



## 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 three and the nine months ended September 30, 2020. 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, 2019.

The condensed interim consolidated financial statements and MD&A have been reviewed by PyroGenesis' Audit Committee and were approved by its Board of Directors on November 25, 2020. 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 and financially literate 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 includes the accounts of Drosrite International Inc. and takes into account all material events that took place up until November 25, 2020, 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](http://www.sedar.com)), OTC Markets ([www.otcmarts.com](http://www.otcmarts.com)) and on the Company's website at [www.pyrogenesis.com](http://www.pyrogenesis.com).

### FORWARD-LOOKING STATEMENTS

This MD&A contains forward-looking statements and forward-looking information (collectively, "forward-looking statements") within the meaning of applicable securities legislation. 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; the execution of its growth strategy; relations with suppliers and customers; future financial position; business strategy; 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. These forward-looking statements are based on management’s current expectations and are subject to a number of risks, uncertainties, and assumptions, including market and economic conditions, business prospects or opportunities, future plans and strategies, projections and anticipated events and trends that affect the Company and its industry. Although management of the Company believes that the expectations reflected in such forward-looking statements are reasonable and are based on reasonable assumptions and estimates as of the date hereof, there can be no assurance that these assumptions or estimates are accurate or that any of these expectations will prove accurate.

Actual results and developments are likely to differ, and may differ materially, from those anticipated by the Company and expressed or implied by the forward-looking statements contained in this MD&A. Such statements are based on a number of assumptions and risks which may prove to be incorrect. Important assumptions relating to the forward-looking statements contained in this MD&A include, among other things, assumptions concerning:

- the Company’s business strategies, strategic objectives and growth strategy;
- the Company’s expected production volumes, rates and costs;
- the Company’s current and future capital resources and the need for additional financing;
- the Company’s ability to increase sales from new and existing customers, and the results of the successful completion of the Company’s current projects;
- management’s expectation that the Company will achieve growth and profitability;
- the Company’s overall financial performance;
- the Company continuing to maintain sufficient and effective production and research and development;
- there being no significant reduction in the availability of qualified and cost-effective human resources;
- there will be adequate liquidity available to the Company to carry out its operations;
- the Company’s ability to obtain and retain key personnel; and
- the success of intellectual property applications.

By their nature, forward-looking statements require assumptions and are subject to inherent risks and uncertainties including those discussed herein. 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 Middle Eastern,



European, 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 forward-looking statements contained in this MD&A are based upon what management currently believes to be reasonable assumptions, the Company cannot assure investors that actual results, performance or achievements will be consistent with these forward-looking statements and additional risks and uncertainties discussed in the Company’s materials filed with the Canadian securities regulatory authorities from time to time, available under the Company’s profile on SEDAR at [www.sedar.com](http://www.sedar.com). 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 in this MD&A are expressly qualified in their entirety by this cautionary statement and are made as of the date of this MD&A or such other date specified herein.

## OVERVIEW

PyroGenesis Canada Inc., a high-tech company, is a leader in the design, development, manufacture and commercialization of advanced plasma processes and products. The Company provides its engineering and manufacturing expertise and its turnkey process equipment packages to customers in the defense, metallurgical, mining, advanced materials (including 3D printing), and environmental industries. With a team of experienced engineers, scientists and technicians working out of its Montreal office and its 3,800 m<sup>2</sup> manufacturing facility, PyroGenesis maintains its competitive advantage by remaining at the forefront of technology development and commercialization. The Company’s core competencies allow PyroGenesis to provide innovative plasma torches, plasma waste processes, high-temperature metallurgical processes, and engineering services to the global marketplace. PyroGenesis’ operations are ISO 9001:2015 and AS9100D certified. The Company is publicly traded on the TSX Exchange under the Symbol “PYR” on the



OTCQB in the USA under the symbol “PYRNF” and on the Frankfurt Stock Exchange (FSX) under the symbol “8PY”.

## SELECTED FINANCIAL INFORMATION

	Three months ended Sept 30,		% Change	Nine months ended Sept 30,		% Change
	2020	2019	2020vs2019	2020	2019	2020vs2019
<b>Revenues</b>	<b>\$ 8,149,427</b>	\$ 2,097,437	289%	<b>\$ 10,996,789</b>	\$ 3,747,649	193%
Cost of sales and services	<b>2,616,901</b>	1,150,347	127%	<b>3,930,257</b>	2,538,538	55%
Gross margin	<b>5,532,526</b>	947,090	484%	<b>7,066,532</b>	1,209,111	484%
<b>Expenses</b>						
Selling, general and administrative (not including share-based expenses)	<b>2,294,394</b>	1,485,803	54%	<b>5,141,456</b>	4,349,616	18%
Research and development	<b>131,955</b>	236,535	-44%	<b>151,176</b>	544,954	-72%
Net finance costs	<b>(16,370)</b>	246,352	-107%	<b>493,295</b>	773,268	-36%
Total expenses (not including share-based expenses)	<b>2,409,979</b>	1,968,690	22%	<b>5,785,927</b>	5,667,839	2%
Net income from operations (not including share-based expenses)	<b>3,122,547</b>	(1,021,600)	406%	<b>1,280,605</b>	(4,458,729)	129%
Share-based expense	<b>(3,017,408)</b>	(14,149)	21,226%	<b>(3,111,913)</b>	(76,218)	3,983%
Net income from operations	<b>105,139</b>	(1,035,749)	110%	<b>(1,831,308)</b>	(4,534,947)	60%
Changes in fair market value of strategic investments	<b>15,220,857</b>	70,717	21,424%	<b>20,628,298</b>	437,600	4,614%
<b>Comprehensive income</b>	<b>\$ 15,325,996</b>	\$ (965,032)	1,688%	<b>\$ 18,796,990</b>	\$ (4,097,346)	559%

Modified 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. Modified 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. Accordingly, they should not be considered in isolation.



**Extract from Statement of Financial Position at:**

	September 30, 2020	Dec 31, 2019
Current assets	8,698,383	1,324,554
Non-current assets	31,039,994	8,254,675
<b>Total assets</b>	<b>\$ 39,738,377</b>	<b>\$ 9,579,229</b>
Current liabilities	13,410,922	11,816,655
Non-current liabilities	2,821,052	3,845,497
<b>Total liabilities</b>	<b>\$ 16,231,974</b>	<b>\$ 15,662,152</b>
Shareholders' equity	<b>\$ 23,506,403</b>	<b>\$ (6,082,923)</b>

**RESULTS OF OPERATIONS**

***Revenue***

PyroGenesis recorded revenue of \$8,149,427 in the third quarter of 2020 (“Q3, 2020”), representing an increase of 289% compared with \$2,097,437 recorded in the third quarter of 2019 (“Q3, 2019”). Revenue for the nine months of fiscal 2020 was \$10,996,789 an increase of 193% over revenue of \$3,747,649 during the same period in 2019.

Revenues recorded during the nine months ended September 30, 2020 were generated primarily from:

- (i) DROSRITE™ related sales of \$6,384,563 (2019 - \$Nil),
- (ii) PUREVAP™ related sales of \$2,883,819 (2019 - \$328,733),
- (iii) torch related sales of \$897,822 (2019 - \$1,932,353),
- (iv) the development and support related to systems supplied to the U.S. Military of \$478,132 (2019 - \$500,946).



## Cost of Sales and Services and Gross Margin

	Three months ended Sept 30, 2020			Nine months ended Sept 30, 2020		
			% Change 2020vs2019			% Change 2020vs2019
Employee compensation	\$ 530,860	\$ 434,624	22%	\$ 907,744	\$ 1,277,859	-29%
Subcontracting	480,602	79,579	504%	670,076	168,467	298%
Direct materials	1,423,762	516,552	176%	2,013,403	876,390	130%
Manufacturing overhead & other	195,681	214,767	-9%	348,145	350,786	-1%
Foreign exchange loss	2,670	(50,037)	-105%	33,325	(34,252)	-197%
Investment tax credits	(23,456)	(50,405)	-53%	(62,844)	(115,536)	-46%
<b>Cost of Sales and Services before Amortization of Intangible Assets</b>	<b>\$ 2,610,119</b>	<b>\$ 1,145,080</b>	<b>128%</b>	<b>\$ 3,909,849</b>	<b>2,523,714</b>	<b>55%</b>
Amortization of intangible assets	6,782	5,267	29%	20,408	14,824	38%
<b>Total Cost of Sales and Services</b>	<b>\$ 2,616,901</b>	<b>\$ 1,150,347</b>	<b>127%</b>	<b>\$ 3,930,257</b>	<b>\$ 2,538,538</b>	<b>55%</b>
<b>Gross Margin</b>						
	Three months ended Sept 30, 2020			Nine months ended Sept 30, 2020		
Revenues	\$ 8,149,427	\$ 2,097,437		\$ 10,996,789	\$ 3,747,649	
Cost of Sales and Services	2,616,901	1,150,347		3,930,257	2,538,538	
Gross Margin	\$ 5,532,526	\$ 947,090		\$ 7,066,532	\$ 1,209,111	
Gross Margin %	67.9%	45.2%		64.3%	32.3%	

Cost of sales and services before amortization of intangible assets was \$2,610,119 in Q3 2020, representing an increase of 128% compared with \$1,145,080 in Q3 2019, primarily due to an increase in employee compensation \$530,860 (Q3, 2019 - \$434,624), subcontracting \$480,602 (Q3, 2019 - \$79,579) and direct material \$1,423,762 (Q3, 2019 - \$516,552).

