



**MANAGEMENT DISCUSSION AND  
ANALYSIS**

For the year ended December 31, 2022

April 28, 2023

The following management's discussion and analysis ("**MD&A**") of the financial condition and results of the operations of SHARC International Systems Inc. (the "**Company**" or "**SHARC Energy**") constitutes management's review of the factors that affected the Company's financial and operating performance for the year ended December 31, 2022. This MD&A has been prepared in compliance with the requirements of National Instrument 51-102 – Continuous Disclosure Obligations. The discussion should be read in conjunction with the audited financial statements of the Company for the years ended December 31, 2022 and 2021, together with the notes thereto. Results are reported in Canadian dollars, unless otherwise noted. In the opinion of management, all adjustments (which consist only of normal recurring adjustments) considered necessary for a fair presentation have been included. The result for the year ended December 31, 2022 are not necessarily indicative of the results that may be expected for any future period. Information contained herein is presented as at April 28, 2023 unless otherwise indicated.

The consolidated financial statements for the year ended December 31, 2022, have been prepared using accounting policies consistent with International Financial Reporting Standards ("**IFRS**") as issued by the International Accounting Standards Board ("**IASB**") and interpretations issued by the International Financial Reporting Interpretations Committee ("**IFRIC**").

For the purposes of preparing this MD&A, management, in conjunction with the Board of Directors, considers the materiality of information. Information is considered material if: (i) such information results in, or would reasonably be expected to result in, a significant change in the market price or value of SHARC Energy's common shares; or (ii) there is a substantial likelihood that a reasonable investor would consider it important in making an investment decision; or (iii) it would significantly alter the total mix of information available to investors. Management, in conjunction with the Board of Directors, evaluates materiality with reference to all relevant circumstances, including potential market sensitivity.

Further information about the Company and its operations is available on SEDAR at [www.sedar.com](http://www.sedar.com).

### **Caution Regarding Forward-Looking Statements**

This MD&A contains certain forward-looking information and forward-looking statements, as defined in applicable securities laws (collectively referred to herein as "forward-looking statements"). These statements relate to future events or the Company's future performance. All statements other than statements of historical fact are forward-looking statements. Often, but not always, forward-looking statements can be identified by the use of words such as "plans", "expects", "is expected", "budget", "scheduled", "estimates", "continues", "forecasts", "projects", "predicts", "intends", "anticipates" or "believes", or variations of, or the negatives of, such words and phrases, or state that certain actions, events or results "may", "could", "would", "should", "might" or "will" be taken, occur or be achieved. Forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause actual results to differ materially from those anticipated in such forward-looking statements. The forward-looking statements in this MD&A speak only as of the date of this MD&A or as of the date specified in such statement.

Forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause SHARC Energy's actual results, performance, or achievements to be materially different from any of its future results, performance or achievements expressed or implied by forward-looking statements. All forward-looking statements herein are qualified by this cautionary statement. Accordingly, readers should not place undue reliance on forward-looking statements. The Company undertakes no obligation to update publicly or otherwise revise any forward-looking statements, whether because of new information or future events or otherwise, except as may be required by law. If the Company does update one or more forward-

looking statements, no inference should be drawn that it will make additional updates with respect to those or other forward-looking statements, unless required by law.

## Corporate Information

The Company was incorporated under the Business Corporations Act (British Columbia) on February 4th, 2011. SHARC Energy is publicly traded in Canada ([CSE:SHRC](#)), the United States ([OTCQB:INTWF](#)) and Germany ([Frankfurt:IWIA](#)). The head office of the Company is located at 1443 Spitfire Place, Port Coquitlam, British Columbia, V3C 6L4 and the registered and records office of the Company is located at 1443 Spitfire Place, Port Coquitlam, British Columbia, Canada, V3C 6L4.

The Company's wholly owned subsidiary, SHARC Energy Systems Inc. ("**SES**") was incorporated under the Business Corporations Act (British Columbia) on May 30th, 2011. On October 27th, 2015, the Company completed the acquisition (the "**Acquisition**") of SES pursuant to a share exchange agreement dated September 4th, 2015. The Acquisition constituted a reverse takeover ("**RTO**").

The Company either wholly owns or owns a percentage of the following subsidiaries located in Canada and the United States:

Company	Location	December 31,	December 31,
		2022	2021
		Ownership	Ownership
		%	%
SHARC Energy Systems Inc. ("SES")	Canada	100	100
2336882 Ontario Inc. <sup>(1)</sup>	Canada	-	100
SHARC Energy (US) Systems Inc. ("SHARC US") <sup>(2)</sup>	United States	100	-

<sup>(1)</sup>The subsidiary was dissolved and was inactive prior to dissolution.

<sup>(2)</sup>The subsidiary was created and incorporated in the State of Delaware on January 5, 2022.

## Highlights

- i. **Sales Order Backlog and Sales Pipeline.** As at April 28, 2023, the Company reported a Sales Order Backlog of \$1.78M and a Sales Pipeline of \$14.38M. This represents a 40% and 123% increase, respectively, from the previous disclosure on November 29, 2022. Please refer to Alternative Performance Measurements below for more information on Sales Order Backlog and Sales Order Pipeline.
- ii. **False Creek Neighbourhood Energy Utility ("NEU") Expansion.** During the three months ended December 31, 2022, the Company commenced work on the supply and maintenance agreement with the City of Vancouver for the provision and maintenance of five SHARC systems for the False Creek NEU Expansion. This project is expected to increase the capacity of the current 3.2MW Wastewater Energy Transfer ("**WET**") system to 9.8MW, making it the largest operating WET project in North America upon completion, with an additional carbon emission reduction of an estimated 4,400 tonnes per year. The project is expected to be completed in Q2/Q3 2023.
- iii. **Sustainable Living Innovations ("SLI").** SHARC Energy's PIRANHA and PIRANHA HC T5, T10 and T15 WET Systems has been selected by SLI for six new projects in design or under construction. The Company has received a purchase order from California-Columbia Hydronics Corporation ("**CHC**") for the first of six projects, which is a PIRANHA T5 HC for SLI's new project in Seattle at 8601 Aurora Avenue. The PIRANHA unit for this first project was shipped in Q4 2022. The remaining five projects currently in the design phase are anticipated to use a mix of 7 PIRANHA and PIRANHA HC T10 and T15's for the various project's heating and cooling needs and have expected shipment dates in 2024.

- iv. **Seattle SHARC WET System.** SHARC Energy has received a purchase order from CHC for a SHARC WET system that will be installed in the heart of Seattle, a few minutes from the Space Needle, marking the first SHARC WET system showcasing the power of wastewater in the heart of the Pacific Northwest USA. The SHARC unit shipped to the project in Q4 2022.
- v. **lelorn.** A 1,200 residential unit master planned development's heating and cooling needs will be met by utilizing a SHARC Energy low-carbon wastewater energy exchange system as part of a centralized energy facility. The system installation and commissioning completed in Q1 2022.
- vi. **PIRANHAs in Canada's Capital.** HTS Ontario, a representative of SHARC Energy products, have been selected to supply two PIRANHA T15 WET systems to be installed in Ottawa. These units will help a new housing complex recover the thermal energy from wastewater. This project represents the second PIRANHA site in Ottawa, Ontario. The units shipped in Q1 2023.
- vii. **Snowmass Base Village, Colorado to install PIRANHA.** A PIRANHA T15 WET system will be installed in Aura's 21 slope-side residences, powered 100% by renewable energy resources within the residential building. Aura's team is led by East West Partners, a developer of high-end mountain resort communities, and supported by SHARC Energy's Colorado distributor, LONG Building Technologies. It is anticipated this unit will ship in Q2 2023.
- viii. **Partnership with Salas O'Brien.** The Company has entered into an agreement with Salas O'Brien, an employee-owned engineering firm with 55 offices, 1,600+ team members and more than 360 registered professionals. Together, the companies intend to establish and cultivate a collaborative and strategic relationship that will support the market with turnkey solutions tailored to carbon reduction and energy efficiency goals (the "**Agreement**"). SHARC Energy anticipates that this relationship will help accelerate the growth of the WET industry and accordingly, generate accretive pipeline growth of SHARC Energy WET systems.
- ix. **Partnership with Subterra Renewables.** The Company and Subterra Capital Partners Inc. ("**Subterra Renewables**"), a leading full-service geothermal drilling provider with a proprietary Energy-as-a-Service ("**EaaS**") model known as Aura™, announced on April 27, 2023, a strategic partnership to revolutionize the renewable thermal energy transfer landscape across North America. By combining SHARC Energy's innovative WET technology with Subterra's geothermal exchange systems ("**Systems**"), the partnership aims to bring unparalleled solutions to the market, capturing a greater share for both companies.
- x. **\$2.29 Million (M) raised through security exercises.** Since the beginning of 2022 to the date of the MD&A, the Company raised \$2.15M through the exercise of stock options and warrants and \$0.14M through the exercise of debenture warrants.
- xi. **Quarter over Quarter Results.** During the three months ended December 31, 2022, the Company reported revenues of \$0.81M, a loss of \$1.27M and an Adjusted EBITDA loss of \$0.77M. Revenue decreased 17% over revenue comparative in 2021 of \$0.98M, the loss increased 65% over comparative in 2021 of \$0.78M and Adjusted EBITDA loss increased by 79% over the 2021 comparative of an Adjusted EBITDA earnings of \$0.38M.
- xii. **Year over Year Results.** During the year ended December 31, 2022, the Company reported revenues of \$1.94M, a loss of \$4.82M and an Adjusted EBITDA loss of \$2.62M. Revenue decreased 28% over revenue comparative in 2021 of \$2.7M, the loss increased 58% over comparative in 2021 of \$3.04M and Adjusted EBITDA loss increased 86% over 2021 comparative of \$1.41M.

