



SPARQ SYSTEMS INC.
(Formerly, SPARQ Corp.)

Management's Discussion and Analysis

For the three and six months ended June 30, 2023 and 2022

Dated August 23, 2023

Management's Discussion and Analysis

This Management's Discussion and Analysis ("**MD&A**") has been prepared by management of SPARQ Systems Inc. (formerly, SPARQ Corp.) (the "**Company**") and should be read in conjunction with the Company's unaudited condensed interim consolidated financial statements for the three and six months ended June 30, 2023 and 2022, and its audited consolidated financial statements and notes thereto for the years ended December 31, 2022 and 2021 (the "**Financial Statements**"). The Financial Statements have been prepared using International Financial Reporting Standards ("**IFRS**") issued by the International Accounting Standards Board and interpretations of the International Financial Reporting Interpretations Committee. All amounts are in Canadian dollars unless otherwise specified. The Financial Statements may be found under the Company's SEDAR+ profile at www.sedarplus.ca.

This MD&A contains commentary from the Company's management regarding the Company's strategy, operating results, financial position and outlook. Management is responsible for the accuracy, integrity, and objectivity of the MD&A, and develops, maintains and supports the necessary systems and controls to provide reasonable assurance as to the accuracy of the comments contained herein.

The Audit Committee and the Board of Directors provide an oversight role with respect to all public financial disclosures by the Company. The Board of Directors approves the Financial Statements and MD&A after the completion of its review and recommendation for approval by the Audit Committee, which meets periodically to review all financial reports prior to filing.

Forward-Looking Statements

Certain statements contained in this MD&A constitute "forward-looking information" and "forward-looking statements". All statements other than statements of historical fact contained in this MD&A. Such statements can, in some cases, be identified by the use of forward-looking terminology such as "expect," "likely", "may," "will," "should," "intend," or "anticipate," "potential," "proposed," "estimate" and other similar words, including negative and grammatical variations thereof, or statements that certain events or conditions "may" or "will" happen, or by discussions of strategy. The forward-looking statements included in this MD&A are made only as of the date of this MD&A and the Company assumes no obligation to update or revise them to reflect subsequent information, events or circumstances or otherwise, except as required by applicable securities laws.

Forward-looking statements in this MD&A are not guarantees of future performance and involve assumptions, risks and uncertainties that are difficult to predict. Therefore, actual results may differ materially from what is expressed, implied or forecasted in such forward-looking statements. Management provides forward-looking statements because it believes they provide useful information to readers when considering their investment objectives and cautions readers that the information may not be appropriate for other purposes.

Factors which could cause the actual results to differ materially from current expectations include but are not limited to:

- if demand for solar energy solutions does not grow or grows at a slower rate than anticipated, the Company's business will suffer;
- the rapidly changing solar industry makes it difficult to evaluate the Company's current business and future prospects;
- an increase in interest rates or tightening of the supply of capital in the global financial markets could make it difficult for end-users to finance the cost of a solar photovoltaic ("**PV**") system and could reduce the demand for smart energy products and thus demand for the Company's products;
- defects or performance problems in our products could result in loss of customers, reputational damage, and decreased revenue, and the Company may face warranty, indemnity, and product liability claims arising from defective products;

