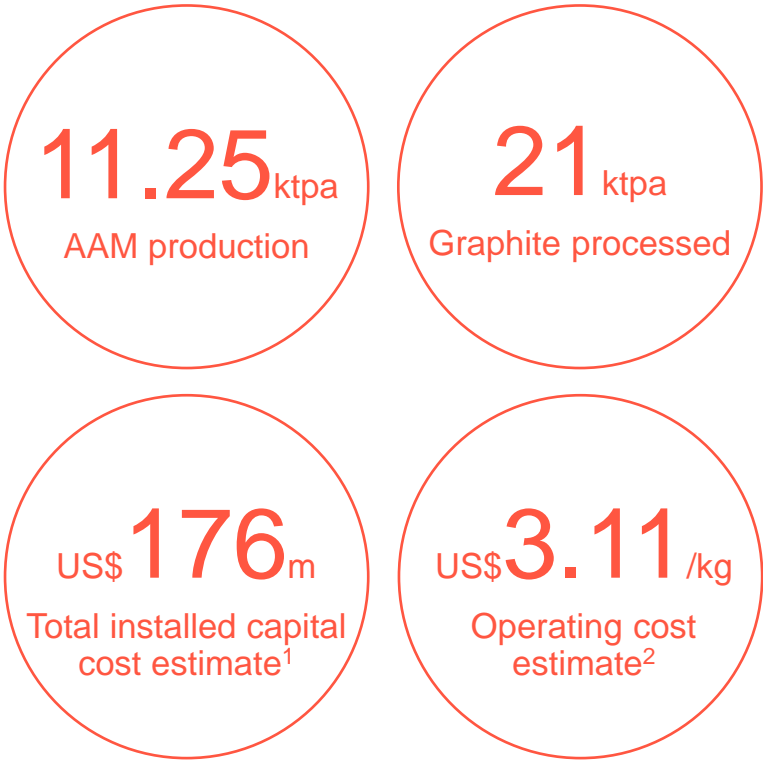
Expanded Vidalia  
production capacity in  
DFS

US Department of  
Energy supporting  
financing of Vidalia's  
development



# Vidalia offers competitive operational metrics

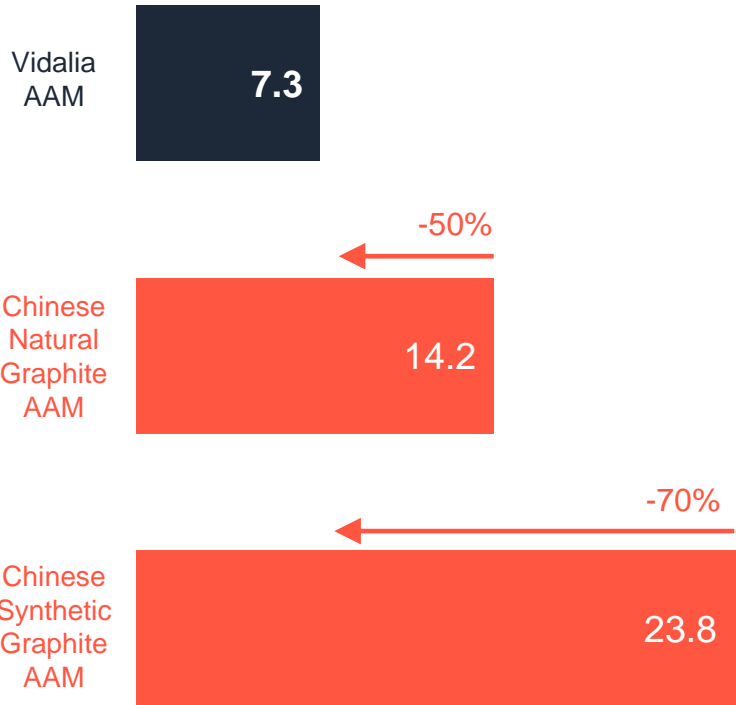
## Vidalia Initial Expansion Project Parameters



## Operating Margin (US\$/kg AAM Real)



## Global Warming Potential (kg CO2 eqv./kg AAM)<sup>4</sup>



1. Includes all actual and estimated engineering, equipment, materials, construction, construction-related capitalised costs from 1 December 2020 and an unutilised contingency.

