PyroGenesis Announces that HPQ Silica Polvere Signs Letter of Intent with Evonik

July9, 2024

Paves Way For Potential Future Partnership

MONTREAL, July 09, 2024 (GLOBE NEWSWIRE) -- PyroGenesis Canada Inc. (http://pyrogenesis.com) (TSX: PYR) (OTCQX: PYRGF) (FRA: 8PY), a high-tech company (the "Company" or "PyroGenesis") that designs, develops, manufactures and commercializes advanced plasma processes and sustainable solutions which are geared to reduce greenhouse gases (GHG) and address environmental pollutants, is pleased to announce the signing by HPQ Silica Polvere Inc. ("HPQ Polvere") of a letter of intent (LOI) with Evonik Corporation, a global specialty chemicals company that manufactures a wide range of high-performance materials including fumed silica. The LOI was announced earlier today by HPQ Silicon Inc. ("HPQ"), the parent company of HPQ Polvere.

HPQ Polvere's primary initiative is the Fumed Silica Reactor (FSR) project. PyroGenesis has been designing, engineering, and constructing this proprietary technology to convert quartz (SiO_2) into fumed silica (also known as *pyrogenic silica*) in a single and eco-friendly step while eliminating the use of harmful chemicals generated by conventional methods. The FSR, if successful, could provide a groundbreaking contribution to the repatriation of silica production to North America.

PyroGenesis previously announced (in a press release dated May 30, 2024) its intent to exercise its right to convert its annual royalty rights into a 50% ownership stake of HPQ Polvere pursuant to a Design and Development Agreement. PyroGenesis has yet to provide HPQ with a notice of the execution of the conversion as the companies finalize key documentation outlining the legal parameters which would govern the relationship, including a shareholder's agreement.

As stated in HPQ's news release of earlier today, the objective of the LOI is to outline the basis of a collaboration with Evonik during the FSR pilot scale phase with the goal to validate the ability of the FSR to produce low-cost, low carbon material acceptable to Evonik's specifications. Evonik has already confirmed that HPQ Polvere's first-generation samples are acceptable to Evonik. The intent is to scale up the current process and confirm that the material produced continues to meet Evonik's criteria.

"Today's news announcing the signing of a letter of intent with Evonik is another step towards confirming the unique potential for the FSR, a ground-breaking technology and process that our engineers developed with both environmental and commercial considerations in mind," said P. Peter Pascali, President and CEO of PyroGenesis. "We look forward to engaging with Evonik and HPQ as the process moves forward."

Fumed silica is a moisture-absorbing white microstructure powder with high surface area and low bulk density. Used most often as a thickening agent, anti-caking agent, and stabilizer to improve the texture and consistency of products, the commercial applications of fumed silica can be found in many industries across thousands of product lines, including – but not limited to – personal care, powdered food, pharmaceuticals, agriculture (food & feed), adhesives, paints, sealants, construction, batteries and automotive.

The fumed silica market, valued at US$1.3 billion in 2022, is expected to grow at a CAGR of 5% to reach US$2.1 billion by 2032. Fumed silica sales accounted for almost 23% of the global specialty silica market at the end of 2021.[1]

PyroGenesis' involvement in developing fumed silica from quartz is part of PyroGenesis' three-tiered solution ecosystem that aligns with economic drivers that are key to global heavy industry. High-purity silicon is part of PyroGenesis' Commodity Security & Optimization tier, where the recovery of viable metals and the optimization of production to increase output helps to maximize raw materials and improve the availability of critical minerals. Silicon has been identified as a critical mineral by many governments worldwide.

About PyroGenesis Canada Inc.

