PYROGENESIS CANADA INC.

MANAGEMENT'S DISCUSSION AND ANALYSIS

This management's discussion and analysis ("MD&A") is intended to assist readers in understanding the business environment, strategies, performance and risk factors of PyroGenesis Canada Inc. ("PyroGenesis", or the "Company"). The MD&A provides the reader with a view and analysis, from the perspective of management, of the Company's financial results for the fourth quarter and the Fiscal year ended December 31, 2017. The MD&A has been prepared in accordance with National Instrument 51-102, Continuous Disclosure Requirements, and should be read in conjunction with the audited financial statements and related notes thereto of the Company for the year ended December 31, 2017.

The financial statements and MD&A have been reviewed by PyroGenesis' Audit Committee and were approved by its Board of Directors on April 30, 2018. The Board of Directors is responsible for ensuring that the Company fulfills its responsibilities for financial reporting and is ultimately responsible for reviewing and approving the MD&A. The Board of Directors carries out this responsibility principally through its Audit Committee. The Audit Committee is appointed by the Board of Directors and is comprised of independent directors. The Audit Committee reports its findings to the Board of Directors for its consideration when it approves the MD&A and financial statements for issuance to shareholders.

The following information takes into account all material events that took place up until April 30, 2018, the date on which the Company's Board of Directors approved this MD&A. Unless otherwise indicated, all amounts are presented in Canadian dollars. The Company's functional and reporting currency is the Canadian dollar.

Additional information regarding PyroGenesis is available on SEDAR (www.sedar.com), OTC Markets (www.otcmarkets.com) and on the Company's website at www.pyrogenesis.com.

FORWARD-LOOKING STATEMENTS

This MD&A contains forward-looking statements. All statements other than statements of historical fact contained in this MD&A are forward-looking statements, including, without limitation, the Company's statements regarding its products and services; relations with suppliers and clients; future financial position; business strategies; potential acquisitions; potential business partnering; litigation; and plans and objectives. In certain cases, forward-looking statements can be identified by the use of words such as "plans", "expects" or "does not expect", "is expected", "budget", "scheduled", "estimates", "forecasts", "intends", "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" or "will be taken", "occur" or "be achieved" and similar words or the negative thereof. Although management of the Company believes that the expectations represented in such forward-looking statements are reasonable, there can be no assurance that such expectations will prove to be correct.

In particular, this MD&A contains forward-looking statements that relate, but are not limited, to:

- the Company's business strategies, strategic objectives and growth strategy;
- the Company's current and future capital resources and the need for additional financing;
- the Company's ability to increase sales, including the results of the successful completion of the Company's current projects;
- management's expectation that the Company will achieve sustained annual growth and profitability, and that gross margins will increase resulting in a decrease in cost of sales as a percentage of revenue; and
- the Company's overall financial performance.

By their nature, forward-looking statements require assumptions and are subject to inherent risks and uncertainties including those discussed herein. In particular, forward-looking statements relating to future sales, growth and profitability are based on the assumption that current projects will be completed, and the Company will be awarded certain anticipated contracts pursuant to recent negotiations with, and statements made by, third parties. There is significant risk that predictions and other forward-looking statements will not prove to be accurate. Readers are cautioned to not place undue reliance on forward-looking statements made herein because a number of factors could cause actual future results, conditions, actions or events to differ materially from the targets, expectations, estimates or intentions expressed in the forward-looking statements.

The future outcomes that relate to forward-looking statements may be influenced by many factors, including, but not limited to, the strength of the Canadian, US and Asian economies; operational, funding, and liquidity risks; unforeseen engineering and environmental problems; delays or inability to obtain required financing and/or anticipated contracts; risks associated with licenses, permits and regulatory approvals; supply interruptions or labour disputes; foreign exchange fluctuations and collection risk; competition from other suppliers, or alternative, less capital intensive, energy solutions; and risk factors described elsewhere in this document under the heading "Risk Factors". We caution that the foregoing list of factors is not exhaustive, and that, when relying on forward-looking statements to make decisions with respect to the Company, investors and others should carefully consider these factors, as well as other uncertainties and potential events, and the inherent uncertainty of forward-looking statements.

Although the Company has attempted to identify significant factors that could cause actions, events or results to differ materially from those described in forward-looking statements, there may be other factors that cause actions, events or results not to be as anticipated, estimated or intended. There can be no assurance that forward-looking statements will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements. Accordingly, readers should not place undue reliance on forward-looking statements. Forward-looking statements are provided as of the date of this MD&A, and the Company assumes no obligation to update or revise such forward-looking statements to reflect new events or circumstances except as required under applicable securities laws.

The forward-looking statements contained herein are expressly qualified in their entirety by this cautionary statement. The forward-looking statements included in this MD&A are made as of the date of this MD&A or such other date specified herein.

OVERVIEW

PyroGenesis Canada Inc. is the world leader in the design, development, manufacturing and commercialization of advanced plasma processes. The Company provides 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 from its Montreal office and its 3,800m^2 production facility, PyroGenesis maintains its competitive advantage by remaining at the forefront of technology development and commercialization. PyroGenesis' core competencies allow the Company to be a leader in providing innovative plasma torches, plasma waste processes, plasma atomisation processes, high-temperature metallurgical processes, and engineering services to the global marketplace. PyroGenesis' operations are ISO 9001:2008 certified and have been ISO certified since 1997. PyroGenesis is a publicly-traded Canadian company on the TSX Venture Exchange (Ticker symbol: PYR.V) and on the OTCQB in the United States (Ticker symbol: PYRNF).

SELECTED FINANCIAL INFORMATION

	Three months ended Dec 31 2017	2016	% Change 2017vs2016	Twelve months ended Dec 31 2017	2016	% Change 2017vs2016
Revenue	$ **1,296,768**	$ 1,483,543	$ -13%	$ **7,192,861**	$ 5,222,133	$ 38%
Cost of sales and services before amortization of intangible assets	**1,244,982**	901,072	38%	**4,065,894**	3,051,356	33%
Gross margin before amortization of intangible assets	**51,786**	582,471	-91%	**3,126,967**	2,170,777	44%
Amortization of intangible assets	**-**	348,870	-100%	**-**	1,396,675	-100%
Gross profit before undernoted write-offs	**51,786**	233,601	-78%	**3,126,967**	774,102	304%
Write-off of inventories		994,015			994,015	-100%
Write-off of costs and profits in excess of billings on uncompleted contracts		1,760,423			1,760,423	-100%
Gross profit (loss)	**51,786**	(2,520,837)		**3,126,967**	(1,980,336)	258%
Expenses						
Selling, general and administrative	**1,710,728**	968,523	77%	**5,153,850**	4,356,862	18%
Research and development	**76,693**	(14,692)	-622%	**289,851**	92,179	214%
Settlement of a claim related to the long-term debt	**3,215,643**	-		**3,215,643**		
Net finance costs	**(44,250)**	166,851	-127%	**641,926**	522,842	23%
	4,958,814	1,120,681	342%	**9,301,270**	4,971,883	87%
Comprehensive loss	$ **(4,907,028)**	$ (3,641,518)	$ 35%	$ **(6,174,303)**	$ (6,952,219)	$ -11%
Basic and diluted loss per share	$ **(0.01)**	$ (0.01)	$	$ **(0.06)**	$ (0.07)	$

