
# POET

## TECHNOLOGIES INC.

Management's Discussion
and Analysis
9-months ended September 30, 2015

# TABLE OF CONTENTS

**POET Technologies Inc.**
Suite 501, 121 Richmond St. W 2550 Zanker Road
Toronto, ON, M5H 2K1 San Jose, CA 95131 USA
Tel: (416) 368-9411 Fax: (416) 861-0749

# MANAGEMENT'S DISCUSSION AND ANALYSIS
# FOR THE NINE MONTHS ENDED SEPTEMBER 30, 2015

The following discussion and analysis of the operations, results, and financial position of POET Technologies Inc., (the "Company") for the nine months ended September 30, 2015 (the "Period") should be read in conjunction with the Company's unaudited condensed consolidated financial statements for the period ended September 30, 2015 and the Company's audited consolidated financial statements for the year ended December 31, 2014 and the related notes thereto where applicable, both of which were prepared in accordance with International Financial Reporting Standards ("IFRS"). The effective date of this report is November 10, 2015. All financial figures are in United States dollars ("USD") unless otherwise indicated. The abbreviation "U.S." used throughout refers to the United States of America.

### *Forward-Looking Statements*

This management discussion and analysis contains forward-looking statements that involve risks and uncertainties. It uses words such as "may", "would", "could", "will", "likely", "except", "anticipate", "believe", "intend", "plan", "forecast", "project", "estimate", and other similar expressions to identify forward-looking statements. Forward-looking statements are subject to a variety of risks and uncertainties which could cause actual events or results to differ from those reflected in the forward-looking statements, including, without limitation, risks and uncertainties relating to the early stage of the Company's development and the possibility that future development of the Company's technology and business will not be consistent with management's expectations, difficulties in achieving commercial production or interruptions in such production if achieved, the inherent uncertainty of cost estimates and the potential for unexpected costs and expenses, the uncertainty of profitability and failure to obtain adequate financing on a timely basis. The Company undertakes no obligation to update forward-looking statements if circumstances or Management's estimates or opinions should change, except to the extent required by law. The reader is cautioned not to place undue reliance on forward-looking statements.

### *Business Overview*

We continue to depend on electronics for day-to-day functioning. As that dependency grows, so does the need for smaller, faster and more power efficient devices. Thus, progress in the electronics, optics and semiconductor industry continues to heavily influence day-to-day life in the developed world in the way we work, communicate, transport and entertain ourselves.

The 50$^{th}$ anniversary of Moore's Law has just past and despite the progress being made in silicon technology at the leading edge, interconnect bottlenecks remain and the ability of copper interconnects (commonly used in leading edge semiconductor technologies and printed circuit boards) to sustain the ever increasing bandwidth requirements are limited and power hungry.

Any processing solution requires two fundamental functions – computation and communication. Computational efficiencies are addressed with Moore's Law advances in silicon technologies. However communications, and more specifically high bandwidth data communications, are increasingly addressed using optical technology. To lower the power consumption of leading edge silicon, the industry is in need of new optical technology that augments existing silicon technologies and provides high bandwidth with low cost optical interconnects, thus unlocking the full potential of the silicon transistors.

The Company has developed a unique, proprietary process that addresses the deficiencies of speed, size, integration, power and cost efficiency associated with current opto-electronic semiconductor manufacturing technologies. The development of its solution has been designed in such a manner that the process can be accommodated in existing semiconductor fabs with minimum re-tooling, thus potentially reducing capital expenditures required to adopt POET's process technologies.

The Company currently has a number of issued patents and patents pending related to the semiconductor Planar Opto-Electronic Technology ("POET"). The Company's focus is on the design of III-V semiconductor devices, processes, and products currently for data communication applications in the consumer, data center and high performance computing segments. The POET platform also enables applications in adjacent segments in automotive, military, industrial and the mobility segments.

The Company is currently positioned as an opto-electronic product and IP Company, with an aim to leverage existing and potential relationships in establishing a POET design and manufacturing value chain, and in commercializing POET IP.

The Company is incorporated under the laws of the Province of Ontario. The Company's shares trade under the symbol "PTK" on the TSX Venture Exchange in Canada and under the symbol "POETF" on the OTCQX in the U.S.

The following sections discuss its business in more detail.

*Semiconductor Technology Process IP*

The Company is conducting research and development related to expansion of the POET platform by adding processes to the POET Intellectual Property ("IP") portfolio. It is also engaged in developmental work related to existing POET processes for a wide array of device IP for data communications applications in potential consumer, data center, high performance computing, industrial, military and mobility segments. The Company continues to develop gallium arsenide-based processes having several potential major market applications, including: (i) infrared sensor arrays for military as well as domestic monitoring and imaging applications, and (ii) the unique combination of analog, mixed-signal, digital and optical functions on the same chip for potential use in very high volume short reach and very short reach data communication transceivers. The use of III-V material such as gallium arsenide is a key factor in the POET process development for these products. The Company believes that the POET process has the potential to fundamentally alter the landscape of optical data communications for a broad range of applications by offering unique integrated optical and electronic components with dramatically lower solutions cost together with increased speed, density, and reliability and lower power consumption.

