



HPQ SILICON GEN3 PUREVAP™ QRR PILOT PLANT: FIRST PROCESS IMPROVEMENT TEST PRODUCES SILICON (Si)

MONTREAL, Canada, December 7th, 2022 — [HPQ Silicon Inc.](#) (“HPQ” or the “Company”) ([TSX-V: HPQ](#)) ([OTCQX: HPQFF](#)) ([FRA: O08](#)), an innovative silicon solutions and technology development company, would like to update shareholders on an important milestone reached by the *GEN3 PUREVAP™ Quartz Reduction Reactor (QRR)* (“*GEN3 QRR*”) during the first process improvement test (using the “Pilot Plant”).

Technology provider [PyroGenesis Canada Inc.](#) ([TSX: PYR](#)) ([NASDAQ: PYR](#)) ([FRA: 8PY](#)), has informed HPQ that the first process improvement test produced Silicon (Si) material. Thus, confirming that the *GEN3 QRR* can generate the carbothermic reaction needed to produce Silicon.

"We are now in the ongoing process of continuous improvements of the testing program," said Mr. Bernard Tourillon, President and CEO of HPQ Silicon Inc. *"Our unique and proprietary advanced technology prototype, the GEN3 QRR Pilot Plant, will undergo multiple tests to repeat and, we expect, surpass the results attained with the GEN2 QRR."*

RIGOROUS TESTING APPROACH CONTINUES TO DELIVER RESULTS AND VALIDATE SCALABILITY

This first successful process improvement test is the most significant of the program to date, given that it was a 2,500 times scale-up from the *GEN2 PUREVAP™ QRR*. During the test, quartz material was successfully converted into Silicon (Si), a process that validates that the *GEN3 QRR*, like its much smaller capacity predecessor, the *GEN2 PUREVAP™ QRR*, can also produce Silicon (Si) material.

REACTOR BEING INSPECTED AND PREPARED FOR NEXT PROCESS IMPROVEMENT TEST

All important components of the Pilot Plant reactor are being inspected and critical wear and tear data collected. Once the inspection is complete, and all systems are given a “pass”, the Pilot Plant will then, again, be prepared for the next series of tests.

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 innovative silicon solutions company that offers silica (SiO₂) and 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, among other industries. On July 21, 2022, HPQ started trading as a Tier 1 Industrial Issuer on the TSX Venture Exchange.

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 (SiO_2) in what has historically been a capital and energy-intensive process.

HPQ is the only company bringing to market a new process for manufacturing Silicon that is perfectly suited to the new demands and realities of today's Silicon market. With ESG principles playing an active role in materials sourcing and with recent geopolitical unrest emphasizing the need for stable trade partners and supply security, global corporations are becoming more aware of the difficulties in securing the ESG-compliant Silicon needed to meet their renewable energy agenda.

The reality of chronic underinvestment in new technologies combined with the offshoring of Silicon production capacity, is creating massive opportunities for HPQ and the processes it is developing with [PyroGenesis Canada Inc. \(TSX: PYR\) \(NASDAQ: PYR\)](#):

1. the **PUREVAP™ “Quartz Reduction Reactors” (QRR)**, an innovative process (patent granted in the United States and pending in other jurisdictions), which will permit the one-step transformation of quartz (SiO_2) into high purity silicon (Si) at reduced costs, energy input, and carbon footprint that will propagate its considerable renewable energy potential.
2. Through its 100% owned subsidiary, HPQ NANO Silicon Powders Inc., the **PUREVAP™ Nano Silicon Reactor (NSiR)** is a new proprietary process that can use material produced by the QRR as feedstock, to make a wide range of nano/micro spherical powders and nanowires of different sizes.
3. Through its second 100% owned subsidiary, HPQ Silica POLVERE Inc., HPQ is developing a new plasma-based process that allows a direct Quartz to Fumed silica transformation, removing the usage of hazardous chemicals in the making of Fumed silica and eliminating the Hydrogen Chloride Gas (HCl) associated with its manufacturing.

HPQ is also a technology development company interested in developing hydrogen-based ventures, that could be complementary to the QRR efforts. Currently, HPQ is working with Novacium developing processes for making hydrogen via hydrolysis of silicon and other materials.

For more information, please visit [HPQ Silicon web site](#).

Disclaimers:

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 Company'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 Company with respect to future events and are subject to certain risks and uncertainties and other risks detailed from time-to-time in the Company's ongoing filings with the security's regulatory authorities, which filings can be found at www.sedar.com. Actual results, events, and performance may differ materially. Readers are cautioned not to place undue reliance on these forward-looking statements. The Company 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 TSX Venture Exchange nor its Regulation Services Provider (as that term is defined in the policies of the TSX Venture Exchange) accepts responsibility for the adequacy or accuracy of this release.

This News Release is available on the company's [CEO Verified Discussion Forum](#), a moderated social media platform that enables civilized discussion and Q&A between Management and Shareholders.

- 30 -

Source: HPQ Silicon Inc.

For further information contact:

Bernard J. Tourillon, Chairman, President, and CEO Tel +1 (514) 907-1011

Patrick Levasseur, Special Advisor to the CEO Tel: +1 (514) 262-9239

Email: Info@hpsilicon.com