



**SYRAH** RESOURCES

*The future of graphite*

## **Deutsche Bank – Australian Future Metals Corporate Day**

Sydney – 25 May 2017

Shaun Verner – Managing Director & CEO

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# Syrah Resources – The Future of Graphite

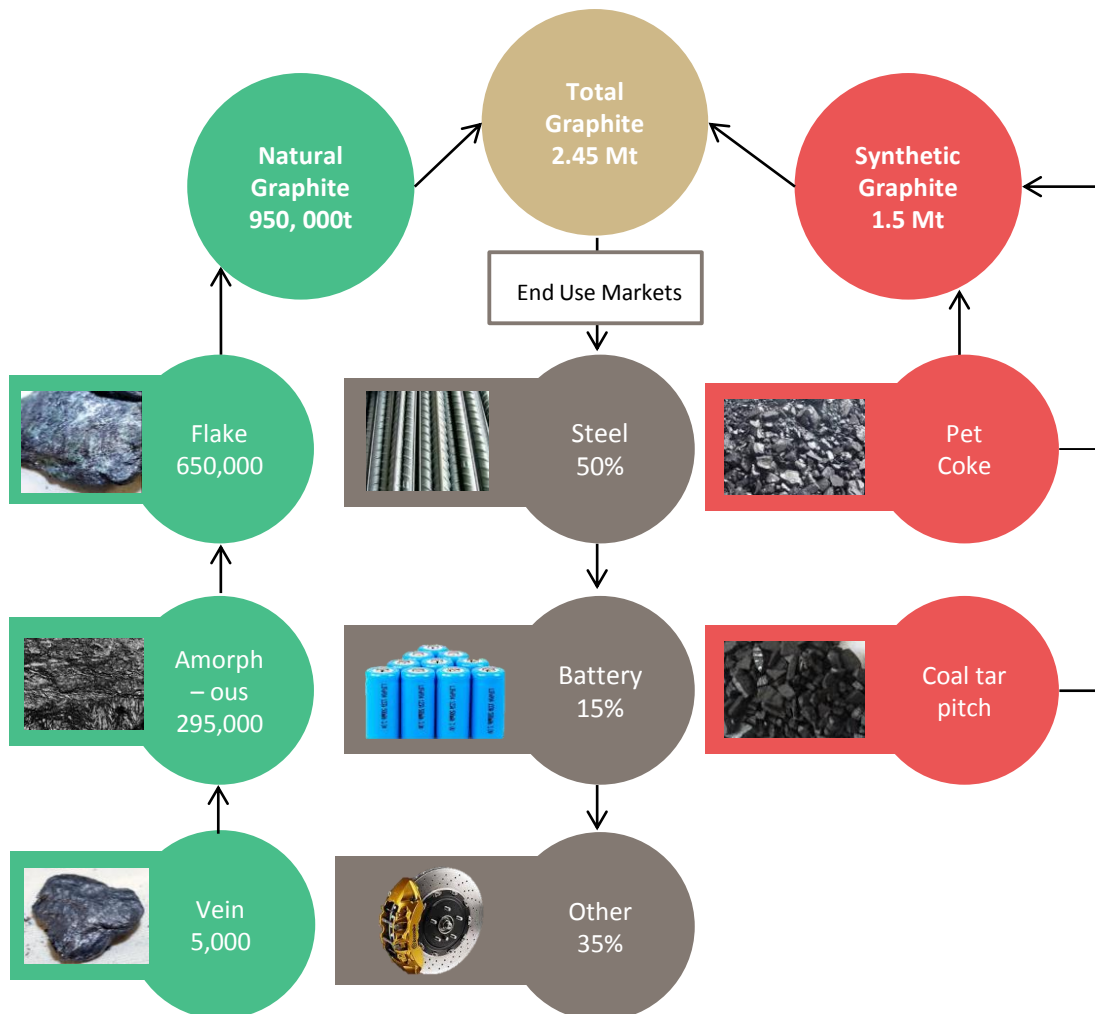
- ❑ The only major, fully funded, natural graphite development project in construction globally
- ❑ Will be the largest natural graphite producer globally, oriented to battery market growth
- ❑ A world class, tier-1 asset by any measure
- ❑ Significant grade advantage
- ❑ Lowest quartile of the cost curve
- ❑ Ramp-up plan and volume in place
- ❑ Deeply commercially engaged with major consumers
- ❑ Battery Anode Material strategy development progressing – production, partnership, development

# What is graphite?

- ❑ Graphite is a grey crystalline allotropic form of carbon and is known for its electrical conductivity, lubrication and resistance to corrosion and high temperatures.
- ❑ Graphite ore is mined and then processed via simple flotation before being dried and classified into a high grade concentrate for sale to end users
- ❑ Natural graphite is beneficiated graphite concentrate (typically 90% to 95% total graphitic carbon) that is then sized and screened into various mesh sizes (large flake and fine flake) for industrial applications
- ❑ Natural spherical graphite is fine flake concentrate that is milled into spherules, purified to at least 99.95% carbon and then coated with a layer of carbon for battery anode applications
- ❑ Battery Anode Material typically comprises both natural spherical graphite and synthetic graphite

# Global graphite market definition and flow

Global Graphite Market Flow (2016)

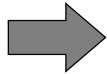


- The total graphite market refers to the sum of natural and synthetic graphite production.
- Synthetic graphite predominately derived from petroleum coke, with a small amount from coal tar pitch
- Majority of world's amorphous and flake supply is from China
- All vein supply is from Sri Lanka.
- Currently, the steel market is the main end use market
- Battery market is the fastest growing sector of the natural flake market moving from 15% to 35% share by 2021

# Syrah's integrated supply chain will service traditional industrial and growth battery markets from start up

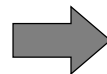


**Balama ore  
(Mozambique)**



**Processing**

- Grinding
- Flotation
- Screening
- Bagging



**Export**



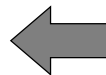
**Traditional markets**

- Refractory
- Lubricants
- Recarburisers

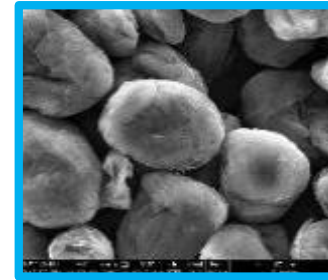


**Lithium ion battery**

- Electric vehicles
- Grid storage



**Direct sales to spherical  
graphite producers**



**Battery Anode Material  
(BAM) Commercial Facility  
(Louisiana)**

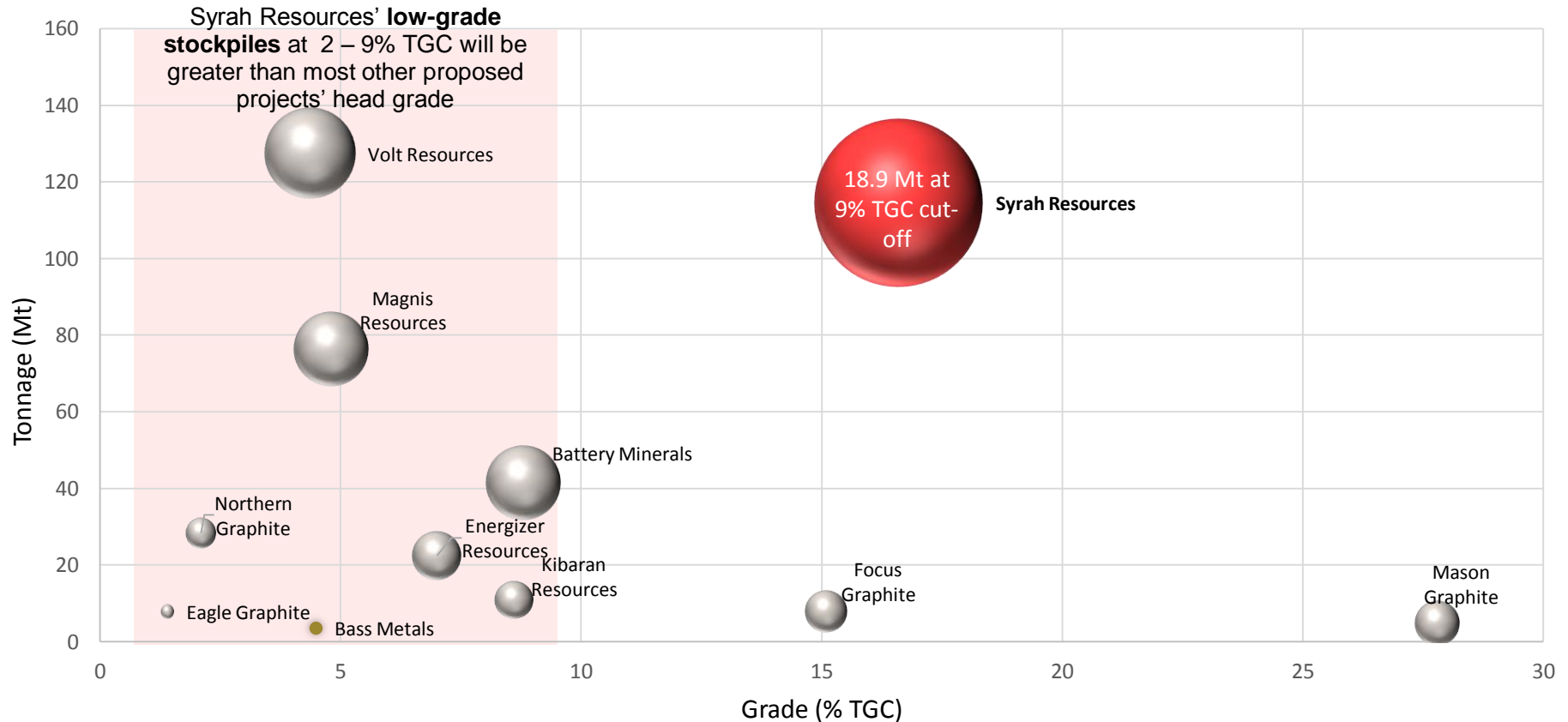
- Spheroidisation
- Purification
- Coating



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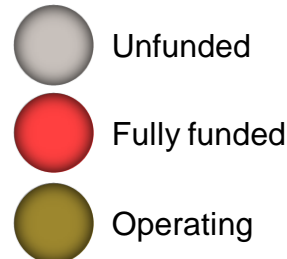
# Syrah's Balama project has the largest defined reserve and significant grade advantage



Source: Syrah Resources, Corporate Reports. bubble size representative of defined reserve / resource.