Adjusted EBITDA (loss) is not a performance measure defined under IFRS and it is not considered an alternative to Income (Loss) from operations or Comprehensive Earnings (Loss) in the context of measuring a Company's performance. Management believes that providing certain non-GAAP performance measures, in addition to IFRS measures, provides users of the Company's financial statements with an enhanced understanding of their results and related trends, and as such increases transparency and clarity. Adjusted EBITDA (loss) is an important measure of operating performance because it allows management, investors and others to evaluate and compare the Company's core operating results, including our return on capital and operating efficiencies, from period to period, by removing the impact of its capital structure (interest expense to service outstanding debt), asset base (depreciation and amortization), tax consequences, and other non-operating items not requiring cash outlays including share-based compensation and change in fair value of investment. Securities regulations require that companies caution readers that earnings and other measures adjusted to a basis other than IFRS do not have standardized meanings and are unlikely to be comparable to similar measures used by other companies. The exclusion of items in adjusted EBITDA does not imply that they are necessarily non-recurring. Accordingly, they should not be considered in isolation or a substitute for financial measures prepared in accordance with IFRS. See 'Reconciliation of non-IFRS financial measures-EBITDA and Adjusted EBITDA' in this MD&A for a reconciliation of this measure to the most comparable IFRS measure.

Extract from Statement of Financial Position at:

	Dec 31 2017	Dec 31 2016
Current assets	2,498,913	1,968,963
Non-current assets	3,270,037	1,279,968
Total assets	$ 5,768,950	$ 3,248,931
Current liabilities	11,902,283	4,048,316
Non-current liabilities	10,290	3,605,897
Total liabilities	$ 11,912,573	$ 7,654,213
Shareholders' deficiency	$ (6,143,623)	$ (4,405,282)

RESULTS OF OPERATIONS

Revenue

PyroGenesis recorded revenue of $7,192,861 in the year of 2017, representing an increase of 38% compared with $5,222,133 recorded in the year of 2016.

Revenues recorded in fiscal 2017 were generated primarily from:

(i) the development of a vacuum arc reducing process to convert Silica into high purity Silicon metal,

(ii) the 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.

Cost of Sales and Services and Gross Margin

	Three months ended Dec 31 2017	2016	% Change 2017vs2016	Twelve months ended Dec 31 2017	2016	% Change 2017vs2016
Employee compensation	$ 467,991	$ 386,549	21%	$ 1,923,895	$ 1,765,997	9%
Subcontracting	22,501	44,913	-50%	98,256	173,190	-43%
Direct materials	670,570	380,719	76%	1,631,275	741,800	120%
Manufacturing overhead & other	154,541	172,965	-11%	783,082	596,826	31%
Foreign exchange loss	(60,854)	14,088	-532%	(3,272)	23,093	-114%
Investment tax credits	(9,765)	(98,160)	-90%	(367,342)	(249,550)	47%
Sub-total before amortization of intangible assets	1,244,983	901,072	38%	4,065,894	3,051,356	33%
Amortization of intangible assets		348,870	-100%	-	1,396,675	-100%
Total Cost of Sales and Services	$ 1,244,983	$ 1,249,942	0%	$ 4,065,894	$ 4,448,031	-9%

	Three months ended Dec 31 2017	2016	Twelve months ended Dec 31 2017	2016
Revenue	**$ 1,296,768**	$ 1,483,543	**$ 7,192,861**	$ 5,222,133
Cost of Sales and Services before amortization of intangible assets	**1,244,983**	901,068	**4,065,894**	3,051,356
Gross Margin before amortization of intangible assets	**51,786**	582,475	**3,126,967**	2,170,777
Gross Margin % before amortization of intangible assets	**4.0%**	39.3%	**43.5%**	41.6%
Amortization of intangible assets	**-**	348,870	**-**	1,396,675
Gross Margin after amortization of intangible assets	**$ 51,786**	$ 233,605	**$ 3,126,967**	$ 774,102
Gross Margin % after amortization of intangible assets	**4.0%**	15.7%	**43.5%**	14.8%

Gross margin before amortization of intangible assets is not a performance measure defined under IFRS and it is not considered an alternative to gross margin in the context of measuring the Company's performance. Management believes that providing certain non-GAAP performance measures, in addition to IFRS measures, provides users of the Company's financial statements with an enhanced understanding of its results and related trends, and increases transparency and clarity. Gross margin before amortization of intangible assets is an important measure of operating performance because it allows management, investors and others to evaluate and compare the Company's core operating results, including its return on capital and operating efficiencies, from period to period, by removing the impact of non-operating items not requiring cash outlays. Securities regulations require that companies caution readers that earnings and other measures adjusted to a basis other than IFRS do not have standardized meanings and are unlikely to be comparable to similar measures used by other companies. Accordingly, they should not be considered in isolation or a substitute for financial measures prepared in accordance with IFRS.

Cost of sales and services before amortization of intangible assets was $4,065,894 in 2017, representing an increase of 33% compared with $3,051,356 in 2016.

In 2017 employee compensation, subcontracting costs, direct materials and manufacturing overhead increased to $4,436,508 (2016 - $3,277,813) as a result of increased volumes during the year. The cost of sales and services for 2017 and 2016 are in line with management's expectations. The type of contracts being executed, and the nature of the project activity 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 labour, materials and subcontracts may be significantly different. The cost of sales and services for 2017 and 2016 are in line with management's expectations

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 increased to $367,342 in 2017, compared with $249,550 in 2016. This represents an increase of 47% year-over-year. The increase is primarily due to a higher amount of these costs being eligible for tax credits.

The gross margin before amortization of intangible assets for 2017 was $3,126,967 or 43.5% of revenue compare to a gross margin of $2,170,777 or 41.6% of revenue for 2016 before amortization of intangible assets and write-offs of inventories and costs and profits in excess of billings on uncompleted contracts. The inventory write-off in 2016 was comprised of the Transportable Waste to Energy system ($147,774) and the CFC destruction system ($846,241). The write-off of costs and profits in excess of billings on uncompleted contracts ($1,760,423) was related to the Company no longer expecting to recover the full amounts owed from a customer for a contract.

