



# Valence Industries

Manufacturing our Carbon Future

Asia Pacific | Europe | North America

May 2014

Christopher S. Darby  
CEO & MD

Deutsche Bank Presentation

Deutsche Bank

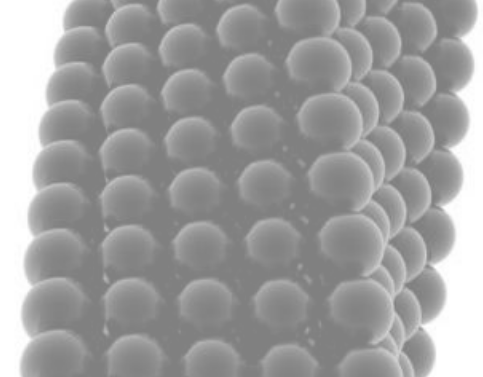


[www.valenceindustries.com](http://www.valenceindustries.com)

**Valence** (*noun*). the combining power of an element, especially as measured by the number of hydrogen atoms it can displace or combine with: carbon always has a valence of 4.

© Valence Industries Limited  
ASX : VXL  
ASX : VXLO





# Disclaimer

This presentation includes certain statements that may be deemed forward-looking statements. All statements in these presentation materials (other than statements of historical facts) which address future production, reserve potential, exploration activities and events or developments that the Company expects, are forward-looking statements. Such forward-looking statements include, without limitation: (i) estimates of future graphite prices, supply, demand and/or production; (ii) estimates of future cash costs; (iii) estimates of future capital expenditures; (iv) estimates regarding timing of future development, construction, production or closure activities; (v) statements regarding future exploration results; (vi) statements regarding cost structure, project economics, or competitive position, and; (vii) statements comparing the Company's properties to other mines, projects or metals. Although the Company believes that such forward-looking statements are based on reasonable assumptions, such statements are not guarantees of future performance and actual results or developments may differ materially from those in the forward-looking statements. Factors that could cause actual results to differ materially from those in forward-looking statements include market prices, exploitation and exploration successes, continued availability of capital and financing, and general economic, market or business conditions. Investors are cautioned that any such statements are not guarantees of future performance, that the Company expressly disclaims any responsibility for revising or expanding the forward-looking statements to reflect actual results or developments, and that actual results or developments may differ materially from those projected, in the forward- looking statements.

No representation or warranty is given by the Company as to the accuracy or completeness of the information contained in this presentation. Neither the Company nor its officers or employees accept responsibility or liability (to the maximum extent permitted by law) for any loss of damage suffered or incurred by any other person or entity however caused and relating in any way to these presentation materials including, without limitation, the information contained in the presentation material and its accuracy, completeness, currency or reliability. This presentation does not constitute a recommendation regarding the securities of the Company, and should not be construed as legal or financial advice. It has been prepared for information purposes only and contains general summary information and does not take into account the circumstances of any individual investor. Prospective investors in the Company are encouraged to obtain separate and independent advice with regard to any investment in the Company. By accepting the presentation materials, the recipient agrees to keep permanently confidential the information contained herein.

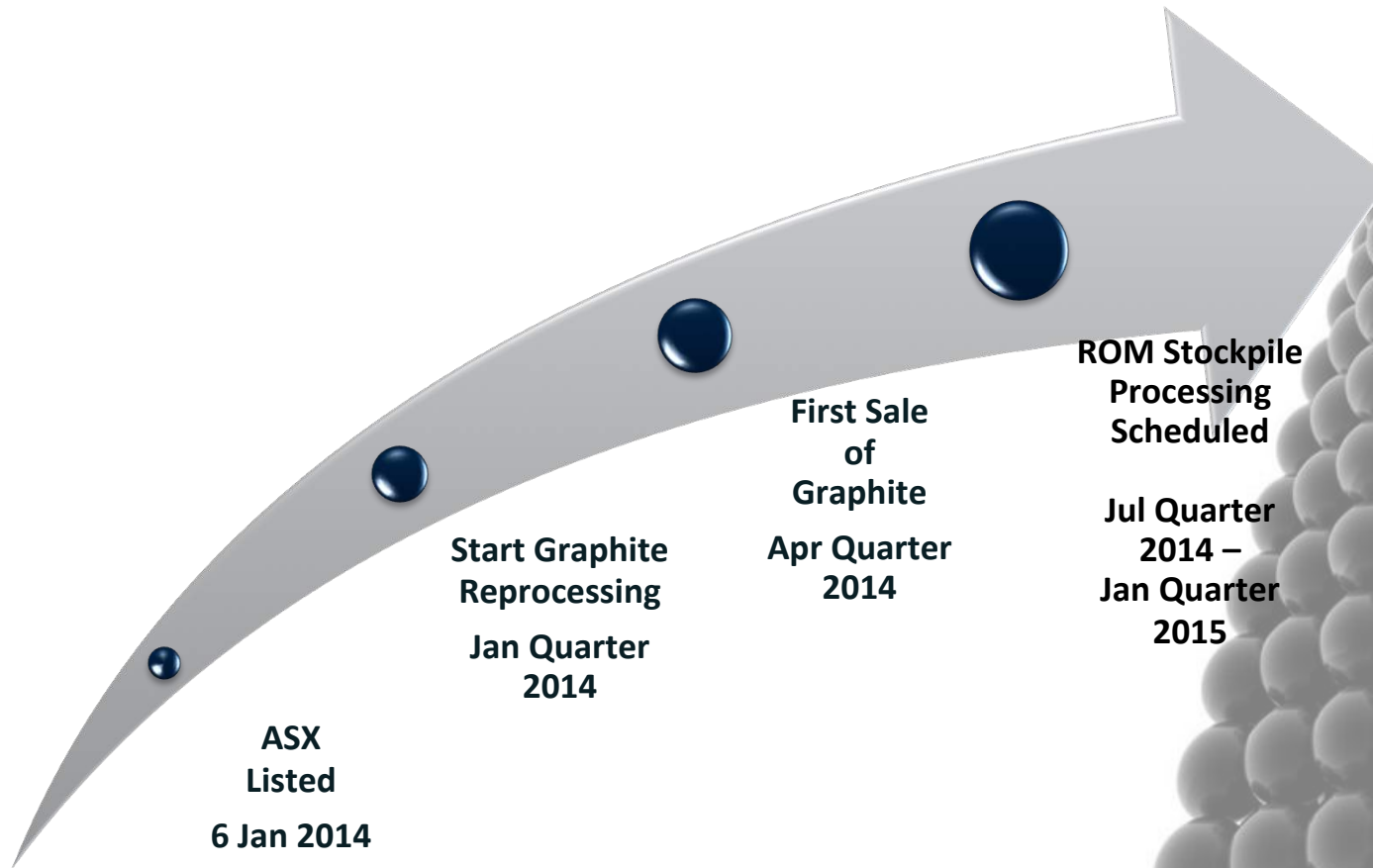
The information in this presentation which relates to Indicated and Inferred Mineral Resources compiled in accordance with the JORC Code 2012 is based on information supplied by Ms. Karen Lloyd, Mr. Ingvar Kirchner and Ms. Ellen Maidens as detailed in the Company's Replacement Prospectus released as an ASX announcement on 18 November 2013. The Company confirms that it is not aware of any new information included in this presentation. Valence confirms that all material assumptions underpinning the estimates in this report continue to apply and have not materially changed. The Company confirms that the form and content in which the Competent Person's findings are presented have not been materially modified.

