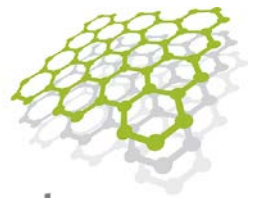


## ASX Announcement

29 November 2017

# Wholesale Investor Presentation



**first graphene**

Australia's leading graphene company

The Manager  
Company Announcements Office  
ASX Limited  
Level 6, 20 Bridge Street  
SYDNEY NSW 2000

First Graphene Limited is pleased to advise that the Company's Chairman, Mr Warwick Grigor, will be making a presentation at the Wholesale Investor, Sydney Emerging Company Investor Luncheon, being held at the PWC Offices, Level 14, One International Towers, Watermans Quay, Barangaroo, Sydney.

A copy of Mr Grigor's presentation is attached.

**Peter R. Youd**  
Executive Director, Chief Financial Officer  
& Company Secretary

### First Graphene Limited

ACN 007 870 760  
ABN 50 007 870 760

### Registered Office

Suite 3  
9 Hampden Road  
Nedlands WA 6009

Tel: +61 1300 660 448  
Fax: +61 1300 855 044

### Directors

Warwick Grigor  
Craig McGuckin  
Peter R Youd  
Chris Banasik

### Company Secretary

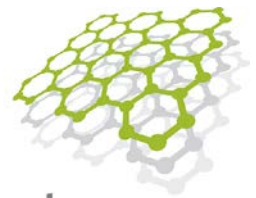
Peter R Youd

E: [info@firstgraphene.com.au](mailto:info@firstgraphene.com.au)

W: [firstgraphene.com.au](http://firstgraphene.com.au)

### ASX Symbol

FGR



## ASX Announcement

29 November 2017

# Wholesale Investor Presentation

**first graphene**

Australia's leading graphene company

### About First Graphene Ltd (ASX: FGR)

First Graphene produces high quality graphene from high grade Sri Lankan vein graphite.

First Graphene seeks to develop graphene production methods and acquire graphene related intellectual property which can provide further revenue related opportunities.

### About Graphene

Graphene, the well-publicised and now famous two-dimensional carbon allotrope, is as versatile a material as any discovered on Earth. Its amazing properties as the lightest and strongest material, compared with its ability to conduct heat and electricity better than anything else, means it can be integrated into a huge number of applications. Initially this will mean graphene is used to help improve the performance and efficiency of current materials and substances, but in the future, it will also be developed in conjunction with other two-dimensional (2D) crystals to create some even more amazing compounds to suit an even wider range of applications.

One area of research which is being very highly studied is energy storage. Currently, scientists are working on enhancing the capabilities of lithium ion batteries (by incorporating graphene as an anode) to offer much higher storage capacities with much better longevity and charge rate. Also, graphene is being studied and developed to be used in the manufacture of supercapacitors which can be charged very quickly, yet also be able to store a large amount of electricity.