PyroGenesis Canada Inc., a high-tech company, is a proud leader in the design, development, manufacture and commercialization of advanced plasma processes and sustainable solutions which reduce greenhouse gases (GHG) and are economically attractive alternatives to conventional "dirty" processes. PyroGenesis has created proprietary, patented and advanced plasma technologies that are being vetted and adopted by multiple multibillion dollar industry leaders in four massive markets: iron ore pelletization, aluminum, waste management, and additive manufacturing. With a team of experienced engineers, scientists and technicians working out of its Montreal office, and its 3,800 m^2 and 2,940 m^2 manufacturing facilities, PyroGenesis maintains its competitive advantage by remaining at the forefront of technology development and commercialization. The operations are ISO 9001:2015 and AS9100D certified, having been ISO certified since 1997. For more information, please visit: www.pyrogenesis.com.

About HPQ Silicon

HPQ Silicon Inc. (TSX-V: HPQ) is a Quebec-based TSX Venture Exchange Tier 1 Industrial Issuer.

HPQ is developing, with the support of world-class technology partners PyroGenesis Canada Inc. and NOVACIUM SAS, new green processes crucial to make the critical materials needed to reach net zero emissions.

HPQ activities are centred around the following four (4) pillars:

1. Becoming a green low-cost (Capex and Opex) manufacturer of Fumed Silica using the **FUMED SILICA REACTOR**, a proprietary technology owned by HPQ being developed for HPQ by PyroGenesis.
2. Becoming a zero CO_2 low-cost (Capex and Opex) producer of High Purity Silicon (2N+ to 4N) using our ***PUREVAP™ "Quartz Reduction Reactors" (QRR),*** a proprietary technology owned by HPQ being developed for HPQ by

PyroGenesis.

3. Becoming a producer of silicon-based anode materials for battery applications with the assistance of NOVACIUM SAS.
4. HPQ SILICON affiliate NOVACIUM SAS is developing a low carbon, chemical base on demand and high-pressure autonomous hydrogen production system.

For more information, please visit HPQ Silicon web site.

Cautionary and Forward-Looking Statements

This press release contains "forward-looking information" and "forward-looking statements" (collectively, "forward-looking statements") within the meaning of applicable securities laws. In some cases, but not necessarily in all cases, forward-looking statements can be identified by the use of forward-looking terminology such as "plans", "targets", "expects" or "does not expect", "is expected", "an opportunity exists", "is positioned", "estimates", "intends", "assumes", "anticipates" or "does not anticipate" or "believes", or variations of such words and phrases or state that certain actions, events or results "may", "could", "would", "might", "will" or "will be taken", "occur" or "be achieved". In addition, any statements that refer to expectations, projections or other characterizations of future events or circumstances contain forward-looking statements. Forward-looking statements are not historical facts, nor guarantees or assurances of future performance but instead represent management's current beliefs, expectations, estimates and projections regarding future events and operating performance.

Forward-looking statements are necessarily based on a number of opinions, assumptions and estimates that, while considered reasonable by the Company as of the date of this release, are subject to inherent uncertainties, risks and changes in circumstances that may differ materially from those contemplated by the forward-looking statements. Important factors that could cause actual results to differ, possibly materially, from those indicated by the forward-looking statements include, but are not limited to, the risk factors identified under "Risk Factors" in the Company's latest annual information form, and in other periodic filings that the Company has made and may make in the future with the securities commissions or similar regulatory authorities, all of which are available under the Company's profile on SEDAR+ at www.sedarplus.ca. These factors are not intended to represent a complete list of the factors that could affect the Company. However, such risk factors should be considered carefully. There can be no assurance that such estimates and assumptions will prove to be correct. You should not place undue reliance on forward-looking statements, which speak only as of the date of this release. The Company undertakes no obligation to publicly update or revise any forward-looking statement, 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 OTCQX Best Market accepts responsibility for the adequacy or accuracy of this press release.

For further information please contact:
Rodayna Kafal, Vice President, IR/Comms. and Strategic BD
E-mail: ir@pyrogenesis.com
RELATED LINK: http://www.pyrogenesis.com/

---

[1] https://www.factmr.com/report/2301/fumed-silica-market