

## **Q2 2020 Quarterly Activities Report**

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SYRAH RESOURCES

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# Investment highlights

Balama: A Tier 1 asset	<ul> <li>Long life asset, with over 50 years of mine life<sup>1</sup> and 350kt per year of graphite concentrate production capability<sup>2</sup></li> <li>Balama is the largest integrated natural graphite mine and processing plant globally as measured by annual flake concentrate pr</li> <li>Balama's large Reserve and Resource allows for future plant expansion, potentially representing a low capital intensity option to graphite demand</li> </ul>
Exposure to High Growth Lithium-ion Battery Markets	<ul> <li>Graphite is a key component of lithium-ion batteries used in electric vehicles and energy storage, both rapidly growing markets</li> <li>Balama's high quality product mix and product specifications are suited for use in these markets</li> <li>Strategic importance of natural graphite as a critical battery mineral is recognised by major EV production regions (China, Europe,</li> </ul>
Positive ESG Profile	<ul> <li>Natural graphite has superior environmental credentials compared to synthetic graphite which is derived from oil refining and coal l</li> <li>Leading practice ESG standards applied at Balama, certified ISO:45001 Occupational Health and Safety Management Systems ar Management Systems</li> </ul>
Uniquely positioned to supply anode material to ex-Asia end user markets	<ul> <li>Anode battery supply chain currently concentrated in Asia, with 100% of anode precursor material manufactured in China</li> <li>Value added processing of natural graphite to Active Anode Material at Syrah's BAM project in Louisiana (USA) is enabled by log</li> <li>Syrah's downstream processing site in Louisiana (USA) aims to provide an alternate to existing Asia supply chain for battery and growing USA and Europe markets</li> </ul>
Vanadium Optionality at Balama	<ul> <li>Balama contains a significant vanadium by-product Resource which presents a potential value-accretive opportunity that Syrah will Study</li> <li>Vanadium, a by-product which is liberated during the graphite production process, could potentially be refined into a saleable product material currently reporting to tailings at Balama</li> </ul>

1. Life of mine based on current 108Mt Graphite Ore Reserves being depleted at 2Mt throughput per annum. Refer to 2019 Annual report released to ASX 31 March 2020 for Reserve as at 31 December 2019. All material assumptions underpinning the Reserves and Resource statement in this announcement continue to apply, other than as updated in subsequent ASX announcements.

2. Refer to ASX announcements dated 29 May 2015

3. Refer ASX announcement dated 30 July 2014

roduction capacity

meet incremental future

, USA)

by-products

nd ISO:14001 Environmental

ong mine life at Balama

ode supply, able to serve

Il advance through Pre Feasibility

uct  $(V_2O_5)^3$  via processing of



## Balama is a globally significant asset with increasing strategic importance

### Leveraging the globally significant Balama asset to develop an integrated battery anode material and industrial products business



**Balama a globally** significant resource leading practice ESG

Size of Balama natural graphite ore Reserve (> 50 year mine life<sup>1</sup>) and high Reserve grade (16% total graphitic carbon) enables participation in long-term EV growth

### **Balama Open Pit Mining Operation**





Value added processing of natural graphite to Active Anode Material by Syrah enabled by long mine life at Balama

Svrah's downstream processing of flake graphite in Louisiana





Decarbonisation of the transport sector, via Lithium-ion battery powered electric vehicles (EV), is gaining momentum



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- 2. Source: Wood Mackenzie (Jan 2020)

## **Global mega trend**

## Making Syrah an important part of the EV value chain

### Set to provide much needed supply chain independence to Europe and US in a post COVID 19 world



TGC = Total Graphitic Carbon 1.

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Ore Reserves 108Mt at 16% TGC<sup>1</sup> (17Mt of contained

• Simple open pit operation, low stripping ratio, design production capability 350kt flake graphite per annum

• Balama graphite product mix and specifications are suited for

· Capability to produce purified spherical graphite for product qualification in the lithium ion battery supply chain