2. Includes cost of US\$400/t (FOB Nacala) for Balama natural graphite, reflecting an approximate all-in cost of production at Balama at full plant utilisation. Includes costs of transporting Balama natural graphite from Nacala to Vidalia, AAM delivery costs from Vidalia to representative US battery manufacturing facilities and maintenance costs.

3. Prices shown are the mid-point prices for “domestic/low-range” and “domestic/mid-range” natural graphite AAM as of 20 January 2023, converted at a USD/CNY exchange rate of 6.78. The prices shown are the Chinese domestic observable spot price for natural graphite AAM as reported by ICCSino. The price range shown is not necessarily indicative of a landed USA price for AAM nor the price that Vidalia AAM will be sold at.

4. Source: Minviro Ltd’s lifecycle assessment on Syrah. Note: Global Warming Potential (“GWP”) is defined as the cumulative radiative forcing, both direct and indirect effects, over a specified time horizon resulting from the emission of a unit mass of gas related to some reference gas [CO2: (IPCC 1996)]. GWPs shown are a forecast life of operation average for Vidalia based on detailed engineering and include scope 1, scope 2 and scope 3 greenhouse gas emissions. Syrah’s LCA meets the requirements of ISO14040/14044 standards and has been critically reviewed by a third-party.

# Vidalia Initial Expansion

Q3 2023 start of production

## Key Project Milestones Achieved

**Offtake Agreement**

Dec 2021



**Final Investment Decision**

Feb 2022



**Construction on Schedule and Budget**

Q4 2022



**Construction Completion and Commissioning**

Q3 2023



**Start of Production**

Q3 2023



**11.25ktpa AAM Run-rate Production**

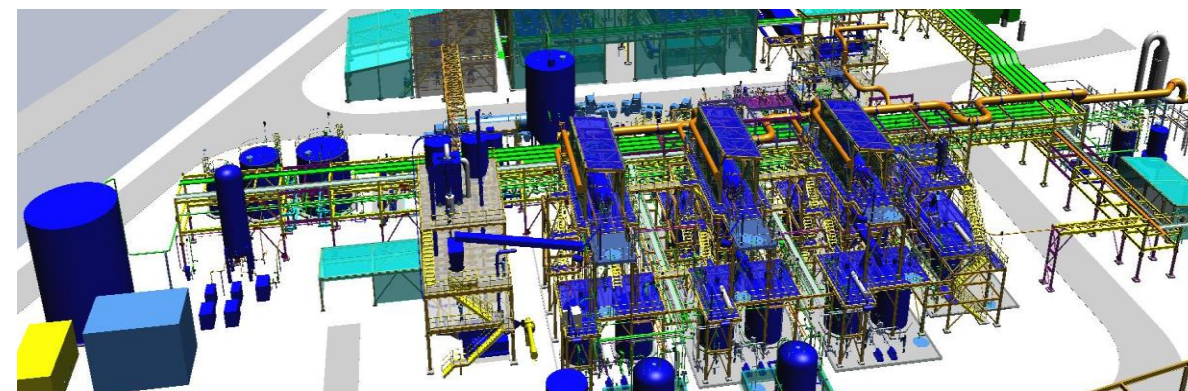
~18 Months After Start of Production

## Key Steps in Construction



- Order critical long-lead items
- Execute construction contracts sequentially
- Final construction permitting
- On-site construction activities
- Receive equipment deliveries
- Recruit operating team
- Progress operational readiness
- Secure additional binding offtake agreements