The amortization of intangible assets of $Nil in 2017 and $1,396,675 for 2016 relates to the licenses and know-how purchased in 2011 from a company under common control. Of note, this expense is a non-cash item and the underlying asset was fully amortized by December 31, 2016.

Selling, General and Administrative Expenses

	Three months ended Dec 31 2017		2016	% Change 2017vs2016	Twelve months ended Dec 31 2017		2016	% Change 2017vs2016
Employee compensation	$ 690,375	$	558,709	24%	$ 2,394,823	$	2,165,025	11%
Professional fees	266,246		229,507	16%	818,911		922,892	-11%
Office and general	156,833		97,705	61%	516,267		406,144	27%
Travel	103,079		104,418	-1%	263,577		204,246	29%
Depreciation on property and equipment	29,986		31,583	-5%	111,937		127,404	-12%
Government grants	(19,333)		(3,375)	-100%	(28,333)		(31,832)	-11%
Other expenses	149,831		58,360	157%	317,655		196,958	61%
Sub-total before Share-based payments	1,377,018		1,076,906	28%	4,394,837		3,990,837	10%
Share-based payments	333,710		(166,098)	-301%	759,013		366,025	107%
Total selling, general and administrative	$ 1,710,728	$	910,808	88%	$ 5,153,850	$	4,356,862	18%

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 2017 excluding the costs associated with share-based compensation (a non-cash item in which options vest principally over a two-year period), were $4,394,837, representing an increase of 10% compared with $3,990,837 reported for 2016.

The increase in SG&A expenses in 2017 over the same period in 2016 is mainly attributable to the net effect of:

i) an increase of 11% in employee compensation due primarily to additional headcount,
ii) a decrease of 11% for professional fees, primarily due to a decrease in investor relations expense and patent expenses,
iii) an increase of 27% in office and general expenses, due to an increase in computers and internet expenses,
iv) travel costs increased by 29%, due to an increase in travel abroad,
v) depreciation on property and equipment decreased by 12% due to a lower amount of property and equipment being depreciated. In 2017, the Company had $1,879,455 of assets under development, which will begin to be depreciated when these assets are available or ready for use (expected in 2018),
vi) government grants decreased by 11% due to a decreased level of activities supported by such grants and,
vii) other expenses increased by 61%, primarily due to an increase in promotion and advertising expenses, an increase in marketing expenses, and an increase in insurance expense.

Separately, share based payments increased by 107% in 2017 over the same period in 2016 as a result of the vesting structure of the stock option plan including the stock options granted on November 3, 2017.

Research and Development (“R&D”) Costs

	Three months ended Dec 31 2017		2016	% Change 2017vs2016	Twelve months ended Dec 31 2017		2016	% Change 2017vs2016
Employee compensation	$	**71,355** $	(10,256)	-796%	$	**269,965** $	73,591	267%
Subcontracting		**2,783**	720	100%		**6,616**	720	100%
Materials and equipment		**562**	(4,392)	-113%		**10,100**	16,646	-39%
Other expenses		**1,993**	(764)	-361%		**3,170**	1,222	159%
Total net R&D costs	$	**76,693** $	(14,693)	-622%	$	**289,851** $	92,179	214%

The Company incurred $289,851 of R&D costs, net of government grants, on internal projects in 2017, an increase of 214% as compared with $92,179 in 2016. The increase in 2017 is related to torch development and plasma atomisation related expenses.

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).

Settlement of a claim related to the long-term debt

	Three months ended Dec 31 2017	2016	% Change 2017vs2016	Twelve months ended Dec 31 2017	2016	% Change 2017vs2016
Net comprehensive loss	**$ 3,215,643**	$ -	100%	**$ 3,215,643**	$ -	100%

Subsequent to year end, the Company and the company under control of the controlling shareholder and CEO entered into a settlement agreement to resolve a claim in the amount of $5,420,000 made by the company under control of the controlling shareholder and CEO in connection with the share for debt conversion transaction between the parties that that took place in 2014. Under the share for debt conversion, the Company issued 7,500,000 common shares in 2014 to settle $6,000,000 of the carrying value of the Balance of sale payable. The settlement agreement also constitutes the final payment of the Balance of sale, and provides for the issuance of units by the Company having a value of $3,327,571 to the company under common control and CEO as follows: (i) on February 9 and March 7, 2018, issuance of 1,899,999 units at a value of $0.70 per unit with each unit consisting of 1 common share of the Company and 1 common share purchase warrant which entitles the holder to purchase 1 common share at a price of $1.25 until August 9th, 2019, and (ii) on April 30, 2018, issuance of 3,385,715 units at a value of $0.59 per unit with each unit consisting of 1 common share of the Company and 1 common share purchase warrant which entitles the holder to purchase 1 common share at a price of $0.85 until April 19, 2020. As the claim related to a dispute that existed at year-end, a liability and related expense of $3,215,643 was recorded as at December 31, 2017. The liability was measured based on the fair value of the units as at their issuance date, which is $0.70 on February 9 and March 7, 2018 and $0.59 on April 30, 2018.

Net Finance Costs

	Three months ended Dec 31 2017		2016	% Change 2017vs2016	Twelve months ended Dec 31 2017		2016	% Change 2017vs2016
Adjustment to the fair value of investments	$	(120,848) $		100%	$	138,200 $	(30,700)	-550%
Gain on disposal of investments		-	93,714			-	(50,000)	-100%
Finance expenses	$	**14,384** $	166,851	-91%	$	**503,726** $	603,542	-17%
Net finance costs	$	**(106,464)** $	260,565	-141%	$	**641,926** $	522,842	23%

The adjustment to the fair market value of investments for 2017 resulted in an expense of $138,200, compared to a gain in the amount of $30,700 in 2016. Finance income in 2016 resulted from a gain realized on the disposal of an investment in an amount of $50,000 in Q1, 2016.

Finance costs for 2017 totaled $641,926 as compared with $522,842 for 2016, representing an increase of 23% year-over-year. The increase in finance costs in 2017, is primarily attributable to an increase in the adjustment in fair value of investments.

Depreciation on Property and Equipment

	Three months ended Dec 31 2017		2016	% Change 2017vs2016	Twelve months ended Dec 31 2017		2016	% Change 2017vs2016
Depreciation on property and equipment	$	**29,986** $	31,584	-5%	$	**111,937** $	127,404	-12%

The depreciation on property and equipment decreased to $111,937 in 2017, compared with $127,404 in Fiscal 2016. The 12% decrease reflects a reduced level of investments in machinery and equipment since 2010, when major acquisitions were made.