In Q3 2020, manufacturing overhead & other and foreign exchange increased to \$198,351 (Q3, 2019 - \$164,730). The gross margin for Q3 2020 was \$5,532,526 or 67.9% of revenue compared to a gross margin of \$947,090 or 45.2% of revenue for Q3 2019. As a result of the type of contracts being executed (the nature of project activity), as well as the composition of the cost of sales and services, the mix between labour, materials and subcontracts may be significantly different.

Investment tax credits recorded against cost of sales are related to projects that qualify for tax credits from the provincial government of Quebec. Qualifying tax credits decreased to \$23,456 in Q3 2020, compared with \$50,405 in Q3 2019. This represents a decrease of 53% year-over-year. In total, for the nine months, the Company earned refundable investment tax credits of \$62,844 against cost of sales in Q3 2020. The Company continues to make investments in research and development projects involving strategic partners and government bodies.

The amortization of intangible assets of \$6,782 in Q3 2020 and \$5,267 for Q3 2019 relates to patents and deferred development costs. Of note, these expenses are non-cash items and will be amortized over the duration of their expected lives.



## *Selling, General and Administrative Expenses*

	Three months ended Sept 30,			Nine months ended Sept 30,		
	2020	2019	% Change 2020vs2019	2020	2019	% Change 2020vs2019
Employee compensation	\$ 1,330,132	\$ 756,141	76%	\$ 3,316,935	\$ 2,380,927	39%
Professional fees	624,375	393,810	59%	1,024,519	852,830	20%
Office and general	93,215	48,917	91%	249,733	176,358	42%
Travel	7,230	78,507	-91%	75,626	302,346	-75%
Depreciation on property and equipment	19,125	44,958	-57%	39,238	145,801	-73%
Depreciation rou assets	128,971	111,492	16%	306,541	326,830	-6%
Investment tax credits	(7,500)	(7,500)	0%	(47,105)	(22,413)	110%
Government grants	-	(16,585)	-100%	(46,728)	(49,063)	-5%
Other expenses	98,846	76,063	30%	222,699	236,000	-6%
<b>Sub-total not including share-based expenses</b>	<b>\$ 2,294,394</b>	<b>\$ 1,485,803</b>	<b>54%</b>	<b>\$ 5,141,456</b>	<b>\$ 4,349,616</b>	<b>18%</b>
Share-based expenses	3,017,408	14,149	21,225%	3,111,913	76,218	3,983%
<b>Total selling, general and administrative</b>	<b>\$ 5,311,802</b>	<b>\$ 1,499,952</b>	<b>254%</b>	<b>\$ 8,253,369</b>	<b>\$ 4,425,834</b>	<b>86%</b>

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, 2020 were significantly impacted by a non-cash item, namely, share-based expenses as a result of the Company issuance of stock options to directors and employees which had an attributed expense value of \$3,017,408 for Q3, 2020. SG&A (net of share-based expenses) were 28% of revenues in Q3 2020 (70%, of revenues in Q3 2019).

SG&A excluding the costs associated with share-based expenses (a non-cash item in which options vest over a four-year period), was \$2,294,394 representing an increase of 54% compared with \$1,485,803 reported for Q3, 2019. On a year-to-date basis, SG&A expenses before share-based expenses were \$5,141,456 compared with \$4,349,616 in the same period in 2019.

The increase in SG&A expenses in Q3, 2020 over the same period in 2019 is mainly attributable to the net effect of:

- an increase of 76% in employee compensation, primarily due to an increase in commissions,
- an increase of 59% for professional fees, primarily due to an increase in legal fees related to the uplisting to the TSX, accounting fees and patent expenses,
- an increase of 91% in office and general expenses, is primarily due to an increase in computer, internet, security and safety expenses,
- travel costs decreased by 91%, due to decrease in travel abroad,
- depreciation on property and equipment decreased by 57%, primarily due to lower amounts of property and equipment being depreciated,
- depreciation on right of use assets increased by 16% due to higher amounts of right of use assets being depreciated,
- investment tax credits did not increase or decrease resulting in an unchanged variance,
- government grants decreased by 100% due to lower level of activities supported by such grants and,



- other expenses increased by 30%, primarily due to higher insurance expenses.

Separately, share based expenses increased by \$3,017,408, or in Q3, 2020, over the same period in 2019 primarily as a result of stock options granted on July 16, 2020. This was directly impacted by the vesting structure of the stock option plan with 50% of the options vesting on the grant date requiring an immediate recognition of that cost.

For comparison purposes, had the vesting structure allocated 25% instead of 50% of the July 16, 2020 stock options granted on the grant date the share-based expenses would have resulted in an approximate amount of \$2,500,000 a significant decrease of \$517,408. Similarly had the vesting structure allocated 10% instead of 50% of the July 16, 2020 stock options granted on the grant date the share-based expenses would have resulted in an approximate amount of \$1,150,000 a significant reduction of \$1,867,408 in SG&A expenses. A comparative chart is provided below;

***Share-based expenses with comparative structures***

	<u>Structure</u>	<u>Expense</u>
<b>Actual</b>	<b>50%</b>	<b>\$ 3,017,408</b>
Hypothetical	25%	\$ 2,500,000
Hypothetical	10%	\$ 1,150,000

***Depreciation on Property and Equipment***

	Three months ended Sept 30, % Change 2020 2019 2020vs2019			Nine months ended Sept 30, % Change 2020 2019 2020vs2019		
<b>Depreciation on property and equipment</b>	<b>\$ 19,125</b>	<b>\$ 44,958</b>	<b>-57%</b>	<b>\$ 39,238</b>	<b>\$ 145,801</b>	<b>-73%</b>

The depreciation on property and equipment decreased to \$19,125 and \$39,238 in Q3, 2020 for the first three months and nine months of fiscal 2020, compared with \$44,958 and \$145,801 in the same periods in 2019. The 57% and 73% decreases are due to an increase in the number of years used in the straight-line method of calculating the property and equipment depreciation.



## Research and Development (“R&D”) Costs

	Three months ended Sept 30, 2020			% Change 2019 2020vs2019			Nine months ended Sept 30, 2020			% Change 2019 2020vs2019		
Employee compensation	\$	142,362	\$	201,128	-29%	\$	422,179	\$	662,820	-36%		
Investment tax credits		(13,985)		(40,798)	-66%		(47,212)		(108,252)	-56%		
Subcontracting		13,075		4,665	180%		25,391		16,285	56%		
Materials and equipment		79,328		96,441	-18%		111,905		163,193	-31%		
Other expenses		2,724		7,411	-63%		5,167		15,433	-67%		
<b>Sub-total before government grants</b>	<b>\$</b>	<b>223,504</b>	<b>\$</b>	<b>268,847</b>	<b>-17%</b>	<b>\$</b>	<b>517,430</b>	<b>\$</b>	<b>749,479</b>	<b>-31%</b>		
Government grants		(91,549)		(32,312)	183%		(366,254)		(204,525)	79%		
<b>Total net R&amp;D costs</b>	<b>\$</b>	<b>131,955</b>	<b>\$</b>	<b>236,535</b>	<b>-44%</b>	<b>\$</b>	<b>151,176</b>	<b>\$</b>	<b>544,954</b>	<b>-72%</b>		

The Company incurred \$131,955 of net R&D costs in Q3, 2020, compared with \$236,535 in Q3, 2019, representing a decrease of 44%. During the first nine months of fiscal 2020, net spending on internal R&D was \$151,176 as compared to \$544,954 in 2019, primarily due to an increase in government grants received of \$366,254 in the nine months ending September 30, 2020 compared to \$204,525 during the same period in 2019.