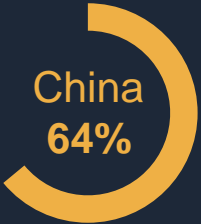
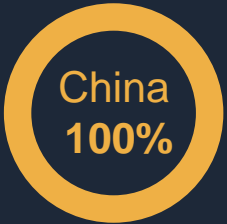
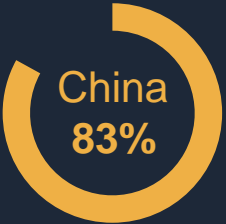






## Ongoing Activities



- Product development and testing (small particle sizes)
- Equipment trialing (purification, carbonisation and coating) and R&D for optimisation of a larger expansion of Vidalia
- DFS and detailed engineering on a 45ktpa AAM Vidalia facility

# Vertically integrated supply chain underpins Syrah strategy

**Syrah’s vision** is to be the world’s leading supplier of superior quality graphite and anode material products, working closely with customers and the supply chain to add value in battery and industrial markets

Sites/Location	Balama Graphite Operation				Vidalia AAM Facility	
Battery anode value add steps	 Mining	 Concentration	 Milling/shaping	 Purification	 Carbon coating	 Heat treatment
2022 share of supply	 China 64% USA 0% Europe 1%		 China 100% USA 0% Europe 0%		 China 83% USA 0% Europe 0%	
Syrah’s vertically integrated production capability						

## Benefits of vertical integration to Syrah:

- Margin capture / cost protection
- Attractive financial returns
- Enhanced channel to market and customer diversity

## Benefits of vertical integration to battery makers / auto OEMs

- Security of supply
- Optimisation of supply chain management
- Single chain of custody / full ESG auditability



# Syrah is a near-term AAM supply option for USA and European markets

## Vidalia AAM Facility

- Establishing US-based AAM supply
- Vertically integrated with Balama
- Localised AAM supply for US customers to complement AAM imports from Asia

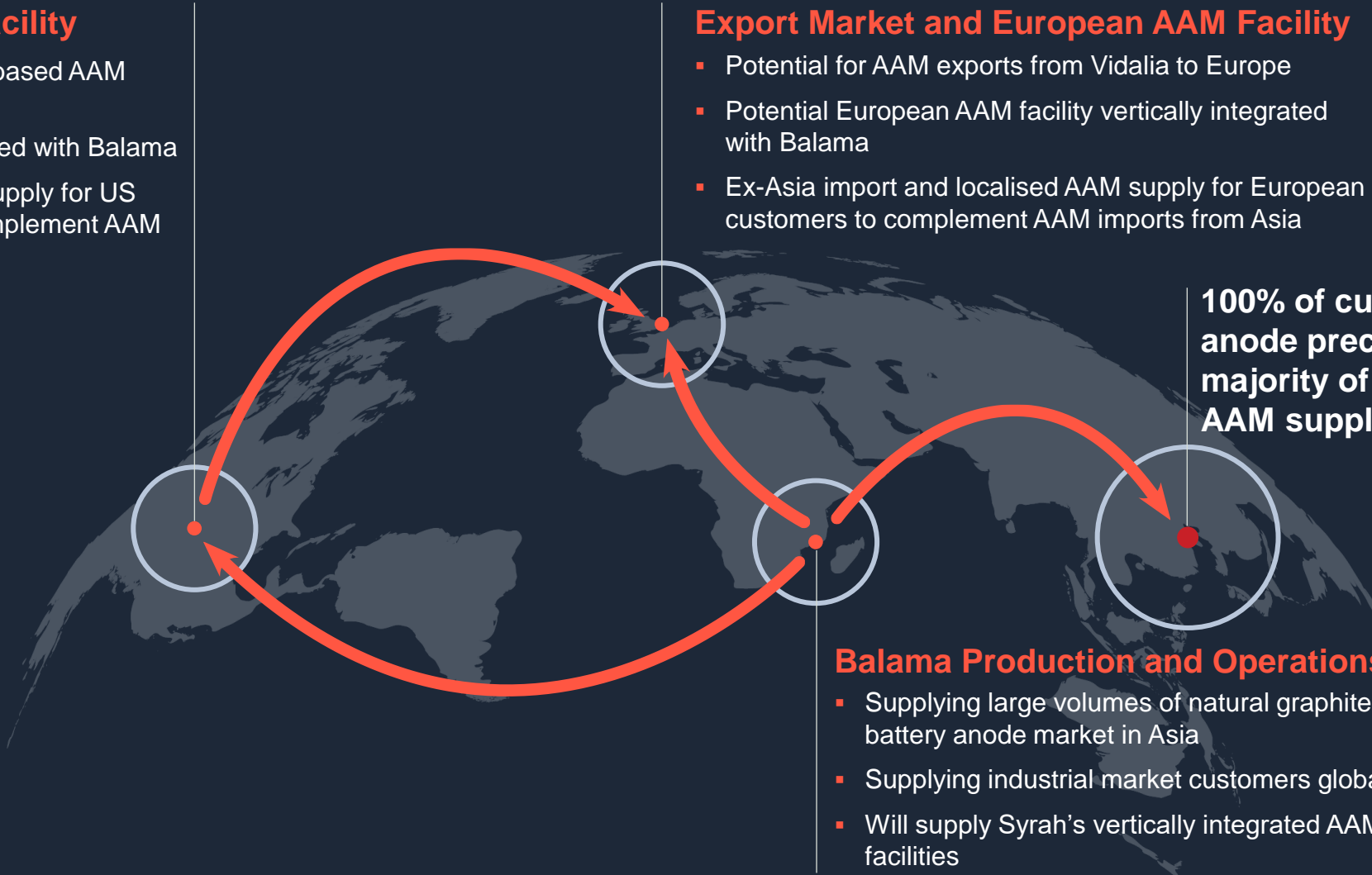
## Export Market and European AAM Facility