The cost of assets under development in 2017 will begin to be depreciated when the asset will be available or ready for use, expected in 2018.

Net loss and comprehensive loss

	Three months ended Dec 31 2017		2016	% Change 2017vs2016	Twelve months ended Dec 31 2017		2016	% Change 2017vs2016
Net loss and comprehensive loss	$	**3,215,643** $	-	100%	$	**3,215,643** $	-	100%

The net comprehensive loss for 2017 of $6,174,303 compared to a loss of $6,952,219, in 2016, represents a decrease of 11% year-over-year. The decrease of $777,916 in the comprehensive loss in 2017 is primarily attributable to the factors described above, which have been summarized as follows:

(i) an increase in product and service related revenue of $1,970,728 arising in 2017,
(ii) an increase in cost of sales and services totaling $1,014,538, primarily due to the concentration of engineering on material purchases, and due to the increase in product and service revenue,
(iii) a decrease in amortization of intangible assets of $1,396,675,
(iv) a decrease in impairment loss in 2017 of $2,754,438 recorded in 2016 for a write-off of inventories and costs and profits in excess of billings on uncompleted contracts.
(v) an increase in SG&A expenses of $796,988 arising in 2017 primarily due to an increase in employee compensation and office and general expenses,
(vi) an increase in R&D expenses of $197,672 primarily due to the increase in development expenditures relating to the asset under construction in 2017,
(vii) an increase due to the settlement of the claim related to the IP debt balance of $3,215,643,
(viii) an increase in net finance costs of $119,084 in 2017 primarily due to an increase in the adjustment in fair value of investments,

Reconciliation of Non-IFRS measures (EBITDA, Adjusted and Modified)

	Three months ended Dec 31 2017	Three months ended Dec 31 2016	% Change 2017vs2016	Twelve months ended Dec 31 2017	Twelve months ended Dec 31 2016	% Change 2017vs2016
Comprehensive loss	**$ (4,907,028)**	$ (3,641,515)	35%	**$ (6,174,303)**	$ (6,952,219)	-11%
Depreciation on property and equipment	**29,986**	31,584		**111,937**	127,405	
Amortization of intangible assets	**-**	348,870		**-**	1,396,675	
Financing charges	**14,385**	$ 166,851		**503,726**	$ 492,142	
EBITDA (loss)	**$ (4,862,657)**	$ (3,094,210)	57%	**$ (5,558,640)**	$ (4,935,997)	13%
Other non-cash items:						
Share-based payments	**333,710**	(166,098)		**759,013**	366,025	
Settlement of a claim related to the long-term debt	**3,215,643**			**3,215,643**		
Write-Off of Inventories		994,015			994,015	
Write-off of costs and profits in excess of billings on uncompleted contracts		1,760,423			1,760,423	
Adjusted EBITDA (loss)	**(1,313,304)**	(505,870)		**(1,583,984)**	(1,815,534)	-13%
Change in fair value of investments	**58,634**	93,714		**138,200**	(30,700)	
Modified EBITDA (loss)	**$ (1,254,670)**	$ (412,156)	204%	**$ (1,445,784)**	$ (1,846,234)	-22%

EBITDA is defined as Earnings (from operations) before Net Financing Charges, Taxes, Depreciation and Amortization, Adjusted EBITDA is defined as Earnings (from operations) before Net Financing Charges, Taxes, Depreciation, Amortization and other non-cash items including share-based payment costs, and change in fair value of investments.

EBITDA and Adjusted EBITDA are not performance measures defined under IFRS and they are not considered an alternative to income or loss from operations, or to comprehensive earnings or loss, in the context of measuring a company's performance. Management believes that providing certain non-GAAP performance measures, in addition to IFRS measures, provides users of the Company's financial statements with an enhanced understanding of its results and related trends and increases transparency and clarity. Management believes that EBITDA, and Adjusted EBITDA are important measures of operating performance because it allows management, investors and others to evaluate and compare the Company's operating results, including its return on capital and operating efficiencies, from period-to-period by removing the impact of the Company's capital structure (interest expense to service outstanding debt), asset base (depreciation and amortization), tax consequences, and other non-operating items not requiring cash outlays including the adjustment to the fair value of investments and share-based compensation. Securities regulations require that companies caution readers that earnings and other measures adjusted to a basis other than IFRS do not have standardized meanings and are unlikely to be comparable to similar measures used by other companies. The exclusion of items in adjusted EBITDA does not imply that they are necessarily non-recurring. Accordingly they should not be considered in isolation or a substitute for financial measures prepared in accordance with IFRS.

The EBITDA loss in 2017 was $5,558,640 compared with an EBITDA loss of $4,935,997 for 2016, representing an increase of 13% year-over-year. The decrease in the EBITDA loss in 2017 compared with 2016 includes amounts written-off of $2,754,438 in 2016.

Adjusted EBITDA loss in 2017 was $1,583,984 compared with an Adjusted EBITDA loss of $1,815,534 for 2016. The decrease of $231,550 in the Adjusted EBITDA loss in 2017 is attributable to the decreased comprehensive loss of $777,916, a decrease of $15,468 in depreciation on property and equipment, a decrease of $1,396,675 in amortization of intangible assets, an increase in finance charges of $11,584, an increase in cost of other non-cash items, specifically share-based payments of $392,988, an increase in a settlement of a claim related to the long-term debt of $3,215,643 a decrease in write-off of inventories of $994,015 and a decrease in write-off of costs and profits in excess of billings on uncompleted contracts of $1,760,423.

The Modified EBITDA loss in 2017 was $1,445,784 compared with a Modified EBITDA loss of $1,846,234 for 2016, representing a decrease of 22%. The decrease in the Modified EBITDA loss in 2017 is attributable to the decrease as mentioned above in the Adjusted EBITDA and a decrease in change of fair value of investments of $168,900.

SUMMARY OF QUARTERLY RESULTS

	2017				2016			
	Q4	Q3	Q2	Q1	Q4	Q3	Q2	Q1
Revenues	$ 1,296,768	$ 2,026,557	$ 2,173,397	$ 1,696,138	$ 1,483,543	$ 1,902,748	$ 818,990	$ 1,016,853
Gross margin before amortization of intangible assets	51,786	1,156,205	1,043,102	875,874	582,471	1,220,646	74,063	293,597
Gross margin %	4.0%	57.1%	48.0%	51.6%	39.3%	64.2%	9.0%	28.9%
Comprehensive loss	(4,907,028)	(360,082)	(608,584)	(298,610)	(3,641,515)	(717,041)	(1,345,000)	(1,248,663)
Net loss per share - basic and dilut	(0.05)	(0.00)	(0.01)	(0.00)	(0.04)	(0.01)	(0.01)	(0.01)

The majority of PyroGenesis' revenue is recognised using the percentage of completion basis and is dependent on the timing of project initiation and execution, including project engineering, manufacturing, and testing.