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).

## Net Finance Costs

	Three months ended Sept 30, 2020			% Change 2019 2020vs2019			Nine months ended Sept 30, 2020			% Change 2019 2020vs2019		
Interest on convertible debentures	\$	27,090	\$	-	100%	\$	171,042	\$	-	100%		
Interest accretion of convertible debentures		15,066		146,237	-90%		182,700		486,952	-62%		
Interest on term loans		11,165		8,924	25%		52,883		22,040	140%		
Interest on lease liabilities		39,161		71,255	-45%		165,085		216,726	100%		
Interest accretion on term loans		(922)		28,640	-103%		17,937		47,271	-62%		
Other interest expenses		29,848		(8,704)	-443%		41,426		279	14,748%		
	<b>\$</b>	<b>121,408</b>	<b>\$</b>	<b>246,352</b>	<b>-51%</b>	<b>\$</b>	<b>631,073</b>	<b>\$</b>	<b>773,268</b>	<b>-18%</b>		
Capitalised finance costs on borrowing costs		(137,778)		-	-100%		(137,778)		-	-100%		
<b>Net finance costs</b>	<b>\$</b>	<b>(16,370)</b>	<b>\$</b>	<b>246,352</b>	<b>-107%</b>	<b>\$</b>	<b>493,295</b>	<b>\$</b>	<b>773,268</b>	<b>-36%</b>		

Finance costs for Q3, 2020 totaled (\$16,370) as compared with \$246,352 for Q3, 2019, representing a decrease of 107%. The decrease in finance costs in Q3, 2020 is primarily attributable to the decrease in interest accretion on convertible liability instruments, and the decrease associated with the capitalized finance costs on borrowing costs as well as the retirement of debt. Of note, there is a Nil balance of convertible liability instruments at the end of Q3,2020.



## *Strategic Investments*

	Three months ended Sept 30,			Nine months ended Sept 30,		
	2020	2019	% Change 2020vs2019	2020	2019	% Change 2020vs2019
Changes to the fair value of strategic investments	\$ 15,220,857	\$ 70,717	21,424%	\$ 20,628,298	\$ 437,600	4,614%

The adjustment to the fair market value of strategic investments in Q3 2020 resulted in a gain of \$15,220,857 compared to a gain in the amount of \$70,717 in Q3 2019, representing an increase of \$15,150,140. The increase is primarily attributable to the increased market share value of common shares and warrants owned by the Company of HPQ Silicon Resources Inc.

## *Net comprehensive income (loss)*

	Three months ended Sept 30,			Nine months ended Sept 30,		
	2020	2019	% Change 2020vs2019	2020	2019	% Change 2020vs2019
Net comprehensive income	\$ 15,325,996	\$ (965,032)	1,688%	\$ 18,796,990	\$ (4,097,346)	559%

The net comprehensive income for Q3 2020, of \$15,325,996 compared to a loss of \$965,032 in Q3 2019, represents an increase of \$16,291,028. The difference of \$16,291,028 in the comprehensive income in Q3 2020 is primarily attributable to the factors described above (net), which are summarized as follows:

- (i) an increase in product and service-related revenue of \$6,051,990 in Q3 2020,
- (ii) an increase in product cost of sales and services totaling \$1,466,554, primarily due to an increase in subcontracting and direct materials
- (iii) an increase of SG&A expenses of \$3,811,850 in Q3, 2020 is primarily due to an increase in share-based payments, and employee compensation,
- (iv) a decrease in R&D expenses of \$104,580 primarily due to a decrease in employee compensation, and an increase in government grants,
- (v) a decrease in net finance costs of \$262,722 in Q3, 2020, primarily due to capitalized finance costs on borrowing costs and a decrease in accretion costs of convertible liability instruments,
- (vi) an increase of \$15,150,140 in the fair market value of strategic investments.



## ***EBITDA, Adjusted EBITDA and Modified EBITDA***

	Three months ended Sept 30,			Nine months ended Sept 30,		
	2020	2019	% Change 2020vs2019	2020	2019	% Change 2020vs2019
Comprehensive income	\$ 15,325,996	\$ (965,032)	1,688%	\$ 18,796,990	\$ (4,097,346)	559%
Depreciation on property and equipment	19,125	44,958	-57%	39,238	145,801	-73%
Depreciation rou assets	128,971	111,492	16%	306,541	326,830	-6%
Amortization of intangible assets	6,782	5,267	29%	20,408	14,825	38%
Financing charges	(16,370)	246,352	-107%	493,295	\$ 773,268	-36%
<b>EBITDA (loss)</b>	<b>\$ 15,464,504</b>	<b>\$ (556,963)</b>	<b>2,877%</b>	<b>\$ 19,656,472</b>	<b>\$ (2,836,622)</b>	<b>793%</b>
Other non-cash items:						
Share-based payments	3,017,408	14,149	21,225%	3,111,913	76,218	3,983%
<b>Adjusted EBITDA (loss)</b>	<b>\$ 18,481,912</b>	<b>\$ (542,814)</b>	<b>3,505%</b>	<b>\$ 22,768,385</b>	<b>(2,760,404)</b>	<b>925%</b>
Change in fair value of investments	15,220,857	70,717	21,424%	20,628,298	437,600	4,614%
<b>Modified EBITDA (loss)</b>	<b>\$ 3,261,055</b>	<b>\$ (613,531)</b>	<b>632%</b>	<b>\$ 2,140,087</b>	<b>\$ (3,198,004)</b>	<b>167%</b>

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 Modified 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, Adjusted EBITDA and Modified 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, Adjusted EBITDA and Modified 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. Accordingly, they should not be considered in isolation.

EBITDA in Q3, 2020 was \$15,464,504 compared with an EBITDA loss of \$556,963 for Q3, 2019, representing an increase of 2,877% year-over-year. The \$16,021,467 increase in EBITDA in Q3 2020, compared with Q3 2019, is due to the increase in comprehensive income of \$16,291,028, a decrease in depreciation on property and equipment of \$25,833,



an increase in depreciation of right of use assets of \$17,479, an increase in amortization of intangible assets of \$1,515 and a decrease in finance charges of \$262,722.

Adjusted EBITDA in Q3, 2020 was \$18,481,912 compared with an Adjusted EBITDA loss of \$542,814 for Q3, 2019, representing an increase of 3,505%. The increase of \$19,024,726 in the Adjusted EBITDA in Q3, 2020 is attributable to an increase in EBITDA of \$16,021,467 and an increase of \$3,003,259 in share-based payments.

Modified EBITDA in Q3, 2020 was \$3,261,055 compared with a Modified EBITDA loss of \$613,531 for Q3, 2019, representing an increase of 632%. The increase in the Modified EBITDA in Q3, 2020 is attributable to the increase in the Adjusted EBITDA of \$19,024,726 offset by the increase in the change of fair value of investments of \$15,150,140.

## SUMMARY OF QUARTERLY RESULTS

	2020			2019				2018
	Q3	Q2	Q1	Q4	Q3	Q2	Q1	Q4
Revenues	\$8,149,427	\$ 2,128,454	\$ 718,908	\$ 1,066,329	\$ 2,097,437	\$ 913,769	\$ 736,443	\$ 450,436
Gross margin	5,532,526	1,266,592	267,414	88,982	947,090	185,349	76,671	(345,158)
Gross margin %	67.9%	59.5%	37.2%	8.3%	45.2%	20.3%	10.4%	-76.6%
Comprehensive income (loss)	15,325,996	5,228,020	(1,757,027)	(5,073,771)	(965,031)	(2,253,390)	(878,925)	(2,523,283)
Earnings (loss) per share								
Basic	0.10	0.04	(0.01)	(0.04)	(0.01)	(0.02)	(0.01)	(0.02)
Diluted	0.09	0.04	(0.01)	(0.04)	(0.01)	(0.02)	(0.01)	(0.02)

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

As at September 30, 2020, the accounts payable and accrued liabilities of \$3,821,505 are payable within 6 months.

## OFF-BALANCE SHEET ARRANGEMENTS

The Company had no off-balance sheet arrangements as at September 30, 2020.



