
**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549**

FORM 6-K

**REPORT OF FOREIGN PRIVATE ISSUER PURSUANT TO RULE 13a-16 OR 15d-16 UNDER THE SECURITIES
EXCHANGE ACT OF 1934**

For the month of October 2023

Commission File Number: **001-39989**

PYROGENESIS CANADA INC.
(Translation of registrant's name into English)

**1744, William St. Suite 200
Montreal, QC, H3J1R4
Canada**
(Address of principal executive office)

Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20-F or Form 40-F.
Form 20-F [] Form 40-F []

On October 11, 2023, the Registrant issued a press release, a copy of which is attached hereto as Exhibit 99.1 and is incorporated herein by reference.

EXHIBIT INDEX

<u>Exhibit Number</u>	<u>Description</u>
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99.1	Press Release dated October 11, 2023
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SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

PYROGENESIS CANADA INC.

(Registrant)

Date: October 11, 2023

/s/ P. Peter Pascali

P. Peter Pascali
Chief Executive Officer

PyroGenesis Announces Successful Silicon “Pour” Validating all Critical Milestones

Client Can Now Start Planning to Transition to Commercial Production Plant with PyroGenesis Supplied Systems

MONTREAL, Oct. 11, 2023 (GLOBE NEWSWIRE) -- PyroGenesis Canada Inc. (<http://pyrogenesis.com>) (NASDAQ: PYR) (TSX: PYR) (FRA: 8PY), a high-tech Company (the “Company” or “PyroGenesis”) that designs, develops, manufactures and commercializes advanced plasma processes and sustainable solutions which are geared to reduce greenhouse gases (GHG) and address environmental pollutants, is pleased to announce that, further to the recent news release dated October 3, 2023, which provided updates to projects as part of the strategic engineering partnership with client HPQ Silicon (the “Client”), PyroGenesis’ engineering teams completed the milestone pour of silicon from the Purevap Quartz Reduction Reactor (QRR).

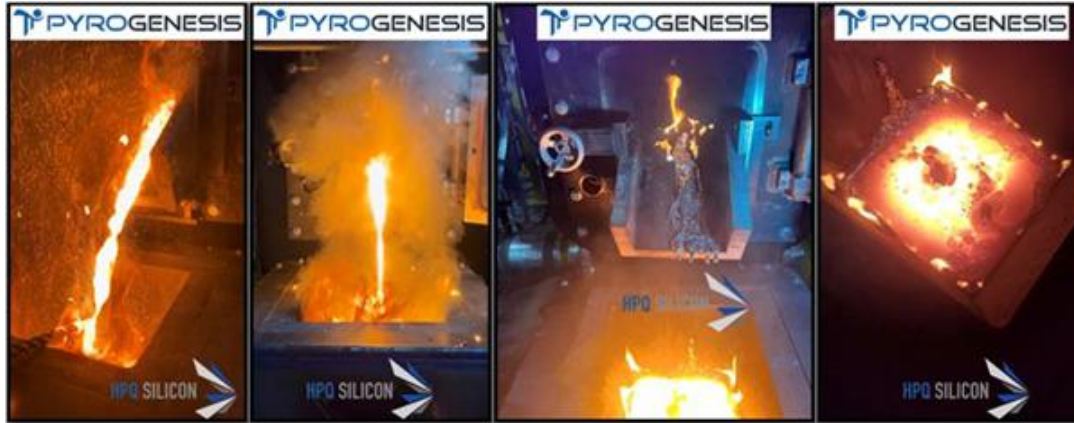


Image: Silicon Tapping Process, from the liquid Si pour (Left) to the solidified Si (Right)

As a result, the work completed has now successfully validated 100% of the project’s critical milestones, which include, but are not limited to:

1. Achieving 99.5% Silicon purity (2N+) from the outset, a level that exceeds the best commercially available purity threshold.
2. Scaling up production by 2,500X from PUREVAP™ Gen2 QRR.
3. Demonstrating the semi-continuous batch production capability of the reactor.
4. Completing a successful silicon pour.
5. Achieving one-step production of 3N+ Silicon or battery-grade Silicon.
6. Production of silicon using 25% less feedstock than conventional carbothermic processes that use a ratio of 6 tonnes (t) of raw materials to produce 1 ton of metallurgical grade silicon (MG Si – 98.5% to 99.5%).

With the achievement of the silicon pour, this phase of the project is now complete, setting the stage for transitioning to commercial production. Some final operational optimizations will be conducted to i) help ensure continuous run quality and ii) collect additional data which will be used to develop the final strategy for commercialization, specifically the determination of the number of Purevap QRR systems required to construct a full commercial plant.

