



# Cyclopharm Limited

A profitable and growing market leader  
in nuclear medical imaging and lung healthcare

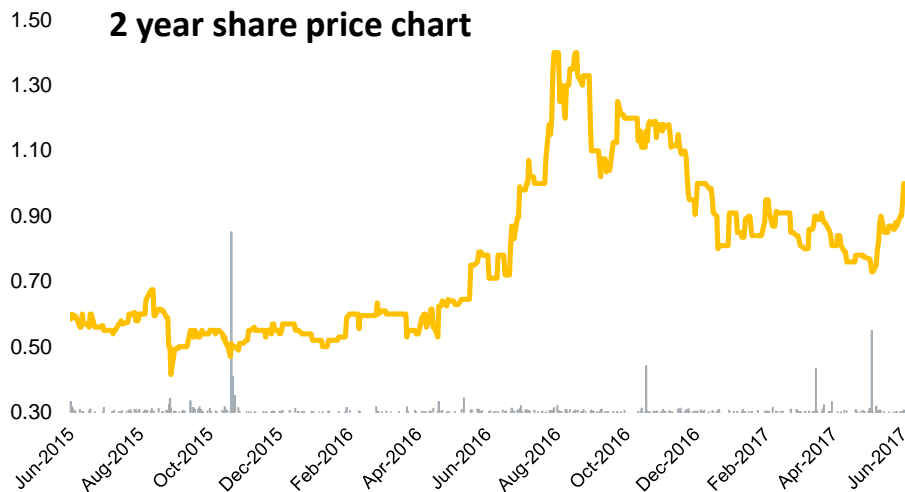
## **Bioshares 2017 Biotech Summit**

22 July 2017

# Company Overview

## Cyclopharm Limited (CYC) is a leading nuclear pharmaceuticals company

- A world leader in functional lung ventilation imaging technology with recurring consumables and capital equipment revenue streams
- A profitable and growing company with a history of dividend payments
- Lead product Technegas is currently sold in 56 countries with significant opportunity to expand into USA with FDA trial completion expected in Q3 2018
- Opportunity to broaden Technegas application beyond pulmonary embolism diagnosis into large addressable markets such as COPD and Asthma
- Successful capital raising June 2017 with 90% shareholder participation increasing cash sufficient to complete USFDA trial



Share Price (as at 20 July 17)	\$0.85
Shares on Issue	68.6 million
Market Capitalisation	\$58.1 million
Cash (31 Dec 16)	\$4.6 million

# A Business Model Based on a Recurring Annuity Stream From Consumables



**Technegas**

Manufacturer and distributor of lung ventilation imaging devices and equipment

- Invented in 1986
- Track record of growing revenue, profits and cash flows
- USFDA trials for sales in US progressing
- Functional ventilation imaging agent used predominantly in the diagnosis of Pulmonary Embolism (PE)
- China trial indicates that Technegas can be an effective tool to diagnose and monitor COPD
- Active clinical program underway targeting indication expansion
- Revenues derived from:
  - Technegas Generator
  - Patient Administration Set (Single patient consumable sold in boxes of 50)
  - Service Income



Innovative, first-in-class, disruptive, proprietary technology used to improve radiopharmaceutical manufacturing efficiency and deliver health care cost effectiveness

- Fine tuning in 2016
- IP Secured
- First sales expected in 2H 2017
- Strong International interest as demonstrated by the International Atomic Energy Agency
- Revenues derived from:
  - Cartridge shielding – one off sale per site
  - Disposable cartridges

# Company Overview

## Cyclopharm's leading product is the *Technegas* technology system

- The Technegas proprietary technology provides high quality diagnostic functional lung imaging.
- Predominantly used to diagnosis the presence of blood clots in the lung otherwise known as Pulmonary Embolisms (PE), with advances in complementary technology the potential for use in other indications is rapidly evolving.
- In a clinical setting, the patient inhales, in only a few breaths, an ultrafine dispersion of Technegas particles. Once inhaled and deposited in the lungs, Technegas images are then captured by using conventional nuclear medicine scanning equipment.
- The Technegas images provide the clinician an understanding of how well the patient's lungs are functioning across a range of disease states.
- CYC sells the Technegas Generator to hospitals as a one-off capital item. Consumable components are inserted into the Technegas Generator which then produce the gas like particles that are inhaled by the patient. The consumables which deliver Technegas are single use items which are sold exclusively by CYC.



# Our Strategy

CYC has a clear strategy to leverage our position as a leading player in the global nuclear medicine imaging market and lung health space to expand the use of our proprietary products and introduce new innovative technology.

We will do this by:

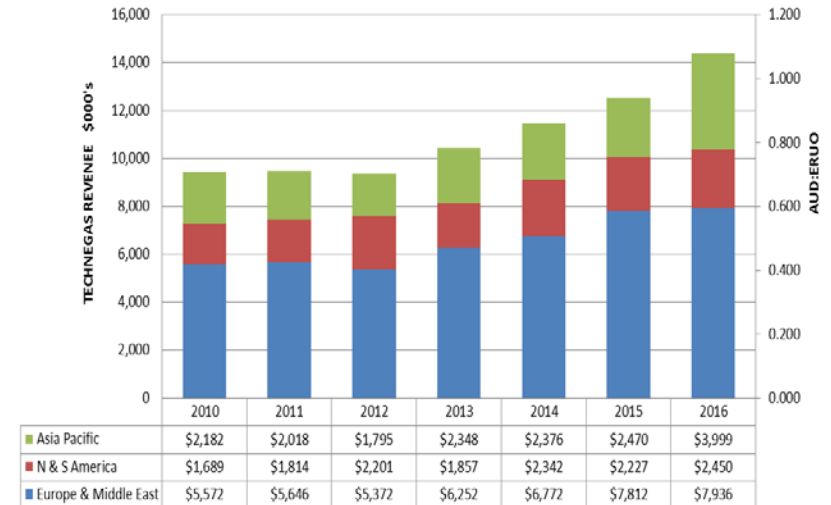
1. Attaining approval to distribute Technegas in the USA
2. Expanding the use of Technegas beyond the traditional diagnosis of Pulmonary Embolism into significantly larger applications such as COPD<sub>1</sub> and Asthma, Lung Cancer and Pulmonary Hypertension for both diagnosis and patient management.
3. Identifying, developing and commercialising complementary innovative technology such as Ultralute™
4. Leveraging our core global regulatory strengths, fiscal discipline, strong balance sheet and well developed expertise in nuclear medicine and pulmonary healthcare to seek out complementary technologies and businesses