## SUMMARY OF CASH FLOWS

	Three months ended Sept 30,		Nine months ended Sept 30,	
	2020	2019	2020	2019
Cash provided by (used in) operating activities	\$ 2,389,896	\$ (848,937)	\$ 1,637,418	\$ (2,800,989)
Cash provided by (used in) investing activities	(1,440,476)	(447)	(1,624,307)	(485,718)
Cash provided by (used in) financing activities	(421,678)	(167,724)	2,047,977	2,917,793
Increase (decrease) in cash	527,742	(1,017,108)	2,061,088	(368,914)
Cash - end of period	2,095,519	276,067	2,095,519	276,067

For the three months ended Q3, 2020, cash flow provided by operating activities was \$2,389,896 compared to cash used of \$848,937 for the same period in the prior year. On a year to date basis, cash flow provided by operating activities was \$1,637,418 compared to cash used of \$2,800,989 for the same period in the prior year.

The cash during Q3, 2020 consists of the comprehensive earnings of \$15,325,998 (comprehensive loss Q3, 2019 - \$965,032) plus adjustment for non-cash items totalling \$11,927,162 (Q3, 2019 – \$351,503) less a net change in non-cash operating working capital items of \$1,008,940 (Q3, 2019 – \$235,406).

The net change in non-cash operating working capital items in Q3, 2020 was driven by:

- an increase in inventories of \$9,245 compared to \$Nil in Q3, 2019;
- an increase in accounts receivable of \$4,798,293 in Q3, 2020, compared to a decrease of \$87,911 in Q3, 2019;
- an increase in costs and profits in excess of billings on uncompleted contracts of \$61,925 in Q3, 2020, compared to a decrease of \$438,169 in Q3, 2019;
- a decrease in investment tax credits receivable of \$308,697 in Q3, 2020, compared to an increase of \$98,703 in Q3, 2019;
- a decrease in deposits of \$140,521 in Q3, 2020, compared to an increase of \$215,880 in Q3, 2019;
- an increase in prepaid expenses of \$62,823 in Q3, 2020, compared to an increase of \$9,530 in Q3, 2019;
- a decrease in accounts payable and accrued liabilities of \$176,227 in Q3, 2020, compared to an increase of \$615,237 in Q3, 2019;
- an increase in billings in excess of costs and profits on uncompleted contracts of \$3,789,057 in Q3, 2020, compared with a decrease of \$608,031 in Q3, 2019.

Investing activities resulted in a use of cash of \$1,440,479 in Q3, 2020, compared to \$447 in Q3, 2019 resulting from the purchase of strategic investments, property and equipment and additions to deferred development costs offset by proceeds on disposal of strategic investments.

Financing activities in Q3, 2020 and the first nine months of fiscal 2020 resulted in a net use of funds of \$421,678 and in a net source of funds of \$2,047,977 respectively, compared



with a net use of funds of \$167,724 and a net source of funds of \$2,917,793 for the same periods in 2019. In 2020, the Company repaid loans of \$1,230,200, made payment of lease liabilities of \$1,300,792, purchased shares for cancellation for a net of \$964,391, received net proceeds of \$903,000 from convertible loan and \$5,006,457 from the issuances of common shares and purchase warrants and paid interest in the amount of \$366,097. In 2019, the source of funds resulted from the issuance of common shares upon exercise of warrants, units and stock options, convertible debentures for net proceeds of \$3,448,077 raised for general working capital purposes, received \$329,200 from loans, repaid an amount of \$408,102 in loans and capital lease obligations and paid \$451,382 of interest.

For Q3, 2020 and the first nine months of fiscal 2020, the net cash position of the Company increased by \$527,742 and \$2,061,888, compared to a decrease of \$1,017,108 and \$368,914 for the same periods in the prior year.

### **CAPITAL STOCK INFORMATION**

The authorized share capital of the Company consists of an unlimited number of common shares (the “Common Shares”). As at November 25, 2020, PyroGenesis had 157,910,592 common shares, 9,387,158 warrants, 191,414 compensation options, 9,050,000 outstanding options issued, and 6,922,500 exercisable options issued.

As previously announced, the Company bought back for cancellation 1,285,000 of its own common shares in the market for \$964,391 at an average price of \$0.75 per share.

### **GOING CONCERN**

The Company presumes it will be able to realize its assets and discharge its liabilities in the normal course of business for the foreseeable future. The Company’s management has reviewed the Company’s projected cash flow and backlog and is of the opinion that the Company will generate sufficient positive cash flows and profits from operations and strategic investments to meet current and future cash requirements. Management expects that the investments currently being made in accelerating projects under development for various clients, together with executing on the \$36.4MM backlog at November 25, 2020, (720% of 2019 revenues).

The December 31, 2019 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 three and nine months ended September 30, 2020, the Company concluded the following transactions with related parties:

An amount including rent and property taxes of \$68,687 and \$205,420 were paid to a trust whose beneficiary is the controlling shareholder and CEO of the Company (\$66,740 and \$199,842 were respectively charged in 2019). A balance representing past due rent payments to the trust of \$58,050 (December 31, 2019 - \$Nil) is included in accounts payable at September 30, 2020.

On July 28, 2020, the Company renegotiated an existing lease with a trust whose beneficiary is the controlling shareholder and CEO of the Company and exercised its option to extend the terms and payments of this same lease with a trust whose beneficiary is the controlling shareholder and CEO of the Company. The lease liability was recalculated using an annual borrowing interest rate of 4%. As a result, the lease liability and the right-of-use assets increased by \$366,566. In return the trust agreed to convert the 2020 convertible loan approximately one year before it's due date. (maturity date September 18, 2021).

As at September 30, 2020, an amount of \$58,050 (December 31, 2019 - \$Nil), of interest payable and an accretion amount of \$Nil (December 31, 2019 - \$Nil), were accrued on the 2020 convertible loan of \$903,000 from a trust whose beneficiary is the controlling shareholder and CEO of the Company and are included in accounts payable and accrued liabilities.

An amount of \$1,427,698 was paid as a prepayment for rent and related property taxes and insurances to a trust whose beneficiary is the controlling shareholder and CEO of the Company (December 31, 2019 – \$Nil), of this amount \$1,178,529 is included in lease liability payments.

A balance due to the controlling shareholder and CEO of the Company amounted to \$21,221 (December 31, 2019 - \$214,470) for expense report, salary and vacation payables and is included in accounts payable and accrued liabilities as at September 30, 2020.

An amount of (\$922) and \$17,937 of interest accretion were accrued on the loan of \$295,000 from the controlling shareholder and CEO of the Company.



As at September 30, 2020, an amount of \$58,050 (December 31, 2019 - \$Nil), of interest payable and an accretion amount of \$Nil (December 31, 2019 - \$Nil), were accrued on the 2020 convertible loan of \$903,000 from a trust whose beneficiary is the controlling shareholder and CEO of the Company and are included in accounts payable and accrued liabilities.

Total compensation of key management and board members for the three and nine months ended September 30, 2020 consists of the following:

	<b>Three months ended September 30, 2020</b>		Nine months ended September 30, 2019	
	<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
Salaries –officers	<b>323,796</b>	136,000	<b>704,114</b>	388,000
Pension contributions	<b>8,195</b>	2,040	<b>14,061</b>	6,120
Fees – Board of Directors	<b>40,000</b>	-	<b>84,000</b>	-
Share – based compensation – officers	<b>1,098,610</b>	-	<b>1,163,909</b>	-
Share – based compensation - Board of Directors	<b>362,215</b>	-	<b>381,008</b>	-
Other benefits – officers	<b>250,724</b>	3,374	<b>488,577</b>	10,252
<b>Total compensation</b>	<b>2,083,540</b>	141,414	<b>2,835,669</b>	404,372

A balance of \$87,926 of the amounts noted above, is included in accounts payable and accrued liabilities as at September 30, 2020 (December 31, 2019 - \$130,604).

### SUBSEQUENT EVENTS

On October 26, 2020 the Company granted stock options to acquire 200,000 and 50,000 common shares of the Company to two Directors. The stock options have an exercise price of \$4.00 per common share and are exercisable over a period of five (5) years. The options are granted in accordance with the Company's stock option plan.

On November 9 and 12, 2020, an employee of the Company exercised a total of 20,000 stock options at a price of \$0.58.

On November 10, 2020 the Company issued 3,354,550 units at a price of \$3.60 per unit for gross proceeds of \$12,076,380. Each unit consists of one common share of the Company and one-half of one common share purchase warrant. Each common share purchase warrant entitles the holder thereof to purchase one common share at an exercise price of \$4.50 until November 10, 2022. In connection with the bought-deal short form prospectus offering,



the Company paid finder fees of \$688,915 and issued 191,414 finder's compensation warrants to the agents.