Photographs, maps, charts, diagrams and schematic drawings appearing in this presentation are owned by and have been prepared by or commissioned by the Company, unless otherwise stated. Maps and diagrams used in the presentation are illustrative only and may not be drawn to scale. Unless otherwise stated, all data contained in charts, graphs and tables is based on information available at the date of this presentation. By accepting this presentation the Recipient agrees to be bound by the foregoing statements.



# Valence Industries 2014

For personal use only

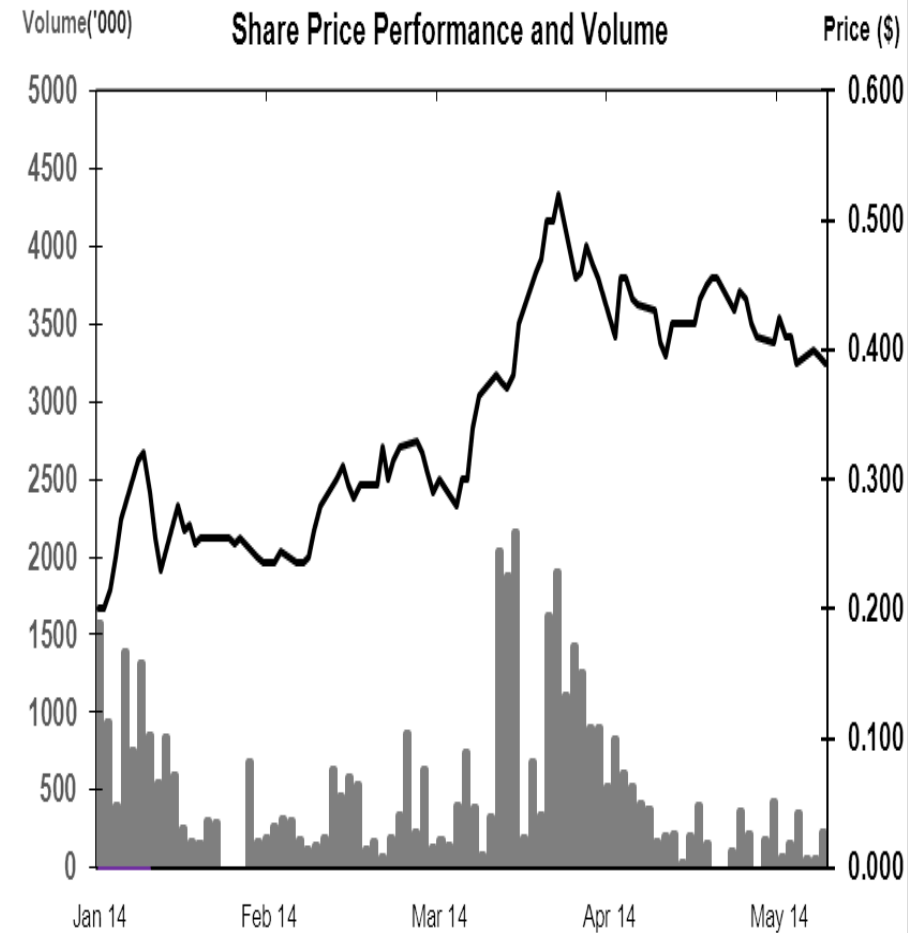




# Corporate Overview

## ASX Code: VXL & VXLO

Ordinary Shares on issue	167.1m
Options on issue	70.0m
Market cap (@42 cents)	\$70.2m
Cash (End Q1 2014)	~\$8.1m
Debt	Nil





# Corporate Overview

## Major Shareholders

Strategic Energy Resources Ltd (Restricted)	13.04%
Avatar Energy Pty Ltd	4.60%
EERC Australasia Pty Ltd	3.97%
HSBC Custody Nominees (Australia) Ltd	3.20%
Chimaera Capital Ltd	2.79%

Top 20 shareholders hold 45.40%

## Directors & Senior Management

Graham Spurling AM, Chairman

Christopher S. Darby, CEO & MD

Glenister Lamont, Non-exec Director

Ian Schache, Non-exec Director

Jarek Kopias, CFO & Co. Sec.

