



PyroGenesis Announces Receipt of AS9100D Certification for Aviation, Space, and Defense Industries; Provides Update on AM Business Line

MONTREAL, QUEBEC (GlobeNewswire – November 13th, 2018) - PyroGenesis Canada Inc. (<http://pyrogenesis.com>) (TSX-V: PYR) (OTCQB: PYRNF), a TSX Venture 50@ high-tech company, (the "Company", the "Corporation" or "PyroGenesis") a Company that designs, develops, manufactures and commercializes plasma atomized metal powder, plasma waste-to-energy systems and plasma torch products, is pleased to announce today that, further to a press release dated August 20th, 2018 wherein it was anticipated that the Company expected to receive AS9100D Certification by year-end, it has, in fact, received its AS9100D Certification ("Certification") for the Aviation, Space, and Defense industries from a major independent risk and standards company, SAI Global; and provides an update on its Additive Manufacturing ("AM") business line.

Mr. P. Peter Pascali, President and CEO of PyroGenesis, provides this update in the following Q&A format. The questions are, for the most part, derived from inquiries received from investors, analysts, and potential customers:

Q. You announced today that you received AS9100D Certification. What does this mean for the Company exactly?

A. This is another step forward for PyroGenesis Additive.

The AS9100D certification is a standardized quality management and quality assurance system specifically developed for the aviation, space and defense industries. In these industries most, if not all, customers will require this Certification and will only do business with vendors that are AS9100D compliant. The requests for quotes we receive for powders are from companies that make AS9100D certification a "must-have".

Receiving this Certification, as quickly as we did, represents strong, third-party validation of PyroGenesis' longstanding commitment to provide the highest quality products and services to its customers.

This Certification provides customers with the confidence they need in PyroGenesis and ensures that the Company meets their highest standards. Combined with the recently announced completion of our cutting-edge metal powder production facility (press release dated October 16th, 2018), one can see how we are, bit by bit, solidifying our position in the AM market.

Q. That's right, congratulations, you did recently announce the completion of your cutting-edge AM facility. Can you elaborate on that?

A. Of course.

Our state-of-the-art metal powder production facility is now not only ISO 9001:2015 certified, but also AS9100D compliant. This is significant since two of our target markets are the aerospace and biomedical industries. In addition, this facility is strictly dedicated to the production of Ti-6Al-4V powder for this purpose.

Q. We are closing in on the end of the year. Could you provide us with a small retrospective of what has been achieved in PyroGenesis' AM business line over the last year or so?

A. Absolutely.

As background, and as you most probably know, we are the inventors of Plasma Atomization, which is the process we currently use to convert wire into powders for metal 3D printers, having coined the name for the industry in our original patent. It is now a household term in AM.

2017 was the year in which the Company went from relative obscurity within the AM industry, to being nominated "Material Company of the Year" at the 3D Printing Industry Awards.

2018 saw us quickly becoming the powder provider everyone wanted to know. PyroGenesis, the inventors, was back in the market providing quality powder at a time when consolidation of powder suppliers and disruption of supply chains was becoming a concern. The amount of interest in our powders took us by surprise, both in terms of timing, and interest in qualifying them for ultimate purchase. This put significant pressure on accelerating both our Certification process and the need for a cutting-edge facility, both of which were recently addressed.

During the year we also announced the signing of our first major exclusive commercial agreement for the sale of 10 tons (minimum) of Ti-6Al-4V powder over two (2) years. This agreement was significant for three reasons: (i) the magnitude of the order as a first order, (ii) it validated our strategy as a powder supplier to the AM industry, and (iii) the potential additional growth that can develop from this relationship is significant.

Another significant milestone, probably bigger than the 10-ton contract, was when we announced in the summer (August 20th, 2018), that a leading 3D printer OEM put us on their recommended list to their customers after extensive testing/qualifying of our powders. Our powders had either met or exceeded rigorous property requirements under intensive chemical and mechanical analysis conducted by this leading 3D printer OEM. I think the significance of this was missed by the market as it could be a good barometer of what is happening in this vertical at the Company. This was an incredible achievement particularly when considering the short amount of time that has passed from when PyroGenesis announced it was re-entering the powder production business.

All this interest in PyroGenesis' powders not only put pressure on speeding up the Certification process and completing a cutting-edge production facility, but also put pressure on having an industrialization plan in place. Such a plan takes up to 6 months to develop so we wanted to be prepared should we receive an order that required a build-out. As such, we decided to have, at the ready, an optimum industrialization plan for multiple powder production units (in multiples of 1 and 3 units), to be executed on the back of a

significant take-or-pay contract. We announced that this has also been completed.

To date, 2018 has been a year where PyroGenesis has strengthened and solidified its position in the market. The year has seen the interest in PyroGenesis' powder more than justify the Board's decision to reenter the market as a powder producer. The achievements we have made to date, as a small company with limited funds, is remarkable. There will be challenges ahead and we will face them as we have in the past with one goal in mind: to be a significant powder supplier to the industry, if not the go-to powder supplier to the industry.