*The Company*:

1. Has successfully produced numerous distinct devices using the POET process, including on-chip continuous-wave lasers and switching lasers with the potential for eliminating chip-to-chip metallic interconnects, complementary hetero-structure field effect transistors (HFETs), optical thyristors, and resonant cavity detectors.
2. Continues to establish Technology Design Kit ("TDK") documentation with an initial focus on the components needed and essential for the design of monolithically integrated VCSEL based optical transceivers. TDKs comprise a library of design rules and parameters for the POET technology that can eventually enable POET and its partners to implement the POET fabrication process into their preferred products.
3. Is considering foundry relationships with commercial 6" foundry suppliers with direct opto-electronic experience. To date the Company has signed a VCSEL Manufacturing Process Transfer agreement with Anadigics, Inc. (ANAD) and with two epitaxial wafer vendors to accelerate the "Lab-to-Fab" transition of the POET technology to a 6" wafer scale. Amongst other objectives this engagement is meant to support the development and verification of the foundation devices and design enablement kits. Additionally, it will provide the baseline process flow in a manufacturing environment and enable the demonstration of product prototypes.
4. Is utilizing Synopsys' TCAD tools and services to develop POET Process Design Kits ("PDKs"). PDKs will initially be used by POET and its 3rd party chip developers to create integrated opto-electronic transceiver product prototypes.

With an immediate view to commercialization, the new management team is focused on exploiting existing high growth markets where the disruptive power of the POET platform IP provides competitive differentiation. To that end the Company has established new, market relevant and product driven milestones that maximize the commercialization potential. These milestones will also capture the aggressive lab-to-fab transition plans being put in place, potentially allowing the technology to be commercialized with no additional transfer delays from concept validation to product realization. The Company is engaged in discussions with multiple companies as it finalizes its choice of foundry and epitaxial wafer partners and has recently signed memorandums of understanding with some of these companies and expects to continue this process.

***Industry Outlook***

Social Networking, Cloud Computing and growth in Mobile are driving a continuous need for improvements in bandwidth and data handling capacity. This has driven and continues to drive a significant growth in Data Centers. The Cloud Data Center traffic growth is over 25% compound annual growth rate ("CAGR ")[1] and is expected to continue to grow at this rate for the next few years. Power consumption in Data Centers has now become a huge central issue. There is therefore a need to proliferate low power computing and communications technology in the Data Centers – and enable the conversion of the power hungry copper based communication links to Fiber Optics.

[1] Source : Cisco Global Cloud Index 2014

The Company's POET technology is applicable to a large portion of the opto-electronic semiconductor market as it represents an integrated comprehensive solution to increasing the performance potential of semiconductors in an economical and functional manner. The technology is particularly capable of addressing the power challenges currently faced in Data Centers. POET provides revolutionary innovation that potentially enables it to manage more data at the performance of light but at the cost points of copper. The ability to be adapted to and co-exist with current fabs with limited re-tooling requirements, compared to alternatives, is an important differentiator. Based on our interactions with potential customers POET may provide significant value in applications where it addresses the need for lower power consumption, solution size, and cost efficiency.

The POET platform may provide the following advantages to the industry:

- **Up to 10X power savings improvement** over existing technologies (depending on application)
- **Up to 5X cost improvement over existing optical solutions**
- **Performance and Power of optical solutions at the price points of copper, thus potentially accelerating a transition to optical communications**
- **Flexible and integrated application solutions** that can be applied to virtually any technical application that commands an optical IO for high bandwidth, including memory, digital/mobile, sensor/laser and electro-optical, among many others
- **The POET process can be deployed into existing semiconductor fabs** – Since POET is a CMOS friendly technology fabricated using standard lithography techniques; it could be easily integrated into current semiconductor production facilities extending the profitable utilization of fabrication equipment and production lines.

The Company's strategy is to complete development of its VCSEL based integrated optical platform and monetize this technology with a mix of product and licensing revenue, while continuing research towards the expansion of the IP portfolio.

The disruptive potential of the POET technology was first recognized within the military community, and this recognition has remained strong. Despite this connection, historical military development work does not constrain the commercial application of the POET Technology.

***Key Success Drivers***

The POET platform, which is covered by numerous patents and patents pending, if and when fully developed may make possible the economic production of fully-integrated optoelectronic semiconductor devices with lower cost, smaller form factors and reduced power consumption compared to conventional silicon-based or Indium-Phosphide based photonics technologies. The Company will continue to drive research, as the expansion of the IP portfolio is important to the future of POET. The currently developed integrated VCSEL technology is in its early development stage and is being transferred to a commercial manufacturing source where development and qualification can be completed over the next year. The success of early stage semiconductor companies is highly dependent on their ability to identify milestones that push the limit of existing technology and the achievement of those milestones in a timely fashion. The Company has demonstrated such successes in the past and continues to establish and achieve significant milestones. Significant milestones achieved over the last nineteen months include:

1) Achieving radio frequency and microwave operation of both n-channel and p-channel transistors. By reaching this milestone, 3-inch POET wafers fabricated at BAE Systems (Nashua, NH) yielded submicron n-channel and micron-sized p-channel transistors operating at frequencies of 42 GHz and 3 GHz respectively.

2) The integration of the complementary inverter. Specifically, the Company successfully demonstrated complementary heterostructure field effect transistor based inverter operation using the POET process.

3) The fabrication of infrared (IR) detectors, using its proprietary planar optoelectronic technology (POET) platform for monolithic fabrication of integrated electronic and optical devices on a single semiconductor wafer. Adding to its significance is the fact that the POET wafers used for the IR devices were fabricated within an independent foundry, BAE Systems' Microelectronics Center in Nashua, New Hampshire. This milestone represents the integration by a third party of the optoelectronic process previously demonstrated in POET laboratories.

4) Demonstration of a switching VCSEL – which is a key optical engine in the creation of single chip opto-electronic transceivers and changes the current paradigm of analog lasers and detectors.

5) Demonstration of a resonant cavity Detector – which completes the immediate requirements of the low cost and efficient optical-electrical-optical conversion engine that will be used in its optical transceiver products.

