



Global Opportunity In Industrial Wastewater

**De.mem Limited (ASX:DEM)**

Investor Presentation | May 2017

Andreas Kroell | CEO & Director

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All figures included in this presentation are in AUD\$ unless otherwise stated. Assumed exchange rate of AUD\$1:USD\$0.75

# A Global Opportunity

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**“De.mem has a multi-billion dollar opportunity in the wastewater treatment sector, driven by environmental trends and regulatory changes around the world”**



Andreas Kroell, CEO  
De.mem Limited (ASX:DEM)

To watch the Executive Interview  
[Click Here](#)

The global water and waste water solutions market has an estimated annual capital expenditure of

**AUD\$240 billion\***

**Trend towards de-centralised units and recycling  
of waste water**



# Innovative Wastewater Solutions

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De.mem designs, builds, owns and operates de-centralised wastewater treatment systems

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Innovative membrane based wastewater filtration technology – Industrial waste water focus

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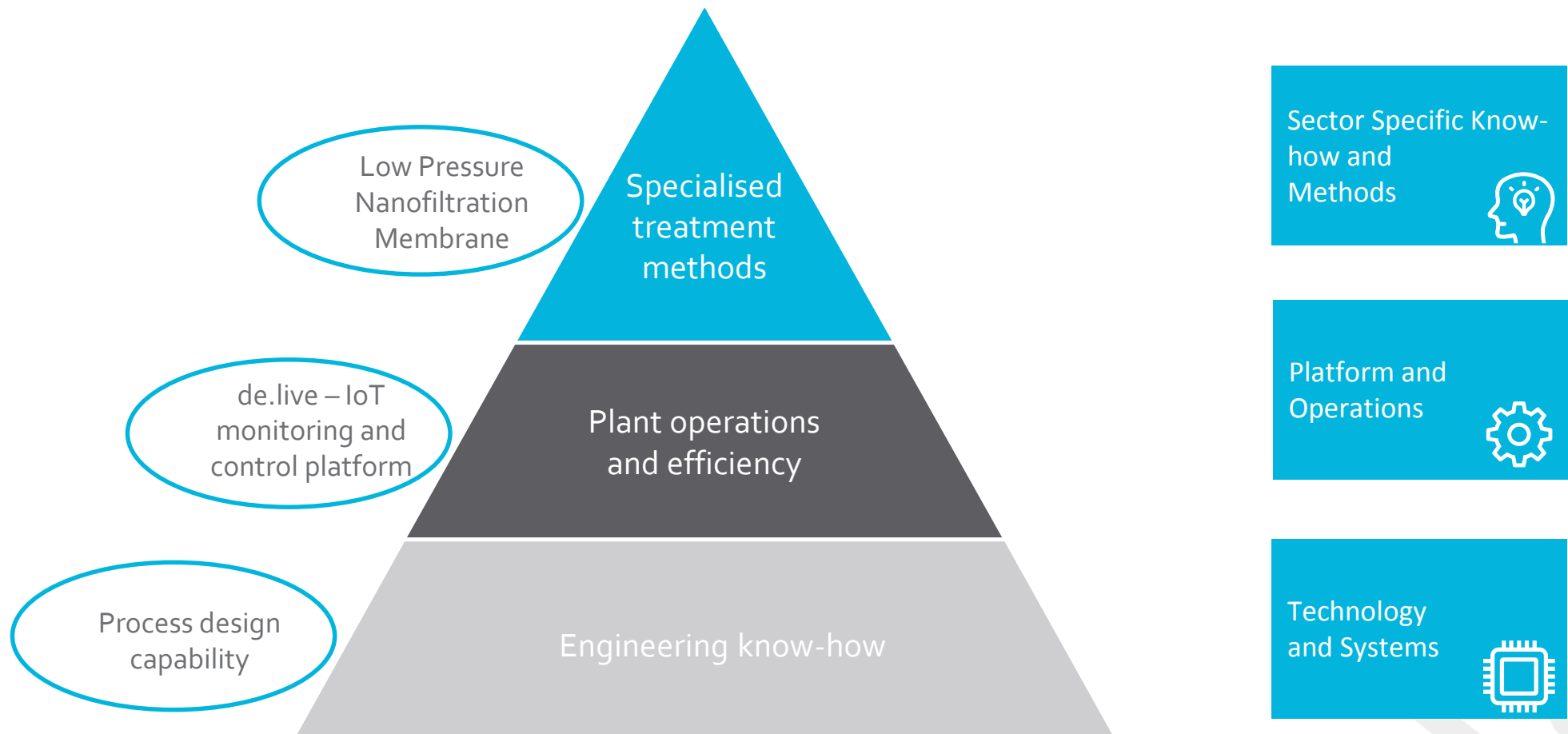
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Licensed proprietary technologies from Nanyang Technological University (NTU) in Singapore