Q. You have had a remarkable year so far. Certifications, cutting-edge facility, industrialization plan, powder interest, but there seems to be a challenge within all that news, and that is with respect to the 10-ton (min) contract you mentioned. It has been some time since the announcement. Nothing has been shipped, correct? What is happening here?

A. That is correct. Nothing has been shipped to the customer except for sample orders. The fact of the matter is that this client is in China and there is a rather rigorous permitting process required before one can export Titanium powder to China.

It is ironic when one considers that some of the best titanium wire is sourced from China, and that others have production facilities in China. With respect to production facilities in China, we decided that we would not produce in China, for a number of reasons, despite Chinese insistence that without a facility there we would not be able to sell into the country. As a result, we did not think that an order from China was on the radar for at least another year or two. You can imagine our surprise when we did finally receive this 10-ton order. We attributed the change in the Chinese position to be associated with our powder quality.

That being said, we are experiencing some rather frustrating delays in getting export permits for this order, and this is what is preventing us from delivering on this contract.

As I have said in the past it will not all be good news. We will not get it right 100% of the time. There will be challenges/setbacks. This delay is one of them. However, we are confident that once we get the permitting process squared away the Chinese opportunity will be enormous. When will that be? We are dealing with the government, so it is hard to estimate, but given the amount of time on the file I would expect it to be very soon.

Q. ...and you mentioned industrialization plan. Could you explain to those new to the story the difference between an industrialization plan and a commercial plan?

A. Sure. The difference between a commercial facility and an industrial plant is a bit subtle but it is important to understand and appreciate how far we have come and how we are proactively preparing for the future. A commercial facility demonstrates process control and repeatability, where there is continuous operation, and where R&D and special test runs for customers are also contemplated. It runs as needed. An industrial plant, on the other hand, is dedicated to continuous production, with no R&D, 24/7. A commercial

facility may typically be run by highly skilled technicians whereas an industrial plant is usually run by less skilled operators.

Our approach to the market is very conservative, which is why we probably have lasted so long. Our strategy is not to build excess capacity and wait for customers. This approach may be risky for a number of reasons. First, it is costly. Second, we do not want to find ourselves across the table negotiating price with a potential customer who knows we have excess capacity on our hands (which is hard to hide when a customer asks how fast you can deliver).

Our approach is built on the recent disruption in the supply chain, and the overall serious lack of quality independent powder producers. Recent discussions with potential customers confirm that these customers find our products compelling enough that they will allow us to grow into their need or, in cases where the need is developing as with new printer companies, grow in-step with their needs.

Q. Thank you. Last but not least could you please elaborate on where things stand with the leading 3D Printer manufacturer that recommended your powder to their clients?

A. There is not much to say other than the next step is to have our powders approved for use by them. The next step will be for them to visit our facility. This is not scheduled yet, but we expect it will take place in Q1-2019.

Q. Where are you headed now? What is your strategy?

A. As I have said in the past our strategic approach, in all our business lines is, is one of conservatism. We build our business strategies taking into consideration our size and the limitations associated with that, but recognize that it could be accelerated with the right partner or funding.

We have mentioned on several occasions that we are looking to partner with significant players in the industry who bring credibility to our product offering, provide a strong balance sheet plus the integrity that comes with working in the industry for many years, all with the sole purpose of accelerating our market penetration with a quality product.

This strategy of teaming up with significant players worked well for us with the US Military for our waste management vertical, and we expect that our recently announced relationship with a multi-billion-dollar Japanese trading house will work equally well for our DROSRITE™ product line. In both cases these partnerships not only provided validation of our product line, but also provided a strong balance sheet, and a knowledge and business depth within their respective industries.

To date we believe we have done exceptionally well in attracting the attention and interest in our powders with significant players in the industry. 3D printer manufacturers, powder distributors, and end-users, have all shown an interest in moving forward as the many NDA's and sample orders can attest to. We believe we have also done exceptionally well in having strategic discussions with potential partners with a longer-

term view. Our goal is to partner up with a large player to accelerate our market penetration. We are not seeking just any partnership. It will have to be one that is not just significant to us, but to the industry as a whole.

We are in discussion with several potential partners, but cannot with certainty say when, or if, these discussions will develop into anything material, but then again it could be any day now. We are very particular about who we would partner with. It is going to be a long-term relationship so, again, choosing the right partner is critical. We are not in a rush.

Separately, PyroGenesis Additive will be exhibiting at Formnext in Frankfurt, Germany between November 13th and 16th (Hall 3.1 Booth A72). Come meet us.

About PyroGenesis Canada Inc.

PyroGenesis Canada Inc., a TSX Venture 50[®] 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 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

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