LIQUIDITY AND CAPITAL RESOURCES

The following table summarizes the contractual maturities of financial liabilities as at December 31, 2017.

	Total	6 months or less	6 to 12 months	1-3 years
	$	$	$	$
Accounts payable and accrued liabilities	2,265,602	2,265,602	-	-
Capital lease obligations	19,591	4,521	4,521	10,549
Term loans	537,400	188,600	348,800	-
Long-term debts	111,928	111,928		
Convertible debentures (principal amount)	4,075,000	4,075,000	-	-
	7,009,521	6,645,651	353,321	10,549

The Company has incurred, in the last several years, operating losses and negative cash flows from operations, resulting in an accumulated deficit of $43,200,708 and a negative working capital of $9,403,370 as at December 31, 2017 (December 31, 2016 - $37,026,405 and $2,079,353 respectively). Furthermore, as at December 31, 2017, the Company's current liabilities and expected level of expenses for the next twelve months exceed cash on hand of $622,846 (December 31, 2016 - $385,257). 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.

Revenue generated from active projects does not yet produce sufficient positive cash flow to fund operations. However, based on current backlog of the Company has a strong backlog from signed contracts totaling $7.2 million, and a pipeline of prospective new projects resulting in the Company's business plan becoming less dependent on raising additional funds to finance operations within and beyond the next 12 months. While the Company has been successful in securing financing in the past, raising additional funds is dependent on a number of factors outside the Company's control, and as such there is no assurance that it will be able to do so, should it need to, in the future. If the Company is unable to obtain sufficient additional financing when needed, it may have to curtail operations and development activities, any of which could harm the business, financial condition and results of operations. Until such financing is secured, there exists a material uncertainty that may cast significant doubt about the Company's ability to continue operating as a going concern and realize its assets and settle its liabilities and commitments in the normal course of business. See note 1(b) to the financial statements.

OFF-BALANCE SHEET ARRANGEMENTS

The Company has entered into long-term leases for premises and automobile ending in 2022 and 2020 respectively. The minimum lease payments due over the next five years are as follows:

	Premises	Automobile
	$	**$**
2018	**481,878**	**6,318**
2019	**488,678**	**6,318**
2020	**495,478**	**527**
2021	**502,278**	**-**
2022	**167,280**	**-**
	2,135,592	**13,163**

SUMMARY OF CASH FLOWS

	Three months ended Dec 31 2017	2016	Twelve months ended Dec 31 2017	2016
Cash provided by (used in) operating activities	$ (1,171,265)	$ 741,629	$ (1,713,254)	$ (1,372,907)
Cash provided by (used in) investing activities	(467,826)	(152,520)	(1,760,233)	(401,020)
Cash provided by (used in) financing activities	1,944,006	(410,005)	3,711,076	1,391,816
Increase (decrease) in cash	304,915	179,104	237,589	(382,111)
Cash - end of period	622,846	385,257	622,846	385,257

For the year 2017, cash flow used by operating activities was $1,713,254 compared to $1,372,907 for 2016.

The use of cash during 2017 consists of the comprehensive loss of $6,174,303 (2016 - $6,952,219) plus adjustment for non-cash items totalling $4,743,487 (2016 - $5,167,385) plus a net change in non-cash operating working capital items of $19,394 (2016 – net change of $774,294) plus interest paid of $301,832 (2016 - interest paid of $362,367).

The net change in non-cash operating working capital items in 2017 was driven by:

a) a decrease in accounts receivable of $140,391 in 2017, compared to an increase of $218,620 in 2016;
b) a decrease in costs and profits in excess of billings on uncompleted contracts of $40,768 in 2017, compared to an increase of $403,330 in 2016;
c) an increase in inventories or $123,735 compared to $Nil in 2016;
d) an increase in investment tax credits receivable of $212,635 in 2017, compared to a decrease of $209,526 in 2016;
e) an increase in prepaid expenses of $129,222 in 2017, compared to a decrease of $64,828 in 2016;
f) an increase in accounts payable and accrued liabilities of $718,716 in 2017, compared to a decrease of $348,128 in 2016;
g) a decrease in billings in excess of costs and profits on uncompleted contracts of $134,107 in 2017, compared with an increase of $1,032,778 in 2016.

Investing activities resulted in a use of cash of $1,760,233 in 2017, compared to a use of cash of $401,020 in 2016 resulting from the purchase of property and equipment and additions to intangible assets.

Financing activities in 2017 resulted in a net source of funds of $3,711,076, compared with a net source of funds of $1,391,816 for the same periods in 2016. In 2017, the Company issued common shares upon exercise of warrants, units and stock options for cash proceeds of $3,640,799 raised for general working capital purposes, received proceeds from the issuance of a loan of $277,062, and repaid an amount of $206,785 in loans and capital lease obligations. In 2016, the Company completed loans and a private placement for net cash proceeds of $2,130,216 and repaid loans in the amount of $738,400.

The net cash position of the Company increased by $237,589 for 2017 compared to a net decrease of $382,111 for 2016.

CAPITAL STOCK INFORMATION

The authorized share capital of the Company consists of an unlimited number of Class A common shares (the "Common Shares"). As at April 30, 2018 PyroGenesis had 122,720,342 Common shares, 8,141,762 share purchase warrants, 9,671,000 outstanding stock options issued, and 7,985,000 exercisable options issued.

GOING CONCERN

Cash generated from contracts and from providing engineering services to clients has historically been insufficient to meet the overall cash requirements of the Company to cover operating costs. For the Company to generate sufficient positive cash flows from operations and meet current cash requirements, the level of business must exceed that recorded to date. Management expects that the investments currently being made in accelerating projects under development for various clients, together with executing on the $7.2 million backlog at April 30 2018, (100% of 2017 revenues) which is primarily related to the Company's successful diversification into niche markets of the additive manufacturing (including 3D printing), and metals & mining industries, will continue to improve the Company's cash position.

To date, the Company has raised financing primarily through successive issuances of equity and convertible debentures. There is no certainty that the Company will continue to be able to raise additional financing or expand its sales to fund its operations, although management is confident that it will be able to do so. These conditions indicate the existence of a material uncertainty that may cast significant doubt on the Company's ability to continue as a going concern.

