



PyroGenesis Announces Receipt of CAN\$1,372,000, Representing 2nd Progress Payment Under Contract with HPQ Silicon Resources Inc.

January 12, 2017

MONTREAL, QUEBEC--(Marketwired - Jan. 12, 2017) - PyroGenesis Canada Inc. (<http://pyrogenesis.com>) (TSX VENTURE:PYP) (OTCQB:PYPNF), a clean-tech company (the "Company" or "PyroGenesis") that designs, develops, manufactures and commercializes plasma waste-to-energy systems and plasma torch products, announces today that it has received the 2nd progress payment under a previously announced \$8.3MM contract with HPQ Silicon Resources Inc. ("HPQ") to provide a 200 metric tonne (MT) per year PUREVAP™ pilot system (the "System") to produce silicon metal directly from quartz (the "Contract"). To date, PyroGenesis has received over CAN \$2,862,000, or more than 34% of the value of the Contract.

As announced on August 2, 2016, the Contract is for the design, fabrication, assembly, commissioning and testing of the System. We currently are in the design, fabrication and assembly phase of which there remains approximately \$2.6MM to be paid subject to certain milestones; \$520,000 in payments are due during the commissioning phase, with an additional \$2.3MM to be paid following various milestones during the testing phase.

To date, PyroGenesis has demonstrated that the System can:

- Transform low purity quartz (97.5%) to high purity silicon; thereby defying standard methods¹;
- Successfully produce 4N (99.99%) silicon from low purity quartz²;
- Remove aluminum, boron, calcium and phosphorous with consistently high efficiencies, between 67 and 97%. Of particular note, boron, which negatively impacts the electrical properties of photovoltaic solar systems, is one of the most difficult impurities to remove from silicon³.

Management believes the PUREVAP™ will have a significant impact on the solar industry. We note that there seems to be significant commercial applications for the System, at lower purity levels, as well (i.e. above 99.9%).

"The PUREVAP™ has the potential to change the silicon making industry by turning a complex multiple step process into a single step process," said Pierre Carabin, Chief Technology Officer of PyroGenesis. "We are extremely pleased with the progress of the project to date and are looking forward to the completion of the System."

"These results are significant as the prevailing proposition suggests that the quartz purity level required to make high purity silicon metal is over 99.5%⁴; however the PUREVAP™ has proven that to no longer be the case," said P. Peter Pascali, President and CEO of PyroGenesis. "We have demonstrated that the System can use quartz of a significantly lower purity level (97.5%) as feedstock and still produce high purity silicon metal. The implications of this are enormous when considering the potential commercial applications of the PUREVAP™ process. Conceivably, we can now take an inexpensive and abundant low purity quartz feedstock and transform it into a high value end product."

Figure 1 reflects the fundamental steps used in the conventional process, as compared to the PUREVAP™ process, to transform quartz into a solar grade silicon. To view Figure 1, please visit the following link: http://media3.marketwire.com/docs/1082485_Fig_1.jpg

As you may note, in the conventional process, an electric arc furnace is used to transform the quartz into metallurgical grade silicon ("MGS"), which is then dissolved in hydrochloric acid and after several additional steps, solar grade silicon is formed. Separately, the now obsolete Timminco Ltd. attempted to replace the hydrochloric acid step with a rotary furnace, thereby, in theory, form solar grade silicon without the additional steps required in the conventional process; however the significant difference between both these processes and the PUREVAP™ is that the PUREVAP™ process starts directly with quartz, which is introduced into a vacuum arc furnace with no additional steps required. The PUREVAP™ process does not have to create a MGS; it is all done in just one step, creating significant advantages.

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 m² 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: PYP) and on the OTCQB Marketplace (Ticker Symbol: PYPNF). For more information, please visit 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, or at www.otcm Markets.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 PyroGenesis Canada Inc.

- 1 See press release dated November 2, 2016 for further details.
- 2 See press release dated November 29, 2016 for further details.
- 3 See press release dated September 29, 2016 for further details.

NI 43-101 Preliminary Economic Assessment on the Langis Silica Deposit and a Metallurgical Silicon Processing Plant in the Matapedia Region, Province of Québec, Canada. PEA study prepared by Viridis.iQ, GmbH in accordance with the requirements of National Instrument 43-101;
4 "Exploring for silica in Quebec", SIDEX, Online report, <http://www.sidex.ca/wp-content/uploads/2015/02/Exploring-for-Silica-in-Quebec.pdf>, February 2015, Accessed on November 1st 2016.

Contact Information:

P. Peter Pascali
Chief Executive Officer
(514) 937-0002
ir@pyrogenesis.com

