



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”



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

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

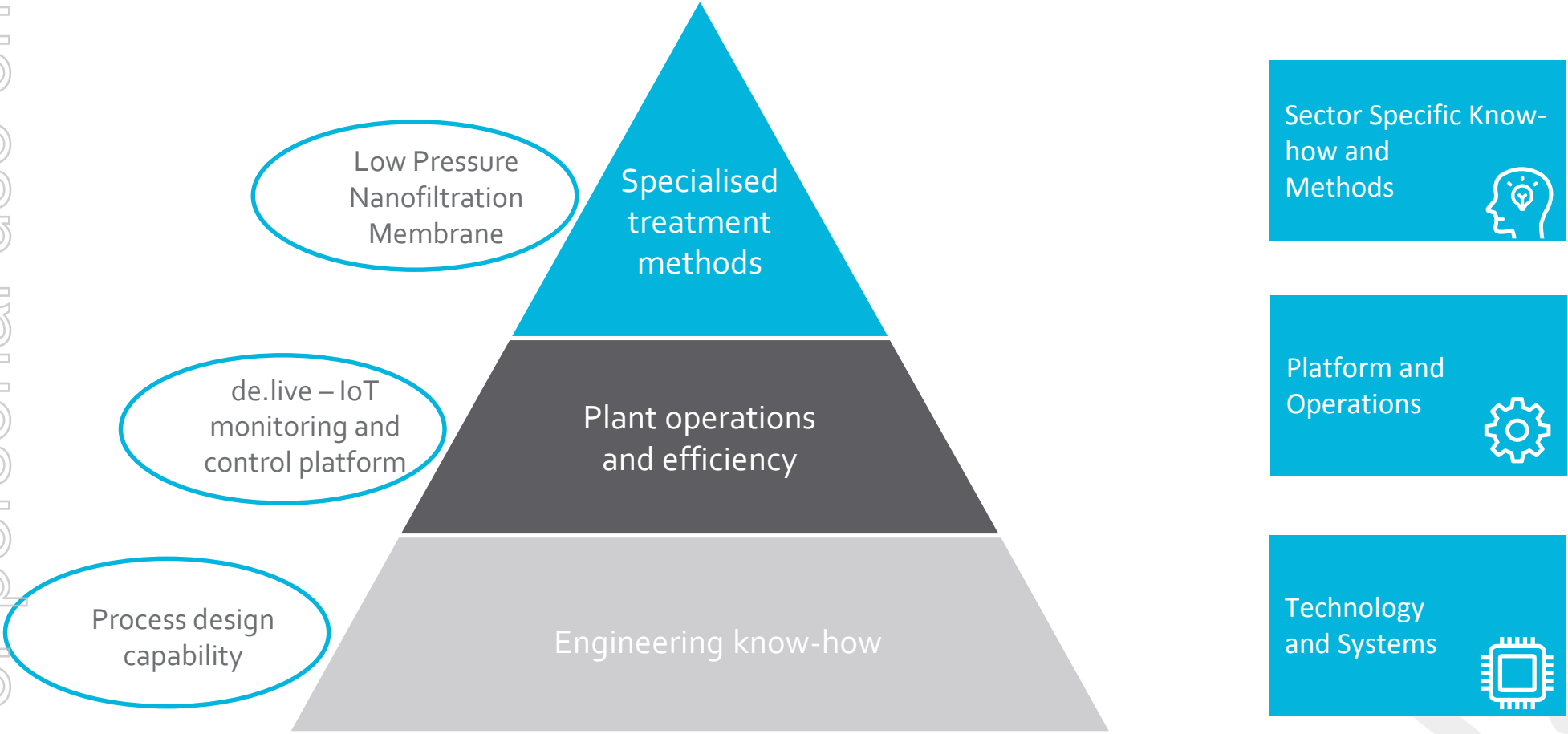
Licensed proprietary technologies from Nanyang Technological University (NTU) in Singapore

Innovative membrane based wastewater filtration technology – Industrial waste water focus