## Notes:

ASX and TSX listed projects only and excludes Chinese producers  
 Cut-off grade for Northern Graphite (Ontario, Canada) is 1% TGC  
 Cut-off grade for Energizer Resources (Madagascar) is 4.5% TGC  
 Cut-off grade for Kibaran Resources (Tanzania) is 5% TGC  
 Cut-off grade for Battery Minerals (Mozambique) is 4.4% TGC  
 (Cut-off grade for Focus Graphite (Quebec, Canada) is 3.1% TGC  
 Cut-off grade for Mason Graphite (Quebec, Canada) is 6% TGC  
 Cut-off grade for Volt Resources (Tanzania) is 1.3% to 1.8% TGC  
 Bass Metals is a resource definition, not a JORC compliant reserve  
 TGC = Total graphitic carbon







Tailings storage facility

Truck  
parking  
area

Administration  
Building

Fixed plant workshop

Raw water dam

Power  
station

Product storage  
building

Fuel  
storage  
facility

Process plant

ROM pad

50m



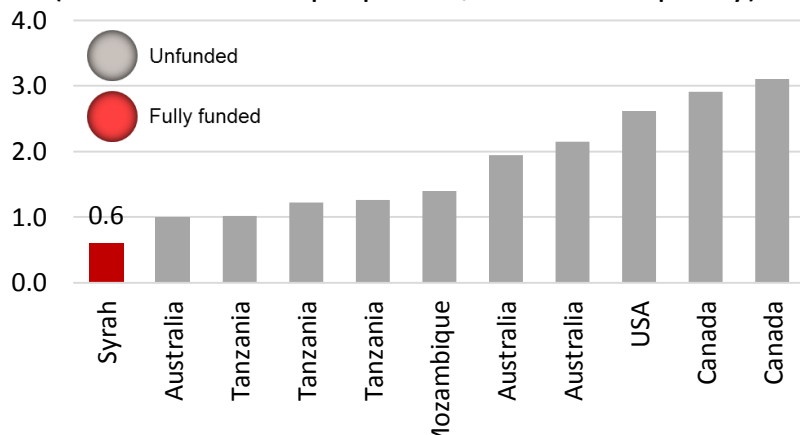
# Balama commissioning activities have commenced with first production scheduled for August 2017

- ❑ Balama Project is approaching 80% complete; commissioning activity has commenced
- ❑ Capital budget remains at US\$193 million plus a project contingency of US\$7 million
- ❑ Production ramp up volumes of flake graphite concentrate:
  - ❑ Year 1: 140kt to 160kt
  - ❑ Year 2: 250kt to 300kt of production
- ❑ Water Pipeline Construction Agreement granted and construction commenced
- ❑ Mining Agreement continues to progress through government approval channels
- ❑ Multiple sales initiatives progressed :
  - MOU with BTR New Energy Materials, the world's largest battery anode manufacturer
  - Statement of Sales Intent (SSI) with a European trader consortium
- ❑ Progress well advanced for US\$50 million in working capital debt funding

# Major project metrics highlight the attractiveness the Balama investment

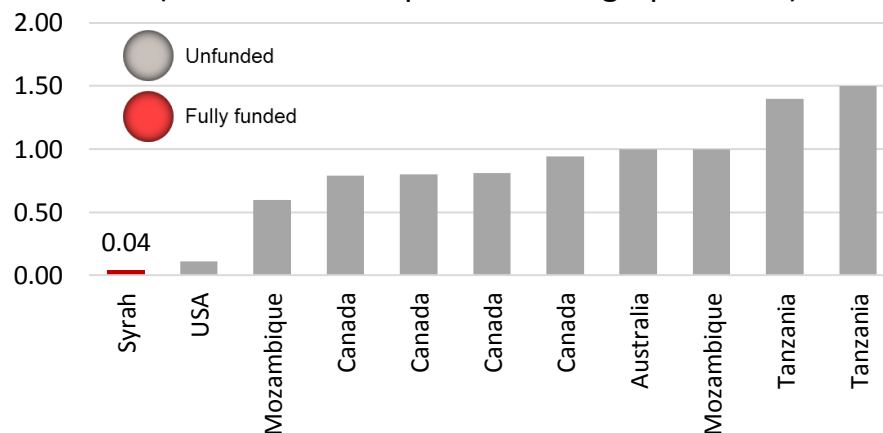
## Capital Intensity

(US\$ invested or proposed / tonne of capacity)



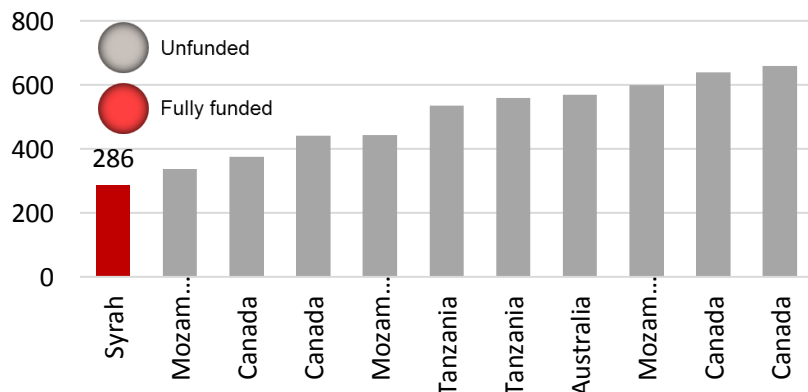
## Strip Ratio

(tonne of waste per tonne of graphite ore)



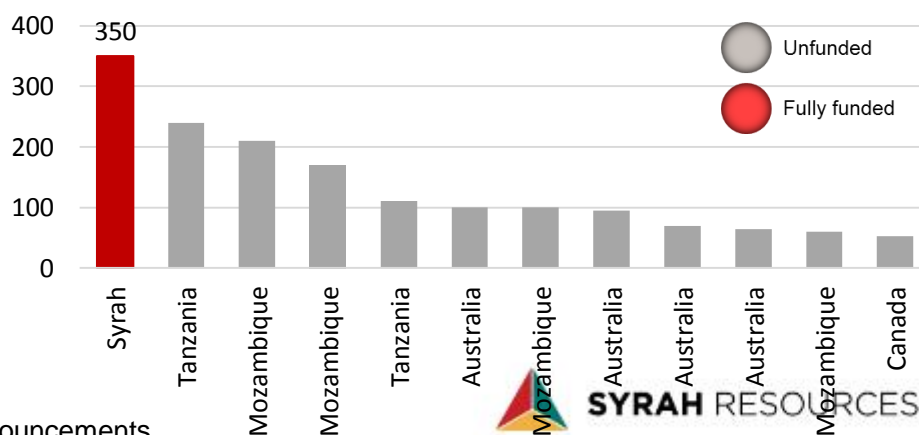
## Cash cost per tonne at full production

(US\$/t)



## Production Capacity

(ktpa)



Source: Syrah Resources, Corporate Reports and ASX announcements

Note: Syrah Resources benchmarked against the next best ten competitors in each metric.

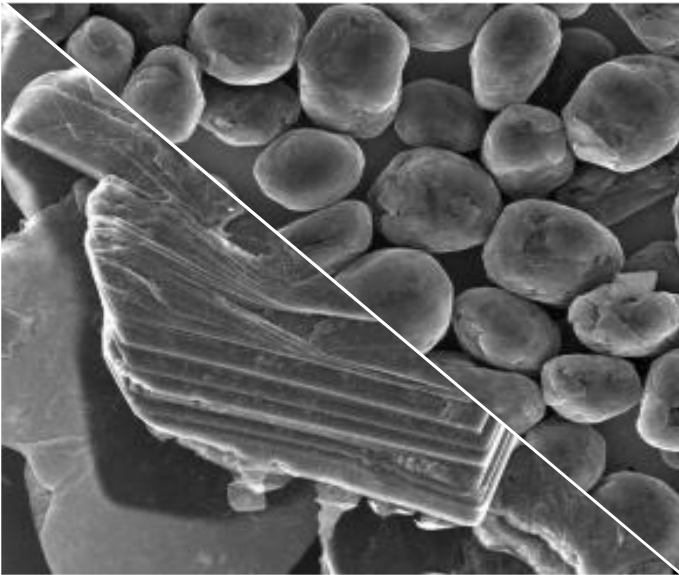
Competitor location based on location of proposed mine, not company headquarters.



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# Syrah's graphite is in demand, and characteristics provide production and cost advantages

## Syrah Resources Spherical Graphite



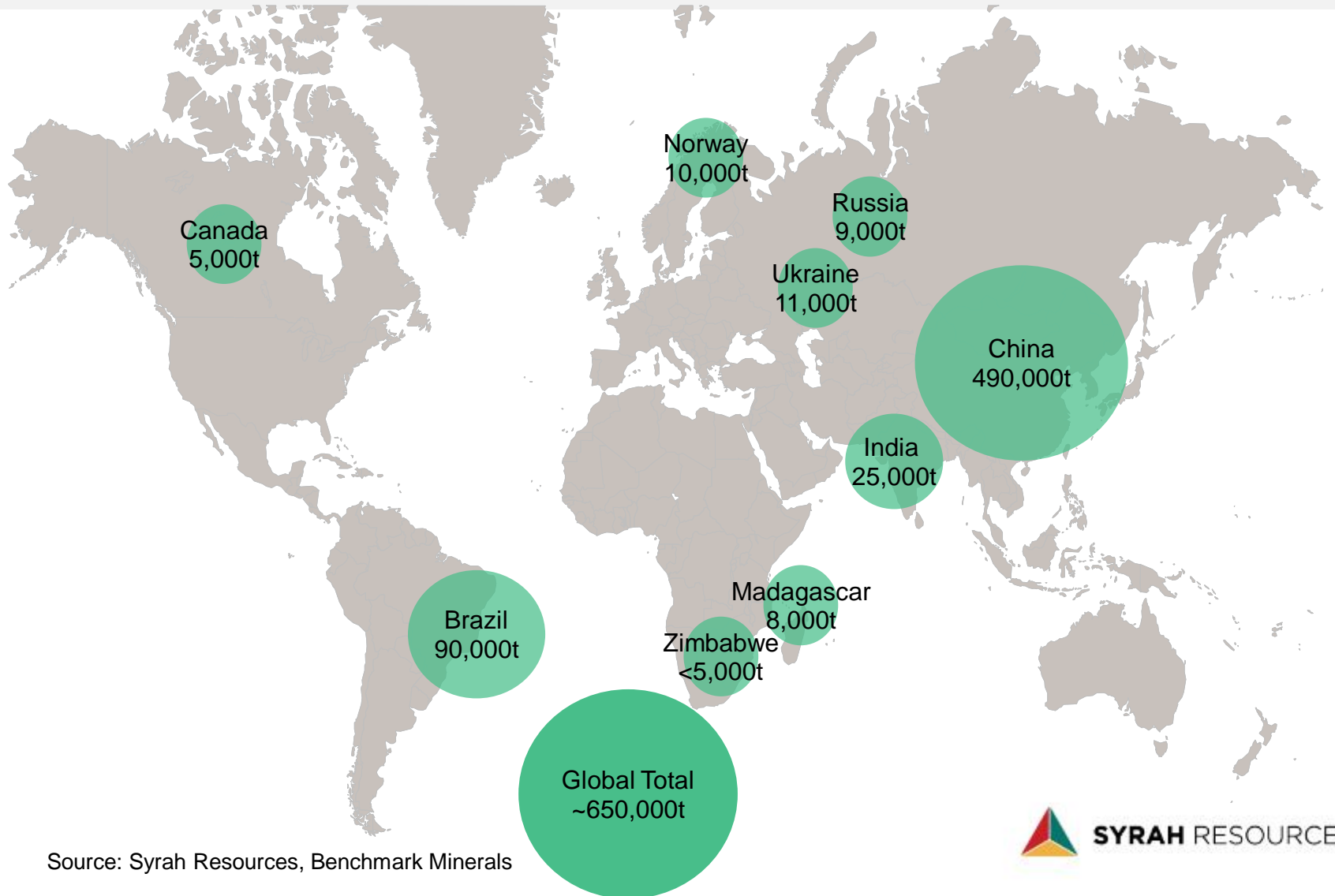
## Syrah Resources Flake Graphite Concentrate

### Characteristics of Syrah Resources' graphite

- 1 Optimal flake size**  
-100 mesh maximises production yield for battery market. +100 mesh material primarily for industrial markets.
- 2 Crystallisation**  
Balama graphite has a fully ordered crystalline structure.
- 3 High production yields**  
Spherical graphite production yield of 45% - 55%, compared to typical yields of 30% - 40%.
- 4 Degree of spheroidisation**  
Well rounded spherules, increased tap density and anode efficiency.
- 5 Purity level**  
High ore graphite content eases purification to 99.95%+ that increases anode life and conductivity.