# Technegas - Proven Market Adoption

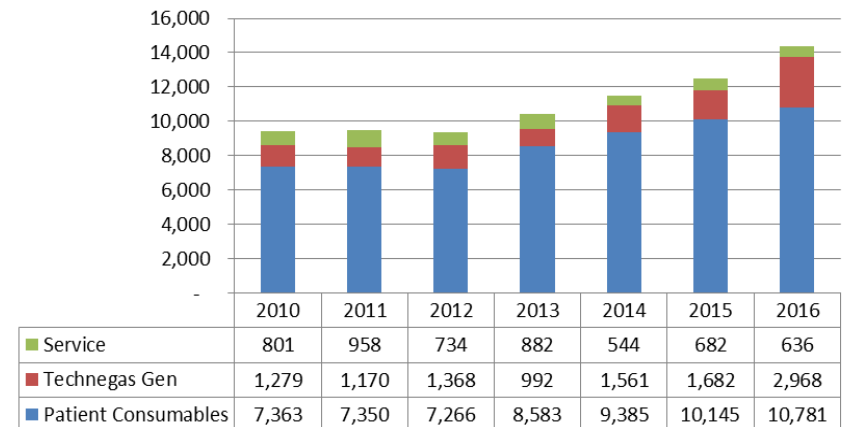
**Technegas is a substantially de-risked commercial proposition with significant upside in the US market**

- Total **global sales of \$77m** since 2010
- Technegas currently sold in **56 countries**
- Over **210,000 patient procedures** in 2016
- Over **3,700,000 patient procedures** since 1986
- **1,500 Technegas generators** sold globally
- **FY2016 Sales of \$14.4m and EBIT of \$1.4m**
- CYC is a growing, profitable and dividend paying company
- Stable gross margins of greater than 75%
- Technegas is a System – Product – Service - Spare Parts
- 79% of historical revenue is generated through recurring consumable sales

**Technegas Regional Revenue**

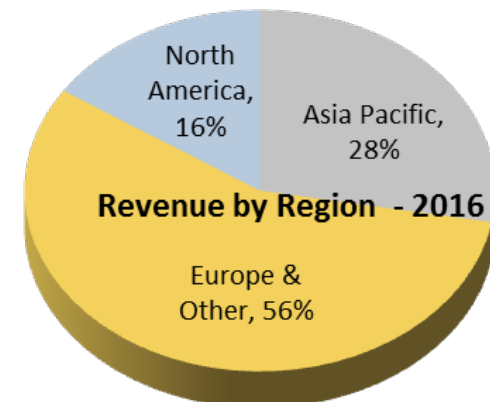
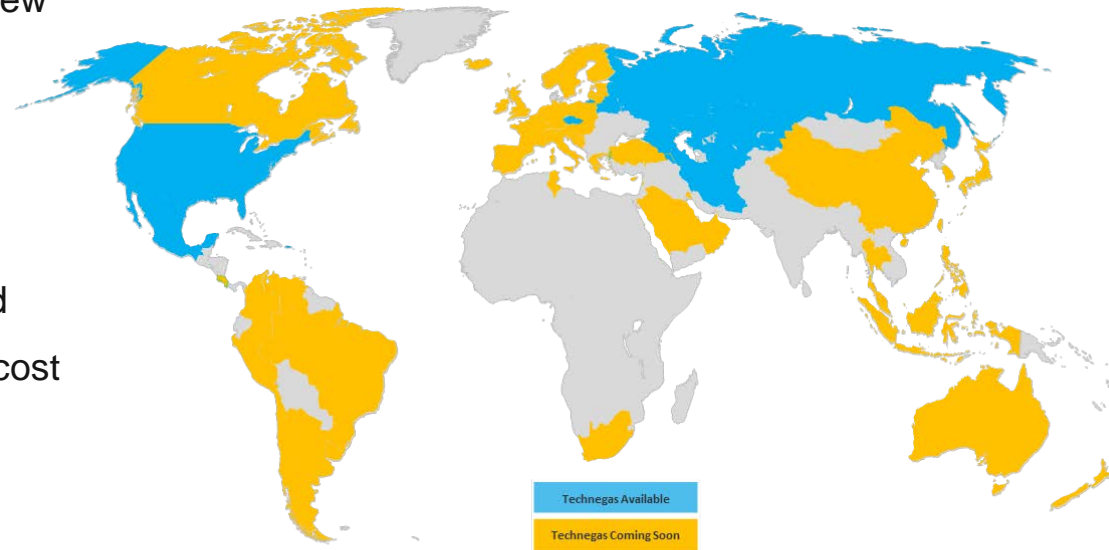


**Technegas Revenue by Category**



# Global Sales & Distribution Footprint - Building on a Strong & Established Base

- Technegas is distributed directly in Australia, New Zealand, Canada and Germany – highest cost base – greatest flexibility – highest margin potential
- The majority of Technegas sales are generated through Distributors. Distributors allow for low cost market entry at the compromise of full market penetration and control
- Agency agreements provides a mid-cost base with good market visibility
- In 2016 China converted from an Agency to a Distributor marked with the largest single Technegas order ever received
- New Manufacturing facility established November 2016 capable of meeting future global demands





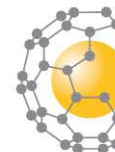
## Session Brief:

# So You've Built It, Now You Have to Sell It!

## Developing New Markets



# US Market Opportunity



- The USA represents the single largest market for Technegas with half of the world's nuclear medicine departments
- Target market for Technegas in the USA equates to ~480,000 patient procedures of the total 600,000 procedures conducted p.a. in that market (Current Rest of the World volumes for Technegas = 200,000 patients p.a.)
- Subject to a successful trial and FDA approval, the Company is targeting US commercialisation in Q4 2018
- First priority following USFDA approval is to repeat our Canadian experience by displacing Xe133 as the standard of care diagnostic product