The December 31, 2017 financial statements have been prepared using International Financial Reporting Standards ("IFRS") applicable to a going concern, which contemplates the realization of assets and settlement of liabilities in the normal course of business as they become due. If the going concern assumption were not appropriate for these financial statements then adjustments would be necessary to the carrying value of assets and liabilities, the reported expenses and the statements of financial position classifications used. The impact on the financial statements could be material.

RELATED PARTY TRANSACTIONS

During the year ended December 31, 2017, the Company concluded the following transactions with related parties:

Rent was charged by a trust beneficially owned by the controlling shareholder and the CEO of the Company in the amount of $226,120 (2016 - $188,781). A balance due of $17,008 (2016 - $40,688) is included in accounts payable and accrued liabilities.

Interest of $56,685 (2016 - $56,640) was paid on the $755,000 convertible debentures held by company under common control of the controlling shareholder and CEO. Accreted interest related to the convertible debenture held by a company under common control amounted to $58,630 (2016 - $52,300).

A balance due to the controlling shareholder and CEO of the Company amounted to $205,641 (December 31, 2016 - $126,237) and is included in accounts payable and accrued liabilities.

The balance of sale due to a company under common control, was $111,928 (December 31, 2016 - $432,166), and is included in long term debt. Accreted interest related to the balance of sale amounted to $41,250 (2016 - $Nil).

As discussed above in the settlement of a claim related to the long-term debt, the Company and a company under common control of the controlling shareholder and CEO entered into a settlement agreement with respect to the balance of sale payable.

The key management personnel of the Company are the members of the Board of Directors and certain executive officers. Total compensation to key management consisted of the following:

	2017	2016
	$	$
Salaries – executive officers	**406,038**	482,475
Pension contributions	**8,121**	8,073
Fees – Board of Directors	**130,000**	123,000
Share based compensation – executive officers	**632,798**	232,253
Share based compensation – Board of Directors	**55,895**	108,535
Other benefits – executive officers	**34,082**	41,391
Total compensation	**1,266,934**	995,727

A balance of $72,617 of key management compensation of the amounts noted above is included in accounts payable and accrued liabilities as at December 31, 2017 (December 31, 2016 - $67,080).

SUBSEQUENT EVENTS

On February 9, 2018, the Company received a refund for the 2016 SR&ED Tax Credits claimed of $113,761, net of the 2016 SR&ED loan balance repayment of $290,200).

On February 9, 2018, the Company issued 200,000 stock options to an officer with an exercise price of $0.60 and are exercisable over a period of 48 months. The stock options are granted in accordance with the Company's stock option plan.

On February 9, 2018 and March 7, 2018, the Company issued an amount of 1,899,999 units to a company under common control of the controlling shareholder and CEO under a settlement agreement and 2,971,430 units to an unrelated party at a price of $0.70 per unit, for gross proceeds of $2,080,001. Each unit consists of one common share of the Company and one Common Share purchase warrant. Each warrant entitles the holder thereof to purchase one common share at a price of $1.25 until August 9th, 2019. Each unit will be subject to a statutory hold period of four months and one day from the date of closing. In connection with the private placement, the Company paid finder fees in the amount of $127,750 and issued 88,000 finder's compensation warrants to the agents.

On April 2, 2018, the Company completed a $3,000,000 non-brokered private placement of 9.5% secured convertible debentures. The convertible debentures bear interest at the rate of 9.5% per annum, with interest payable in cash on a quarterly basis, and mature on March 29, 2020. Each Debenture is convertible into common shares of the Company at a conversion price of $0.80 per common share. The convertible debentures and the common shares issuable on conversion of the Debentures will be subject to a statutory hold period of four months and one day from the closing date of the Offering. In connection with the convertible debenture, the Company paid finder fees in the amount of $180,000 to the agent.

On April 2, 2018 the Company redeemed $3,245,000 of the $4,000,000 unsecured convertible debenture. The subordinated unsecured convertible debenture matured on March 30, 2018 and had an interest component of 7.5% per annum, payable quarterly. The unsecured convertible debenture was convertible into common shares of the Company at any time at the option of the holder at a conversion price of $0.80 per common share.

On April 3, 2018, the Company granted 500,000 stock options to a consultant, to promote the business interests of the Company worldwide. The stock options have an exercise price of $0.70 per Common Share and are exercisable over a period of 18 months. The stock options are granted in accordance with the Company's stock option plan.

On April 19, 2018, the Company issued an amount of 1,258,333 units to a company under common control of the controlling shareholder and CEO to redeem the remaining balance of 755,000 of the $4,000,000 unsecured convertible debenture. The Company also issued 1,850,000 units to an unrelated party at a price of $0.60 per unit, for gross proceeds of $1,110,000. Each unit consists of one common share of the Company and one common share purchase warrant. Each warrant entitles the holder thereof to purchase one common share at a price of $0.85 until April 19th, 2020. Each unit will be subject to a statutory hold period of four months and one day from the date of closing. In connection with the private placement, the Company paid finder fees in the amount of $89,478 to the agents

On April 30, 2018 the Company issued an amount of 3,385,715 units to a company under common control of the controlling shareholder and CEO under a settlement agreement. Each unit consists of one common share of the Company and one common share purchase warrant. Each warrant entitles the holder thereof to purchase one common share at a price of $0.85 until April 19, 2020. Each unit will be subject to a statutory hold period of four months and one day from the date of closing.

From January 1 to January 26, 2018, the Company received an aggregate amount of $629,215 from the exercise of a series of warrants which were previously issued by the Company in connection with the private placement offering completed on July 26, 2016. As a result of such exercise, the Company issued 1,797,500 Common Shares.

From January 1 to March 12, 2018, the Company received an aggregate amount of $73,500 from the exercise of 245,000 options at an exercise price of $0.30.

CRITICAL ACCOUNTING ESTIMATES, NEW AND FUTURE ACCOUNTING POLICIES AND FINANCIAL INSTRUMENTS

For a discussion of critical accounting estimates, new and future accounting policies and financial instruments, please refer to notes 4, 5 and 21 of the annual 2017 Financial Statements.

RISK FACTORS

PyroGenesis is subject to a number of risks and uncertainties that could significantly affect the Company's financial condition and performance. This list of risk factors may not be exhaustive as the Company operates in a rapidly changing business environment and new risk factors emerge from time to time. The Company cannot predict such risk factors, nor can the Company assess the impact, if any, of such risk factors or uncertainties on its business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those projected in any forward-looking statements. Accordingly, neither shareholders of the Company nor purchasers of securities of the Company should rely on forward-looking statements as a prediction of actual results. If any of these risks actually occur, the Company's business, results of operations, financial position and cash flows could be adversely affected. In any such case, the market price of the Company's common shares could decline, and investors may lose all or part of their investment.