- Potential for AAM exports from Vidalia to Europe
- Potential European AAM facility vertically integrated with Balama
- Ex-Asia import and localised AAM supply for European customers to complement AAM imports from Asia

100% of current global anode precursor and majority of current global AAM supply

## Balama Production and Operations

- Supplying large volumes of natural graphite to the battery anode market in Asia
- Supplying industrial market customers globally
- Will supply Syrah's vertically integrated AAM facilities



# Q1 2023 outlook

## End-market growth

- EV sales growth, constructive demand environment and Chinese supply challenges driving good demand and supportive pricing for Balama products

## Balama production and costs

- Increasing Balama production to at least 20kt per month and moving towards a sustainable C1 cash cost position

## Vertical integration in the US

- Advancing construction of the Vidalia Initial Expansion project within schedule and budget and progressing the Vidalia Further Expansion project

## Balance sheet

- Maintaining liquidity for Balama operations under various market scenarios and advancing DOE loan and grant funding





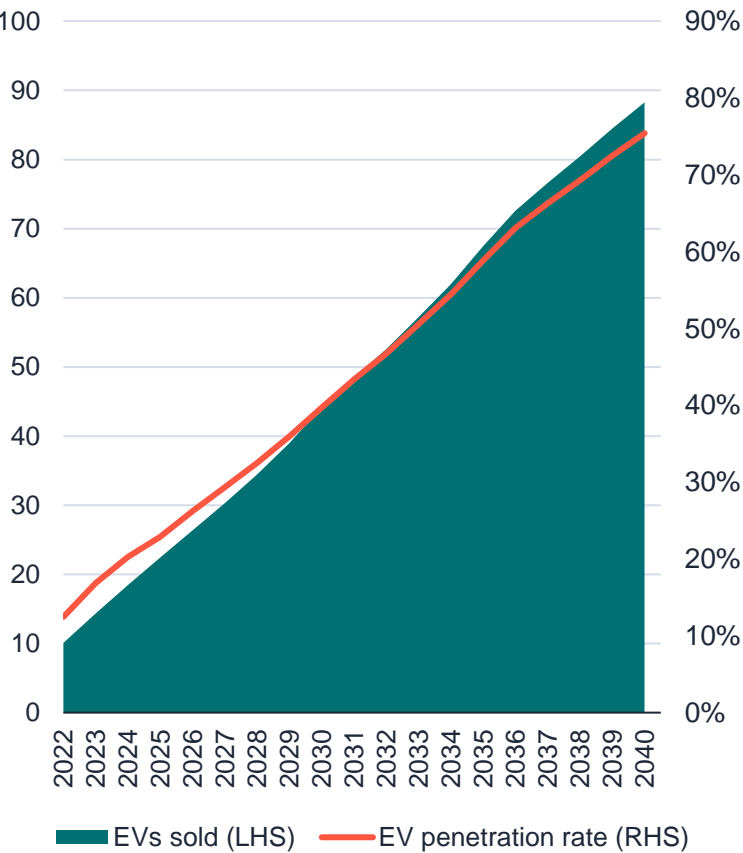
# Appendix



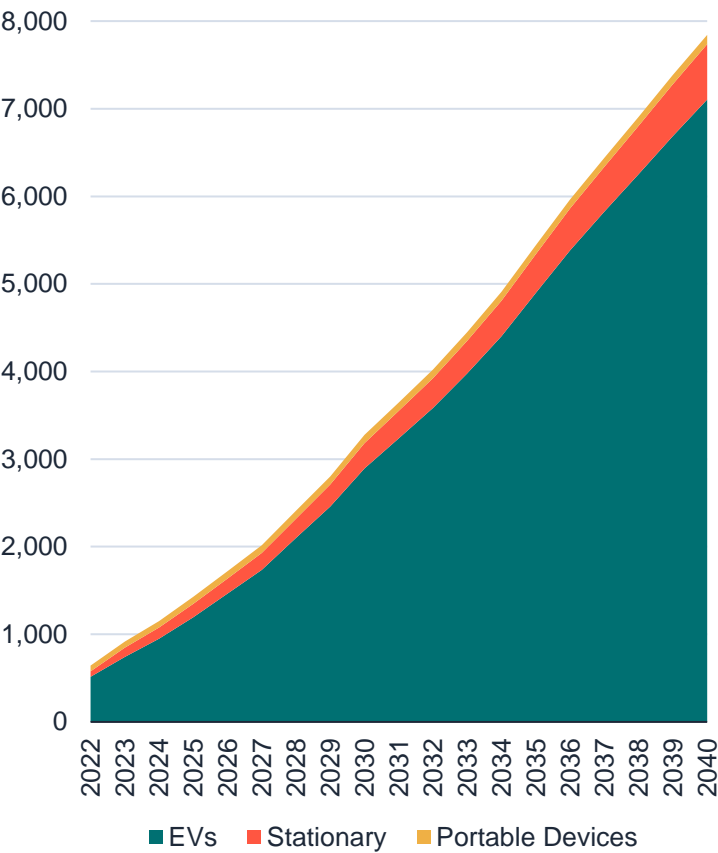


# Battery and natural graphite fines (-100mesh) demand is in the early stages of growth – driven by EV adoption

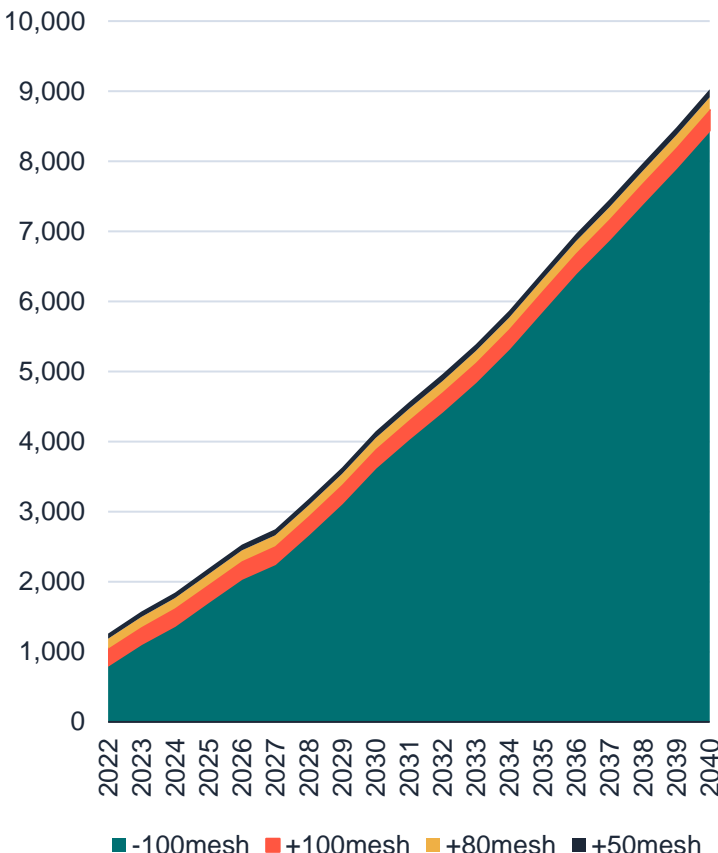
Global EV Sales (Millions)



Lithium-ion Battery Capacity (GWh)



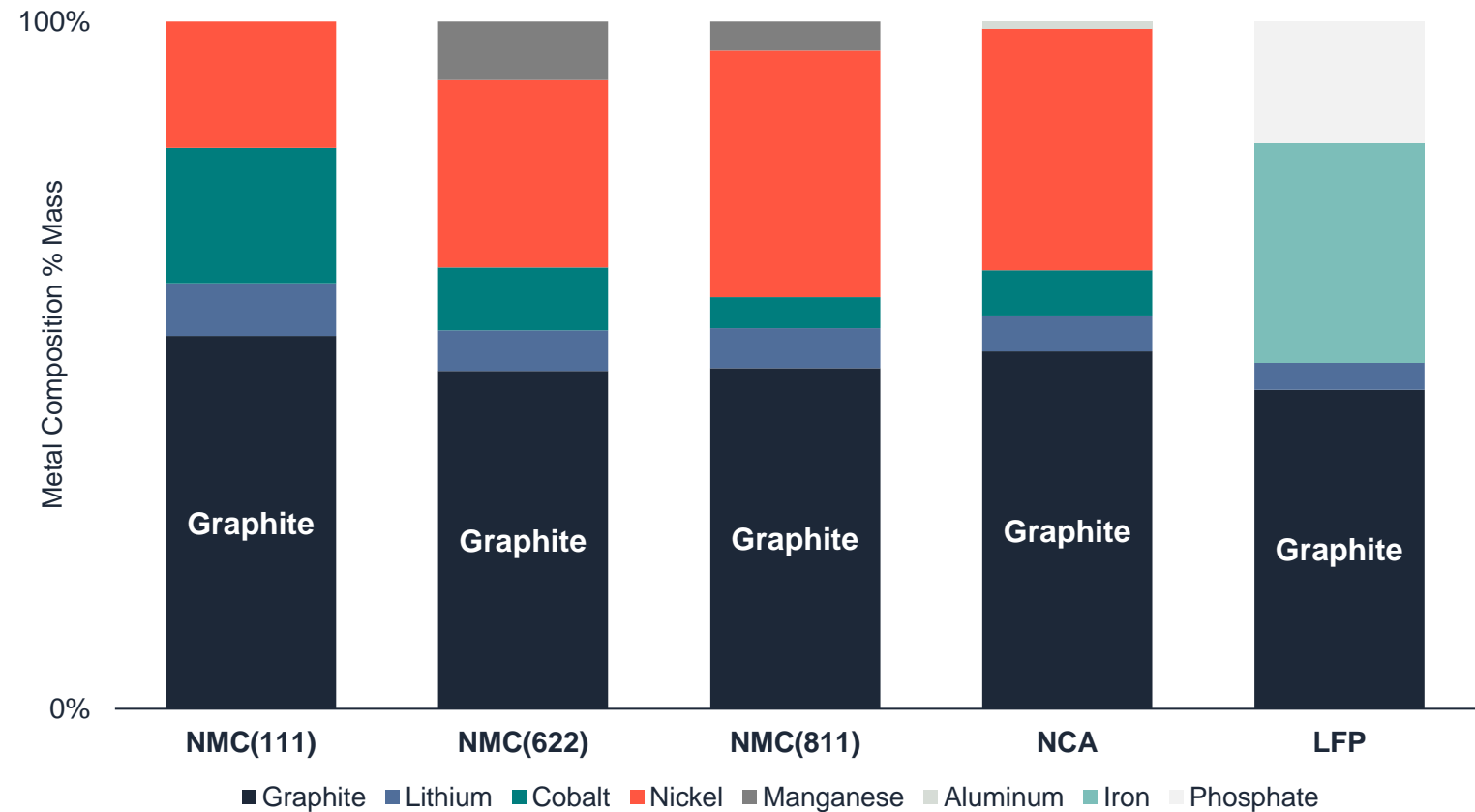
Natural Graphite Demand (kt)