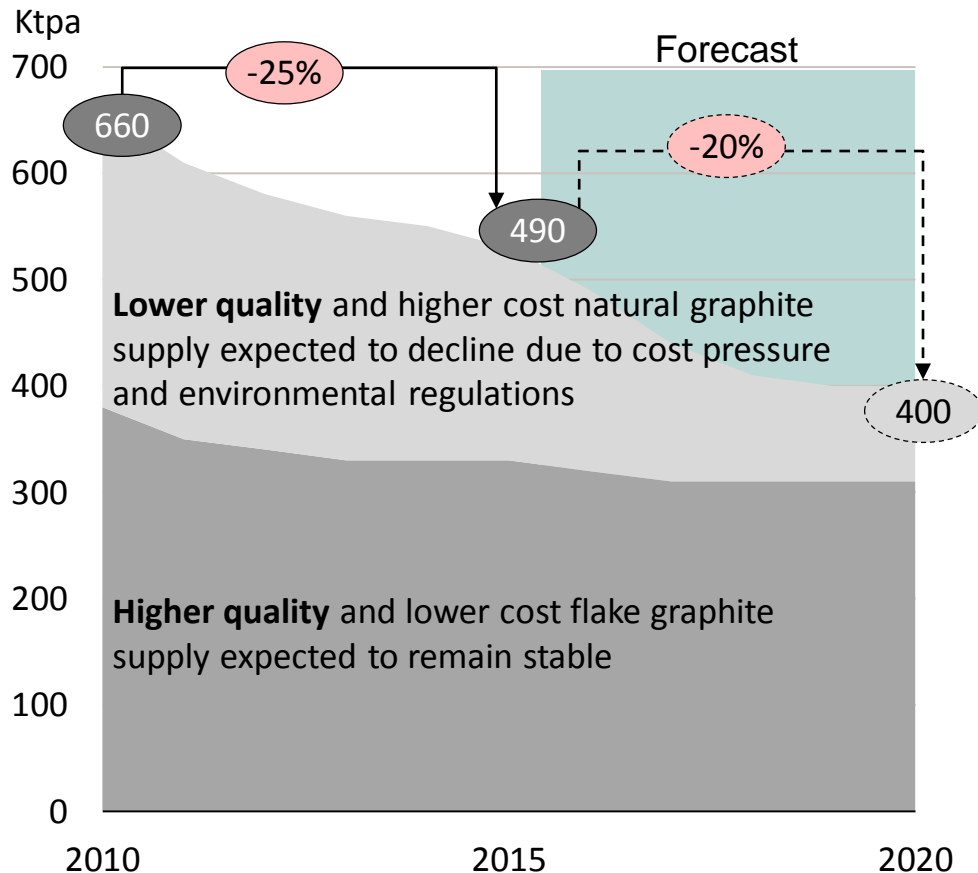
# In 2016, approximately 75% of natural flake graphite was sourced from China



Source: Syrah Resources, Benchmark Minerals

# Chinese domestic supply of natural graphite is declining at a time of increased demand

## China natural flake graphite production



Source: Syrah Resources

## Issues

### Grade Decline

Ore grades have dropped from >10% to 5 -10% across the country in recent years. High quality graphite is now difficult to source domestically.

### Increased environment regulations and costs

More stringent environmental measures have made it more difficult to renew or issue new graphite mining licences. Those remaining are subject to greater environmental controls that require capital investment.

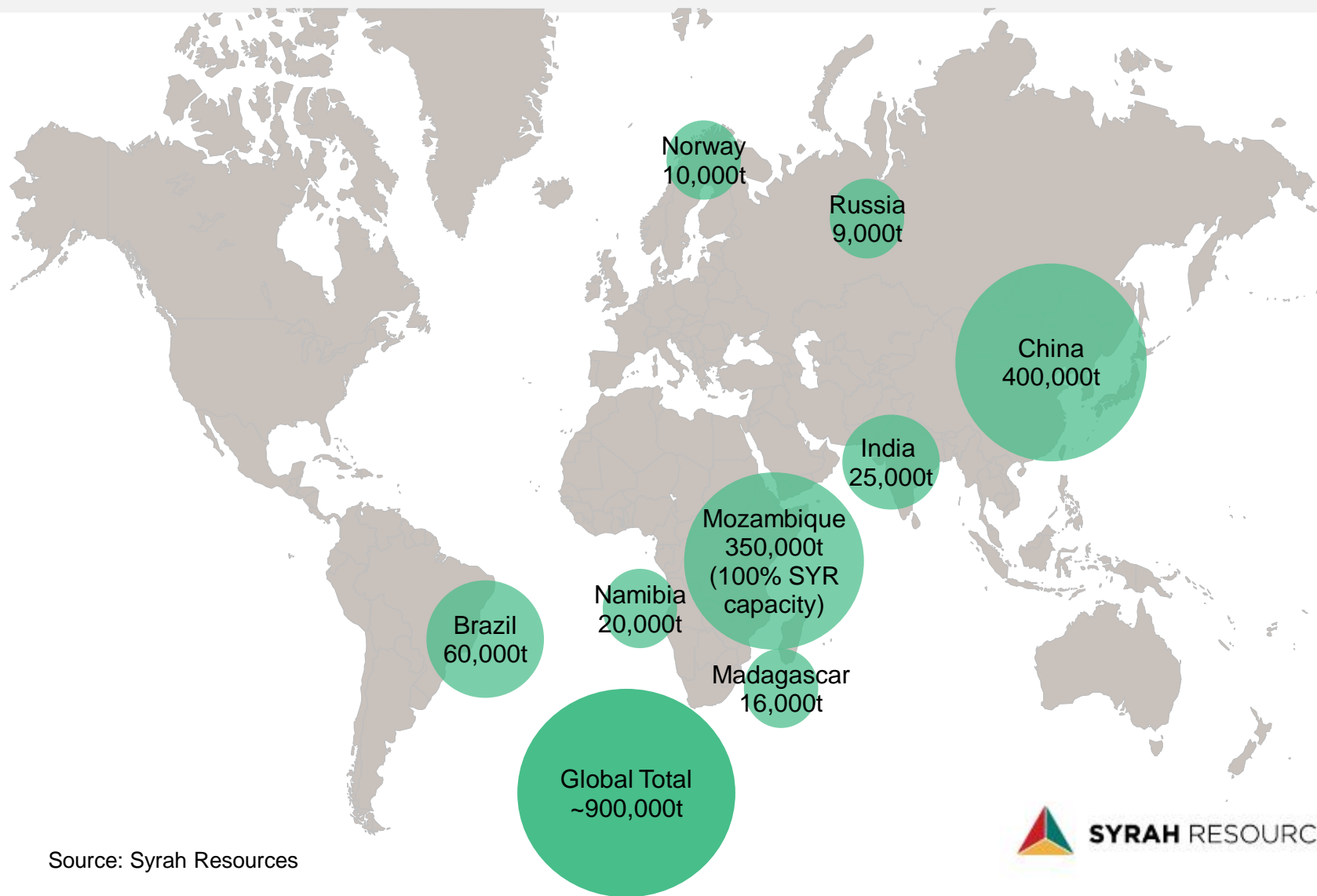
### Industry Consolidation

Many mines that are smaller, unprofitable or closely located to populated areas are being forced to close down or invest in equipment to reduce dust and noise hazards.



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By 2020 Syrah will be the largest individual natural flake graphite producer in the world with ~40% market share



Source: Syrah Resources



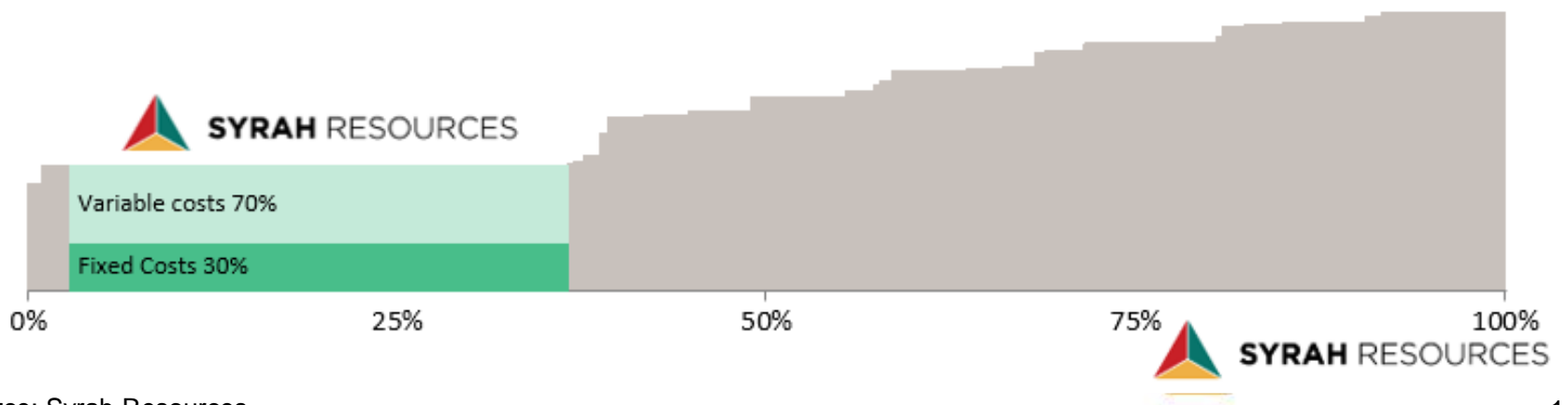
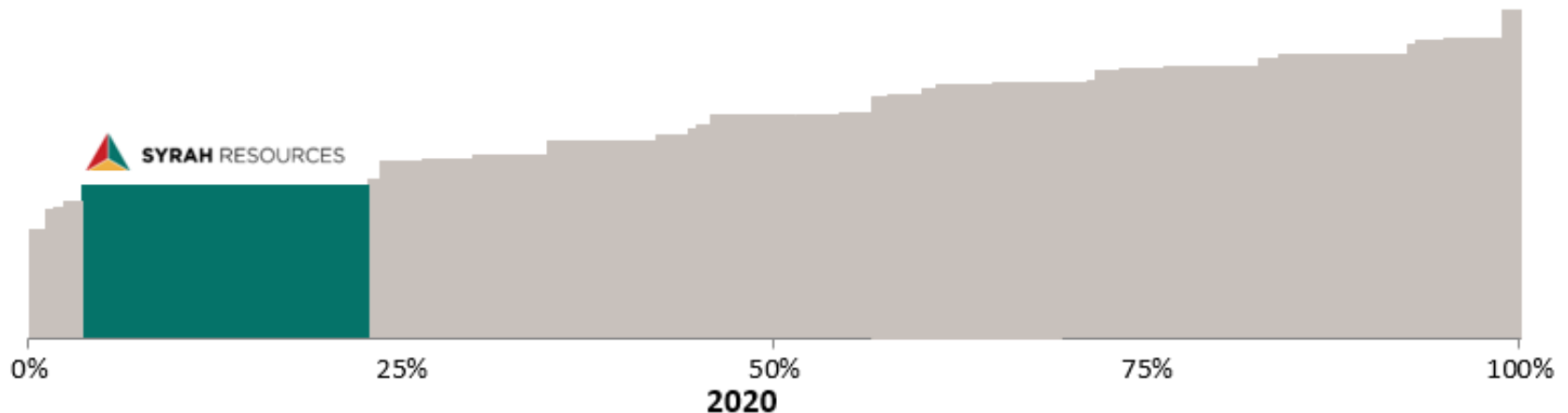
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# Syrah Resources will be a first quartile producer both during ramp up and at full capacity