Karen Lloyd, GM Technical Delivery

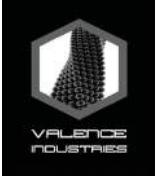
David J. Salari (P.Eng), Chief Dev. Officer



# Vertically Integrated Manufacturing

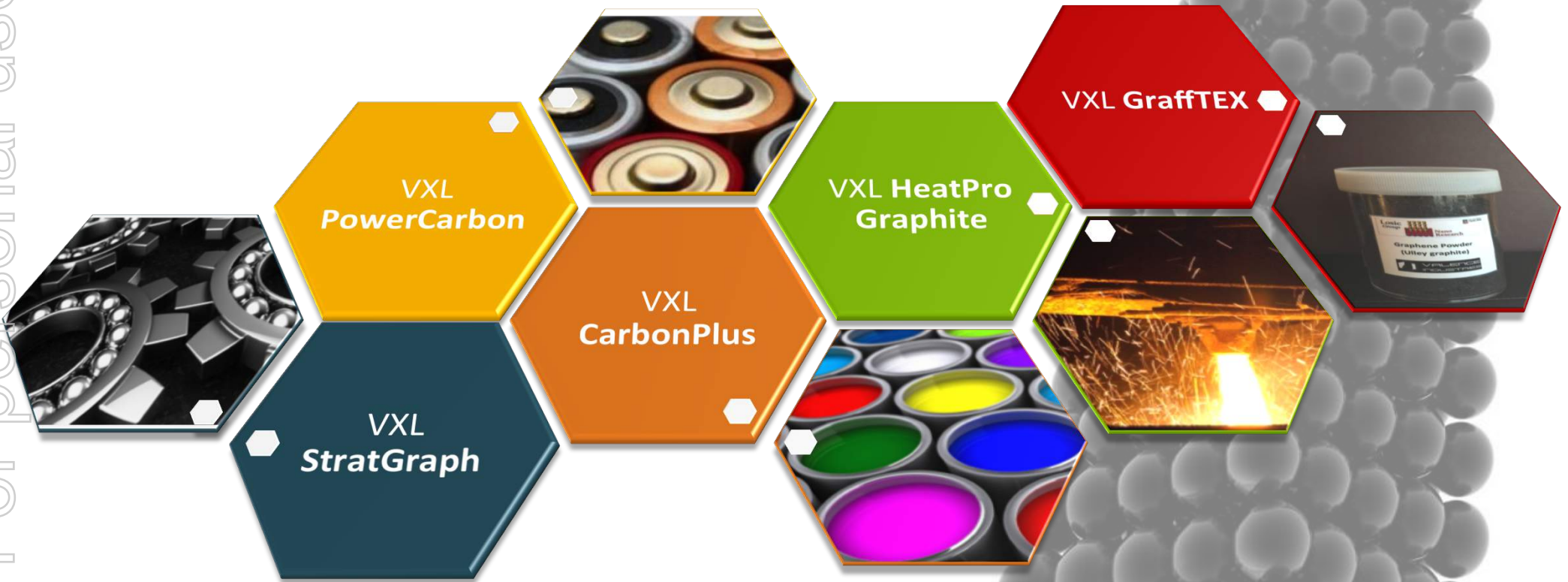


For personal use only



# VXL Graphite Products

For personal use only





# Established Resource

For personal use only



## Valence Industries Uley Graphite Main Road Open Pit #1 (JORC 2012)

Resource Classification	Lower Cutoff Grade (% Graphitic Carbon)	Tonnage (Mt)	Average Grade* (% Graphitic Carbon)
Indicated	3.5	1.9	10.7%
Inferred	3.5	4.5	5.5%
<b>Total</b>		<b>6.4</b>	<b>7.1%</b>

- No exploration drilling required to establish resource
- Existing resource open at depth
- Low cost open pit mining
- Existing Mining Licences





# Valence ROM Stockpiles

Existing Stockpiles available for immediate processing

Stockpile	Volume m <sup>3</sup>	Average SG	Tonnes
1	25,903	1.7	44,035
2	18,161	1.7	30,874
3 & 4	TBC	TBC	TBC

Independent Survey (Maptek 2014)  
ISO 9001 Assay (ALS Adelaide, 2014)



# Uley Graphite Three Phases

## Phase I

Recommission 14000/t  
Primary Process Circuit  
2ndry Process Circuit  
30+ Personnel  
Start Manufacturing  
9+ Month Stockpiles  
First Customer Sales

## Phase II

Complete Phase II BFS  
New Plant Capex ~  
\$34M  
Expand Capacity by  
~60000 tpa  
New Open Pit Mining  
Operate Existing  
Facilities ~14000 tpa  
90+ Personnel  
Increase Sales

## Phase III

Complete Studies  
High Purity Processing  
Significant Value Add  
Direct Entry Tech &  
Battery Markets  
Associated Graphene  
Research Program  
New & Disruptive  
Technologies  
Advanced  
Manufacturing



# Current Status

Company	Market	Market Cap (\$M)	Mining Licences	Plant & Infrastructure	Mine & Tailings Facilities	Sales Agreements	Fully Funded to Production	Production	Country / Jurisdiction
<b>Valence Industries (VXL/VXLO)</b>	<b>ASX</b>	<b>70</b>	<b>YES</b>	<b>YES</b>	<b>YES</b>	<b>YES</b>	<b>YES</b>	<b>2014</b>	<b>AUSTRALIA</b>
Flinders Resources (FDR)	TSX.V	21	YES	YES	YES	NO	YES	NO	SWEDEN
Mason Graphite (LLG)	TSX.V	55	NO	NO	NO	NO	NO	NO	CANADA
Syrah Resources (SYR)	ASX	560	NO	NO	NO	MOU	NO	NO	MOZAMBIQUE
Northern Graphite (NGC)	TSX.V	37	NO	NO	NO	NO	NO	NO	CANADA
Focus Graphite (FMS)	TSX.V	60	NO	NO	NO	MOU	NO	NO	CANADA
Energiser Resources (EGZ)	TSX.V	25	NO	NO	NO	NO	NO	NO	CANADA
Zenyetta (ZEN)	TSX.V	105	NO	NO	NO	NO	NO	NO	CANADA