For further information, please contact

Craig McGuckin

Managing Director  
First Graphene Limited  
+ 611300 660 448

Warwick Grigor

Non-Executive Chairman  
First Graphene Limited  
+61 (0)2 9230 1930

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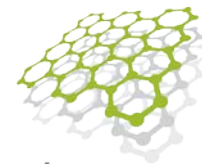
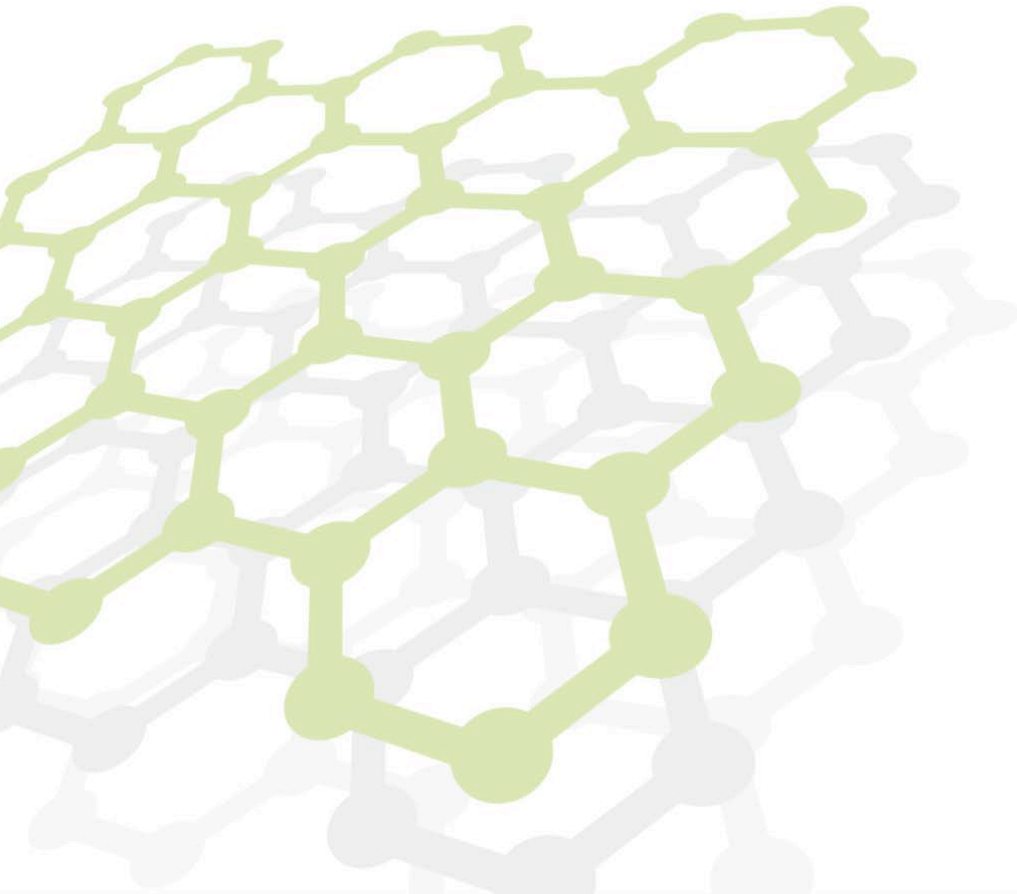
Peter R Youd

E: [info@firstgraphene.com.au](mailto:info@firstgraphene.com.au)

W: [firstgraphene.com.au](http://firstgraphene.com.au)

### ASX Symbol

FGR

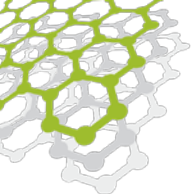


**first** graphene

Australia's leading graphene company

# **ADVANCING GRAPHENE INNOVATIONS AND INTELLECTUAL PROPERTY**

November 2017



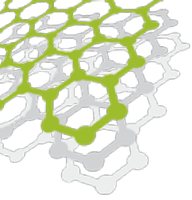
# Who wants a mobile that recharges < 30 seconds?

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FGR will soon be able to do this for you, using the BEST Battery technology



How can this be possible?

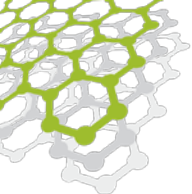


# Its all about graphene, an extraordinary material

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Graphene is the wonder material of the 21<sup>st</sup> century ...

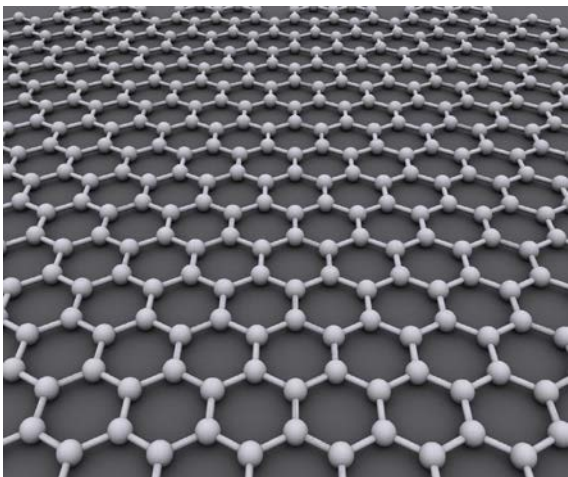
- **Thinnest material known to man** – one atom thick
- **Strongest material** – 200x stronger than steel
- **Best electrical conductor**– 100x greater than copper
- **Best thermal conductor** – for dispersion of heat, better anything else
- **Most impermeable material** – even helium atoms cannot squeeze through
- **Flexible** – can stretch up to 20% of its length
- **Transparent** – lets 97-98% of light through (glass is only 80-90%)