- the Company depends on sole-source and limited-source suppliers for key components and products. If the Company is unable to source these components and products on a timely basis, the Company will not be able to deliver its products to customers;
- the Company depends upon a small number of outside contract manufacturers, and business and operations could be disrupted if the Company encounters problems with these contract manufacturers;
- if the Company or its contract manufacturers are unable to obtain raw materials in a timely manner or if the price of raw materials increases significantly, production time and product costs could increase, which may adversely affect the Company's business;
- manufacturing problems could result in delays in product shipments, which would adversely affect the Company's revenue, competitive position and reputation;
- the products manufactured by the Company use a number of electronic components such as semiconductor switches, semiconductor chips, magnetics and capacitors. The impact of COVID-19 has resulted in a shortage of some of these components. The components supply has now improved but still not returned to pre-COVID-19 levels. This could negatively impact the Company's ability to supply its products to customers, which could have an impact on revenue;
- the Company relies primarily on distributors, installers and providers of solar financing to assist in selling products to customers, and the failure of these customers to perform at the expected level, or at all, would have an adverse effect on the Company's business, financial condition and results of operations;
- mergers in the solar industry among the Company's current or potential customers may adversely affect its competitive position;
- the solar industry is highly competitive, and the Company expects to face increased competition as new and existing competitors introduce products or develop alternative technologies, which could negatively impact its business, financial condition and results of operations;
- the Company's microinverter products may not achieve broader market acceptance, which would prevent the Company from increasing its revenue and market share;
- the Company's recent and planned expansion into existing and new markets could subject it to additional business, financial and competitive risks;
- the Company may fail to capture customers in the new product and geographic markets that the Company is pursuing;
- if the Company fails to retain key personnel or if the Company fails to attract additional qualified personnel, the Company may not be able to achieve its anticipated level of growth and its business could suffer;
- any failure by management to properly manage growth could have a material adverse effect on its business, operating results, and financial condition;
- use of social media may materially and adversely affect the Company's reputation or subject it to fines or other penalties;
- the Company is subject to insurance-related risks;
- credit risk;
- liquidity risk;
- foreign currency risk;
- conflicts of interest;
- if the Company fails to protect or incur significant costs in defending its intellectual property and other proprietary rights, the Company's business and results of operations could be materially harmed;
- third parties may assert that the Company is infringing upon their intellectual property rights, which could divert management's attention, cause the Company to incur significant costs and prevent it from selling or using the technology to which such rights relate;
- the Company's failure to obtain the right to use necessary third-party intellectual property rights on reasonable terms, or the Company's failure to maintain, and comply with the terms and conditions applicable to these rights, could harm the Company's business and prospects;
- the Company may not be able to protect and enforce its trademarks and trade names, or build name recognition in our markets of interest thereby harming its competitive position;

- obtaining and maintaining patent protection depends on compliance with various required procedures, document submissions, fee payments and other requirements imposed by governmental patent agencies, and the Company's patent protection could be reduced or eliminated for non-compliance with these requirements;
- patent terms may be inadequate to protect the Company's competitive position on its products for an adequate amount of time;
- the Company relies on trade secrets;
- changes in laws and regulations;
- the Company's anticipated international sales subject us to additional risks that could adversely affect its business, results of operations and financial condition;
- the Company may be involved in legal proceedings from time to time and, while management cannot predict the outcomes of such proceedings and other contingencies with certainty, some of these outcomes could adversely affect the Company's business and financial condition;
- the reduction, elimination or expiration of government subsidies and economic incentives for on-grid solar electricity applications could reduce demand for solar PV systems and harm the Company's business;
- the Company's gross profit may fluctuate over time, which could impair the Company's ability to achieve or maintain profitability;
- the Company may be under pressure to reduce the prices of its products, which may adversely affect the Company's gross margins;
- a drop in the retail price of electricity derived from the utility grid or from alternative energy sources, or a change in utility pricing structures, may harm the Company's business, financial condition and results of operations;
- if the Company does not forecast demand for its products accurately, the Company may experience product shortages, delays in product shipment, excess product inventory, difficulties in planning expenses or disputes with suppliers, any of which will adversely affect the Company's business and financial condition;
- parties with whom the Company does business may be subject to insolvency risks or may otherwise become unable or unwilling to perform their obligations to the Company;
- natural disasters, public health events, significant disruptions of information technology systems, data security breaches, or other catastrophic events could adversely affect the Company's operations;
- general global economic conditions;
- access to capital;
- estimates or judgments relating to critical accounting policies;
- quarterly performance variation;
- market for the common shares;
- no history of payment of cash dividends;
- significant sales of common shares;
- analyst coverage; and
- tax issues.

Please refer to the Company's management's discussion and analysis for the years ended December 31, 2022 and 2021 (the "**Annual MD&A**") for a detailed description of the risk factors associated with the Company. The Annual MD&A may be found under the Company's SEDAR+ profile at www.sedarplus.ca.