# VXL Strategic Advantages

## Quality of Resource

Large Flake

No Impurity Challenges

Multiple Graphite Products

Traditional & New Markets

High Purity & Graphene Capability

## Regional Infrastructure

23km to Major Regional City

Skilled Local Labour Force

Industrial Manufacturing Industry Base

Roads, Power, Water

Multiple Product Transport Options

## Operational Facilities

Existing Manufacturing Plant Refurb & Recom. Underway

Metallurgy Verified – Strong & Simple Processing

Ownership of Land for Phase I & Phase II Operations

Haul Roads & Power Supply In Place

Mining Licences & Retention Leases & Exploration Licence

## Geopolitical

Low Sovereign Risk

Stable Political & Economic Base

Close to Key Asia Pacific Growth Markets

Seen as Preferred Supplier by Major Regional Customers

Government Support for Advanced Manufacturing

## Growth Prospects

Only Graphite Operator in Australia

No Impediments to Production Expansion

Significant Future Exploration Targets

Graphene Product Development & Research Alliance with Uni of Adelaide

High Purity Plant Strategy Commenced



For personal use only

# Valence Industries

# Global Graphite Market

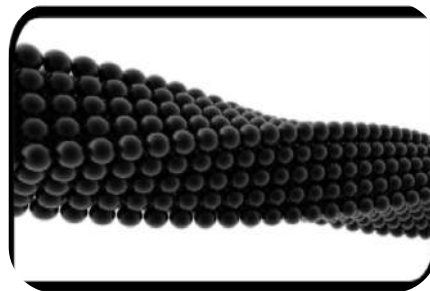


# Graphite Facts



HIGH PURITY FLAKE GRAPHITE IS IN VERY LIMITED SUPPLY

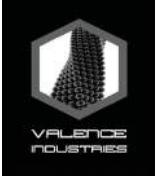
- Graphite is relatively common, but high purity, large flake graphite is rare
- China, the world's major graphite producer is closing polluting operations



- Valence manufactures high purity flake graphite products for multiple applications
- Selling to traditional & new technologies

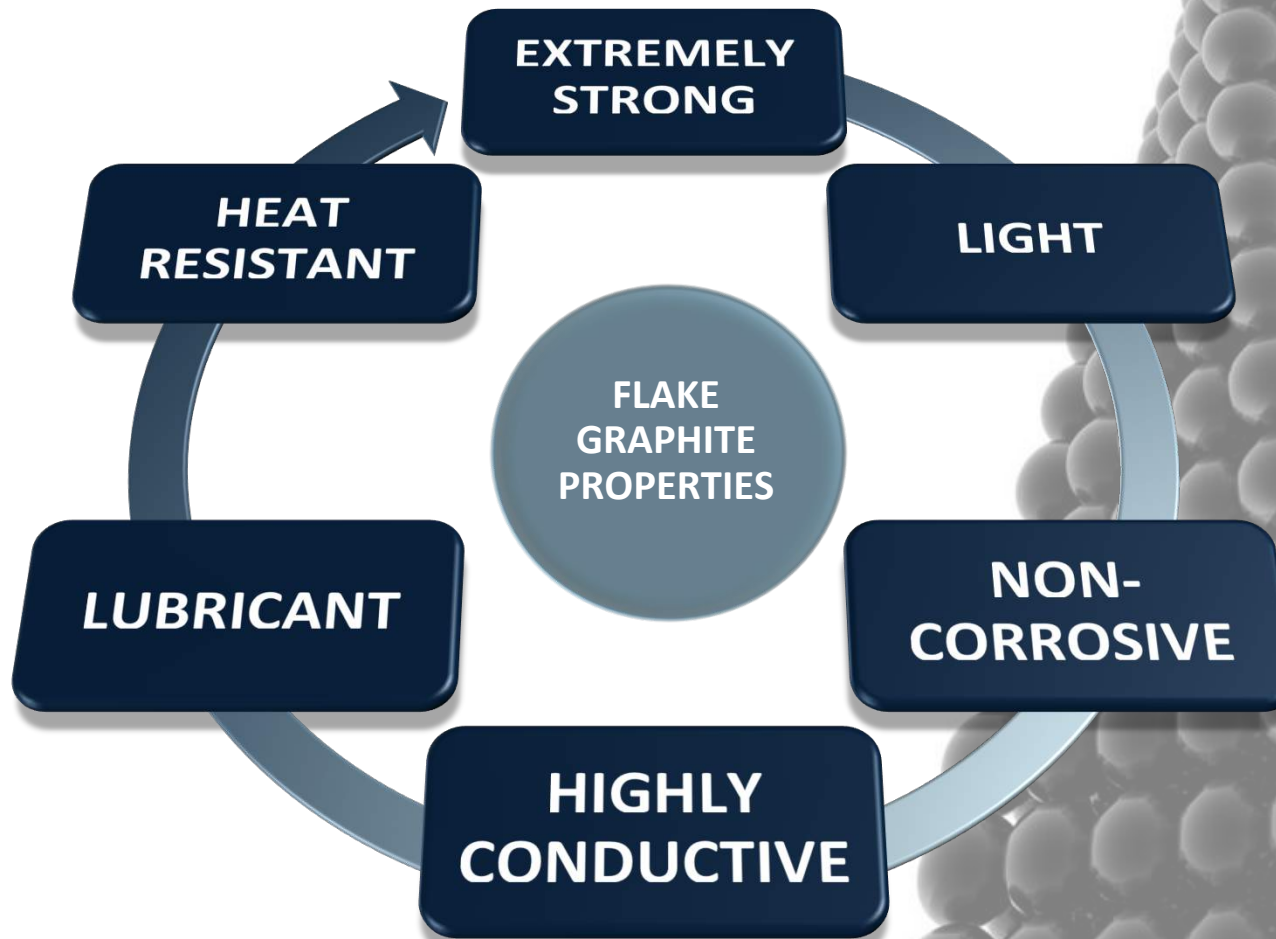
NEW TECHNOLOGIES ARE DRIVING DEMAND FOR HIGH PURITY FLAKE GRAPHITE

- New technologies require high purity graphite
- Valence's Uley graphite is very low in impurities