## Core Business

SHARC Energy is changing the way we think about wastewater. One of the biggest challenges facing climate action is how the world will reduce carbon pollution associated with heating and hot water production in an economic and efficient way. SHARC Energy's systems can help with that. The Company provides users of its solutions the opportunity to use wastewater for the purposes of creating low carbon and energy efficient heating and cooling. In using wastewater for thermal energy transfer, SHARC Energy's systems provides the following opportunities:

- Significantly reducing the carbon emissions from current hot water production or space heating process.
- Operational and upfront capital cost savings through decreased utility bills, carbon tax, maintenance costs paid and upfront capital costs associated with alternative solutions.
- Freshwater savings in cooling towers and improved efficiency of cooling processes

SHARC Energy is considered a pioneer in wastewater energy transfer, an industry very much in its infancy. To the Company's knowledge, SHARC Energy is the only wastewater energy transfer company with several solutions that can address the thermal energy transfer needs of commercial, industrial, and multi-family residential buildings, as well as district energy systems. The solutions are scalable in size depending on access to wastewater flow and output requirements. The Company's business has been built through advocating and promoting the industry for over 10 years, patented and proprietary technology and the delivery and installation of over 25 installations in 4 countries including the current largest wastewater district energy system in North America.

## Overview of the Wastewater Energy Transfer Business

SHARC Energy supplies and services WET systems that provide the opportunity for recovering thermal energy from wastewater or rejecting thermal energy into wastewater for the purpose of creating low carbon and electrically efficient heating and cooling systems. These systems can be used by industrial, commercial or multi-family residential buildings to offset and significantly reduce the energy requirements and carbon emissions associated with heating and cooling.

SHARC WET systems, which are patented in Canada, can filter high volumes of wastewater flow for the purposes of extracting or rejecting thermal energy from or into wastewater. These systems are customer specific and typically paired with a heating or cooling process enabler such as a heat pump, air handler, chiller, etc. that are sold separately. A single SHARC system sale can vary depending on the size and scope of the project, with larger systems for larger capacities of wastewater and output achieved by supplying additional systems which in parallel drive multiples in sales value accordingly. The mix of models, scope and geography of each project impacts the overall sales revenue and margin.

Examples of SHARC WET system projects would be, but not limited too, WET district energy, micro-grids, large commercial and mix-use building developments and industrial applications like commercial laundry, food processing, pulp and paper and textiles manufacturing.

These projects typically require detailed design support from third-party engineering firms and are developed and installed by mechanical contractors. SHARC systems are typically involved in a request for proposal ("RFP") process and can be the specified system in the RFP process. SHARC Energy's ability to supply equipment is subject to the progress of the bid, specification, design and build phases and therefore, these projects tend to have a longer sales cycle of 24 months or longer.

A PIRANHA WET system, which is a self-contained WET heat pump, can offset electric or natural gas boilers used in hot water production up to 100% while providing some air conditioning as a by-product of hot water production. These systems come in three sizes and two models and are sized accordingly based on the hot water demand for the implementation. A PIRANHA system requires a wastewater storage tank and solids pump that flows wastewater systematically through the PIRANHA to produce hot water. These systems are applicable for new build or retrofit implementations. A single PIRANHA system ranges in price depending on the size and model, with larger hot water demand achieved by supplying additional PIRANHA systems which in parallel drive multiples in sales value accordingly. The implementation and related costs of the PIRANHA system is site specific and subject to considerations such as available access to exiting wastewater pipes, space for installation and access or proximity to the mechanical or boiler room.

Examples of PIRANHA WET system projects would be, but not limited too, an apartment building, hospitals, hotel, commercial laundry, breweries, distilleries, recreation facilities such as ice rinks, gyms and pools, senior care facilities and some industrial applications.

The Company currently sells its systems through a mix of direct and indirect sales channels. Direct sales team members are employed or contracted by SHARC Energy and help generate leads and manage the indirect sales network. The indirect sales network consists of Representatives and independent sales representatives ("ISR") that operate on a resale or commission only basis. This provides SHARC Energy with a lower upfront cost model and provides extended market coverage across North America and some foreign regions while SHARC Energy continues to build awareness of the opportunity of wastewater.

SHARC Energy maintains a pipeline of prospective projects that it updates regularly to ensure that it is reflective of the sales opportunities that can convert into orders within approximately a rolling 24-month time horizon ("**Sales Pipeline**"). Not all these potential projects will proceed or proceed within the expected timeframe and not all the projects that do proceed will be awarded to SHARC Energy. Additions and reductions are discussed in greater detail below in Alternative Performance Measures.

The market for SHARC Energy's products is expected to grow as an increasing number of organizations and individuals seek out solutions to meet their sustainability goals and governments around the world enact and strengthen environmental policies designed to combat climate change by promoting the adoption of low carbon and electrically efficient heating and cooling solutions.

## Overview For the Year Ended December 31, 2022 and Subsequent Events

### Financial Developments

#### **i. Exercise of Warrants and Stock Options for Gross Proceeds of \$2.15M**

During the year ended December 31, 2022, the Company issued 2,657,381 common shares pursuant to the exercise of stock options and warrants for aggregate gross proceeds of \$619,096.

Subsequent to December 31, 2022, the Company issued 7,645,000 common shares pursuant to the exercise of warrants for aggregate gross proceeds of \$1,529,000.

#### **ii. Conversion of Convertible Debt Face Value of \$2.35M and Exercise of Debenture Warrants for Gross Proceeds of \$0.14M**

During the year ended December 31, 2022, the Company issued 3,240,625 common shares pursuant to the conversion of \$850,000 of convertible debt. Furthermore, 58 debenture warrants

were exercised for total proceeds of \$58,000. Upon issuance, the debentures were immediately converted into 546,667 common shares.

Subsequent to December 31, 2022, the Company issued 14,905,000 common shares pursuant to the conversion of \$1,500,500 of convertible debt. Furthermore, 79 debenture warrants were exercised for total proceeds of \$79,000. Upon issuance, the debentures were immediately converted into 790,000 common shares.

**iii. Extinguishment of 8% March 8, May 3, and June 28, 2022 Maturing Convertible Debt**

During the year ended December 31, 2022, the Company repaid \$815,000 of principal and outstanding interest related to 8% March 8, May 3, and June 28, 2022 maturing convertible debt. Along with the above conversions, this represents extinguishment of 100% of the outstanding debt.

**iv. Extinguishment of 2% February 13 and February 24, 2023 Maturing Convertible Debt**

Subsequent to December 31, 2022, the Company fully retired the 2% February 13 and February 24 maturing convertible debt via conversion into common shares as mentioned above.

**Operational Developments**

**i. Sales Order Backlog and Sales Pipeline Disclosure.**

As at May 1, 2023, the Company reported a Sales Order Backlog of \$1.78M and a Sales Pipeline of \$14.38M. Please refer to Alternative Performance Measurements below for more information on Sales Order Backlog and Sales Order Pipeline.

**ii. False Creek NEU Expansion**

The Company has entered into a Supply and Maintenance Agreement with the City of Vancouver, for the provision and maintenance of five SHARC Systems for the False Creek NEU Expansion. The expansion is expected to increase the capacity of the current 3.2MW of WET system to 9.8MW—**making it the largest WET project in North America, with an additional carbon emission reduction of an estimated 4,400 tonnes a year, upon completion in 2023.**

Under the Agreement, SHARC Energy will supply and commission five SHARC systems to perform sewage screening for the False Creek NEU and, subsequently, maintain these systems for five years with a City option for an additional five years. These systems will be paired with the current 3.2MW sewage-to-water heat pump in operation plus two new 3.3MW heat pumps.

The False Creek NEU began operation in 2010 and has rapidly expanded to serve over 600,000 square metres of residential, commercial and institutional space including Science World and Emily Carr University. In accordance with the 2018 NEU expansion plan, the False Creek NEU will continue to expand to serve over 1,900,000 square metres of new development in Southeast False Creek, Mount Pleasant, the False Creek Flats and Northeast False Creek. The NEU targets 70% of its energy supply to come from renewable energy sources with a goal of 100% renewable energy by 2030 as a part of the Climate Emergency Action Plan. The utility is self-funded, simultaneously providing affordable rates to customers and a return on investment to City taxpayers.

SHARC Energy began working with the City in 2017 when it retrofitted two SHARC systems for sewage screening into the False Creek NEU as a pilot. Upon successful demonstration, the Company entered a lease on these units with the City of Vancouver which is now being replaced with the expansion of the system—demonstrating the important role that wastewater energy transfer plays in renewable energy and reducing carbon emissions.

“This project is a crucial step forward to ensure the NEU can continue to provide reliable, cost effective, low carbon energy to the growing network of connected buildings. We are excited to be able to leverage the local innovation and expertise offered by SHARC for screening in-coming sewage, a crucial step in the sewage heat recovery process.” says City of Vancouver NEU Manager Derek Pope.

“We have seen firsthand through a successful pilot demonstration the high performance of the SHARC system and look forward to continued collaboration through this agreement as we work to transition away from fossil fuels to a more sustainable future.”

