

22 September 2016

**ASX Market Announcements**

**Imagine Intelligent Materials**

**Market Update – September 2016**

Pacific American Coal limited (**ASX:PAK**) is pleased to provide shareholders the latest Imagine Intelligent Materials (**Imagine IM**) presentation. PAK holds a 40% equity interest in Imagine IM, which forms the cornerstone of the Company's investment into technology companies. Imagine IM is focused on delivering value through the commercialisation of graphene based technologies.

**The Imagine IM Market Update – September 2016 includes details about;**

- ***Imagine IM's Business Model***
- ***Strategic developments via the formation of international corporate relationships***
- ***Commercialisation Pathway***
- ***Short and long term objectives***

For information further on the Imagine IM Market Update – September 2016, please contact:

**Chris Gilbey OAM**

Chief Executive Officer

**Imagine Intelligent Materials Pty Ltd**

By visiting <http://imgne.com/>

**For further information on Pacific American Coal Limited, please contact:**

**Mark Sykes**

Chief Executive Officer

Australia

**Dom Hill**

Business Development Manager

North America

**Pacific American Coal Limited** - Tel: +61 (2) 9252-5300, Fax: +61 (2) 9252-8400

More details are available on PAK's website: [www.pamcoal.com](http://www.pamcoal.com)



Market Update  
September 22<sup>nd</sup> 2016



## High Volume Commercialisation Of Graphene

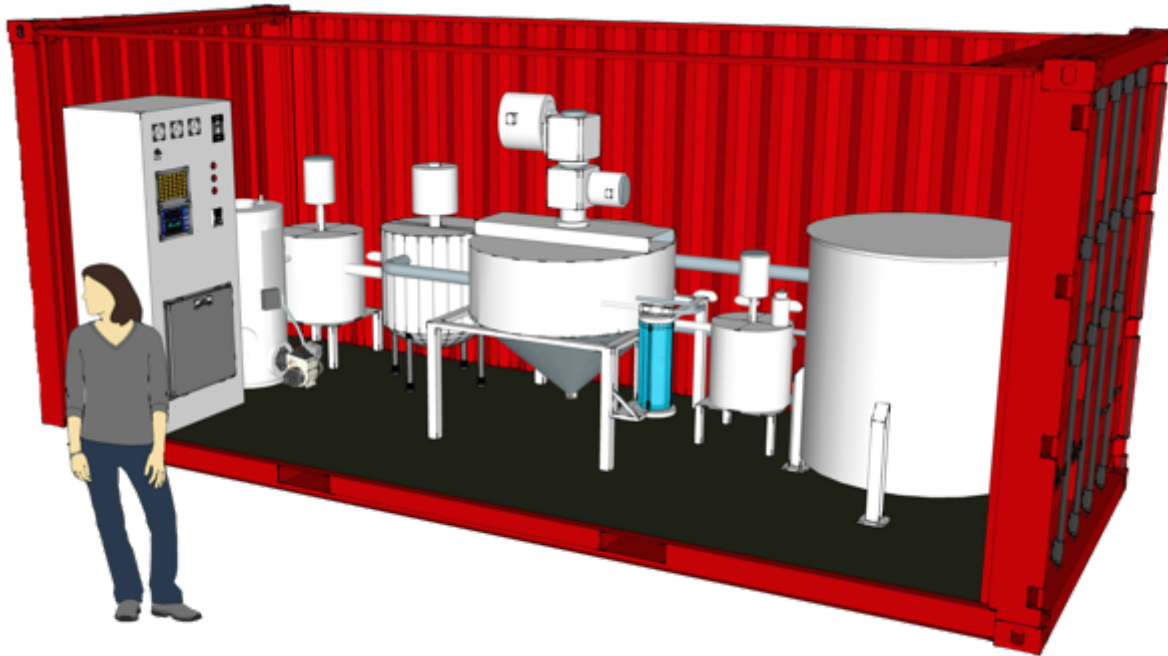


- The Imagine IM Graphene *pilot plant* commenced operations June 14<sup>th</sup> 2016 in Geelong.
- It was designed to deliver a three step process – to exfoliate graphene, functionalise it and put it into a commercially scalable dispersion that will satisfy the future needs of the Australian geosynthetics marketplace and enable Imagine IM to open up commercial activities in other market verticals in Australia and Internationally
- The plant will reach full capacity in time for anticipated product launch of Geofabrics bidim® using imgne X3 before the end of Q4 2016