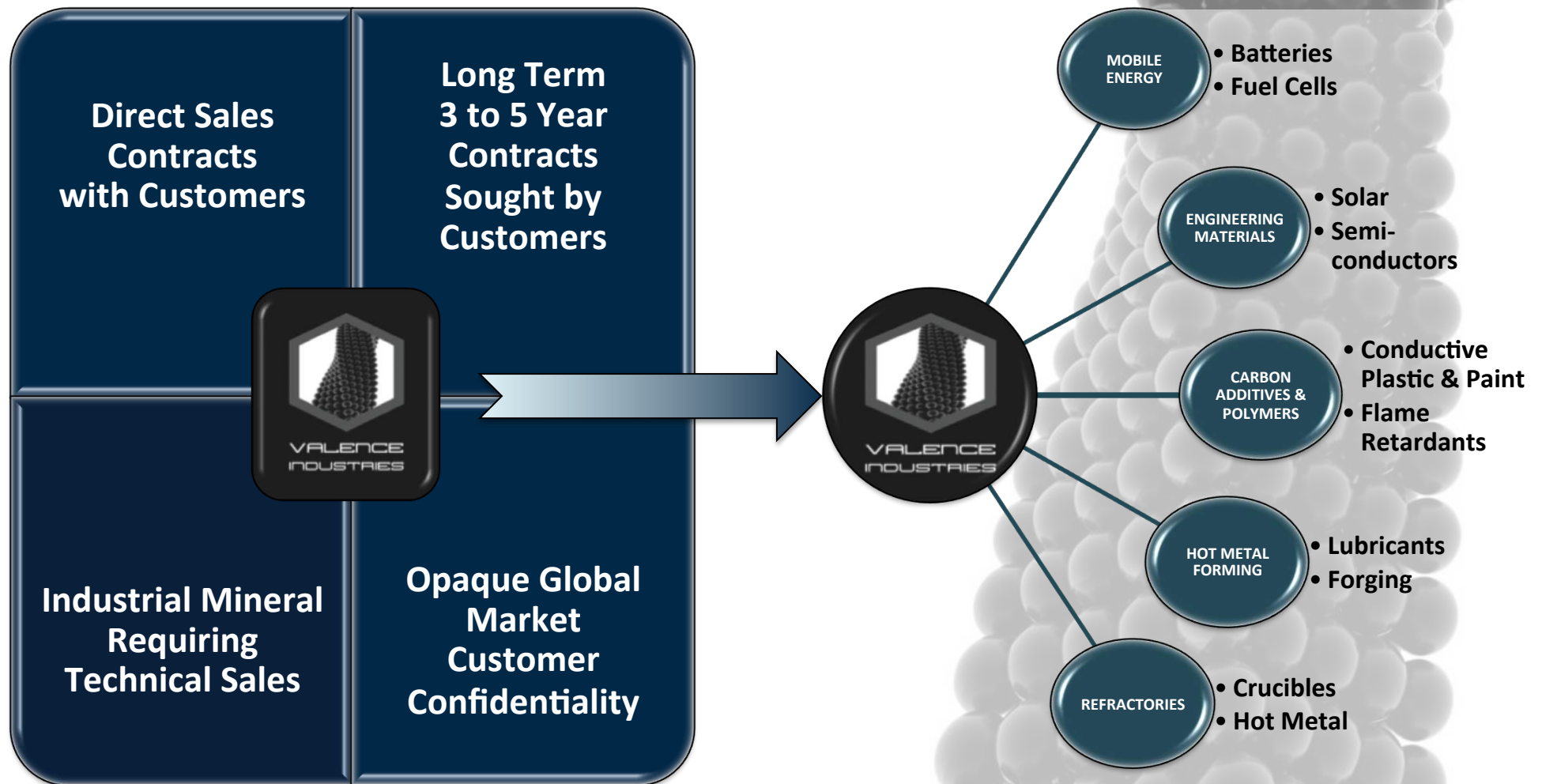
# Graphite Facts

GRAPHITE DEMAND GROWTH IS DRIVEN BY ITS  
UNIQUE PROPERTIES AND BENEFITS  
IN BOTH TRADITIONAL & NEW TECHNOLOGIES





# Graphite Sales & Pricing



Valence Industries has Graphite for **Multiple Applications** in **Diverse Industries** in New & Traditional Applications





# Traditional Graphite Uses

- Established Base Industries
- Steady Volumes Growth
- VXL Global Demand Drivers
- Graphite Critical for Industry
- Valence Breadth & Depth of Market





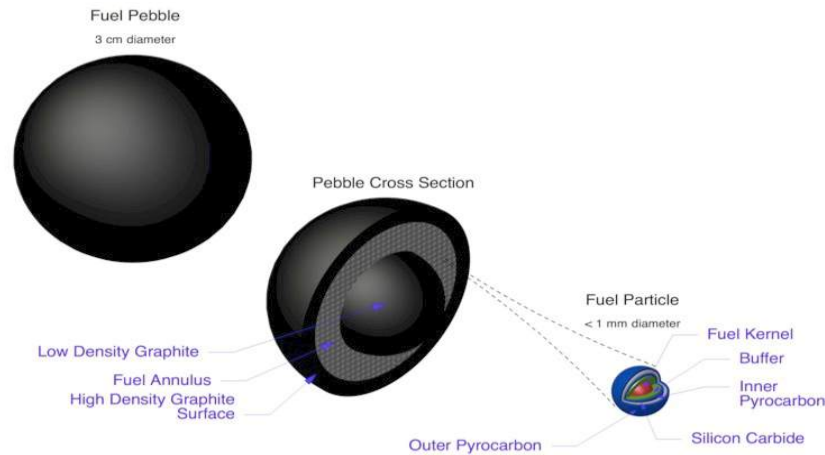
# New Graphite Technology

- Li-Ion Batteries = Graphite Anode
- 40kg – 140kg of Graphite per EV
- E-Bikes, E-Motorcycles & E-Scooters
- Large Scale Fuel Cells Could Double Demand Volumes (USGS 2012 Survey)
- Graphite foils
- Graphite Conductive Polymers
- Conductive Paints
- Solar Power Generation





