HPQ FUMED SILICA REACTOR PILOT PLANT DESIGN REWORKED TO FAST TRACK AND DE-RISK COMMERCIAL PLANT SCALE-UP

Montreal, Canada, April 11th, 2024 — HPQ Silicon Inc. ("HPQ" or the "Company") (TSX-V: HPQ) (OTCQB: HPQFF) (FRA: O08), a technology company specializing in green engineering of silica and silicon-based materials, updates shareholders on its HPQ Fumed Silica Reactor (FSR) technology pathway to commercialization.

HPQ Silicon's subsidiary, HPQ Silica Polvere Inc. (HPQ Polvere), is pleased to share that its technology provider and equipment supplier, PyroGenesis Canada Inc. (TSX: PYR) (OTCQX: PYRGF) (FRA: 8PY) responsible for the Fumed Silica project, has reworked and simplified the overall design of the 50 tonnes per year (TPY) pilot plant system. This rework is set to accelerate the process to commercial scalability, effectively minimizing the risks associated with scaling up. Furthermore, it streamlines the process of constructing HPQ Polvere's inaugural 1,000 TPY commercial-scale plant, ensuring a smoother path to production.

Importantly, this rework will not impact the scheduled commissioning of the pilot plant in Q2 2024.

"Fast tracking and de-risking the commercial scale-up of our proprietary Fumed Silica Reactor technology, with its disruptive capability to produce Low-Carbon Footprint and Hydrogen Chloride (HCl) free Fumed Silica in just one step, represents a significant advantage for HPQ," said Mr. Bernard Tourillon, President and CEO of HPQ Silicon Inc and HPQ Silica Polvere Inc.

PILOT SCALE VALIDATION TIMELINE FOR THE FUMED SILICA REACTOR TECH:

For the remainder of Q2- 2024, the project will focus on finalizing the assembly of the FSR pilot plant and completing its commissioning.

Beginning Q3 2024, the pilot plant will start operations. Initially, the system will operate under a batch protocol with the goal of replicating the production of fumed silica material with specific surface areas between 150 – 200 m^2/g, similar results to those obtained at lab-scale.

Subsequently, the system will progress to semi-continuous operations with the goal of producing $5m^3$ (200kg) of commercial-grade fumed silica, equivalent to 199 times the entire lab-scale production. This quantity will provide HPQ Polvere with enough material to send samples for qualification to multiple potential clients who have shown interest in our products, with the aim of securing priority offtake agreements for our low-carbon fumed silica material.

During a follow up phase, the pilot plant operations will be optimized in order to target the production of food/pharma grade fumed silica material with specific surface areas exceeding 300 m^2/g. This high value material is used in 'beauty and personal care' products—a market segment expected to drive increase demand for fumed silica and is projected to constitute 30% of the entire Fumed Silica market by 2032 [1].

Furthermore, if additional material were to be needed to fulfill clients demand and or qualify HPQ Polvere low-carbon fumed silica with additional potential clients, the system could switch to its full capacity mode, running multiple production cycles throughout the day. Assuming 20 hours of operations per day, the system could produce around 161 kg/day, equivalent to about 50,000 kg per year (50 TPY).

"*Going forward, HPQ Polvere plans to negotiate offtake agreements in order to optimize the financial model and secure favorable financial terms for the construction of our first 1,000 TPY commercial-scale plant*," added Mr. Bernard Tourillon, President and CEO. "*Depending on the size of the offtake demand, HPQ may look at building additional 1,000 TPY units concurrently or over time."*

FUMED SILICA MARKET TRENDS ARE SUPPORTIVE OF HPQ PATHWAY TO COMMERCIAL PRODUCTION

In 2023, the Fumed Silica market was valued at US$ 1.9 billion. It is projected to grow by more than 5.5% CAGR over the next seven years, reaching US$ 3.1 billion [1] in 2032. The physical market for Fumed Silica is anticipated to grow by 80,000 tonnes (t) between 2024 to 2029, to about 390,000 t per year in 2029 [2], which translates to a requirement of approximately 16,000 additional tonnes of capacity annually.

The traditional Fumed Silica market is very consolidated around 5 large integrated chemical companies, (Evonik Industries AG, Cabot Corporation, Wacker Chemie AG, Tokuyama Corporation, and OCI Company Ltd.) [2], that use their capital-intensive, low margins and carbon intensive legacy technologies, to produce Fumed Silica.

Because of HPQ Polvere's Fumed Silica Reactor (FSR) disruptive advantages [3] regarding both capital investment requirement and high operating margins at commercial scale, is very well positioned to compete with traditional fumed silica manufactures and go to market after the end of the pilot plant phase. In addition to the new annual demand for Fumed Silica mentioned above, Canada, with its 24,000-ton fumed silica consumption per year [4], can certainly support HPQ Polvere's objective of building multiple 1,000-ton-per-year Fumed Silica Reactors (FSRs), and becoming the first and the sole producer of Low-Carbon Fumed Silica globally.

REFERENCE SOURCES

[1] GML, Global Market Insight. Fumed Silica Market - By Product (Hydrophilic, Hydrophobic), By Application (Pharmaceutical, Beauty & Personal Care, Silicone Elastomers, Paints, Coatings & Inks, UPR, Adhesives & Sealants, Food & Beverages) & Global Forecast, 2024 – 2032.

[2] Mordor Intelligence: Fumed Silica Market Size & Share Analysis - Growth Trends & Forecasts (2024 - 2029). Source.

[3] HPQ January 10th, 2024, release.

[4] Sales data per regions from MarketsandMarkets 2017 "fumed silica market – global forecast to 2022".

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 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 three 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 m2 and 2,940 m2 R&D and 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 producer of silicon-based anode materials for battery applications with the assistance of NOVACIUM SAS.
3) HPQ SILICON affiliate NOVACIUM SAS is developing a low carbon, chemical base on demand and high-pressure autonomous hydrogen production system.
4) 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.

For more information, please visit HPQ Silicon web site.

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