HPQ SILICON GEN3 QRR PILOT PLANT PRODUCES 3N+ SILICON (99.92% Si) IN A SINGLE STEP

MONTREAL, Canada, June 1st, 2023 — HPQ Silicon Inc. ("HPQ" or the "Company") (TSX-V: HPQ) (OTCQX: HPQFF) (FRA: O08), a technology company specializing in green engineering processes for silica and silicon material production, announces the successful validation of a crucial milestone that demonstrates the capabilities of our proprietary technology, the *PUREVAP™ Quartz Reduction Reactor (QRR)* process. Our accomplishment is that we have produced Silicon with a purity exceeding 3N+ in a single step.

This validation follows a thorough review of test #5 results from the ongoing GEN3 pilot plant program conducted by technology provider PyroGenesis Canada Inc. (TSX: PYR) (NASDAQ: PYR) (FRA: 8PY) (Pyrogenesis).

The results are also highly promising because they confirm the capability of the QRR process to reduce the cash cost of silicon metal manufacturing through a single-step process and by decreasing the feedstock requirement.

"These advancements mark a milestone for HPQ Silicon and highlight the effectiveness of the PUREVAP™ QRR process in modernizing the production of high-purity Silicon while concurrently driving down production costs," said Bernard Tourillon, President & CEO of HPQ Silicon. *"HPQ, with partner Pyrogenesis, is continually advancing its new QRR technology. These recent results demonstrate more positive progress in the efforts to create a new, low-cost process to manufacture of high purity Silicon. The existing processes have remained largely unchanged for the past century."*

PRODUCED 3N+ PURITY SILICON OR BATTERY-GRADE SILICON

Pyrogenesis thoroughly assessed the Silicon material generated during tests #4 and #5 in the series. The samples were analyzed using ICP-MS Silicon Bulk Sample Analysis at Air Liquide Electronics (Balazs NanoAnalysis).

In test #4, the results revealed an average silicon purity (%) surpassing 99.8%. This achievement signifies a noteworthy enhancement compared to the previous best results of 99.6% Si, as announced on March 16th.

However, it is the outcome of test #5 that is noteworthy.

During test #5, we achieved an average silicon purity (%) of 99.92% across two separate tests. This outcome validates the capability of the QRR process to surpass the minimum purity requirement of 3N, specifically for battery-grade silicon.

The achievement moves forward HPQ in its goal of producing high-purity silicon for battery and other high-value applications with the QRR.

QRR PROCESS: UNLOCKING A REDUCTION IN CASH COSTS FOR SILICON PRODUCTION

Conventionally, the production yield of metallurgical grade silicon (1-2N purity) ranges from 80 to 90% [1]. However, when traditional plants implement optimized processes to produce higher purity silicon (2-3N), production yields are reduced to between 50 and 60% [2].

Our innovative *PUREVAP™ QRR* reactor, with its unique enclosed design, has the potential to achieve a conversion efficiency exceeding 75% while consistently maintaining a high purity level of 3N+ and more.

This would enable us to produce one unit of silicon using fewer units of feedstock, potentially resulting in a greater than 25% reduction in feedstock usage [3]. If successful, this could provide HPQ with an additional cost advantage compared to traditional methods.

As part of our program's objective to optimize feedstock utilization in the QRR process, we are delighted to report that test #5 demonstrated this progress. The conversion efficiency of the process reached 20%, a four-fold improvement compared to tests #1 through #4.

"*Results to date demonstrate that we are steadily progressing towards attaining a conversion efficiency of 75%, which will represent a leap forward in high-purity silicon manufacturing, providing HPQ with economic advantages and process efficiency within the silicon industry,"* added Mr. Tourillon. *"We take great pride in the efforts of the team at PyroGenesis and our role in this exceptional opportunity and its potential for transformative impact."*

FILING OF NEW QRR PROCESS PATENT AND SHARES FOR DEBT SETTLEMENT

HPQ Silicon is pleased to announce that it has entered into an agreement to acquire all rights held by the inventors of a new *PUREVAP™ QRR* provisional patent application related to improvement of the Purity of the Silicon material produce by the QRR by one (1) N. Practically this invention will allow us to increase the purity of our Silicon from the 99.92% already achieved to 99.992%

This contract stems from negotiations between the parties and the debt results from the French legislation stipulating that inventors of a patent are entitled to receive remuneration for their work. That consideration was payable by the patent owner and became a debt affecting the patent.

HPQ, to become the owner and acquire all the rights in a clear patent, negotiated the payment of the debt and agreed with the inventors that the debt in the amount of $ 88,560 will be settled by means of the issuance by the company of 432,000 Units. The payment shall be made, in two stages, being 144,000 Units to each of the three inventors.

Each Unit will consist of one (1) common share of the Company and one (1) warrant to purchase one (1) additional common share of the Company at an exercise price of $ 0.27 for a period of two (2) years after the closing date of the transaction. The first issue of 72,000 units to each of the inventors will be made on the date the Company receives TSX Venture Exchange approval. The second issue of 72,000 Units will be made to each of the inventors at the time of the international filing of the patent. This transaction is subject to TSX Venture Exchange and regulatory approval.

SOURCE

[1] B. Ceccaroli, O. Lohne; Solar Grade Silicon Feedstock; Handbook of Photovoltaic Science and Engineering; J. Whiley (2003)

[2] Andersen, V., Solheim, I., Gaertner, H., Sægrov-Sorte, B., Einarsrud, K. E., & Tranell, G. (2023). Pilot-Scale Test of Flue Gas Recirculation for The Silicon Process. *Journal of Sustainable Metallurgy*, *9*(1), 81-92.

[3] Management refers to public information from Ferroglobe PLC investor presentation dated October 17, 2017 (Page 5). According to this information, approximately 45% of the total cost of producing Metallurgical grade Silicon (98.5% - 99.5% Si) is attributed to feedstock expenses, primarily quartz and reductant. Reaching a conversion efficiency exceeding 75% would result in a reduction of about one-third of the required amount of feedstock needed to make silicon metal. Therefore this reduction in feedstock usage could result in an HPQ cost advantage of over 14% (45% * 33%) compared to traditional methods.

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.(TSX: PYR) (NASDAQ: PYR) 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 five (5) pillars:

1) Becoming a green low-cost (Capex and Opex) producer of High Purity Silicon (2N+ to 4N) using our proprietary ***PUREVAP™ "Quartz Reduction Reactors" (QRR)*** being developed by PyroGenesis.
2) Becoming North America's first producer of micron size High Purity Silicon (3N & 4N) powders with the assistance of NOVACIUM SAS.
3) Working to become the first producer of nano silicon materials from High Purity Silicon chunks using our proprietary ***PUREVAP™ Nano Silicon Reactor (NSiR)*** being developed by PyroGenesis.
4) Becoming a green low-cost (Capex and Opex) producer of Fumed Silica using our proprietary **FUMED SILICA REACTOR** being developed by PyroGenesis.
5) Developing a small and compact process for the on-demand production of 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.

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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.

Source: HPQ Silicon Inc.

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