PyroGenesis Improves Key Performance Parameters of its NexGenTM Plasma Atomized Metal Powder Production System

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MONTREAL, March 04, 2025 (GLOBE NEWSWIRE) -- PyroGenesis Inc. (“PyroGenesis”) (http://pyrogenesis.com) (TSX: PYR) (OTCQX: PYRGF) (FRA: 8PY), a high-tech company that designs, develops, manufactures and commercializes all-electric plasma processes and sustainable solutions to support heavy industry in their energy transition, emission reduction, commodity security, and waste remediation efforts, provides improvement details for its NexGen^{TM} plasma atomized metal powder production system. These details are provided following the March 3, 2025 press release (*Technical Requirements for Titanium Coarse Metal Powder Have Been Met by PyroGenesis' NexGen ^{TM} Plasma Atomized Metal Powder for Global Aerospace OEM*), in which PyroGenesis' President and CEO, P. Peter Pascali, stated that “ *throughout this qualification process with Boeing, and ahead of the final supplier list notification, PyroGenesis has not been idle. We continue to improve the system in step with Boeing's continued technological advancements…*”

2024 saw PyroGenesis make gains in several areas that have positively impacted internal production results.

INTERNAL IMPROVEMENT RESULTS

PyroGenesis has demonstrated improvements in the following three key areas:

a) Higher Yields: **increased yield of key powder by 33-50%**
b) Increased Uptime: **increased operational uptime by more than 25%**
c) Lowered Operational Costs: **reduced costs by ~20%**

a) Higher Yields

In this case, yield refers to the fraction of laser cut powder that is being produced from the raw material input.

Yield is an important aspect of powder production. Over the past 12 months, PyroGenesis increased yield for metal powder used in the Laser Powder Bed Fusion LPB-F printing process (the “laser cut”) by between 33% to 50%, depending on the configurations.

The powder used for the “laser cut” typically has a particle size ranging from 15 to 63µm and is one of the most widely used cut sizes in the industry. It also offers one of the highest price points. The adjustments that were made shifted the yield ratio to a higher percentage of more expensive powders, and a lower percentage of lower cost powders, all while improving the operational cost.

Specific yield volume data is proprietary and is not disclosed.

b) Increased Uptime

Uptime is time spent in metal powder production mode and is contrasted by non-productive activities such as setup, feedstock changeovers, maintenance, and reconfiguring for different tests and production cycles.

Over the past 12 months, uptime specific to metal powder production has increased by more than 25%.

This increase was achieved without adding additional production days or shifts.

c) Lowered Operational Costs

Since May 2023, when PyroGenesis announced its full entrance into the titanium metal powders marketplace, operational costs have continued to improve.

The NexGen metal powder production system currently operates at ~20% lower costs than those recorded in May 2023.

These cost reductions have been achieved through a combination of operational efficiencies, technology enhancements, optimization of raw materials, and adjustments to supplier relationships.

PyroGenesis is the inventor of the plasma atomization process and in fact coined the term “plasma atomization” in its original patent. PyroGenesis' development of high quality titanium metal powders is part of its three-vertical solution ecosystem that aligns with economic drivers that are key to global heavy industry. Metal powders are part of PyroGenesis' **Commodity Security & Optimization** vertical, where the development of advanced material production techniques, and the use of technology such as plasma to recover viable metals, chemicals, and minerals from industrial waste, helps to maximize raw materials and improve the availability of critical minerals. Titanium has been identified as a critical mineral by the Canadian government. The Company's other verticals are **Energy Transition and Emission Reduction** and **Waste Remediation**.

About PyroGenesis Inc.

PyroGenesis, 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 m^2 and 2,940 m^2 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. PyroGenesis' shares are publicly traded on the TSX in Canada (TSX: PYR), the OTCQX in the US (OTCQX: PYRGF), and the Frankfurt Stock Exchange in Germany (FRA: 8PY).

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 PyroGenesis 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 PyroGenesis' latest annual information form, and in other periodic filings that it has made and may make in the future with the securities commissions or similar regulatory authorities, all of which are available under PyroGenesis' profile on SEDAR+ at www.sedarplus.ca. These factors are not intended to represent a complete list of the factors that could affect PyroGenesis. 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. PyroGenesis undertakes no obligation to publicly update or revise any forward-looking statement, except as required by applicable securities laws.

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