Description of the Company's Business

The Company was incorporated under the *Business Corporations Act* (Ontario) on November 13, 2018. On December 31, 2021, the Company completed its qualifying transaction pursuant to the rules of the TSX Venture Exchange (the "**Qualifying Transaction**"), resulting in a reverse takeover of the Company by SPARQ Systems Inc. ("**SPARQ**"). The Qualifying Transaction was completed by way of a three-cornered amalgamation (the "**Amalgamation**") pursuant to which, among other things, (i) SPARQ amalgamated with a wholly-owned subsidiary of the Company, incorporated for the purposes

of the Amalgamation, pursuant to the provisions of the *Business Corporations Act* (Ontario), and (ii) all of the outstanding common shares in the capital of SPARQ (the “**SPARQ Shares**”) were cancelled and, in consideration therefor, the holders thereof received post-consolidation common shares in the capital of the Company on a 1:1 basis.

On January 1, 2023, the Company completed a short-form vertical amalgamation with SPARQ pursuant to the *Business Corporations Act* (Ontario) (the “**Vertical Amalgamation**”). Upon completion of the Vertical Amalgamation, the Company changed its name from “SPARQ Corp.” to “SPARQ Systems Inc.”

The Company designs and manufactures next generation single-phase microinverters for residential and commercial solar electric applications. The Company has developed a proprietary PV solution called the Quad; the Quad inverter optimizes four PV modules with a single microinverter, simplifying design and installation, and lowering cost for solar power installations when compared to existing market offerings.

The address of the Company’s registered and head office is 945 Princess Street, Box 212, Kingston, Ontario K7L 0E9. The common shares are listed for trading on the TSX Venture Exchange under the symbol “SPRQ” and the warrants issued pursuant to the Qualifying Transaction are listed for trading under the symbol “SPRQ.WT”. The common shares are also quoted for trading on the OTCQX® Best Market under the symbol “SPRQF”.

Highlights of the six months ended June 30, 2023 and to the date of this MD&A

- On March 20, 2023, the Company announced that its Chief Executive Officer, Dr. Praveen Jain, was one of the recipients of the 2023 Killam Prize. The Killam Prize is awarded annually to active Canadian scholars who have distinguished themselves through sustained research excellence, making a significant impact in their respective fields of engineering, health sciences, humanities, natural sciences and social sciences. Dr. Jain was awarded the 2023 Killam Prize in Engineering as a result of his contributions to the field of engineering in respect of power electronics over the past 43 years.
- On March 27, 2023, the Company entered into a sales and distribution agreement (the “**Distribution Agreement**”) with Rolaz Green Energy PVT. Ltd (“**Rolaz**”), a company based in India. Under the Distribution Agreement, the Company appointed Rolaz as its non-exclusive importer, vendor and distributor within the territory of India of all models of the Company’s microinverters and its interface Sparq Linq as well as any newly developed products of the Company. The Distribution Agreement provides that, unless terminated earlier pursuant to its terms, the term of the Distribution Agreement is one year and shall automatically renew for additional six month periods.

Results of Operations

For the three and six months ended June 30, 2023, the Company incurred a net loss and net comprehensive loss of \$950,904 and \$1,890,150, respectively, compared to a net loss and comprehensive loss of \$858,864 and \$1,724,591, respectively, for the three and six months ended June 30, 2022. The increased net loss and net comprehensive loss was due to an increase in expenses as described below.

Revenue

In Q2 2023, the Company commenced generating revenues under the Distribution Agreement with Rolaz (\$207,763 for the three and six months ended June 30, 2023). Previously, no revenues were earned as the Company remained in a research and development stage and was unable to build material quantities of inventory due to supply chain issues from the continued impact of COVID-19 and the lack of availability of supplies from China. The Company is reliant on these supplies for building its

inventory to fill orders and to generate revenue. The Company's plan to generate material revenue is contingent upon access to these supplies. The Company anticipates these supply chain issues to improve into Q3 2023.

Cost of Finished Goods Sold

During the three and six months ended June 30, 2023, the Company recognized cost of sales of \$186,843 and \$186,843, respectively, compared to \$nil and \$nil, respectively, for the three and six months ended June 30, 2022 (as no revenues were reported in 2022). During the three and six months ended June 30, 2023, the Company had an inventory write down charge of \$53,498 and \$89,978, respectively, (\$13,758 and \$48,538, respectively, for the three and six months ended June 30, 2022) representing a write off of finished goods and raw materials for items no longer expected to be manufactured and sold. The inventory is reviewed at the end of each reporting quarter to determine the amount of obsolescence.