Revenue Risks

PyroGenesis may experience delays in achieving revenues, particularly with plasma gasification projects which have a long sales cycle. Revenues may be delayed or negatively impacted by issues encountered by the Company or its clients including:

- (a) unforeseen engineering and/or environmental problems;
- (b) delays or inability to obtain required financing, licenses, permits and/or regulatory approvals;
- (c) supply interruptions and/or labour disputes;
- (d) foreign exchange fluctuations and/or collection risk; and
- (e) competition from other suppliers and/or alternative energy solutions that are less capital intensive.

There is no assurance that the business will perform as expected or that returns from the business will support the expenditures needed to develop it.

Technology Development and Manufacturing Capability Risks

PyroGenesis recently expanded into new areas of business and, as a result, many of the Company's products are at various stages of the development cycle. The Company may be unable to commercialise such products, or it may be unable to manufacture such products in a commercially viable manner. Whilst management is confident in both its technology and in its team of experienced engineers, scientists and technicians, it cannot know with certainty, which of its products will be commercialised, when such products will be commercialised, or whether such products will be able to be manufactured and distributed profitably.

Lack of Product Revenues/History of Losses

PyroGenesis has incurred losses in the majority of years since its inception. The Company's operations have not generated sufficient earnings and cash flows to date to result in consistent profitability or positive cash flow. Consequently, the Company's continued existence is dependent upon its ability to generate profitable operations by establishing and expanding its client base and/or raising adequate long-term financing. PyroGenesis has relied primarily on equity financing, debt financing, partner funding and government funding to carry on its business to date. The ability of the Company to achieve profitable sustainable operations in the future is uncertain. PyroGenesis has not yet demonstrated its ability to consistently achieve positive gross margins and its ongoing efforts to improve product gross margins may be insufficient to result in profitability.

Additional financing and dilution

PyroGenesis will require additional financing to support ongoing operations and to undertake capital expenditures. There can be no assurance that additional financing will be available to the Company when needed, or on terms acceptable to the Company. PyroGenesis' inability to raise financing to support ongoing operations or to fund capital expenditures could limit the Company's growth and may have a material adverse effect upon the Company.

The Company does not exclude raising additional funds by equity financing. In addition, at April 30, 2018, 9,671,000 stock options are currently issued and outstanding, together with 8,141,672 share purchase warrants and $3,000,000 convertible debentures. The exercise of stock options and/or warrants, together with the conversion of debentures, as well as any new equity financings, represents dilution factors for present and future shareholders.

Sales Cycle and Fixed Price Contracts

PyroGenesis sales cycle is long and the signing of new contracts is subject to delay, over which the Company has little control. The Company also enters into sales contracts with fixed pricing, which may be impacted by changes over the period of implementation. There is no assurance that delays or problems in fulfilling contracts with clients will not adversely affect the Company's activities, operating results or financial position.

Reliance on Technology

PyroGenesis will depend upon continuous improvements in technology to meet client demands in respect of performance and cost, and to explore additional business opportunities. There can be no assurance that the Company will be successful in its efforts in this regard or that it will have the resources available to meet this demand. Whilst management anticipates that the research and development will allow the Company to explore additional business opportunities, there is no guarantee that such business opportunities will be presented or realised. The commercial advantage of the Company will depend to a significant extent on the intellectual property and proprietary technology of PyroGenesis and the ability of the Company to prevent others from copying such proprietary technologies. PyroGenesis currently relies on intellectual property rights and other contractual or proprietary rights, including (without limitation) copyright, trade secrets, confidential procedures, contractual provisions, licenses and patents, to protect its proprietary technology. PyroGenesis may have to engage in litigation in order to protect its patents or other intellectual property rights, or to determine the validity or scope of the proprietary rights of others. This type of litigation can be expensive and time consuming, regardless of whether or not the Company is successful. PyroGenesis may seek patents or other similar protections in respect of particular technology; however, there can be no assurance that any future patent applications will actually result in issued patents, or that, even if patents are issued, they will be of sufficient scope or strength to provide meaningful protection or any commercial advantage to the Company. Moreover, the process of seeking patent protection can itself be long and expensive. In the meantime, competitors may develop technologies that are similar or superior to PyroGenesis' technology or design around the patents owned by the Company, thereby adversely affecting the Company's competitive advantage in one or more of its areas of business. Despite the efforts of the Company, its intellectual property rights may be invalidated, circumvented, challenged, infringed or required to be licensed to others. It cannot be assured that any steps the Company may take to protect its intellectual property rights and other rights to such proprietary technologies that are central to the Company's operations will prevent misappropriation or infringement of its technology.

Changes to Contracts

PyroGenesis is dependent upon its ability to establish and develop new relationships and to build on existing relationships with current clients. The Company cannot provide assurance that it will be successful in maintaining or advancing its relationships with current clients or procure additional clients. In addition, PyroGenesis cannot provide assurance that the U.S. Military and/or other military clients will continue to provide the Company with business. Sales to governments and governmental entities are subject to specific additional risks, such as delays in funding, termination of contracts or sub-contracts at the convenience of the government, termination, reduction or modification of contracts or sub-contracts in the event of changes in the government's policies or as a result of budgetary constraints and increased or unexpected costs resulting in losses or reduced profits under fixed price contracts.

Foreign Exchange Exposure

PyroGenesis' products and services are increasingly being sold in markets outside of Canada, whilst most of its operating expenses and capital expenditures are denominated in Canadian dollars. As a result, the Company is exposed to fluctuations in the foreign exchange rates between Canadian dollar and the currency in which a particular sale is transacted, which may result in foreign exchange losses that could affect earnings.

Competition

The industry is competitive and PyroGenesis competes with a substantial number of companies which have greater technical and financial resources. There can be no assurance that such competitors will not substantially increase the resources devoted to the development and marketing of products and services that compete with those of the Company or that new or existing competitors will not enter the various markets in which PyroGenesis is active. There can be no assurance that competitors will not develop new and unknown technologies with which the Company may have difficulty competing. Furthermore, failure to remain cost competitive may result in PyroGenesis losing business to its competitors.

Management and Key Personnel

PyroGenesis depends on the skills and experience of its management team and other key employees. The Company relies heavily on its ability to attract and retain highly-skilled personnel in a competitive environment. PyroGenesis may be unable to recruit, retain, and motivate highly-skilled employees in order to assist the Company’s business, especially activities that are essential to the success of the Company. Failure to recruit and retain highly-skilled employees may adversely affect PyroGenesis’ business, financial condition and results of operations.