# Different qualities mean different pricing

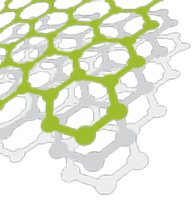
**Graphene** is a form of carbon consisting of planar sheets which are one atom thick, with the atoms arranged in a honeycomb-shaped lattice.

Price varies with quality and volume



## Indicative Prices in US\$, order sizes of 100 kg

- |                                  |                |
|----------------------------------|----------------|
| ■ Graphene (monolayer)           | \$1,000/kg     |
| ■ Very few layer Graphene (vFLG) | \$800/kg       |
| ■ Few layer graphene (FLG)       | \$300-\$400/kg |
| ■ Multilayer graphene (MLG)      | \$60-120/kg    |
| ■ Graphene nanoplatelets (GNP)   | \$30-\$50/kg   |
| ■ Graphene oxide                 | By negotiation |

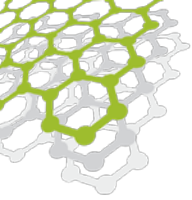


# So, back to the 30 second charging of the phone

---

FGR is developing the **BEST Battery (Bolt Electric Storage Device)**

- Physical storage energy rather than chemical storage
- No risk of thermal runaway
- No degradation of battery over time, > 10,000 cycles (> 10 years)
- Up to 75% weight reduction
- Flexible and safe
- No pollutants
- The next generation of energy storage - supercapacitors



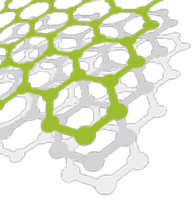
# Technology and Commercialisation

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BEST Battery Technology developed by Swinburne University

- Working on scaled up proto-type for demonstration in 2018
- Using laser printing on graphene oxide to create nanopores to store electricity
- Achieving 10x greater energy density than existing technology
- Patents held by Swinburne
- FGR earning 70% of global licencing rights
- Business model is to sell licences and earn royalties



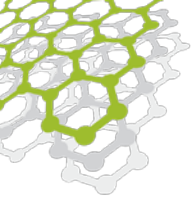


# First Graphene – the Leader the Graphene Field

---

The first ASX-listed company to open a **commercial graphene production plant**

- Official opening 23<sup>rd</sup> November, 2017
- Plant commissioning over the next three months
- Capacity for up to 90 tpa of graphene
- Breakeven throughput 18 tpa of graphene
- Initial production process designed by Uni of Adelaide,
- Commercial scale plant designed by FGR

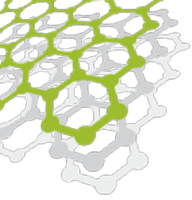


# Accessing the Entire Graphene Value Chain

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First Graphene is a vertically integrated company ;

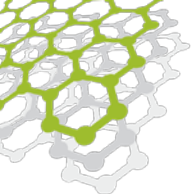
- It **buys** and **mines** the vein graphite ore in Sri Lanka
- It **converts** the graphite into graphene at > 90% yield
- It provides **secondary finishing** of graphene to meet customer needs
- It **develops IP** for graphene applications
- It **licences** its IP to manufacturing industries for fees and royalties



# Unique Competitive Advantages

First Graphene Limited holds a number of competitive advantages, which include;

- **Modular process** that limits up-front capital
- **Highest graphite grade** in the world means lowest operating costs – 97%
- First true **bulk tonnage** producer in the market
- **Lowest defect** graphene
- **Largest platelet size** – averages 40-50 microns in diameter
- Range of graphene products to suit clients application
- Ability to install on the customers' factory floor
- Strong collaboration with universities













