



PyroGenesis Announces Receipt of \$1.3 Million Payment from Client B

November 1, 2022

Confirms All Iron Ore Pelletization Trials Moving Forward

MONTREAL, Nov. 01, 2022 (GLOBE NEWSWIRE) -- PyroGenesis Canada Inc. (<http://pyrogenesis.com>) (TSX: PYR) (NASDAQ: PYR) (FRA: 8PY), a high-tech company (hereinafter referred to as the "Company" or "PyroGenesis"), that designs, develops, manufactures and commercializes advanced plasma processes and sustainable solutions which are geared to reduce greenhouse gases (GHG), confirms today that, further to its [press release dated September 14, 2021](#), it has received a milestone payment from Client B of approximately \$1.3 million. Separately, the Company confirms that the previously announced^{1,2} trials of its patented plasma torch system for use in iron ore pelletization furnaces, with both Client A and Client B, (the "Clients" or "Client") are ongoing with no change in strategy by either PyroGenesis and/or the Clients. The names of the Clients have been kept confidential for competitive reasons.

"These trials, representing years of research and development, computer modelling, business case development, and factory acceptance testing, have required multi-million-dollar infrastructure expenditures by the Clients," said Mr. P. Peter Pascali, CEO and Chair of PyroGenesis. "These projects are all continuing as expected notwithstanding the impact covid has had on our Client's ability to source the supplies required to ready their site for the introduction of our torches. Excluding covid-related supply chain delays on the Client's part, other engineering and project-partnership aspects not impacted by covid are continuing by both parties."

"Our goal has always been to help companies, across multiple industries, replace all manner of fossil fuel burners with PyroGenesis' plasma torch, not just those using fuel oil or bunker fuel, but also natural gas and other fuel types," added Mr. Pascali. "We are happy to see that over the recent past, several major industry players, particularly in the iron ore pelletization industry, have initiated their decarbonization efforts by first switching from heavy fuel oil to natural gas which was essentially a switch to a cheaper fuel but with limited impact on CO₂ emissions (with approximately 70% remaining). As such, this switch to a cheaper fuel has never been a threat to our business. In fact, of note, is that one of PyroGenesis' iron ore clients has already targeted natural gas burners to be replaced by PyroGenesis' plasma torches. Natural gas use by iron ore pelletizers (and by companies in other industries) represents the same opportunity for PyroGenesis' plasma torches as it does with companies using heavier fuel oil or bunker fuel. It should also be noted that industry announcements related to switching to a different type of fossil fuel, are common, and may, in fact, relate to decisions that were planned before PyroGenesis' plasma torch became an option. Naturally, until the trials with our torches are undertaken, one would not expect our Clients to materially change the plans they had before PyroGenesis became known. We can state unequivocally that neither of our existing iron ore Clients has expressed any desire to change their strategy/plan with PyroGenesis based on any fossil fuel currently, or slated to be, put into use. In fact, I would suggest that given recent market conditions, our Clients seem more interested in the potential benefits of our offering."

The Company provides a short update with respect to its work with previously announced Clients, as follows:

Client A

Client A is a multi-billion-dollar international producer of iron ore. Further to its [press release dated July 5, 2022](#), the Company has already delivered (and the Client has purchased) a 1-MW plasma torch system and numerous peripheral components for use in the Client's iron ore pelletization furnaces.

At the Client's discretion, based on their engineering and facility schedule, the plasma torch system will be trialed in an active pelletization furnace.

On July 5th, the Company announced that the Site Acceptance Test ("SAT"), which was initially scheduled to be completed for the end of July 2022, would be postponed to the end of October, due to nothing other than supply chain delays in implementing significant modifications to their site which they are making, at their expense. The Client has reassured PyroGenesis that activities are advancing as required, and this process extension represents changes to scheduling and reallocation of materials and personnel, with all objectives remaining the same. As of this writing, the Client continues to experience bottlenecks with parts of their infrastructure readiness and is not yet ready to start the SAT, nor have they given a firm start date. It must be repeated that the Client has made a major engineering and financial investment in this plasma torch trial, and according to the Client, its eventual operation is not in doubt. Once the SAT is performed, the Client most probably will run the system for a trial period, the duration of which is unknown at this time.

Client B

Client B is also a multi-billion-dollar international producer of iron ore. Further to the [press release dated September 14, 2021](#), in which it was announced that the Client will purchase, and PyroGenesis will supply, four (4) high power plasma torches together with ancillary equipment for trial use in iron ore pelletization furnaces, the achievement of recent production milestones has resulted in a payment to PyroGenesis of approximately \$1.3 million. These plasma torch systems, when delivered at the discretion of the Client's engineering and infrastructure timeline, will be used to replace fossil fuel-burners in an iron ore pellet baking furnace.