Revenue generating and positioned for growth

Leading Technology & Engineering Knowhow

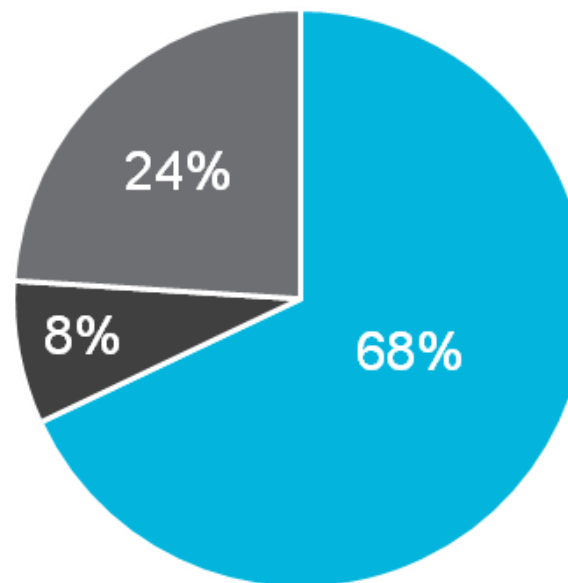
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Corporate Overview

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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

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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

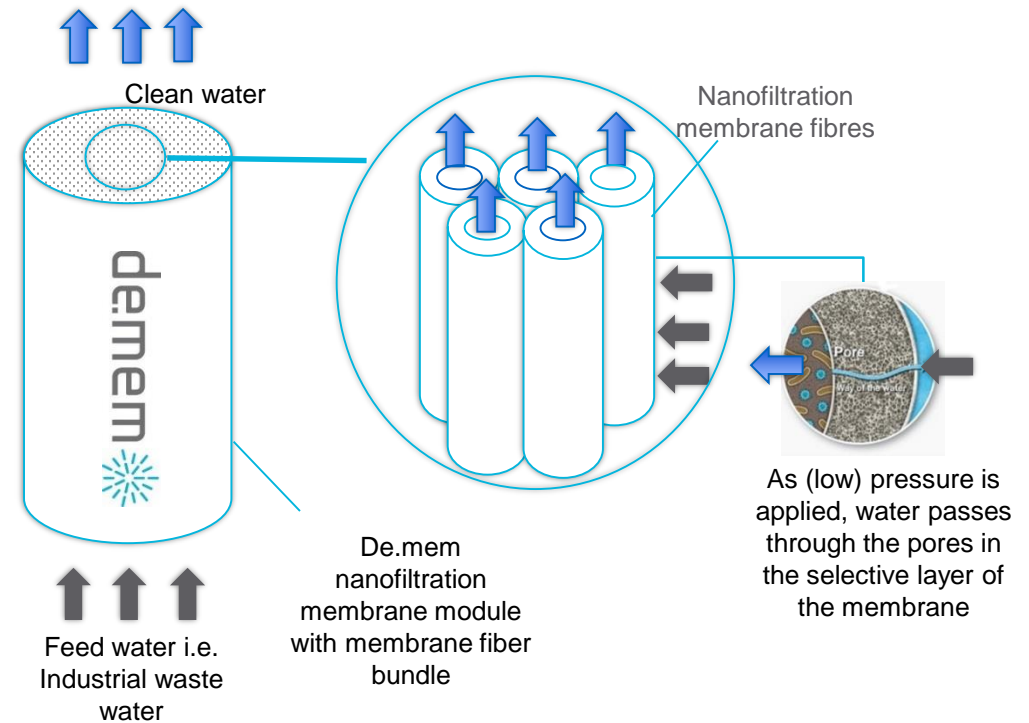
- Potable and wastewater
- Off the shelf products
- Using river or well water
- Meeting required quality

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

Unique Proprietary Low Pressure Membrane

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- 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

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Proprietary Products & Technologies

- Low pressure, hollow fibre nanofiltration membrane
- De.live monitoring system
- New technologies (planned)

Process Expertise

- Engineering
- Process design
- System integration

Operations Expertise

- Operations
- Monitoring
- Maintenance

Customer

- Specialised products
 - Containerised
 - Modular
 - Compact
 - Customised, high quality, efficient
- Build, Own, Operate (BOO)
- Build, Own, Transfer (BOT)

De.mem's business model includes proprietary technology, engineering and system integration as well as ongoing operations & maintenance

Highly Scalable Revenue Model

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Build-Own-Operate or Build-Own-Transfer

- De.mem owns the equipment
- Long term contract with the customer
- Stable recurring revenue stream
- High margin

Equipment sales

- Customer driven
- Opportunity for ongoing maintenance revenue

Pricing

- Flexible pricing structure
- De.mem's pricing model allows the company and its customers to share those savings – providing a genuine win-win outcome