# FGR's Science-Based Developments



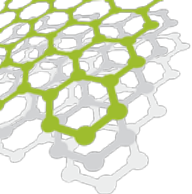
## graphene IP development

The enormous potential of First Graphite and it's involvement in graphene applications

University	Current Graphene Applications	Exclusive Involvement of First Graphite
 <p>ADELAIDE UNIVERSITY AUSTRALIA</p>	<b>Node 1</b>  FIRE RETARDANT	 WORLDWIDE LICENCE
	<b>Node 2</b>  CONDUCTIVE POLYMERS	 A GROWTH MARKET
	<b>Node 3</b>  BUILDING MATERIALS	 CEMENT  FIBRE CEMENT  PLASTER BOARD  WATER SOLVENT

- FGR is a leading participant in the Australia Research Council Hub for Graphene Enabled Industry Development.
- Three universities and five Australian businesses over three years. FGR is focused on;
  - Fire retardants
  - Conductive polymers
  - Building materials





## graphene IP development

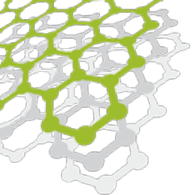
The enormous potential of First Graphite and it's involvement in graphene applications



Strategic partnership to develop and commercialise graphene manufacturing technology using;

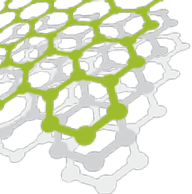
- Vortex fluidic device (VFD)
- Turbo Thin Fluidic Device (T<sup>2</sup>FD)





These new process technologies have the potential to significantly enhance the following areas:

- Be a delivery device for the dispersion and functionalisation of graphene powders into the client's production stream.
- Further enhance the graphene produced from the FGR production process as required.
- Produce graphene and graphene oxide (GO) using water as the solvent.
- Creation of other carbon nano products.



## graphene IP development

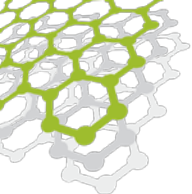
The enormous potential of First Graphite and it's involvement in graphene applications

University	Current Graphene Applications	Exclusive Involvement of First Graphite
	 SUPER CAPACITY BATTERIES	 IMPROVED PERFORMANCE OVER LITHIUM IRON BATTERIES
		 WORLDWIDE LICENCE

### Developing the BEST Battery;

- Potential to make Li-Ion batteries obsolete
- Safer and more environmentally friendly
- Charges phones in < 30 seconds
- Life of > 10,000cycles





# There is nothing better than vein graphite

It starts with...

...the highest grade graphite

...and the best quality

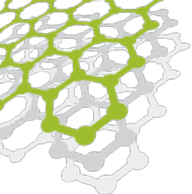
...in the world



	Compound Name	Concentration (%)	Absolute Error (%)
1	C	99.87	
2	Mg	0.01	0.003
3	Al	0.01	0.003
4	Si	0.04	0.006
5	Cl	0.02	0.004
6	Ca	0.00	0.002
7	Fe	0.04	0.006