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Revenue generating and positioned for growth

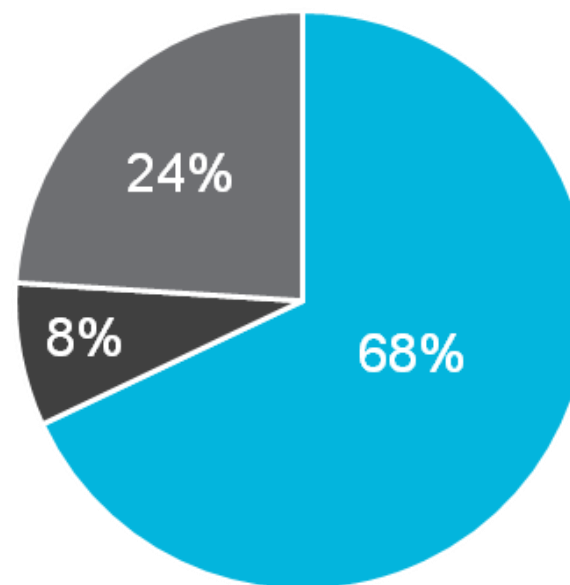
# Leading Technology & Engineering Knowhow



# Corporate Overview

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|                        |              |
|------------------------|--------------|
| ASX code               | DEM          |
| Ordinary shares        | 95.8m        |
| Market capitalisation  | \$30m        |
| Cash on hand (31.3.17) | \$4.9m       |
| Listed on ASX          | 7 April 2017 |
| Issue price            | \$0.20       |
| Last price (22.5.17)   | \$0.31       |
| 52 week high           | \$0.50       |
| 52 week low            | \$0.31       |
| Average daily volume   | 198,000      |
| GICS classification    | Utilities    |



- NA Singapore Fund / New Asia Inv / Vendor / Other
- Pre-IPO
- IPO

# Targeting High Growth Industrial Sectors



## Food & Beverage

- Water and wastewater
- High turbidity, solid and oil & grease removal
- Discharge & recycling



## Oil & Gas

- Wastewater
- High turbidity, oil & grease removal
- Discharge & recycling



## Electronics

- Water and wastewater
- Heavy metals removal
- Ultra pure water
- Discharge & recycling



## Palm Oil Industry

- Wastewater
- High organic and oil content
- High temperature
- Discharge



## Mining

- Wastewater
- Environmentally friendly
- Remote operations
- Discharge, recycling and recovery



