PyroGenesis Announces Q3, 2018 Results: Revenues of $1.1MM; Gross Margin of 23%; Current Backlog $6.7MM; Cash on Hand: $1.8MM

MONTREAL, QUEBEC (GlobeNewswire – November 29th, 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 its financial and operational results for the third quarter ended September 30, 2018.

"Results to date reflect both a decrease in revenues and increase in expenses in large part due to the Company's decision to redeploy assets from paying projects to nonpaying projects with the goal of meeting certain benchmark/tests which would enable the Company to enter strategic relationships with significant market players," said Mr. P. Peter Pascali, President and CEO of PyroGenesis Canada Inc. "We have seen the first results of this with the recently announced signing with a Japanese corporation (Revenues > Can$5.4 Billion; Profit > Can$2.0 Billion; Assets > Can$25 Billion; Subsidiaries & Affiliates: > 400) to move forward to jointly toll DROSRITE™ worldwide. We fully expect to have similar success within our additive manufacturing sector (3D Printing) within the ensuing weeks."

Q3, 2018 results reflected the following highlights:

- Revenues of $1.1MM in Q3, 2018, a decrease of 46% from $2.MM posted in Q3, 2017;
- Gross margin of 23% a decrease of 34.1% over the same period in Q3, 2017;
- A Modified EBITDA loss of $1.6MM compared to a Modified EBITDA gain of $91K over the same period in Q3, 2017;
- Backlog of signed contracts as of the date of this writing is $6.7MM;
- Cash on hand on September 30, 2018 was $1.8MM (December 31, 2017: $623K).

The following is a summary of PyroGenesis' main activities.

Synopsis:

- DROSRITE™:
    - Construction of second demonstration unit in progress; Completion expected over the next two (2) months,

- Enters the Zinc Market; first DROSRITE™ zinc paid-for-demonstration,
- Second DROSRITE™ Furnace System Completed,
- Embraces Tolling Strategy; Signing with multi-billion-dollar Japanese corporation to move forward to jointly toll with DROSRITE™

- Powder Production:
  - Nominated "Materials Company of the Year" at the 3D Printing Industry Awards 2018,
  - Contracted for an order of 10 tons (minimum) of titanium powders,
  - Recommended by leading 3D Printer OEM to their customers as titanium powder supplier;
  - Strategic commercial discussions with 3D printer manufacturers, distributors, and end-users continue.
  - New Additive Manufacturing metal powder production facility
  - AS9100D Certified
  - Discussions with significant players to accelerate market penetration

- HPQ:
  - HPQ secures financing for the balance of the project;
  - Pilot Plant in progress after significant improvements.

- US Military:
  - Interest for two (2) US Aircraft Carrier systems received ($10-12MM); Order expected Q1-2019,
  - Seeking to establish a presence in the USA to, amongst other things, better serve the US Military's needs.

- Torch/Equipment Sales:
  - PyroGenesis continues to address interest for plasma torch/equipment,
  - Announced $745,000 Plasma Torch System Contract with a European Entity

A) <u>DROSRITE™:</u>

As the Company positioned itself, during 2017, to become a significant powder producer to the Additive Manufacturing industry, it also successfully positioned its DROSRITE™ furnace system to become a fully commercial product line in and of its own right.

2017 saw the commercial acceptance of PyroGenesis' patented DROSRITE™ system with, not only an acceptance of its first commercial sale, but a subsequent re-order by the same client at a higher price. Since that time a separate client has ordered 2 additional systems, the Company's demonstration system is fully booked and a second is being constructed.

PyroGenesis originally focused on selling systems by aggressively targeting both primary aluminum smelters, as well as tertiary casting producers worldwide. During this time the Company also added zinc recovery from dross as a target market.

At the request of several smelters, PyroGenesis started to consider tolling arrangements. A tolling service agreement is one in which a smelter provides dross to a third party to be processed either on or off-site. In our case, PyroGenesis would provide a tolling service using its proprietary DROSRITE™ system to process the dross and recover valuable metals for a fee. The benefits would be shared with the smelter.

It quickly became apparent to the Company that the best way to maximize the return from its DROSRITE™ product line would be to enter into tolling service agreements with smelters.

