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Dotz Achieved Technology Demonstration Milestone of Its New Generation Sorbent Technology for CO₂ Capture

Completes Bench-Scale Demonstration Unit

Sorbent Validation and Process Simulations Yield Enhanced Performance and Demonstrates Potential to Significantly Drive Down the Cost of Carbon Capture

Key highlights

- Completed the construction of a bench-scale unit, demonstrating the effectiveness of Dotz Earth technology;
- Dotz Earth features a proprietary nano-porous carbon sorbent with high-adsorption capacity and high-selectivity for capturing CO₂;
- Process simulations of the nano-porous carbon sorbent in a Moving Bed Temperature Swing Process (MBTSA) resulted in a significant reduction in regeneration energy;
- Data demonstrates superior results compared with existing commercial sorbents, suggesting potential to drive down the cost of carbon capture; and
- Commenced design of a small-scale pilot unit to further advance the technology readiness.

Dotz Nano Limited (ASX: DTZ, OTC: DTZNY) (“Dotz” or “Company”), a leading developer of innovative climate and industrial nanotechnologies, today announced the completion of a bench-scale demonstration unit for its carbon capture technology, Dotz Earth. Validation testing and process simulation results of Dotz’s proprietary nano-porous carbon sorbent demonstrated enhanced properties compared with commercial carbon-based sorbents: **greater adsorption capacity, better selectivity, and a reduction in regeneration energy.**

Dotz CEO, Sharon Malka said: “We are pleased to have delivered the bench-scale unit ahead of schedule and the highly successful results from this round of test work confirmed the effectiveness of DotzEarth. We are thrilled to see the validation testing and process simulations results, which demonstrated enhanced properties compared with commercial carbon-based sorbents, highlighting the potential of Dotz Earth sorbent technology to offer substantial practical advantages for the future, and drive down the cost of carbon capture.

“We are confident that Dotz Earth offers substantial practical advantages for the future, by enabling wide-scale cost-effective and sustainable CO₂ capture. Following the investment by Mercer in February, we are well placed to commence work on a small-scale pilot unit with SINTEF to take the next major step in the development of Dotz Earth.

“We look forward to explaining more about the bench-scale unit testing to current and prospective investors, as well as potential commercial partners at the Global Carbon Capture & Storage Institute’s 2024 *Australia and Southeast Asia Forum* in Perth next week and during our non-deal roadshow in Perth, Adelaide, Melbourne and Sydney in mid-March.”



“As a pioneer in the research and development of climate technologies, with longstanding experience in CCUS technologies, the initial results obtained on the Dotz’s adsorbent speak directly to strength of the technology, showing superior properties compared with commercial sorbent case study. These enhanced properties further support potential cost savings and provide a basis for advancing the technology towards its next stage of demonstration.” said **SINTEF Research Manager, Jasmina H. Cavka**.

Dotz Earth represents a new generation sorbent technology for CO₂ Capture. Dotz’s proprietary nano-porous carbon adsorbent demonstrated multiple advantages such as high working capacity, fast kinetics, increased selectivity and lower regeneration energy.

Dotz built a bench-scale demonstration unit designed by SINTEF, demonstrating and confirming the effectiveness of its adsorbent. Dotz’s nano-porous carbon sorbent testing and validation conducted at SINTEF’s labs, showed a 3-fold increase in adsorption capacity when compared to a commercially available activated carbon sorbent (at 10 kPa) and significantly higher selectivity vs. nitrogen (N₂).

Process simulations using SINTEF’s validated Moving Bed Temperature Swing Process (“MBTSA”), resulted in superior results compared with commercial sorbents. Most importantly, use of the Dotz nano-porous carbon sorbent reduces the energy required for sorbent regeneration and release of CO₂ (energy penalty), which was significantly lower than energy requirements of commercial activated carbon and commercial liquid amines.

The results of the sorbent validation testing and the process simulations, demonstrates potential to significantly drive down the cost of CO₂ capture, and will now be followed up with the design and building of a small-scale pilot unit to further advance the technology readiness on its path to market viability. Advancing the development of Dotz’s technology creates pathway towards further lowering of carbon removal costs.

This announcement has been authorised for release by the Board of Directors of Dotz Nano.

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About Dotz Nano Limited

Dotz Nano Limited (ASX: DTZ) is a nanotechnology company developing innovative climate and industrial nano-technologies.

The Company’s primary focus is centered around ground-breaking carbon dioxide (CO₂) management technologies leading towards carbon-neutral future. The company’s proprietary carbon-based solid sorbent, offering an efficient and sustainable approach, facilitating industrial deep decarbonization.

To learn more about Dotz, please visit the website via the following link www.dotz.tech

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About SINTEF

SINTEF is one of Europe’s largest independent research organizations, with international top-class expertise in the fields of technology, natural sciences, medicine and social sciences. SINTEF develops sustainable solutions to some of society’s biggest challenges and creates value and innovation by developing knowledge and technological solutions with practical applications. SINTEF has researched CCUS since its inception in the 1980s.

To learn more about SINTEF, please visit www.sintef.com.

Future Performance And Forward Looking Statements

This announcement contains certain statements that constitute forward-looking statements that may be identified by the use of terminology such as “may,” “will,” “expects,” “plans,” “anticipates,” “estimates,” “potential” or “continue” or the negative thereof or other comparable terminology. Examples of such statements include, but are not limited to, statements regarding the design, scope, initiation, conduct and results of our research and development programs; our plans and objectives for future operations; and the potential benefits of our products and research technologies. These statements involve a number of risks and uncertainties that could cause actual results and the timing of events to differ materially from those anticipated by these forward-looking statements. These risks and uncertainties include a variety of factors, some of which are beyond our control. Forward looking statements, opinions and estimates provided in this announcement are based on assumptions and contingencies which are subject to change without notice, as are statements about market and industry trends, which are based on interpretations of current market conditions. Forward looking statements including projections, guidance on future earnings and estimates are provided as a general guide only and should not be relied upon as an indication or guarantee of future performance.

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