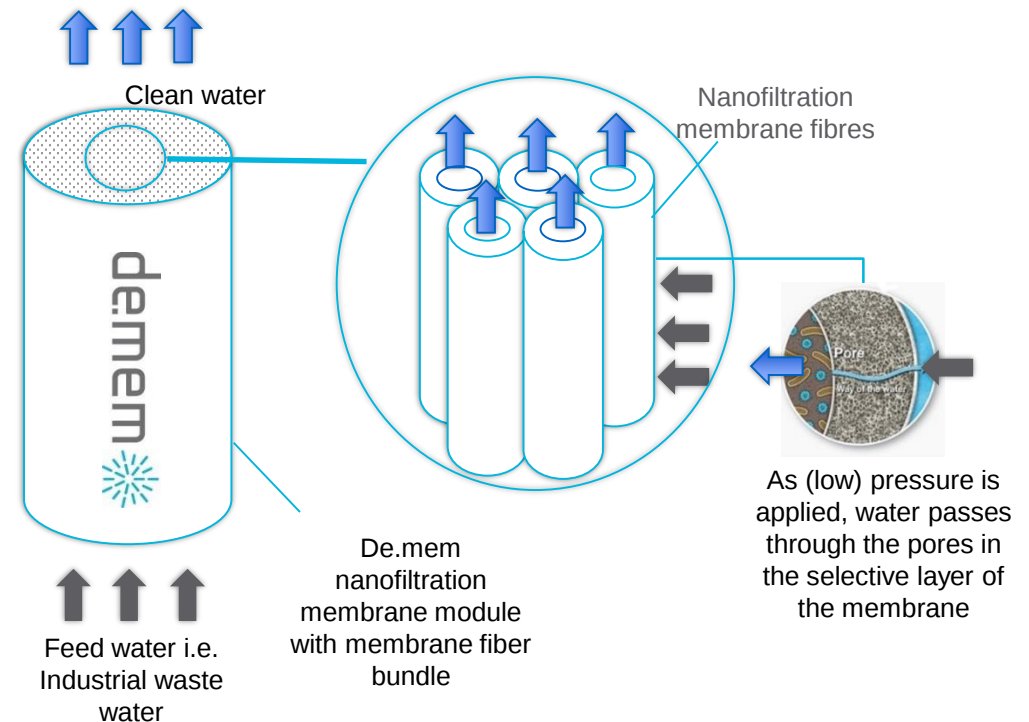
## Municipal & Residential

- Potable and wastewater
- Off the shelf products
- Using river or well water
- Meeting required quality

De.mem has partnered with **Nanyang  
Technological University  
(Singapore)**, one of the leading water  
universities in the world

# Unique Proprietary Low Pressure Membrane

- De.mem commercialises a novel low pressure hollow fibre nanofiltration (NF) membrane developed at NTU in Singapore
- The membrane can reduce power consumption by up to five times
- Significant reduction in operating cost and investment relative to traditional technologies
- De.mem plans to expand its portfolio of proprietary technologies in the coming months



# NF Membrane Ready For Infield Validation

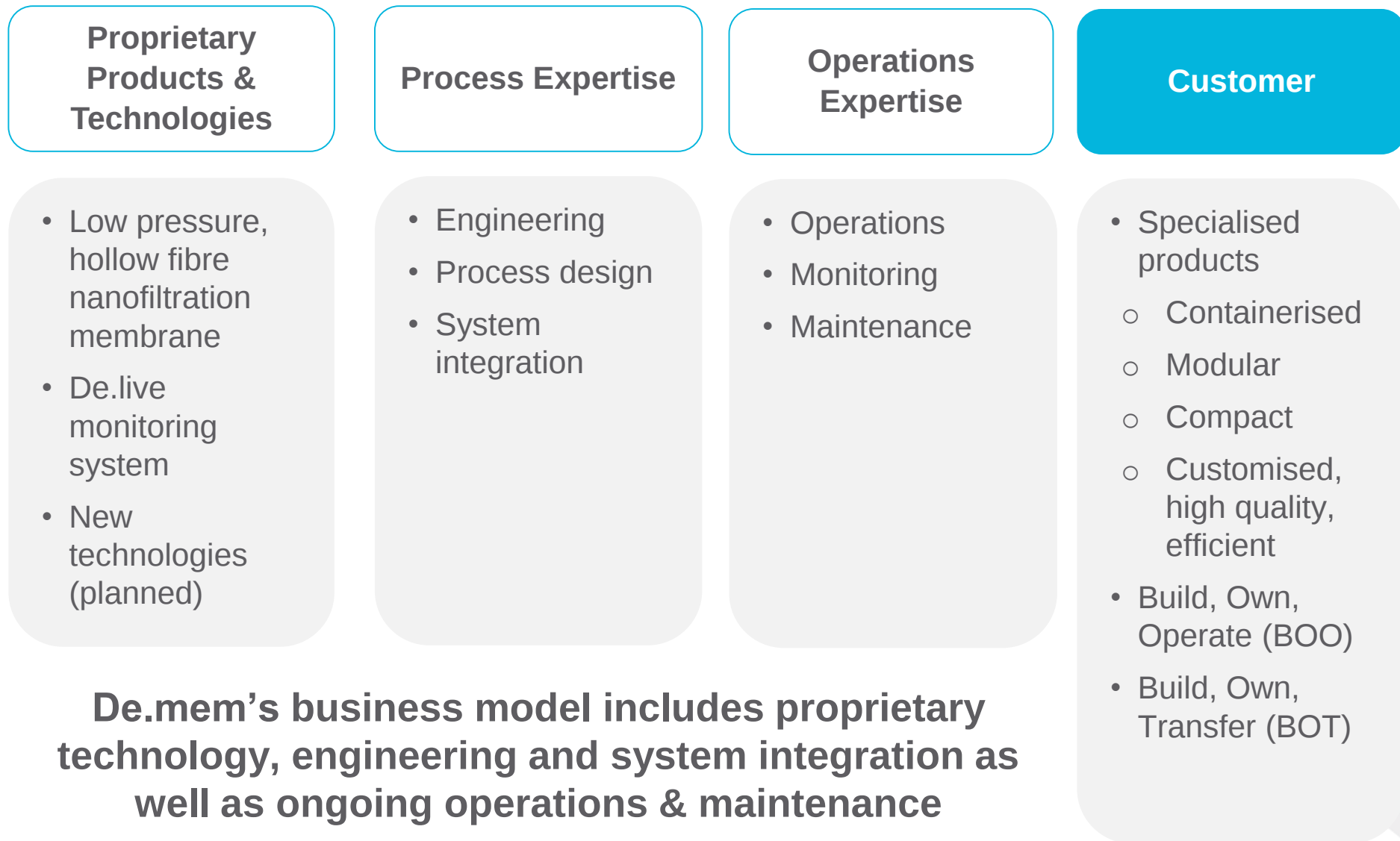
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- Successfully tested on different types of water / wastewater streams since 2015
- First industrial sized module produced in April 2017
- Production of the NF membrane in pilot factory in Singapore to commence shortly
- Infield validation and implementation from Q3 2017 onwards