Results of XRF WDS Analysis



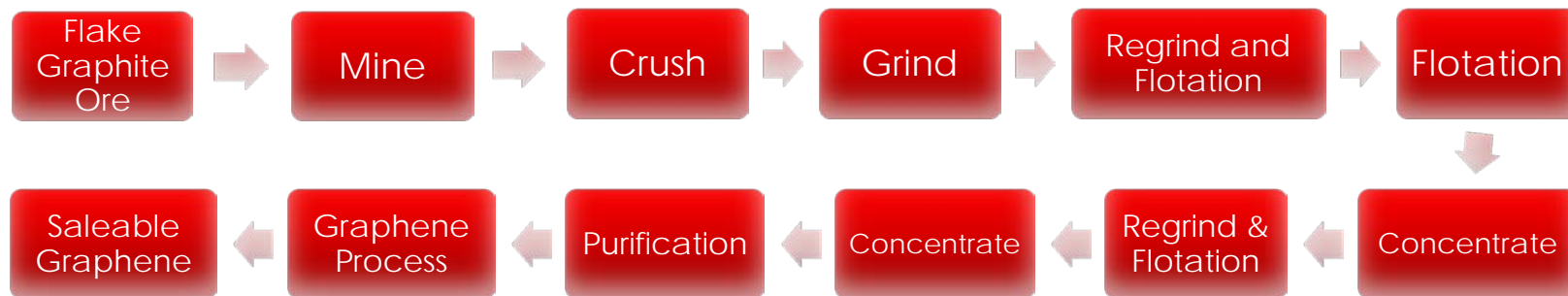


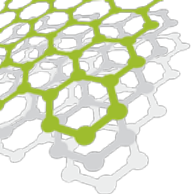
# A simple, one step process

First Graphene Process... one step, low cost to graphene



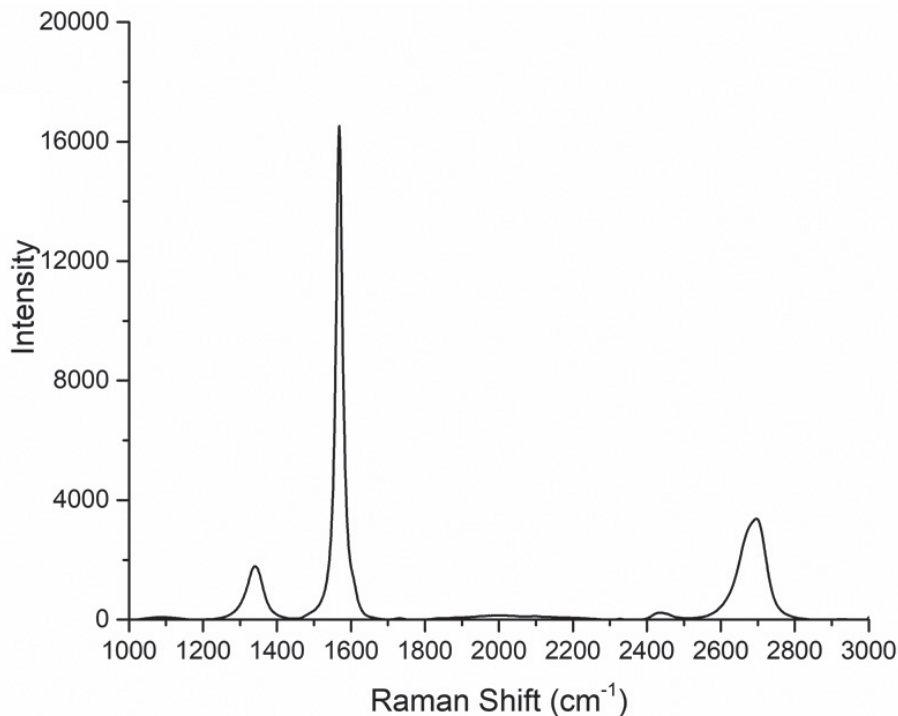
Flake Graphite Process... > 10 steps





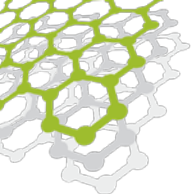
# The highest quality graphene

...which enables the production of the highest quality graphene, confirmed with Raman Spectroscopy and product specs.



## Products Specifications

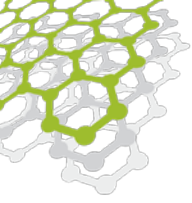
- Raman spectrum of FGR Graphene Powder showing a strong G band and a low D/G ratio of 0.12 confirming the pristine nature of these products.
- The 2D band shape at ca. 2700cm-1 also confirms the absence of graphite



## Dr. Andy Goodwin

### Advanced Material Specialist

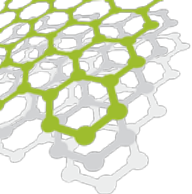
- Ph.D. scientist with extensive leadership experience in innovation and new business growth within the specialty chemicals industry
- Strong technical & financial skills – PhD scientist with business school training
- Formerly Business Director – Advanced Materials Division At Thomas Swan & Co Ltd in UK
- Formerly, Global Science & Technology Manager – Solar, Dow Corning Corporation in USA



