



**PyroGenesis Announces 2016 Results:  
Revenues Decrease 16%; Gross Margins (before non-cash items) Increase to  
41%; EBITDA (Adj.) Improves 33% Year Over Year;  
Current Backlog \$9.9MM;**

**MONTREAL, QUEBEC--(Marketwired - April 28, 2017) - PyroGenesis Canada Inc.** (<http://pyrogenesis.com>) (TSX-V: PYR) (OTCQB: PYRNF), a high-tech company (the "Company" or "PyroGenesis") that designs, develops, manufactures and commercializes plasma waste-to-energy systems and plasma torch products, is pleased to announce today its financial and operational results for the fourth quarter and the fiscal year ended December 31, 2016.

"Despite a decrease of 16% in revenues, and non-cash write-offs totaling \$2.8MM, we believe we have had a challenging but stellar year in 2016, and have positioned the Company well for the coming years," said P. Peter Pascali, President and CEO of PyroGenesis. "2016 was a pivotal year for PyroGenesis as the Company shifted its focus away from being a fabricator of plasma-based systems that produced unique titanium powders, in favour of becoming a producer of such powders for the Additive Manufacturing Industry. This strategic decision resulted, in early 2016, in the termination of a \$12.5MM contract to deliver ten (10) powder production systems to a client in Asia, which understandably put significant pressure on cash flows. This was further exacerbated by the need to secure funds to build the first powder production unit. Notwithstanding these challenges, the Company, in 2016, not only successfully managed the cash flow demands but has built its first powder production unit while at the same time improving Gross Margins (after non-cash items) to 41% (2015:27.1%), reducing EBITDA (Adj) loss year over year and ending the year with a healthy backlog of signed contracts of \$9.9MM (2016 revenues: \$5.2MM; 2015 revenues: \$6.2MM), none of which are attributable to Additive Manufacturing."

### **Highlights**

2016 was a year in which PyroGenesis posted:

- A decrease of 16% in Revenues to \$5,222,133 year over year;
- An increase in Gross margins (before amortization of intangible assets and write-offs of inventories and costs and profits in excess of billings on uncompleted contracts) to 41.6%. (2015: 27.1%);
- EBITDA loss of \$4.9MM (including 2.8MM of write-offs);
- Adjusted EBITDA loss of \$1.7MM in Q4, 2016(an improvement of 33% year over year);
- A backlog of \$9.9MM at December 31, 2016.

## Outlook

2016 has been a pivotal year for PyroGenesis as the Company shifted its focus away from being a fabricator of plasma-based systems that produced unique titanium powders, in favour of becoming a producer of such powders for the Additive Manufacturing Industry. These powders are greatly sought after by the Additive Manufacturing industry given their unique properties which include pure, small, spherical, and uniform, allowing them to flow like water; a characteristic that is extremely important in industries such as 3D printing.

This strategic decision, made in early 2016, combined with the termination of the \$12.5MM contract to deliver 10 powder production systems to a client in Asia, put significant pressure on cash flows, which was further exacerbated by the need to secure funds to build our first production unit. We are happy to announce that we have been successful on both fronts.

Removing the effect of the onetime non-cash write-offs of \$2.8MM reveals the following results for 2016.

- Gross Margin increased from 27% in 2015 to over 41% in 2016 despite a decrease in Revenues by 16% to \$5.2MM in 2016 over 2015;
- Adjusted EBITDA loss decreased from (\$2.6MM) in 2015 to (\$1.7MM) in 2016;
- Over \$13.5MM in contracts were signed, and work begun on, since June 30, 2016 which, taken in context of historic revenues (2016: \$5.2MM; 2015: \$6.2MM; 2014: \$5.8MM) is quite significant. A significant portion of these contracts are expected to run through the financials in 2017. None of these revenues reflect any contracts for the sale of powders.

As previously mentioned, 2017 looks like a breakout year for a number of reasons, including:

- The healthy gross margin (before consideration of the 2016 write-offs) established in 2016 is not only expected to continue into the foreseeable future, but improve once powder production is in full swing.
- Established backlog of signed contracts, the majority of which are expected to be completed in 2017.
- Our traditional lines of business are poised to contribute significantly to the bottom line, namely:

A) Powder Production: The Company has met every milestone announced on the road to making metal powders for the Additive Manufacturing (“AM”) Industry. It was recently announced that the assembly of the first powder production system was completed and that the first powder run exceeded expectations. The ramp up is under way and is expected to take place linearly over approximately four (4) months of which we are currently 25% complete. As announced in recent press releases interest has far exceeded Managements’ expectations and an initial contract was signed for a sample amount of powder. Also recently announced was the fact that the Company has signed a number of agreements with significant and potential players in the AM industry reflecting various discussions regarding the possibility of concluding certain business relationships or transactions geared to the production of powders. This bodes well for

2017. The current system is the first of many PyroGenesis expects to make to address an increasing need for metal powders in the AM industry.<sup>1</sup>

B) DROSRITE™: The DROSRITE™ Furnace System was proven out at a North American customer's Mexican facility during the first half of 2016. Soon thereafter, a successful demonstration of the DROSRITE™ System in the Middle East took place, following which an unsolicited request to exclusively market the process in the region was received and is currently being discussed. Management's belief that the supply and installation of the first commercial sale in North America would enable the Company to leverage this success to generate a continued flow of orders for additional DROSRITE™ systems is being borne out. This recent flurry of activity and interest for the DROSRITE™ system bodes well for 2017 where we now expect to have at least 3 orders placed and delivered. We expect the first follow on contracts to be signed in the 2<sup>nd</sup> half of 2017. The market potential for PyroGenesis' DROSRITE™ system, from Aluminium dross alone, exceeds \$400MM.