Gross Profit

Gross profit on sales for the three and six months ended June 30, 2023 was \$20,920 and \$20,920 (excluding the write off of inventory for obsolescence of \$53,498 and \$89,978 for the three and six months ended June 30, 2023, that is included in cost of sales). The Company did not realize any gross profit in the three and six months ended June 30, 2022, as no revenues were generated.

Operating Expenses

For the three and six months ended June 30, 2023 and 2022, total operating expenses are detailed as follows:

Expenses		Three months ended June 30		Six months ended June 30,	
		2023	2022	2023	2022
Research and development	(i)	\$ 309,689	\$ 381,518	\$ 621,763	\$ 657,160
Sales and marketing	(ii)	3,829	1,541	23,135	2,592
General and administration	(iii)	529,917	300,195	1,039,158	650,978
Depreciation of property and equipment		24,902	5,909	40,097	11,209
Stock-based compensation	(iv)	74,376	185,670	148,752	412,843
		\$ 942,713	\$ 874,833	\$1,872,905	\$1,734,782

- (i) Research and development costs include building prototypes, certification, testing, salaries of personnel working on the projects, and consultants' fees. There was decrease for the three and six months ended June 30, 2023 of \$71,829 and \$35,397 compared to the same period in 2022. The variances in the costs are illustrated below.

Breakdown of research and development costs for the three and six months ended June 30, 2023 and June 30, 2022:

	Three months ended June 30,		Six months ended June 30,	
	2023	2022	2023	2022
Personnel	\$228,406	\$236,788	\$471,619	\$446,109
Professional fees	12,785	5,432	32,860	26,715
Beta Testing	-	6,124	12,057	25,048
Administration	2,037	4,928	3,899	19,964
Equipment Rental	17,269	7,717	17,269	14,824
Lab Supplies and Materials	21,838	27,605	40,325	30,086
Certification and Safety Testing	27,354	92,924	43,734	94,414
	\$309,689	\$381,518	\$621,763	\$657,160

- (ii) Sales and marketing costs relate to trade shows, costs of building a website, and developing and printing marketing materials. The increase in such costs for the three and six months ended June 30, 2023 compared to 2022 was \$2,288 and \$20,543, respectively, and was due to the retention of a new sales consultant.
- (iii) General and administration expenses are the costs incurred by the Company that are not directly related to the production of goods or services. These expenses items such as rent, utilities, office supplies, salaries of support staff, legal fees, accounting fees, insurance, and other general costs. The increase of \$229,723 and \$388,181, respectively, for the three and six months ended June 30, 2023 compared to the same period in 2022 are primarily due an increase in personnel to support operations.

Breakdown of general and administration costs for the three and six months ended June 30, 2023 and June 30, 2022:

	Three months ended June 30,		Six months ended June 30,	
	2023	2022	2023	2022
Professional fees	\$196,841	\$144,001	\$372,744	\$375,521
Salaries	243,619	58,667	472,204	109,475
Management share bonus	-	-	-	-
Office and general	72,684	47,000	145,133	83,784
Regulatory	16,773	50,527	49,077	82,198
	\$529,917	\$300,195	\$1,039,158	\$650,978

- (iv) Stock based compensation relates to the value of stock options issued that vested during the year and is a non-cash expense. The decrease in stock-based compensation was due to fewer options vesting in 2023.

Update on Use of Proceeds

In connection with the Qualifying Transaction, on December 22, 2021, SPARQ completed a brokered private placement of subscription receipts (each, a “**Subscription Receipt**”) at a price of \$0.50 per Subscription Receipt, pursuant to which SPARQ issued an aggregate of 20,000,000 Subscription Receipts for aggregate gross proceeds of \$10,000,000 (the “**Offering**”). The proceeds of the Offering were released to the Company from escrow upon the completion of the Qualifying Transaction. The Company has committed the use of proceeds from the Offering for research and development, regulatory certifications, inventory, sales and marketing, general administration, and for working capital and general corporate purposes.