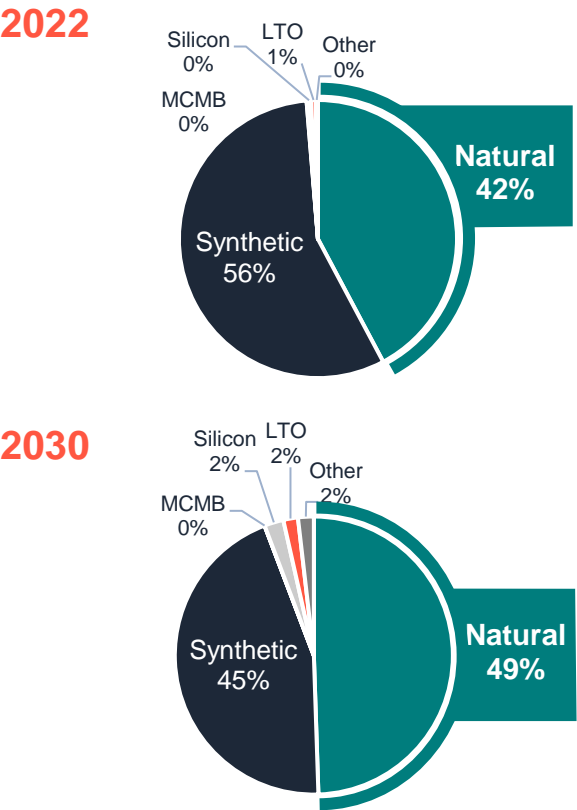
Source: Benchmark Mineral Intelligence Flake Graphite Forecast, Q4 2022.

# Graphite is a high intensity material in EV batteries, with costs / emissions expected to drive shift towards natural graphite

Battery Mineral Composition of Batteries<sup>1</sup>



Natural Graphite Demand for Batteries<sup>2</sup>



1. Source: Syrah Resources analysis, data from Gaines, L., Richa, K., & Spangenberg, J. (2018) Key issues for Li-ion battery recycling (excludes oxygen). Notes: NMC: Lithium nickel manganese cobalt oxide battery; NCA: Lithium nickel cobalt aluminium oxide battery; LFP: Lithium iron phosphate battery.  
2. Source: Benchmark Mineral Intelligence Flake Graphite Forecast, Q4 2022.

# Syrah's global business to supply growing battery anode demand