## Flake Graphite C1 Cost Curve

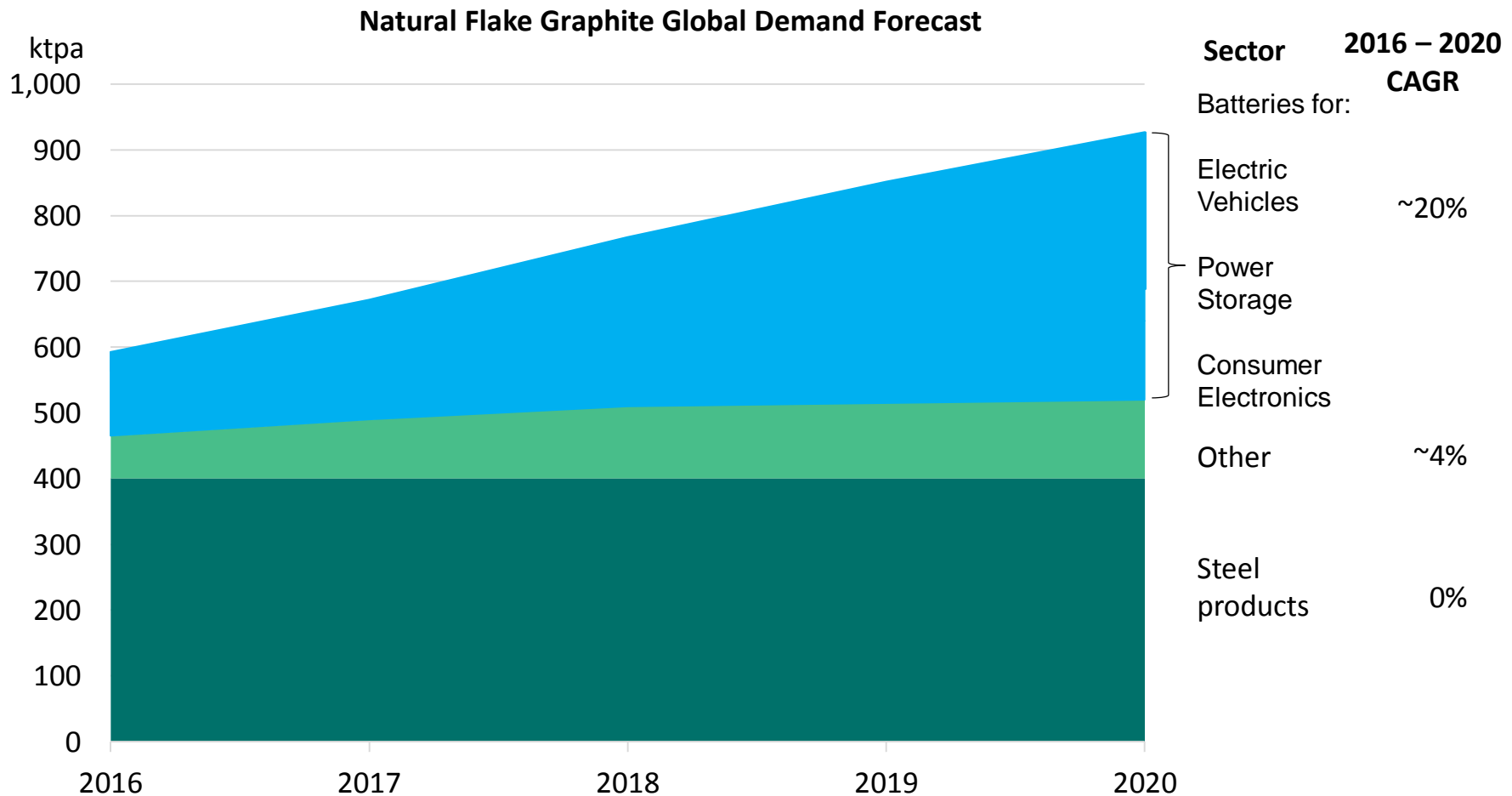
(Not concentrate TGC adjusted, first 12 months of production for Syrah Resources, 2017/18)



Source: Syrah Resources

Notes: Cost curves include current operating graphite mines that accounted for ~95% of global production in 2016.

# Syrah's Balama production ramp up will be driven by the strong global demand growth profile



Source: Syrah Resources

Notes: Steel sector includes refractory bricks, foundries and recarburising products.

Other includes lubricants, brakes, friction products and pencils.



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# Majority of incremental demand growth is for smaller sized flake used in the battery sector

## Graphite Types, Market Size and Prices

Mesh Size & Description	End User Markets	Market Growth 2016 to 2020	Current Price <sup>1</sup> & 2020 Market Value	Syrah Resources Product <sup>3</sup>
- 100 Fines	Batteries Lubricants Steel <sup>2</sup>	315kt to 580kt <b>+265kt growth</b>	USD\$550 – 600 >>\$350 million	68% / 238kt of SYR production
+100 Medium	Steel <sup>2</sup>	175kt to 180kt +5kt growth	\$650 – 750 \$100 - 150 million	12% / 42kt of SYR production
+80 Large	Steel <sup>2</sup>	105kt to 120kt +15kt growth	\$750 – 850 \$70 - 100 million	12% / 42kt of SYR production
+50 Jumbo	Steel <sup>2</sup>	35kt to 40kt +5kt growth	\$1,100 – 1,200 \$50 - 100 million	8% / 28kt of SYR production

Source: Syrah Resources, Benchmark Minerals, Industrial Minerals

Notes: 1. April 2017 prices. Market value based on today's prices. Prices based on a 90% to 95% concentrate product, FOB China and CIF EU. Syrah Resources will be producing a 98% product. 2. Steel products include crucibles, foundries, recarburizer and refractories 3. Based on full production capacity

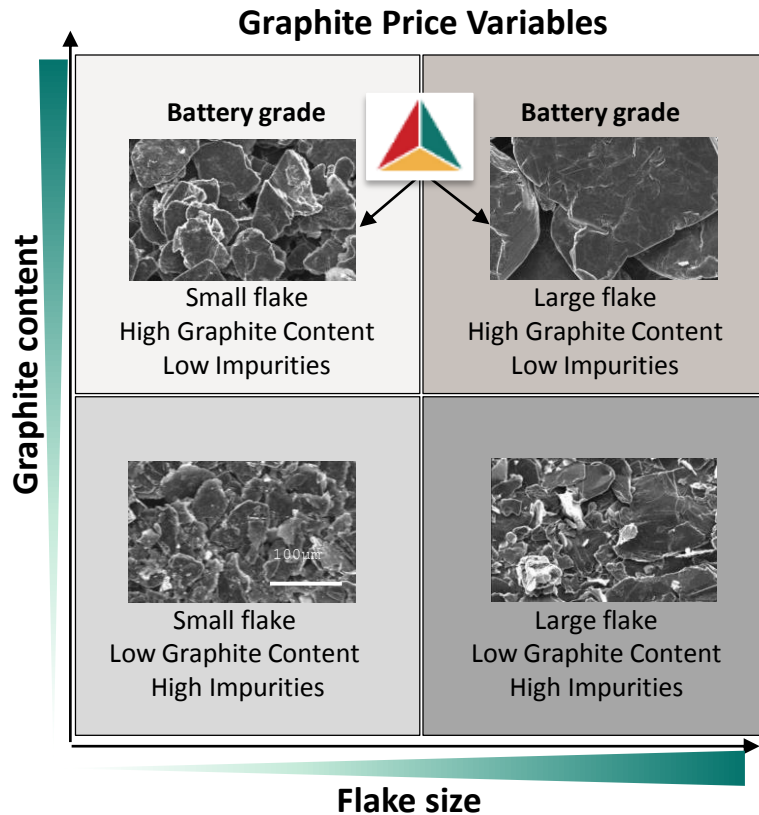


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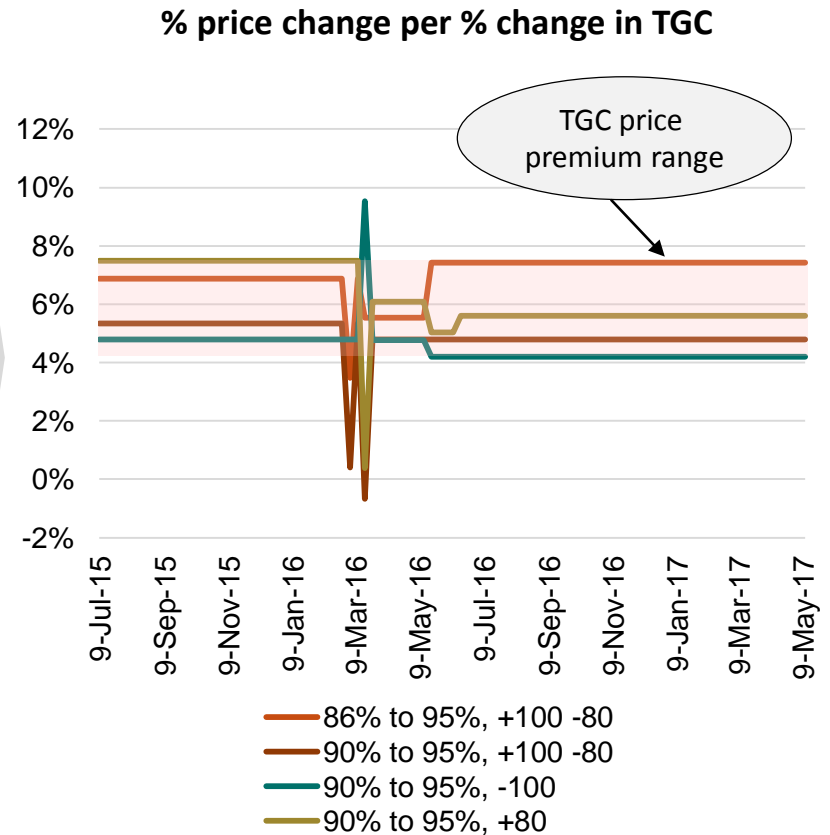


# Syrah's product quality and grade will command a premium price

Flake prices are determined based on a range of value in use variables such as graphite content, flake size and impurity levels.

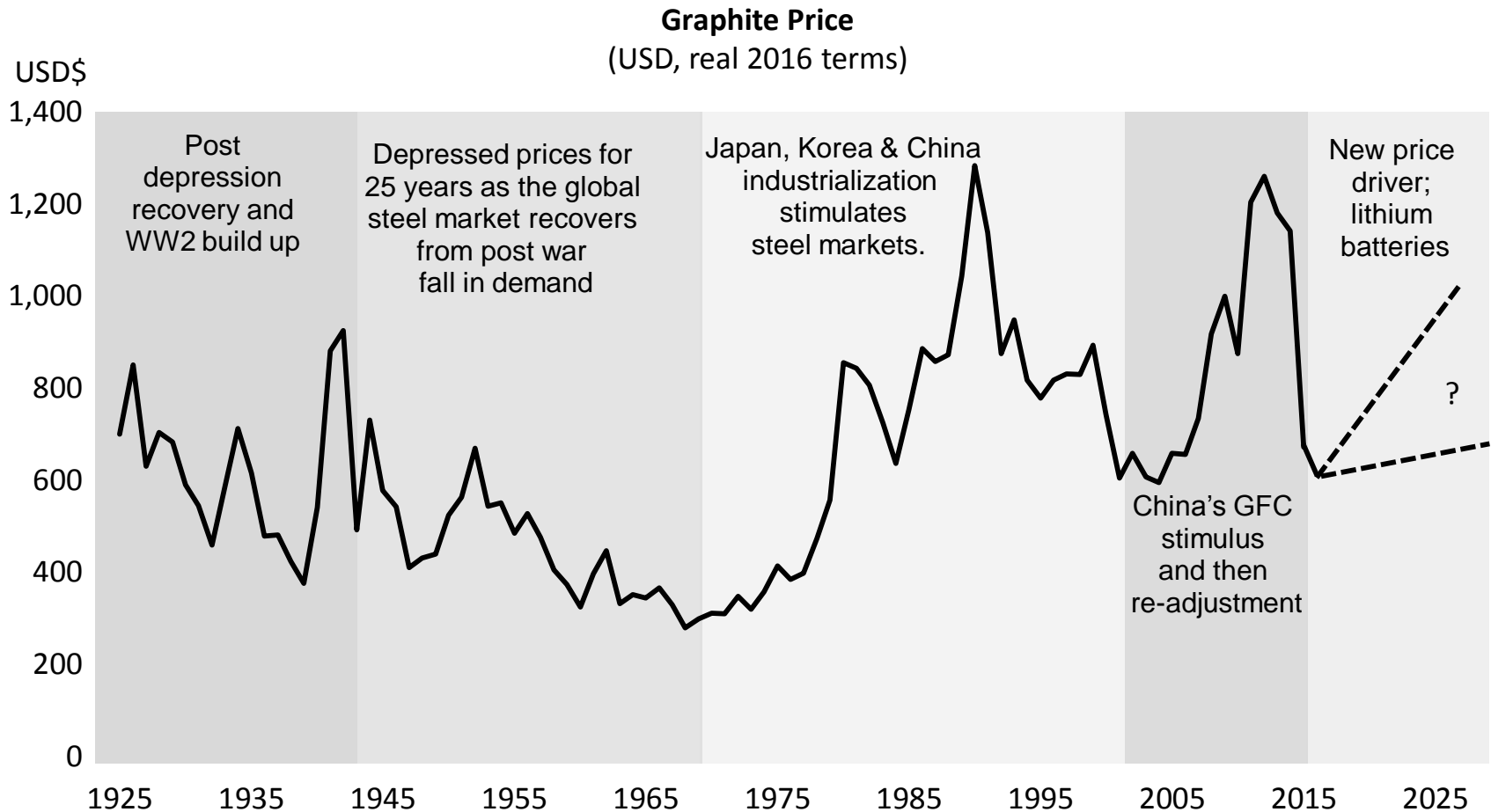


The market already appreciates this value. An additional +1% of TGC equates to a +4 - +7% value uplift, depending on the flake size.



