

PyroGenesis Announces \$700,000 Grant from SDTC to Develop a Pilot System to Transform Quartz into Fumed Silica with HPQ Silicon Resources

MONTREAL, May 27, 2021 (GLOBE NEWSWIRE) -- PyroGenesis Canada Inc. (<http://pyrogenesis.com>) (TSX: PYR) (NASDAQ: PYR) (FRA: 8PY), a high-tech company (hereinafter referred to as the "Company" or "PyroGenesis") that designs, develops, manufactures and commercializes plasma atomized metal powders, environmentally-friendly plasma waste-to-energy systems and plasma torch products, is pleased to announce that PyroGenesis received a \$700,000 grant from Sustainable Development Technology Canada ("SDTC") for a novel production process to transform quartz into fumed silica using a plasma reactor, thereby reducing hazardous waste and greenhouse gas ("GHG") emissions in comparison to the established fumed silica production process. This project is in partnership with HPQ Silicon Resources ("HPQ"), provider of innovative, cost-effective and low carbon emission silicon-based solutions. The proposed start date for SDTC funding is June 2021, subject to execution of the project funding agreement with SDTC.

For this project, PyroGenesis and HPQ will collaborate on the design, fabrication and operation of a novel pilot system to demonstrate the production of fumed silica, an inert and non-hazardous substance, using a plasma reactor. Fumed silica is used as a thickening agent in a wide range of applications, such as paints, cosmetics, coatings, inks and resins. The companies will (i) build and test a pilot system to investigate if continuous production of fumed silica by plasma is feasible, (ii) produce bulk samples of high-quality fumed silica for property evaluation, and (iii) use pilot data as the basis for a techno-economic feasibility study, where this new technology will be compared to the existing commercial process. The project will be conducted over a 2-year period, starting in June 2021.

"Fumed silica has unique physical properties which make it a useful and versatile commodity, including high surface area and low bulk density," said Mr. Pierre Carabin, CTO and Chief Strategist "The established process for making this product is flame hydrolysis, a lengthy, expensive, and wasteful multistep process requiring transportation of the materials between multiple locations. With this project, PyroGenesis and HPQ will propose an alternative solution which would eliminate the toxic by-products of the conventional process and reduce GHG emissions by about 90%. If successful, it will be a game-changer for the industry."

"We wish to thank SDTC for their continued support of Canadian entrepreneurs in general, and our project specifically," added Mr. Pierre Carabin. "One cannot overstate the impact SDTC support has towards the commercialization of our novel production process to transform quartz into fumed silica using a plasma reactor. Their credibility alone speaks volumes as they are a very discerning valued partner. We are also working with HPQ Silicon Resources on this project, and we look forward to ultimately delivering, as the PyroGenesis/SDTC/HPQ team, the environmental solution to an issue that has been plaguing the industry for years."

"Sustainable Development Technology Canada is incredibly proud to support PyroGenesis' innovative plasma technology which helps reduce harmful toxins from entering our environment. By investing in companies, like PyroGenesis we can bring lasting economic, environmental and health benefits to Canadians and the world" said Leah Lawrence, President and CEO of Sustainable Development Technology Canada.

About SDTC

Sustainable Development Technology Canada (SDTC) helps Canadian companies develop and deploy competitive, clean technology solutions, to help solve some of the world's most pressing environmental challenges: climate change, clean air, clean water and clean soil. By taking a cross-Canada approach, from seed to scale, and in partnership with the best peers and experts, SDTC is the global benchmark for sustainable development innovation programming.

About HPQ Silicon Resources

HPQ Silicon Resources Inc. ([TSX-V: HPQ](#)) is a Quebec-based innovative silicon solutions company that offers innovative silica (SiO₂), silicon (Si) based solutions and is developing a unique portfolio of high value-added silicon (Si) products sought after by battery and electric vehicle manufacturers.

Silicon (Si), also known as silicon metal, is one of today's key strategic materials needed for the decarbonization of the economy and the Renewable Energy Revolution ("RER"). However, silicon does not exist in its pure state and must be extracted from quartz (SiO₂) in what has historically been a capital and energy-intensive process.

With PyroGenesis HPQ is developing the PUREVAP™ "Quartz Reduction Reactors" (QRR), an innovative process (patent pending), which will permit the one-step transformation of quartz (SiO₂) into high purity silicon (Si) at reduced costs, energy input, and carbon footprint that will propagate its considerable renewable energy potential. Through its 100% owned subsidiary, HPQ NANO Silicon Powders Inc., the PUREVAP™ Nano Silicon Reactor (NSiR) is a new proprietary process that can use different purities of silicon (Si) as feedstock, to make a wide range of nano/micro spherical powders of different sizes and nanowires. For more information, please visit [HPQ Silicon web site](#).

About PyroGenesis Canada Inc.

PyroGenesis Canada Inc., a high-tech company, is a leader in the design, development, manufacture and commercialization of advanced plasma processes and products. The Company provides its engineering and manufacturing expertise and its turnkey process equipment packages to customers in the defense, metallurgical, mining, advanced materials (including 3D printing), and environmental industries. With a team of experienced engineers, scientists and technicians working out of its Montreal office and its 3,800 m² and 2,940 m² manufacturing facilities, PyroGenesis maintains its competitive advantage by remaining at the forefront of technology development and commercialization. The Company's core competencies allow PyroGenesis to provide innovative plasma torches, plasma waste processes, high-temperature metallurgical processes, and engineering services to the global marketplace. PyroGenesis' operations are ISO 9001:2015 and AS9100D certified. For more information, please visit www.pyrogenesis.com.

This press release contains certain forward-looking statements, including, without limitation, statements containing the words "may", "plan", "will", "estimate", "continue", "anticipate", "intend", "expect", "in the process" and other similar expressions which constitute "forward- looking information" within the meaning of applicable securities laws. Forward-looking statements reflect the Corporation's current expectation and assumptions and are subject to a number of risks and uncertainties that could cause actual results to differ materially from those anticipated. These forward-looking statements involve risks and uncertainties including, but not limited to, our expectations regarding the acceptance of our products by the market, our strategy to develop new products and enhance the capabilities of existing products, our strategy with respect to research and development, the impact of competitive products and pricing, new product development, and uncertainties related to the regulatory approval process. Such statements reflect the current views of the Corporation with respect to future events and are subject to certain risks and uncertainties and other risks detailed from time-to-time in the Corporation's ongoing filings with the securities regulatory authorities, which filings can be found at www.sedar.com, or at www.sec.gov. Actual results, events, and performance may differ materially. Readers are cautioned not to place undue reliance on these forward-looking statements. The Corporation UNDERTAKES no obligation to publicly update or revise any forward- looking statements either as a result of new information, future events or otherwise, except as required by applicable securities laws. Neither the Toronto Stock Exchange, its Regulation Services Provider (as that term is defined in the policies of the Toronto Stock Exchange) nor the NASDAQ Stock Market, LLC accepts responsibility for the adequacy or accuracy of this press release.

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