



PyroGenesis Provides GEN2 Testing Report to HPQ Silicon Resources; Confirms PUREVAP™ Process Significantly Reduces the Cost of Making Silicon Metal

MONTREAL, QUEBEC (GlobeNewswire – June 17th, 2019) - PyroGenesis Canada Inc. (<http://pyrogenesis.com>) (TSX-V: PYR) (OTCQB: PYRNF) (FRA: 8PY), a high-tech company, (the "Company", the "Corporation" or "PyroGenesis") that designs, develops, manufactures and commercializes plasma atomized metal powder, plasma waste-to-energy systems and plasma torch products, today announced that it has provided an interim report to HPQ Silicon Resources ("HPQ"), confirming that the PUREVAP™ process can significantly reduce the cost of making silicon metal by lowering raw material costs.

PUREVAP™ PROCESS PROPRIETARY ADVANTAGE: USING LOW COST CARBON

One of PUREVAP™ process' unique advantages is its capacity to use low cost highly reactive carbon sources, and convert them into high purity silicon metal. In comparison, conventional processes available on the market are using expensive higher purity carbon sources. This advantage allows the PUREVAP™ process to significantly reduce the cost of making silicon metal.

Depending on the producer, making metallurgical grade silicon metal (98.0% to 99.5% silicon) in 2018 with a conventional process can cost between US \$1,450-2,000/MT¹. More than 40% of that cost² is directly attributable to the 6+ metric tonnes of raw material (silicon dioxide and reductant) needed to produce 1 MT of metallurgical grade silicon metal³. The carbon reductant used in those processes accounts for 30% of total cost³. From that cost, 10% accounts for woodchip, and 20% for carbon, the latter being twice as expensive.

Therefore, having a process that uses less feedstock to make 1 MT of metallurgical grade silicon metal and allows the substitution of costly high purity reductant with readily available lower cost material would make the process more economically viable, and that is what PUREVAP™ offers.

GEN2 TESTING RESULTS: PUREVAP™ ABLE TO PRODUCE COMMERCIALY VIABLE SILICON

During GEN2 testing, the Company decided to push the limits of the project by using only one reductant, a highly reactive carbon source, in the PUREVAP™ reactor. The results show that GEN2 PUREVAP™ is

¹ CRU – Silicon Market Outlook – November 14 2018 (Page 17)

² Ferroglobe_Investor_Day_Presentation__17_Oct_2017 (Page 40)

³ GSM_Investor_Presentation_-_March_2014 (Page 3)

able to produce commercially viable 99.73% silicon with 0.166% Fe and 0.0424% Al, representing chemical grade metallurgical grade silicon metal.⁴

“Being able to produce chemical grade metallurgical grade silicon underscores the versatility of the PUREVAP™ process and, as such, we continue to de-risk the project”, said Mr. Pierre Carabin, Chief Technology Officer and Chief Strategist of PyroGenesis.

GEN3 PILOT PLANT WILL VALIDATE THE COMMERCIAL VIABILITY

Being able to use lower cost raw material represents significant potential cost savings, however another significant outcome from this is that, as a result, the PUREVAP™ process should only require 4.5 MT of raw material⁵ (lower purity silicon dioxide and cheaper reductant) to produce 1 MT of metallurgical grade silicon metal.

As more than 40% of the cost of conventional processes is directly attributable to the 6+ metric tonnes of raw material (silicon dioxide and reductant) needed to produce 1 MT of metallurgical grade silicon metal³, it is possible to estimate that the PUREVAP™ process could cut in half raw material cost, representing a 20% reduction in the cost of making chemical grade metallurgical grade silicon metal. GEN3 pilot plant testing will allow us to refine and validate these numbers at commercial scale.

About PyroGenesis Canada Inc.

PyroGenesis Canada Inc., a high-tech company, is the world leader in the design, development, manufacture and commercialization of advanced plasma processes and products. 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 9001:2015 and AS9100D certified, and have been since 1997. PyroGenesis is a publicly-traded Canadian Corporation on the TSX Venture Exchange (Ticker Symbol: PYR) and on the OTCQB Marketplace. 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 Corporation's current expectation and assumptions and are subject to a number of risks and uncertainties that could cause actual results to

4 Balazs™ NanoAnalysis – ICP OES (Inductively coupled plasma - optical emission spectrometry) analysis results

5 PyroGenesis efficiency estimation for the PUREVAP™ process

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 Corporation with respect to future events and are subject to certain risks and uncertainties and other risks detailed from time-to-time in the Corporation's ongoing filings with the securities regulatory authorities, which filings can be found at www.sedar.com, or at 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 Corporation 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, its Regulation Services Provider (as that term is defined in the policies of the TSX Venture Exchange) nor the OTCQB accepts responsibility for the adequacy or accuracy of this press release.

SOURCE PyroGenesis Canada Inc.

For further information please contact: Clémence Bertrand-Bourlaud, Marketing Manager/Investor Relations, Phone: (514) 937-0002, E-mail: ir@pyrogenesis.com

RELATED LINKS: <http://www.pyrogenesis.com/>