Delivery of the contract milestones commenced in Q4 2022 with an anticipated shipment and commissioning date in Q2/Q3 2023.

iii. **SLI**

SHARC Energy's PIRANHA and PIRANHA HC T5, T10 and T15 WET Systems has been selected by SLI for six new projects in design or under construction. The Company has received a purchase order from CHC for the first of six projects, which is a PIRANHA T5 HC for SLI's new project in Seattle at 8601 Aurora Avenue. The unit for 8601 Aurora Avenue shipped in Q4 2022.

Seattle-based Sustainable Living Innovations, Inc. uses patent-protected panelized pre-fabricated building technology and cutting-edge energy-saving systems to construct some of the world's most carbon-neutral residential buildings. Sustainable Living Innovations installed SHARC Energy's PIRANHA T15 in their 303 Battery project in Seattle, which contributed to the residential tower being the first multifamily tower in the world certified as Net Zero Energy by the International Living Future Institute.

“The inclusion of PIRANHA and PIRANHA HC T5, T10, and T15 WET Systems in SLI's residential projects is a testament to how SHARC Energy's technology, which transfers thermal energy using wastewater as a source, can help curb carbon emissions while producing reduced costs for multi-family residential heating and cooling. We are pleased to support SLI's mission to construct the most environmentally sustainable residential buildings globally,” says **Lynn Mueller, Chief Executive Officer, SHARC Energy**.

The remaining five projects currently in the design phase are anticipated to use a mix of 7 PIRANHA and PIRANHA HC T10 and T15's for the various project's heating and cooling needs and have expected shipment dates in 2024.



iv. **Seattle and King County SHARC WET System**

SHARC Energy has received a purchase order from CHC for a SHARC WET system that will be installed in the heart of Seattle, a few minutes from the Space Needle, marking the first SHARC WET system showcasing the power of wastewater in the heart of the Pacific Northwest USA.

The project will be taking advantage of the King County Wastewater Heat Recovery Pilot Project program being pioneered by the King County Wastewater Treatment Division. The pilot program provides for no WET fees to be charged in exchange for the operational data of the WET systems for the first three years of operation. This pilot program is the first of its kind in North America. Seattle is the latest US city demonstrating global leadership in addressing climate action with innovative solutions to address the carbon emission reduction required to curb climate action.

This system shipped in Q4 2022.

v. **leləm**

leləm, which means home in the Musqueam language həh̓qəmiḥəm, is a master planned community in the University Endowment Lands developed by Musqueam Capital Corporation. The 1,200 residential unit development's heating and cooling needs will be met by utilizing a SHARC Energy low-carbon wastewater energy exchange system as part of a centralized energy facility.

The development is consistent with the recommendations of the United Nations Environment Programme (UNEP) which has identified low carbon district energy systems as a best practice to addressing the global climate challenge. The report states a transition to such systems, combined with energy efficiency measures, could contribute as much as 58 per cent of the carbon dioxide (CO<sub>2</sub>) emission reductions required in the energy sector by 2050 to keep global temperature rise to within 2-3 degrees Celsius.

District energy systems utilizing wastewater energy like the leləm project will benefit from significant carbon savings, energy efficiency and freshwater savings compared to current standards. As witnessed by the recent heat waves in British Columbia, balancing both heating and cooling loads globally is critical. Wastewater based district energy systems can provide consistent year-round environmental and operating efficiencies to both heating and cooling loads.

The system installation and commissioning completed in Q1 2022.

vi. **PIRANHAs in Canada's Capital**

HTS Ontario, a representative of SHARC Energy products, have been selected to supply two PIRANHA T15 WET systems to be installed in Ottawa. These units will help a new housing complex recover the thermal energy from wastewater. This project represents the second PIRANHA site in Ottawa, Ontario. The units are expected to ship in the fourth quarter of 2022.

This deal is a key milestone as it marks the beginning of HTS's growing SHARC Energy pipeline turning over and it validates the Company's strategy to support and leverage its representative network to help grow awareness and sales for its products in key markets.

The units were shipped to site Q1 2023.

vii. **Snowmass Base Village, Colorado installs PIRANHA**

A PIRANHA T15 WET system will be installed in Aura's 21 slope-side residences, powered 100% by renewable energy resources within the residential building. Aura's team is led by East West Partners, a developer of high-end mountain resort communities, and supported by SHARC Energy's Colorado distributor, LONG Building Technologies. It is anticipated this unit will ship in Q2 2023.

Once completed, Aura will be the fourth installation of a SHARC system in Colorado, supporting the state's goal of reducing carbon emissions by 90% from the building sector by 2050. SHARC Energy's PIRANHA systems are installed in the Boulder Commons Phase II project, a 98,000-square-foot development consisting of offices and multi-family residential buildings and 30PRL Apartments, a 120-unit affordable housing project in Boulder. The SHARC series, an industrial-sized WET system is installed in National Western Center.

viii. **First Bite of the Big Apple**

SHARC Energy is supporting **Egg Geo, LLC**, a global leader in geothermal, in the first proposed combined WET and geothermal system in the world. This innovative and groundbreaking system will utilize thermal energy transfer from the ground and wastewater to provide 100 percent of the heating, hot water and cooling load for 316 affordable housing units in two - 20 story multi-family towers. This one-of-a-kind project will be located in the Bronx, New York.

This innovative combination of solutions is pioneering a blueprint for the world to follow. The benefits of a combined SHARC WET and geothermal system compared to a standalone geothermal system is as follows:

- The upfront capital cost is significantly reduced as the designed combined system will no longer require as large of a borefield to meet the projects energy needs.
- The smaller borefield allows for geothermal projects to become both financially and technically viable in densely populated urban centers, that have limited space.
- The system can provide 100% of the heating, cooling and hot water needs in extreme weather conditions.
- The installation is weather resilient as all equipment is indoors or below ground.
- There is no longer a need for cooling tower and cooling tower maintenance which reduces cost and opens up valuable rooftop space.

ix. **Partnership with Salas O'Brien**

The Company has entered into the Agreement with **Salas O'Brien**, an employee-owned engineering firm with 55 offices, 1,600+ team members and more than 360 registered professionals. Together, the companies intend to establish and cultivate a collaborative and strategic relationship that will support the market with turnkey solutions tailored to carbon reduction and energy efficiency goals.

Since entering the Agreement, Salas O'Brien and SHARC Energy have been developing their relationship and building opportunity for not only standalone WET systems, but also WET and

Geothermal paired systems across North America. The companies are currently engaged on several projects.

As part of Salas's commitment to the Wastewater Energy Transfer industry, the organization has invested in engineering software and training allowing Salas to generate simulation models for SHARC Energy products that will provide information and design offerings to WET project stakeholders that they would not have access to elsewhere.

SHARC Energy recognizes it has a unique position as an Original Equipment Manufacturer (“OEM”) of an early adoption technology in a well-established industry like Heating, Ventilation and Air Conditioning (“HVAC”). As SHARC Energy continues to emerge as the leader in the WET space, it will look to leverage relationships and partnerships like Salas O'Brien to provide more of a complete solution around its systems for better support of the market.

In providing more of a complete solution around its products to create value for project end-users, the Company anticipates creating shareholder value through new and diversified revenue opportunities generated by its proprietary technology.

x. **Partnership with Subterra Renewables**

The Company and Subterra Renewables, a leading full-service geothermal drilling provider with a proprietary EaaS model known as Aura<sup>™</sup>, announced on April 27, 2023, a strategic partnership to revolutionize the renewable thermal energy transfer landscape across North America. By combining Systems, the partnership aims to bring unparalleled solutions to the market, capturing a greater share for both companies.

Aura's proprietary EaaS model offers clients sustainable heating, cooling, and domestic hot water solutions, without the upfront capital investment. The model includes a pricing guarantee, ensuring that clients will experience cost savings in comparison to conventional systems while enjoying the benefits of renewable thermal energy over the 25 to 50 year term of their fixed price service contract. At the end of the term of the contract, ownership of the Systems will revert to the customer.

Under the five-year term of the agreement, SHARC Energy and Subterra Renewables will co-develop up to \$200M of qualified projects that consist of either the acquisition of existing Systems active in the field today or the development of Systems requiring capital to design, build, own, operate and maintain (“**Projects**”). SHARC Energy will be responsible for business development, client engagement and securing letters of intent on a first right of refusal basis while Subterra, with over 25 years of experience and 60+ drills in its fleet, will provide support in project management, engineering, finance, accounting, legal, and asset management, leveraging their expertise in delivering turnkey solutions for heating, cooling, and domestic hot water. Upon completion of the deployment of \$200M or expiration of the term, Subterra will receive a first right of refusal on any similar relationship for one year.

This collaboration will strengthen SHARC Energy's and Subterra Renewables' market position, making it a viable solution for developers, investors, and governments seeking to invest in sustainable energy infrastructure. The integration of wastewater and geothermal technologies will create a competitive advantage for both companies, driving market share growth and diversifying revenues for SHARC Energy and its shareholders.

xi. **National Western Center**

The National Western Center is pioneering the largest scale wastewater district-energy innovation in North America to date. The National Western Center will rely on two SHARC™ wastewater recovery systems placed in the heart of its 3.8-megawatt (MW) district energy system, creating a low-carbon campus that is sustainable and regenerative. The first phase of development is expected to recover the thermal energy from 3,000 gallons of wastewater that would otherwise be wasted and go down the drain every minute.

The National Western Center's wastewater heat recovery system has already received widespread attention as an innovation to help developers align with the GHG reduction goals set forth in Denver's Climate Action Plan. The Denver Post recently reported the National Western Center system will "prevent 2,600 metric tons of carbon dioxide from being emitted into the atmosphere each year by circumventing the need to burn fossil fuels."