Based on ongoing discussions with HPQ, collaborative preliminary assessments have revealed that a minimum of two initial reactors, each capable of producing 2,500 MT of high-purity silicon per year, are likely to be required – at a build cost to HPQ of at least \$20 million each and PyroGenesis would be the engineering partner contracted to build these units. If realized, the project would represent a potentially large build order contract to PyroGenesis of approximately \$40 million.

“In many ways, this silicon pour is the crowning achievement in the development of this QRR pilot plant,” said Mr. P. Peter Pascali, CEO of PyroGenesis. “This phase is now complete, and I personally would like to recognize the effort shown by our team of scientists and engineers who met and overcame all challenges and delays during this long process. We are, of course, also very happy for our client HPQ Silicon, as they now have final proof that this game-changing approach to the creation of high-purity silicon is ready for commercialization.”

PyroGenesis’ involvement in developing high-purity silicon from quartz is part of PyroGenesis’ three-tiered solution ecosystem that aligns with economic drivers that are key to global heavy industry. High-purity silicon is part of PyroGenesis’ Commodity Security & Optimization tier, where the recovery of viable metals and the optimization of production to increase output helps to maximize raw materials and improve the availability of critical minerals. Silicon has been identified as a critical mineral by many governments worldwide.

About PyroGenesis Canada Inc.

PyroGenesis Canada Inc., a high-tech company, is a proud leader in the design, development, manufacture and commercialization of advanced plasma processes and sustainable solutions which reduce greenhouse gases (GHG) and are economically attractive alternatives to conventional “dirty” processes. PyroGenesis has created proprietary, patented and advanced plasma technologies

that are being vetted and adopted by multiple multibillion dollar industry leaders in four massive markets: iron ore pelletization, aluminum, waste management, and additive manufacturing. With a team of experienced engineers, scientists and technicians working out of its Montreal office, and its 3,800 m² and 2,940 m² manufacturing facilities, PyroGenesis maintains its competitive advantage by remaining at the forefront of technology development and commercialization. The operations are ISO 9001:2015 and AS9100D certified, having been ISO certified since 1997. For more information, please visit: www.pyrogenesis.com.

Cautionary and Forward-Looking Statements

This press release contains “forward-looking information” and “forward-looking statements” (collectively, “forward-looking statements”) within the meaning of applicable securities laws. In some cases, but not necessarily in all cases, forward-looking statements can be identified by the use of forward-looking terminology such as “plans”, “targets”, “expects” or “does not expect”, “is expected”, “an opportunity exists”, “is positioned”, “estimates”, “intends”, “assumes”, “anticipates” or “does not anticipate” or “believes”, or variations of such words and phrases or state that certain actions, events or results “may”, “could”, “would”, “might”, “will” or “will be taken”, “occur” or “be achieved”. In addition, any statements that refer to expectations, projections or other characterizations of future events or circumstances contain forward-looking statements. Forward-looking statements are not historical facts, nor guarantees or assurances of future performance but instead represent management’s current beliefs, expectations, estimates and projections regarding future events and operating performance.

Forward-looking statements are necessarily based on a number of opinions, assumptions and estimates that, while considered reasonable by the Company as of the date of this release, are subject to inherent uncertainties, risks and changes in circumstances that may differ materially from those contemplated by the forward-looking statements. Important factors that could cause actual results to differ, possibly materially, from those indicated by the forward-looking statements include, but are not limited to, the risk factors identified under “Risk Factors” in the Company’s latest annual information form, and in other periodic filings that the Company has made and may make in the future with the securities commissions or similar regulatory authorities, all of which are available under the Company’s profile on SEDAR+ at www.sedarplus.com, or at www.sec.gov. These factors are not intended to represent a complete list of the factors that could affect the Company. However, such risk factors should be considered carefully. There can be no assurance that such estimates and assumptions will prove to be correct. You should not place undue reliance on forward-looking statements, which speak only as of the date of this release. The Company undertakes no obligation to publicly update or revise any forward-looking statement, except as required by applicable securities laws.

Neither the Toronto Stock Exchange, its Regulation Services Provider (as that term is defined in the policies of the Toronto Stock Exchange) nor the NASDAQ Stock Market, LLC accepts responsibility for the adequacy or accuracy of this press release.

For further information please contact:
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RELATED LINK: <http://www.pyrogenesis.com/>

A photo accompanying this announcement is available at <https://www.globenewswire.com/NewsRoom/AttachmentNg/6a88f510-1777-465e-b6bb-d040e0c0de04>