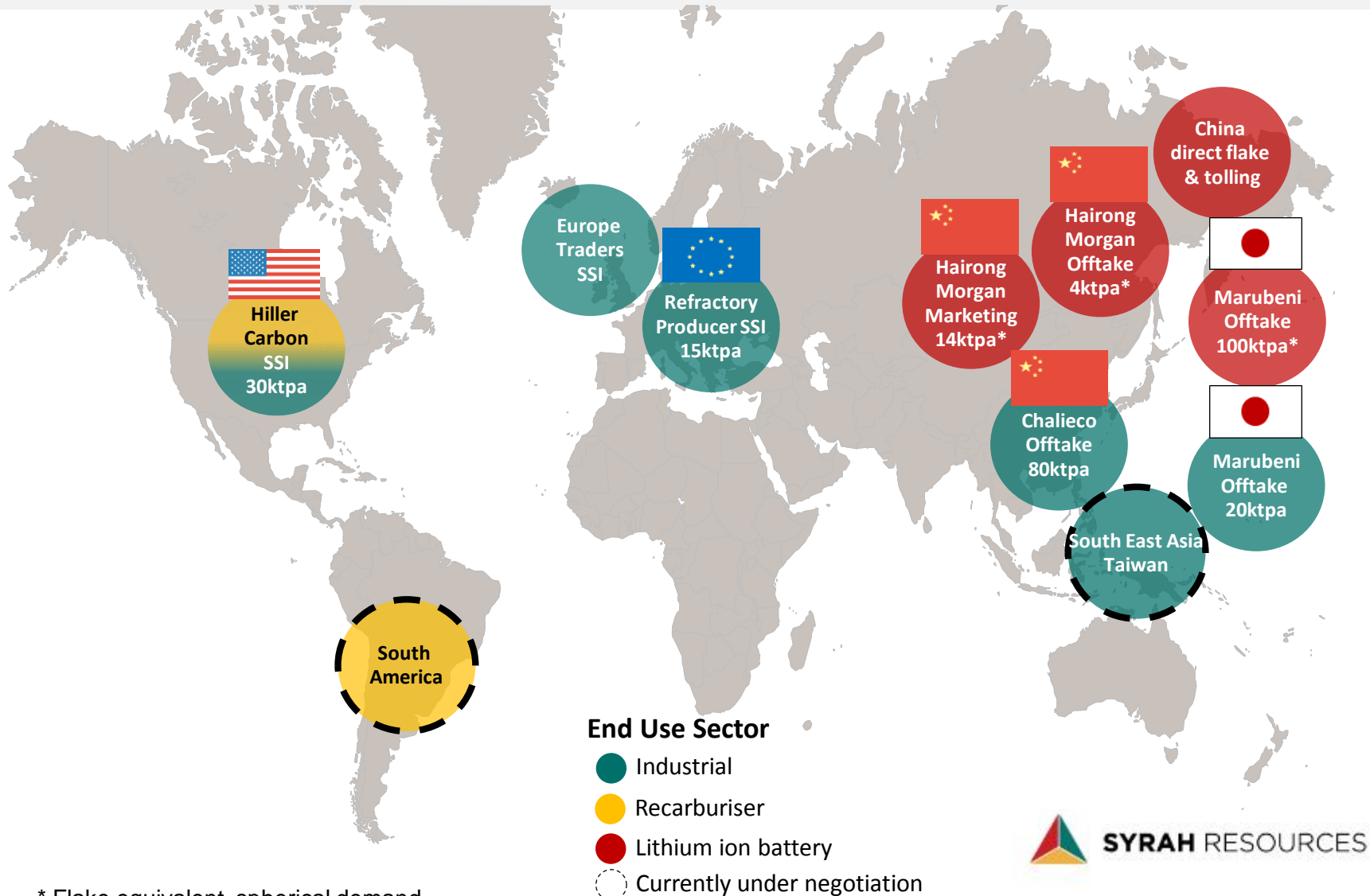
Source: Syrah Resources analysis, Industrial Minerals price data

# Price historically driven by steel and industrial applications; now and in future by battery demand



Source: USGS, Syrah Resources  
Notes: for low grade fines

# Syrah's marketing strategy is to be diversified across end user markets and geographies





# Syrah's flake concentrate sales are well progressed

## – all production will be placed

Customer	Type	Region	Product	Tonnes p.a.	Duration	Status
Chalieco	Offtake	China	Flake graphite	80,000	3 years	Being operationalised (timing, customer volumes, pricing)
Marubeni	Offtake	Japan & Korea	Flake graphite	20,000	3 years	Being operationalised (timing, customer volumes, pricing)
Hiller Carbon	SSI	North America and Mexico	Recarburiser	25,000 to 35,000	5 years	Extending focus of agreement to include traditional markets
European refractory producer	SSI	Europe	Flake graphite	Up to 15,000	10 years	Awaiting commercial production to operationalise contract
European trader consortium (NEW)	SSI	Europe	Flake graphite	15,000 to 25,000	5 years	Agency and direct sales for traditional markets only; excluding battery and recarburiser markets
BTR New Energy Materials (NEW)	MOU	China	Flake graphite and supply chain co-operation	Confidential		

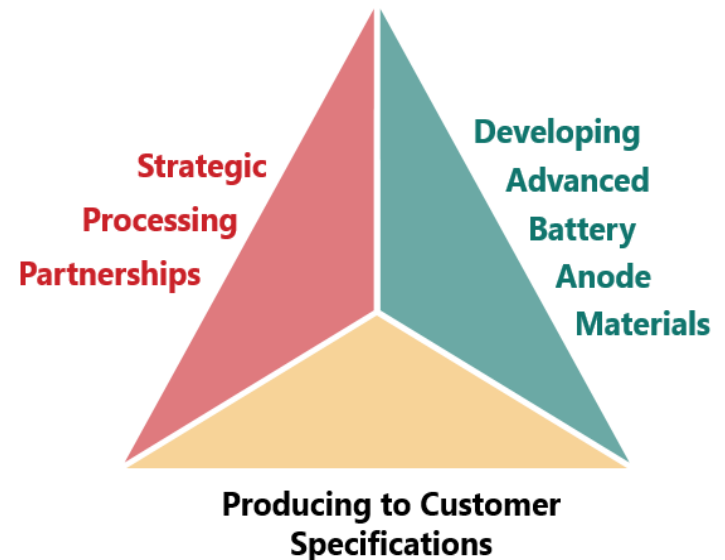
### ❑ Other developments:

- **China battery anode segment:** additional direct flake sales to spherical producers being negotiated (New)
- **India market development:** sales agency options for flake sales identified - negotiations initiated (New)
- **South East Asia / Taiwan market development:** initial offers made (New)
- **Europe and South America recarburiser market development:** initial offers made (New)
- **Internal consumption of flake in toll processing options to produce spherical graphite in China:** awaiting final proposals (New)



# Battery Anode Material – vertical integration through production, partnership and development

- ❑ Initial BAM team mobilised to Louisiana / COO appointed
- ❑ Finalising site lease for Qualification Plant
- ❑ Environmental permitting progressing well concurrently
- ❑ Front End Engineering Design (FEED) complete, now detailed engineering
- ❑ On target for Qualification Plant production in Q1 2018
- ❑ Commercial Plant planning for Q4 2018 on schedule - additional commercial and technology options developed before the Bankable Feasibility Study (BFS)
- ❑ Conditional SSI with major anode producer for battery grade spherical graphite
- ❑ Further progress made in commercial discussions under MOU with BTR
- ❑ Toll processing options to produce spherical graphite in China
- ❑ China Pilot Plant will be relocated to Perth in mid CY 2017
- ❑ MOU in place, contract under negotiation with Cadenza Innovation for product testing and development partnership, for advanced Battery Anode Materials



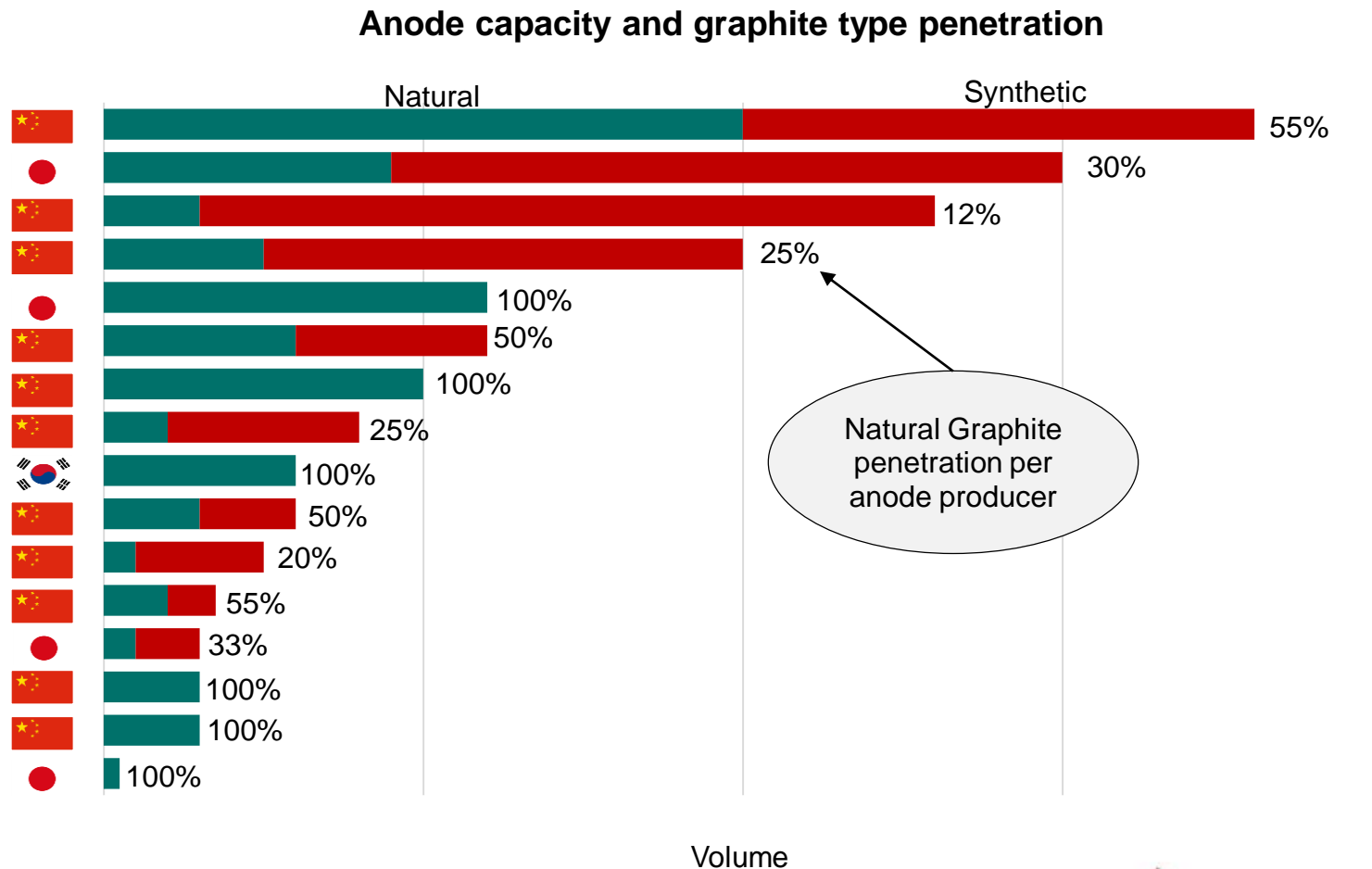
# Syrah's current downstream commercial arrangements for Battery Anode Material