The system was commissioned during Q1 2022.

xii. **SHARC International Patent Application Filed**

The Company has filed an international patent application under the Patent Cooperation Treaty (PCT) for its latest design of the SHARC system. This filing allows the latest SHARC design to become patent pending globally for 30 months from the date of filing the PCT application. The Company can now decide what countries it would like to file patent applications in and has already filed in the United States and EU.

The Company leveraged funding made available by Global Affairs and the Trade Commissioners Service through the CanExport SME program to file.

xiii. **Accelerating Lead and Deal Generation**

As part of SHARC Energy's commitment to continuous improvement, the Company has leveraged in-house technology to make key infrastructure advances that have increased overall business intelligence and visibility into Sales and Operational performance. The improvements impact interdepartmental communication, better forecasting and capacity planning, improved quote turnaround time, and granularity of opportunity tracking.

During 2022, the Company performed 68 project assessments (leads), representing a trend of ~6 leads generated per month. Of these 68 technically qualified sales leads, 37 have requested a formal quote (deal) representing a conversion rate of over 50%. Once a deal enters a detailed design stage (Sales Pipeline), it becomes probable that the deal will convert into a purchase order (Sales Order Backlog) within the next 24 months of entering Sales Pipeline.

The growth in leads and deals has materially accelerated in the first two months of 2023 with 65 total leads created—of which 36 have already been converted into deals. Also, there are currently 36 leads pending conversion to deals which SHARC Energy expects to either convert to deals or removed from lead status within 90 days. The Company believes the growth in leads and deals is due to several factors including increasing regulation and policy supporting the adoption of WET technology and the dedicated work of its internal team and partners presenting SHARC Energy solutions in the market.

## **Industry Developments**

i. **Washington State First State to Mandate Newly Constructed Buildings be Outfitted with All-Electric and Space Heating and Hot Water Systems.**

Washington State will require all-electric space and water heating in new commercial and multi-family construction, making it the first state to incorporate building electrification mandates into statewide energy codes.

On April 22, the Washington State Building Code Council, or SBCC, voted to adopt a revised energy code that requires most new commercial and large multi-family buildings to install electric heat pumps for space and water heating.

The Company and its Representative **CHC** remain optimistic that this code change will lead to growth of SHARC Energy's product market in Washington State in the coming years.

ii. **New York Governor Hochul Signs Utility Thermal Network and Jobs Act**

On July 5, 2022, Governor Kathy Hochul signed three bills including legislation A.10493/S.9422, which allows utilities to own, operate, and manage thermal energy networks, as well as supply distributed thermal energy, with Public Service Commission (PSC) oversight. Heating and cooling networks – also referred to as community thermal or district energy systems – are a resilient, energy efficient, and clean solution that can also help New York State meet its ambitious climate goals. By leveraging multiple sources of existing waste heat (such as water, **wastewater**, and geothermal, among others) and connecting a diverse set of building types on a shared loop, thermal energy networks can provide significant operating and energy cost savings when compared to more traditional heating and cooling methods, while also reducing demand on the electric grid.

The Company anticipates this bill will spur SHARC WET district energy projects in New York State.

iii. **New York State Begins Transformative \$1.2B Development to Create 2,400 Affordable Homes, Medical Clinic, Retail in East New York**

New York State Governor Kathy Hochul's recent announcement that construction has begun for the transformative \$1.2 billion redevelopment of the former 27-acre Brooklyn Developmental Center property in Brooklyn's East New York neighborhood. The initial \$373 million phase will create 576 affordable homes, a new 15,000-square-foot outpatient medical clinic, and 7,000 square feet of ground floor retail space. The initial phase of the development is comprised of two buildings with the current design having one featuring a SHARC WET System and the other a PIRANHA WET System.

As stated in the announcement by Governor Hochul, "Both buildings in the initial phase are designed to meet Passive House design standards and will utilize a closed loop geothermal heat pump system for energy efficient heating and cooling. There will also be a roof-mounted solar array that will convert solar energy into electricity and a SHARC wastewater heat recovery system that uses energy from wastewater for heating, cooling and hot water."

The first phase of redevelopment will include the new construction of a 15-story building with 452 apartments, which will feature the SHARC WET System, and a six-story building with 124 apartments, which will feature a PIRANHA WET System. The 15-story building includes two towers connected by a common lobby with a 15,000-square-foot medical clinic in the first tower and 7,800 square feet of retail space in the second tower. SHARC Energy is working through the final submittal process with its New York State distributor HIGHMARK and the purchase order is expected imminently.

iv. **Mechanical Contractors Association of America ("MCAA") Student Chapter Competition Showcasing National Western Center**

Twenty-two MCAA student chapters recently submitted a mock proposal for the installation of the National Western Center Campus Energy project as part of MCAA Annual Student Chapter Competition.

The Final Four for the competition includes California Polytechnic State University, Farleigh Dickinson University, McMaster University and Pittsburg State University. The Merit Award winner teams for the competition include Ball State University, Kent State University, Purdue University, University of Maryland College Park, University of Washington, and Wentworth Institute of Technology.

The teams presented their proposals on the afternoon of March 28<sup>th</sup> at MCAA23 in Phoenix, Arizona, where the next generation of mechanical contractors competed for the first prize of \$10,000. The contest required students to submit proposals for the installation of three 1000-ton cooling towers, six 6000-mbh boilers, a SHARC WET system, plate and frame heat exchangers, pumps, piping and supporting infrastructure. In the end, Pittsburg State University came away from the competition as the National Champion.

The contest highlights the increasing popularity of wastewater energy transfer among young Science, Technical, Engineering and Mathematics ("**STEM**") enthusiasts, who are actively engaging with SHARC Energy's proprietary technology to develop more sustainable solutions for heating and cooling buildings today and into the future.

## Selected Annual Financial Information

	Year ended December 31,		
	2022	2021	2020
Revenue	1,941,737	2,696,772	630,568
Adjusted EBITDA loss ( <i>non-GAAP Measure</i> )	(2,620,125)	(1,408,424)	(1,428,975)
Loss from continuing operations	(4,817,966)	(3,044,988)	(2,894,339)
Loss from for the year	(4,817,966)	(3,044,988)	(2,894,339)
Continuing operations basic and diluted loss per share	(0.05)	(0.03)	(0.05)
Total Basic and Diluted Loss per share	(0.05)	(0.03)	(0.05)
	As at December 31,		
	2022	2021	2020
Total Assets	3,153,969	5,970,385	4,370,634
Long-Term Liabilities	226,869	3,329,160	5,208,145
Working Capital	(2,229,492)	3,345,436	3,316,997

For 2022, the Company increased spending into Sales Pipeline & Sales Order Backlog growth through increased headcount which resulted in higher wages & benefits and share-based payments paid. Although Revenue decreased by 28% in 2022 in comparison to 2021, Sales Pipeline & Sales Order Backlog increased by nearly 70% in 2022 from an aggregate of \$6.58M as reported November 15, 2021 in comparison to 11.06M reported November 29, 2022. Also, the Company was able to extinguish \$1.67M face value of convertible debt while \$3.95M face value of convertible debt became current liability during the course of 2022.

2021 has seen the Company achieve significant revenue growth as it reached \$2.7M which represented a 328% increase from 2020. The significant increase in sales along with the conversion of convertible debt and exercise of warrants, options and brokers compensation warrants during 2021 helped the company continue to maintain its working capital level during the year which resulted in an ending balance of \$3.3M.

During 2020, the Company restructured and recapitalized its balance sheet through the Settlement Agreements with Debenture holders of the 12% maturing debentures and raising of capital through a combination of convertible debt, equity and equity unit financing. The Company continued to build and grow its focused equipment sales model through a combination of direct and indirect sales network. SHARC Energy entered 2021 capitalized for over 12 months of operation with nearly \$3.3M in working capital.

## Summary of Quarterly Results

A summary of selected information for each of the eight most recent quarters is as follows:

Three months ended,	Total Revenue	Loss for the period		Adjusted EBITDA \$ ( <i>non-GAAP Measure</i> )	Total Assets at each Report date \$
		Total \$	\$ Per Share		
31-Dec-2022	809,149	(1,278,733)	(0.01)	(671,771)	3,153,969
30-Sep-2022	81,799	(1,463,003)	(0.01)	(675,009)	3,877,489
30-Jun-2022	166,768	(1,239,659)	(0.01)	(758,505)	4,135,883
31-Mar-2022	884,021	(836,571)	(0.01)	(514,840)	5,509,795
31-Dec-2021	975,751	(775,168)	(0.01)	(374,348)	5,970,385

30-Sep-2021	1,423,787	(405,084)	(0.00)	28,580	5,887,275
30-Jun-2021	107,022	(1,014,679)	(0.01)	(536,134)	5,524,125
31-Mar-2021	190,212	(850,057)	(0.01)	(494,706)	5,923,910

In the first half of 2021, the Company raised \$2.0M through the exercise of warrants, debenture warrants, and options, and the issuance of common shares through private placement. Furthermore, SHARC Energy shipped and installed its first retrofit implementation of a PIRANHA T15 under the FortisBC Custom Performance Program and its first PIRANHA T10 HC under the CleanBC Custom-Lite program.

In the second half of 2021, the Company shipped a SHARC system and multiple PIRANHA systems, resulting in the largest revenue and first Adjusted EBITDA positive quarter in the Company's history. Also, the Company shipped a SHARC system and completed approximately 50% of the installation for the [leleṛṛ](#) project and shipped a PIRANHA.