**US Pulmonary Embolism Ventilation Imaging  
Market opportunity USD \$90m p.a.**

**TRIAL IS FULLY FUNDED**

# FDA Approved Trial Design

- **De-risked clinical trial strategy** - In order to mitigate regulatory risk the Company adopted the FDA Special Protocol Assessment (SPA) pathway for its US clinical trial
- **FDA approved trial design** - The SPA pathway provided the Company with the opportunity to reach agreement with the FDA on the overall protocol design (including entry criteria, dose selection, endpoints and planned analysis).
- **Regulatory risk substantially eliminated** - The key benefits of the SPA pathway are the value of preliminary input from the FDA around trial design and eliminating the risk that clinical endpoints can be called into question at the time of the New Drug Application submission.
- **Broad patient selection criteria** - The trial is designed on an 'all comers basis' meaning broad selection criteria which will facilitate the expeditious completion of the trial in Q3 2018.
- **Short timeframe to FDA approval and commercial launch** - The Company has diligently de-risked the FDA clinical trial process and looks forward to concluding the trial and obtaining FDA approval with the aim of commencing US commercialisation during Q4 2018

# Pathway to US commercialisation

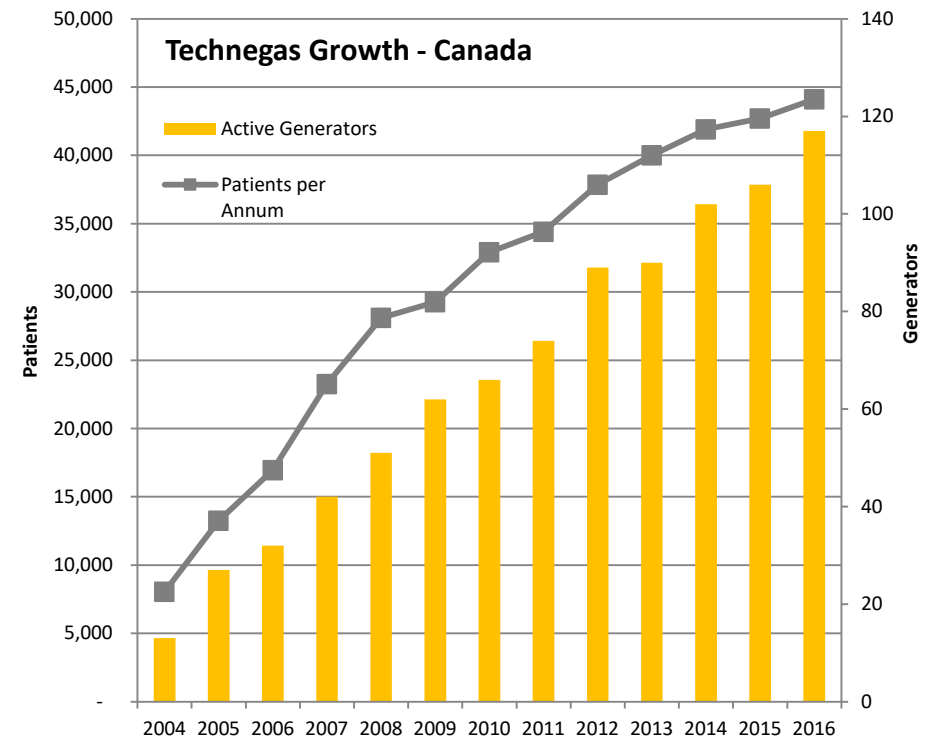
- **Target preliminary study completion Q1 2018** - During Q1 2018 the Company aims to conclude a preliminary study of 40 patients and receive feedback from the FDA.
- **Target FDA Trial completion Q3 2018** - Assuming positive feedback from the preliminary study, the Company will continue with the comprehensive FDA trial which it anticipates will be completed during Q3 2018.
- **Target commercial launch Q4 2018** - Following the preliminary 40 patient study the Company will invest in Technegas inventory and, after successful completion of FDA trial and issue of FDA approval, target commercial launch in the US during Q4 2018
- **Market dominance in Canada** - The Company achieved market dominance in Canada (and a number of other markets) at gross margins of ~75% over approximately 10 years.
- **US market penetration** – Based on experience in other markets, the Company is targeting in the US greater than 50% conversion of competitive products to Technegas over a period of 5 to 7 years.
- **Increased gross margin in US market** – Based on sale prices of existing competitive products, the Company expects to maintain or improve its historical gross margin on both consumable and capital equipment sales in the US Market.
- **Expanding the use of Technegas** – clinical trials underway targeting potentially much larger applications in COPD, Asthma and Pulmonary Hypertension

# Technegas – The Canadian Case Study

## Canada is Cyclopharm's largest single country market

- Market leader for diagnosing PE
- 13 consecutive years of PAS growth
- Represents a strong indicator of USA acceptance
- Xe-133 rapidly displaced by early adopters
- Direct correlation with the number of active generators and annual consumable sales
- Market driven by public healthcare sector
- Market launch initiated province by province, leveraging off pilot sites
- Market developed with 1 FTE with outsourced distribution and service support

## The Generator and Consumable Relationship



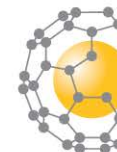


## Session Brief:

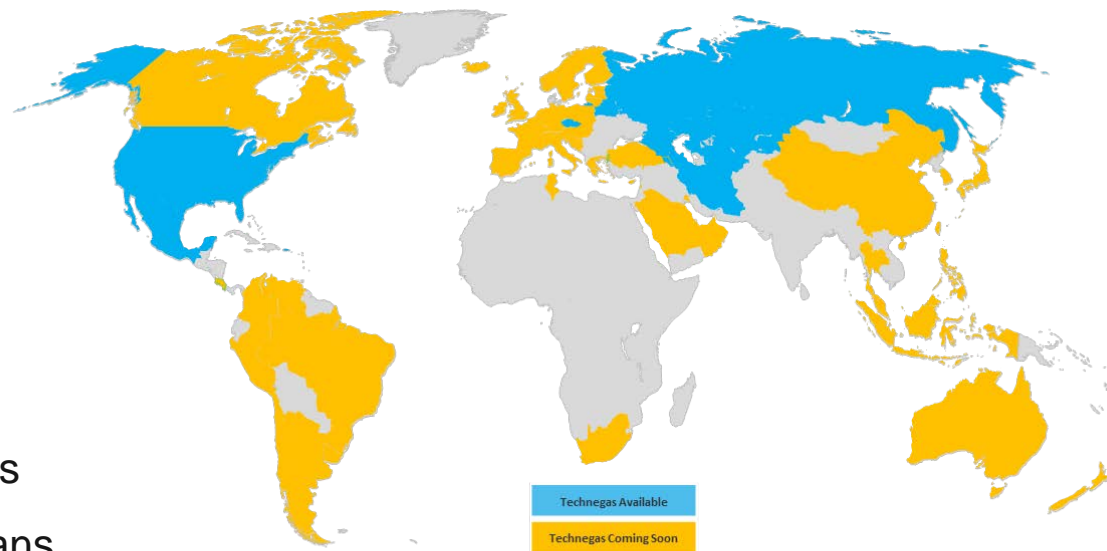
# So You've Built It, Now You Have to Sell It!