Professor Wang, Nanyang Technological University

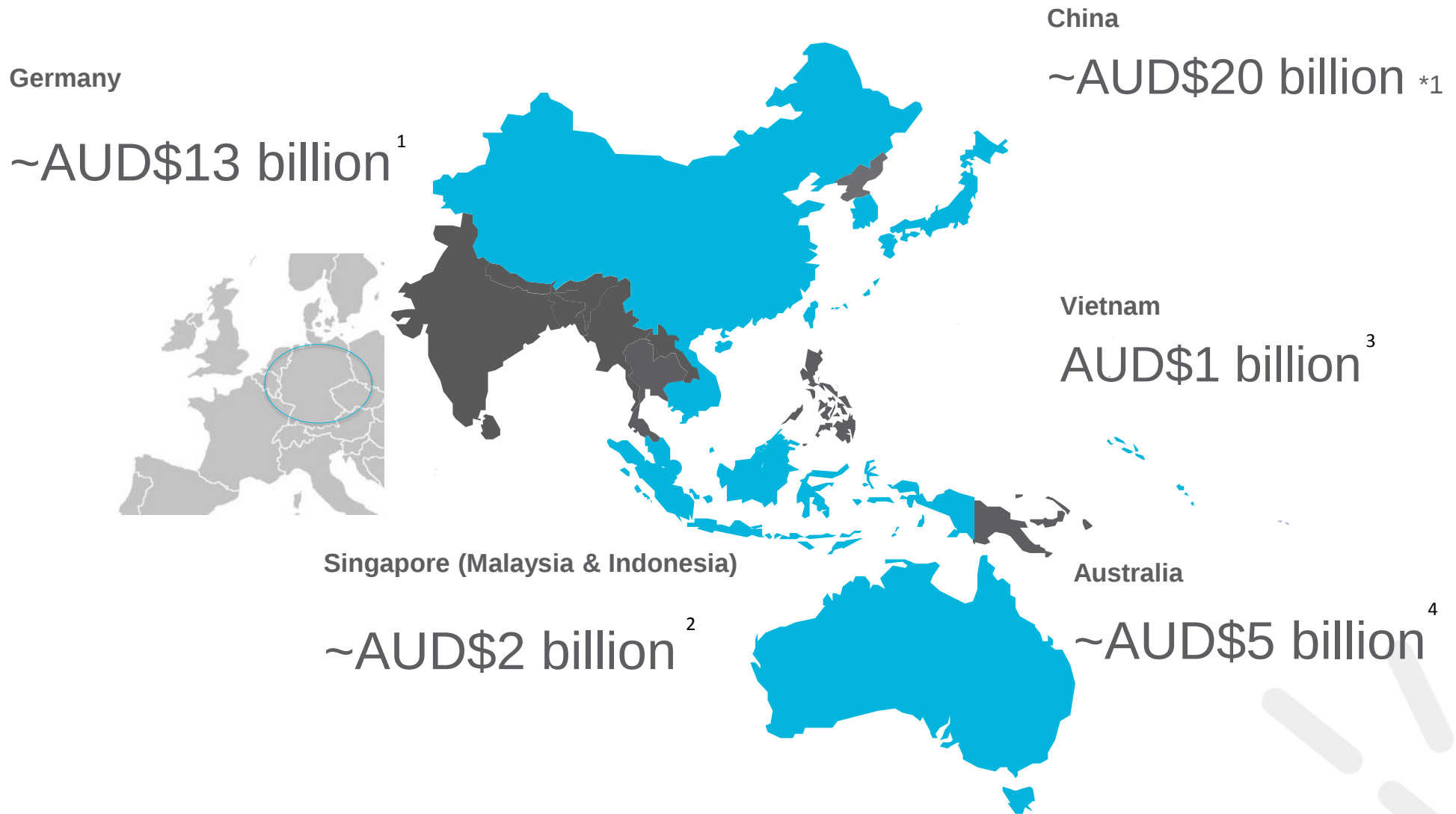
# Integrated Business Model



# Highly Scalable Revenue Model

| Build-Own-Operate<br>or<br>Build-Own-Transfer                                                                                                                                              | Equipment sales                                                                                                         | Pricing                                                                                                                                                                                                         | Customer base                                                                                                                                                                                            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>• De.mem owns the equipment</li><li>• Long term contract with the customer</li><li>• Stable recurring revenue stream</li><li>• High margin</li></ul> | <ul style="list-style-type: none"><li>• Customer driven</li><li>• Opportunity for ongoing maintenance revenue</li></ul> | <ul style="list-style-type: none"><li>• Flexible pricing structure</li><li>• De.mem's pricing model allows the company and its customers to share those savings – providing a genuine win-win outcome</li></ul> | <ul style="list-style-type: none"><li>• Multi-national corporations operating in high growth markets &amp; high volume sectors</li><li>• Clients with manufacturing presence in many countries</li></ul> |

# Expanding Into Growth Markets



Sources: 1. Global Water Intelligence 2. The Singapore EDB 3. Frost & Sullivan 4. IBIS

**85%** of the total wastewater  
generated in urban areas in China should be treated  
and **20%** of the treated wastewater should be  
reused

(China's Water Development Plan 2011-2015)

De.mem's pipeline of opportunities is growing rapidly and currently stands at

**AUD\$10m+**

and includes opportunities in China, Germany and Australia

# Global Commercial Validation

Impressive pedigree of clients & completed projects in 2015 & 2016



Robust \$10m+ pipeline of opportunities for 2017 & 2018



# Significant Leverage Play

| Company                             | FY16 Revenue                       | Market Capitalisation (22.5.17) | Technology                              | Market Focus                                                                    |
|-------------------------------------|------------------------------------|---------------------------------|-----------------------------------------|---------------------------------------------------------------------------------|
| Emefcy (ASX:EMC)                    | A\$0.8m<br>(12 months to 31/12/16) | A\$220m                         | Aeration                                | Municipal waste water                                                           |
| Phoslock Water Solutions (ASX: PHK) | A\$1.9m<br>(6 months to 31/12/16)  | A\$67m                          | Chemicals that bind dissolved phosphate | Prevention of algae growth                                                      |
| De.mem (ASX:DEM)                    | A\$0.3m<br>(12 months to 31/12/16) | A\$29m                          | Membranes                               | Industrial (across many sectors) & Municipal/ Residential Water and Waste Water |

# Experienced Board & Management Team

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**Cosimo Trimigliozzi | Chairman**  
COO of Wild Flavors International  
Managing Director Givaudan Asia  
MBA, University of Basel,  
Switzerland



**Bernd Dautel | Non-Executive Director**  
Director New Asia Investments  
Managing Director Wieland Metals  
Asia Pacific  
Master of Chemical Engineering,  
Karlsruhe University of Technology,  
Germany



**Andreas Kroell | CEO and Director**  
Director New Asia Investments  
Deutsche Bank  
Deloitte Corporate Finance  
MBA, University of Frankfurt,  
Germany



**Stuart Carmichael | Non-Executive Director**  
Partner & Director Ventnor Capital  
Executive Vice President UGL Limited  
(ASX:UGL)  
KPMG Corporate Finance  
Bcom, CA



**Nicanor Suarin | Chief Engineer**  
Hyflux  
Doosan  
Bachelor of Engineering, MBA,  
Philippines



**Michael Edwards | Non-Executive Director**  
CEO Latitude Consolidated (ASX:LCD)  
Non-Executive Director Norwood  
Systems Limited (ASX:NOR) & Dawine  
Limited (ASX:DW8)  
BBus (Economics / Finance), BSc  
(Geology), Grad Dip (Oen)

# Key Milestones

- Award of customer contracts
- Expansion into key growth markets
- M&A / Partnerships / JV's
- Access to new technology / intellectual property