On November 12, 2020 the acting Chief Financial Officer and Director of the Company, Mr. Michael Blank exercised 200,000 stock options at \$0.51 each for a total amount of \$102,000.

On November 18, 2020, the Company received final approval from the Toronto Stock Exchange (the "TSX") to graduate from the TSX Venture Exchange (the "TSXV") and list its common shares on the TSX.

On November 18, 2020 the Company exercised 1,500,000 HPQ warrants for a total amount of \$202,500. Each warrant entitled the holder thereof to acquire one common share at a price of \$0.135.

On November 20, 2020, the Company commenced trading its common shares on the Toronto Stock Exchange (the "TSX") under the symbol PYR.

### **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 3, 4 and 24 of the annual 2019 Consolidated Financial Statements. A number of the Company's accounting policies and disclosures require the measurement of fair values, both for financial and non-financial assets and liabilities. The Company's finance team is responsible for overseeing all significant fair value measurements, including level 3 measurements, reporting directly to the (Acting) Chief Financial Officer. The finance team regularly reviews significant unobservable inputs and valuation adjustments. Significant valuation issues are reported to the Company's audit committee.

### **RISK FACTORS**

The Company has identified below certain significant risks relating to the business of the Company and the industry in which it operates. The following information is only a summary of certain risk factors and is qualified in its entirety by reference to, and must be read in conjunction with, the detailed information appearing elsewhere in this MD&A. These risks and uncertainties are not the only ones facing the Company. Additional risks and uncertainties not currently known to the Company, or that the Company currently considers immaterial, may also impair the operations of the Company. If any such risks materialize into actual events or circumstances, the Company's assets, liabilities, financial condition, results of operations (including future results of operations), business and business prospects, are likely to be materially and adversely affected. There is no assurance that risk management steps taken will avoid future loss due to the uncertainties described below or other unforeseen risks. An investment in the Common Shares or other securities



of the Company is highly speculative and involves a high degree of risk. Before making any investment decision, prospective investors should carefully consider all the information contained in this document including, in particular, the risk factors described below.

### ***Risks Related to the Company's Business and Industry***

#### ***Operating Losses and Negative Operating Cash Flow***

The Company has not yet generated substantial revenue from its products and services. The Company had net losses and negative operating cash flow for the financial years ended December 31, 2019 and December 31, 2018, offset by the net operating income of \$18,796,990 for the nine months ended September 30, 2020, resulting in an accumulated deficit of \$41,978,687 as at September 30, 2020. To the extent that the Company has net losses and negative operating cash flow in future periods, it may need to allocate a portion of its cash reserves to fund such negative cash flow. The Company may also be required to raise additional funds through the issuance of equity or debt securities. There can be no assurance that the Company will be able to generate a positive cash flow from its operations, that additional capital or other types of financing will be available when needed or that these financings will be on terms favourable to the Company.

The Company's ability to continue as a going concern is dependent upon its ability in the future to grow its revenue, achieve profitable operations, successfully developing and introducing new products and, in the meantime, to obtain the necessary financing to meet its obligations and repay its liabilities when they become due. 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 in the future. External financing, predominantly by the issuance of equity and debt, might be sought to finance the operations of the Company; however, there can be no certainty that such funds will be available at terms acceptable to the Company, or at all. If the Company is unable to obtain sufficient additional financing, it may have to curtail operations and development activities, any of which could harm the business, financial condition and results of operations.

#### ***Actual Financial Position and Results of Operations May Differ Materially from the Expectations of the Company's Management***

The Company's actual financial position and results of operations may differ materially from management's expectations. The Company has experienced some changes in its operating plans and certain delays in the timing of its plans. As a result, the Company's revenue, net income and cash flow may differ materially from the Company's projected revenue, net income and cash flow. The process for estimating the Company's revenue, net income and cash flow requires the use of judgment in determining the appropriate assumptions and estimates. These estimates and assumptions may be revised as additional information becomes available and as additional analyses are performed. In addition, the



assumptions used in planning may not prove to be accurate, and other factors may affect the Company's financial condition or results of operations.

### ***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:

- (i) unforeseen engineering and/or environmental problems;
- (ii) delays or inability to obtain required financing, licenses, permits and/or regulatory approvals;
- (iii) supply interruptions and/or labour disputes;
- (iv) foreign exchange fluctuations and/or collection risk; and
- (v) 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.

### ***Concentration Risk***

To date, a small number of customers have accounted for a majority of PyroGenesis' revenues. As its business expands, the Company expects that revenue distribution will be over a larger number of different customers. For the year ended December 31, 2019, sales of PyroGenesis to its five principal customers accounted for approximately 77% of its total revenue. For the year ended December 31, 2018, sales to three principal customers accounted for approximately 82% of PyroGenesis' total revenue. The loss of, or a reduction in, purchase orders or anticipated purchase orders from PyroGenesis' principal customers could have a material adverse effect on its business, financial condition and results of operations. Additionally, if one of PyroGenesis' customers is unable to meet its commitments to PyroGenesis, the Company's business, financial condition and results of operations could be adversely affected.

### ***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.

### ***Product Revenues/History of Losses***

PyroGenesis has incurred losses in the majority of years since its inception. In the past the Company's operations have not generated sufficient earnings and cash flows to date to result in consistent profitability or positive cash flow. For the three, and nine months ending September 30, 2020 the Company has net comprehensive income of \$15,325,996 and \$18,796,990 respectively.

### ***Additional financing and dilution***

PyroGenesis may require additional financing. 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 November 25, 2020, 191,414 compensation options, 9,050,000 stock options are currently issued and outstanding, together with 9,387,158 warrants. The exercise of stock options and/or warrants, as well as any new equity financings, represents dilution factors for present and future shareholders.

### ***Reliance on Third Party Suppliers, Service Providers, Distributors and Manufacturers***

The Company's direct and indirect suppliers, service providers, distributors and manufacturers may elect, at any time, to breach or otherwise cease to participate in supply, service, distribution or manufacturing agreements, or other relationships, on which the Company's operations rely. Loss of its suppliers, service providers, distributors and manufacturers could have a material adverse effect on the Company's business and operational results. Further, any disruption in the manufacturing process done by third party manufacturers could have a material adverse effect on the business, financial condition and results of operations of the Company. The Company cannot ensure that alternative production capacity would be available in the event of a disruption, or if it would be available, it could be obtained on favorable terms.

### ***Manufacturing Facility***

The vast majority of the Company's products are manufactured in its manufacturing facility located in Montreal, Quebec. Accordingly, the Company is highly dependent on the uninterrupted and efficient operation of its manufacturing facility. If for any reason the Company is required to discontinue production at its facility, it could result in significant delays in production of the Company's products and interruption of the Company's sales as it seeks to resume production. The Company may be unable to resume production on a timely basis. If operations at the facility were to be disrupted as a result of equipment



failures, natural disasters, fires, accidents, work stoppages, power outages or other reasons, the Company's business, financial condition and/or results of operations could be materially adversely affected.

### ***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 realized. 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 its customers and the end users of its products will continue to provide the Company with business, or that existing customers and end users will not seek to renegotiate or terminate existing contracts providing for the sale of the Company's products and technology based on circumstances on which the Company is not currently aware. Any termination or amendment of a contract under which the Company derives an important portion of its revenues, including the Drosrite International Exclusive Agreement and the Dross Processing Service Agreement, and any adverse change in the relationship of the Company with its customers and end users, will have an adverse effect on the Company's business, financial condition and results of operations.

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. Foreign sales are predominantly denominated in U.S. dollars. The Company has not to date sought to hedge the risks associated with fluctuations in foreign exchange rates.

### ***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.

The plasma technology of PyroGenesis competes against other plasma and conventional technologies. Without limitation, the demand for the plasma technology of PyroGenesis,



particularly in waste destruction and waste-to-energy systems, can be impacted by the commodity prices of the energy source used for the process and the price at which waste is accepted by landfills and traditional waste processing plants. While the Company believes that demand for sustainable waste management practices that have lower environmental impacts than traditional solutions such as landfill or incineration is increasing, the high flows of electricity necessary to operate the waste destruction and waste-to-energy systems of PyroGenesis have an impact on the operational costs of the Company's systems, and traditional solutions may constitute lower-cost solutions, particularly if commodity prices (including of oil and natural gas) remain low or experience a decline.

