Royal Canadian Navy Partners with ZEN Graphene and Evercloak to Test Graphene Oxide Dehumidification Membrane Technology

written by Raj Shah | September 30, 2020

September 30, 2020 (Source) – **ZEN Graphene Solutions Ltd.** (TSXV: ZEN) ("**ZEN**" or the "**Company**") is pleased to announce that the Naval Material Technology Management (NMTM) section of the Royal Canadian Navy (RCN) has partnered with ZEN and Evercloak Inc. (Evercloak) as a testing organization, and has agreed to provide in-kind donations of test services from the Naval Engineering Test Establishment (NETE). The tests will compare the efficiency of an HVAC unit produced with the Evercloak dehumidification membrane technology to the incumbent HVAC system that is currently in use on the RCN's Halifax-class frigates.

Evercloak is evaluating the advantages of its dehumidification membrane technology against the current dehumidification system used by the RCN. Based on lab testing and modelling, Evercloak estimates up to 75% energy savings and anticipates that the equipment will have a smaller footprint and also require minimal maintenance as there will be fewer parts to replace.

As reported in ZEN's July 9, 2020 news release, Evercloak and ZEN were recently awarded $125,000 each as part of a Next Generation Manufacturing Canada (NGen) Project. The project entitled "Advancing Large-Scale Graphene and Thin-Film Membrane Manufacturing" will support the scale up of graphene oxide (GO) production by ZEN to supply GO to Evercloak for their scale up

and optimization activities.

Francis Dubé, ZEN CEO commented, “Having the opportunity to test ZEN’s GO in Evercloak’s dehumidification technology with the Royal Canadian Navy is an excellent platform to showcase how nanotechnology can improve performance compared to current technologies. This could provide significant commercial opportunities beyond RCN should the testing prove successful.”

Evelyn Allen, Evercloak CEO stated, “We are thrilled to be working closely with the Royal Canadian Navy, ZEN, and our proto-type manufacturing partner Environmental System Corporation to showcase Evercloak’s graphene-based membrane performance in these critical environments.”

Evercloak’s patent-pending HydroAM printer is capable of depositing both 1D and 2D nanomaterials and transferring these ultra-thin films onto flexible substrates with a controlled density for various applications ranging from transparent conductors for flexible electronics to more efficient membranes for industrial separations. Through the NGen grant, and in collaboration with Evercloak, ZEN will optimize and scale-up the electrochemical exfoliation (ECE) process that was developed by Prof. Aicheng Chen and his team at the University of Guelph to produce graphene oxide from its unique precursor Albany Pure™ Graphite. The ECE process was designed to be scalable, low cost, low energy, and environmentally friendly to produce high quality, few-layer graphene oxide at ZEN’s Guelph facility.

About ZEN Graphene Solutions Ltd.

ZEN is an emerging graphene technology solutions company with a focus on the development of graphene-based nanomaterial products and applications. The unique Albany Graphite Project provides the company with a potential competitive advantage in the

graphene market as independent labs in Japan, UK, Israel, USA and Canada have independently demonstrated that ZEN's Albany Pure™ Graphite is an ideal precursor material which easily converts (exfoliates) to graphene, using a variety of mechanical, chemical and electrochemical methods.

About Evercloak Inc.

Evercloak, an innovative cleantech company, is commercializing a manufacturing platform for producing continuous, large-area, monolayers of exfoliated 2D nanomaterials, including graphene, graphene oxide, molybdenum disulfide, and carbon nanotubes. These films are increasingly used for a wide range of applications such as energy storage, smart packaging, electronic devices, corrosion inhibitors, and membranes. Evercloak's initial focus is on manufacturing graphene-based membranes for dehumidification to significantly reduce the energy use and associated greenhouse gas related with building cooling. Evercloak is a winner of the NRCan Breakthrough Energy Solutions Canada program, which includes seed funding to accelerate technology development in this area.

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To find out more about ZEN Graphene Solutions Ltd., please visit our website at www.ZENGraphene.com. A copy of this news release and all material documents in respect of the Company may be obtained on ZEN's SEDAR profile at www.sedar.ca.

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To find out more about Evercloak Inc., please visit our website www.evercloak.com.

ZEN Graphene Solutions is seeking advanced applied graphene-related research projects where ZEN could support this research by providing customized graphene materials and, in some cases, funding in exchange for some commercialization rights to be negotiated. Please submit your proposals in confidence to researchproposals@ZENGraphene.com.

Forward-Looking Statements

This news release contains forward-looking statements. Since forward-looking statements address future events and conditions, by their very nature they involve inherent risks and uncertainties. Although ZEN believes that the assumptions and factors used in preparing the forward-looking information in this news release are reasonable, undue reliance should not be placed on such information, which only applies as of the date of this news release, and no assurance can be given that such events will occur in the disclosed time frames or at all. ZEN disclaims any intention or obligation to update or revise any forward-looking information, whether as a result of new information, future events or otherwise, other than as required by law. Neither the TSX Venture Exchange nor its Regulation Services Provider (as that term is defined in the policies of the TSX Venture Exchange) accepts responsibility for the adequacy or accuracy of this release.