# New Graphite Technology



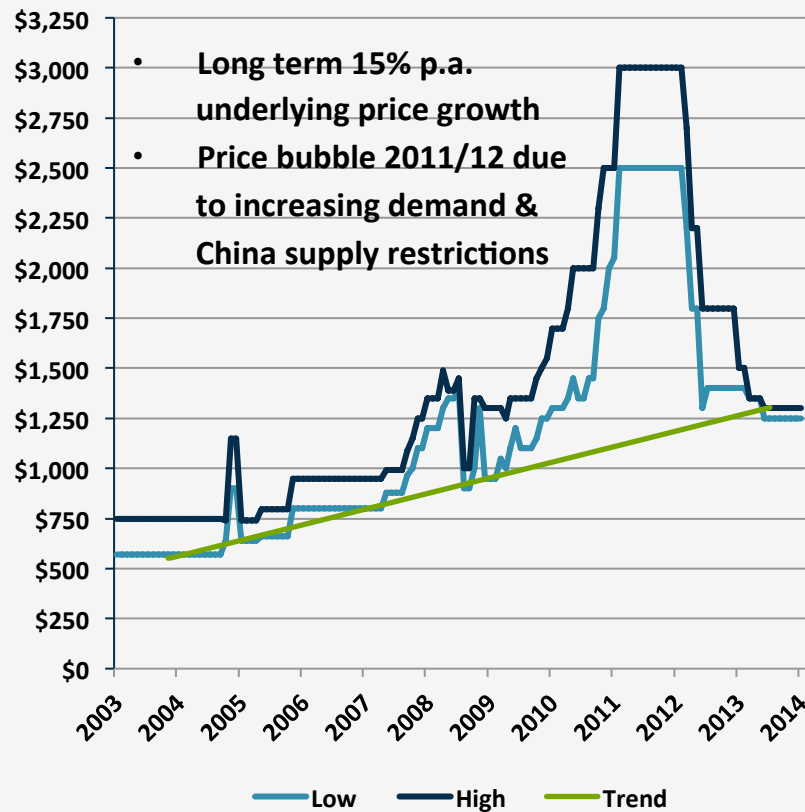
- Pebble Bed Nuclear Reactors
- Graphite Coating Uranium Balls
- Smaller & Safer Reactors
- Cost Effective Technology



- 3000 tonnes Graphite for startup 1GW Reactor
- 1000 tonnes Graphite annually for 1 GW Reactor
- [Link to Graphite Energy Storage Cells](#)

