Spherical Graphite
Spherical graphite is produced through fine grinding, purification and spheritisation – processing the flat flake into a sphere of concentrate.

Purification is generally conducted via an acid wash treatment which takes a raw material of approximately 94% TGC to over 99% TGC purity.

Purified product is milled to reach an average commercial size of between 10 and 20 microns, with the ultimate objective of maximising the surface area of the material. Flake graphite can be spheritised to as low as 5 microns.

Uncoated spherical graphite material is usually sold onto processing or trading companies who then add their own specialised coating material to aid conductivity in the battery. This is most commonly a carbon coating of some form that is applied using a chemical vapour method.

Production of uncoated spherical graphite is generally wasteful, with producers today achieving an average yield of 30-40% on initial flake concentrate inputs.

The only application for spherical graphite is as an anode material for lithium-ion batteries, with the majority of consumers being situated in either China, Japan or South Korea.

To become “battery-grade”, spherical graphite must achieve a minimum of 99.95% TGC following purification.

Price is dependent on purity and particle shape / size.

Source: Benchmark Mineral Intelligence.

www.graphexmining.com.au
Spherical Graphite Market

Chart of the Week

THE LITHIUM-ION BATTERY MEGAFACORIES ARE COMING
Production capacity of lithium-ion batteries is anticipated to more than triple by 2020

LG Chem
Capacity: 76GWh
Nanjing

TESLA
Capacity: 35GWh
Nevada

FOXCONN
Capacity: 15GWh
Anhui

BYD
Capacity: 20GWh
Various

Boston Power
Capacity: 10GWh
Various

125GWh
100GWh
75GWh
50GWh
25GWh


Capacity to TRIPLE by 2020
(Anticipated Growth)

Current Demand

*Benchmark estimates, not all data disclosed by companies **instant planned capacity stated for graphical purposes, slower ramp up expected

Data by:

BENCHMARK MINERAL INTELLIGENCE

visualcapitalist.com
Spherical Graphite Market – Electric Vehicles

• Tesla building a $5b 35GWh battery factory – expected to be operational in 2017 and achieve full capacity by 2020
• Tesla plant alone would essentially double the world’s output of electric vehicle (EV) batteries – 500,000 batteries a year at capacity
• If Tesla chooses to use natural flake graphite, the demand for battery-grade material could go up 154%
• An estimated 80-126 Kt of battery-grade spherical graphite is needed to supply the plant at capacity
• Newer model EVs have higher battery capacities to give greater range – increase in graphite demand
• Tesla Model S has an 85kW battery consuming 170kg of spherical graphite (425kg of flake graphite)
• China expanding capacity to > 50GWh by 2020
• Chinese Government committed to reducing pollution
  • By 2016, 30% of Chinese Government car fleet will be EVs
  • China EV production up 850% year on year (October 2015)
  • Chinese government targeting an EV population of 5 million by 2020
• Macquarie Group’s Asia research team forecast 57% CAGR in the Chinese EV manufacturing sector to 2020

www.graphexmining.com.au
Spherical Graphite Market – Energy Storage

- Stationary energy storage has the potential to be a larger market than EVs
- A growing retail market already exists with a large number of battery products, usually combined with Photo Voltaic (PV) solar systems, available to consumers wishing to supplement their grid power demands with alternative energy or go to ‘off grid’ entirely
- Tesla recently announced its Powerwall home battery system
- Targeting annual production of 15GWh a year of 10kWh and 7Kwh Powerwall models
- Growth market for small scale energy storage in the developing world
  - Governments and NGOs are already developing ‘roadmaps’ to the roll out of large scale PV schemes such as the African Green Energy Corridor initiative

What’s in a Powerwall

<table>
<thead>
<tr>
<th>Specs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology</td>
</tr>
<tr>
<td>Wall mounted, rechargeable lithium ion battery with liquid thermal control.</td>
</tr>
<tr>
<td>Models</td>
</tr>
<tr>
<td>10 kWh $3,500</td>
</tr>
<tr>
<td>For backup applications</td>
</tr>
<tr>
<td>7 kWh $3,000</td>
</tr>
<tr>
<td>For daily cycle applications</td>
</tr>
<tr>
<td>Warranty</td>
</tr>
<tr>
<td>Ten year warranty with an optional ten year extension.</td>
</tr>
<tr>
<td>Efficiency</td>
</tr>
<tr>
<td>50% round-trip DC efficiency</td>
</tr>
<tr>
<td>Power</td>
</tr>
<tr>
<td>2.0 kW continuous, 3.3 kW peak</td>
</tr>
<tr>
<td>Voltage</td>
</tr>
<tr>
<td>350 – 450 volts</td>
</tr>
<tr>
<td>Current</td>
</tr>
<tr>
<td>5 amp nominal, 8.5 amp peak output</td>
</tr>
</tbody>
</table>