Customer base

- Multi-national corporations operating in high growth markets & high volume sectors
- Clients with manufacturing presence in many countries

Expanding Into Growth Markets

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Germany

~AUD\$13 billion¹



China

~AUD\$20 billion^{*1}



Vietnam

AUD\$1 billion³

Singapore (Malaysia & Indonesia)

~AUD\$2 billion²

Australia

~AUD\$5 billion⁴

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

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Impressive pedigree of clients & completed projects in 2015 & 2016

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



NVA LAND

American multinational corporations, oil sector,

Givaudan

GROOMWERHZ

euvi pharm

Japanese multinational corporations, electronics sector, Singapore

RYOBUKI UNIVERSITY OF AGRICULTURE
1956
55th Anniversary of Establishment



China
Currently evaluating partnership options

Germany
Pipeline projects in agriculture, food & beverage sectors, resort & spas

Australia
Pipeline projects in municipal & residential sector, food & beverage, agriculture, mining

Vietnam
Pipeline projects in municipal & residential sector, food & beverage

Singapore
Extensive pipeline in petrochemical, oil & gas, food & beverage, electronics sectors

Significant Leverage Play

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

Experienced Board & Management Team



Cosimo Trimigliozi | 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)

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Key Milestones

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

Why Invest?

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Substantial market opportunity: global expenditure in wastewater sector expected to reach AUD\$125bn by the end of 2016¹ and the membranes market in particular forecast to be worth AUD\$43bn by 2020²



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

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demem 

Appendix



Select Project Experience (Build-own-operate)

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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)

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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

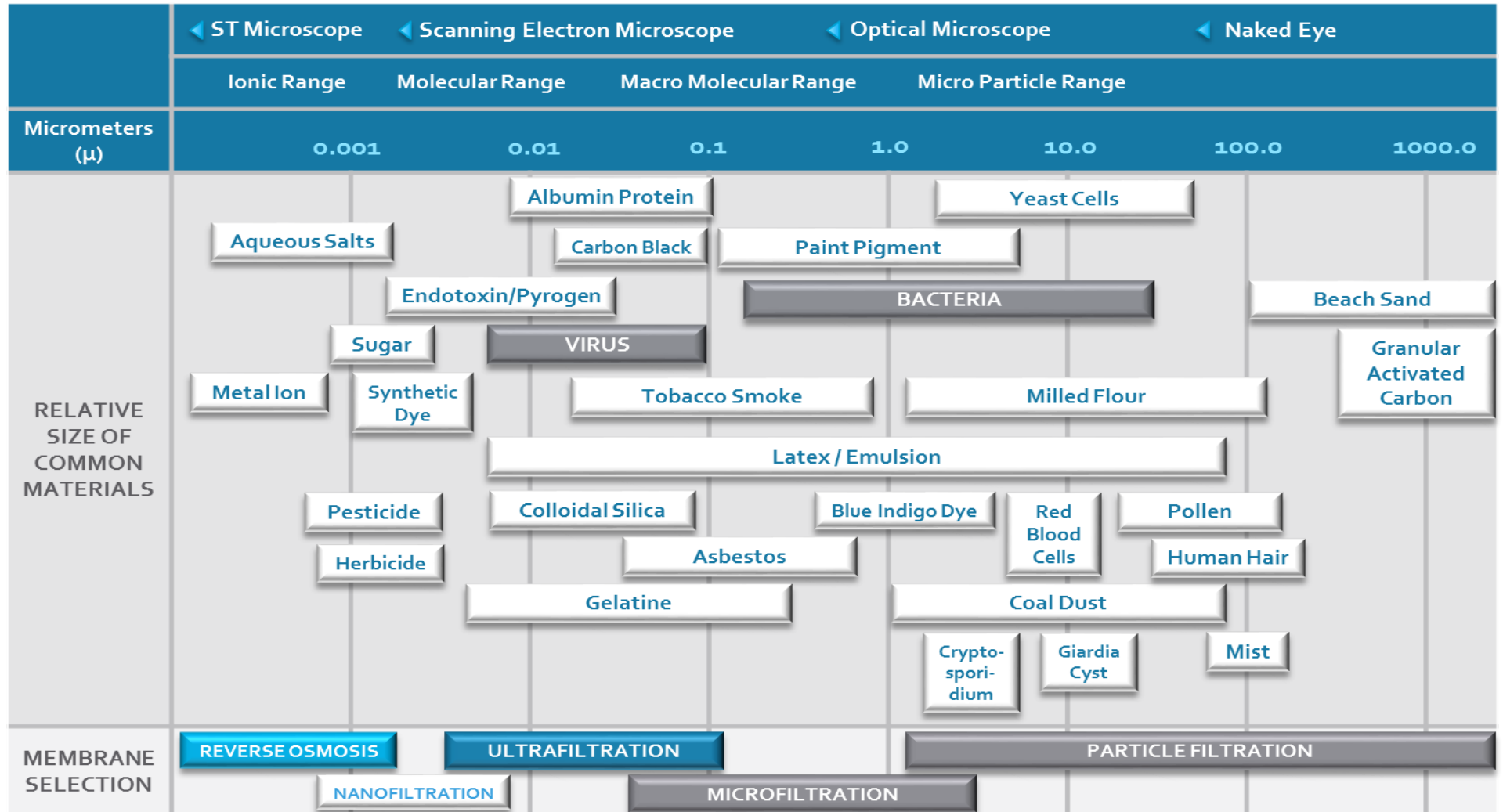
Vinh Water Treatment Plant, Nghe An Province, Vietnam