# Graphite Sales & Pricing

**Price Range for Flake Graphite**  
+80 Mesh, 94-97% C, US\$/tonne

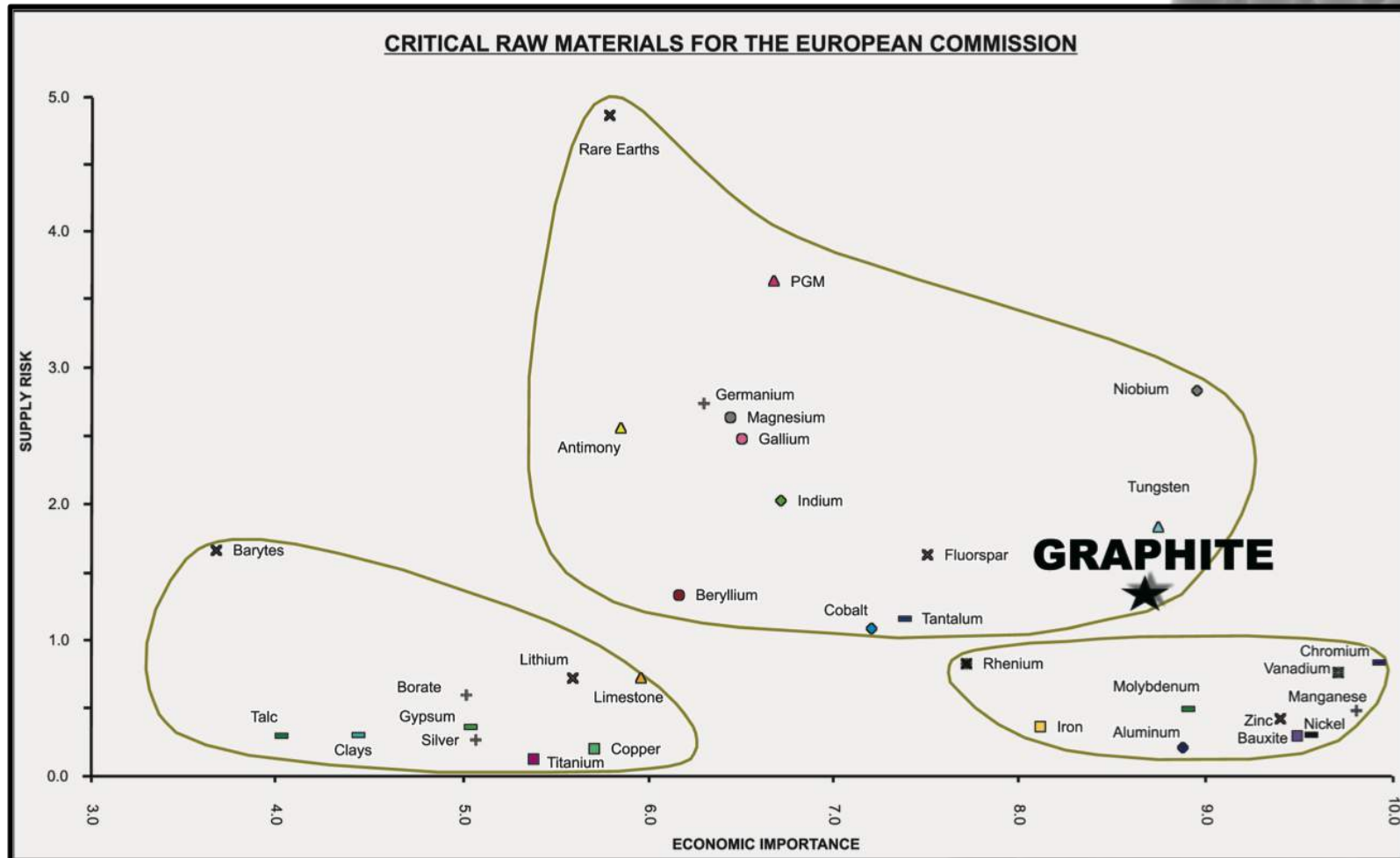


## PRICE DRIVERS

- Long term growth in base markets
- UK & USA Supply Risk for Graphite
- Significant demand new markets
- Established production capability
- Quality is key to sustainable price
- Consistent and reliable supply
- Global delivery capability
- Market and customer knowledge

**VXL Flake Graphite Pricing Range is  
US\$890 to US\$2500 per tonne**

# Critical Material

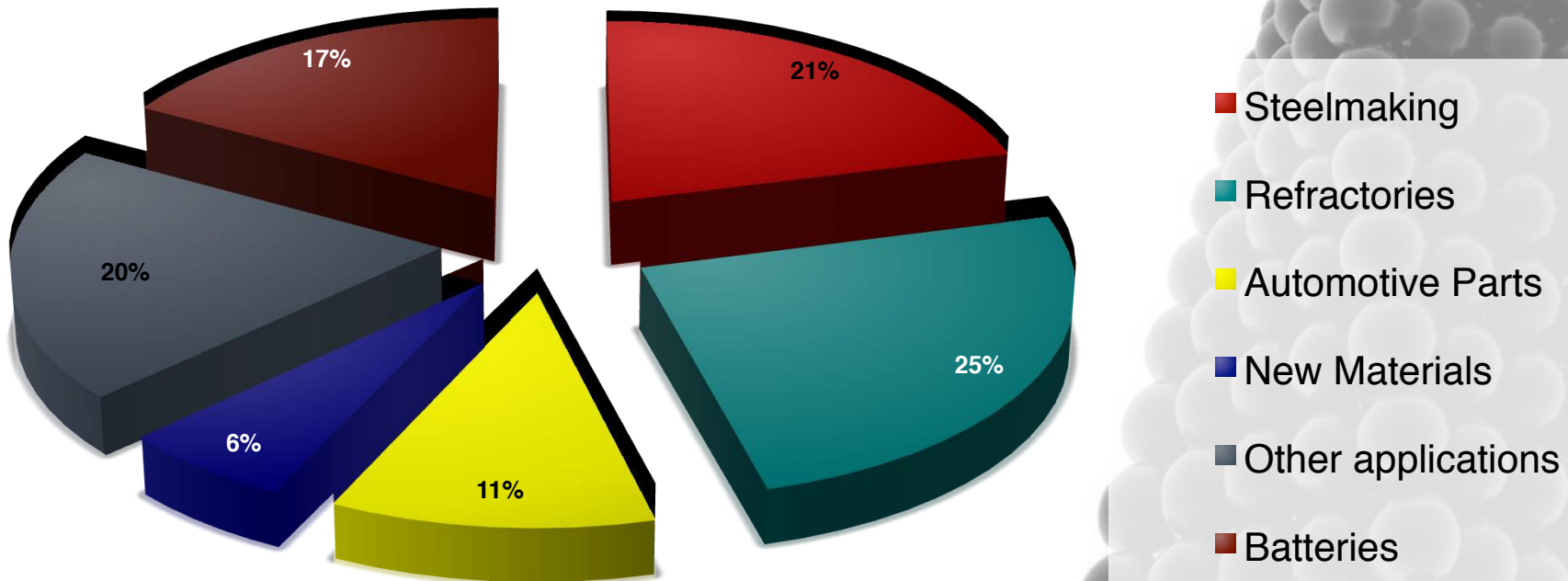


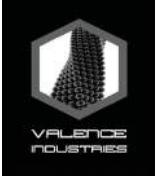
Strategic & Critical for industrial nations including USA & European Commission



# Global Production & Uses VXL Graphite

World Graphite Production 2014  
**1,573,000 tonnes**





# VXL Product Ranges

- World class quality products
- Broad range of graphite products
- Globally diversified
- Vertically Integrated
- Near term revenue
- Extensive customer engagement



**+595**

- Premium Product + High Demand
- Consistent High Purity + High Quantity

**+895**

- Premium Product + High Demand
- Consistent High Purity + High Quantity

**-195**

- High Quality + Sustained Demand
- Consistent High Purity + Consistent Quantity

**-295**

- High Quality + Sustained Demand
- Consistent High Purity + Consistent Quantity

**-395**

- High Quality + Increasing Demand
- New Applications + New Markets
- Consistent High Purity + Consistent Quantities