Timely capital investment is also key to the success of semiconductor companies. The Company acquired and installed $937,860 in new equipment during 2013 and has purchased another $365,000 in new equipment in 2014. This equipment has resulted in the ability to target milestones further down the development roadmap than previously mapped. While the Company has an approved capital investment program approximating $3 million for 2015, substantial capital investment is not anticipated in 2015. Instead the Company will transition its ongoing development to third party foundries. Capital spend will be limited to augmenting the test and characterization capabilities of the Company in its new lab in San Jose, CA.

The Company has successfully raised over CA$17.5 million in equity financing through private placements and an additional CA$22.7 million through the exercise of stock options and warrants since June 2012 of which CA$13.7 million was raised through the exercise of stock options and warrants in 2015.

During 2014, the University of Connecticut converted certain royalty rights into a significant investment in the Company. The parties agreed to restructure the payment provisions of the licensing agreement between the Company and the University of Connecticut regarding certain aspects of the POET technology (the "License Agreement") by reducing royalty payments to three percent (3%) of amounts received from unaffiliated third parties in respect of the exploitation of the Intellectual Property defined in the License Agreement, in consideration for 2,000,000 common shares of the Company.

The Company recently established an office in Silicon Valley, San Jose, California. It is important for the Company to have a presence in the Valley as it is an area of concentration of the potential customers and partners of the Company.

The Company's future success will also be driven by focusing on the foundation of critical human capital. In this regard, the Company appointed a Chief Operating Officer and Chief Executive Officer in Q2'2015 and other key members of the management team in Q4'2015. The Company has also launched a recruitment drive for other key executives and engineering personnel.

***Significant Events and Milestones During 2015***

In 2015, the Company continued to execute on its stated strategic plan. The Company has achieved the following significant milestones in 2015:

**1.** On February 10, 2015, the Company announced the completion of a significant interim milestone, the completion of the installation of the critical unit processes required by the Transistor Fabrication Process at its 3rd Party Foundry. This provided the substantiation that the process was transferable and scalable to commercial manufacturing sites.

**2.** On March 30, 2015, the Company signed an agreement with BAE Systems under which BAE Systems could provide non-exclusive third-party foundry services in support of the Company's "Lab-to-Fab" transition plan. At present, there has not been any joint process IP development under this agreement, and none is anticipated.

**3.** On April 8, 2015, the Company announced the appointment of two new Directors: Todd A. DeBonis and David E. Lazovsky.

Mr. Debonis was the Vice President of Global Sales and Strategic Development at TriQuint Semiconductor, Inc. Mr DeBonis played an integral role in the merger of RF Micro Devices, Inc. with TriQuint and the subsequent creation of Qorvo, Inc. (Nasdaq: QRVO). Mr. Debonis was VP Worldwide sales and marketing at Centillium Communications, Ishoni Networks and Infineon Technologies North America.

Mr. Lazovsky is the founder of Intermolecular, Inc. (NASDAQ: IMI) and served as President and CEO from 2004 to 2014. Mr. Lazovksy raised significant amounts of venture capital and other strategic private investments in Intermolecular's initial public offering. Mr. Lazovsky held senior management roles at Applied Materials Inc. (NASDAQ: AMAT) from 1995 to 2004. As of March 31, 2014, Mr. Lazovsky held 41 pending or issued U.S. patents.

**4.** On April 27, 2015, the Company announced the appointment of Dr. Subhash Deshmukh as Chief Operating Officer effective June 8, 2015. Dr. Deshmukh was VP Emerging Technologies and Products at Applied Materials Inc. Nasdaq: AMAT) He was also VP and General Manager of the Plasma products Business Unit as well as VP Business Development for Varian Semiconductor Equipment Associates Inc. (NASDAQ: VSEA). Dr. Deshmukh holds a PhD in Chemical Sciences and has authored or co-authored over 55 technical articles. Dr. Deshmukh has been granted over 27 patents and several patents pending.

**5.** On June 11, 2015, the Company announced the appointment of Dr. Suresh Venkatesan as CEO. Dr. Venkatesan was most recently Senior Vice President, Technology Development at GLOBALFOUNDRIES and was responsible for the company's Technology Research and Development. Dr. Venkatesan joined GLOBALFOUNDRIES in 2009, where he led the development and ramp of the 28nm node and was instrumental

in the technology transfer and qualification of 14nm. In addition, he was responsible for the qualification and ramp up of multiple mainstream value added technology nodes.

**6.** On June 15, 2015, the Company announced the appointment of Mohan Warrior as a Director. Mr. Warrior has been president and chief executive officer (CEO) of Alfalight Inc. ("Alfalight") since February 2004. Alfalight is a GaAs based high power diode laser manufacturing company with headquarters in Madison, Wisconsin. Alfalight serves military, telecom and industrial customers. Mr. Warrior established Alfalight as a leading provider of high powered laser diode solutions in both commercial and defense segments. Prior to joining Alfalight, Mr. Warrior's career included 15 years at Motorola Semiconductors (now Freescale) where he led the test and assembly operations, a group of 3500 employees, in the US, Scotland and Korea.

**7.** On August 24, 2015, the Company announced a VCSEL Manufacturing Process Transfer Agreement with Anadigics, Inc. This agreement accelerates the transition from lab-to-fab and enables successful prototype demonstrations in a mature and capable manufacturing environment.

**8.** On September 30, 2015 the Company hosted an investor conference call in which it provided an update on the Company's operational roadmap.