# Imagine IM: Commercialisation Path To Date

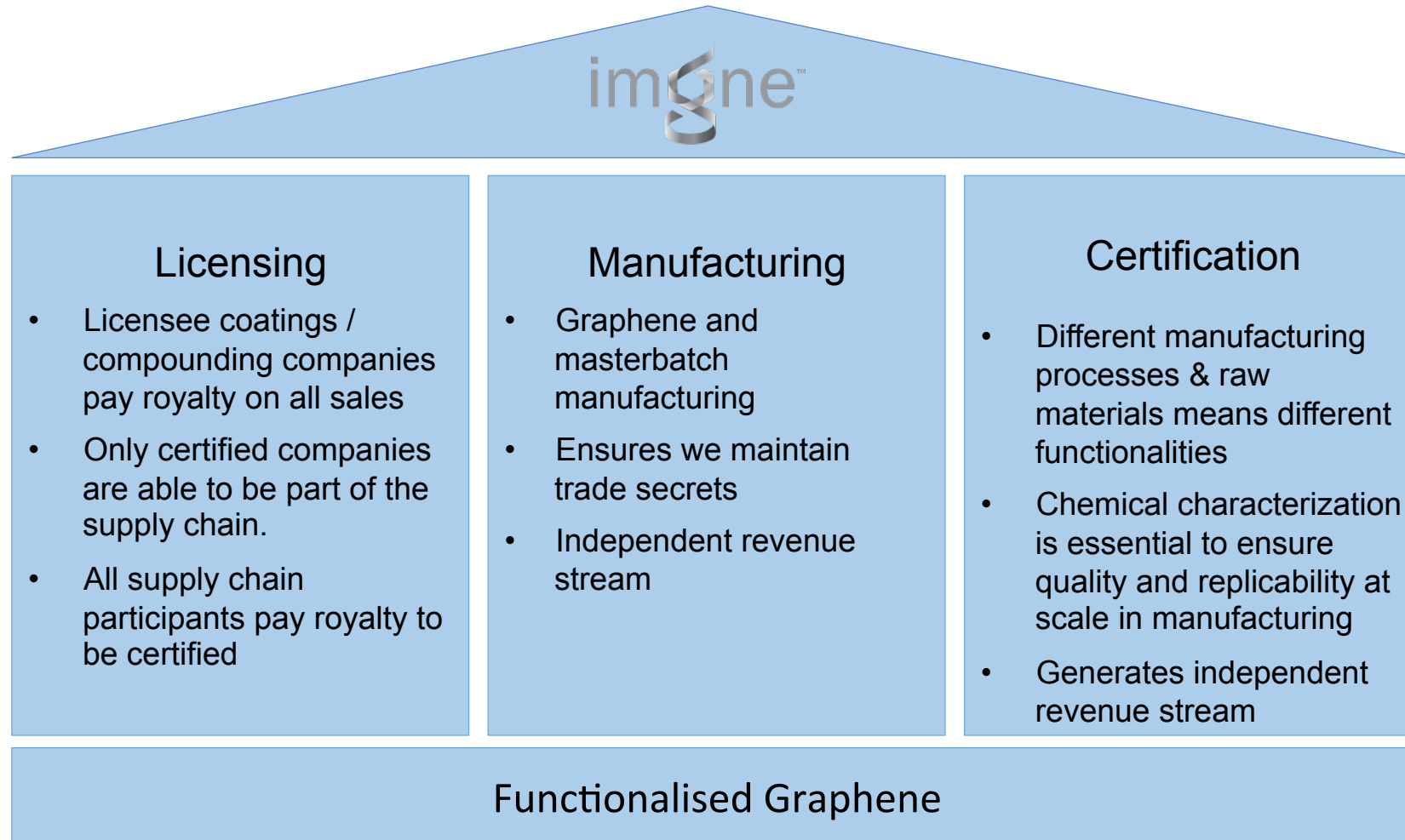
- We identified an opportunity that requires high volumes of graphene
- We developed a detailed understanding of the supply chain
- We closed an initial commercial agreement to deliver the solution and validated our business model
- We developed a laboratory proof of concept and migrated it into a manufacturable product and process
- We built a pilot plant that delivers the commercial end product and have now successfully completed field trials (August 11<sup>th</sup>)

# Imagine IM - Plant In A Box



Our plant was designed to fit into a 40' shipping container so that it can be deployed to the optimum location for supply & integration into a manufacturing production process.

# 3 Pillars Business Model



# Imagine IM: What We Intend To Do Next

- We plan to engage globally within our first target market vertical - Geosynthetics
- Migrate our platform technology into new high volume market verticals
- Optimise our manufacturing processes
- Develop our certification and QA capabilities
- Identify and close relationships with strategic partners that will enable fast tracking of solutions for potential customers/licensees
- These will take place over the next 12 months

# Why Geosynthetics?

- Total Global Geosynthetics market predicted to be worth \$16 Billion by 2018 according to Markets and Markets.
- Leak detection solutions represents an entry point into a high value global market that provides validation to other market verticals
- Conductive coatings are a platform that have applications in other market verticals
- Geelong pilot plant has sufficient graphene output capacity to meet current Australian forecast demand and enable initial orders from foreign markets to be fulfilled.
- The first revenues from sales and licensing of imgne X3 masterbatch are anticipated to begin in Q1 2017





# Extending Globally

- We anticipate closing an MOU to develop a prototype imgne® X3 solution for the specific polymer geotextiles used by a leading US geotextile company and are in discussions with geotextile companies in other territories
- We anticipate closing at least one new international commercial agreement for our leak detection product during Q4 2016



# Moving Into New Market Verticals

- We anticipate closing an MOU with a European company to develop a prototype product solution in a new vertical that will leverage our abilities to deliver conductive coatings using graphene
- We anticipate closing an MOU with a SE Asian company to co-develop new materials
- We continue to be focused on large scale infrastructure applications for graphene with a focus on industrial textiles for civil engineering, packaging, and other large scale opportunities.
- We will be closing an MOU to develop our Certification Capabilities within the next 30 days.

# Long Term Goal: 'Internet Of Things' Products

- Moving beyond leak detection in geotextiles
- Goal is real time monitoring of stress, leaks etc in dams and infrastructure using large scale graphene sensor technology