**Driving Sales in Existing Markets**

# Existing Market Development



- Sales and marketing program targeting referring respiratory physicians
- Implemented educational programs for Distributors
- Updating Technegas distribution contracts to include detailing to respiratory physicians
- Leveraging New Complementary Technologies
- Strengthening relationships with KOL's and industry bodies
- Guideline Development



- Product Renewal & Enhancements
- Initiated pilot clinical trials targeting expanded indications
- Introduction of new products by leveraging off of existing network - Ultralute

# Technegas – Global Indication Expansion

## **Targeting Chronic Obstructive Pulmonary Disease (COPD) market**

Evaluating the effectiveness of Technegas in early detection of COPD and the presence of the comorbidities associated with the disease

### **Market Size:**

- 30x the size of total PE market
- 65m people have moderate to severe COPD
- Estimates show that COPD will be the third leading cause of death by 2030

### **Timeline:**

- ✓ Q2 2016 China trial recruitment completed
- ✓ Q2 2017 Trial Results published in the International Journal for COPD
- ✓ Extending the COPD initiative to additional markets including in Canada, Australia and several European countries

### **Australian Study Specifics:**

- Patient size: 100 patients
- Total cost = ~\$600K

## **Additional indication and applications – Asthma, Lung Reduction and CTEPH\***

Technegas can provide the clinician the ability to visualise and quantify lung ventilation by region. No other diagnostic tool can provide consistent, accurate and reliable functional imaging in comparison.

In 2016 Cyclopharm commenced a clinical program targeting Technegas indication expansion to include:

### **Asthma**

- 334 million people globally

### **Lung Reduction Intervention**

- Application in determining ventilation pre and post lung reduction intervention

### **Chronic Thromboembolic Pulmonary Hypertension**

- Ventilation/Perfusion imaging is recommended
- Up to 40 million patients globally



## Innovative, first-in-class, disruptive, proprietary technology used to improve radiopharmaceutical manufacturing efficiency and deliver health care cost effectiveness



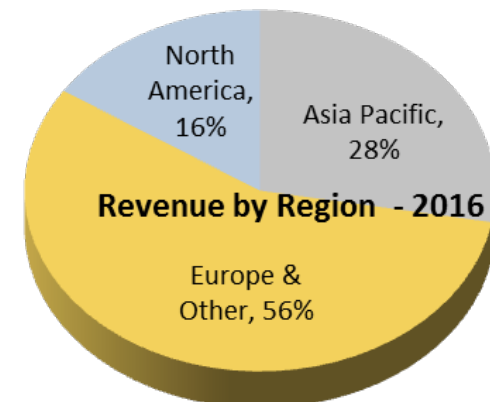
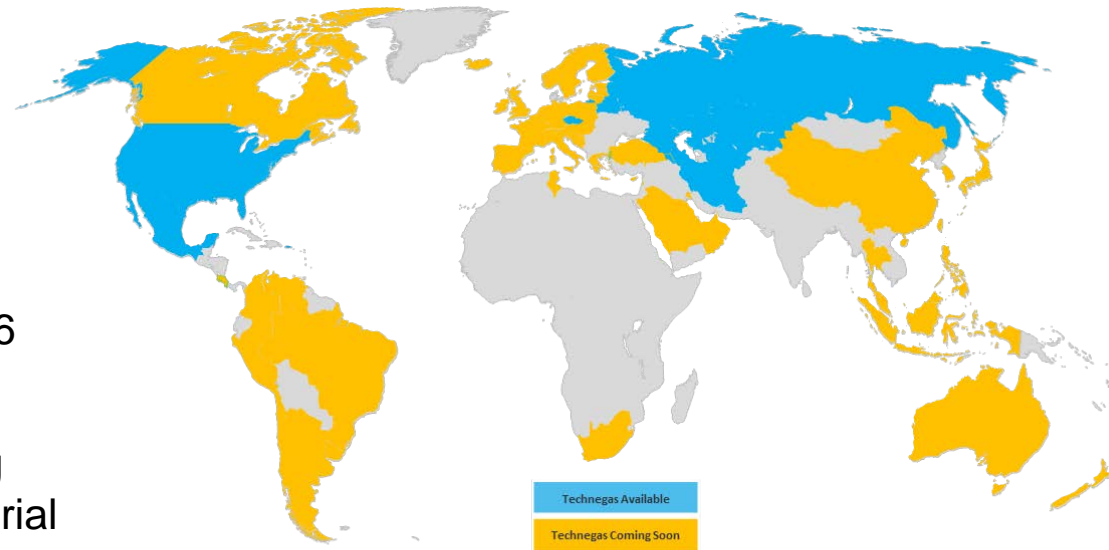
Ultralute™

- **Extension of Generator life** – the Ultralute will extend the effective use of an Mo99 generator by up to 50%
- **Reduced purchase volumes** – Allows the user to purchase a smaller (lower cost) Mo99 Generator
- **Cost effective** - Provides a saving of between 30% to 40% in the cost of Tc-99m
- **Large market** - there are over 5,000 Mo99 generators sold worldwide each week.
- **Commercialisation** - Sales expected to commence H2 2017
- **Strong IP** - Patents secured in 2014
- **Supportive peak body** – Strong relationship with the International Atomic Energy Association (IAEA)
- **Established clinical trial strategy** - Multi-centre multi-country trial planned in conjunction with the IAEA