***Summary of Quarterly Results***

Following are the highlights of financial data of the Company for the most recently completed eight quarters which have been derived from the Company's consolidated financial statements prepared in accordance with IFRS:

| | Sep. 30/15 | Jun. 30/15 | Mar. 31/15 | Dec. 31/14 | Sep. 30/14 | Jun. 30/14 | Mar. 31/14 | Restated Dec. 31/13 |
|---|---|---|---|---|---|---|---|---|
| Other (income) | $ - | $ - | $ - | $ - | $ - | $ (85,204) | $ (84,628) | $ (80,890) |
| Shares issued for the reduction of license fee | - | - | - | - | - | 1,439,898 | - | - |
| Research and development | 767,124 | 715,732 | 564,602 | 457,470 | 504,131 | 362,848 | 312,302 | 438,777 |
| Depreciation and amortization | 82,022 | 79,587 | 74,728 | 70,222 | 66,050 | 50,276 | 50,407 | 27,780 |
| Professional fees | 110,389 | 353,892 | 122,716 | 134,339 | 325,695 | 146,057 | 301,703 | 184,777 |
| Wages and benefits | 423,214 | 269,015 | 198,965 | 578,071 | 405,012 | 366,368 | 351,149 | 229,396 |
| Management and consulting fees | 160,303 | 168,700 | 180,614 | 140,040 | 290,327 | 65,084 | 100,216 | 155,200 |
| Stock-based compensation (1) | 1,621,751 | 1,110,758 | 593,898 | 1,044,330 | 2,613,335 | 368,558 | 589,774 | 960,705 |
| General and administrative | 285,802 | 241,088 | 364,316 | 204,857 | 192,935 | 224,892 | 199,286 | 67,892 |
| Investment (income), including interest | (18,979) | (22,793) | (14,471) | - | - | - | - | (18,371) |
| Net loss | $ 3,431,626 | $ 2,915,979 | $ 2,085,368 | $ 2,629,329 | $ 4,397,485 | $ 2,938,777 | $ 1,820,209 | $ 1,965,266 |

(1) Stock based compensation includes General and Administrative and Research and Development issuances

***Explanation of Quarterly Results for the three months ended September 30, 2015 ("Q3 2015")***

During Q3 2015, the Company reported a loss of $3,431,626 as compared to a loss of $4,397,485 for the same period in 2014. The following discusses the significant variances between Q3 2015 and the three months ended September 30, 2014 ("Q3 2014").

Consistent with the strategy of the Company and its goal of monetizing POET, Research and development ("R&D") increased by 52% or $262,993 over the same period in 2014 from $504,131 to $767,124. The increase is attributed primarily to direct labor costs and subcontract fees related to the Company's research and development program. Direct labor costs increased by 20% or $40,368 while subcontract fees increased by 92% or $235,816.

The Company's "lab-to-fab" transition resulted in increased subcontractor fees with new subcontractors which includes Anadigics, Inc. Anadigics, Inc. has been retained to complete the goal of a successful prototype demonstration for a product produced in a mature and capable manufacturing environment, specifically focused on the Company's VCSEL technology. The Company expects to increase its research and development program in the short term to advance the POET process, this will result in increased subcontractor fees expense for 2015 and the following year.

Professional fees decreased by $215,306 from $325,695 in Q3 2014 to $110,389 in Q3 2015. In Q3 2014, the Company updated the Pellegrino valuation report. The Company did not have any unusual matters requiring additional professional fees in Q3 2015.

Management and consulting fees decreased in Q3 2015 by $130,024 over Q3 2014. The services of a number of consultants were no longer required in 2015 and their services were terminated as the Company reviewed the services that were being provided by these consultants.

General and administrative increased in Q3 2015 by $92,867 over the same period in 2014. This increase was primarily due to the $50,500 increase in rent expense due to the addition of the Company's new location in Silicon Valley and the $43,000 increase in investor relations and travel expenses. The Company transitioned its operations from the University of Connecticut to Silicon Valley in October 2015. The transition resulted in additional travel costs to ensure a seamless and orderly process, as well as additional rental charges while the move was progressing. Additionally, there was in increase investor relations expense related to a program to raise awareness of the POET process and the new management team.

Non-cash stock-based compensation had the most significant decrease from Q3 2014 to Q3 2015. This expense decreased by $991,584 from $2,613,335 in Q3 2014 to $1,621,751 in Q3 2015. The valuation of stock options are driven by a number of factors including the quantity of options granted, the strike price and the volatility of the Company's stock. The stock option expense is dependent on the timing of the stock option grant and the amortization of the options as they vest. No stock options were granted in either Q3 2015 or Q3 2014.

The stock options vest in accordance with the policies determined by the Board of Directors from time to time consistent with the provisions of the 2015 Plan which grants discretion to the Board of Directors.

***Explanation of Results for the Nine Months Ended September 30, 2015***

During the nine months ended September 30, 2015, the Company recorded a loss of $8,432,973 compared to a loss of $9,156,471 for the nine months ended September 30, 2014. Changes in major expense categories are discussed below:

*SBIR Grant Income*

The Company had $169,832 in SBIR grant income in the nine months ended September 30, 2014. During 2014 the Company decided to eliminate its use of SBIR grants in order to focus all of its resources on developing and monetizing the POET technology. The Company had no SBIR grant income in nine months ended September 30, 2015.

*Research and Development.*

The Company is developing proprietary IP. This development process requires the use of third party consultants to both test and prove the concepts. During the nine months ended September 30, 2015, the Company expanded on its development roadmap which includes additional proof of concept tests conducted by the Company's primary R&D consultants, namely BAE and Anadigics, Inc. Of the $2,047,458 spent on R&D in the nine months ended September 30, 2015, $958,833 was spent on subcontract services. The subcontract fees related to work done with the Company's VCSEL technology, epitaxy substrates and technical design kits. Additionally, the Company had expanded the capacity of the work being undertaken by BAE in the earlier portion of 2015. The Company has expanded beyond the BAE arrangement to facilitate the acceleration of its R&D work. In 2014, the Company spent $1,179,281 on R&D expenditures, with BAE as its primary subcontractor in 2014.