• Existing plant/facility expandable to commercial scale

· Global sales and marketing functions led from UAE

Sales and marketing support provided by contract sales liaison

• Finance, Legal, Human Resources, Investor Relations



# Q2 2020 Update



### Photo: Balama Graphite Operation Processing Plant

## Q2 2020: Key Points

Ongoing focus on health and safety	<ul> <li>Quarter end Total Recordable Injury Frequency Rate ("TRIFR") was 0.8</li> </ul>
	<ul> <li>Ongoing focus on compliance with government directives and internal COVID 19 protocols. No cases of COVID 19 have be global operations to date</li> </ul>
Positioning Balama for return of EV sales growth	<ul> <li>No production in Q2 2020 at Balama due to ongoing impacts of COVID 19, specifically:</li> </ul>
	<ul> <li>Ongoing travel restrictions, limiting the mobility of the Balama workforce; and,</li> </ul>
	• Weak end user demand due to lockdowns, mobility restrictions and economic uncertainty negatively impacting year-to-
	<ul> <li>Increasing certainty of medium to long-term growth in natural graphite demand, driven by growth EV sales. However, imm remain weak, timing of re-commencement of production at Balama uncertain</li> </ul>
	<ul> <li>A labour restructure at Balama (65% headcount reduction) and other actions are being implemented to further preserve ca suspended production, whilst also retaining operating and marketing capability to restart production - restart lead time is exp implementation of planned cash preservation measures</li> </ul>
	<ul> <li>Cost reduction measures expected to reduce Balama cash outflow to ~US\$7m per quarter once implemented, with one-off ir to be incurred in Q3 2020</li> </ul>
	Commitment maintained to all in-progress sustainable development and community activities
BAM project progressing	<ul> <li>Production of battery specification anode precursor has been demonstrated at commercial scale at Vidalia (achieved post que Syrah as a credible and advanced potential supplier of battery anode material ex-Asia</li> </ul>
	<ul> <li>China currently produces 100% of the natural graphite anode precursor material used for production of lithium-ion batteries well as other applications. Syrah believes the Vidalia operation is the farthest progressed alternate source of natural graphit China</li> </ul>
	<ul> <li>Anode precursor from Vidalia will be further processed to Active Anode Material via toll treatment and from a furnace to coming quarters, which will further facilitate ongoing strategic, financial partnership, and end-customer interactions</li> </ul>
Company well	<ul> <li>Cash balance at 30 June 2020 was US\$53m, in line with forecast<sup>1</sup></li> </ul>
capitalised to navigate near term uncertainty	Available liquidity and measures taken to minimise fixed costs positions the company to manage an extended period of marke

been identified at any of Syrah's

- -date EV sales
- mediate term market conditions
- ash during the current period of pected to be 2 to 3 months post
- implementation cost of ~US\$1m
- uarter end), uniquely positioning
- s in Electric Vehicles ("EV"), as ite anode precursor material ex-
- be installed at Vidalia over the

### et uncertainty



## Q2 2020 Balama operations summary

### Production at Balama remained suspended through Q2 2020

- Total Recordable Injury Frequency Rate ("TRIFR") of 0.8 at Balama at the end of Q2 2020
- No natural graphite production during Q2 2020 (prior quarter: 12kt). Production fully suspended due to ongoing impacts of COVID 19, specifically:
  - Ongoing travel restrictions, limiting the mobility of the Balama workforce: and.
  - Weak end user demand
- Natural graphite sales of 9kt (prior guarter: 7kt)
- Average selling price of US\$478 per tonne (prior quarter US\$478 • per tonne). Some weakness in prices during the guarter offset by a higher proportion of coarse flake in the sales mix
- · Finished product natural graphite inventory at Balama and the Port of Nacala was 8kt and finished product natural graphite inventory at USA was 2kt at 30 June 2020
- Within Mozambigue, international and domestic travel restrictions are in the early stages of easing. However, end user demand currently remains unsupportive for restart of production







## Battery market: Near-term stumble, long-term growth increasingly certain

### High conviction of return to growth in lithium-ion battery demand, driven by EV sales growth, although timing uncertain

## **Outlook for rest of 2020 challenged**

- Potential for approx. flat annual EV sales 2018 through 2020
- Syrah market interactions imply market imbalance likely to be sustained for much of H2
- Potential for COVID 19 second wave lock downs adds additional market uncertainty

### High conviction of return to growth – although 2 timing uncertain

- EV sales more resilient than ICE vehicles through period of recent market weakness. To the end of May, EV sales in 2020 are down 15% compared to ICE sales down 30% versus the same period in 2019
- COVID 19 economic stimulus measures by governments have been implemented to accelerate the decarbonisation of the transport sector whilst also stimulating the economy<sup>1</sup>, which provides additional support for the expected strong medium to long-term growth outlook for natural graphite
- Syrah's interactions with government, OEMs and battery supply chain participants indicate increased focus on localised supply chains and supply security of critical battery minerals

Demand for lithium-ion batteries is forecast to surge after a virus-linked stumble in 2020