### ***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.

### ***Risks Related to International Operations***

A substantial portion of the Company's sales are made to customers and end users outside Canada. The Company conducts its international operations directly or through distributors or other agents or intermediaries, including Drosrite International. The Company plans to continue to expand its international sales and marketing efforts. International operations are subject to a number of inherent risks, and the Company's future results could be adversely affected by a number of factors, including:



- unfavorable political or economic environments; requirements or preferences for domestic products or solutions, which could reduce demand for the Company's products;
- differing existing or future regulatory and certification requirements;
- unexpected legal or regulatory changes;
- greater difficulty in collecting accounts receivable and longer collection periods;
- difficulties in enforcing contracts; an inability to effectively protect intellectual property;
- tariffs and trade barriers, export regulations and other regulatory and contractual limitations on the Company's ability to sell its products; and
- potentially adverse tax consequences, including multiple and possibly overlapping tax structures.

Fluctuations in currency exchange rates could materially adversely affect sales denominated in currencies other than the Canadian dollar and cause a reduction in revenues derived from sales in a particular country. Financial instability in foreign markets could also affect the sale of the Company's products in international jurisdictions. In addition, the Company may be denied access to its end customers as a result of a closing of the borders of the countries in which its products are sold due to economic, legislative, political and military conditions in such countries.

There can be no assurance that such factors will not materially adversely affect the operations, growth prospects and sales of the Company and, consequently, its results of operations. In addition, revenues the Company earns in other jurisdictions may be subject to taxation by more than one jurisdiction, which could materially adversely affect the Company's earnings. Each of these factors could have an 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.

### ***Government-funded Defense and Security Programs***

Like most companies that supply products and services to governments, government agencies routinely audit and investigate government contractors. These agencies may review the Company's performance under its contracts, business processes, cost structure,



and compliance with applicable laws, regulations and standards. The Company's incurred costs for each year are subject to audit by government agencies, which can result in payment demands related to costs they believe should be disallowed. The Company works with governments to assess the merits of claims and where appropriate reserve for amounts disputed. The Company could be required to provide repayments to governments and may have a negative effect on its results of operations. Contrary to cost-reimbursable contracts, some costs may not be reimbursed or allowed under fixed-price contracts, which may have a negative effect on the Company's results of operations if it experiences costs overruns.

### ***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.

A malfunction or the inadequate design of the Company's products could result in product liability or other tort claims. Accidents involving the Company's products could lead to personal injury or physical damage. Any liability for damages resulting from malfunctions could be substantial and could materially adversely affect the Company's business and results of operations. In addition, a well-publicized actual or perceived problem could adversely affect the market's perception of the Company's products. This could result in a



decline in demand for the Company's products, which would materially adversely affect the Company's financial condition and results of operations.

The sale and use of products and processes developed by the Company may entail potential liability and possible warranty claims. The Company may be subject to personal injury claims for injuries resulting from use of its products. Although the Company maintains product liability insurance, there can be no assurance that such insurance will continue to be available on commercially reasonable terms or that the risks covered or coverage amounts will be sufficient to cover all claims.

### ***Information systems disruptions***

The Company relies on various information technology systems to manage its operations. Over the last several years, the Company has implemented, and it continues to implement, modifications and upgrades to such systems, including changes to legacy systems, replacing legacy systems with successor systems with new functionality, and acquiring new systems with new functionality. These types of activities subject the Company to inherent costs and risks associated with replacing and changing these systems, including impairment of the Company's ability to fulfill customer orders, potential disruption of its internal control structure, substantial capital expenditures, additional administration and operating expenses, retention of sufficiently skilled personnel to implement and operate the new systems, demands on management time and other risks and costs of delays or difficulties in transitioning to or integrating new systems into the Company's current systems. These implementations, modifications, and upgrades may not result in productivity improvements at a level that outweighs the costs of implementation, or at all. In addition, the difficulties with implementing new technology systems may cause disruptions in the Company's business operations and have a material adverse effect on its business, financial condition, or results of operations.

### ***Security Breaches***

As part of its day-to-day business, the Company stores its data and certain data about its customers in its global information technology system. Unauthorized access to the Company's data, including any regarding its customers, could expose the Company to a risk of loss of this information, loss of business, litigation and possible liability. These security measures may be breached by intentional misconduct by computer hackers, as a result of third-party action, employee error, malfeasance or otherwise. Additionally, third parties may attempt to fraudulently induce employees or customers into disclosing sensitive information such as usernames, passwords or other information in order to gain access to the data of the Company's customers or the Company's data, including the Company's intellectual property and other confidential business information, or the Company's information technology systems. Because the techniques used to obtain unauthorized access, or to sabotage systems, change frequently and generally are not recognized until launched against a target, the Company may be unable to anticipate these techniques or to implement adequate preventative measures. Any security breach could result in a loss of confidence by the Company's customers, damage its reputation, disrupt its business, lead to legal liability and negatively impact its future sales.



### ***Public Health Crises***

Public health crises, including local, regional, national or international outbreak of a contagious disease, could have an adverse effect on local economies, the global economy, and the markets in which the Company operates and markets its products, and may adversely impact the price and demand for the Company's products and the ability of the Company to operate and market its products. Any such alterations or modifications could cause substantial interruption to the Company's business, any of which could have a material adverse effect on the Company's operations or financial results, and could include temporary closures of one or more of the Company's or its partner's offices or facilities; temporary or long-term labor shortages; temporary or long-term adverse impacts on the Company's supply chain and distribution channels; the potential of increased network vulnerability and risk of data loss resulting from increased use of remote access and removal of data from the Company's facilities.

Subsequent to December 31, 2019, the global emergence of coronavirus (COVID-19) occurred. The global outbreak of COVID-19 has resulted in governments worldwide enacting emergency measures to protect against the spread of the virus. These measures, which include, among other things, limitations on travel, self-imposed quarantine periods and social distancing measures, have caused material disruption to businesses globally resulting in an economic slowdown. Global equity markets have experienced significant volatility and weakness. Governments and central banks have reacted with significant monetary and fiscal interventions designed to stabilize economic conditions. The duration and impact of the COVID-19 outbreak is unknown at this time, as is the efficacy of any government and/or central bank interventions. It is not possible to reliably estimate the length and severity of these developments and the impact on the financial results and condition of the Company in future periods.

As of the date of this MD&A, the Company has successfully continued operations under COVID-19 protocols. COVID-19 has not resulted in any material delays in the development or testing of the Company's products or any other material development projects. The Company is not currently experiencing any delays or interruptions in service or product delivery. At the outset of the COVID-19 pandemic, certain of the Company's operations were negatively impacted, but have since normalized. The Company has not experienced any material disruption in its supply chain, and the pandemic has not materially impacted the Company's business or delivery of services or products.

The Company's production schedule has continued throughout COVID-19 on a modified employee schedule, with certain non-production employees working remotely. The Company has been able to operate largely unaffected by the COVID-19 pandemic. Notwithstanding the foregoing, if the Company or its vendors and suppliers are unable to continue operations or keep up with increasing demands as a result of COVID-19, customers may experience delays or interruptions in service or the delivery of products, which may be detrimental to the Company's reputation, business, results of operations and financial position. The Company cautions that it is impossible to fully anticipate or quantify the effect and ultimate impact of the COVID-19 pandemic as the situation is rapidly



evolving. The extent to which COVID-19 impacts the Company's results will depend on future developments, which are highly uncertain and cannot be predicted, including new information that may emerge concerning the severity of COVID-19 and the actions taken by governments to contain it or treat its impact, including shelter in place directives, which, if extended, may impact the economies in which the Company now operates, or may in the future operate, key markets into which the Company sells products and delivers services, and markets through which the Company's key suppliers source their products.

### ***Litigation***

The Company may from time to time become party to litigation in the ordinary course of business which could adversely affect its business. Should any litigation in which the Company becomes involved be determined against the Company, such a decision could adversely affect the Company's ability to continue operating and the market price for the Common Shares and could use significant resources. Even if the Company is involved in litigation and wins, litigation can redirect significant Company resources. Litigation may also create a negative perception of the Company's brand.

### ***Trade Secrets May Be Difficult to Protect***

The Company's success depends upon the skills, knowledge and experience of its scientific and technical personnel, consultants and advisors, as well as contractors. Because the Company operates in a highly competitive industry, it relies in part on trade secrets to protect its proprietary products and processes. However, trade secrets are difficult to protect. The Company generally enters into confidentiality or non-disclosure agreements with its corporate partners, employees, consultants, outside scientific collaborators, developers and other advisors. These agreements generally require that the receiving party keep confidential, and not disclose to third parties, confidential information developed by the receiving party or made known to the receiving party by the Company during the course of the receiving party's relationship with the Company. These agreements also generally provide that inventions conceived by the receiving party in the course of rendering services to the Company will be its exclusive property, and the Company enters into assignment agreements to perfect its rights.

