HPQ Silica Polvere Fumed Silica Reactor Project Update

Montreal, Canada, November 12th, 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 would like to update shareholders on recent developments from HPQ Silica Polvere Inc. ("HSPI") [1] regarding the commercial validation of its proprietary Fumed Silica Reactor (FSR) process.

Technology supplier PyroGenesis Canada Inc. (TSX: PYR, OTCQX: PYRGF, FRA: 8PY) ("PyroGenesis") informed HSPI that, after successfully commissioning the pilot system, its engineering team identified the need for an additional enhancement to improve the performance of the pilot plant. This enhancement will ensure a more consistent flow of fumed silica from the reactor to downstream recovery equipment at pilot scale, a marked improvement from its lab-scale system.

"Implementing the enhancement at this stage is essential for a smooth transition to commercial production later on," said P. Peter Pascali, President and CEO of PyroGenesis Inc. *"By refining the operational process now, we're ensuring that HSPI's clients can expect high-quality standards, setting the stage for a sustainable and efficient production scale-up."*

Ensuring Product Quality with Key Process Enhancements

PyroGenesis Canada is always actively exploring ways to refine HSPI's proprietary FSR technology pilot plant to ensure high-quality production at both the pilot scale and in future commercial operations. The current improvement centers on an extended refractory conditioning phase, a crucial process designed to prepare the reactor's internal structure to handle continuous, high-quality material output. Before full material production begins, the refractory lining within the reactor must undergo high-temperature curing, a step that conditions and strengthens the lining, especially in areas exposed to off-gas interactions.

This conditioning is essential to creating a smoother, more robust inner surface that can withstand prolonged high-intensity use. By establishing these foundational elements now, we are setting up the pilot plant for steady, high-efficiency operation that will meet quality standards both during pilot runs and in commercial-scale production.

"Implementing this integration, which ensures a consistent flow of product at this stage, demonstrates that the PyroGenesis engineering team has complete control over the process," added Mr. Pascali.

"These normal and expected process improvements during the scale-up phase do not alter our confidence in the transformative potential of our FSR technology," said Bernard Tourillon, President & CEO of HPQ Silicon and HPQ Silicon Polvere. "Our objective remains clear: to disrupt the fumed silica market by providing a cost-effective, high-efficiency solution that could redefine industry standards. We are making strides toward securing offtake agreements and are excited to lead the charge in revolutionizing fumed silica manufacturing."

A Foundation for Commercial Readiness

Once the extended refractory conditioning phase is completed in the next two weeks, the program will advance to the batch production phase, during which the FSR will begin manufacturing fumed silica. The primary objective at this stage is to validate the process's ability to consistently replicate essential physical properties—such as surface area—and rheological properties, including viscosity and thickening behavior, as demonstrated at the lab scale. After reaching this milestone, the system will transition to semi-continuous operation, targeting the production of at least 200 kg of commercial-grade fumed silica samples for comprehensive testing and validation.

Throughout these phases, the produced fumed silica will undergo internal testing, with samples sent to Evonik as per the LOI announced on July 9, 2024, and potentially to other parties under NDA for

evaluation. By Q1 2025, the focus will shift toward optimizing pilot plant operations to produce food- and pharma-grade fumed silica with surface areas of 300 m^2/g. In addition to producing materials with surface areas ranging from 150 to 300 m^2/g, the overarching goal is to run the pilot plant at full capacity, achieving multiple daily production cycles and delivering commercial-quality material. With an estimated 20 hours of daily operation, the system is projected to produce approximately 161 kg per day, or 50,000 kg annually (50 TPY).

REFERENCE SOURCES

[1] A wholly owned subsidiary of HPQ Silicon Inc. when technology supplier PyroGenesis announced its intention to exercise its option to acquire a 50% stake in HSPI in May 2024.

About HPQ

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 Silica Polvere Inc being developed for HSPI 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.

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

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