# Growth Drivers: Expanding the Global footprint

- Technegas sold in **56 countries**
  - Europe is the largest regional market for Technegas
  - In 2014 Canada became largest country market for Technegas, surpassing France
- Over **210,000 patient studies** in 2016
- Over **3,700,000 patient studies** since 1986
- **1,500** Technegas generators sold globally
- Targeting USA USD \$90M market following successful completion of USFDA Phase 3 trial
- Expanding the use of Technegas – China COPD trial published in May 2017
- Expansion of clinical development program in 2017
- Patent protection until 2026 with optionality for extension
- 75% of sales are from single patient consumables / patient administration sets (PAS)
- Ultralute – leveraging existing network





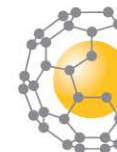
# Appendix

- Company Financials
- Technegas
- Ultralute™
- MMI
- KPI's
- Disclaimer



# Company Financials

# Historic Performance



**Cyclopharm's proven proprietary technology underpins accelerating commercial success and provides a foundation for further growth**

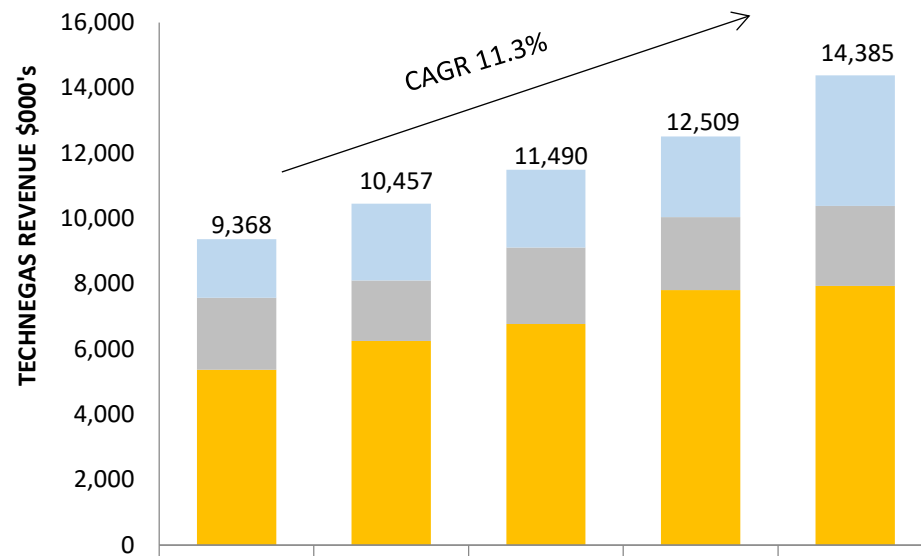
<i>Year ended 31 December (\$000's)</i>	2016	2015	% Change
<b>Technegas Results:</b>			
<b>Sales Revenue</b>			
PAS	10,782	10,145	6.3%
Generators/service	3,604	2,363	52.5%
<b>Total Sales</b>	<b>14,386</b>	<b>12,508</b>	15.0%
<b>Underlying EBITDA</b>	<b>3,438</b>	<b>2,980</b>	15.4%
Underlying EBITDA Margin	23.9%	23.7%	0.2%
FDA Expenses	(1,098)	(686)	60.0%
<b>EBITDA</b>	<b>2,340</b>	<b>2,294</b>	2.0%
D&A	(106)	(137)	22.6%
<b>EBIT</b>	<b>2,234</b>	<b>2,157</b>	3.6%

- FY16 revenue of \$14.4m and underlying EBIT of \$2.2m with no contribution from USA which represents over 50% of the Pulmonary Embolism world market
- A third consecutive year of record revenues in FY2016 assisted by the delivery in December 2016 of the single largest order placed for the China market

# Technegas Full Year Performance

## Third consecutive year of record underlying results

**Technegas Regional Revenue**



	2012	2013	2014	2015	2016
Asia Pacific	1,795	2,348	2,376	2,470	3,999
N & S America	2,201	1,857	2,342	2,227	2,450
Europe & Middle East	5,372	6,252	6,772	7,812	7,936

- Cyclopharm have delivered 4 year Revenue CAGR of 11% from Technegas Sales
- Europe is the largest regional market for Technegas
- In 2014 Canada became the largest single country market, surpassing France

# Group Balance Sheet

## Solid Financial Foundation to Leverage Growth Strategy

(\$000's)	Dec 2016	Cap Raising Impact	Pro Form Dec 2016
Cash	4,591	6,600	11,191
Other current assets	6,470		6,470
Non-current Assets	5,354		5,354
<b>Total Assets</b>	<b>16,415</b>		<b>23,015</b>
Current Liabilities	3,896		3,896
Borrowings	-		-
Non-current Liabilities	57		57
<b>Total Liabilities</b>	<b>3,953</b>		<b>3,953</b>
<b>Net Assets</b>	<b>12,462</b>		<b>19,062</b>

- **Debt free** – provides balance sheet and funding flexibility
- Funds raised under the Offer will be used to complete the FDA approved US clinical trial enrolment and preliminary trial submission to the FDA
- Underlying strong financial performance supports ongoing investment in R&D and expansion into new markets and indications



# Technegas Technology

# What is Technegas?

## Technegas is the world leader in functional lung ventilation imaging.

- Technegas is a structured ultra-fine dispersion of radioactive gas like substance which is inhaled by the patient. It allows imaging for evaluating functional ventilation.
- Primarily used to diagnose the presence of blood clots in lungs (Pulmonary Embolism)
- Produced by heating Technetium-99m in a carbon crucible for a few seconds at 2,750 degrees Celsius
- The resultant gas-like substance is produced in a Technegas generator
- The small size and hydrophobic properties together confirm ideal characteristics for gas-like behaviour on inhalation into the lungs
- Technegas, used in the ventilation part of the low radiation dose V/Q SPECT imaging, is cost-effective, simple to perform and accurate

### **Technegas is a System**

In order to deliver the best clinical outcomes, Technegas requires the combination of authorised:

- ✓ Equipment and consumable sales and support
- ✓ Regulatory representation
- ✓ Technical provision of equipment installation and maintenance
- ✓ Applications education in the use of the Technegas technology

### **Technegas Consumable - Patient Administrator Set**





# Advantages of Technegas

## Technegas provides clinically superior outcomes to its competitors

- Better clinical results at a fraction of the high radiation doses used in CTPA (angiograms)
- No contraindications
- More accurate and sensitive measurement in diagnosing pulmonary embolism
- Effective when CTPA is contraindicated e.g. renal impairment
- Improved patient comfort and tolerance with only 3-4 breaths required for delivery
- Allows for 3D images and regional quantification
- Named as the preferred ventilation imaging agent of choice in the European Association of Nuclear Medicine Guidelines

## IP/Generic protection

- Technegas is a system - needs the generator, patient administrator set (PAS) and service capability
- R&D on 3rd generator generation underway set to extend IP protection

## Competitive Nuclear Medicine Products

Product	Comparison to Technegas
Xenon 133	<ul style="list-style-type: none"><li>▪ Patient has to continually re-breathe gas causing patient discomfort</li><li>▪ Can't provide 3D images</li><li>▪ Costly air-handling infrastructure required in order to administer</li></ul>
DTPA	<ul style="list-style-type: none"><li>▪ Inferior images in patients with obstructive lung disease (COPD)</li></ul>

## Study Specifics:

- Non-inferiority structural ventilation study comparing Xe133 vs. Technegas
- Pathway to approval requires a two part study
  - ✓ CYC 010 – Establishes the Inter & Intra reader variability for Xe133 – Completed
  - ✓ CYC 009 - Compares Xe133 with Technegas requiring patient recruitment – SPA Approved
- Total estimated trial cost \$7.5 million USD with \$2.4 m AUD spent to date
- Assumes 240 patient study at 15 clinical sites
- CYC will complete a preliminary 40 patient trial for submission to the FDA in Q1 2018

### TIMELINE

2H 2017

1H 2018

Q3 2018

Q4 2018

Finalise  
Trial  
Recruitment

Submit  
Preliminary Trial  
Results for FDA  
Review

Complete US  
Clinical Trial

Commence US  
Commercialisation

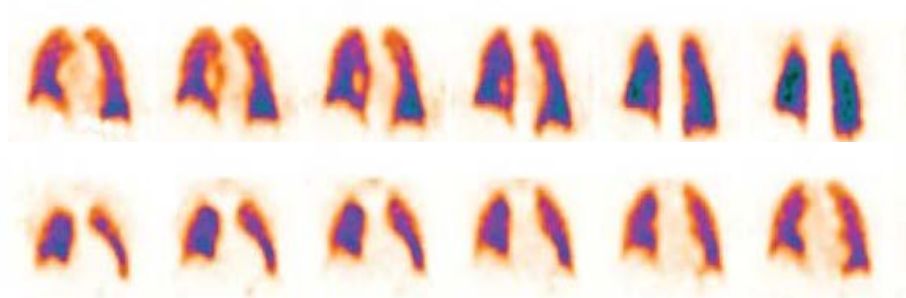
# Evolution of Functional Lung Ventilation Imaging

- Improvements in 3D imaging techniques, hybrid imaging and the advent of analytical software have dramatically improved the sensitivity and specificity in functional lung imaging with Technegas
- Traditionally used in the diagnosis of Pulmonary Embolism, nuclear medicine functional lung ventilation imaging utilising improved imaging techniques are expanding the potential clinical utility for Technegas
- The following Technegas images underscore the advancement in complementary technology Cyclopharm is leveraging today:



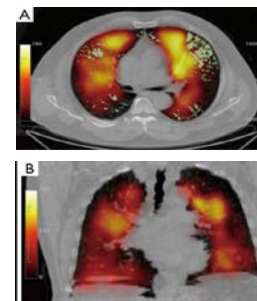
1980s

Planar Imaging



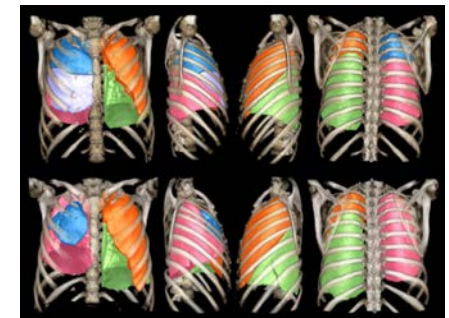
2000

SPECT Imaging



2010

SPECT with Low Dose CT



2015

SPECT with Low Dose CT & Lobular Quantification

# Technegas

## Indication expansion – Targeting COPD in China

- **The Global incidence of Chronic Obstructive Pulmonary Disease (COPD) is 30x greater than that of Pulmonary Embolism (PE)**
- **By 2030 COPD is estimated to be *world's* 3<sup>rd</sup> highest cause of death**
- **Between 2003 and 2033, it is predicted that China will see 65 million deaths from COPD and 18 million deaths from lung cancer**
- **Following successful initial Chinese COPD trial progress, single largest Technegas order placed in June 2016 for H2 2016 delivery**



### **Drivers of the Chinese COPD market**

- Greatest producer and user of tobacco in the world\*
- Rapidly Aging Population
- High use of biomass burning at home for cooking
- Elevated incidence of post-pulmonary tuberculosis
- Poor air quality in metropolitan areas

### **China Trial assessing Technegas for COPD diagnosis & management**

- Preliminary trial results suggest earlier detection than traditional Spirometry
- Trial finalised in Q4 2016
- Peer review paper submitted Q4 2016 - awaiting publication

### **China Market Potential**

- Total public hospitals 12,747
- Private hospitals: 16,004
- 620 Hospitals with nuclear medicine departments (~35% of tertiary hospitals)
- 85% of Nuclear Medicine have SPECT/CT capabilities
- 62 installed Technegas Generators in China

# Technegas Indication expansion – Australian Initiative



- Partnership with the University of Newcastle, John Hunter Hospital and Hunter Medical Research Institute
- Targeting Clinical Applications in COPD Patients
- Clinical Hypothesis:

**Small airway dysfunction assessed using Technegas functional lung ventilation imaging with quantification identifies treatable traits of obstructive airway disease.**