R&D wages during the nine months ended September 30, 2015 increased by 42% or $278,577 over the same period in 2014. The increase in wages relate to the addition of a CTO and Program Manager along with additional over-time hours. These new employees were not with the Company for all nine months of 2014. In addition, improper installation of equipment which was purchased in 2014 contributed to the team working significant over time hours to identify the cause of poor test results generated by this piece of equipment. The issues relating to the faulty installation were rectified in the first quarter of 2015. These two expenses were the biggest factors that led to an $868,177 increase in research and development expenses in the nine months ended September 30, 2015 over the same period in 2014.

*Management and Consulting Fees*

Management and consulting fees increased in the nine months ended September 30, 2015 by $53,990 over the same period in 2014. The increase was mainly due to the compensation of the new Executive Co-Chairman who joined the Company in July 2014. The Company had some reduction in consulting fees due to discontinuing services that the Company felt were not adding material value.

*General and Administrative*

General and administrative increased in the nine months ended September 30, 2015 by $274,093 over the same period in 2014, mainly due to increased investor relations, travel and promotion, which collectively increased by $210,000. The Company implemented a promotion program for POET which included advertisements on Bloomberg TV and the

Fox News Network. The Company also had its annual meeting in Silicon Valley which resulted in increased logistics costs.

Additionally, maintenance and repair costs, included in general and administrative, increased by $25,000 in the nine months ended September 30, 2015 over the same period in 2014. These costs resulted primarily from the improper installation of new equipment by a third party. The Company consulted with specialists in the field to assist with correcting the issues related to the faulty installation. The issues relating to the faulty installation were rectified in the first quarter of 2015. The Company also spent $17,000 on specialized software that is required to operate the equipment along with optimizing the optical elements of the POET process.

Rent expense increased by $42,823 over 2014 due to the addition of the Company's new location in Silicon Valley.

*Wages and Benefits*

Wages and benefits decreased by $231,335 in the nine months ended September 30, 2015 over the same period in 2014 as a result of the cessation of employment of the former president in September 2014 and the non-repetition in 2015 of a 2014 performance bonus of $125,000 paid to the former interim CEO. The compensation to the former president included a one-time debt settlement of $100,000 which was settled in February 2014. Wages and benefits will, however, increase over the short-term with the addition of the new CEO and the transition of responsibilities between the CEO and former interim CEO.

*Professional Fees*

Professional fees decreased from $773,455 in 2014 to $586,997 in 2015 or 24%. Professional services in 2015 were primarily on routine operational matters as compared to 2015 when the Company incurred additional fees for the updated Pellegrino valuation report which indicated a median value for the Company of approximately $2.3.billion. Additionally, increased fees were incurred in 2014 for submitting a registration statement on Form 20-F in connection with the registration of its common stock under the U.S. Securities Exchange Act of 1934.

*Non-Cash Stock-based Compensation*

Non-cash stock-based compensation decreased by $245,260 from $3,571,667 in 2014 to $3,326,407 in 2015. The Company granted 10,430,000 stock options during the nine months ended September 30, 2015 as compared to 6,155,000 in the same period in 2014. The number of options granted in the nine months ended September 30, 2015 were unusually high due to the recruitment of two new senior executive officers. The valuation of stock options are driven by a number of factors including the quantity of options granted, the strike price and the volatility of the Company's stock. The stock option expense is dependent on the timing of the stock option grant and the amortization of the options as they vest.

The stock options vest in accordance with the policies determined by the Board of Directors from time to time consistent with the provisions of the 2015 Plan which grants discretion to the Board of Directors.

*Shares issued for the reduction of license fee*

In the nine months ended September 30, 2014, the Company had a one-time non-cash issuance of 2,000,000 common shares to the University of Connecticut valued at $1,439,898 for the reduction of certain royalty rights in exchange for an investment in the Company. The parties agreed to restructure the payment provisions of the License Agreement by reducing royalty payments to three percent (3%) of amounts received from unaffiliated third parties in respect of the exploitation of the Intellectual Property defined in the License Agreement, in consideration for 2,000,000 common shares of the Company. The Company did not have a similar expense in nine months ended September 30, 2015.

***Explanation of Material Variations by Quarter for the Last Eight Quarters***

*Q3 2015 compared to Q2 2015*

In Q3 2015, professional fees decreased by $243,503 from Q2 to Q3 2015. The Company successfully recruited two high profile executive officers (CEO and COO). The Company paid $200,000 in recruitment fees related to Drs. Deshmukh's and Venkatesan's employment. Both executives were appointed in June 2015. No recruitment fees were paid in Q3 2015.

Wages and benefits increased by $154,199 due to the addition of the new CEO and COO. Wages and benefits will be high over the short term as the transition of responsibilities continues from the former interim CEO to the new CEO.

Non-cash stock-based compensation in Q3 2015 was $510,993 higher than the expense in Q2 2015. The increase was impacted by timing of the expense related to the 10,430,000 stock options granted in 2015. The Company granted 7,857,000 stock options to new executives (CEO and COO). The valuation of stock options are driven by a number of factors including the quantity of options granted, the strike price and the volatility of the Company's stock. The stock option expense is dependent on the timing of the stock option grant and the amortization of the options as they vest.

*Q2 2015 compared to Q1 2015*

In Q2 2015, professional fees increased by $231,176 over Q1 2015. The Company successfully recruited two high profile executive officers (CEO and COO). The Company paid $200,000 in recruitment fees related to Drs. Deshmukh's and Venkatesan's employment. Both executives were appointed in June 2015.

