

HPQ and Apollon Assessing Manufacturing Porous Silicon Wafers for Li-Ion Batteries

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MONTREAL, Sept. 25, 2019 - [HPQ Silicon Resources Inc.](#) - TSX-V: HPQ; OTCPink: URAGF; FWB: UGE ("HPQ" or "the Company") is pleased to announce the extension and the expansion of scope of the December 2017 collaboration agreement with Apollon Solar SAS, ("Apollon"). The agreement now includes evaluating manufacturing porous Silicon wafers for solid-state Li-Ion batteries using Apollon patented process and Silicon (Si) produced by HPQ *PUREVAP*®; Quartz Reduction Reactor ("QRR") ("PVAP Si").

APOLLON PATENTED LOW-COST APPROACH TO MAKING POROUS SILICON WAFERS

In 2012, Apollon, working in collaboration with France CNRS ("Centre National de la Recherche Scientifique"), developed and obtained a worldwide patent for a unique low-cost process that uses standard metallurgical Silicon (2N to 4N+ Si) to produce square porous Silicon Wafers with a thickness of up to 2 cm.

"The HPQ *PUREVAP*®; QRR's proprietary capacity of controlling the purity of the Silicon (Si) produced should allow our unique and patented process to optimize the porous structure of the wafers between Microporous (pore size <5nm), Mesoporous (pore size 5nm – 50nm) and Macroporous (pore size >50nm) as per end-users requirements, simply by adapting process parameters" stated Mr. Jed Kraiem Ph.D, General Manager of Apollon Solar.

Working with Apollon, HPQ intends to develop the manufacturing of porous silicon wafers using *PUREVAP*®; Si that can be used as anodes for solid-state Li-ion batteries.

"Combining Apollon's patented low cost approach to make porous Si wafers and the HPQ *PUREVAP*®; Gen3 Pilot Plant's ability to produce Si will allow us to start the commercialisation of our porous Si wafers for solid state Li-Ion batteries earlier than most competitors, who are still only earlier stages R&D plays" said Bernard Tourillon, President & CEO of [HPQ Silicon Resources Inc.](#) Mr. Tourillon added: "Production of the first porous Silicon test wafers could start as early as Q4 2019."

GLOBAL ENERGY STORAGE MARKET READY TO EXPLODE

A recent report projects that energy storage deployments are estimated to grow 1,300% from a 12 Gigawatt-hour market in 2018 to a 158 Gigawatt-hour market in 2024. An estimated US\$71 billion in investments will be made into storage systems where batteries will make up the lion's share of capital deployment. Research suggests that replacing graphite materials with Silicon anodes in Li-Ion Batteries promises an almost tenfold (10x) increase in the charging capacity of batteries.

"Silicon potential to meet energy storage demand is generating massive investments. HPQ, working with Apollon, fully intends to use its first mover advantage in low cost porous Silicon (Si) wafer manufacturing using metallurgically produced *PUREVAP*®; Silicon (2N to 4N+ Si) to attract investors and commercial interest" said Mr. Tourillon.

About Silicon

Silicon (Si) is one of today's strategic materials needed to fulfil the renewable energy revolution presently under way. Silicon does not exist in its pure state; it must be extracted from quartz, one of the most

abundant minerals of the earth's crust and other expensive raw materials in a carbothermic process.

About HPQ Silicon

[HPQ Silicon Resources Inc.](#) is a TSX-V listed company developing, in collaboration with industry leader PyroGenesis (TSX-V: PYR) the innovative *PUREVAP™ Quartz Reduction Reactors* (QRR), a truly 2.0 Carbothermic process (patent pending), which will permit the transformation and purification of quartz (SiO₂) into Metallurgical Grade Silicon (Mg-Si) at prices that will propagate its significant renewable energy potential.

HPQ is also working with industry leader Apollon Solar to develop:

1. Porous silicon wafers manufacturing using *PUREVAP™* Silicon (PVAP Si) that can be used as anode for solid-state Li-ion batteries; and
2. A metallurgical pathway of producing Solar Grade Silicon Metal (SoG Si) that will take full advantage of the *PUREVAP™* QRR one-step production of high purity silicon (Si) and significantly reduce the Capex and Opex associated with the transformation of quartz (SiO₂) into SoG-Si.

HPQ focus is becoming the lowest cost producer of Silicon (Si), High Purity Silicon (Si), Porous Silicon Wafers and Solar Grade Silicon Metal (SoG-Si). The pilot plant equipment that will validate the commercial potential of the process is on schedule to start in 2019.

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 the Company's Roncevaux Quartz Project, Matapedia Area, in the Gaspé Region, Province of Quebec.*

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 securities 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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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

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