The below table describes the differences between (i) the Company’s anticipated use of proceeds from the Offering as disclosed in the Company’s filing statement dated December 23, 2021; and (ii) the Company’s actual use of such proceeds, each as at June 30, 2023.

	<i>A</i>	<i>B</i>	<i>C</i>	<i>D = B + C</i>
Principal Use of Proceeds	Previous Disclosure Regarding Use of Proceeds in Filing Statement	Actual Use of Proceeds as at June 30, 2023	Remaining Use of Proceeds as at June 30, 2023	Anticipated Use of Proceeds
Research and Development	\$1,815,000	\$1,928,766	-	\$1,928,766
Regulatory Certifications	\$150,000	\$169,001	-	\$169,001
Inventory	\$4,374,000	\$2,517,976	\$856,024	\$3,374,000
Sales and Marketing	\$1,398,000	\$47,859	\$1,350,141	\$1,398,000
General and administration	\$1,255,000	\$2,247,503	\$7,497	\$2,255,000
Unallocated Working Capital	\$56,657	-	\$56,657	\$56,657
TOTAL	\$9,048,657	\$6,911,105	\$2,270,319	\$9,181,424

The expected use of net proceeds from the Offering represents the Company's current intentions based upon its present plans and business condition, which could change in the future as its plans and business conditions evolve. The amounts and timing of the actual use of the net proceeds will depend on multiple factors and there may be circumstances where, for sound business reasons, a reallocation of funds may be necessary in order for the Company to achieve its stated business objectives. The Company may also require additional funds in order to fulfill its expenditure requirements to meet existing and any new business objectives, and the Company expects to either issue additional securities or incur debt to do so.

Liquidity

As at June 30, 2023, the Company had working capital of \$4,336,614 (December 31, 2022 - \$6,330,604). The reduction in working capital resulted from cash used for operating activities. As the Company has just commenced generating revenues, it has been unable to generate sufficient amounts of cash and cash equivalents from its operations in the short term to meet its planned growth.

Cash used in operating activities during the six months ended June 30, 2023 was \$2,647,732 (June 30, 2022 - \$2,246,176). Cash outflows from operating activities mainly relate to the net loss for the periods and the negative impact of changes in working capital items. The increase in cash used in operating activities was due to the increase in expenses as described above.

There was no cash from financing activities in the three and six months ended June 30, 2023 and June 30, 2022.

During the six months ended June 30, 2023 and June 30, 2022, the Company used \$292,689 and \$37,762 in cash for the purchase of equipment in the respective periods.

Capital Resources

The Company regularly monitors and manages its capital resources to assess the liquidity necessary to fund operations and capacity expansion. As at June 30, 2023, the Company had a cash balance of \$1,647,106 and working capital of \$4,336,614.

As of the date of this MD&A, the Company's current resources are not anticipated to be sufficient to settle its current liabilities for the next 12 months. The Company currently does not have any

commitments for capital expenditures. However, management will need to raise the capital necessary to execute on its business objectives and to meet ongoing general and administrative requirement. The Company has been successful in the past at raising necessary funds but the timing and ability to do so will depend on the liquidity of the financial markets, economic conditions, as well as the acceptance by investors of small cap companies. There can be no guarantee that the Company will be able to secure any required financing.

Selected Quarterly Information (all amounts in accordance with IFRS)

The following table summarizes the Company's financial information for the last eight quarters:

Financial Results	Q2 2023 \$	Q1 2023 \$	Q4 2022 \$	Q3 2022 \$	Q2 2022 \$	Q1 2022 \$	Q4 2021 \$	Q3 2021 \$
Revenue	207,763	-	-	-	-	-	-	-
Gross Profit (Loss)	(32,578)	(36,480)	(291,011)	(35,380)	(13,758)	(34,780)	(19,894)	(2,014)
Total Expenses	942,713	999,672	1,643,245	876,531	874,833	859,949	6,587,873	462,232
Net Income (Loss)	(950,904)	(939,246)	(1,291,811)	(911,911)	(858,864)	(865,728)	(6,919,623)	(372,756)
Basic profit (loss) per share	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)	(0.16)	(0.01)
Fully-diluted profit (loss) per share	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)	(0.16)	(0.01)

The Company's level of activity and expenditures during a specific quarter have been influenced by the availability of working capital, the availability of additional external financing and the status of projects and level of expenditures required to complete them. Given the past start up phases of the Company, there has been no seasonality factors or other trends that have affected the quarterly results.