## Warwick Grigor

### Non-Executive Chairman

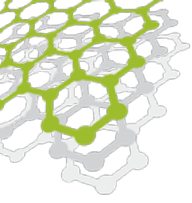
- Respected and experienced mining analyst.
- Mr. Grigor's research knowledge and market intelligence gives First Graphene a strong strategic direction.
- Bachelors of Law and Economics from the Australian National University, Diploma of Company Director.



## Craig McGuckin

### Managing Director

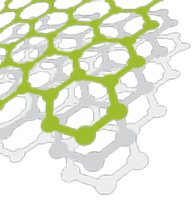
- Qualified mining professional with in excess of 35 years experience in the mining, drilling and petroleum industries.
- Held senior positions in private and publicly listed companies.



## Peter Youd

### Executive Director, Chief Financial Officer & Company Secretary

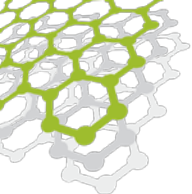
- Chartered Accountant and has extensive experience within the resources, oil and gas services, and mining.
- For over 35 years has held senior management positions and directorships for publicly listed and private companies in Australia and overseas.
- Bachelor of Business from the W.A Institute of Technology (now Curtin University).



## Chris Banasik

### Non-Executive Director

- Master's Degree in Mineral Economics from University of WA and Bachelor's Degree in Applied Physics from Curtin University.
- Formerly Director of Exploration and Geology of Silver Lake Resources.
- Held senior geological management positions over 12 years' with organisations including WMC Resources Ltd, Reliance Mining Ltd, Goldfields Mine Management and Consolidated Minerals Ltd.



## Capitalisation

Shares On Issue	373,761,237
-----------------	-------------

Price (29/11/17)	(\$)	\$0.110
Market Cap	(\$m)	\$41.11
52 Week High	(\$)	\$0.140
52 Week Low	(\$)	\$0.060
Cash (30/09/17)	(\$m)	\$2.49
Debt	(\$m)	\$0.00
Enterprise Value	(\$m)	\$38.62

## Share Price History (Source Westpac)



## Board and Management

**Warwick Grigor** – Non-Executive Chairman

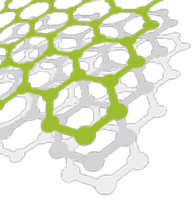
**Craig McGuckin** – Managing Director

**Peter Youd** – Executive Director, CFO & Co. Secretary

**Chris Banasik** – Non-Executive Director

**Dr Andy Goodwin** – Advance Material Specialist





# So, what does FGR offer its shareholders?

---

The **lowest risk exposure** to the exciting graphene revolution

It offers **opportunity** and **optionality**

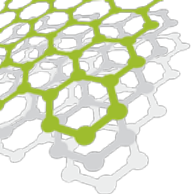
An **existing** production facility

**No intimidating capex** requirements

**Highest profit margin** graphene

Valuable scientific developments and **IP**

FRG is perfectly positioned to capitalise on the biggest growth story since plastics



# Important Notice

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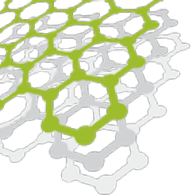
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The potential quantity and quality of the targets identified in this presentation are conceptual in nature and there has been insufficient exploration to date to define a mineral resource in accordance with JORC.

The content of the report is based on low level technical and economic assessment and is insufficient to support estimation of reserves or to provide assurance of an economic development case or to provide certainty that the production conclusions will be realised. Furthermore it is uncertain if further exploration will result in the determination of mineral resources.

The potential quality and grade of targets are conceptual in nature, there has been insufficient exploration to determine mineral resources and there is no certainty that further exploration work will result in the determination of a mineral resources or that the production targets will be realised.

