



ASX RELEASE | De.mem Limited (ASX:DEM)

De.mem Receives First Order for Graphene Oxide Enhanced Membrane Cartridges

7 February 2024: Australian headquartered, international water technology company De.mem Ltd (ASX:DEM) (“De.mem” or “the Company”) is pleased to announce that the Company has received the first sales contract for its recently developed Graphene Oxide (“GO”) enhanced membrane technology.

First Revenues from Graphene Oxide Enhanced Membrane Technology

The order is a significant milestone as it is the first commercial quantity of Graphene Oxide enhanced membrane cartridges supplied to a customer.

Based on the order, De.mem will supply its GO enhanced membrane cartridges to Grafoid, Canada (“Grafoid”), the parent company of Purafy, Canada (“Purafy”). Grafoid/Purafy is De.mem’s partner for domestic water treatment applications in North America. The order is valued at approximately \$55,000 in revenues for De.mem.

Global Commercialisation

This order commences the commercial launch of De.mem’s GO membrane technology through the partnership with Purafy. The membrane cartridges will be deployed by Grafoid/Purafy for applications that do *not* require National Sanitary Foundation (NSF) approval.

The completion of the NSF certification, which is the regulatory product certification for drinking water applications in the USA, will widen the addressable market (see further details below).

Targeting the Global Market for Domestic Water Filtration

Through the partnership, De.mem targets the global market for domestic water filtration.

The new GO enhanced membrane technology is particularly well suited for domestic water filtration applications. Thanks to the membrane’s high throughput, the size of the membrane cartridge can be reduced significantly while maintaining the same treatment capacity. This is a key requirement for domestic water filtration applications, which are typically exposed to space constraints.

The global market for domestic water filters is a large commercial market growing faster than the overall water treatment industry. It is estimated at USD 8.6 billion in 2018 and expected to grow by 15.9% per annum to reach approx. USD 24.1 billion by 2025 (Source: Grand View Research, Home Water Filtration Market Unit Market Size, 9 July 2019). The Asia-Pacific region accounts for the largest share in the overall market for domestic water filters.

De.mem conservatively estimates its Year 1 and 2 revenues from the Purafy partnership during the initial market introduction phase at approx. \$300k and \$750k from the NSF certified product in the North American and Australian markets respectively (see the ASX announcement “De.mem signs technology commercialisation partnership agreement” dated 19 July 2022 for further details). Additionally, De.mem expects further upside from:

- Sales of the product for non-NSF applications such as the order received.
- Year 3 sales revenue growth in North America and Australia.
- Launch into other global markets.
- Release of new product applications.



NSF Certification

The completion of regulatory product certifications for drinking water applications will widen De.mem's addressable market. The relevant approval authorities are the NSF (National Sanitation Foundation) for the USA and the WaterMark certification in Australia.

On 19 July 2022, De.mem announced its Purafy partnership, with the objective of launching the GO enhanced membrane technology as the key component of Purafy's domestic and portable/mobile water treatment products into the North American and Australian markets, and subsequently into other global markets. De.mem will manufacture and supply the GO enhanced membrane cartridges.

During 2022, De.mem initiated the process with the NSF to obtain approval for use of the new GO membrane technology for potable water treatment applications in the USA. De.mem has been liaising with the NSF regularly since then and already fulfilled a number of key technical milestones and tests. Completion of the process is expected within the coming months.

New GO Enhanced Technology Developed in Singapore

De.mem originally presented its GO enhanced membrane technology on 7 September 2021 (see ASX release "*De.mem Presents Next Generation Membrane Technology*").

Developed in house at De.mem's facility in Singapore, the GO membrane technology is proven to deliver:

- 20-40% higher water flux (=throughput, or volume of clean water produced) vs. standard polymer ultrafiltration membranes;
- Ultra-high water flux significantly higher than the above, for selected applications; and
- Superior rejection of contaminants.

Due to its high flux and resulting smaller cartridge size, the technology is well suited for integration into compact domestic or mobile / portable water treatment systems. Given the membrane's high throughput, the size of the membrane cartridge can be reduced significantly, while maintaining the same treatment capacity. This is a key requirement for domestic water filtration applications, which are typically limited by space constraints.

De.mem has a strong competitive advantage of proprietary and/or patented technologies, underpinning the Company's unique portfolio of hollow fibre Microfiltration, Ultrafiltration and Nanofiltration membranes. The Company commercialises its membranes as the key component of its integrated water and wastewater treatment systems or its Build, Own, Operate and service contracts, and in combination with the Company's wide range of specialty chemicals, pumps and consumables that are typically required by clients during operations of membrane based water treatment plants.

Management Commentary

De.mem Chief Executive Officer Andreas Kroell said:

"We are very pleased to receive the first commercial order for our Graphene-Oxide enhanced membrane.

Thanks to its high throughput, which results in a very compact membrane cartridge, the new membrane is a perfect fit for the portable and domestic water filtration market.

As the order confirms, the technology meets a significant market demand. With the certification for drinking water applications in the USA, which we expect to complete shortly, we will open up significant additional market and revenue potential for our company."



The significance of this announcement is that it represents the first sales contract for the Company's GO enhanced membrane technology with the prospect of expansion in the future. The Company looks forward to providing further updates in due course.

This release was authorised by the Company's Chief Executive Officer, Mr. Andreas Kroell.

-ENDS-

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De.mem Limited (ASX:DEM) is a decentralised water and wastewater treatment business that designs, builds, owns and operates turnkey water and wastewater treatment systems for some of the world's largest companies in the mining, electronics, chemical, oil & gas, and food & beverage industries. Its systems also provide municipalities, residential developments and hotels/resorts across the Asia Pacific with a reliable supply of clean drinking water.

De.mem's technology to treat water and wastewater is among the most advanced globally. The Company is headquartered in Australia and has international locations in Singapore, Germany and Vietnam. It is commercialising an array of innovative proprietary technologies from its research and development partner, Nanyang Technological University (NTU) in Singapore, a world leader in membrane and water research. Technologies uniquely offered by De.mem include a revolutionary low-pressure hollow fibre nanofiltration membrane that uses less electricity and is cheaper to operate than conventional systems, as well as a new Forward Osmosis membrane deployed in de-watering applications or the concentration of liquids.

To learn more, please visit: www.demembranes.com

Purafy Clean Technologies is a division of Grafoid Inc., a graphene research, development and investment company that invests in, manages and develops markets for processes that produce economically scalable graphene for use in graphene development applications by leading corporations and institutions.

At Purafy, we believe in a world where clean water is accessible to all. We apply cutting-edge materials and innovations in nanotechnology to manufacture and distribute robust and effective water filtration systems for commercial and residential use to help defeat the water scarcity issue. We believe that graphene – a thin layer of graphite that has endless potential applications in almost every industry due to its unique and extraordinary qualities – holds the key to developing and producing more effective, safe, and environmentally friendly solutions that deliver clean water in both small and largescale applications.

For more information, please visit: www.purafy.com

Forward Looking Statements

Statements contained in this release, particularly those regarding possible or assumed future performance, revenue, costs, dividends, production levels or rates, prices or potential growth of De.mem Limited, are, or may be, forward looking statements. Such statements relate to future events and expectations and, as such, involve known and unknown risks and uncertainties. Actual results and developments may differ materially from those expressed or implied by these forward-looking statements depending on a variety of factors.