Customer	Type	Region	Product	Tonnes p.a.	Duration	Status
Marubeni	Offtake	Japan & Korea	Uncoated spherical graphite	50,000	5 years	Ongoing sample testing and customer engagement. Awaiting production from US plant
Morgan Hairong	Offtake	China	Uncoated spherical graphite	2,000	3 years	Awaiting production from US plant
Morgan Hairong	Marketing	China	Coated and uncoated spherical graphite	7,000	3 years	Awaiting production from US plant

## ❑ Other developments:

- **BTR New Energy Materials:** signed MOU for strategic development of sales and supply chain options **(New)**
- **Signed conditional Statement of Sales Intent (SSI) for lithium ion battery grade spherical graphite with a major battery anode manufacturer.** This SSI follows the provision of multiple spherical graphite samples for testing and reference purposes, and is targeted at continuing close cooperation to qualify material for mass production **(New)**
- **Assessment of opportunity for spherical production via toll processing agreement (New)**
- **Ongoing sample provision and commercial negotiation with multiple potential customers**

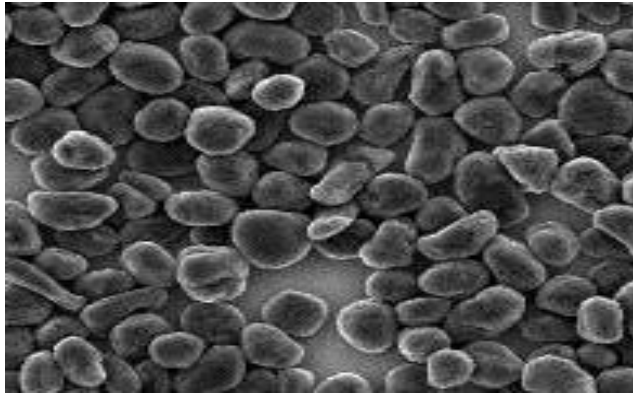
# Blending natural and synthetic graphite in anodes enables a balance of performance and cost



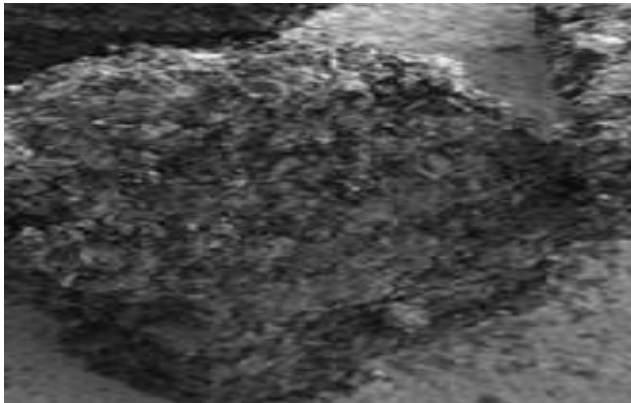


# A higher proportion of natural graphite drives down battery cost, and improves capacity

**Natural graphite**



**Synthetic graphite**



Natural graphite anode active material has an average capacity +6% greater than synthetic graphite.

Substituting a higher proportion of natural graphite into the anode reduces battery costs.

This facilitates overall battery prices to decline without placing price pressure on the natural flake and anode producers.

Current industry research is focused on improving the cycle lifetime of natural flake anodes.

Our MOU with Cadenza will allow us to further test and develop battery anode material options.

# Timetable

	2017			2018			
	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>Balama Graphite Project, Mozambique</b>							
Balama Plant Construction							
Commissioning							
First Ore & Production Ramp Up							
Full Production Capacity							
<b>BAM - Qualification Plant, Louisiana USA</b>							
Development							
Customer Product Qualification							
<b>BAM - Commercial Plant, Louisiana USA</b>							
Development							
Production							
<b>BAM - China / Perth</b>							
China Pilot Plant							
Perth Technology Centre							



Overlap between tail end of construction, start of commissioning and first production



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# Conclusion

- ❑ Syrah is the only major natural graphite development project in construction globally, and is fully funded for production of graphite concentrate from Balama in only a few months' time
- ❑ We have an extraordinary deposit – with almost 60 years mine life as the largest natural graphite producer globally
- ❑ We have a world class tier 1 asset by any measure – size, quality, life, expandability
- ❑ Our grade advantage is significant. It requires less work and lower cost to produce high carbon content concentrate, which will over time attract a premium price
- ❑ We are positioned and will remain in the lowest quartile of the cost curve
- ❑ And we are advancing our downstream Battery Anode Material project to capitalise on the available margins and exponential growth in the global battery market
- ❑ In doing so we are deeply commercially engaged with the major consumers in the traditional and downstream markets building baseload contractual relationships – including that with BTR, the world's largest battery anode manufacturer
- ❑ Optionality for rapid, significant expansion at low capex





# Appendices



## Corporate / Finance





# SYRAH RESOURCES – The world's pre-eminent graphite resource



— Flake Graphite  
— Battery Anode Material

# Our vision and values

Syrah's vision is to be the **leading supplier** of **superior quality graphite products**, working closely with our customers and supply chain to innovate and bring **enhanced value** to **industrial** and **emerging technology markets** globally.

Syrah is committed to:

- **WORKING SAFELY** at all times
- **PARTNERING WITH STAKEHOLDERS** for community and environmental sustainability
- **INTEGRITY** and **FAIRNESS** in all our business dealings
- Being **ACCOUNTABLE** for all our decisions and actions
- **SETTING GOALS** and supporting people to achieve them

We will work as a team and act as owners.

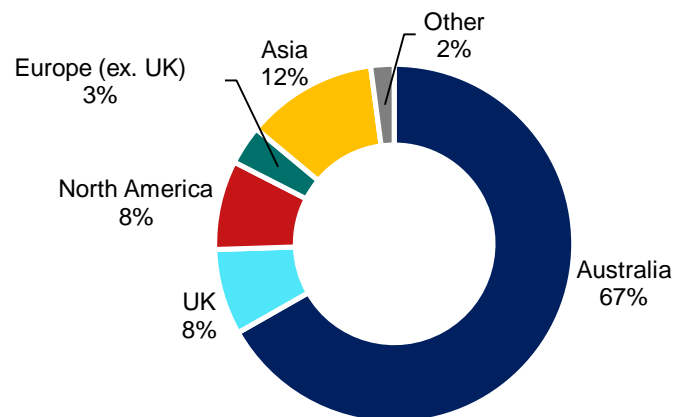


# Capital structure

## Key details

Shares on issue (as at 17 May 2017)	263.8m
Options on issue (as at 17 May 2017)	9.3m
Unlisted performance rights (as at 17 May 2017)	0.8m
Cash as at 31 March 2017	US\$134.9m
Debt as at 31 March 2017	Nil

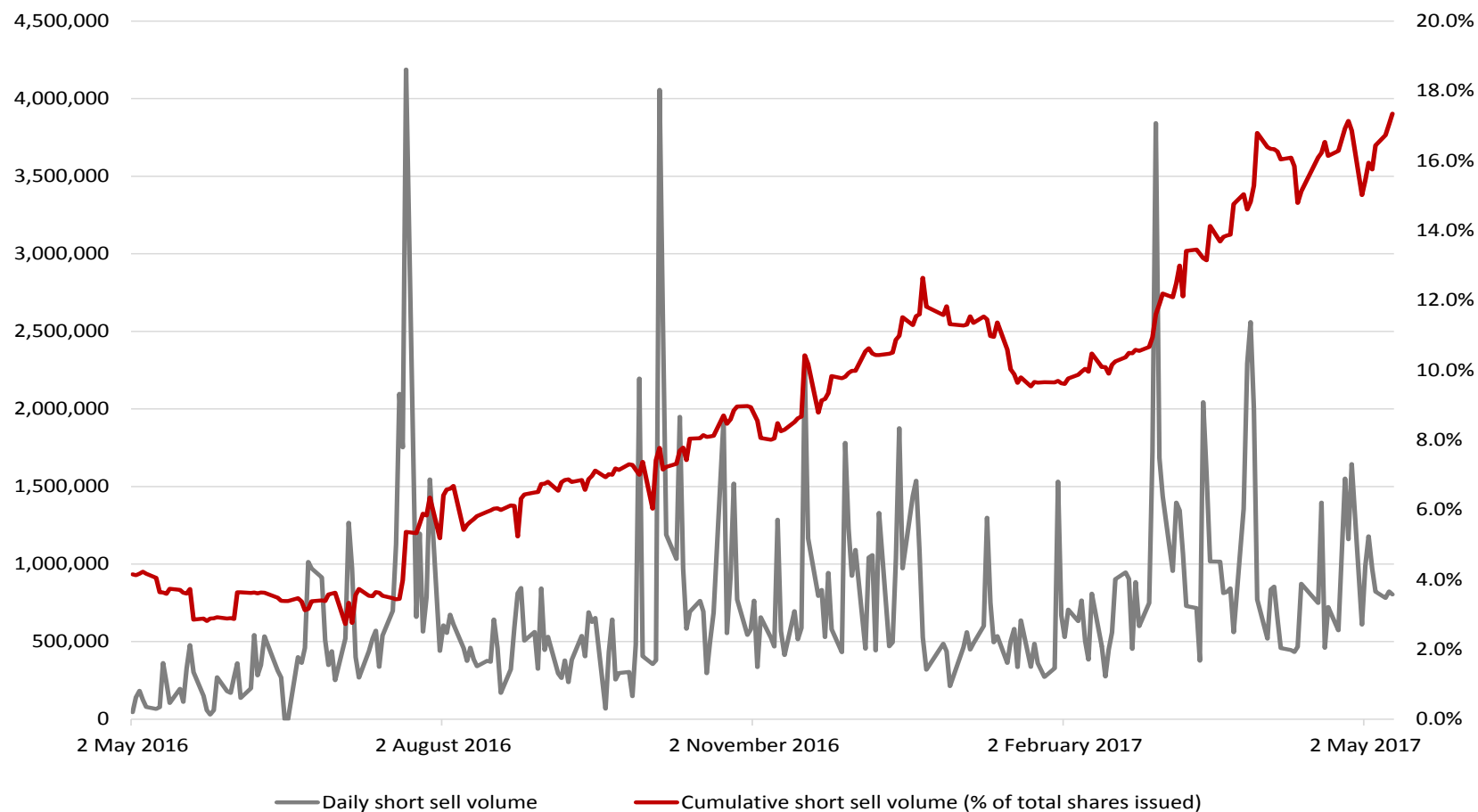
## Geographic analysis of investors<sup>(1)</sup>



Source: Company filings, IRESS

(1) As at April 2017

# Short sell volume over the last 12 months



Source: Bloomberg

# Board of directors and executive management team



Jim Askew

**Non-Executive Chairman**

Over 40 years of experience as a Director / CEO of Australian and international publicly mining companies



Sam Riggall

**Non-Executive Director**

Over 20 years of experience in mining project generation and evaluation, business development and capital market transactions



Dr. Christina Lampe-Onnerud

**Non-Executive Director**

Founder of Boston Power and over 20 years of experience in the lithium ion battery sector



Rhett Brans

**Non-Executive Director**

Over 40 years experience in the design and construction of mineral processing facilities and extensive African experience



José Caldeira

**Non-Executive Director**

Pre-eminent legal and regulatory professional in Mozambique with over 25 years experience