# Why Invest?



**Substantial market opportunity:** global expenditure in wastewater sector expected to reach AUD\$125bn by the end of 2016<sup>1</sup> and the membranes market in particular forecast to be worth AUD\$43bn by 2020<sup>2</sup>



**Established revenue generating** business with a strong presence in emerging Asian markets (Singapore and Vietnam)



**Patented technology** licensed from a leading water technology university, software development and extensive know how providing significant barriers to entry



**Strong activity pipeline** with expansion into Australia, Germany and China during 2017 & further product development in progress including innovative NF membrane technology



**Flexible revenue model** and a low cost base: Existing projects providing stable cash flow and recurring service revenues



**Significant customer pipeline** throughout Singapore and Vietnam and new markets of Australia, Germany and China



## Appendix

# Select Project Experience (Build-own-operate)

## Factory of Swiss Multinational, Flavours Industry, Singapore



- Capacity: Up to 50 m3 per day
- Industrial waste water with high and varying COD content
- Limited availability of space requires containerised solution
- Currently in pilot phase

## Factory of French Multinational, Electronics/Plating, Singapore



- Capacity: Up to 50 m3 per day
- Industrial waste water with high content of chemicals from plating process
- Using a customised treatment process designed by De.mem
- Operational in April 2016

## Factory of Japanese Multinational, Electronics, Singapore



- Capacity: 1 m3 per day
- Industrial waste water with extremely high COD and ethanol content
- Using a customised treatment process designed by De.mem
- Operational in March 2016

## Vinh Water Treatment Plant, Nghe An Province, Vietnam



- Project description: See previous slide
- De.mem operates the plant and sells water under a long term supply agreement
- Water is used for drinking by municipality and by nearby textile factory
- Commenced in January 2015

# Select Project Experience (Equipment Sales)

## Hanoi University of Agriculture Water Tr. Plant, Hanoi, Vietnam



- Capacity: Up to 2,000 m3 per day
- Using UF membranes
- Supplies the campus of the university
- Operational in December 2015
- System sales agreement worth approx. 170 k USD (2015)

## Factory of Multinational Corporation, Oil & Gas, Singapore



- Capacity: Up to 10 m3 per day
- Industrial waste water with high oil content
- Using a customised treatment process designed by De.mem
- Operational in Dec 2015
- System sales agreement worth approx. 20 k SGD (2015)