Illustrative of selected VXL 95% Graphite Products



# VXL Market Overview

Grade	Low US\$t	High US\$t
99% to 99.9% C, +400 mesh	\$3,500	\$35,000
94% to 97% C, +80 mesh	\$1,900	\$2,500
90% C, +80 mesh	\$1,250	\$1,375
94% to 97% C, -80 +100 mesh	\$1,650	\$1,795
90% C, -80 +100 mesh	\$1,070	\$1,150
85% to 87% C, -80 +100 mesh	\$989	\$1,020
94% to 97% C, +100 mesh	\$1,425	\$1,489
90% C, -100 mesh	\$975	\$1,050
Amorphous powder 80% to 85C	\$730	\$850
Synthetic 99.95% C2	\$6,200	\$19,000

## Graphite Pricing Overview

- Systematic price increase large flake
- New & Traditional Demand
- Demand for Quality Flake Graphite

Country	2004 t	2008 t	2012 t	2014 t
China	678,230	799,554	924,283	967,805
India	116,268	137,066	182,828	220,348
Brazil	73,958	87,188	113,575	141,075
North Korea	29,067	34,267	40,707	43,707
Canada	27,129	31,982	40,493	87,710
Madagascar	14,534	17,134	20,354	22,376
Mexico	14,310	16,870	20,041	22,031
Czech Republic	9,689	11,422	16,069	22,308
Ukraine	7,267	8,567	10,177	16,145
Zimbabwe	9,948	11,728	13,932	15,315
Others	7,879	9,288	13,046	14,342
Total	988,279	1,165,066	1,395,505	1,573,162

## World Graphite Production

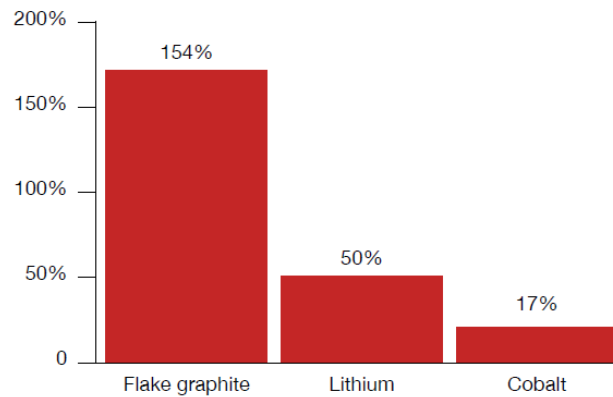
- Demand / Supply Imbalance
- New Product Development
- Constrained supply from majors





# VXL HP Graphite Market

Potential critical mineral growth from Tesla's battery sector plant



- VXL High Purity 99.99%+ TGC
- Accelerating demand
- Favourable growth outlook
- EV Demand a game changer
- Energy storage far beyond EV



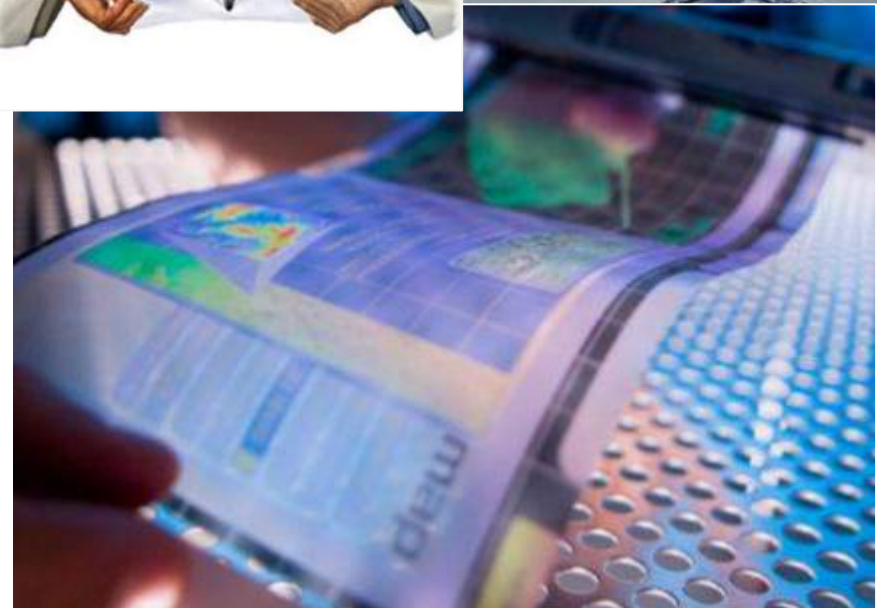


# VXL Graphene Future

## VXL Has Produced Graphene

- 1 Atom thick layer of graphite
- 1gm = 600m<sup>2</sup> coverage
- 1000 x Electrical Capacity Cu
- 200 x Stronger Structural Steel
- 10 x Heat Conductivity of Cu
- Advanced Materials VXL GraffTEX
- University of Adelaide Partnership
- VXL Flake Graphite for Graphene
- Commercialisation Rights in Place

**Graphene Sales Scheduled in 2014**





# Valence Industries Summary

## Existing Facility

- Existing Graphite Resource, Mine & 14,000 tpa Processing infrastructure
- 6.4 Mt JORC 2012 Indicated & Inferred Resource @7.1% TGC + exploration upside
- Proven past production of high quality Flake Graphite

## Production and Sales Commenced

- Initial sales of large flake >95% purity graphite commenced in April
- Processing of stockpiles continues in Jun Quarter 2014 and into Mar Quarter 2015
- Strong expressions of interest from major global customers

## Rapid Growth Program

- New 60,000 tpa Phase II plant planned to be in production in 2015
- Scoping Study indicates manufacturing costs of <\$600/t & average pricing US\$1,400/t
- Finance Facilities to be in Place H2 2014 for New Plant Construction

## High Purity & Graphene

- Phase III High Purity program & Graphene programs ahead of schedule
- Increase purity to >99.99% at estimated value of US\$5,500 to US\$10,000/tonne
- Graphene production confirmed & sales can commence in H2 2014



# Contact

Christopher S. Darby  
CEO & Managing Director  
Valence Industries Limited



info@valenceindustries.com | +61 8 8418 8564

For personal use only



www.valenceindustries.com