PFAS Destruction Testing Confirms That PyroGenesis' Plasma Torches Reduce Energy Requirements By Up To 45%

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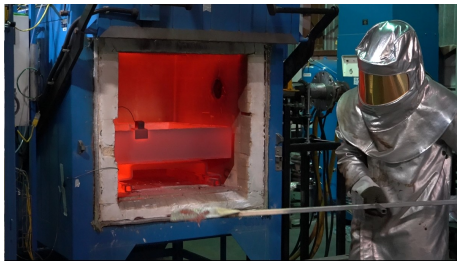
Supports recent results from other projects using PyroGenesis plasma torches showing lower energy usage, reduced CAPEX, and faster production rates.

MONTREAL, Feb. 10, 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 advanced all-electric plasma processes and sustainable solutions to support heavy industry in their energy transition, emission reduction, commodity security, and waste remediation efforts, announces that recent data from a current contract confirms that PyroGenesis plasma torches posted significantly lower operational energy requirements. Savings of up to 45%, when compared to legacy diesel burners, have been obtained in destroying PFAS (often called "forever chemicals"). This contract has been disclosed previously (discussed most recently in the December 3, 2024 press release) and the name of the client remains anonymous for confidentiality and competitive reasons. This new data, combined with other recent results, highlights how a transition from fossil fuels to PyroGenesis plasma torches can generate both significant OPEX and emission reduction advantages.

PyroGenesis' tests using plasma torches within an aluminum melting furnace



An engineer removes metal from a furnace during PyroGenesis' tests using plasma torches within an aluminum melting furnace supplied by its client Constellium.

Figure 1: An engineer removes metal from a furnace during PyroGenesis' tests using plasma torches within an aluminum melting furnace supplied by its client Constellium.

These latest results are consistent with those obtained in other test installations where PyroGenesis plasma torches were used. In controlled tests carried out by PyroGenesis for similar applications in the aluminum sector, including those conducted as part of a contract with Constellium, one of the world's largest aluminum transformation and recycling companies (press release dated April 10, 2024), to benchmark plasma torches against equivalent-power fossil-fuel burners, PyroGenesis' plasma torches have achieved improvements of up to 45% reduction in global energy consumption, with a range of 10-45% reduction depending on the type of operation (e.g. melting, remelting or holding furnaces). These same tests also revealed up to 30% reduction in melting time (i.e. they melt faster, which translates into higher productivity).

Separately, tests using PyroGenesis plasma torches in casting ladle heating demonstrated energy reduction of 80% when compared to the energy requirement to power the furnaces with the pre-existing natural gas burners. This project was previously disclosed in the April 17, 2024 press release.

"These latest results, which have been confirmed across several projects under very different conditions, have significant implications for our torch offerings," said P. Peter Pascali, President and CEO of PyroGenesis. "First, a solid business case can be made to transition to all-electric PyroGenesis plasma torches from an energy savings perspective alone, and any positive environmental impact (such as CO_2 reduction) would be just icing on the cake. Second, with the reduced energy requirement as a result of using PyroGenesis torches, companies can now contemplate building smaller

equipment (for the same capacity), reducing costs further for the same project. Third, the reduced aluminum melting time means companies can raise production levels, generating higher and faster output. Increasing production rates by up to 30% from the same production footprint implies processing more output which in turn directly impacts revenues and profitability. As I said, the advantages from using PyroGenesis' plasma torches create a solid business case apart from the concurrent positive environmental impact of doing so. It is for these reasons that we say that '*PyroGenesis is working to make sustainability sustainable*."

PyroGenesis' development of plasma torches for use in high temperature industrial processes is part of its three-vertical solution ecosystem that aligns with economic drivers that are key to global heavy industry. Plasma torches for use in industrial furnaces are part of PyroGenesis' **Energy Transition and Emission Reduction** vertical, where fuel switching to PyroGenesis' electric-powered plasma torches helps heavy industry reduce energy costs, fossil fuel use, and emissions. The other verticals are **Waste Remediation** and **Commodity Security and Optimization**.

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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