Consumer electronics Stationary storage Passenger EVs E-buses

Commercial EVs Electric two-wheelers





## **Positioning Balama for return of EV sales growth**

### Measures taken to preserve cash whilst retaining operational and marketing capability to support production re-start

### Key outcomes of operational review

- An operational review was undertaken in the context of:
  - high conviction in resumption of demand growth; but,
  - challenging immediate term market conditions
- The review identified further actions to preserve cash in the immediate term whilst also maintaining operational and marketing capability to restart production relatively promptly once travel restrictions are eased and improved end user demand is observed
- Key initiatives implemented to minimise costs during ongoing period of suspended production include:
  - Negotiation of all contracts to minimise costs during period of no production
  - Minimisation or deferral of capital works
  - 65% head count reduction at Balama, with retention of core team to maintain operational expertise and to support recommencement of production. 220 roles will be retained, of which 93% are national and local personnel
- The lead time to recommence production post implementation of the labour restructure is expected to be 2 to 3 months, which reflects the time required to re-establish a full complement of labour to operate Balama
- Remaining Balama workforce will be focused on preparing for and implementing sustained cost reductions to be embedded upon restart of production:
  - Process plant maintenance and improvements
  - Ongoing contract reviews to seek contract improvements (cost and performance)
  - Lower cost procurement
  - Readiness to implement lower cost power options
- Commitment to ongoing community projects under the Livelihood Development Program will be maintained during period of suspended production



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## **Ongoing commitment to sustainability & community**

### **Ongoing commitment to existing HSE standards and community projects**

- In June 2017, Syrah established a Local Development Agreement ("LDA") with the Company's eight Host Communities and the Balama District Administration
- The LDA required the formation of a Local Development Committee ("LDC") consisting of Company, Host Community, and District and Provincial Government representatives to ensure fair and transparent stakeholder oversight / input into local development projects and associated expenditure
- All existing commitments agreed via the LDC are planned to be maintained through the current period of suspended production, including ongoing operation of the Balama **Training Centre**
- 220 jobs will be retained at Balama to ensure preservation of operational capability to support re-start of operations retained workforce 93% national and local personnel
- Capability and resources will be maintained for ongoing best practice health, safety and environment management systems, in-line with existing ISO:45001 Occupational Health and Safety Management Systems and ISO:14001 **Environmental Management Systems certifications**





## **BAM** project de-risking towards commercial Active Anode Material production

### Anode precursor production at commercial scale demonstrated at Vidalia

- Anode precursor to battery specification has been produced at Vidalia and will be dispatched to potential customers and supply chain partners for testing and qualification. •
- China currently produces 100% of the natural graphite anode precursor material used for production of lithium-ion batteries in Electric Vehicles, as well as other applications. Syrah ۲ believes the Vidalia operation is the farthest progressed alternate source of natural graphite anode precursor material ex-China.
- Anode precursor from Vidalia will be further processed to Active Anode Material via toll treatment and from a furnace to be installed at Vidalia over the coming guarters, which will • further facilitate ongoing strategic, financial partnership, and end-customer interactions.
- Current installed plant at Vidalia is capable of 5kt per annum milling and commercial gualification scale of 200t per annum purification. An in-progress Bankable Feasibility Study is assessing the economics of expanding the capacity of the existing facility to 10kt per annum of Active Anode Material production capability initially, and then scale up to 40kt per annum.



## Syrah's site in USA is significantly de-risked for anode material production

### Site owned by Syrah in Vidalia (Louisiana, USA) has all the key requirements for large scale Active Anode Material production

- ✓ Access to key utilities (Water/Gas/Power)
- Confirmed compliance with water and air discharge requirement from large scale commercial facility
- Options to expand facility size
- ✓ Direct barge/port access to Mississippi river
- Supportive government relations
- Access to key consumables (HF, HCL, Caustic)
- Capable workforce initial production team in place and proximity to skilled workforce from petrochemical industries







## Uniquely positioned to supply the ex-Asia anode supply chain

### Significantly progressed in demonstrating capability to supply anode material at commercial scale

Focus to date on establishing production lines that are of adequate commercial scale to demonstrate Syrah's capability to supply ex-Asia markets (USA and Europe) with Active Anode Material that:

- has equivalent or superior physical and electrochemical properties to currently available material;
- is cost competitive with incumbent supply (currently 100% based in Asia); and,
- provides an environmentally superior alterative to existing production.