These confidentiality, inventions and assignment agreements, where in place, may be breached and may not effectively assign intellectual property rights to the Company. The Company's trade secrets also could be independently discovered by competitors, in which case the Company would not be able to prevent the use of such trade secrets by its competitors. The enforcement of a claim alleging that a party illegally obtained and was using the Company's trade secrets could be difficult, expensive and time consuming and the outcome could be unpredictable. The failure to obtain or maintain meaningful trade secret protection could adversely affect the Company's competitive position.



### ***Risks Related to Acquiring Companies***

The Company may acquire other companies in the future and there are risks inherent in any such acquisition. Specifically, there could be unknown or undisclosed risks or liabilities of such companies for which the Company is not sufficiently indemnified. Any such unknown or undisclosed risks or liabilities could materially and adversely affect the Company's financial performance and results of operations. The Company could encounter additional transaction and integration related costs or other factors such as the failure to realize all of the benefits from such acquisitions. All of these factors could cause dilution to the Company's earnings per share or decrease or delay the anticipated accretive effect of the acquisition and cause a decrease in the market price of the Company's securities. The Company may not be able to successfully integrate and combine the operations, personnel and technology infrastructure of any such acquired company with its existing operations. If integration is not managed successfully by the Company's management, the Company may experience interruptions in its business activities, deterioration in its employee and customer relationships, increased costs of integration and harm to its reputation, all of which could have a material adverse effect on the Company's business, financial condition and results of operations. The Company may experience difficulties in combining corporate cultures, maintaining employee morale and retaining key employees. The integration of any such acquired companies may also impose substantial demands on the management. There is no assurance that these acquisitions will be successfully integrated in a timely manner.

### ***Global Economic Uncertainty***

Demand for the Company's products and services are influenced by general economic and consumer trends beyond the Company's control. There can be no assurance that the Company's business and corresponding financial performance will not be adversely affected by general economic or consumer trends. In particular, global economic conditions are still tight, and if such conditions continue, recur or worsen, there can be no assurance that they will not have a material adverse effect on the Company's business, financial condition and results of operations.

Furthermore, such economic conditions have produced downward pressure on stock prices and on the availability of credit for financial institutions and corporations. If these levels of market disruption and volatility continue, the Company might experience reductions in business activity, increased funding costs and funding pressures, as applicable, a decrease in the market price of the Common Shares, a decrease in asset values, additional write-downs and impairment charges and lower profitability.

### ***Inability to Renew Leases***

The Company may be unable to renew or maintain its leases (commercial or real property) on commercially acceptable terms or at all. An inability to renew its leases, or a renewal of its leases with a rental rate higher than the prevailing rate under the applicable lease prior to expiration, may have an adverse impact on the Company's operations, including



disruption of its operations or an increase in its cost of operations. In addition, in the event of non-renewal of any of the Company's leases, the Company may be unable to locate suitable replacement properties for its facilities or it may experience delays in relocation that could lead to a disruption in its operations. Any disruption in the Company's operations could have an adverse effect on its financial condition and results of operations.

### ***Financial Reporting and Other Public Issuer Requirements***

The Company is subject to reporting and other obligations under applicable Canadian Securities Laws and rules of any stock exchange on which the Common Shares are then-listed. These reporting and other obligations will place significant demands on the management, administrative, operational and accounting resources. If the Company is unable to accomplish any such necessary objectives in a timely and effective manner, the Company's ability to comply with its financial reporting obligations and other rules applicable to reporting issuers could be impaired. Moreover, any failure to maintain effective internal controls could cause the Company to fail to satisfy its reporting obligations or result in material misstatements in its financial statements. If the Company cannot provide reliable financial reports or prevent fraud, its reputation and operating results could be materially adversely affected which could also cause investors to lose confidence in the Company's reported financial information, which could in turn result in a reduction in the trading price of the Common Shares.

The Company is a "venture issuer" as defined in NI 52-109. In contrast to the certificate required for non-venture issuers under NI 52-109, the certificates filed by the Company's officers are not required to include representations relating to the establishment and maintenance of disclosure controls and procedures ("DC&P") and ICFR, as defined in NI 52-109. In particular, the certifying officers are not be required to make any representations relating to the establishment and maintenance of (i) controls and other procedures designed to provide reasonable assurance that information required to be disclosed by the Company in its annual filings, interim filings or other reports filed or submitted under securities legislation is recorded, processed, summarized and reported within the time periods specified in securities legislation; and (ii) a process to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with IFRS.

Inherent limitations on the ability of certifying officers of a venture issuer to design and implement on a cost-effective basis DC&P and ICFR may result in additional risks to the quality, reliability, transparency and timeliness of interim and annual filings and other reports provided under securities legislation.

### ***Influence of the Significant Shareholders***

To the Company's knowledge, no shareholder beneficially owns, or controls or directs, directly or indirectly, more than 10% of the voting rights attached to the Company's outstanding voting securities, except for Mr. Peter Pascali, President and Chief Executive Officer of the Company, who holds or controls, directly or indirectly, 77,038,722 Common Shares, representing in aggregate 49.93% of the total voting rights attached to the



outstanding Common Shares, and options and warrants to acquire an additional 12,198,276 Common Shares (increasing the total number of Common Shares held or controlled, directly or indirectly, by him to 89,236,998 Common Shares, or 53.60% of the Common Shares, on a fully diluted basis). In addition, from time to time, the Company may have other shareholders who have the ability to exercise significant influence over matters submitted to the shareholders of the Company for approval, whether subject to approval by a majority of the shareholders of the Company or subject to a class vote or special resolution.

### ***Limited Control Over the Company's Operations***

Holders of the Common Shares have limited control over changes in the Company's policies and operations, which increases the uncertainty and risks of an investment in the Company. The Board determines major policies, including policies regarding financing, growth, debt capitalization and any future dividends to shareholders of the Company. Generally, the Board may amend or revise these and other policies without a vote of the holders of the Common Shares. The Board's broad discretion in setting policies and the limited ability of holders of the Common Shares to exert control over those policies increases the uncertainty and risks of an investment in the Company.

### ***Change in Tax Laws***

New income, sales, use or other tax laws, statutes, rules, regulations or ordinances could be enacted at any time. Further, existing tax laws, statutes, rules, regulations or ordinances could be interpreted, changed, modified or applied adversely to the Company. These enactments and events could require the Company to pay additional tax amounts on a prospective or retroactive basis, thereby substantially increasing the amount of taxes the Company is liable to pay in the relevant tax jurisdictions. Accordingly, these events could decrease the capital that the Company has available to operate its business. Any or all of these events could harm the business and financial performance of the Company.

### ***Forward-Looking Information***

The forward-looking information included in this MD&A relating to, among other things, the Company's future results, performance, achievements, prospects, targets, intentions or opportunities or the markets in which it operates and the other statements listed is based on opinions, assumptions and estimates made by the Company's management in light of its experience and perception of historical trends, current conditions and expected future developments, as well as other factors that the Company believes are appropriate and reasonable in the circumstances. However, there can be no assurance that such estimates and assumptions will prove to be correct. The Company's actual results in the future may vary significantly from the historical and estimated results and those variations may be material. The Company makes no representation that its actual results in the future will be the same, in whole or in part, as those included in this MD&A.



### ***Credit Facilities***

The Company's credit facilities and financing agreements mature on various dates. There can be no assurance that such credit facilities or financing agreements will be renewed or refinanced, or if renewed or refinanced, that the renewal or refinancing will occur on equally favourable terms to the Company. The Company's ability to continue operating may be adversely affected if the Company is not able to renew its credit facilities or arrange refinancing, or if such renewal or refinancing, as the case may be, occurs on terms materially less favorable to the Company than at present. The Company's current credit facilities and financing agreements impose covenants and obligations on the Company. There is a risk that such loans may go into default if there is a breach in complying with such covenants and obligations, which could result in the lenders realizing on their security and causing our shareholders to lose some or all of their investment.

