



**PyroGenesis Announces Commencement of Advanced Second Phase Lab Scale Testing  
with HPQ Silicon Resources Inc.,  
Totalling CAN\$170,000 which has been Received.**

**MONTREAL, QUEBEC--(Marketwired – September 19, 2017) - PyroGenesis Canada Inc.** (<http://pyrogenesis.com>) (TSX-V: PYR) (OTCQB: PYRNF), a high-tech company (the “Company” or “PyroGenesis”) that designs, develops, manufactures and commercializes plasma waste-to-energy systems and plasma torch products, is pleased to announce today that, further to its press release dated on May 4, 2017, it has informed its client, HPQ Silicon Resources Inc (“HPQ”), that the *Gen 2 PUREVAP™ Quartz Reduction Reactor (“QRR”)* (referred to herein as: “Gen 2 PUREVAP™”), a 1/250 scale model of the planned 200 metric tonne (MT) per year pilot plant (the “Pilot Plant”), will be operational in the coming weeks, and that an advanced, second phase, lab scale testing program is about to commence.

As previously announced, the first generation lab scale PUREVAP™ QRR (referred to herein as: “Gen 1 PUREVAP™”) was built to prove that Silicon Metal (Si) could be produced directly from quartz in just one step, for the solar panel industry.

The Gen 2 PUREVAP™ will focus on Process Refinement, Characterization, Metallurgical Testing and purity improvements using this new semi-continuous feed 1/250 scale model.

Based on Gen 1 PUREVAP™ results, PyroGenesis completed the detailed engineering and design of the Pilot Plant, including substantial process modifications, and as a result, this Gen 2 PUREVAP™ is an upgraded version of the Gen 1 PUREVAP™ that will be a true 1/250 scale replica of the planned larger pilot plant (“Gen 3 PUREVAP™”). The Gen 2 PUREVAP™ is currently undergoing final manufacturing, assembly and testing, and will be operational during the first weeks of October 2017.

The start of this new metallurgical testing program using the Gen 2 PUREVAP™ represents major de-risking of the Pilot Plant program as the Gen 2 PUREVAP™ will:

1. Allow for specific process design improvements and modifications derived from Gen 1 PUREVAP™ test work to be implemented and perfected;
2. Produce larger Silicon Metal (Si) samples to test improvements to the purification process;
3. Allow an intermediate step in scaling up to the Pilot Plant, thereby mitigating the scaling up risk;
4. Allow for the following milestones to be reached sooner than originally planned:

- Producing larger Si samples for testing by potential purchasers;
- Allow HPQ and PyroGenesis to test the electrical parameters of the High Purity Si;
- Produce enough material to send samples to solar industry participants; and
- Provide data to demonstrate the economics of PUREVAP™ technology.

“We are happy to see this new phase of the project. This new reactor will allow us to produce larger quantities of silicon and validate the process for the pilot phase,” said Pierre Carabin, Chief Technology Officer of PyroGenesis.

The next key milestone is to produce quantities of solar grade silicon for testing of its electrical characteristics, sending material to industry participants and finalize Pilot plant design en route to commercialization.

### **About PyroGenesis Canada Inc.**

PyroGenesis Canada Inc. is the world leader in the design, development, manufacture and commercialization of advanced plasma processes. We provide engineering and manufacturing expertise, cutting-edge contract research, as well as turnkey process equipment packages to the defense, metallurgical, mining, advanced materials (including 3D printing), oil & gas, and environmental industries. With a team of experienced engineers, scientists and technicians working out of our Montreal office and our 3,800 m<sup>2</sup> manufacturing facility, PyroGenesis maintains its competitive advantage by remaining at the forefront of technology development and commercialization. Our core competencies allow PyroGenesis to lead the way in providing innovative plasma torches, plasma waste processes, high-temperature metallurgical processes, and engineering services to the global marketplace. Our operations are ISO 9001:2008 certified, and have been ISO certified since 1997. PyroGenesis is a publicly-traded Canadian company on the TSX Venture Exchange (Ticker Symbol: PYR) and on the OTCQB Marketplace (Ticker Symbol: PYRNF). For more information, please visit [www.pyrogenesis.com](http://www.pyrogenesis.com)

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 securities regulatory authorities, which filings can be found at [www.sedar.com](http://www.sedar.com), or at [www.otcmarkets.com](http://www.otcmarkets.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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