Bunker Fuel to Natural Gas

Separately, PyroGenesis is both aware of, and encourages, the fact that many iron ore producers continue to take numerous steps towards a decarbonized future, including testing and trialing a variety of alternatives to replace the carbon-producing aspects of their business. One such example is the replacement of fuel oil (also known as "bunker fuel" or "number 6 fuel oil") with natural gas.

To that end, it is important to note that natural gas – a fossil fuel – is also a heavy emitter of CO₂, and while offering an approximately 28% to 30%³ reduction in CO₂ from the existing fuel oil approach, is generally considered a short term solution for iron ore factories towards their eventual decarbonization goal; additionally, the use of natural gas is often related to wider availability, lower cost, and different competitive market dynamics for

the gas compared to fuel oil. Importantly, the Company notes its long awareness of natural gas usage in pelletization plants; in fact, the location of the planned plasma torch trials for Client A are at a location where furnaces already are utilizing natural gas.

"This latest production milestone, and the concurrent \$1.3 million dollar payment, is another step in the long journey that we have undertaken together with our major iron ore clients – a journey towards the decarbonization goals of these companies and of an entire industry," said Mr. Pascali. "The size and scale of the transition at which these iron ore pelletizers are aiming, takes not only time, but extensive analysis, significant resources, uncompromising engineering discipline and expertise, and technology vendors willing to go the distance as true partners. As numerous other activities, tests, trials, and modifications take place concurrently, and as companies across heavy industry implement various interim measures such as alternative fuels, the key players within iron ore and steelmaking continue to publicly assert that the future is carbon-free and electric. With our patented 100% electric, carbon-free, plasma torches offering a truly unique solution for fossil-fuel furnace burner replacement, we agree wholeheartedly. There is no doubt that both Clients A and B are moving as quickly as possible, given their individual circumstances, with the previously announced trials. We are, along with many in the industry, eagerly looking forward to the upcoming technology trials, with the start-date, timing, and duration being entirely up to the clients' discretion."

"We are extremely happy, and proud, with the progress made to date although, as with everything we do, we wish it would move a tad faster. Notwithstanding that, the fact remains that PyroGenesis has gone, in a few short years, from being an unknown in the iron ore pelletization industry to being considered a technology of choice in solving a serious issue plaguing multiple iron ore pelletizers," added Mr. Pascali. "As one might expect we are also in discussions with other companies within the iron ore industry, as well as other industries, about replacing natural gas burners with plasma torches. I think it is generally recognized by those in the industry that natural gas burners are not the long-term solution for any company that is serious about the reduction of CO₂ and as such is not an impediment to our long-term goal of replacing all fossil fuel burners with plasma torches. This position is confirmed by our Clients who would not be moving forward with us and investing the type of money they are in this project. That is not to say that we are guaranteed to be successful, just that we are definitely on the right track and moving in the right direction. In fact, the big picture of our success to date is the fact that this continued interest underscores the far-reaching opportunity for PyroGenesis' plasma torches, namely aiding multiple industries in their fuel-switching goals, away from CO₂-producing sources and on to a clean electric future."

Pelletization is the process in which iron ore is concentrated before shipment, thus significantly reducing the cost of transportation, and providing a required feedstock for blast furnaces. In conventional technologies, the process heat is provided by fuel oil or natural gas burners (both environmentally damaging). The combustion of fossil fuels in the burners results in the production of GHG, mainly CO₂. Plasma torches, by contrast, utilize renewable electricity and offer an environmentally attractive alternative to fossil fuel burners. As previously disclosed, PyroGenesis has the process patent to replace fossil fuel burners with PyroGenesis' clean plasma torches in the iron ore pelletization industry, thereby reducing GHG emissions.

About PyroGenesis Canada Inc.

PyroGenesis Canada Inc., a high-tech company, is a 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.

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

¹ PyroGenesis Announces \$6 million Torch Order With Another Major Iron Ore Pelletizer

<https://ir.pyrogenesis.com/news-releases/news-release-details/pyrogenesis-announces-6-million-torch-order-another-major-iron>

² PyroGenesis Confirms Delivery of Plasma Torch To One of the World's Largest Producers of Iron Ore For Use In Induration Furnace

<https://ir.pyrogenesis.com/news-releases/news-release-details/pyrogenesis-confirms-delivery-plasma-torch-one-worlds-largest>

³ The Bottom of the Barrel: The Fuel Effect: What is Being Burned Matters, by M.J. Bradley & Associates LLC for the EDF

https://www.edf.org/sites/default/files/10071_EDF_BottomBarrel_Ch3.pdf