### ***Risks Related to the Company's Securities***

#### ***Potential Volatility of Common Share Price***

The market price of the Common Shares could be subject to significant fluctuations. Some of the factors that may cause the market price of the Common Shares to fluctuate include:

- (i) the public's reaction to the Company's press releases, announcements and filings with regulatory authorities and those of its competitors;
- (ii) fluctuations in broader stock market prices and volumes;
- (iii) changes in market valuations of similar companies;
- (iv) investor perception of the Company, its prospects or the industry in general;
- (v) additions or departures of key personnel;
- (vi) commencement of or involvement in litigation;
- (vii) announcements by the Company or its competitors of strategic alliances, significant contracts, new technologies, acquisitions, commercial relationships, joint ventures or capital commitments;
- (viii) variations in the Company's quarterly results of operations or cash flows or those of other comparable companies;
- (ix) revenues and operating results failing to meet the expectations of securities analysts or investors in particular quarter;
- (x) changes in the Company's pricing policies or the pricing policies of its competitors;



- (xi) future issuances and sales of Common Shares;
- (xii) sales of Common Shares by insiders of the Company;
- (xiii) third party disclosure of significant short positions;
- (xiv) demand for and trading volume of Common Shares;
- (xv) changes in securities analysts' recommendations and their estimates of the Company's financial performance;
- (xvi) short-term fluctuation in stock price caused by changes in general conditions in the domestic and worldwide economies or financial markets; and
- (xvii) the other risk factors described under this heading of the MD&A.

The realization of any of these risks and other factors beyond the Company's control could cause the market price of the Common Shares to decline significantly.

In addition, broad market and industry factors may harm the market price of the Common Shares. Hence, the price of the Common Shares could fluctuate based upon factors that have little or nothing to do with the Company, and these fluctuations could materially reduce the price of the Common Shares regardless of the Company's operating performance. In the past, following a significant decline in the market price of a company's securities, there have been instances of securities class action litigation having been instituted against that company. If the Company were involved in any similar litigation, it could incur substantial costs, management's attention and resources could be diverted and it could harm the Company's business, operating results and financial condition.

### ***Market Liquidity***

The market price for the Common Shares 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 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 Common Shares.

### ***Dividends to Shareholders***

The Company does not anticipate paying cash dividends on the Common Shares in the foreseeable future. The Company currently intends to retain all future earnings to fund the development and growth of its business. Any payment of future dividends will be at the discretion of the directors and will depend on, among other things, the Company's earnings, financial condition, capital requirements, level of indebtedness, statutory and contractual



restrictions applying to the payment of dividends, and other considerations that the directors deems relevant.

### ***Impact of Future Sales by Existing Shareholders***

If the Company's shareholders sell substantial amounts of the Common Shares in the public market, the market price of the Common Shares could decrease. The perception among investors that these sales will occur could also produce this effect. All currently outstanding Common Shares other than those subject to lock-up agreements executed by certain existing shareholders will, subject to applicable securities laws, generally be immediately available for resale in the public markets.

Subject to compliance with applicable securities laws, the Company's officers, directors and their affiliates may sell some or all of their Common Shares in the future. No prediction can be made as to the effect, if any, such future sales of Common Shares will have on the market price of the Common Shares prevailing from time to time. However, the future sale of a substantial number of Common Shares by the Company's officers, directors and their affiliates, or the perception that such sales could occur, could materially adversely affect prevailing market prices for the Common Shares.

Additional Common Shares issuable upon the exercise of stock options may also be available for sale in the public market, which may also cause the market price of the Common Shares to fall. Accordingly, if substantial amounts of Common Shares are sold in the public market, the market price could fall.

### ***Working Capital and Future Issuances***

The Company may issue additional Common Shares in the future which may dilute a shareholder's holdings in the Company. The Articles permit the issuance of an unlimited number of Common Shares, and shareholders of the Company will have no pre-emptive rights in connection with any further issuances. The directors of the Company have the discretion to determine the provisions attaching to the Common Shares and the price and the terms of issue of further Common Shares.

Additional equity financing may be dilutive to holders of Common Shares. Debt financing may involve restrictions on the Company's financing and operating activities. Debt financing may be convertible into other securities of the Company which may result in immediate or resulting dilution. In either case, additional financing may not be available to the Company on acceptable terms or at all. If the Company is unable to raise additional funds as needed, the scope of its operations or growth may be reduced and, as a result, the Company may be unable to fulfil its long-term goals. In this case, investors may lose all or part of their investment. Any default under such debt instruments could have a material adverse effect on the Company, its business or the results of operations.



### *Securities or Industry Analysts*

The trading market for Common Shares could be influenced by the research and reports that industry and/or securities analysts may publish about the Company, its business, the market or competitors. If any of the analysts who may cover the Company's business change their recommendation regarding the Common Shares adversely, or provide more favourable relative recommendations about its competitors, the share price would likely decline. If any analyst who may cover the Company's business were to cease coverage or fail to regularly publish reports on the Company, it could lose visibility in the financial markets, which in turn could cause the share price or trading volume to decline.

### OUTLOOK

The third quarter continues to reflect the results of the strategic long term focusing/positioning which has been taking place over the past several years.

To date during 2020, PyroGenesis has with respect to:

(i) **Business Segments:**

- a) received significant payments under the \$20MM+ contract with Drosrite International, thereby validating announcements made during 2019;
- b) established a relationship with a US based tunneling company for plasma torches;
- c) signed a contract for approx. \$3MM with HPQ Nano Silicon Powders Inc, a wholly owned subsidiary of HPQ Silicon Resources Inc, to exploit the benefits of the novel PUREVAP™ Nano Silicon Reactor (NSiR) to make nano Silicon powder for the battery market,
- d) established a relationship with an OEM in North America with the intent to eventually supply powders for their 3D printing needs. This augments our relationship with Aubert & Duval, while at the same time de-risking our dependence on them;
- e) closed the long-awaited order of \$11.5MM for the US Navy. This contract was for two plasma waste destruction systems, one for each ship in the US Navy's two-ship build;
- f) established itself in the iron ore pelletization industry as a supplier of plasma torches geared to replacing existing fossil fuel burners and thereby reducing greenhouse gas (GHG) emissions. Interest is also gaining traction in other industries with GHG emissions reduction targets, and



(ii) **Financials:**

- a) retired a \$3MM convertible debenture in full, and repaid all other term loans;
- b) benefited from early conversion of warrants maturing in 2021 and beyond of approx. \$4MM;
- c) bought back approximately 1.3 million shares under a Normal Course Issuer Bid at an average price of approximately 0.75;
- d) increased the Company's investment in HPQ, which has subsequently experienced a significant increase in market capitalization;
- e) posted profitable operations in Q3 2020 (even after a onetime non-cash charge of approx. \$3MM for share based compensation);
- f) posted positive cash flow from operations; for three and nine months 2020 of \$2.4 MM and \$1.6MM respectively versus (\$0.849 MM) and (\$2.8MM) over the same periods in 2019;
- g) booked backlog of signed contracts of approx. \$36.4MM as of November 25<sup>th</sup>, 2020;
- h) closed a \$12MM bought deal (oversubscribed by >100%);
- i) graduated to the most senior exchange in Canada, the Toronto Stock Exchange (TSX).

At the time of this writing, the Company is well positioned with a clean balance sheet, over \$17MM in cash on hand, and a healthy backlog of approx. \$36.4MM.

One of the most significant developments in 2020 is the emergence of the Company as a credible provider of GHG reducing technologies to the iron ore pelletization industry with its patented plasma torch process geared to replacing fossil fuel burners. The Company is not only well positioned to address this opportunity with iron ore pelletizers, but to also leveraging off of this first mover advantage in other industries which are also under pressure to reduce GHG emissions and are similarly using fossil fuel burners (such as the cement, aluminum and glass industries).

The Company is already repositioning its offerings to address the world-wide need for solution to reduce GHG emissions, and expects a significant increase in interest in its offerings as a result. The Company is selectively considering strategic alliances with technologies/technology providers which could accelerate this strategic focus with a goal to become a world leader in GHG emissions reduction.

The Company has, as of November 25<sup>th</sup>, 2020, approximately \$6MM of in-the-money warrants and options expiring in 2020 and 2021. The Company also has over \$50MM in



tax loss carryforwards (roughly evenly distributed between federal and provincial obligations) which is not reflected as an asset on the balance sheet.

Additional information regarding the Company can be found on SEDAR at [www.sedar.com](http://www.sedar.com), OTC Markets ([www.otcmarkets.com](http://www.otcmarkets.com)), and on the Company's website at [www.pyrogenesis.com](http://www.pyrogenesis.com)