- The pilot study will be seeking to ascertain:
  - Is there ventilation heterogeneity among patients with severe obstructive airway diseases that can be assessed using Technegas functional lung ventilation imaging with quantification?
  - Is Technegas functional lung ventilation imaging with quantification responsive to changes following intervention in patients with severe obstructive airway diseases?
- Study Specifics
  - Q4 2016 - Protocol finalised
  - 2H 2017 - Patient recruitment to commence
  - Patient size = 100
  - 1.5 Year Project Term
  - ~\$600k AUD - Project Cost



THE UNIVERSITY OF  
**NEWCASTLE**  
AUSTRALIA



**Health**  
Hunter New England  
Local Health District



# Ultralute Technology

## Product Overview

- Disruptive Technology – changes 60 years of how radiopharmaceuticals are manufactured
- Extends the effective use of Mo99 generator up to 50%
- Each cartridge consumable designed for a maximum of 5 uses
- Patents secured in 2014
- Will be designated as laboratory equipment
- Market introduction represents a base platform for additional applications
- Revenues commencing 2H 2017
- Strong support from the International Atomic Energy Association (IAEA) where they refer to Ultralute™ as “a new innovation...that has significant global potential in the nuclear medicine supply chain”.



## Technical Features

- Enables a user to extend the usable life of a Mo99 Generator
- Allows the user to purchase a smaller (lower cost) Mo99 Generator
- Provides greater flexibility and product optimisation in manufacturing radiopharmaceuticals
- Provides a saving of between 30% to 40% in the cost of Tc-99m
- Enhances radiolabelling efficiency and imaging quality
- Purifies contaminants from the Tc99m eluate
- Provides a platform for further product development

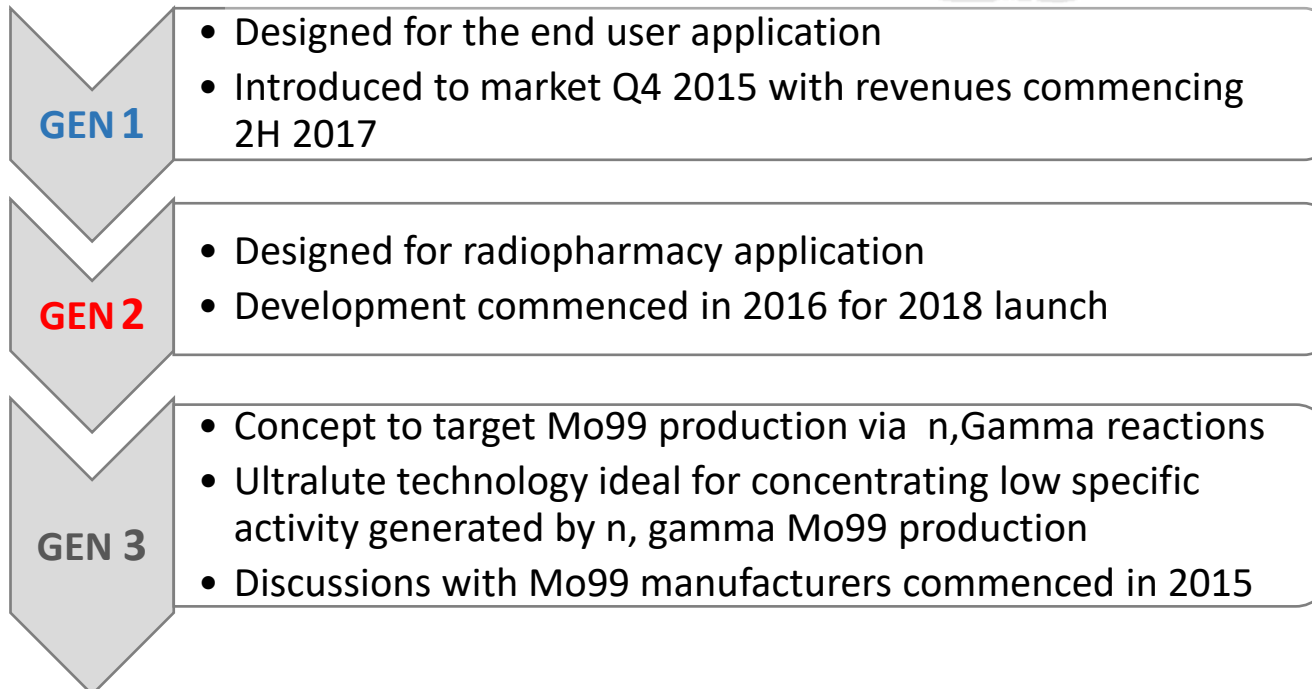


# Ultralute™ Generational Overview & Mo99 Supply Chain

## Molybdenum Manufacturing and Supply Chain



- There are over 5,000 Mo99 generators sold worldwide **each week**.
- 50% are sold to Radiopharmacy with the remaining 50% sold directly to end users





# Ultralute™

## 2017 Launch - Targeting Direct Generator Users of Mo99

**cyclopharm**  
Nuclear Medicine



- Ultralute™ v1 is targeted at the clinical end-user market
- The European Mo99 generator market is completely Direct
- Ultralute™ registration in the EU has been determined to be a laboratory apparatus
- The largest single market for Mo99 generators in Europe is Germany
  - Germany accounts for almost 50% of European generator market
- Ultralute™ v2 is being developed for the Radiopharmacy user market

# Macquarie Medical Imaging



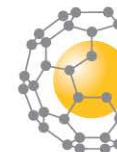
- Joint venture with:
  - 50% Alfred Health Solutions
  - 30% Macquarie University
  - 20% Cyclopharm
- Comprehensive suite of imaging modalities
- State of the art research platform
- Growth and profitability linked to ramp-up of Macquarie University Hospital
- EBIT positive since 2014
- Sales revenue increased 8% in 2016 as outpatient initiatives implemented at Macquarie University Hospital take effect
- Satellite Outpatient Clinic opened in 2H 2016 at nearby Macquarie Shopping Center