Accordingly, this document contains reference to certain targets and plans of FGR which may or may not be achieved. The performance of FGR may be influenced by a number of factors, uncertainties and contingencies, many of which are outside the control of FGR and its directors, staff and consultants.



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- a. are necessarily based upon a number of estimates and assumptions that, while considered reasonable by the Company, are inherently subject to significant technical, business, economic, competitive, political and social uncertainties and contingencies;
- b. involve known and unknown risks and uncertainties that could cause actual events or results to differ materially from estimated or anticipated events or results reflected in such forward looking statements; and
- c. may include, among other things, statements regarding estimates and assumptions in respect of prices, costs, results and capital expenditure, and are or may be based on assumptions and estimates related to future technical, economic, market, political, social and other conditions.

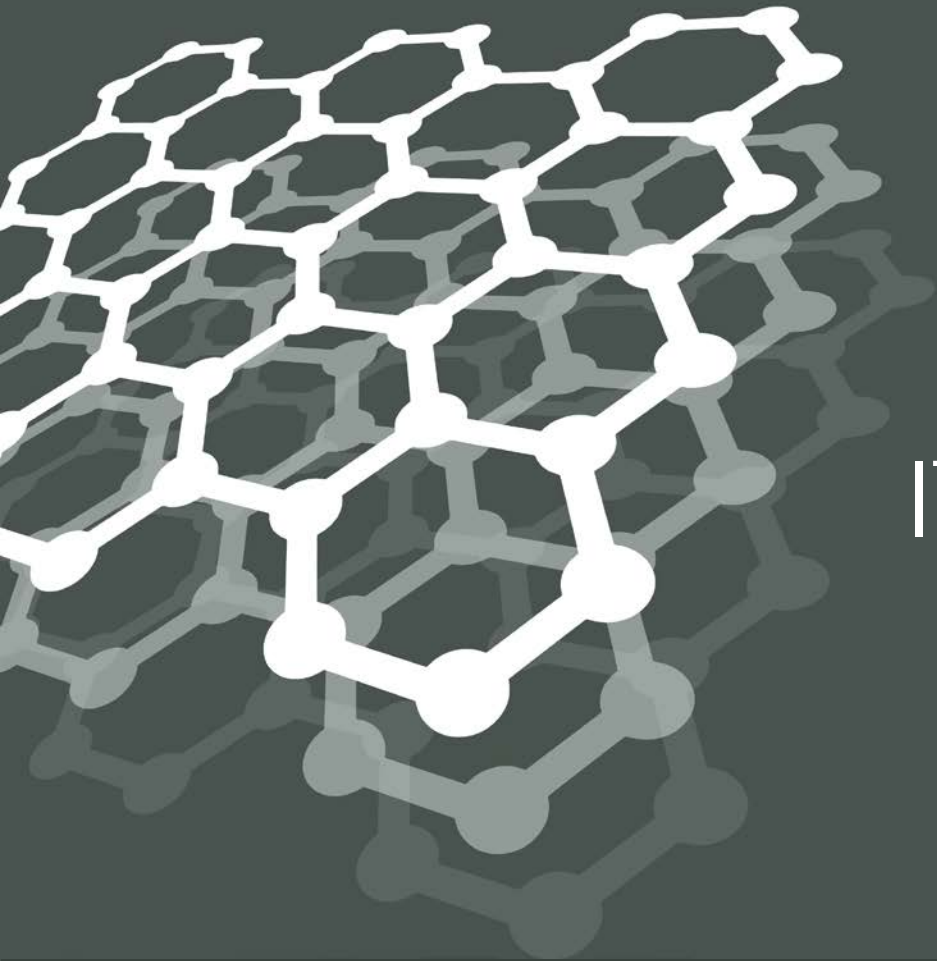
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The words “believe”, “expect”, “anticipate”, “indicate”, “contemplate”, “target”, “plan”, “intends”, “continue”, “budget”, “estimate”, “may”, “will”, “schedule” and similar expressions identify forward looking statements.

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The Presentation Materials do not purport to be all inclusive or to contain all information about the Company.

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No substitutes:

IT'S ALL ABOUT  
QUALITY!