In the first half of 2022, the Company completed the remaining 50% of the installation for the leleṛṛ project and shipped two PIRANHA T10s.

For the three months ended September 30, 2022, the Company did not ship any systems but continued service and rental of SHARC and PIRANHA systems and shipped PIRANHA related equipment. For the three months ended December 31, 2022, SHARC Energy shipped a SHARC 880 System, a PIRANHA T5 HC and began the fulfilment of the False Creek NEU expansion.

## Overall Financial Performance

The consolidated statements of financial position as of December 31, 2022, show a cash position of \$1,069,813 (2021 - \$3,150,705) and total current assets of \$2,693,593 (2021 - \$5,529,638). Current liabilities at December 31, 2022, total \$4,873,085 (2021 - \$2,184,202).

As at December 31, 2022, the Company had a working capital deficit of \$2,229,492 (2021 – positive working capital of \$3,345,436).

During the three months ended December 31, 2022, the Company reported a loss of \$1,278,733 (\$0.01 basic and diluted loss per share) on revenue of \$809,149 and a gross margin of \$190,163. This compared to a loss of \$775,168 (\$0.01 basic and diluted loss per share) on revenue of \$975,751 and a gross margin of \$255,292 for the same period in the prior year.

During the year ended December 31, 2022, the Company reported a loss of \$4,817,966 (\$0.05 basic and diluted loss per share) on revenue of \$1,941,737 and a gross margin of \$560,463t. This compared to a loss of \$3,044,988 (\$0.03 basic and diluted loss per share) on revenue of \$2,696,772 and a gross margin of \$991,078 for the year ended December 31, 2021.

## Discussion of Operations

### **Three months ended December 31, 2022 compared with three months ended December 31, 2021**

SHARC Energy's loss for the current period totaled \$1,278,733 for the three months ended December 31, 2022, or a basic and diluted loss per share of \$0.01. This compares with a loss of \$775,168 with basic and diluted loss per share of \$0.01 for the three months ended December 31, 2021. The increase of \$503,565 in loss for the current period was principally because:



- For the three months ended December 31, 2022, revenue decreased by \$166,602, cost of sales decreased \$101,473 and the gross margin decreased by \$65,129.
- For the three months ended December 31, 2022, revenue consisted of \$30,600 from equipment leases, \$27,246 from service and service agreement revenue from Vancouver, B.C. and Greater Vancouver Region installations and \$751,303 from the shipment of SHARC and PIRANHA systems. This compared to the three months ended December 31, 2021, where revenue consisted of \$30,600 from equipment leases and \$50,376 from service and service agreement revenue from Vancouver, B.C. and Greater Vancouver Region installations and \$894,775 from the shipment of SHARC and PIRANHA systems.
- Cost of goods sold in the three months ended December 31, 2022 consisted of costs associated with SHARC systems, including installation cost, the sale of PIRANHA systems and related equipment, including a one-time true up adjustment for cost on past PIRANHAs sold, service and rental expense. This compared to the three months ended December 31, 2021 which consisted of PIRANHA and SHARC system cost of sales and service and rental expense.
- For expenses during the three months ended December 31, 2022, when compared to the prior three months ended December 31, 2021:
  - bad debt expense totaled \$141,099 (2021- \$Nil) resulting from the write-off of one customer's invoice.
  - consulting expenses increased by \$44,230 and consists of fees paid to the Chief Financial Officer, sales consultants, and investor relations. The decrease is attributed to a decrease in use of investor, marketing and management consultants.
  - interest and financing expense decreased by \$72,435. The Company extinguished a total of \$1.6M face value of 8% convertible debt during the first six months of 2022 resulting in decreased accretion expense.
  - research and development increased by \$98,506. The increase is due to certification costs for the PIRANHA series.
  - wages and benefits increased by \$120,846. The Company averaged an employee headcount of 17 during the three months ended December 31, 2021, compared to 15 during the comparative prior quarter.

**Year ended December 31, 2022, compared with Year ended December 31, 2021**

SHARC Energy's loss for the period totaled \$4,817,966 for the year ended December 31, 2022, or a basic and diluted loss per share of \$0.05. This compares with a loss of \$3,044,988 with basic and diluted loss per share of \$0.03 for the year ended December 31, 2021. The increase of \$1,772,978 in loss was principally because:

- For the year ended December 31, 2022, revenue decreased by \$755,035, cost of sales decreased \$324,420 and the gross margin decreased by \$430,615.
- For the year ended December 31, 2022, revenue consisted of \$122,400 from equipment leases, \$63,655 from service and service agreement revenue from Vancouver, B.C. and Greater Vancouver Region installations and \$1,755,682 from sales and installation of SHARC and PIRANHA systems. This compared to the year ended December 31, 2021, where revenue consisted of \$122,400 from equipment leases, and \$85,743 from service and service agreement revenue from Vancouver, B.C. and Greater Vancouver Region installations and \$2,488,629 for the sale of SHARC and PIRANHA products and ancillary equipment.
- Cost of goods sold in the year ended December 31, 2022 consisted of costs associated with PIRANHA, including a one-time true up adjustment for cost on past PIRANHAs sold, and SHARC systems, including installation costs, service expense and rental expense. For the year ended December 31, 2021, consisted of costs associated with PIRANHA, including retrofit implementation related costs, and SHARC systems, including installation costs, service expense and rental expense.
- For expenses during the year ended December 31, 2022, when compared to the prior year ended December 31, 2021:
  - bad debt expense totaled \$141,099 (2021- \$Nil) resulting from the write-off of one customer's invoice.
  - consulting expenses decreased by \$47,891 and consists of fees paid to the Chief Financial Officer, sales consultants, and investor relations. The decrease is attributed to a decrease in use of investor, marketing and management consultants.
  - interest and financing expense decreased by \$236,124. The Company extinguished a total of \$1.6M face value of 8% convertible debt during the first six months of 2022 resulting in decreased accretion expense.

- research and development increased by \$64,083. The increase is due to certification costs for the PIRANHA series.
- travel expenses increased by \$125,285 as COVID-related restrictions fully relaxed during the 2022 year and speaking engagement opportunities for the CEO and other senior management increased.
- share-based payments increased by \$522,864. The increase is due to the vesting of stock options and RSUs issued on May 30, 2022 and in connection with the **Agreement**, the Company issued common share purchase warrants to purchase 5,000,000 common shares of the Company at an exercise price of \$0.40 CDN per share for a period of 24 months from the date of issuance, provided that and conditional upon the Agreement being in full force and effect. The common share purchase warrants will be exercisable in full without right to any partial exercise and shall be subject to accelerated expiry upon 30 day's notice in the event that the Company's shares trade at a price of \$0.60 CDN per share for a period of 10 consecutive trading days. The fair value of the share purchase warrants was \$495,549 estimated by using the Black-Scholes valuation model
- wages and benefits increased by \$636,677 over the prior year. The Company averaged an employee headcount of 16 during the year ended December 31, 2022, compared to 12 during the comparative prior year. 2021 included an offset by National Research Council of Canada Industrial Research Assistance Program ("**NRC-IRAP**") funding under the Innovation Assistance Program ("**IAP**") where \$176,745 in funding offset an increase in headcount. Funding by NRC-IRAP in 2022 was \$38,381. Furthermore, during the 2022 year, the role of the COO was terminated, which resulted in one-time severance payments.

### Alternative Performance Measures

Management evaluates the Company's performance using a variety of measures, including "Adjusted EBITDA", "Sales Pipeline" and "Sales Order Backlog". The non-IFRS measures should not be considered as an alternative to or more meaningful than revenue or net loss. These measures do not have a standardized meaning prescribed by IFRS and therefore they may not be comparable to similarly titled measures presented by other publicly traded companies and should not be construed as an alternative to other financial measures determined in accordance with IFRS. The Company believes these non-GAAP financial measures provide useful information to both management and investors in measuring the financial performance and financial condition of the Company. Management uses these and other non-IFRS financial measures to exclude the impact of certain expenses and income that must be recognized under IFRS when analyzing consolidated underlying operating performance, as the excluded items are not necessarily reflective of the Company's underlying operating performance and make comparisons of underlying financial performance between periods difficult. From time to time, the Company may exclude additional items if it believes doing so would result in a more effective analysis of underlying operating performance. The exclusion of certain items does not imply that they are non-recurring.

*Adjusted EBITDA*

	Three Months Ended December 31,		Year Ended December 31,	
	2022	2021	2022	2021
	\$	\$	\$	\$
Loss before Income Taxes	(1,278,735)	(775,168)	(4,819,113)	(3,063,639)
Adjustments:				
Interest and Financing Expense	192,600	265,035	859,598	1,095,722
Interest Income	(4,424)	(2,053)	(15,646)	(4,973)
Depreciation	52,941	46,214	161,997	157,337
Bad debt expense (recovery)	141,099	-	141,099	0
Share-based payments	112,446	42,156	896,911	374,047
Severance	-	-	62,104	-
Expense paid by shares	-	21,667	-	75,617
Research & Development	102,885	4,379	135,845	71,762
Foreign exchange	10,822	12,535	(25,752)	2,181
NRC-IRAP Funding & Other Subsidies	(1,840)	(2,719)	(37,946)	(177,738)
Warranty expense	-	13,606	20,778	61,260
<b>Adjusted EBITDA Loss</b>	<b>(671,771)</b>	<b>(374,348)</b>	<b>(2,620,125)</b>	<b>(1,408,424)</b>

Adjusted EBITDA is a non-IFRS financial measure and does not have any standardized meaning prescribed by IFRS and is therefore unlikely to be comparable to similar measures presented by other issuers. See "Non-IFRS Measure" below for additional information.