Shaun Verner

**Managing Director & CEO**

Previously a senior sales and marketing executive at BHP Billiton



Darrin Strange

**Chief Operating Officer**

25 years of experience in mining, manufacturing and engineering firms in Australia and internationally



Rob Schaefer

**Chief Commercial Officer**

Extensive sales, marketing and finance experience in the resources industry with senior roles at WMC Limited, BHP Billiton and most recently MMG Ltd



David Corr

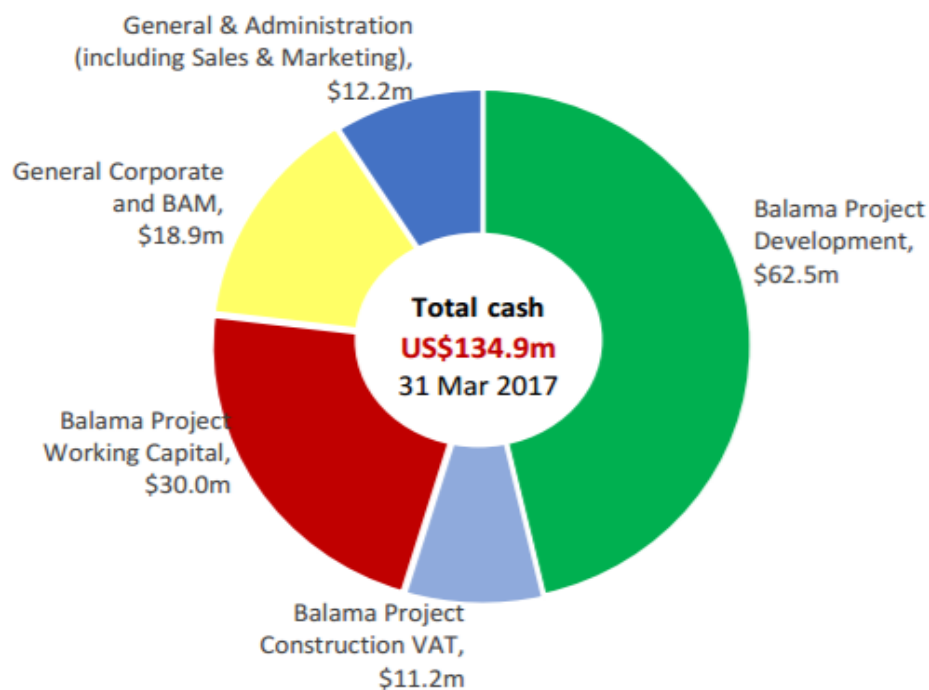
**Chief Financial Officer**

Over 15 years of experience in the resources industry in Australia and internationally



# Solid balance sheet with no debt (as at 31 Mar 2017)

- ❑ Fully funded to deliver the development of the Balama Project
- ❑ US\$50 million to fund working capital requirements for the Balama Project through to positive cash flows across a range of reasonable assumptions



## Balama Project



# Summary of Balama Project features

<b>Reserves and Resources<sup>(1)</sup></b>	<ul style="list-style-type: none"> <li>❑ Reserves: 114.5Mt at 16.6% TGC (18.6Mt contained graphite)</li> <li>❑ Resources: 1,191Mt at 11.0% TGC (128.5Mt of contained graphite)</li> </ul>
<b>Mining Method</b>	<ul style="list-style-type: none"> <li>❑ Simple open pit operation with low strip ratio; operations will commence as free-dig mining using conventional truck and shovel mining</li> </ul>
<b>Processing method</b>	<ul style="list-style-type: none"> <li>❑ Conventional process including crushing, grinding, flotation, filtration, drying, screening and bagging</li> </ul>
<b>Processing rate</b>	<ul style="list-style-type: none"> <li>❑ 2 Mtpa</li> </ul>
<b>Product</b>	<ul style="list-style-type: none"> <li>❑ 95% to &gt;98% TGC concentrate to be produced across a range of flake sizes</li> </ul>
<b>Production</b>	<ul style="list-style-type: none"> <li>❑ Nameplate capacity of 380,000 tonnes of graphite concentrate per annum</li> </ul>
<b>Total cash operating costs</b>	<ul style="list-style-type: none"> <li>❑ Initially achieve a C1 production cash cost of &lt;US\$400 per tonne in the first 12 months (with later progression to less than US\$300 per tonne)</li> </ul>
<b>Life of mine</b>	<ul style="list-style-type: none"> <li>❑ Almost 60 years</li> </ul>

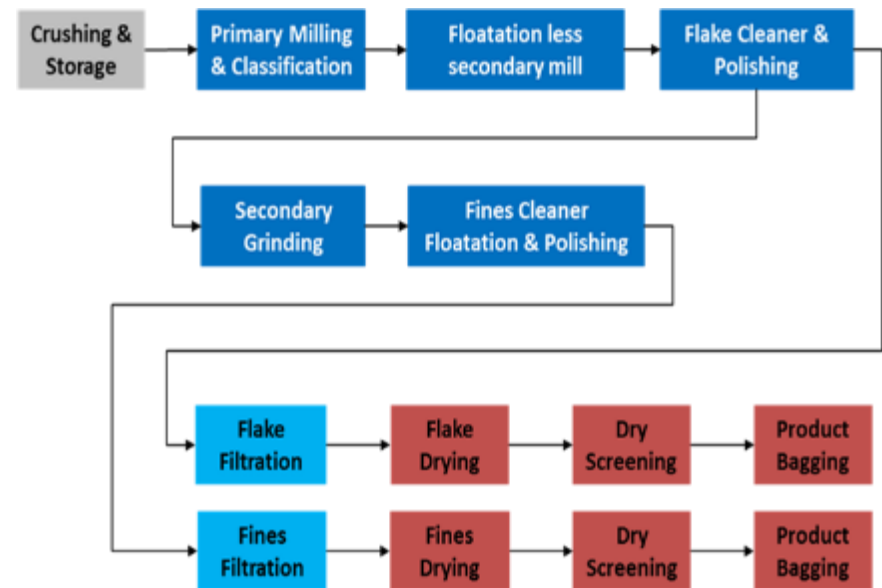
(1) Refer ASX announcements dated 29 May 2015, 29 November 2016 and 28 April 2017

# Low risk and low cost mining drives a significant competitive advantage

- ❑ Conventional truck and shovel mining methods
- ❑ Mining 2 Mtpa at a very low average strip ratio of 0.04:1 projected over the life of mine
  - Strip ratio is inclusive of economic low grade ore (> 2% to < 9% TGC) which will be stockpiled for processing in the future
  - Approximately 2 million tonnes of low grade (> 2% to < 9% TGC) material will be stockpiled per annum over the first 10 years of operations
- ❑ Following completion of open pit mining at Balama West, operations will shift to the pits in Balama East followed by Mualia
- ❑ Sufficient Ore Reserves to support operations for almost 60 years of production and provides opportunity for both mine life extensions and production increases
- ❑ Syrah's Mining Concession (issued on 6 December 2013) covers a 25 year period and is renewable for a further term of 25 years

# Balama commissioning will be staged sequentially to commence as section construction completes

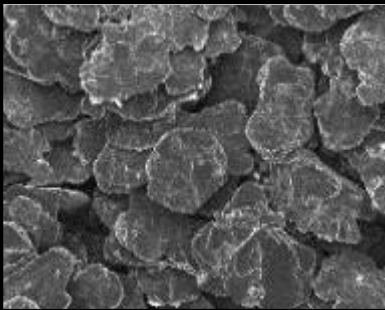
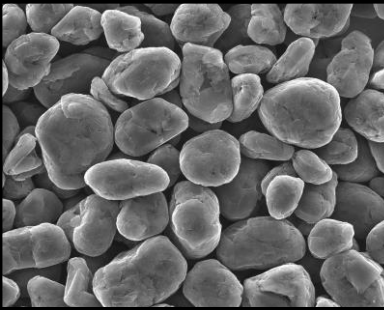
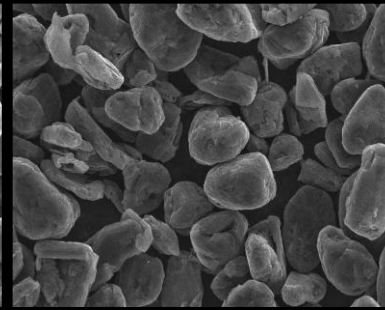
- ❑ Wet commissioning of the processing plant remains on schedule for Q2 2017, followed shortly afterwards by ore commissioning
- ❑ Commissioning will be staged to be completed in parallel with construction completion
- ❑ The stages used in the Commissioning are C1 to C4:
  - Construction Verification (C0)
  - Dry Commissioning (C1) – No-load energisation
  - Wet Commissioning (C2) – Running with water and air
  - Ore Commissioning (C3) – Initial introduction of ore
  - Optimisation (C4) – Tuning to enable capacity and product specifications to be achieved.



*Balama ore commissioning sequence overview*



# Across the graphite value chain, a consistent, high quality supplier can capture attractive margins

	Flake Graphite	Uncoated Spherical	Coated Spherical
<b>Products</b>			
<b>Cost</b>	US\$300/t	US\$2,300/t <sup>(1)</sup>	US\$3,200/t <sup>(2)</sup>
<b>Current Price</b>	US\$560/t - US\$1,150/t <sup>(3)</sup>	US\$2,800/t - US\$4,000/t <sup>(4)</sup>	US\$7,000/t - US\$10,000/t <sup>(1)</sup>
	<b>Mozambique</b>	<b>Louisiana</b>	

Syrah's strategy is to **capture enhanced value** by positioning itself as the **leading, high quality** and **consistent** supplier to the **high growth technology markets**.

- (1) Based on Syrah's market inquiries
- (2) Syrah internal economic assessment – refer to ASX announcement dated 18<sup>th</sup> June 2015 for coated figures
- (3) Based on Benchmark Minerals 2017 price data
- (4) Based on Benchmark Minerals 2017 price data for 15µm (D50) spherical graphite product



**SYRAH RESOURCES**



# Traditional and developing markets for graphite offer a multi-channel marketing opportunity

## Traditional markets






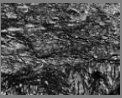














- ❑ **Refractories** – act as protective insulating materials in industrial processes which involve extremely high temperatures, corrosive and abrasive environments
- ❑ **Lubricants** – used to reduce friction between moving surfaces e.g. additive in petroleum oil or aerosol
- ❑ **Industrial products** – devices, shapes and products e.g. brake pads, pencils and graphite foils
- ❑ **Recarburisers** – carbon additive used to increase the carbon content of steel up to the required specification for different applications
- ❑ **Lead acid batteries** – used in the electrodes as an electrically conductive additive to help extend the battery's life-cycle and improve the charging process

## Developing markets

- ❑ **Battery anode materials** – coated spherical graphite is used in the manufacture of anodes in lithium ion batteries for electric vehicle and energy storage applications
- ❑ **Expandable graphite** – used as a fire retardant and to prevent oxidation and heat loss in metallurgical application