- 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)

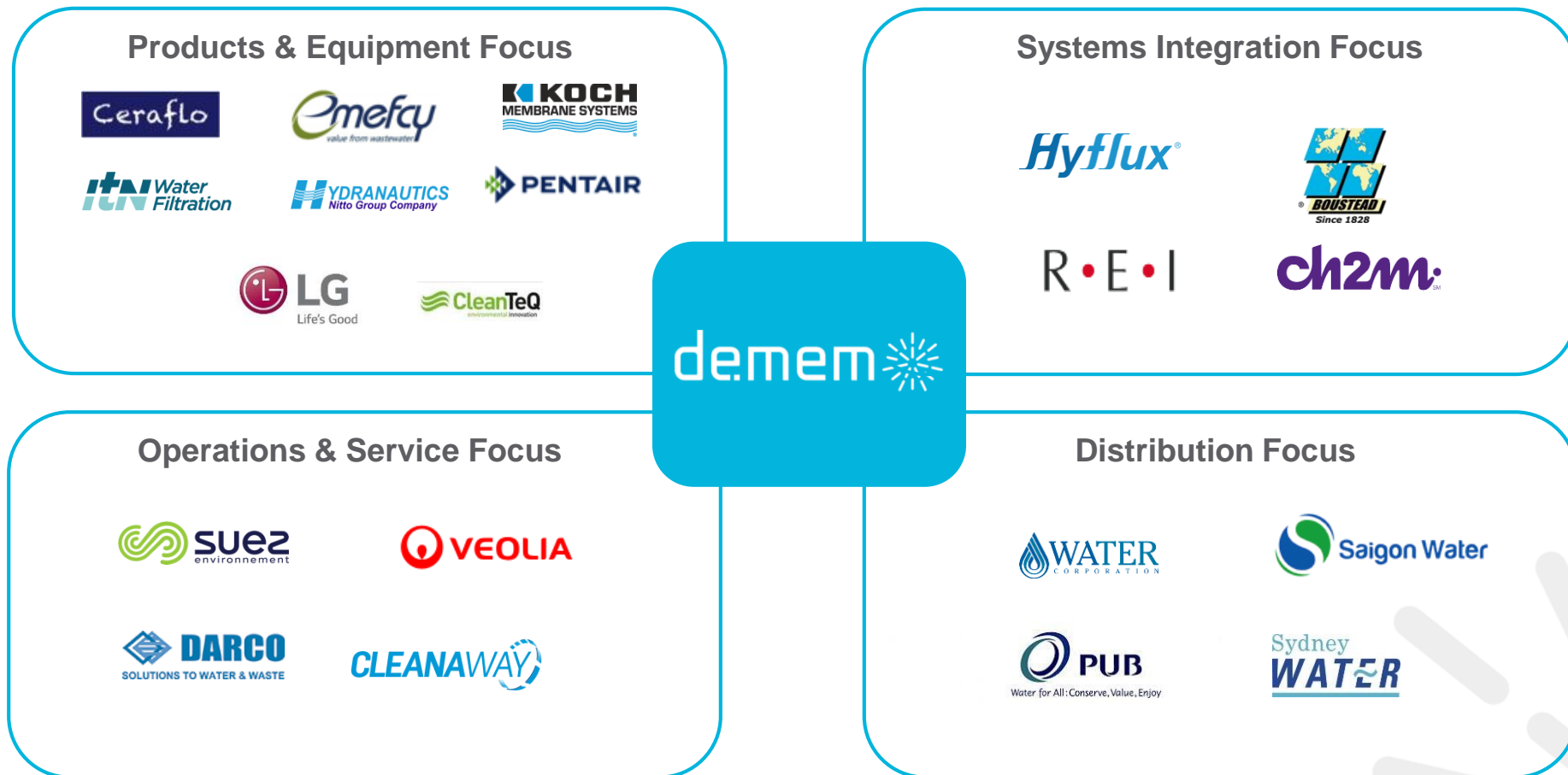
Filtration Spectrum

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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



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ASIA PACIFIC

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

AUSTRALIAN IPO
De.mem, an engineering and equipment sales business based in Singapore, is planning to raise \$53.75-4.50 million (US\$2.9-3.5 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 beyond 23rd 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, 34% on new build-own-operate (BOO) contracts and 15% on expanding into industrial wastewater treatment markets in Australia and China. De.mem was originally formed in 2013 by venture capitalist New Asia Investments through a fund co-seeded by the Singapore 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, the company started initially more around MINT got injected in De.mem to give De.mem more critical mass. "The company side with a few projects on the municipal side which we did in the past 12 months we have shifted much more to the industrial segment [where] the margins are more attractive." Although De.mem

FULL-TIME FOCUS



Andreas Kroell moved over full time from venture capital backer New Asia Investments in 2016.



Water treatment proves to be cost-saver

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

Carwash boom
 Washing your vehicle is not getting less clean. Car washes in Singapore are becoming more sophisticated, thanks to water treatment technology. NTU-linked start-up De.mem provides water treatment systems for car washes, helping car wash operators to reduce their water and electricity costs. De.mem's water treatment systems are designed to be compact and easy to install. They are also designed to be easy to maintain. De.mem's water treatment systems are designed to be compact and easy to install. They are also designed to be easy to maintain.



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THE BUSINESS TIMES

NTU BREAKTHROUGH: Scientists invest 2-year energy saving water filter