In Q2 2015, the Company increased its R&D efforts. Additional consultants were engaged to assist the Company. Of the $151,350 increase in R&D, the Company paid an additional $60,000 in consulting fees during Q2 in excess of Q1. The remaining increase was a result of the expanded scope of BAE's foundry services to the Company.

General and administrative in Q2 2015 was $241,088 as compared to $364,316 in Q1 2015, a decrease of $123,228. In Q1 2015, the Company increased its investor relations, travel and promotion. The Company implemented a promotion program for POET which included advertisements on Bloomberg TV and the Fox News Network. Additionally, there were increases in maintenance and repair costs, resulting from the improper installation of new equipment by a third party and the purchasing of $15,000 of specialized software required to optimize the optical elements of the POET process.

Non-cash stock-based compensation in Q2 2015 was $516,860 higher than the expense in Q1 2015. The increase was impacted by 9,930,000 stock options granted in Q2 as compared to 500,000 granted in Q1 2015. The Company granted 7,857,000 stock options to new executives (CEO and COO) in Q2. The valuation of stock options are driven by a number of factors including the quantity of options granted, the strike price and the volatility of the Company's stock. The stock option expense is dependent on the timing of the stock option grant and the amortization of the options as they vest.

*Q1 2015 compared to Q4 2014*

In Q1 2015, research and development expenses increased by $107,132 over Q4 2014 due to the addition of a Program Manager in Q1 2015 along with substantial overtime incurred during the quarter incurred in connection with the rectification of improper installation of new equipment noted above. The issues relating to the improper installation were rectified in Q2 2015.

Wages and benefits in Q1 2015 were $198,965 compared to $578,071 in Q4 2014. Q4 2014, included $230,000 paid in bonuses and $165,000 paid in directors fees. No bonuses were paid in Q1 2015 and director fees were $39,981 in Q1 2015. The director fees in Q4 2014 included an expense for two quarters (Q3 payment and Q4 accrual).

In Q1 2015, non-cash stock-based compensation decreased by $450,412 from Q4 2014. This is a result of the timing of stock based compensation expense relative to the vesting date of the historical granted stock options. Only 500,000 stock options were granted in Q1 2015. The expense in Q4 2014 was significantly impacted by 6,155,000 stock options granted throughout 2014. The valuation of stock options are driven by a number of factors including the quantity of options granted, the strike price and the volatility of the Company's stock. The stock option expense is dependent on the timing of the stock option grant and the amortization of the options as they vest.

In Q1 2015, general and administrative increased by $159,459 over Q4 2014 due to increased investor relations, travel and promotion. The Company implemented a promotion program for POET which included advertisements on Bloomberg TV and the Fox News Network. Additionally increases were incurred in maintenance and repair costs, resulting from the improper installation of new equipment by a third party and the leasing of specialized software required to optimize the optical elements of the POET process.

*Q4 2014 compared to Q3 2014*

Stock-based compensation and professional fees both decreased significantly from Q3 2014 to Q4 2014. Stock based compensation was $2,613,335 in Q3 2014 compared to $1,044,330 in Q4 2014. The valuation of stock options are driven by a number of factors including the quantity of options granted, the strike price and the volatility of the Company's stock. The stock option expense is dependent on the timing of the stock option grant and the amortization of the options as they vest.

Professional fees were $325,695 in Q3 2014 compared to $134,339 in Q4 2014. In Q3, the Company updated the Pellegrino valuation report. Additionally, professional fees were incurred in recruiting the new Executive Co-Chairman in Q3 2014.

*Q3 2014 compared to Q2 2014*

Professional fees increased by $179,638 from Q2 2014 to Q3 2014. The increase was primarily due to the updated Pellegrino valuation report and the professional fees incurred in recruiting the new Executive Co-Chairman.

In Q3 2014, non-cash stock-based compensation increased by $2,244,797 over Q2 2014 as a result of the 3,940,000 annual Company stock options granted in Q3 compared to 215,000 granted in Q2 2014. The valuation of stock options

are driven by a number of factors including the quantity of options granted, the strike price and the volatility of the Company's stock. The stock option expense is dependent on the timing of the stock option grant and the amortization of the options as they vest.

In Q2 2014, the Company had a one-time non-cash issuance of 2,000,000 common shares to the University of Connecticut valued at $1,439,898 for the reduction of certain royalty rights in exchange for an investment in the Company. The parties agreed to restructure the payment provisions of the License Agreement by reducing royalty payments to three percent (3%) of amounts received from unaffiliated third parties in respect of the exploitation of the Intellectual Property defined in the License Agreement, in consideration for 2,000,000 common shares of the Company.

*Q2 2014 compared to Q1 2014*

Professional fees decreased from $301,703 in Q1 2014 to $146,057 in Q2 2014. The decrease in professional fees was a result of reduced professional services resulting from the successful completion of the filing of Form 20-F with the SEC to register the Company's shares in the United States. Additional accounting fees associated with the annual financial statements were also incurred in Q2.

*Q1 2014 compared to Q4 2013*

On January 24, 2014, the Company submitted a registration statement on Form 20-F in connection with the registration of its common stock under the U.S. Securities Exchange Act of 1934. In preparation for this filing, the Company incurred substantial legal and accounting fees. Accounting fees related to the completion of the Company's annual financial statements and professional guidance relating to the filing of Form 20-F were $87,000 (nil – Q4 2013).

The Company also filed new IP portfolio protection documents with the U.S. Patent and Trademark office (USPTO) and in other key jurisdictions to support strategic applications in POET-based quantum computing. Legal fees directly associated with the filing and maintenance of patents was $47,000 (nil - Q4 2013).