For the three months ended December 31, 2022, adjusted EBITDA loss was \$671,771 compared with an adjusted EBITDA loss of \$374,348 for the same period in the previous year. The decline was due in most part to decreased margin by \$65,083, and increased wages and benefits and consulting fees by \$165,076.

For the year ended December 31, 2022, adjusted EBITDA loss was \$2,620,125 compared with an EBITDA loss of \$1,408,424. The increased loss from the prior year is due to decreased margin contribution by \$430,569, increased wages and benefits by \$636,677, increased travel expense by \$125,285, increased advertising and promotion by \$57,199 and increased accounting and legal by \$58,396. The decreased margin is due to a decrease in revenue and a higher percentage of revenue related to general contracting on the delivery of Ielern. This is not a typical revenue stream for the Company and it is anticipated that gross margins will increase with the higher degree of contribution of margin from the supply of WET equipment.

*Sales Pipeline*

Sales Pipeline is defined as qualified prospective projects and installations that could convert into orders within approximately 24 months. Not all these potential projects and installations will proceed or proceed within the expected timeframe and not all the projects that do proceed will be awarded to SHARC Energy. Nevertheless, over time, this number gives a reasonable metric of changes in market activity and anticipated growth of the industry.

As of April 28, 2023, the Company has \$14.38M in Sales Pipeline.

### *Sales Order Backlog*

Sales Order Backlog refers to the balance of unrecognized revenue from sales orders received with a deposit and/or shipment date and contracted projects, where such revenue is recognized over the period of the contract by reference to the stage of completion of each contract.

As of April 28, 2023, the Company has \$1.78M in Sales Order Backlog.

### **Non-IFRS Measure**

Adjusted EBITDA is a supplemental, non-GAAP financial measure. EBITDA is defined by the Company as earnings before interest, income taxes, depreciation, and amortization. Adjusted EBITDA, as presented, additionally excludes impairment charges, all other non-cash items, and one-time transaction fees. Management evaluates the Company's performance using a variety of measures, including providing Adjusted EBITDA, sales pipeline and sales order backlog which is useful to investors' understanding and assessment of the Company's ongoing continuing operations and prospects for the future and it is used by the financial community to evaluate the market value of companies considered to be in similar businesses. Since Adjusted EBITDA is not a measure of performance calculated in accordance with IFRS, it should not be considered in isolation of, or as a substitute for, measures of performance prepared in accordance with IFRS. Adjusted EBITDA, as calculated and reconciled in the table above, may not be comparable to similarly titled measures employed by other companies. In addition, Adjusted EBITDA is not necessarily a measure of our ability to fund our cash needs.

### *Sales Order Backlog*

Additions to Sales Order Backlog will be when a purchase order, deposit and/or shipment date is received from a customer or manufacturer representative, or a contract is signed for the supply or service of a system. Reductions to the amount in sales order backlog arise when units are shipped, and revenue is recognized or when a contract has been recognized by the stage of completion or completed and fulfilled.

### *Sales Pipeline*

Additions to the amount in the Sales Pipeline come from situations where the Company has been specified on a request for proposal ("RFP"), has been specified on a winning bid in an RFP process, has been included in a stage of design for a project, the project has been verbally awarded by customer, a signed sales quote or not to exceed sales quote has been received or a deposit has been received without a firm shipment date.

Reductions to the amount in the Sales Pipeline arise when the Company loses a quote or bid, the project owner decides not to proceed with the project, the final design changes the equipment selection originally quoted or, where a quote in the pipeline is converted to the order book and therefore, converted into Sales Order Backlog.

## Liquidity and Financial Position

As of December 31, 2022, the Company has accumulated a deficit of \$33,397,147 and has negative working capital of \$2,229,492. The Company will continue to pursue opportunities to raise additional capital through equity markets and/or debt to fund its operating activities. Management anticipates it has sufficient working capital to maintain its activities for the next 12 months.

As of December 31, 2022, the Company's cash balance was \$1,069,813 (December 31, 2021 - \$3,150,705) and the Company had a working capital deficit of \$2,229,492 (December 31, 2021 – working capital of \$3,345,436).

As of December 31, 2022, the Company had 107,499,566 common shares issued and outstanding, 21,232,434 warrants outstanding that would raise \$5,725,608 if exercised in full, 5,853,974 options outstanding that would raise \$1,052,265 if exercised in full, and 209 debenture warrants outstanding that would raise \$396,323 if exercised in full including the warrants attached.

Cash used in continuing operating activities was \$1,558,907 for the year ended December 31, 2022 (2021 \$2,594,254). Operating activities were affected by the loss for the period of \$4,817,966 partially offset by non-cash expenses of \$2,060,190 and a positive change in non-cash working capital balances of \$1,198,869 due to a decrease in accounts receivable and an increase in accounts payable and accrued liabilities.

The Company has the following undiscounted lease payments:

Not later than one year	141,400
Later than one year and not later than 5 years	158,732
<b>December 31, 2022</b>	<b>300,132</b>

As at December 31, 2022, the Company has the following convertible debt payments scheduled over the next 5 years:

	13-Feb-2023	24-Feb-2023	29-May-2023	12-June-2023	Total
	\$	\$	\$	\$	\$
2023	1,385,714	89,267	1,911,031	585,198	3,971,210
2024	-	-	-	-	-
2025	-	-	-	-	-
2026	-	-	-	-	-
2027	-	-	-	-	-
	<b>1,385,714</b>	<b>89,267</b>	<b>1,911,031</b>	<b>585,198</b>	<b>3,971,210</b>

Subsequent to December 31, 2022, the February 13 and 24, 2023 maturing convertible debt was converted in full to common shares.

## Related Party Transactions

Key management personnel are those persons having authority and responsibility for planning, directing, and controlling the activities of the Company, directly or indirectly. Key management personnel include officers and directors.

The Company incurred the following charges with key management personnel:

	Three months ended December 31,		Year ended December 31,	
	2022	2021	2022	2021
	\$	\$	\$	\$
Consulting Fees <sup>(i)</sup>	39,000	39,000	156,000	149,000
Wages and Benefits <sup>(ii)</sup>	69,939	108,091	377,309	372,483
Share-based payments <sup>(iii)</sup>	73,248	16,813	300,432	301,737
	<b>182,187</b>	<b>164,704</b>	<b>833,741</b>	<b>823,220</b>

- (i) The Company paid consulting fees to a company controlled by the Chief Financial Officer.
- (ii) The Company paid wages and benefits to the Chief Executive Officer and Director and the former Chief Operating Officer.
- (iii) Share-based payments was recognized in connection with the vesting of options granted to directors and officers of the Company in the amount of \$300,432 during the year ended December 31, 2022 (2021 - \$301,737).

The following table summarizes the cash compensation paid to each related party.

	Three months ended December 31,		Year ended December 31,	
	2022	2021	2022	2021
	\$	\$	\$	\$
Lynn Mueller	69,939	69,841	228,329	219,841
Hanspaul Pannu <sup>1</sup>	39,000	39,000	156,000	149,000
Matt Engelhardt	-	39,050	148,980	152,642
	<b>108,939</b>	<b>147,891</b>	<b>533,309</b>	<b>521,483</b>

1. Payments are made to a company controlled by Mr. Pannu

**Other transactions with related parties included:**

Included in accounts payable is \$Nil (December 31, 2021 – \$5) due from related parties.

**Share Capital**

As of the date of this MD&A, the Company had 130,839,566 (December 31, 2021 – 78,406,348) issued and outstanding common shares.

Warrants outstanding for the Company at the date of this MD&A were as follows:

<b>Warrants</b>	<b>Expiry Date</b>	<b>Exercise Price</b>
6,565,997	May 29, 2023	\$0.25
2,266,437	June 12, 2023	\$0.25
5,000,000	August 17, 2024	\$0.40
3,773,585	April 27, 2028	\$0.265
<b>17,606,019</b>	<b>Total Outstanding</b>	

Stock options outstanding for the Company at the date of this MD&A were as follows:

<b>Options</b>	<b>Expiry Date</b>	<b>Exercise Price</b>
333,000	October 29, 2024	\$0.090
2,485,000	January 19, 2025	\$0.075
700,000	February 26, 2025	\$0.125
200,000	March 16, 2025	\$0.105
1,186,875	December 20, 2025	\$0.345
949,099	May 30, 2027	\$0.335
1,930,000	April 27, 2028	\$0.27
<b>7,783,974</b>	<b>Total Outstanding</b>	

Debenture Warrants outstanding for the Company at the date of this MD&A were as follows:

<b>Debenture Warrants</b>	<b>Expiry Date</b>	<b>Exercise Price</b>
100	May 29, 2023	\$1,000
30	June 12, 2023	\$1,000
<b>130</b>	<b>Total Outstanding</b>	



Restricted Share Units (“RSUs”) outstanding for the Company at the date of this MD&A were as follows:

RSUs	Expiry Date	Grant Price
1,690,407	May 29, 2023	\$0.335
2,734,000	April 27, 2028	\$0.265
<b>4,424,407</b>	<b>Total Outstanding</b>	

## Subsequent Events

Subsequent to December 31, 2022:

- [a] 7,250,000 warrants were exercised for total proceeds of \$1,450,000.
- [b] Holders of convertible debt converted \$1,500,500 principal into 14,905,000 shares, fully extinguishing \$1,439,645 that were held in liabilities during the year ended December 31, 2022.
- [c] 150,000 warrants expired unexercised.
- [d] 79 debenture warrants were exercised for total proceeds of \$79,000. Upon issuance, the debentures were immediately converted into 790,000 common shares. Pursuant to the issuance of the debenture units, 395,000 common share purchase warrants were issued. 395,000 of these common share purchase warrants were exercised for total proceeds of \$79,000.
- [e] The Company entered into a geothermal systems partnership agreement with Subterra Renewables whereby the Company and Subterra Renewables will co-develop up to \$100,000,000 (“Capital Commitment”) of projects with a Company option to renew the commitment with an additional \$100,000,000 if Capital Commitment is used within the initial term of five years. In connection with the Agreement, the Company issued 3,773,585 common share purchase warrants to Subterra Renewables. Each warrant allows the holder to purchase one common share at an exercise price of \$0.265 per share for a period of 5 years from date of issuance. Each warrant holder will have the right to exercise the warrants held proportionately in 20% increments as the Company uses up the Capital Commitment.
- [f] The Company issued 1,930,000 stock options with an exercise price of \$0.27 each, maturing 5 years from date of issuance, subject to vesting terms and 2,734,000 RSUs with an exercise price of \$0.27 each, expiring on December 31, 2025.