Proposed Transactions

As at the date of this MD&A there are no proposed transactions.

Off-balance Sheet Arrangements

As at the date of this MD&A, the Company does not have any off-balance sheet arrangements that have or are reasonably likely to have a current or future effect on the results of operations or financial condition of the Company.

Transactions Between Related Parties

- As at June 30, 2023, accounts payable and accrued liabilities included \$19,765 (June 30, 2022 - \$nil) was payable to a law firm, of which a partner is the Corporate Secretary of the Company, which are non-interest bearing, unsecured and due on demand.
- During the three and six months ended June 30, 2023, the Company was charged \$75,000 and \$150,000, respectively, (three and six months ended June 30, 2022 - \$75,000 and \$150,000, respectively) for consulting services provided by PE Consultants Inc., an entity which is controlled by Praveen Jain, the Chief Executive Officer of the Company. These expenses have been recorded in research and development and general and administrative expenses.
- During the three and six months ended June 30, 2023, the Company was charged \$9,000 and \$18,000, respectively, (three and six months ended June 30, 2022 - \$9,000 and \$18,000, respectively) for consulting services provided by CFO Advantage Inc., an entity which is controlled

by Kyle Appleby, the Chief Financial Officer of the Company. These expenses have been recorded in general and administrative expenses.

- (d) On June 16, 2022, the Company signed a manufacturing agreement (the “**Manufacturing Agreement**”) with Ti-Lane Precision Electronic Company Limited (“**Ti-Lane**”) to manufacture turn-key Q1200 microinverters for the Company on a high volume basis at Ti-Lane’s facility based in Guangdong Province, China. The Manufacturing Agreement has an initial term of three years and will automatically renew for additional one year terms after expiration of the initial term unless terminated earlier by either the Company or Ti-Lane. Ti-Lane is a shareholder in the Company and is controlled by Baojun (Robbie) Luo, one of the Company’s directors. During the six months ended June 30, 2023, the Company was charged \$589,909 (June 30, 2022 - \$nil) by Ti-Lane.
- (e) Transactions with related parties are incurred during the course of normal operations and initially recorded at fair value. Key management includes directors and officers of the Company. Compensation awarded to key management was comprised of the following for the three and six months ended June 30, 2023 and 2022:

	Three months ended June 30		Six months ended June 30	
	2023	2022	2023	2022
Short-term compensation	\$ 84,000	\$ 84,000	\$ 168,000	\$ 168,000
Share-based payments	46,902	185,670	93,804	412,843
Total	\$ 130,902	\$ 269,670	\$ 261,804	\$ 580,843

Risks and Uncertainties

The Company’s business is subject to a number of risk factors which are described in detail in the Annual MD&A. See “Forward-looking Statements” above for a summary of such risk factors.

Financial Risk Management

The Company is exposed in varying degrees to a variety of financial instrument related risks. The Company mitigates these risks by assessing, monitoring and approving the Company’s risk management processes:

(a) Credit risk

Credit risk is the risk of a potential loss to the Company if one party of a financial instrument fails to meet its contractual obligations. The maximum credit exposure as at June 30, 2023 relates to the carrying amount of cash and cash equivalents, accounts receivable, investment tax credit recoverable, and government assistance receivable. To reduce credit risk, all significant cash balances are placed with major financial institutions and accounts receivable, investment tax credit receivable and government assistance receivable is due from the Government of Canada and therefore credit risk is low.

The Company provides credit to its customers in the normal course of its operations. It carries out, on a continuing basis, credit checks on its clients and maintains provisions for contingent credit losses which, once they materialize, are consistent with management’s forecasts. The maximum exposure to credit risk is the carrying value of the accounts receivable. The Company does not normally require a guarantee. As at June 30, 2023, 0% of the Company’s accounts receivables were comprised of overdue balances from customers (December 31, 2022- 0%).