Tesla CEO, Elon Musk – Presenting the Powerwall

www.graphexmining.com.au
Spherical Graphite Market – Supply

- Chinese suppliers produce the majority of uncoated spherical graphite
- The material is then shipped to Japan, where a carbon coating is applied to enhance performance
- Japan dominates the coated portion of the spherical graphite market, purchasing 100% of their uncoated material from China. Japanese equipment manufacturers such as Hosokawa Micron are the leading supplier of spherical graphite milling equipment
- China are seeking to integrate downstream into manufacturing of coated spherical graphite to control the entire battery chain process
- Meanwhile, the rest of the world are looking to diversify supply away from Chinese sources

Source: Benchmark Mineral Intelligence.
www.graphexmining.com.au
Below are the current prices for uncoated spherical graphite. Given 60% loss during spheritisation, it is clear why coarse flake graphite cannot be feasible given the price of coarse flake plus processing costs exceeds the uncoated spherical graphite sale price.

**Analyst Pricing – Spherical uncoated graphite > 99.95% (US$/t)**

Source: Benchmark Mineral Intelligence.

www.graphexmining.com.au
Disclaimer

- This presentation (the “Presentation”) has been prepared by IMX. No party other than IMX has authorised or caused the issue of this document, or takes responsibility for, or makes any statements, representations or undertakings in this Presentation. This Presentation does not constitute an offer, invitation or recommendation to subscribe for or purchase any securities and neither this Presentation nor anything contained in it shall form the basis of any contract or commitment.

- This Presentation contains summary information about IMX, Graphex and their activities, which is current as at the date of this Presentation. The information in this Presentation is of a general nature and does not purport to be complete nor does it contain all the information which a prospective investor may require in evaluating a possible investment in IMX or Graphex that would be required in a prospectus or product disclosure statement prepared in accordance with the requirements of the Corporations Act 2001 (Cth). This Presentation should be read in conjunction with IMX’s other periodic and continuous disclosure announcements lodged with the ASX, which are available at www.asx.com.au.

- This Presentation is not a prospectus, product disclosure statement or other offering document under Australian law (and will not be lodged with the Australian Securities and Investment Commission) or any other law. A prospectus for an initial public offering of Graphex Mining Limited is available at www.graphexmining.com.

- Mineral Resources reported in this presentation have been estimated using Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC 2012).

- This presentation includes certain “forward-looking statements”. Forward-looking statements and forward-looking information are frequently characterised by words such as “plan,” “expect,” “project,” “intend,” “believe,” “anticipate”, “estimate” and other similar words, or statements that certain events or conditions “may”, “will” or “could” occur. All statements other than statements of historical fact included in this presentation are forward-looking statements or constitute forward-looking information. Although the Company believes the expectations expressed in such statements and information are based on reasonable assumptions, there can be no assurance that such information or statements will prove to be accurate and actual results and future events could differ materially from those anticipated in such information. Important factors that could cause actual results to differ materially from those in forward-looking statements include the market price of graphite, exploitation and exploration successes, capital and operating costs, changes in project parameters as plans continue to be evaluated, continued availability of capital and financing and general economic, market or business conditions, as well as those factors disclosed in the Company’s filed documents. Accordingly, readers should not place undue reliance on “forward looking information”. The potential quantity and grade of potential or target mineralisation, including Exploration Target tonnage quantity and grades estimates are conceptual in nature only. These figures are not a Mineral Resource estimate as defined by JORC 2012, as insufficient exploration has been conducted to define a Mineral Resource and it is uncertain if further exploration will result in the target being delineated as a Mineral Resource. There can be no assurance that development of the Chilalo Graphite Project will proceed as planned or that exploration will result in the discovery of an economic ore deposit. Even if an apparently viable deposit is identified, there is no guarantee that it can be economically exploited.

- This Presentation has been prepared in good faith, but no representation or warranty, express or implied, is made as to the fairness, accuracy, completeness, correctness, reliability or adequacy of any statements, estimates, opinions or other information, or to the reasonableness of any assumption or other statement, contained in the Presentation (any of which may change without notice). To the maximum extent permitted by law, IMX and its professional advisers and their related bodies corporate, affiliates and each of their respective directors, officers, partners, employees, advisers and agents and any other person involved in the preparation of the Presentation disclaim all liability and responsibility (including, without limitation, any liability arising from fault or negligence) for any direct or indirect loss or damage which may arise or be suffered through use of or reliance on anything contained in, or omitted from, this Presentation.
Suite 2
Level 1, 2 Richardson Street
West Perth, 6005 Western Australia

Telephone: +61 8 9200 4960
Facsimile: +61 8 9200 4961

Phil Hoskins
Managing Director – Graphex Mining Limited
Email: phoskins@graphexmining.com.au