## Estimates, Judgments and Assumptions

The preparation of the Company’s consolidated financial statements requires management to make judgments, estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Estimates and assumptions are continually evaluated and are based on management’s experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. Actual results could differ from these estimates.

The areas which require management to make significant judgments, estimates and assumptions in determining carrying values include, but are not limited to:

***Critical Judgments***

The following are critical judgments that management has made in the process of applying accounting policies and that have the most significant effect on the amounts recognized in the Financial Statements:

- I. Research costs are recognized as an expense when incurred but development costs may be capitalized as intangible assets if certain conditions are met as described in IAS 38, Intangible Assets. Management has determined that development costs do not meet the conditions for capitalization under IAS 38 and all research and development costs have been expensed.
- II. The Company recognizes the deferred tax benefit related to deferred income and resource tax assets to the extent recovery is probable. Assessing the recoverability of deferred tax assets requires management to make significant estimates of future taxable profit. In addition, future changes in tax laws could limit the ability of the Company to obtain tax deductions from deferred income and resource tax assets.

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### ***Estimation Uncertainty***

The following are key assumptions concerning the future and other key sources of estimation uncertainty that have a significant risk of resulting in a material adjustment to the carrying amount of assets and liabilities within the next financial year:

- i. Provisions for income taxes are made using the best estimate of the amount expected to be paid based on a qualitative assessment of all relevant factors. The Company reviews the adequacy of these provisions at the end of the reporting period. However, it is possible that at some future date an additional liability could result from audits by taxation authorities. Where the final outcome of these tax-related matters is different from the amounts that were originally recorded, such differences will affect the tax provisions in the period in which such determination is made.
- ii. Warranty provisions are recognized for the future obligations to provide services for the repairs and maintenance of products sold to its customers. The Company assesses its warranty provision based on experience. Actual costs incurred may differ from those amounts estimated.
- iii. The Company estimates the net realizable values of inventories, taking into account the most reliable evidence available at each reporting date. The future realization of these inventories may be affected by future technology or other market drive changes that may reduce future selling prices.
- iv. The Company has service agreements with regards to some of its product sales which requires management to make judgments regarding the timing and allocation of revenue. Specifically, installation is generally not assumed to have stand-alone value and is often recognized on the same basis as the remainder of the services fees. However, the Company defers the recognition of revenue associated with fees for services agreements or warranty costs that are built into the original sales price and recognizes the associated revenue evenly over the term of the service.
- v. The equity component of the convertible debenture is calculated using a discounted cash flow method which requires management to make an estimate on an appropriate discount rate.

### **Capital Management**

The Company's objective when managing capital is to safeguard the Company's ability to continue as a going concern in order to support the development of its business and maintain the necessary corporate and administration functions to facilitate these activities. The capital of the Company consists of items included in shareholders' deficiency.

The Company manages and adjusts its capital structure when changes to the risk characteristics of the underlying assets or changes in economic conditions occur. To maintain or adjust the capital structure, the Company may attempt to raise new funds.

There were no changes to the Company's approach to capital management during the year. The Company is not subject to externally imposed capital requirements.

## Financial Instruments

### Fair value

IFRS 13 establishes a fair value hierarchy for financial instruments measured at fair value that reflects the significance of inputs used in making fair value measurements as follows:

Level 1 – quoted prices in active markets for identical assets or liabilities;

Level 2 – inputs other than quoted prices included in Level 1 that are observable for the asset or liabilities, either directly (i.e. as prices) or indirectly (i.e. from derived prices); and

Level 3 – inputs for the asset or liability that are not based upon observable market data.

The fair value of cash is based on Level 1 inputs. The fair value of the Company's receivables, accounts payable and accrued liabilities, and loans payable approximate their carrying values due to the short-term to maturity. The fair value of long-term liabilities are initially recorded at fair value and subsequently carried at amortized cost using rates comparable to market interest rates. The carrying value of the Company's lease liabilities is measured as the present value of the discounted future cash flows.

### [a] Credit risk

Credit risk is the risk that one party to a financial instrument will cause a financial loss for the other party by failing to discharge an obligation. The Company's cash and receivables are exposed to credit risk. The Company reduces its credit risk on cash by placing these instruments with institutions of high credit worthiness. Receivables are primarily from sales or loans. The Company believes these parties to be of sound creditworthiness, and to date, all receivables have been settled in accordance with agreed upon terms and conditions. As at December 31, 2022, the Company is exposed to nominal credit risk arising from receivables.

### [b] Liquidity risk

Liquidity risk is the risk that the Company will encounter difficulty in meeting obligations associated with financial liabilities. The Company manages liquidity risk by maintaining sufficient cash balances to enable settlement of transactions on the due date. The Company addresses its liquidity through debt financing. While the Company has been successful in securing financings in the past, there is no assurance that it will be able to do so in the future.

### [c] Market risk

#### [i] Interest rate risk

Interest rate risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market interest rates. As at December 31 2022, the Company is not exposed to any significant interest rate risk.

## Risks and Uncertainties

### Manufacturing Risks

For the successful development of the Company's manufacturing operations, the Company will require maintenance of production equipment, hiring and retaining of managerial personnel and skilled labour and maintaining of desirable levels of production. There can be no assurance that the Company will be able to achieve and sustain these goals. The Company's future success also depends on its ability to successfully achieve expected manufacturing capacity in a cost-effective and efficient manner. If the Company cannot do so, it may be unable to achieve and sustain profitability. The Company's ability to achieve expected production capacity is subject to significant risks and uncertainties, including the following: (a) delays and unexpected costs as a result of a number of factors, many of which may be beyond the Company's control, such as its ability to secure successful contracts with equipment vendors, (b) failure to effectively break in new equipment, (c) delays or denial of required approvals by relevant government authorities, (d) unavailability of manufacturing inputs; and (e) failure to execute its expansion plans effectively.

### Regulatory Risks

The activities of the Company will be subject to intense regulation by governmental authorities. Achievement of the Company's business objectives are contingent, in part, upon compliance with regulatory requirements enacted by these governmental authorities and obtaining all regulatory approvals, where necessary, for the sale of its products. The Company cannot predict the time required to secure all appropriate regulatory approvals for its products, or the extent of testing and documentation that may be required by governmental authorities. Any delays in obtaining, or failure to obtain regulatory approvals would significantly delay the development of markets and products and could have a material adverse effect on the business, results of operations and financial condition of the Company.

### Change in Laws, Regulations and Guidelines

The Company's operations will be subject to a variety of laws, regulations and guidelines relating to the manufacture, management, transportation, storage and disposal of untreated wastewater but also including laws and regulations relating to health and safety, the conduct of operations and the protection of the environment. Changes to such laws, regulations and guidelines due to matters beyond the control of the Company may cause adverse effects to the Company's operations.

### Lack of Operating History

The Company has only recently started to carry on its business. The Company is therefore subject to many of the risks common to early-stage enterprises, including under-capitalization, cash shortages, limitations with respect to personnel, financial, and other resources and lack of revenues. The failure by the Company to meet any of these conditions could have a materially adverse effect on the Company and may force it to reduce, curtail, or discontinue operations. There is no assurance that the Company will be successful in achieving a return on shareholders' investment and the likelihood of success must be considered in light of the early stage of operations. The Company may not successfully address all of the risks and uncertainties or successfully implement its existing and new products and services. If the Company fails to do so, it could materially harm its business and impair the value of its common stock, resulting in a loss to shareholders. Even if the Company accomplishes these objectives, the Company may not generate the anticipated positive cash flows or profits. No assurance can be given that the Company can or will ever be successful in its operations and operate profitably.

**Reliance on Management and Key Personnel**

The success of the Company is dependent upon the ability, expertise, judgment, discretion and good faith of its senior management. While employment agreements are customarily used as a primary method of retaining the services of key employees, these agreements cannot assure the continued services of such employees. The Company attempts to enhance its management and technical expertise by recruiting qualified individuals who possess desired skills and experience in certain targeted areas. The Company's inability to retain employees and attract and retain sufficient additional employees as well as information technology, engineering, and technical support resources could have a material adverse impact on the Company's financial condition and results of operation. Any loss of the services of such individuals could have a material adverse effect on the Company's business, operating results or financial condition.

**Additional Financing**

The Company's future capital requirements depend on many factors, including its ability to market products successfully, cash flows from operations, locating and retaining talent, and competing market developments. The Company's business model requires spending money to generate revenue. Based on the Company's current financial situation, the Company may have difficulty continuing operations at the current level, or at all, if it does not raise additional financing in the near future.