Implementation of a strategic plan

PyroGenesis’ commercial strategy aims to leverage its products, consumables, and services whilst focusing on the resolution of problems within niche markets within the industries served by the Company. There can be no assurances as to the success of the Company’s strategic plan, which should be considered under the risks perspective and difficulties frequently encountered by a developing business.

Adverse Decisions of Sovereign Governments

PyroGenesis conducts an increasing portion of its business internationally. There is no assurance that any sovereign government, including Canada’s, will not establish laws or regulations that will not be detrimental to the Company’s interests or that, as a foreign corporation, it will continue to have access to the regulatory agencies in other countries. Governments have, from time to time, established foreign exchange controls, which could have a material adverse effect on the Company’s business, financial condition and results of operations.

Governmental Regulation

PyroGenesis is subject to a variety of federal, provincial, state, local and international laws and regulations relating namely to the environment, health and safety, export controls, currency exchange, labour and employment and taxation. These laws and regulations are complex, change frequently and have tended to become more stringent over time. Failure to comply with these laws and regulations may result in a variety of administrative, civil and criminal enforcement measures, including assessment of monetary penalties, imposition of remedial requirements and issuance of injunctions as to future compliance. The Company may be subject to compliance audits by regulatory authorities in the various countries in which it operates.

Environmental Liability

PyroGenesis is subject to various environmental laws and regulations enacted in the jurisdictions in which it operates, which govern the manufacturing, processing, importation, transportation, handling and disposal of certain materials used in the Company’s operations. Management believes that it has adequate procedures in place to address compliance with current environmental laws and regulations. Furthermore, management monitors the Company’s practices concerning the handling of environmentally hazardous materials. However, there can be no assurance that the Company’s procedures will prevent environmental damage occurring from spills of materials handled by the Company or that such damage has not already occurred. On occasion, substantial liabilities to third parties may be incurred. The Company may have the benefit of insurance maintained by it or the operator, however, the Company may become liable for damages against which it cannot adequately insure or against which it may elect not to insure because of high costs or other reasons. The Company’s clients are subject to similar environmental laws and regulations, as well as limits on emissions to the air and discharges into surface and sub-surface waters. While regulatory developments that may follow in subsequent years could have the effect of reducing industry activity, the Company cannot predict the nature of the restrictions that may be imposed. The Company may be required to increase operating expenses or capital expenditures in order to comply with any new restrictions or regulations.

Product Liability and Other Lawsuits

PyroGenesis is subject to a variety of potential product liabilities claims and other lawsuits related with its operations, including liabilities and expenses associated with product defects. The Company maintains product liability and other insurance coverage that management believes is generally in accordance with the market practice in its industry, but there can be no assurance that the Company will always be adequately insured against all such potential liabilities.

Market Liquidity

The market price for the common shares of the Company could be subject to wide fluctuations. Factors such as the announcement of significant contracts, technological innovations, new commercial products, patents, a change in regulations, quarterly financial results, future sales of common shares by the Company or current shareholders, and many other factors could have considerable repercussions on the price of the Company's common shares. In addition, the financial markets may experience significant price and value fluctuations that affect the market prices of equity securities of companies that sometimes are unrelated to the operating performance of these companies. Broad market fluctuations, as well as economic conditions generally may adversely affect the market price of the Company's common shares.

Information systems disruptions

The Company's business depends on the efficient and uninterrupted operation of its computer and communications software, hardware systems, and its other information technology. If such systems were to fail, or the Company was unable to successfully expand the capacity of these systems or integrate new technologies into its existing systems, its operations and financial results could be adversely affected.

OUTLOOK

2017 was a year in which all key indicators of operational performance posted significant gains and positioned the Company for profitability in the future. Building upon the successes of 2016, which saw the establishment of healthy gross margins, in excess of 40% continue and improve throughout 2017, as the Company put in place the infrastructure and personnel to ensure that these margins, not only continue into the foreseeable future, but improve once powder production is in full commercialization.

The following is a non-exhaustive review of PyroGenesis' main commercial activities:

A) Powder Production:

2017 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 2018.

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 should be fully operational by the end of July 2018. These new powder production 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 our build out strategy for the better.

The Company expects that one of the next significant milestones is to be formally placed on a powder user's approved supplier list. This requires significant time and money on the part of the user and would be the first formal step to a powder production contract. Although we cannot predict the time frame in which this might happen, we can confirm that we have not been rejected during any powder qualification process leading to this ultimate goal.

B) DROSRITE™

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.

During this time, a successful demonstration of the DROSRITE™ System in the Middle East has resulted in significant interest from that region while the Company's demonstration unit is already fully booked in India, to September, with paid-for-demonstrations. This flurry of activity and interest for the DROSRITE™ System resulted in the Company hiring a full-time business development manager to market the DROSRITE™ System, and who's role is exclusively to secure DROSRITE™ system sales. PyroGenesis is aggressively targeting both primary aluminum smelters in Asia and the Middle East where the market is estimated to be in excess of 1 million tonnes of dross[1], as well as tertiary casting producers worldwide. These two markets alone represent a potential market for DROSRITE™ systems numbering in the hundreds of units.

As of this writing, PyroGenesis

1. is currently discussing the purchase of an additional two (2) systems with an existing client;

2. has demonstrated the system in the Middle East and are expected to close on the equivalent of three (3) systems over the next few months;

3. has a demonstration system in India on contract for paid-for-demonstrations, which if successful could result in 1-4 additional orders;

   Plus,

4. as noted, this demonstration system is fully booked until September 2018.

Due to this high demand for on-site paid-for demonstrations, the Company is in the process of constructing a second DROSRITE™ demonstration system which is expected to be available for demonstrations in Q3 2018. There is a high probability that PyroGenesis will be profitable in 2018 from DROSRITE™ system sales when combined with existing backlog.

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 now it seems that the interest is for two, for an estimated value of between $10-12 MM.

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 to accommodate 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.

[1] http://www.world-aluminium.org/statistics/primary-aluminium-production/

D) HPQ:

On August 2, 2016, PyroGenesis announced that it had signed contracts totalling CAN$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 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.

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 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.

All indications are that 2018 should be a profitable year for the Company given that business lines, other than non-additive manufacturing, continue to contribute significantly to Pyrogenesis’ revenues. Management expects that the Corporation’s non-additive manufacturing business lines will generate enough revenues, on their own in 2018, to make PyroGenesis profitable overall.

Additional information regarding the Company can be found on SEDAR at www.sedar.com OTC Markets (www.otcmarkets.com) and on the Company’s website at www.pyrogenesis.com