The Company’s expected credit loss allowance is estimated using historical loss information, current industry conditions and payment practices, as well as reasonable and supportable forecasts of future economic conditions. Credit risk is assessed based on days outstanding and utilizes both internal credit assessments and publicly available credit information. As a result, the allowance reflects anticipated effects caused by recent market deterioration. As at June 30, 2023, the current expected credit loss allowance was \$nil (December 31, 2022 - \$nil).

(b) Liquidity risk

Liquidity risk is the risk that the Company will not be able to meet its financial obligations associated with financial liabilities. The Company manages liquidity risk through the effective management of its capital structure. The Company's approach to managing liquidity is to ensure that it will have sufficient liquidity at all times to settle obligations and liabilities when due. The Company has the following contractual obligations:

	Less than 1 year \$	1 to 3 years \$	3 to 5 years \$	Greater than 5 years \$	Total \$
Accounts payable and accrued liabilities	916,156	-	-	-	916,156
CEBA Term Loan	-	38,196	-	-	38,196
December 31, 2022	916,156	38,196	-	-	954,352

	Less than 1 year \$	1 to 3 years \$	3 to 5 years \$	Greater than 5 years \$	Total \$
Accounts payable and accrued liabilities	889,457	-	-	-	889,457
CEBA Term Loan	-	38,196	-	-	38,196
June 30, 2023	889,457	38,196	-	-	927,653

(c) Interest rate risk

Interest rate risk relates to the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market interest rates. The Company's financial liabilities are non-interest bearing as at June 30, 2023, and therefore the Company is not exposed to interest rate risk.

(d) Foreign exchange risk

The Company is exposed to foreign exchange risk from various currencies, primarily the US dollar. Foreign exchange risk arises from sales and purchase transactions as well as recognized financial assets and liabilities that are denominated in a currency other than the Canadian dollar, which is the functional currency of the Company.

The Company's primary objective in managing its foreign exchange risk is to preserve sales values and cash flows and reduce variations in performance. Although management monitors exposure to such fluctuations, it does not employ any external hedging strategies to counteract the foreign currency fluctuations.

The following amounts were denominated in foreign currency:

	Currency	June 30, 2023	December 31, 2022
Cash	US Dollar	\$ 16,966	\$ 20,089
Accounts Receivable	US Dollar	\$ 214,778	\$ 5,685
Accounts Payable	US Dollar	\$ 433,440	\$ 516,824

On June 30, 2023, an increase of 1% in the value of US dollar will result in a gain of \$169 (December 31, 2022 - \$272) in the value of cash, \$2,147 (December 31, 2022 - \$56) in accounts receivable and loss of \$4,334 (December 31, 2022 - \$5,160) in accounts payable. Similarly, a decrease of 1% in the value of US dollar will have similar effects but in opposite direction.

Critical Accounting Estimates

Estimated Useful Lives and Depreciation of Property and Equipment

Depreciation of property and equipment is dependent upon estimates of useful lives which are determined through the exercise of judgment. The assessment of any impairment of these assets is dependent upon estimates of recoverable amounts that take into account factors such as economic and market conditions and the useful lives of assets.

Valuation of Deferred Tax Assets

Deferred tax assets, including those arising from tax loss carryforwards, require management to assess the likelihood that the Company will generate sufficient taxable income in future periods in order to utilize recognized deferred tax assets. Assumptions about the generation of future taxable profits depend on management's estimates of future cash flows. In addition, future changes in tax laws could limit the ability of the Company to obtain tax deductions in future periods. To the extent that future cash flows and taxable income differ significantly from estimates, the ability of the Company to realize the net deferred tax assets recorded at the reporting date could be impacted.

Going Concern Risk Assessment

The assessment of the Company's ability to continue as a going concern and meet its liabilities for the ensuing year involves significant judgment based on expectation of future events that are believed to be reasonable under the circumstances.

Valuation of Research and Development Costs and Tax Credits

The Company claims investment tax credits as a result of incurring scientific research and experimental development expenditures. Investment tax credits are recognized when the related expenditures are incurred, and there is reasonable assurance of their realization. Management has made a number of estimates and assumptions in determining the expenditures eligible for the investment tax credit claim. The Company's claim is subject to audit by Canada Revenue Agency which may allow more than the amount recorded or may disallow all or a portion of the amount recorded.