C) HPQ: On August 2, 2016 PyroGenesis announced that it had signed contracts totalling CDN \$8,260,000 with HPQ Silicon Resources Inc., formally Uragold Bay Resources Inc. for the sale of IP and to provide a 200 metric tonne (MT) per year PUREVAP™ pilot system to produce silicon metal directly from quartz. This system will for the most part be constructed in 2017, with advancement of the contract accelerating in the second half of the year. According to percent completion accounting standards for revenue recognition the majority of these revenues will be recognized in the 2<sup>nd</sup> half of 2017. Of 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.

D) Chemical Warfare Destruction System: The Company recently announced that PyroGenesis has, in coordination with the US-based Southwest Research Institute (SwRI), successfully completed long-duration performance tests using the Company's tactical Plasma Arc Chemical Warfare Agents Destruction System ("PACWADS") using surrogate chemical warfare agent material. These tests supported the Defense Advanced Research Projects Agency (DARPA) Agnostic Compact Demilitarization of Chemical Agents (ACDC) program and far exceeded minimum requirements with over 99.9999% destruction efficiency. The PACWADS is now scheduled to go through final testing using real chemical warfare agents by the US Military). These tests should be completed by the end of Q3 2017 (this timeline, however is out of the Company's control). Again this bodes well for 2017 as we would expect additional contracts resulting from a successful completion of the final testing. However, no indication has been given as to the size, if any, such procurement would entail.

E) Other Contracts: There are other contracts being discussed (such as a third order for a PAWDS for a New US Aircraft Carrier which is expected to be ordered sometime towards the end of 2017/beginning of 2018 with an estimated value of approximately \$6MM; SPARC system sales, amongst others) which give us confidence that overall 2017 looks like a break out year.

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<sup>1</sup> Wohlers Report 2016 (ISBN 978-0-9913332-2-6)

These points are strongly indicative of a strong performance in the coming year, and based on existing contracts, the Company expects to be profitable in 2017 excluding any contribution from powder sales as noted above. Further underscoring the sentiment for 2017, is how our entrance as a powder producer has been so well received by the Additive Manufacturing community.

Management remains 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.

Management is also actively targeting recurring revenue opportunities that will generate a growing, and profitable, regular cash flow to the Company.

PyroGenesis has one of the largest concentrations of plasma expertise in the world, with over 250 years of accumulated technical experience and 59 patents, combined with unique relationships with major Universities performing cutting edge plasma research and development, which positions the Company well to execute this strategy.

All indications are that 2017 will be a breakout year for more than one of the Company's product lines. The Company'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**

### **Revenues**

The Company posted revenues of \$1,483,543 in the fourth quarter of 2016 ("Q4, 2016"), representing a decrease of 33% compared with \$2,228,272 recorded in the fourth quarter of 2015 ("Q4, 2015"). Revenue recorded in Fiscal 2016 was generated primarily from (i) the sale of intellectual property and development of a vacuum arc reducing process to convert Silica into high purity Silicon metal, (ii) manufacture and further field testing of Tactical PACWADS, the first mobile plasma system for destruction of chemical warfare agents under contract with an international military consortium, (iii) the demonstration of the viability of PyroGenesis' existing plasma chemical warfare agent destruction platform with locally available materials, for the complete eradication of chemical warfare agents without creating hazardous by-products, (iv) support services related to PAWDS-Marine systems supplied to the US Navy and (v) to manufacture and deliver a fully automated plasma torch system comprised of six air plasma torches to be used for waste gasification.

### **Cost of Sales and Services and Gross Margins**

Cost of sales and services before amortization of intangible assets and write-offs of inventories and costs and profits in excess of billings on uncompleted contracts was \$3,051,356 in 2016, representing a decrease of 33% compared with \$4,551,090 in 2015. In the fourth quarter of 2016, the cost of sales and

services before amortization of intangible assets and write-offs of inventories and costs and profits in excess of billings on uncompleted contracts was \$901,072 representing a decrease of 41% compared with \$1,538,828 in Q4, 2015.

Various factors, including, but not limited to a write-off of inventories and costs and profits in excess of billings on uncompleted contracts, the mix of long and short-term manufacturing projects, project complexity and scale, and project R&D content, may significantly impact both the composition and overall level of cost of sales and services reported in a given period, as the mix of labor, materials and equipment may be significantly different.