HOCK LOCK SEW: Property cyclist excited over 2 big deals for good reason: COMPARES 5 MARKETS / 6

MARKETS: SSI 2,863.17 -0.36, SFCOMP 0.0000, NIKKEI 225 16,274.34 -162.79, DAXI DAXI 30,764.91 -171.64, SENSEX 8,114.69 -1.91, CMC 1,000.00 0.00

CHELOOT REPORT: Fate of waste land should preoccupy us

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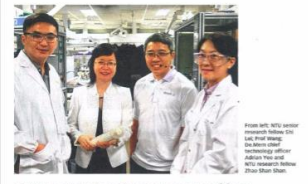
Offer only available online, ends June 30. Conditions apply.

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%

By Andreas Koh
 Scientists at Nanyang Technological University (NTU) have developed a new water filter that uses 80% less energy than conventional filters. The filter is made of hollow fibre nano-filtration membranes. The filter is made of hollow fibre nano-filtration membranes. The filter is made of hollow fibre nano-filtration membranes.

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

Singapore based De.mem Limited has closed its IPO early and oversubscribed, raising the maximum amount of \$4.5 million.

It has applied to the ASX to have its shares quoted for trading (under the code DEM), which subject to ASX approval is expected to occur in the coming weeks. On listing the company would have an implied market capitalisation of \$19 million, based on the \$0.20 per share offer price.

Alto Capital is the lead manager to the IPO and Ventnor Capital is the corporate advisor.

De.mem produces innovative membrane based waste water filtration technology providing high-end systems and solutions for de-centralised water treatment in the Asia-Pacific region. According to its prospectus it is currently generating revenues and has a strong pipeline of near term contract opportunities.

It is backed by a range of proprietary technologies developed at Nanyang Technological University (NTU) in Singapore, one of the leading institutions in the water sector worldwide.



De.mem Limited (ASX:DEM)

Andreas Kroell

CEO

De.mem Limited

investor@demem.com.sg

Corporate Enquiries

Shane Wee

Director

Alto Capital

shane@altocapital.com.au

Media & Investor Enquires

Julia Maguire

Director

The Capital Network

julia@thecapitalnetwork.com.au

+61 419 815 386

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