

HPQ Receives its First Mini-Generator Set Based on Clean Hydrogen Produced by Simply Combining Water and a Powder Bag

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MONTREAL, Feb. 25, 2021 - Innovative silicon solutions provider [HPQ Silicon Resources Inc.](#) ("HPQ" or the "Company") (TSX-V: HPQ; FWB: UGE; Other OTC :HPQFF), is proud to announce that it has received the TREKHY? system, a portable hydrogen-based mini-power generator, jointly developed by the French companies Apollon Solar SAS ("Apollon") and Pragma Industries SAS ("Pragma"). While continuing to work with Apollon on the development of new generations of more efficient silicon powders for hydrogen production, HPQ signed a Memorandum of Understanding with Apollon and Pragma to study the commercial potential of the TREKHY? autonomous power generator in Canada.

The portable hydrogen-based power generator, a revolutionary product The TREKHY? provides energy on demand. The system uses a compact fuel cell to provide electrical power. The integrated fuel cell combines hydrogen and oxygen to provide useful electricity + H₂O. Hydrogen is produced through a chemical reaction resulting from contact between water and a powder bag. Each bag delivers 30W of power for more than one hour. (Video of the system in operation). In January 2021, a Japanese distributor purchased 300 TREKHY? systems to equip the survival shelters of the Japanese Civil Security.

"In addition to continuing our research, development and commercialization of advanced nanoscale silicon materials, HPQ continues to look for synergistic opportunities in order to remain at the forefront of innovative processes for the storage and delivery of clean renewable energy. This new collaboration with Apollon and Pragma represents another unique opportunity to combine the expertise of HPQ in the low-cost manufacturing of silicon nanomaterials, Apollon in the manufacturing of hydrogen reactors, and Pragma in the manufacturing of fuel cells," said Bernard Tourillon, Chairman and CEO of [HPQ Silicon Resources Inc.](#)

Autonomous energy storage and generation capacity superior to batteries

The energy autonomy of TREKHY? depends on the number of bags used. This option significantly reduces weight and operating costs, as compared to batteries. The table below compares the weights and costs of delivered energy between:

- Li-ion primary batteries,
- Li-ion rechargeable batteries,
- Zn-Air primary battery,
- TREKHY? with 150, 300, 450, 600 powder bags.

TREKHY?, with its revolutionary fuel cell and powder technology, offers unmatched performance.

A superior clean renewable hydrogen production thanks to silicon

The current cost of manufacturing silicon nanopowders is very high and it has led Apollon and Pragma to use a less efficient, but more economical, environmentally friendly chemical powder to begin the commercialization of their system. However, the use of silicon nanopowders manufactured by HPQ's PUREVAP™ Nano Silicon Reactor could increase the hydrogen generation potential of the system by 40%, while the use of porous silicon nanopowders could double the amount of hydrogen released by the system.

HPQ and Apollon are currently working to compare the technical and commercial potential of nanoscale and porous silicon materials to create new generations of environmentally friendly powders with better performance for hydrogen production.

"HPQ's Silicon R&D Consortium has the depth and flexibility to meet the challenges, as we strive to produce

products for renewable energy storage participants and electric vehicle manufacturers, each of which is searching for cost-effective ways to increase the Silicon content of their batteries. Silicon's potential to meet energy storage demands is undeniable, generating massive investments, and serious industry interest. We are very confident that the Silicon materials we are producing, with our expected low-cost scalable processes, will be in high demand for batteries, and by EV manufacturers and other participants in the ongoing renewable energy revolution," added Bernard Tourillon.

About HPQ Silicon Resources

[HPQ Silicon Resources Inc.](#) (TSX-V: HPQ) is a Quebec-based company that offers innovative 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 (SiO₂) in what has historically been a capital and energy-intensive process.

With PyroGenesis Canada Inc. (TSX: 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 (SiO₂) into high purity silicon (Si) at reduced costs, energy input, and carbon footprint that will propagate its considerable renewable energy potential. Through its 100% owned subsidiary, HPQ NANO Silicon Powders Inc., the *PUREVAP™ Nano Silicon Reactor (NSiR)* is a new proprietary process that can use different purities of silicon (Si) as feedstock, to make a wide range of nano/micro spherical powders of different sizes and nanowires.

HPQ is also working with industry leader Apollon Solar of France to develop the capability to produce commercially porous silicon (Si) wafers and porous silicon (Si) powders, and to develop the hydrogen generation potential of Silicon nanopowders for use with the Gennao™ system and 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"). 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. 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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Photos accompanying this announcement are available at

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