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DOTZ achieves successful lab-scale pilot demonstration of DotzEarth CO₂ capture technology

Lab-scale pilot runs confirm the sorbents' high adsorption capacity, selectivity and robustness

Key highlights

- Dotz advances DotzEarth's Technology Readiness Level to TRL 4-5, demonstrating progress towards commercial deployment
- The lab-scale Pilot operating results corroborate previous process simulations, demonstrating an enhanced CO₂ adsorption capacity, selectivity of CO₂ and robustness, compared with commercial activated carbon sorbents
- Results demonstrate continuous adsorption/desorption cycles with no evidence of sorbent degradation

24 September 2024 - Dotz Nano Limited (ASX: DTZ, "Dotz" or "Company"), a leading developer of innovative climate and industrial nanotechnologies, is pleased to announce the successful completion of a lab-scale pilot demonstration of its proprietary nano-porous sorbent utilizing a moving bed temperature swing adsorption capture unit, simulating Waste-to-Energy flue gas conditions.

This accomplishment marks the advancement of DotzEarth's Technology Readiness Level ("TRL") to TRL 4-5, a significant step forward on the path toward market viability.

Dotz CEO, Sharon Malka said: "The achievement of TRL 4 lab-scale demonstration for DotzEarth is a significant step forward on the path towards the technology's commercialization.

"We are very excited about the results of the lab-scale runs, which corroborate the results previously achieved in validation testing and process simulations, and confirm the potential of DotzEarth as a viable, cost-effective solution for hard-to-abate industries.

"This lab-scale pilot testing program was specifically designed to verify and validate the performance of our proprietary nano-porous sorbent. The fact that we see such high recoveries in this continuous flow system is incredibly encouraging as we now look towards the next scale up of our technology, process design of a modular, mobile small-scale pilot.

"Dotz would again like to acknowledge the support provided by SINTEF in undertaking these trial runs. We have been working very closely with SINTEF for a year now, and are looking forward to continuing our partnership through another round of technology demonstration".

DotzEarth, Dotz's proprietary nano-porous carbon adsorbent, represents a new generation sorbent technology for CO₂ capture. Dotz's innovative nano-porous carbon adsorbents have demonstrated multiple advantages such as high working capacity, fast kinetics, increased selectivity and lower regeneration energy.



The sorbent was process tested at SINTEF's lab, a leading climate technologies research organization. The testing was conducted on SINTEF's Moving-Bed Temperature Swing Adsorption (MBTSA) TRL-4 pilot unit, simulating Waste-to-Energy flue gas conditions.

The lab-scale pilot testing was operated at defined process conditions, according to an adsorbent benchmarking protocol defined by SINTEF. The pilot operating demonstrated the superior results of the Dotz sorbent when compared with a commercial activated carbon sorbent. Most importantly, use of the Dotz nano-porous sorbent yielded higher adsorption capacity, and higher in situ desorption purity relative to the commercially available sorbent. In addition, stable performance of the Dotz sorbent was demonstrated over approximately 140 desorption/adsorption cycles.

These results corroborated the previous process simulation results conducted by SINTEF and validates the potential to significantly drive down the cost of CO₂ capture.

A number of process optimization opportunities have been identified to further enhance the performance of the MBTSA unit with the Dotz adsorbent. These opportunities will be developed with Dotz's strategic development partners, and it is planned to be incorporated into the basis of design for the small-scale modularized and mobile pilot. Dotz plans to use the mobile pilot at different industrial sites with varying flue gas conditions in order to optimize the Dotz adsorbent and CO₂ capture process offering for specific industrial applications.

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

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.