

## HPQ Silica Polvere Fumed Silica Reactor Project Update: Extended Refractory Conditioning Work Completed

Montreal, Canada, December 5<sup>th</sup>, 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**”) <sup>[1]</sup> regarding the start of the commercial validation of its proprietary Fumed Silica Reactor (FSR) process.

Technology supplier [PyroGenesis Inc.](#) ([TSX: PYR](#), [OTCQX: PYRGE](#), [FRA: 8PY](#)) (“PyroGenesis”) informed **HSPI** that it has successfully completed the *extended refractory conditioning work* on the pilot system, as previously announced in HPQ’s [November 12, 2024, press release](#). This work was essential to ensure a more consistent flow of fumed silica from the reactor to the downstream recovery equipment.

PyroGenesis also advised HPQ that the first series of process material tests are scheduled to start in December 2024.

*“During the scale-up phase of any project, process improvements are to be expected. However, this does not change the fact that our FSR technology will transform fumed silica manufacturing for the better,”* said Bernard Tourillon, President & CEO of HPQ Silicon and HPQ Silica Polvere. *“Our objective remains clear: to disrupt the fumed silica market by delivering a cost-effective, high-efficiency solution that redefines industry standards. And as we continue ongoing discussions to secure offtake agreements.”*

### **HSPI Fumed Silica Reactor Pilot Plant – Focus on Ensuring Product Quality**

The FSR Pilot Plant represents a pioneering, state-of-the-art prototype system, meticulously designed with a suite of seamlessly integrated sub-systems. These sub-systems operate in synchronization to enable the production of fumed silica within the reactor, ensure its controlled transfer to downstream recovery systems, and optimize the efficient extraction and packaging of the final product.

The FSR development program is thoughtfully designed and systematically implemented to address the intricate challenges of scaling up a novel process—from laboratory-scale equipment producing only a few grams of fumed silica per batch to an industrial-grade system capable of generating multiple kilograms per hour.

*“PyroGenesis is committed to pursuing ideas with real and significant potential for successful commercialization, and the Fumed Silica Reactor project definitively meets that threshold,”* said P. Peter Pascali, President and CEO of PyroGenesis Inc. *“Our primary goal during the scaling-up phase is to continuously refine operational processes to ensure that HSPI’s clients receive high-quality materials, setting the stage for sustainable and efficient commercial production.”*

### **A Foundation for Commercial Readiness**

Following the successful completion of the initial processing material test, the program will progress to the batch production phase, where the Fumed Silica Reactor (FSR) will commence manufacturing kilograms of fumed silica.

The primary goal of this phase is to validate the system's ability to consistently reproduce critical physical properties—such as surface area—and essential rheological characteristics, including



viscosity and thickening behavior, as previously demonstrated at the lab scale. Upon achieving this milestone, the program will advance to semi-continuous operations, aiming to produce a minimum of 200 kilograms of commercial-grade fumed silica samples for extensive testing and validation.

*“PyroGenesis’ technical team is always actively exploring ways to refine **HSPI’s** proprietary **FSR** technology at the pilot plant scale to ensure high-quality material production at the pilot scale and for future commercial operations,”* added Mr. Pascali

### **Sample Testing**

Throughout these phases, the fumed silica produced will undergo rigorous internal testing, with samples sent to Evonik, as outlined in the [LOI announced on July 9, 2024](#). Additional evaluations may also be conducted by other parties under NDA. By Q1 2025, the focus will shift to optimizing pilot plant operations to produce high-purity, food- and pharma-grade fumed silica with a surface area of 300 m<sup>2</sup>/g.

In addition to manufacturing materials with surface areas ranging from 150 to 300 m<sup>2</sup>/g, the overarching goal is to achieve full-capacity operations, enabling multiple daily production cycles and delivering commercial-quality material. With an expected 20 hours of daily operation, the system is projected to produce approximately 161 kilograms per day, equivalent to an annual output of 50,000 kilograms (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 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<sub>2</sub> 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 Inc.**

PyroGenesis, 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<sup>2</sup> and 2,940 m<sup>2</sup> 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. PyroGenesis’ shares are publicly traded on the TSX in Canada (TSX: PYR), the OTCQX in the US (OTCQX: PYRGF), and the Frankfurt Stock Exchange in Germany (FRA: 8PY). [www.pyrogenesis.com](http://www.pyrogenesis.com)

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**Source:** HPQ Silicon Inc.

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