## Duc Hoa Water Treatment Plant, near Saigon, Vietnam



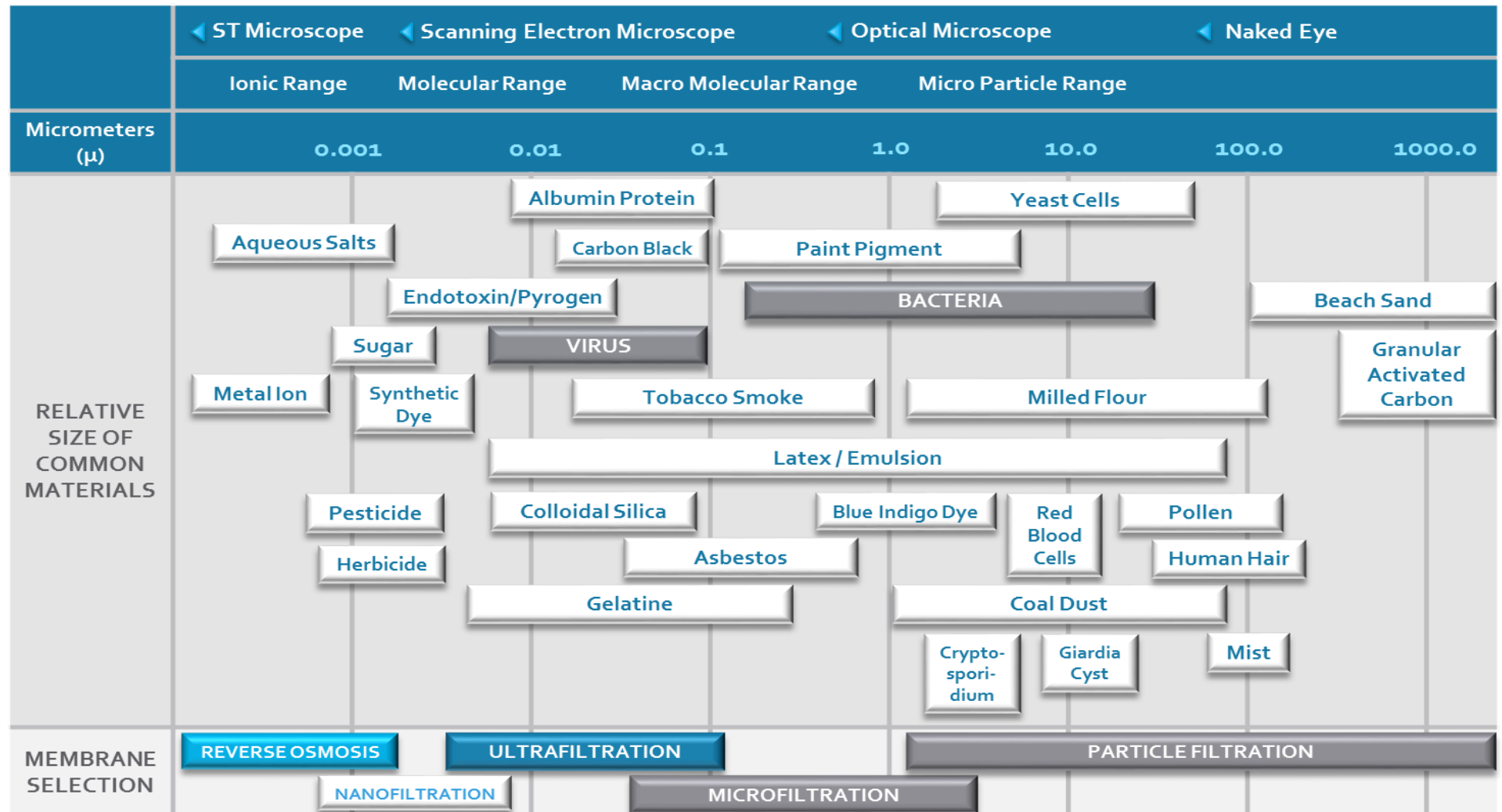
- Capacity: Up to 1,000 m3 per day
- Using UF, RO and advanced pre-filtration processes
- Supplies a nearby industrial park
- Operational in January 2015

