



## HPQ PARTNERS WITH PROFESSOR LIONEL ROUÉ (INRS) TO EVALUATE THE POTENTIAL OF PUREVAP™ SILICON FOR LI-ION BATTERIES

**Montreal, QC, Canada, (October 31, 2019):** [HPQ Silicon Resources Inc.](#) – [TSX-V: HPQ](#); [OTCPink: URAGF](#); [FWB: UGE](#) (“HPQ” or “the Company”) is pleased to announce its collaboration with Professor Lionel ROUÉ of the Institut National de Recherche Scientifique (INRS) within the scope of projects aimed at evaluating the electrochemical performances of different materials produced by the HPQ PUREVAP™ Quartz Reduction Reactor (“QRR”) for Li-ion batteries.

The [Énergie Matériaux Télécommunications \(Energy Materials Telecommunications\)](#) Research Centre is a centre of excellence in research, innovation, and graduate and postgraduate education in the fields of advanced materials, nanotechnology, photonics, telecommunications and sustainable energy. The EMT Centre brings together about 40 professors.

Professor Lionel ROUÉ of the INRS-EMT has developed a scientific program focused on the study of new electrode materials for various applications of industrial interest (batteries, aluminium production, etc.). In recent years, a significant part of its research activities has been devoted to the study of Si anodes for Li-ion batteries and the development of in-situ characterization methods applied to batteries. He is the author of more than 150 publications, including twenty articles and 2 patents on Si-based anodes for Li-ion batteries. He was awarded the Energia Prize by the Quebec Association for the Mastery of Energy for his work in this field.

### EVALUATING WORLDWIDE BATTERY MARKET POTENTIAL OF MATERIALS PRODUCED BY PUREVAP™

The first goal of the association is determining the commercial potential of materials produced by the PUREVAP™ QRR as anode material for the Li-ion battery market and ascertaining whether their usage within Li-ion batteries could lead to a significant increase in their energy density, which is crucial for some applications, especially electric vehicles.

In the second phase, the electrochemical performance of PUREVAP™ silicon based porous silicon wafers made using Apollon Solar's patented process will be tested.

*“Silicon’s potential to meet energy storage demand is generating [massive investments](#). Collaborating with a world-class university center, HPQ will be able to validate the potential of silicon materials produced from the PUREVAP™QRR as high-capacity anode materials for Li-ion batteries”* said Bernard Tourillon, President & CEO of HPQ Silicon Resources Inc. Mr. Tourillon added: *“HPQ, working with PyroGenesis, Apollon and the INRS Energy Materials Telecommunications (EMT) Research Centre, fully intends to use its Gen3 PUREVAP™ QRR to produce and market Silicon materials for batteries”*.

### 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 specific capacity of the anode, inducing a 20-40% gain in the energy density of Li-ion batteries.



## 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 (SiO<sub>2</sub>) 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: Porous silicon wafers manufacturing using *PUREVAP™ Silicon (PVAP Si)* that can be used as anode for all-solid-state and Li-ion batteries; and 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 (SiO<sub>2</sub>) 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 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.*

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