

## HPQ SILICON ISSUED U.S. PATENT FOR *PUREVAP™* QUARTZ REDUCTION REACTOR TECHNOLOGY

**MONTREAL, Canada, March 9, 2022** — [HPQ Silicon Resources Inc.](https://www.hpqsilicon.com) (“HPQ” or the “Company”) ([TSX-V: HPQ](https://www.tsx.com/stocks/HPQ)) ([OTCQX: HPQFF](https://www.otcmarkets.com/stock/HPQFF)) ([FWB: UGE](https://www.fwb.com/stock/UGE)), an innovative silicon solutions and technology development company, is pleased to inform shareholders that further to our [Nov. 29 2021 release](#), the United States Patent and Trademark Office issued U.S. Patent No. 11,267,714 entitled "*SILICA TO HIGH PURITY SILICON PRODUCTION PROCESS*" to HPQ SILICON RESOURCES INC on March 8 2022.

### HPQ US PATENTED *PUREVAP™* QRR PROCESS: THE KEY TO OUR DEVELOP & MONETIZE STRATEGY

The US patent covers the *PUREVAP™* Quartz Reduction Reactor (QRR) innovative process, which permits the one-step transformation of quartz (SiO<sub>2</sub>) into high purity silicon metal (up to 4N+ Si), the material sought after by battery makers and high value applications manufactures, at significantly reduced costs, energy input, and carbon footprint than traditional processes.

### HPQ ON TARGET TO START THE *PUREVAP™* QRR PILOT PLANT

HPQ *PUREVAP™* QRR disruptive advantages means that not only can it produce a higher purity silicon material than traditional processes in one step, but it also does not require the extremely pure feedstock needed by conventional processes. In fact, the process only requires 4.5 MT of raw material to make 1 MT of Silicon, versus the 6 MT required by conventional processes, a 25% reduction which potentially allows a 20% cash cost advantage versus the lowest cost traditional Silicon producer<sup>1</sup>.

*“Since 2015, HPQ *PUREVAP™* QRR has been at the forefront of disrupting Silicon manufacturing, an industry that still relies on a traditional process to make silicon first develop in 1899. The U.S. patent issuance on our novel new approach to making silicon, combined with the end of Q1 start of the GEN3 *PUREVAP™* QRR pilot plant, have culminated at an opportune time, as demand for high purity silicon from the battery and high-performance material companies continues to rise just as bottlenecks, we had foreseen are now occurring in the silicon supply chain. With ESG principles playing an active role in materials sourcing, the world is more aware of the difficulties of securing the ESG compliant Silicon needed to meet its renewable energy goals. The reality of chronic underinvestment in new technologies combined with the offshoring of Silicon production capacity, has created a massive opportunity for HPQ and its *PUREVAP™* QRR patented process, as we are the only company to bring to market a new process for making Silicon that is perfectly suited to the new demands and realities of the Silicon market,”* said Mr. Bernard Tourillon, President and CEO of HPQ Silicon.

### 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 m<sup>2</sup> and 2,940 m<sup>2</sup> R&D and manufacturing facilities, PyroGenesis maintains its competitive advantage by remaining at the forefront of technology

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<sup>1</sup> [HPQ Silicon June 17<sup>th</sup>, 2019, release](#)

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](http://www.pyrogenesis.com).

### **About HPQ Silicon Resources**

[HPQ Silicon Resources Inc. \(TSX-V: HPQ\)](#) is a Quebec-based innovative silicon solutions company that offers silica (SiO<sub>2</sub>) 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.

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<sub>2</sub>) in what has historically been a capital and energy-intensive process.

With [PyroGenesis Canada Inc. \(TSX: PYR\) \(NASDAQ: PYR\)](#), HPQ is developing:

1. the **PUREVAP™ "Quartz Reduction Reactors" (QRR)**, an innovative process (patent pending), which will permit the one-step transformation of quartz (SiO<sub>2</sub>) 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 of different sizes and nanowires.
3. Through its second 100% owned subsidiary, HPQ Silica POLVERE Inc., HPQ is developing a new plasma-based process that will allow a direct Quartz to Fumed silica transformation, removing the usage of hazardous chemical 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 evaluating two different approaches to reach this goal, those being:

1. Working with Swiss based company EBH2 Systems SAS as it pertains to their proprietary process to manufacture Green Hydrogen via electrolysis, and
2. Developing our own processes of making hydrogen via hydrolysis of nanosilicon materials made by our **PUREVAP™ (NSiR)**.

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

### **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 ongoing filings with the security's regulatory authorities, which filings can be found at [www.sedar.com](http://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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**Source:** HPQ Silicon Resources Inc.

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