# **Priorities, Outlook & Key Performance Indicators**

# 2017 Strategic Priorities and Outlook



Strategic Goals & Guidance	Activity	Timeframe
<b>United States FDA Approval</b>	<ul style="list-style-type: none"> <li>• Commence patient recruitment</li> <li>• Complete 10<sup>th</sup> clinical site installation</li> <li>• Complete Technegas particulate study</li> <li>• Submit preliminary 40 patient report to the USFDA</li> <li>• Finalise patient recruitment</li> <li>• Submit New Drug Application to the USFDA</li> </ul>	May 2017 Q4 2017 2H 2017 1H 2018 1H 2018 1H 2018
<b>Indication Expansion</b>	<ul style="list-style-type: none"> <li>• Peer reviewed publication for China COPD study approved</li> <li>• Initiate UoN-HMRI-JHH clinical trial</li> <li>• Identify additional sites for pilot clinical trials targeting Technegas indication expansion</li> </ul>	Q2 2017 Q2 2017 2H 2017
<b>New Product – Ultralute™</b>	<ul style="list-style-type: none"> <li>• First sales of Ultralute™</li> <li>• Finalise multi-centre multi-country trial design with the IAEA</li> <li>• Complete IAEA trial</li> </ul>	2H 2017 2H 2017 1H 2018
<b>Expand Product &amp; Service Offering</b>	<ul style="list-style-type: none"> <li>• Identify and evaluate business prospects targeting growth, product extension, diversification, improved distribution models, accretion and enhanced returns</li> </ul>	Ongoing
<b>Trading Update – Ongoing Underlying Growth (excluding China)</b>	<ul style="list-style-type: none"> <li>• FY2017 Trading YTD is in line with Board’s Expectations</li> <li>• Continued growth in core underlying sales</li> <li>• Modest increase in generator and PAS volumes in existing markets</li> <li>• Investing in transformational growth</li> </ul>	FY 2017
<b>Full Year Guidance Affirmed</b>	<ul style="list-style-type: none"> <li>• Excluding the positive impact of the large Chinese order FY16, the board expects continuing modest growth in underlying Technegas volumes for FY17. Guidance affirmed.</li> <li>• Timing of orders in the pipeline could affect 1H/2H split hence guidance focused on full year outlook</li> <li>• Ultralute™ revenues, following launch in late H1 2017. Small contribution to FY17 results expected as new product builds traction. Larger contribution expected in FY18 and beyond.</li> </ul>	FY 2017

# Growth Opportunities and Key Performance Indicators

## Technegas

USA	<ul style="list-style-type: none"> <li>The USA represents the single largest market with half of the world's nuclear medicine departments located there</li> <li>Existing market for PE in the USA equates to ~480,000 patients per annum</li> <li>First priority following USFDA approval is to repeat our Canadian experience by replacing the Xe133 market valued at \$47m USD</li> </ul>
Currency	< 30% of revenues are \$AUD related; Currently > 55 % of Technegas revenues linked to Euro.
Seasonality	Historically 2H revenues are stronger due to higher procedures volume during northern hemisphere winters
Pricing & Product Margins	In 2016 the average selling price for a per patient PAS=\$50.33 AUD & Technegas Generators = \$24.9k AUD. Despite downward pressure on healthcare products globally, Technegas continues to maintain our margins. Consolidated GM of 77.7% in 2016 made up of PAS, the profitability engine room, accounting for 75% of total Technegas revenues.
Sales Volumes	PAS boxes sold in 2016= 4,284 equating to 214,200 patient studies Underlying Technegas generators volumes continue to average 50-60 units per year in 2016 plus an additional 50 units delivered to China end 2016
Competitive Products	<ul style="list-style-type: none"> <li>Xe133 has been eliminated from the Canadian market with the introduction of Technegas. Xe133 only used in the USA is a \$USD 47M product in 2015</li> <li>Kr89 – excellent imaging properties. Only available in a few countries due to limited availability and high cost</li> <li>DTPA in low patient volume sites continue where Technegas is available. Used in the USA off-label</li> <li>CTPA continues to dominate the PE space; however concerns with high CTPA radiation dose and improved nuclear medicine imaging techniques are bringing referrers back to nuclear medicine VQ imaging</li> </ul>
Intellectual Property	TechnegasPlus Generator patented until 2026 A new generation of Technegas generators is under development with the goal to extend patent protection
Clinical Indications	Primarily used for PE. Also used in preplanning and post surgical evaluation for lung reduction intervention The incidence of COPD is 30x that of PE. Furthermore, COPD represents an opportunity for ongoing patient management
Distribution	Cyclopharm continues to evaluate the effectiveness of Distributors/Agents/Partnerships/Independent
Facility Relocation	After 20 years of tenancy, in 2016 ANSTO notified Cyclopharm that our lease would not be renewed. One-off cost of relocation amounted to approximately \$0.43M in 2016 with an ongoing increase in facility costs.

# Growth Opportunities and Key Performance Indicators

Ultralute	
Market Penetration	<ul style="list-style-type: none"> <li>Europe targeted as the primary market to launch due to the highest concentration of end user Mo99 generators in the world</li> <li>1<sup>st</sup> Generation launched in Germany in May with initial sales to follow 1H 2017</li> </ul>
Margins	Product launch estimates 50% GM with margin improvement expected from leveraging volume growth
Product Development	<ul style="list-style-type: none"> <li>1<sup>st</sup> Generation targeting end users in hospitals and clinics to be commercialised in 2017</li> <li>2<sup>nd</sup> Generations targeted for Radiopharmacy will be introduced in 2018</li> </ul>
Other Applications	Discussions underway with interested parties for extended applications with other isotopes

MMI	
Revenue	Volumes closely aligned with the hospital. Continued double digit growth expected per annum in the foreseeable future
Profitability	EBITDA positive as of mid CY 2014
MRI Licensing	Significant increase in profitability if Government funded MRI licensing is achieved
Expansion	New outpatient facility opened at Macquarie Centre H2 2016

Cyclopet	
Molecular Imaging	Following competition from government owned enterprises, Cyclopharm's Board decided to suspend commercial operations. Subsequent to this decision the company successfully mediated an outcome that resulted in ANSTO paying \$2.65M to Cyclopharm. Cyclopharm has no immediate intention of re-entering this market under the current competitive landscape.
Facility	Fully written off. Discussions underway relating to the long term to include partnerships and disposal of the facility



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All references to dollars unless otherwise specified are to Australian dollars.

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