PyroGenesis is currently in various stages of negotiating tolling service agreements with four (4) different smelters for a total of eleven (11) 5,000 tpd DROSRITE™ furnace systems dedicated to tolling. Each 5,000 tpd DROSRITE™ furnace system has the potential to generate approx. $3.7 million of annual recurring benefits.

Tolling has become the most important element in PyroGenesis' overall strategy. It provides for higher recurring revenues over a longer period of time. With long term contacts in hand, it also de-risks the technology from the customary threats, which a strategy of selling systems alone would be challenged with.

In order to accelerate this tolling strategy, the Company announced on November 6th, 2018 that it had signed with a Japanese multi-billion-dollar corporation (Revenues > Can$5.4 Billion; Profit > Can$2.0 Billion; Assets > Can$25 Billion; Subsidiaries & Affiliates: > 400) to move forward to jointly toll worldwide. It is expected that this arrangement, with a large multi-national corporation, who has the experience, organizational depth, balance sheet, and credibility required to execute this strategy, will accelerate our time to market.

B) Powder Production:

2018 became the year in which the Company went from relative obscurity within the additive manufacturing industry, to being nominated "Materials Company of the Year" at the 3D Printing Industry Awards.

Not only, during this period, did the Company successfully assemble and commission its first metal powder production system, but also (i) successfully delivered orders for Titanium and Inconel powders, all while still in the ramp up phase, (ii) generated new, game changing, IP which provides for more control over particle size distribution, with little to no waste, while increasing powder production even further, and (iii) entered into several NDA's with significant players in the industry (end users, printer manufacturers, and distributors) all with a view of providing sample orders, repeat orders, long term orders, contract R&D, and/or strategic partnerships for long term powder supply

contracts, some with a view to a possible acquisition. Given the level of activity, and the prospect of significant orders in the near term, management decided to order the long lead items for two powder production systems, both of which were scheduled to be fully operational before the end of September 2018-beginning of October 2018. There were additional small delays as personnel were reallocated to more important needs, the nature of which should be disclosed by year end. We now expect these systems to be operational over the next few weeks. These units will incorporate some of the cutting-edge IP that has recently been developed and/or is in development. We expect these units will cost significantly less to manufacture, generate higher production rates, and provide greater control over particle size distributions.

Of note, although the Company's strategic plan has always been based on its existing IP, know-how, and system (the economics of which remain true to this day), management has decided to leverage off of its significant advantage in plasma technology and dedicate certain limited assets to increasing its IP base with the goal of further significantly reducing capital and operating costs of the powder production system while at the same time improving production rates even further. PyroGenesis is confident that these goals once achieved will significantly impact the build out strategy for the better.

The Company's press release dated May 17th, 2018 (which announced a commercial agreement for a minimum order of 10,000 kg of Titanium powder over two years from Asia), together with those issued on August 14th and 20th (which announced results of powder testing by a top OEM as well as their recommendation to their clients to use such powder), has underscored the need for PyroGenesis to be even more focused than ever before on addressing market demand for its powder.

The Company decided to have, at the ready, an optimum industrialization plan for multiple powder production units (in multiples of 1, 3, and 5 units), to be executed on the back of a significant take-or-pay contract. This has now been completed and the Company is continuing to look at ways to accelerate the technological advances mentioned above.

PyroGenesis has mentioned on several occasions that the Company has been looking to partner with significant players in the industry who bring credibility to its 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 PyroGenesis' market penetration with a quality product.

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

Management believes that the Company is in the final days/weeks of concluding a similar arrangement with a global player in the AM industry and expects something definitive to be signed by year end.

C) US Military:

Originally it was thought that just one new US Aircraft Carrier would be ordered in 2018, with an estimated value of approximately $6MM, but the interest is now for two, for an estimated value of between $10-12 MM. This contract is now expected Q1 2019.

The chemical warfare destruction unit, that PyroGenesis developed for a consortium involving various groups within the US military, and was in the process of being tested, continues to have its schedule delayed accommodating other unrelated testing needs by the group. This testing timeline is out of the Company's control.