The costs incurred in 2016 are primarily attributable to managements decision to write-off inventories and costs and profits in excess of billings on uncompleted contracts, the work completed under PyroGenesis' project to develop a vacuum arc reducing process to convert Silica into high purity Silicon metal, together with work completed on the final, phase to design, manufacture and deliver a fully automated plasma torch system comprised of six air plasma torches to be used for waste gasification, work completed on the tactical mobile plasma system for destruction of chemical warfare agents under contract with an international military consortium, and support services related to PAWDS Marine systems supplied to the US Navy.

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 \$249,550 in 2016, compared with \$544,676 in 2015, this is primarily due to the Company having adjusted the 2016 qualifying tax credits to incorporate amounts disallowed for the 2015 qualifying tax credits. This represents a decrease of 54% year-over-year. The Company continues to make investments in research and development projects incorporating the involvement of strategic partners and government bodies.

In 2016, the gross margin before amortization of intangible assets and write-offs of inventories and costs and profits in excess of billings on uncompleted contracts was \$2,170,777, which represents 41.6% of revenue. This compares with a gross margin before amortization of intangible assets of \$1,690,913 (27.1% of revenue) for 2015

The amortization of intangible assets of \$1,396,675 in 2016 (\$1,397,074 in 2015) relates to the licenses and know-how purchased in 2011 from a company under common control. This expense is a non-cash item and the underlying asset is fully amortized by December 31, 2016.

### **Selling, General and Administrative Expenses**

Selling, general and administrative expenses ("SG&A") for 2016 were \$4,320,862, representing a decrease of 7% compared with \$4,648,473 reported for 2015. Excluding the costs associated with share-based compensation (a non-cash item in which options vest over a four year period), SG&A expenses decreased by 8% in 2016 compared with 2015.

The decrease in SG&A expenses is attributable to the net effect of (i) an increase of 1% in employee compensation, (ii) a decrease of 18% for professional fees, primarily due to lower accounting fees, (iii) a decrease of 10% in office and general costs, primarily due to lower communication expenses, (iv) travel costs decreased by 20%, due to less travel abroad, (v) depreciation on property and equipment decreased by 22% due to a reduced level of investments in machinery and equipment since 2010, when major acquisitions were made, (vi) government grants decreased by 41% due to lower level of activities supported by such grants, (vii) other expenses decreased by 34%, primarily due to the reduced cost of freight and shipping costs and (viii) an increase in share base payments of 12% primarily due to the vesting structure of the stock option plan and the stock options offered on September 25, 2016.

Separately, share based payments increased by 12% as a result of the vesting structure of the stock option plan and for new options issued in 2016.

### **Total Comprehensive Loss**

The comprehensive loss for 2016 was \$6,952,219 compared to a loss of \$4,917,779 in 2015, representing an increase of 41% year-over-year.

The increase of \$2,034,440 in the comprehensive loss in 2016 is primarily attributable to: (i) a decrease in product and service related revenue of \$1,019,871 arising in 2016, (ii) a decrease in cost of sales and services totaling \$1,500,134, primarily due to the concentration of engineering on developing the 3D printing powder production system, (iii) a decrease in SG&A expenses of \$327,611 arising in 2016 primarily due to a decrease in professional fees, (iv) a decrease in R&D expenses of \$44,625 primarily due to the fact that some of the R&D expenses were capitalized, (v) an increase in net finance costs of \$132,501 that is primarily due to interest on the convertible debenture and the tax credit loans obtained in 2016, (vi) an increase of \$2,754,438 for the write-off of inventories and costs and profits in excess of billings on uncompleted contracts.

### **EBITDA**

The EBITDA loss in 2016 was \$4,869,297 compared with an EBITDA loss of \$2,930,637 for 2015, representing an increase of 66%. The increase in the EBITDA loss in 2016 compared with 2015 includes amounts written-off of \$2,754,438.

Adjusted EBITDA loss in 2016 was \$1,748,834 compared with an Adjusted EBITDA loss of \$2,602,987 for 2015. The decrease of \$854,153 in the Adjusted EBITDA loss in 2016 is attributable to the increased comprehensive loss of \$2,034,440, a decrease of \$36,322 in depreciation on property and equipment, a decrease of \$399 in amortization of intangible assets, an increase in finance charges of \$132,501, an increase in cost of other non-cash items, specifically share-based payments of \$38,375 an increase in write-off of inventories of \$994,015 and an increase in write-off of costs and profits in excess of billings on uncompleted contracts of \$1,760,423.

## Liquidity

As at December 31, 2016, the Company had cash on hand of \$385,257 and a negative working capital of \$2,079,353 compared with a cash balance of \$767,368 and positive working capital of \$166,095 as at December 31, 2015.

## About PyroGenesis Canada Inc.

PyroGenesis Canada Inc., a TSX Venture 50® clean-tech company, is the world leader in the design, development, manufacture and commercialization of advanced plasma processes. 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<sup>2</sup> 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 9001:2008 certified, and have been since 1997. PyroGenesis is a publicly-traded Canadian company on the TSX Venture Exchange (Ticker Symbol: PYR) and on the OTCQB Marketplace (Ticker Symbol: PYRNF). For more information, please visit [www.pyrogenesis.com](http://www.pyrogenesis.com)

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