



HPQ NANO ON TRACK TO START OF GEN1 REACTOR IN DECEMBER PROCESS & MECHANICAL ENGINEERING PHASES COMPLETED

Montreal, QC, Nov. 5, 2020 – Innovative silicon solutions provider [HPQ Silicon Resources Inc.](#) (“HPQ” or “the Company”) ([TSX-V: HPQ](#); [FWB: UGE](#); [Other OTC : URAGF](#)) through its wholly – owned subsidiary, HPQ Nano Silicon Powders inc (“HPQ NANO”), is pleased to announce today that technology provider [PyroGenesis Canada Inc. \(TSX-V: PYR\)](#) has updated HPQ NANO on the following *PUREVAP™ Nano Silicon Reactor (“NSiR”)* development program milestones:

- Process and mechanical engineering designs for the Gen1 *PUREVAP™ NSiR* have been completed, on time and on budget;
- Gen1 fabrication will start next week, project is on schedule for a December 2020 commissioning and start.

The process engineering phase allowed the PyroGenesis technical team to run a series of computer simulations to ensure that the system works as planned. Satisfied with the result, the mechanical engineering work needed to start the build of the Gen1 *PUREVAP™ NSiR* was then completed.

Bernard Tourillon, President & CEO of HPQ Silicon and HPQ NANO stated *“It is very nice to see all the pieces of the puzzle falling into place. We are just starting to visualize the potential commercial applications of the PUREVAP™ processes we are developing in close partnership with PyroGenesis, and I must say that I really like what we are seeing. While we are very excited by HPQ NANO material blue sky potential in the silicon battery space, we are also thrilled by our material potential in other high value markets, as this is another way for HPQ to expand its product markets by diversifying which could potentially reduce risk.”*

***PUREVAP™ NSiR* LOW COST SPHERICAL SILICON MATERIALS: A GAME CHANGING LEAP**

Despite strong research and [massive investment in Silicon material for batteries](#), current manufacturing processes are simply not scalable or commercially viable.

PyroGenesis, with 20+ years of experience in manufacturing plasma atomized metal powders, bring this massive knowhow to the development of the *PUREVAP™ NSiR*, a scalable plasma-based Nano-Atomization process. *PUREVAP™ NSiR* will allow the low-cost transformation of metallurgical Silicon into tailor-made spherical silicon powders and/or Silicon Nanowires that battery and Electric Vehicle (EV) manufacturers are looking for.

With its capability of producing tailor made spherical silicon materials within a wide size distribution ranges (from < 0.20 µm up to 5 µm), the *PUREVAP™ NSiR* represents a game changing leap forward in resolving the issues of commercial viability and scalability.

HPQ NANO will be uniquely positioned to offer a wide spectrum of the products needed to meet the anticipated massive emerging demands from battery and EV manufactures.



PUREVAP™ QRR AND NSIR PRODUCT RANGE OPENS UP OTHER HIGH VALUE NICHE MARKET

HPQ NANO will also be uniquely positioned to offer the hydrogen sector access to a low-cost nano silicon powders alternative that can be used to extract H₂ from water.

Having the ability to use the metallurgical silicon (3N – 4N Si) to be produced by HPQ PUREVAP™ “Quartz Reduction Reactors” (QRR) as feedstock for the PUREVAP™ NSiR, HPQ NANO will be able to come to market with a range of High Purity Si powder products presently used by specialty manufacturers. This represent an immediately addressable market of 100,000+ tonnes per year for HPQ NANO products. This represents 3% of the entire Silicon market which CRU¹ estimates will grow 15% by 2025.

Tourillon added “*What is truly becoming exciting about HPQ NANO is the competitive advantage we have in the massive EV and battery space, as well as, the competitive advantages we are starting to build in silicon products that we will be able to produce for alternative silicon markets.*”

OTHER CORPORATE NEWS

In accordance with the agreement between HPQ-Silicon and Agoracom entered into on July 15, 2018 for the term ending July 15, 2020, HPQ-Silicon board has approved the issuance of 37,171 common shares at a deemed price of \$0.38 per share to pay \$14,125 for services rendered during the period from April 16, 2020 ending July 15, 2020. Each share issued pursuant to the debt settlement will have a mandatory four (4) month and one (1) day holding period from the date of closing.

