

# HPQ Update of Ongoing Validation of EBH<sub>2</sub> Green Hydrogen Extraction Technology

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MONTREAL, Dec. 08, 2021 - [HPQ Silicon Resources Inc.](#) ("HPQ" or the "Company") (TSX-V: HPQ) (OTCQX: HPQFF) (FWB: UGE), an innovative silicon solutions and technology development company, would like to update shareholders on the ongoing validation of the EBH<sub>2</sub> technology announced on September 29, 2021. The validation team, two (2) PhD's with more than 30 years practical experience in the field of renewable energy and with first-hand experience developing hydrogen processes, have completed the first round of testing. The tests confirmed that the EBH<sub>2</sub> Green Hydrogen Reactors (EBH<sub>2</sub> GHR) uses low voltage<sup>1</sup> to power electrolyzers that generate a H<sub>2</sub> + O<sub>2</sub> gas mixture fuels that can be used to power a generator or any kind of fuel system to produce electricity.

## HPQ KEEPS OPEN IT EXCLUSIVE OPTION WITH EBH<sub>2</sub> SYSTEMS SA

The testing scope was limited by mechanical equipment issues, but it did confirm enough positive aspects about the technology and its potential, including hydrogen generation, that it was deemed to be in the best interest of HPQ to keep its exclusive options with EBH<sub>2</sub> open until further validation tests are completed. The equipment issues did not allow the validation of EBH<sub>2</sub> key claim, it's very high conversion efficiency, but EBH<sub>2</sub> is presently working on resolving the equipment issues. The plan, going forward, is to have HPQ's validation team complete a new testing round of the EBH<sub>2</sub> GHR demonstrator, as soon feasible.

A photo accompanying this announcement is available at

<https://www.globenewswire.com/NewsRoom/AttachmentNg/7185e581-b9fe-4709-ab2b-074c315cf3e3>

## EBH<sub>2</sub> ELECTROLYSER TECHNOLOGY VERSUS COMMERCIALLY AVAILABLE ELECTROLYSER TECHNOLOGIES

EBH<sub>2</sub> has filed a provisional patent for its proprietary low-cost electrolysis technology that it claims can efficiently extract hydrogen (H<sub>2</sub>) from water. To understand the scope of the electrolyser breakthrough as it pertains to system conversion efficiency (Ratio of Energy Produced to the Energy Consumed), one must look at the two (2) commercially available electrolyzers technologies (Polymer Electrolyte Membrane (PEM) and Alkaline) deployed. Presently both technologies are capable of sustaining system conversion efficiencies between 50-70% with an assumption that PEM base processes could reach >80 % by 2050, and > 70% by the same time frame for Alkaline.

## THERE WON'T BE ENOUGH ELECTROLYSERS TO MEET GREEN HYDROGEN DEMAND IN 2030<sup>2</sup>

In a 45-page report for clients, entitled Plugging into the Hydrogen Ecosystem, US investment bank and financial services firm Jefferies estimates that the worldwide supply of electrolyzers by 2030 will reach 47GW, but "could sit somewhere in the 30-40GW range". The report also points out that the International Energy Agency expects to see 180GW of demand for electrolyzers in use by 2030 and by 2050 a whopping 850GW in demand. Current global installed capacity of electrolyzers is currently 200MW, according to Aurora Energy Research. The conclusions of the report are twofold: A) that the global supply of electrolyzers will not be large enough to meet demand for green hydrogen by 2030, even in the least bullish scenarios, and B) Jefferies note recommends that investors buy shares in the electrolyser manufacturers ITM Power and Nel due to "our preference for PEM [polymer electrolyte membrane electrolyzers], partnerships and track records".

*HPQ CEO Bernard Tourillon commented: "Corporations and Governments worldwide strongly believe that Hydrogen can play a significant part in decarbonising our economies, and they are willing to invest billions of dollars to help develop green hydrogen production. EBH<sub>2</sub> Systems SA, with their proprietary low-cost electrolyser technology, present HPQ with one of these game changing synergistic opportunities that we simply could not overlook," Mr. Tourillon, further stated: "We are getting even closer to the point where EBH<sub>2</sub>*

*technology will be validated and when that occurs HPQ will be very well positioned to enter the hydrogen market with a system that can efficiently produce green hydrogen, on demand, which we believe will complement our green silicon materials initiatives needed to meet the demand of the up and coming*

*renewable energy revolution."*

#### About EBH<sub>2</sub> Systems SA.

EBH<sub>2</sub> Systems SA is a Swiss company located in Lausanne area focused on Hydrogen solutions that will be "Powering a Healthier Future". Together with a researcher that has dedicated his life to develop green Hydrogen technologies, EBH<sub>2</sub> is working on a solution to produce Hydrogen from virtually any water source including salt water. EBH<sub>2</sub> claims its process will be scalable with no limits. If successful, they claim it can power a large range of applications. For more information, please visit EBH<sub>2</sub> web site.

#### About HPQ Silicon Resources

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

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.

Source: [HPQ Silicon Resources Inc.](#)

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<sup>1</sup> ~ 36 volt

<sup>2</sup>[Link to Source Article](#)

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