## Vinh Water Treatment Plant, Nghe An Province, Vietnam



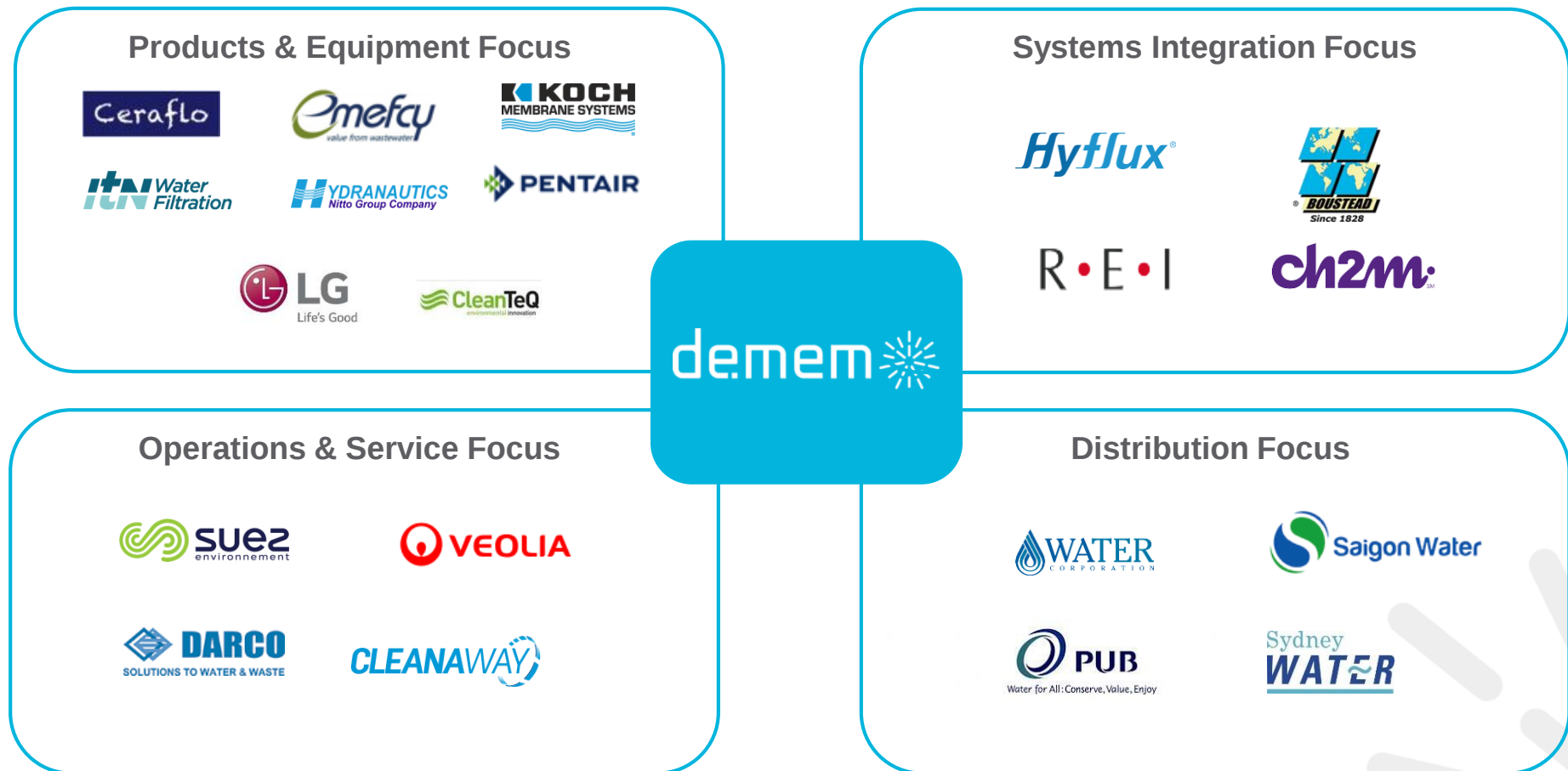
- Capacity: Up to 1,000 m3 per day
- Using UF membranes
- Supplies a municipality outside Vinh City with currently about 2,000 households connected
- Operational in January 2015
- EPC contract worth approx. 330 k USD (2014)