As of July 15, 2020, HPQ-Silicon entered into a new agreement with Agoracom for the term ending July 15, 2021. HPQ-Silicon board has approved the new agreement and has approved the issuance of 25,223 common shares at a deemed price of \$0.56 per share to pay \$14,125 for services rendered during the period from July 16, 2020 ending October 15, 2020 in accordance with the new agreement. Each share issued pursuant to the debt settlement will have a mandatory four (4) month and one (1) day holding period from the date of closing. These agreement and debt settlement are subject to the approval of the TSX Venture Exchange.

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 products. The Company provides its engineering and manufacturing expertise and its turnkey process equipment packages to customers in the defense, metallurgical, mining, advanced materials (including 3D printing), and environmental industries. With a team of experienced engineers, scientists and technicians working out of its Montreal office and its 3,800 m² manufacturing facility, PyroGenesis maintains its competitive advantage by remaining at the forefront of technology development and commercialization. The Company’s core competencies allow PyroGenesis to provide innovative plasma torches, plasma waste processes, high-temperature metallurgical processes, and engineering services to the global marketplace. PyroGenesis’ operations are ISO 9001:2015 and AS9100D certified. For more information, please visit www.pyrogenesis.com.

¹ CRU – Silicon Market outlook – November 2018



About HPQ Silicon

[HPQ Silicon Resources Inc. \(TSX-V: HPQ\)](#) is a Canadian Innovative Silicon Solutions Provider.

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").

Silicon is the most abundant element in earth's crust but 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. That is why HPQ is building a portfolio of silicon-based products using innovative scalable processes. The target objective is to produce high value speciality Silicon products using technologies that will reduce energy consumption, GHG's, and carbon footprint. .

Working with [PyroGenesis Canada Inc. \(TSX-V: PYR\)](#), a high-tech company that designs, develops, manufactures and commercializes plasma - based processes, HPQ is developing:

- The **PUREVAP™ "Quartz Reduction Reactors" (QRR)**, an innovative process (patent pending), 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;
 - > HPQ believes it will become the lowest cost (Capex and Opex) producer of silicon (Si) and high purity silicon metal (3N – 4N Si);
- Through its 100% owned subsidiary HPQ NANO Silicon Powders Inc, the **PUREVAP™ Nano Silicon Reactor (NSiR)**, a new proprietary process that can use different purities of silicon (Si) as feedstock, to make spherical silicon nanopowders and nanowires;
 - > HPQ believes it can also become the lowest cost manufacturer of spherical Si nanopowders and silicon-based composites needed by manufacturers of next-generation lithium-ion batteries;
 - > During the coming months, spherical Si nanopowders and nanowires silicon-based composite samples requested by industry participants and research institutions' will be produced using **PUREVAP™ SiNR**.

HPQ is also working with industry leader Apollon Solar of France to:

- Use their patented process and develop a capability to produce commercially porous silicon (Si) wafers and porous silicon (Si) powders;
 - > The collaboration will allow HPQ to become the lowest cost producer of porous silicon wafers for all-solid -state batteries and porous silicon powders for Li-ion batteries;
 - > Develop the hydrogen generation potential of Silicon nanopowders for usage with the Gennao™ system;
 - > Commercialize, exclusively in Canada, and non-exclusive in the U.S.A., the Gennao™ H2 system and the chemical powders required for the hydrolysis production of Hydrogen ("H2").



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.

Disclaimers:

The Corporation's interest in developing the PUREVAP™ QRR and any projected capital or operating cost savings associated with its development should not be construed as being related to the establishing the economic viability or technical feasibility of any of the Company's Quartz Projects.

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 on-going 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.

For further information contact

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

Patrick Levasseur, Vice-President and COO Tel: (514) 262-9239

<http://www.hpqsilicon.com> Email: Info@hpqsilicon.com