# Non-metallic and metallic properties of flake graphite ensure the largest variety of applications

## Graphite Types, Properties & Uses

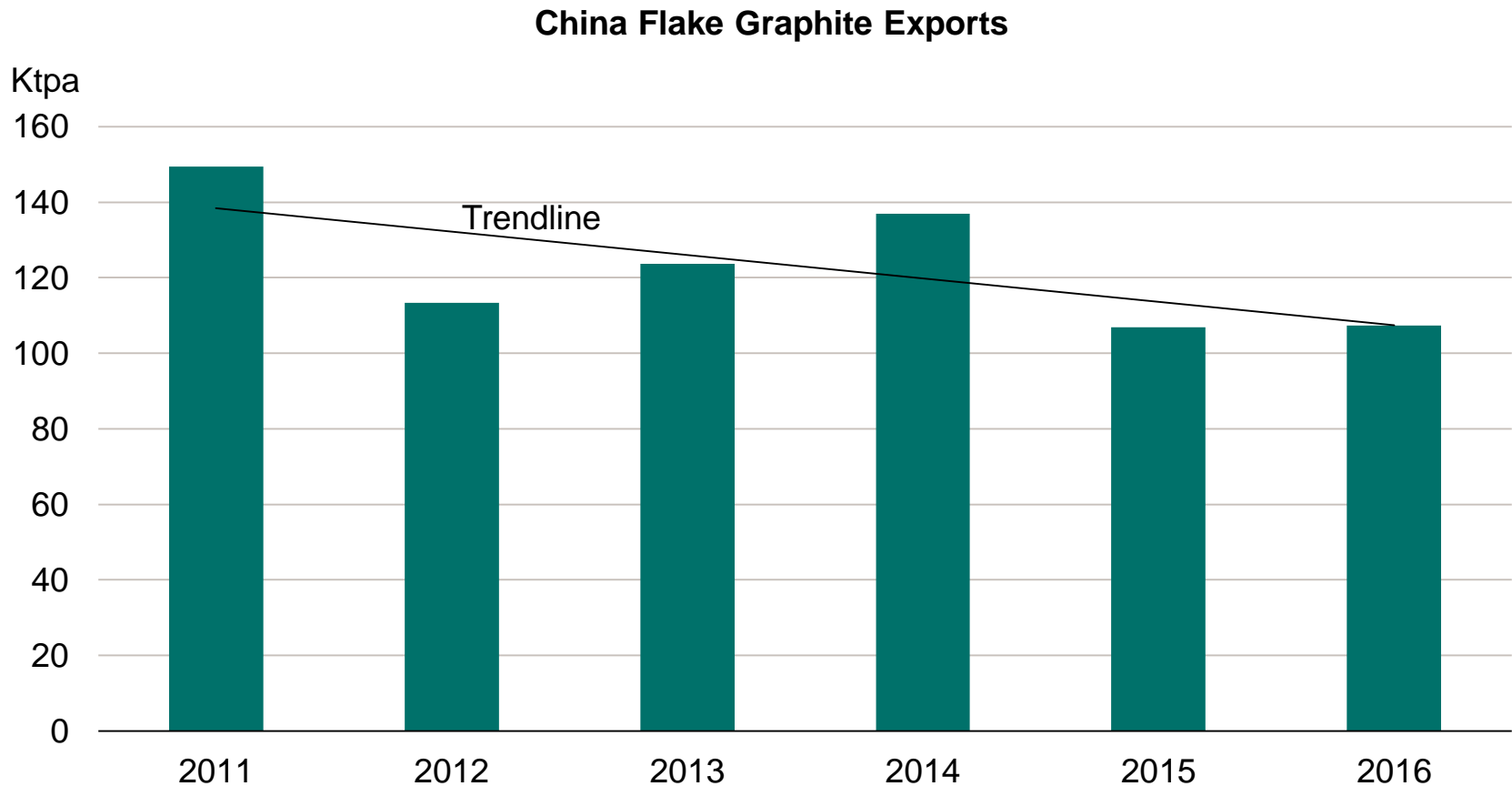
Graphite Type	Disadvantages	Advantages	End Markets			
			Metallurgical	Batteries	Technical	Other
 Flake	Inconsistent quality	Low cost, low impurities, crystalline structure, porosity				
 Amorphous	Weak crystalline structure, high impurities	Lowest cost				
Brakes only						
 Vein	Small economic Sources, high cost	Very high graphite content				
Brakes only						
 Primary Synthetic	Highest cost, Highest pollution	Consistent quality, very low impurities				

**Metallurgical:** Refractories, crucibles, moulds, castings. **Batteries:** Lithium, lead acid, fuel cells, carbon brushes.  
**Technical:** Electrodes for steel and aluminium production, expandable, brakes, flame retardants, nuclear reactors.  
**Other:** Pencils, lubricants, paints.



**SYRAH RESOURCES**

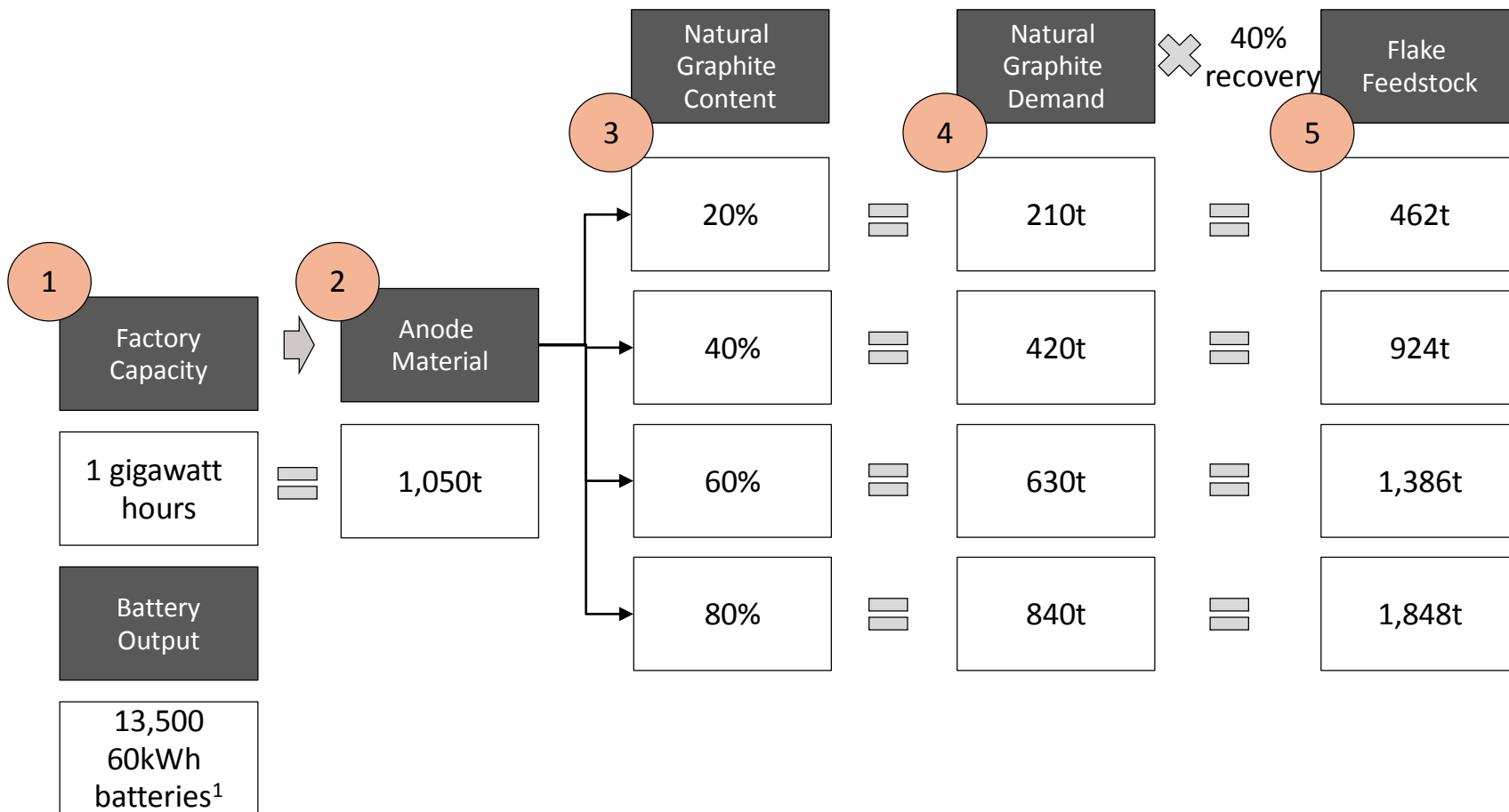
# Chinese exports have been on a downward trend since 2011 due to the reduced availability of export quality material



Source: Syrah Resources, Ministry of Land and Resources

# How much does an additional GWh of battery production impact flake graphite demand? It depends...

## Factory to Flake Calculation



Source: Syrah Resources

Notes: 1. Nominal 60kWh advertised to consumers contains ~75kWh absolute capacity to compensate for lifetime capacity fading.



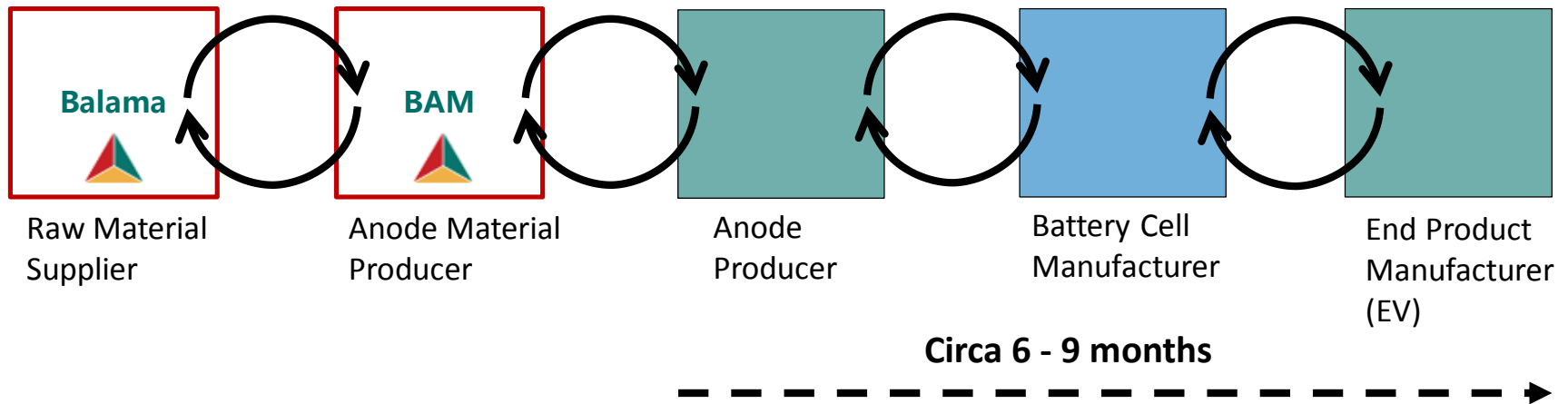
**SYRAH RESOURCES**

## BAM Project



# Why does product qualification take time?

- ❑ Demonstrating consistency in product across the qualification period places Syrah in a strong position
- ❑ Observed demand pressure on raw material supply is assisting in building relationships and facilitating collaboration with key customers



Vertically integrated qualification is core to placing product into the supply stream



# Establishing a Louisiana Product Qualification Plant will accelerate commerciality

	2017						2018					
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
<b>BAM - Qualification Plant, Louisiana USA</b>												
Development												
Customer Product Qualification												

- ❑ Detailed design completed and in discussions with US authorities on location and permitting
- ❑ The plant will consist of a full scale production line
- ❑ Necessity for a Qualification Plant:
  - Satisfies customers' timing requirement for commercial scale product qualification (minimum 6 month period) prior to issuing Product Purchase Orders
  - Accelerates sales and cash flows from the Commercial Plant by allowing product qualification and sales to occur prior to the commencement of full production
  - Pathway to early cash flows through sales to Morgan Hairong for coating Louisiana product in China

*USA based **Product Qualification** will **accelerate sales** and **cash flows** from the Commercial Plant by **fast tracking product qualification** by customers*



# A Perth based Technology Centre will provide sales and marketing data and optimise process development

	2017									2018								
	Q2			Q3			Q4			Q1			Q2			Q3		
<b>BAM - China / Perth</b>																		
China Pilot Plant																		
Perth Technology Centre																		

- ❑ Currently specifying design, coordinating spheroidisation of material and purification tests
- ❑ Syrah's spherical graphite milling machines in China will be relocated to Perth in mid-2017:
  - Process training – early training and manual preparation for knowledge transfer to the Commercial Plant
  - Optimisation development – ongoing test work to optimise product yields, quality and consistency
- ❑ Building out our proprietary data-bank which aids our marketing and product development efforts

*Perth based **Technology Centre** focused on process training and optimisation development.*