***Segment Disclosure***

The Company and its subsidiary currently operate in a single segment - the design of semiconductor products for military and industrial applications. The Company's sole operating and reporting segment reflects the management reporting structure of the organization and the manner in which the chief operating decision maker regularly assesses information for decision making purposes, including the allocation of resources. A summary of the Company's operating segment is below:

**ODIS Inc. ("ODIS")**

ODIS is the developer of the POET platform semiconductor process IP for monolithic fabrication of integrated circuit devices containing both electronic and optical elements on a single die.

The Company operates geographically in the United States and Canada. Geographical information is as follows:

| | 2015 | | |
|---|---|---|---|
| **As of September 30,** | **US** | **Canada** | **Consolidated** |
| **Current assets** | **$ 3,979,273** | **$ 11,968,419** | **$ 15,947,692** |
| **Property and equipment** | **860,919** | **25,235** | **886,154** |
| **Patents and licenses** | **399,006** | **-** | **399,006** |
| **Total Assets** | **$ 5,239,198** | **$ 11,993,654** | **$ 17,232,852** |

| | S | Canada | Consolidated |
|---|---|---|---|
| **For the nine months ended September 30,** | | | |
| **General and administration** | **$ 2,119,313** | **$ 3,850,976** | **$ 5,970,289** |
| **Research and development** | **2,518,927** | **-** | **2,518,927** |
| **Investment income** | **-** | **(56,243)** | **(56,243)** |
| **Net Loss** | **$ 4,638,240** | **$ 3,794,733** | **$ 8,432,973** |

| | 2014 | | |
|---|---|---|---|
| As of September 30, | US | Canada | Consolidated |
| Current assets | $ 4,243,884 | $ 8,115,633 | $ 12,359,517 |
| Property and equipment | 1,099,643 | - | 1,099,643 |
| Patents and licenses | 182,451 | - | 182,451 |
| Total Assets | $ 5,525,978 | $ 8,115,633 | $ 13,641,611 |

| | US | Canada | Consolidated |
|---|---|---|---|
| For the nine months ended September 30, | | | |
| General and administration | $ 1,337,750 | $ 6,265,996 | $ 7,603,746 |
| Research and development | 1,722,557 | - | 1,722,557 |
| Other income | (169,832 ) | - | (169,832 ) |
| Net Loss | $ 2,890,475 | $ 6,265,996 | $ 9,156,471 |

***Liquidity and Capital Resources***

The Company had working capital of $15,568,623 on September 30, 2015 compared to $11,079,641 on December 31, 2014. The increase and maintenance of the higher working capital was due to the approximately $10.9 million dollars raised through the exercise of stock options and warrants during the nine months ended September 30, 2015.

The Company's balance sheet as at September 30, 2015 reflects assets with a book value of $17,232,852 (2014 - $12,850,946) of which 93% (2014 - 89%) or $15,947,692 (2014 - $11,531,365) is current and consists primarily of cash totaling $15,849,935 (2014 - $11,287,864). The Company's liquidity and unencumbered balance sheet will allow for investments in capital equipment and valuable human capital which are necessary to enable the Company to achieve its technical and operational milestones.

Based on current plans and cash utilization, we believe we have sufficient liquidity to support our operations and technological programs through 2016, which include further development of the POET semiconductor process and increasing the POET intellectual property portfolio to enable us to exploit POET, through licenses and collaborative arrangements.

The Company is embarking on an aggressive plan of attempting to monetize POET while simultaneously improving shareholder value. The focus, therefore, is to remain sufficiently capitalized to facilitate this.

***Related Party Transactions***

Compensation to key management personnel were as follows:

| | **Three Months Ended September 30,** | | **Nine Months Ended September 30,** | |
|---|---|---|---|---|
| | **2015** | 2014 | **2015** | 2014 |
| Salaries | **$ 418,378** | $ 348,580 | **$ 1,219,401** | $ 907,240 |
| Share-based payments (1) | **1,084,701** | 1,260,883 | **1,915,065** | 1,660,750 |
| Total | **$ 1,503,079** | $ 1,609,463 | **$ 3,134,466** | $ 2,567,990 |

(1) Share-based payments are the fair value of options granted to key management personnel and expensed during the year as calculated using the Black-Scholes model.

The Company paid or accrued $29,797 and $76,545 in fees and disbursements for the three and nine months respectively ended September 30, 2015 (2014 - $67,069 and $121,030) to a law firm, of which a director is counsel, for legal services rendered to the Company.

All transactions with related parties have occurred in the normal course of operations and are measured at the exchange amounts, which are the amounts of consideration established and agreed to by the related parties.

***Critical Accounting Estimates***

*Stock-based Compensation*

Stock options and warrants awarded to non-employees are accounted for using the fair value of the instrument awarded or service provided, whichever is considered more reliable. Stock options and warrants awarded to employees are

accounted for using the fair value method. The fair value of such stock options and warrants granted is recognized as an expense on a proportionate basis consistent with the vesting features of each tranche of the grant. The fair value is calculated using the Black-Scholes option pricing model with assumptions applicable at the date of grant.

*Other stock-based payments*

The Company accounts for other stock-based payments based on the fair value of the equity instruments issued or service provided, whichever is more reliable.

*Cumulative Translation Adjustment*

IFRS requires certain gains and losses such as certain exchange gains and losses arising from the translation of the financial statements of a self-sustaining foreign operation to be included in comprehensive income.

***Recent Accounting Pronouncements***

The Company has considered all recently issued accounting pronouncements and does not believe the adopting of such pronouncements will have a material impact on its consolidated financial statements. Please see note 3 of the financial statements for additional information.