Revenues from military contracts in 2017 were over $4,300,000, mainly related to providing technical support, training services and sale of spare parts. Over the past three years, revenues from military contracts have typically represented more than $2,000,000 per year of PyroGenesis' revenues. As the PAWDS technology becomes fully operational on US Navy ships, management expects the level of recurring revenues from the sale of parts and services to increase over the next 2 to 5 years.

The Company is looking at ways to establish a presence in the USA to, amongst other things, better serve the US Military's needs arising from having multiple systems in operation.

D) HPQ:

On August 2nd, 2016, PyroGenesis announced that it had signed contracts totaling $8,260,000 with HPQ Silicon Resources Inc., formally Uragold Bay Resources Inc. ("HPQ") for the sale of IP and to provide a pilot system to produce high purity silicon metal directly from quartz. Of particular note, if successful, PyroGenesis benefits from a 10% royalty on all revenues derived from the use of this system by HPQ, subject to annual minimums.

E) Torch/Equipment Sales:

Consistent with the Company's overall strategy to (i) remain focused on reducing PyroGenesis' dependency on long-cycle projects by developing a strategic portfolio of volume driven, high margin/low risk products that resolve specific problems within niche markets and doing so by introducing these plasma-based technologies to industries that have yet to consider such solutions, and (ii) to actively target recurring revenue opportunities that will generate a growing, and profitable, regular cash flow to the Company, the Company continues to market its torch/equipment capabilities and expects this to start becoming a revenue contributor, with its recurring revenue stream, in the very near future. The recent torch sale announced on October 23rd, 2018 is a good example of this.

PyroGenesis has one of the largest concentrations of plasma expertise in the world, with over 250 years of accumulated technical experience and supporting patents, combined with unique relationships with major universities performing cutting edge plasma research and development, positions the Company well to execute its strategies.

Management's focus will continue to be to generate an improved mix of short and long-term projects that will, in turn, facilitate operational and financial planning. Repeat orders for the same, or similar, products will further result in the standardization of manufacturing processes which will lead to improved gross margins.

Financial Summary

Revenue

PyroGenesis recorded revenue of $1,097,726 in the third quarter of 2018 ("Q3, 2018"), representing a decrease of 46% compared with $2,026,557 recorded in the third quarter of 2017 ("Q3, 2017"). Revenues recorded in Q3, 2018 were generated primarily from:

(i) the development of a process to convert Silica into high purity Silicon metal;

(ii) the manufacture and sale of a DROSRITE™ System;

(iii) support services related to PAWDS-Marine Systems supplied to the US Navy.

Cost of Sales and Services and Gross Margins

Cost of sales and services was $845,575 in Q3, 2018, representing a decrease of 3% compared with $870,352 in Q3, 2017.

In Q3, 2018 cost of direct materials and manufacturing overhead decreased to $23,845 (Q3, 2017: $153,988), $163,951 (Q3, 2017: $279,656) respectively, while subcontracting increased to $291,817 (Q3, 2017 - $9,123).

The gross margin for Q3, 2018, was $252,151, or 23% of revenue. This compares with a gross margin of $1,156,205 (57.1% of revenue) for Q3, 2017.

The type of contracts being executed and the nature of the project activity during any given quarter has a significant impact on both the overall level of cost of sales and services reported in a period, as well as the composition of the cost of sales and services, as the mix between labor, materials and

subcontracts may be significantly different.

Selling, General and Administrative Expenses

Included within Selling, General and Administrative expenses ("SG&A") are costs associated with corporate administration, business development, project proposals, operations administration, investor relations and employee training.

SG&A expenses for Q3, 2018 excluding the costs associated with share-based payments (a non-cash item in which options vest over a four-year period), were $1,696,158, representing an increase of 68% compared with $1,009,044 reported for Q3, 2017.

The increase in SG&A expenses in Q2, 2018 over the same period in 2017 is mainly attributable to the net effect of:

- an increase of 48% in employee compensation,
- an increase of 187% for professional fees, primarily due to an increase in consulting fees,
- an increase of 18% in office and general expenses, due to an increase in courses, seminar, computers and internet expenses,
- travel costs decreased by 11%, due to less travels abroad,
- depreciation on property and equipment increased by 58%, primarily due to an increase in plant and equipment assets. The asset under development in Q3, 2018 will begin to be depreciated when the asset is available or ready for use,
- government grants increased by 337% due to higher level of activities supported by such grants and,
- other expenses increased by 106%, primarily due to higher cost of freight and shipping.