Fair Value of Stock Options

Stock-based compensation expense is measured by reference to the fair value of the stock options at the date at which they are granted. Estimating fair value for granted stock options requires determining the most appropriate valuation model which is dependent on the terms and conditions of the grant. This estimate also requires determining the most appropriate inputs to the valuation model including the expected life of the option, volatility, dividend yield, interest rate, and rate of forfeitures and making assumptions about them. Expected volatility is estimated using price history of comparable companies that are publicly listed over the expected life of the options granted.

Expected Credit Losses

The Company's accounts receivables are typically short-term in nature, with the exception of holdbacks and the Company recognized an amount equal to the lifetime expected credit losses ("ECLs"). The Company measures ECLs based on historical experience and forecasted economic conditions. The amount of the ECLs is sensitive to changes in future circumstance and economic conditions.

Valuation of Inventory

The Company's inventory is valued at the lower of average cost or net realizable value and management makes an estimate for any item that cannot be sold. If realization of inventory values differs from estimates, future earnings would be affected.

Outstanding Share Data

The authorized capital of the Company consists of an unlimited number of common shares. The Company has the following securities issued and outstanding as at the date of this MD&A:

Securities	Number Outstanding
Common shares	82,444,752
Options ⁽¹⁾	6,492,000
Warrants ⁽²⁾	20,000,000
Compensation Options ⁽³⁾	1,258,250

Notes:

(1) The Company has an omnibus equity incentive plan (the “**Equity Incentive Plan**”), which replaced the Company’s existing stock option plan effective June 1, 2022. Under the terms of the Equity Incentive Plan, officers, directors, employees and consultants are eligible to receive grants of stock options, deferred share units, restricted share units, performance share units, and other share-based awards. The Equity Incentive Plan allows for (a) the grant of up to such number of stock options as is equal 10% of the total issued and outstanding common shares at the date of the grant; and (b) the grant of other forms of equity incentive awards such that up to an aggregate maximum of 8,244,475 common shares may be issuable pursuant to those awards.

(2) Issued upon the conversion of the Subscription Receipts that were issued pursuant to the Offering. Each warrant is exercisable into one common share at a price of \$0.75 per share for a period of 24 months from the date of issuance.

(3) Issued to Echelon Capital Markets and members of the selling group as partial compensation for their services provided in the Offering. Each compensation option is exercisable into one common share and one warrant, with each such warrant entitling the holder thereof to acquire one common share at an exercise price of \$0.75 per share for a period of 24 months from the date of issuance.

Internal Control Over Financial Reporting

Management has established processes to provide them with sufficient knowledge to support representations that they have exercised reasonable diligence to ensure that (i) the financial statements do not contain any untrue statement of material fact or omit to state a material fact required to be stated or that is necessary to make a statement not misleading in light of the circumstances under which it is made, as of the date of and for the periods presented by the financial statements; and (ii) the financial statements fairly present in all material respects the financial condition, results of operations and cash flows of the Company, as of the date at and for the periods presented.

In contrast to the certificate required for non-venture issuers under National Instrument 52-109 *Certification of Disclosure in Issuers’ Annual and Interim Filings* (“**NI 52-109**”), the Company uses the Venture Issuer Basic Certificate, which does not include representations relating to the establishment and maintenance of disclosure controls and procedures (“**DC&P**”) and internal control over financial reporting (“**ICFR**”), as defined in NI 52-109. In particular, the certifying officers filing this certificate are not making any representations relating to the establishment and maintenance of:

1. controls and other procedures designed to provide reasonable assurance that information required to be disclosed by the issuer 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
2. a process to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with the issuer’s generally accepted accounting principles (IFRS). The Company’s certifying officers are responsible for ensuring that processes are in place to provide them with sufficient knowledge to support the representations they are making in this certificate.

Investors should be aware that 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 as defined in NI 52-109 may result in additional risks to the quality, reliability, transparency and timeliness of interim and annual filings and other reports provided under securities legislation.

Additional Information

Additional information relating to the Company can be found on SEDAR+ at www.sedarplus.ca.

Approval

The Board of Directors has approved the disclosure contained in this MD&A.