***Financial Instruments and Risk Management***

The Company's financial instruments consist of cash and accounts payable and accrued liabilities. Unless otherwise noted, it is management's opinion that the Company is not exposed to significant interest or credit risks arising from these financial instruments. The Company estimates that the fair value of these instruments approximate the carrying values due to their short term nature.

***Exchange Rate Risk***

The Company is exposed to foreign currency risk with the Canadian dollar. A 10% change in the Canadian dollar would increase or decrease other comprehensive loss by $1,189,642. Since the Company's operations predominantly transact business in their respective domestic currencies, the exposure is reduced. Therefore, the Company typically does not hedge accounts receivable and accounts payable that are denominated in a foreign currency. The Company maintains bank accounts and cash reserves in both currencies to reduce its exposure to currency fluctuations.

***Interest Rate Risk***

Cash equivalents bear interest at fixed rates, and as such, are subject to interest rate risk resulting from changes in fair value from market fluctuations in interest rates. The Company does not depend on interest from its investments to fund its operations.

***World Economic Risk***

Like many other companies, the world economic climate could have an impact on the Company's business and the business of many of its current and prospective customers. A slump in demand for electronic-based devices, due to a world economic crisis, may impact any anticipated licensing revenue.

***Liquidity Risk***

The Company predominately relies on equity funding for liquidity to meet current and foreseeable financial requirements.

***Strategy and Outlook***

During 2015, there are a number of projects planned which will the Company expects will address the short-term and long-term growth plans of the Company including, but not limited to the following:

- Continue to expand and develop the POET technology platform.
- Re-profile the current engineering team as critical lab activities transition out of the lab into a commercial foundry environment.
- Expand the POET executive team, through an ongoing executive recruiting program, which includes amongst other positions a VP, Technology Development and various positions listed on the POET careers website [http://www.poet-technologies.com/careers].
- Procure additional equipment which may be required for the continuing development and expansion of the POET platform.

- Continue to develop and expand the IP patent portfolio.
- Facilitate the adoption of the POET process into opto-electronic products by providing ease of access to the platform with initiatives such as the documentation of the TDK's and the development of the PDKs.
- Continue the lab-fab transition through evaluation of external partners for both the epi stack growth and commercial foundry fabrication.
- Actively search out opportunities to monetize POET.

***Outstanding Share Data***

*Common Shares*

As of September 30, 2015 and November 10, 2015, there were respectively, 193,904,315 and 195,321,815 outstanding common shares of the Company.

*Stock Options and Warrants*

As of September 30, 2015 and November 10, 2015, there were respectively, 8,770,733 and 8,369,232 outstanding warrants and compensation warrants to purchase common shares at exercise prices ranging from CAD $0.23 – $1.00

Total stock options outstanding as at September 30, 2015 and November 10, 2015, were 28,453,000 and 27,560,000 priced between CAD $0.23 and $1.99 per common share.

Additional detailed share data information is available the Company's Notes to Consolidated Financial Statement.

***Off-Balance Sheet Arrangements***

The Company has not entered into any off-balance sheet arrangements.

***Key Business Risks and Uncertainties***

*Dependence Upon Key Personnel* – The Company depends on its senior management and technical staff. If the Company is unable to attract and retain key personnel, it may have a material adverse effect on the Company. In an effort to manage this risk, the Company is establishing a competitive compensation grid for all staff that includes certain benefits and stock options. The Company will be benchmarking its rates of pay to similar companies and the compensation package that would normally be offered to senior individuals within the industry.

*Technology Development* – Delays in either technology development or the transition to large scale application of the technology may cause a material adverse effect to the Company. Technology development in the Company follows a strict path of concept, research, business analysis, design, beta testing and technical implementation. These milestones are reviewed regularly with the head of technology development to ensure timely completion of the technological milestones.

*Financial Liquidity* –The Company has not earned profits, so its ability to finance operations is chiefly dependent on equity financings. Since June 2012, the Company has raised over US$35 million dollars in equity financing in support of the POET initiative. However, there are no assurances that the Company will be able to continue to raise further equity financing on favourable terms or at all.

*Ability to Reach Profitability* – The Company has no history of profitability and may not be able to monetize POET.

*Market Acceptance of New Products* – The Company's POET technology is a new technology which currently does not have an installed base and may not be embraced for use by the semiconductor industry. Branding is a key to creating market acceptance. There is no assurance that these risks can be mitigated through public announcements, demonstrations and advertisements about the competitive advantage of the Company's high efficiency technology.

*Technology Changes* – The Company's technology is highly reliant upon staying ahead of technological changes, particularly in other competing semiconductor processes. If the Company cannot keep pace, it may have a material adverse effect on the Company. Retaining qualified engineers and scientists has been identified as a key success driver for the Company. Qualified personnel will continue to ensure that the Company is not only keeping in touch with technological developments but is also implementing these new developments as appropriate.

*Major Competitors* – The Company may face several competitors before or after it brings its technology to market which could result in the lack of acceptance thereby having a material adverse effect on the Company. Through research and competitive data, the Company feels that these markets are ready for a new entrant especially with the efficiency of the POET technology. Staying ahead of the curve with R&D, and consistency in process development and technology transfer will be key to developing, keeping and maintaining industry share.

Please refer to the Company's Annual Information Form filed on SEDAR on August 4, 2015 for a detailed discussion of Risk and Uncertainties.

***Additional Information***

Additional information relating to the Company is available on SEDAR at www.sedar.com including the information contained in the Company's Annual Information Form filed on SEDAR on August 4, 2015.


POET TECHNOLOGIES INC.

Suite 501, 121 Richmond St. W. 2550 Zanker Road
Toronto, Ontario M5H 2K1 San Jose, CA 95131 USA
Tel: 416-368-9411 - Fax: 416-861-0749
http://www.poet-technologies.com