## **Co-location with planned USA battery factories**

### Syrah plans to provide a co-located and ESG verifiable source of anode material supply to the USA battery supply chain



✓ Increased security of critical battery

Security of supply from localised

Optimisation of supply chain

Ease of co-development or

partnerships with potential local

partners (governments, other supply

## Syrah an alternate supply option for USA and Europe battery supply chains

### Syrah aims to provide a complementary and alternate supply proposition to existing domestic China supply to meet growing demand





## Benchmarking of anode material produced with natural graphite from Balama

### Syrah anode material benchmarks favourably against comparable material available from existing major incumbent industry participants

Benchmarking of the physical and electrochemical properties of the planned products from Syrah's BAM provides comfort that Active Anode Material planned to be produced at scale at Vidalia will deliver equivalent or superior physical and electrochemical performance as material supplied by major incumbent industry participants









### **Particle Shape Benchmarking**

Comp C

Syrah



## ESG and cost considerations are growing issues for synthetic graphite

Natural graphite has superior environmental and cost credentials compared to synthetic graphite



(1): Syrah Resources simplified flow sheet of synthetic graphite feedstock origins

Cost and LCA/ESG considerations a growing issue for synthetic:

• Origin – Primarily pet coke from the oil industry

 Process is highly energy intensive -3x natural graphite<sup>1</sup>

Feedstock cost – subject to oil production

(1): Benchmark Minerals Intelligence



## Natural graphite expected to gain share versus synthetic graphite

Environmental credentials and cost to drive increased share of natural versus synthetic graphite in the anode



## 2030



## 2,558,928

Source: Benchmark Minerals Intelligence



## Near term BAM project milestones

### Rapidly progressing to become the first vertically integrated natural graphite anode material producer ex-Asia

	2020		2021		
	Q2	Q3	Q4	Q1	
Product development			Ongoing		
Development of strategic and financial partnerships (government, supply chain participants, other)			Ongoing		
First purified spherical graphite (anode precursor) to full specification	(	$\bigcirc$			
Dispatch of anode precursor to supply chain participants					
Commercial scale toll processed AAM			$\diamond$		
Bankable Feasibility Study					
Furnace installation at Vidalia			_	$\rightarrow \diamond$	
Production of AAM qualification volumes at Vidalia					
Dispatch of AAM to potential customers for evaluation					

------(1): Potential for government/strategic/financial partnership to facilitate project post feasibility study

----- (2): Project development pathway beyond completion of feasibility study to be informed by strategic and financial partnerships and end customer commitments





## Summary and outlook

## BAM progressing towards project milestones. Balama production to remain suspended, with the asset being positioned to preserve cash whilst also retaining capability to respond when market conditions improve

Important BAM milestones expected H2 2020	<ul> <li>Anode precursor material to battery specification has been produced at Vidalia and will be dispatched to potential customers and su</li> <li>Anode precursor from Vidalia will be further processed to Active Anode Material via toll treatment and from a furnace to be instal which will further facilitate ongoing strategic, financial partnership, and end-customer interactions</li> <li>A Bankable Feasibility Study due for completion in Q4 2020 is assessing the economics of expanding the capacity of the existing fa Material production capability initially, and then scale up to 40kt per annum</li> </ul>
Positioning Balama for return of EV sales growth	<ul> <li>Production at Balama remains suspended due to ongoing impacts of COVID 19. Specifically, ongoing travel restrictions that limit th weak end user demand due to lockdowns, mobility restrictions and economic uncertainty which have negatively impacted year-to-da</li> <li>High conviction of return to natural graphite demand growth, although timing uncertain</li> <li>Given immediate term uncertainty, the Balama cost base will be further positioned through Q3 to best preserve cash whilst also retain to restart production. Restart lead time is expected to be 2 to 3 months</li> </ul>
Available liquidity to manage an extended period of market uncertainty	<ul> <li>Cash balance at 30 June 2020 was US\$53m, in line with forecast<sup>1</sup></li> <li>Implementation cost of further measures to preserve cash at Balama will be approximately US\$1m, to be incurred through Q3 2020 reduce to approximately US\$7m per quarter at Balama</li> <li>Near term cash outflows for BAM and corporate will be approximate to year-to-date 2020 expenditures of US\$2m and US\$1m per q</li> </ul>

upply chain partners through Q3 2020 Iled at Vidalia over the coming quarters,

acility to 10kt per annum of Active Anode

the mobility of the Balama workforce and late EV sales

aining operating and marketing capability

0. Post implementation, cash outflow will

quarter respectively