To execute the Company's business plan, the Company will require some additional equity and/or debt financing to undertake capital expenditures. There can be no assurance that additional financing will be available to the Company when needed or on terms which are acceptable. The Company's inability to raise financing to support on-going operations or to fund capital expenditures could limit the Company's operations and may have a material adverse effect upon future profitability.

The Company may require additional financing to fund its operations to the point where it is generating positive cash flows.

If additional funds are raised through further issuances of equity or convertible debt securities, existing shareholders could suffer significant dilution, and any new equity securities issued could have rights, preferences, and privileges superior to those of holders of Company Shares. Any debt financing secured in the future could involve restrictive covenants relating to capital raising activities and other financial and operational matters, which may make it more difficult for the Company to obtain additional capital or to pursue business opportunities, including potential acquisitions. If adequate funds are not obtained, the Company may be required to reduce, curtail, or discontinue operations. There is no assurance that the Company's existing cash flow will be adequate to satisfy its existing operating expenses and capital requirements.

**Competition**

There is potential that the Company will face intense competition from numerous other companies, some of which can be expected to have longer operating histories and more financial resources and manufacturing and marketing experience than the Company. Increased competition by larger and better financed competitors could materially and adversely affect the business, financial conditions, and results of operations of the Company.

Because of early stage of the industry in which the Company operates, the Company expects to face additional competition from new entrants. To remain competitive, the Company will require a continued high level of investment in research and development, marketing, sales, and client support. The

Company may not have sufficient resources to maintain research and development, marketing, sales and client support efforts on a competitive basis which could materially and adversely affect the business, financial condition and results of operations of the Company.

### **Intellectual Property Risks**

The Company's ability to compete largely depends on the superiority, uniqueness, and value of its intellectual property and technology, including both internally developed technology and the ability to acquire patent protection and/or trademark protection. To protect its proprietary rights, the Company will rely on a combination of trademark, copyright, and trade secret laws, trademark and patent applications, confidentiality agreements with its employees and third parties, and protective contractual provisions. Despite these efforts, certain risks may reduce the value of the Company's intellectual property. The Company's applications for trademarks and copyrights relating to its business may not be granted, and if granted, may be challenged or invalidated. There is no guarantee that issued trademarks and registered copyrights will provide the Company with any competitive advantages. The Company's efforts to protect its intellectual property rights may not be effective in preventing misappropriation of its technology and may not prevent the development and design by others of products or technology similar to, competitive with, or superior to those the Company develops. There is a risk that another party may obtain a blocking patent and the Company would need to either obtain a license or design around the patent in order to continue to offer the contested feature or service in its products.

### **New Market Risks**

Extracting heat from raw sewage flows is a relatively new market and its long-term growth prospects are uncertain. Should the raw sewage heat market fail to expand, it would have a materially adverse effect on our business and financial position.

### **Product Development Risks**

The development of additional products is subject to the risks of failure inherent in the development of new, state of the art products, laboratory devices and products based on new technologies. These risks include: (i) delays in product development or manufacturing; (ii) unplanned expenditures for product development or manufacturing; (iii) failure of new products to have the desired effect or an acceptable accuracy profile; (iv) emergence of superior or equivalent products; (v) failure by any potential collaborative partners to successfully develop products; and (vi) the dependence on third parties for the manufacture, development, and sale of the Company's products. Because of these risks, our research and development efforts or those of potential collaborative partners may not result in any commercially viable products. If a significant portion of these development efforts is not successfully completed, or any products are not commercially successful, we are less likely to generate significant revenues, or become profitable. The failure to perform such activities could have a material adverse effect on the Company's business, financial condition, and results of its operations.

The areas in which we plan to commercialize, distribute, and/or sell products involves rapidly developing technology. There can be no assurance that we will be able to establish ourselves in such fields, or, if established, that we will be able to maintain our market position, if any. There can be no assurance that the development by others of new or improved products will not make our present and future products, if any, superfluous or obsolete.

**Product Liability**

The devices and products that we intend to develop may expose us to potential liability from personal injury claims by end-users of the product. We intend to carry product liability insurance to protect us against the risk that in the future a product liability claim or product recall could materially and adversely affect our business. Inability to obtain sufficient insurance coverage at an acceptable cost or otherwise to protect against potential product liability claims could prevent or inhibit the commercialization of our intended products. We cannot assure you that if and when we commence distribution of our product that we will be able to obtain or maintain adequate coverage on acceptable terms, or that such insurance will provide adequate coverage against all potential claims. Moreover, even if we maintain adequate insurance, any successful claim could materially and adversely affect our reputation and prospects and divert management's time and attention. If we are sued for any injury allegedly caused by our future products our liability could exceed our total assets and our ability to pay the liability.

**Product Defects**

The Company's products are complex and, accordingly, they may contain defects or errors, particularly when first introduced or as new versions are released. We may not discover such defects or errors until after a product has been released and used by end-customers. Defects and errors could materially and adversely affect our reputation, result in significant costs to us or the termination of an agreement, delay planned release dates and impair our ability to sell our products in the future. The costs incurred in correcting any product defects or errors may be substantial and could adversely affect our operating margins. Furthermore, there can be no assurance that our efforts to monitor, develop, modify and implement appropriate test and manufacturing processes for our products will be sufficient to permit us to avoid a rate of failure in our products that results in substantial delays, significant repair or replacement costs or potential damage to our reputation, any of which could have a material adverse effect on our business, results of operations and financial condition.

We may also be subject to claims that our products are defective or that some function or malfunction of our products caused or contributed to damages. While we attempt to minimize this risk by incorporating provisions into our standard agreements that are designed to limit our exposure to potential claims of liability, we are not always able to negotiate such protections. In addition, no assurance can be given that all claims will be barred by the contractual provisions limiting liability or that the provisions will be enforceable. We may be liable for failure regarding the use of our products or services. A significant liability claim against us could have a material adverse effect on our operating results and financial position

**Reliance on Key Inputs**

The Company's business will be dependent on a number of key inputs and their related costs including raw materials and supplies related to its growing operations, as well as electricity, water and other local utilities. Any significant interruption or negative change in the availability or economics of the supply chain for key inputs could materially impact the business, financial condition and operating results of the Company. Some of these inputs may only be available from a single supplier or a limited group of suppliers. If a sole source supplier was to go out of business, the Company might be unable to find a replacement for such source in a timely manner or at all. If sole source supplier were to be acquired by a competitor, that competitor may elect not to sell to the Company in the future. Any inability to secure required supplies and services or to do so on appropriate terms could have a materially adverse impact on the business, financial condition and operating results of the Company.



**Dependence on Suppliers and Skilled Labour**

The ability of the Company to compete and grow will be dependent on it having access, at a reasonable cost and in a timely manner, to skilled labour, equipment, parts and components. No assurances can be given that the Company will be successful in maintaining its required supply of skilled labour, equipment, parts and components.

**Management of Growth**

The Company has, and may in the future, experience rapid growth and development in a relatively short period of time by aggressively marketing its products and services. The Company may be subject to growth related risks including capacity constraints and pressure on its internal systems and controls. The ability of the Company to manage growth effectively will require it to continue to implement and improve its operational and financial systems and to expand, train and manage its employee base. The inability of the Company to deal with this growth may have a material adverse effect on the Company's business, financial condition, results of operations and prospects

**Conflicts of Interest**

Certain of the directors and officers of the Company are also directors and officers of other companies, and conflicts of interest may arise between their duties as officers and directors of the Company and as officers and directors of such other companies.

**Litigation**

The Company may be forced to litigate, enforce, or defend its intellectual property rights, protect its trade secrets, or determine the validity and scope of other parties' proprietary rights. Such litigation would be a drain on the financial and management resources of the Company which may affect the operations and business of the Company.

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

**The Market Price of Company Shares May Be Subject to Wide Price Fluctuations**

The market price of Company Shares may be subject to wide fluctuations in response to many factors, including variations in the operating results of the Company, divergence in financial results from analysts' expectations, changes in earnings estimates by stock market analysts, changes in the business prospects for the Company, general economic conditions, legislative changes, and other events and factors outside of the Company's control. In addition, stock markets have from time to time experienced extreme price and volume fluctuations, which, as well as general economic and political conditions, could adversely affect the market price for Company Shares.

**Environmental and Employee Health and Safety Regulations**

The Company's operations will be subject to environmental and safety laws and regulations concerning, among other things, emissions and discharges to water, air and land, the handling and disposal of hazardous and non-hazardous materials and wastes, and employee health and safety. The Company will incur ongoing costs and obligations related to compliance with environmental and employee health and safety matters. Failure to comply with environmental and safety laws and regulations may result in

additional costs for corrective measures, penalties or in restrictions on our manufacturing operations. In addition, changes in environmental, employee health and safety or other laws, more vigorous enforcement thereof or other unanticipated events could require extensive changes to the Company's operations or give rise to material liabilities, which could have a material adverse effect on the business, results of operations and financial condition of the Company.

### Disclosure of Internal Controls

Management has established processes to provide them sufficient knowledge to support representations that they have exercised reasonable diligence that (i) the consolidated 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 consolidated financial statements; and (ii) the consolidated financial statements fairly present in all material respects the financial condition, results of operations and cash flows of the Company, as of the date of 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"), this Venture Issuer Basic Certificate 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:

- i) 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
- ii) a process to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with the issuer's GAAP (IFRS).

The issuer'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.