# Filtration Spectrum



# Competitively Positioned in a Fragmented Market

De.mem covers all aspects of the value chain in a fragmented market, providing end users with a cost effective, full service solution to manage their wastewater production capacity



ASIA PACIFIC

AUSTRALIAN IPO

Singapore's De.mem pivots to industrial market ahead of Aussie listing

Venture capital-backed decentralised water treatment firm De.mem is launching an IPO on the Australian Stock Exchange as it looks to raise funds to break into Australia and China. It is targeting the industrial wastewater market with a new nanofiltration product.

De.mem, an engineering and equipment sales business based in Singapore, is planning to raise A\$375.45 million (US\$2.935 million) via an initial public offering (IPO) on the Australian Stock Exchange at the end of March. New shares worth 25% of the post-money equity are available to purchase until 23 March as the company looks beyond its existing markets of Vietnam and Singapore. The company intends to spend 25% of the IPO proceeds on commercialising its proprietary nanofiltration membrane, 14% on new build-out operations in Australia and 15% on expanding into industrial wastewater treatment markets in China. De.mem was originally formed in 2013 by venture capitalist New Asia Investments – through a fund co-seeded by the Singaporean government and a number of individual investors – to address a market for engineered decentralised water treatment systems in Vietnam. The market while they were pursuing sales leads for Membrane Instruments and Technology (MINT), a company spun out of Nanyang Technological University (NTU) to commercialise acoustic and integrity sensors for membranes. According to Andreas Kroell, CEO of De.mem, in January 2016 “the intellectual property around MINT got injected into more give De.mem more critical mass.” “The company side with a few projects on Vietnam which we did in the older days,” Kroell told GWI. “But in the past 12 months we have shifted much more to the industrial segment [where] the margins are more attractive.” Although De.mem

GLOBAL WATERS INTELLIGENCE MAGAZINE

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SELLING SAUDI WASTEWATER BY THE POUND

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Water treatment proves to be cost-saver

NTU-linked start-up helps car groomer, MNCs cut expenses

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De.mem eyes commercial launch

De.mem has produced the first industrial standard membrane module, paving the way for commercial market launch.

The module is a closed cylinder filled with NF membrane fibres.

The module has been built at Nanyang Technological University in Singapore, who exclusively licensed its innovative low-pressure hollow fibre nano-filtration membrane technology to De.mem in June 2016.

NTU scientists invent water filter that cuts energy use by 80%

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De.mem closes IPO early, raises \$4.5m

De.mem closes IPO early, raises \$4.5m

De.mem closes IPO early, raises \$4.5m

De.mem closes IPO early, raises \$4.5m



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