Separately, share based payments increased by 34% in Q3, 2018 over the same period in 2017 as a result of the vesting structure of the stock option plan including the stock options offered on July 3, 2018.

Research and Development ("R&D") Costs

The Company incurred $177,405 of R&D costs in Q3, 2018, compared with $82,951 in Q3, 2017, representing an increase of 114%.

In addition to internally funded R&D projects, the Company also incurred R&D expenditures during the execution of client funded projects. These expenses are eligible for Scientific Research and Experimental Development ("SR&ED") tax credits. SR&ED tax credits on client funded projects are applied against cost of sales and services (see "Cost of Sales" above). Investment tax credits recorded against cost of sales are primarily related to client funded projects that qualify for tax credits from the provincial government of Quebec. Qualifying tax credits decreased to $106,188 in Q3, 2018,

compared with $88,336 in Q3, 2017. This represents an increase of 20%. The Company continues to make investments in research and development projects involving strategic partners and government bodies.

Inventory

The Company's inventory increased by $2,889 in Q3, 2018, compared with Nil in the same period in 2017.

Net Comprehensive Loss

The loss from operations and comprehensive loss for Q3, 2018 was $2,758,835 compared to $360,083 in Q3, 2017 representing an increase of 665% year-over-year.

The increase in net comprehensive loss in Q3, 2018 compared to the same period in 2017 is primarily attributable to a decrease in revenue of $928,831 and by the factors described above, which have been summarized as follows:

(i) a decrease in cost of sales and services totaling $24,777 in Q3, 2018;
(ii) an increase of SG&A expenses of $738,790 arising in Q3, 2018 as explained above;
(iii) an increase in R&D expenses of $94,454 primarily due to research and development in Q3, 2018 on plasma atomization;
(iv) an increase in net finance costs of $661,454 in Q3, 2018 due to a decrease in the fair value of investments of $655,651.

EBITDA

The EBITDA loss in Q3, 2018 was $2,538,215 compared with an EBITDA loss of $161,420 for Q3, 2017, representing an increase of 1472%. The increase in the EBITDA loss in Q3, 2018 compared with the same period in 2017 is primarily attributable to lower revenues, an increase in comprehensive loss of $2,398,752, an increase in depreciation on property and equipment of $15,828, and an increase in finance charges of $6,129 in Q3, 2018.

Adjusted EBITDA loss in Q3, 2018 was $2,334,831 compared with an Adjusted EBITDA loss of $9,712 for Q3, 2017. The increase of $2,325,119 in the Adjusted EBITDA loss in Q3, 2018 is mainly attributable to the increased EBITDA loss of $2,376,795, and an increase of $51,676 in share-based payments.

Modified EBITDA loss in Q3, 2018 was $1,578,081 compared with a Modified EBITDA gain of $91,387 for Q3, 2017. The increase of $1,669,468 in the Modified EBITDA loss in Q3, 2018 is mainly

attributable to the increase in the Adjusted EBITDA loss of $2,325,119 and a decrease in the change in fair value of investments of $655,651.

Liquidity

The Company has incurred, in the last several years, operating losses and negative cash flows from operations, resulting in an accumulated deficit of $48,523,228 and a negative working capital of $3,651,136 as at September 30, 2018 (December 31, 2017 - $43,200,708 and $9,403,370 respectively). Furthermore, as at September 30, 2018, the Company's current liabilities and expected level of expenses for the next twelve months exceed cash on hand of $1,833,036 (December 31, 2017 - $622,846). The Company has relied upon external financings to fund its operations in the past, primarily through the issuance of equity, debt, and convertible debentures, as well as from investment tax credits.

As at September 30, 2018, the Company had cash on hand of $1,833,036 and negative working capital of $3,651,133 compared with a cash balance of $622,846 and negative working capital of $9,403,370 as at December 31, 2017.

Revenue generated from active projects does not yet produce sufficient positive cash flow to fund operations. However, based on current backlog of $6.7MM at November 28, 2018, together with the pipeline of prospective new projects, cash flow from operations are expected to become positive in the very near future.

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 m^2 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 and AS9100D certified, having 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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