



Management's Discussion and Analysis

For the Year Ended December 31, 2023

NORTHSTAR CLEAN TECHNOLOGIES INC.

Management's Discussion and Analysis

December 31, 2023

DESCRIPTION OF BUSINESS AND OVERVIEW OF OPERATIONS AND FINANCIAL CONDITION

The following is management's discussion and analysis ("MD&A"), prepared as of April 26, 2024. This MD&A should be read in conjunction with the audited Annual Consolidated Financial Statements for the year ended December 31, 2023 and the accompanying notes, all as prepared in accordance with International Financial Reporting Standards ("IFRS"). All amounts are stated in Canadian dollars unless otherwise indicated.

Forward Looking Statements

This report includes certain statements that may be deemed "forward-looking statements" within the meaning of applicable securities legislation. All statements, other than statements of historical facts that address such matters as future events or developments that the Company expects, are forward-looking statements and, as such, are subject to risks, uncertainties, assumptions and other factors of which are beyond the reasonable control of the Company. You can identify these statements by forward-looking words such as "expects", "does not expect", "plans", "anticipates", "does not anticipate", "believes", "intends", "estimated", "projects", "potential", "scheduled", "forecast", "budget", and similar expressions, or that events or conditions "will", "would", "may", "could", "should" or "might" occur and similar words. Such statements give the Company's current expectations or forecasts of future events and are not guarantees of future performance and actual results or developments may differ materially from those expressed in, or implied by, this forward-looking information. With respect to forward-looking statements and information contained herein, we have made numerous assumptions including among other things anticipated costs and expenditures and the Company's ability to achieve its goals. Although management believes that the assumptions made and the expectations represented by such statements or information are reasonable, there can be no assurance that a forward-looking statement or information herein will prove to be accurate. Forward-looking statements and information by their nature are based on assumptions and involve known and unknown risks, uncertainties and other factors which may cause our actual results, performance or achievements, or industry results, to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements or information. Factors that could cause actual results to differ materially from those in forward-looking statements include, for example, such matters as continued availability of capital and financing and general economic, market or business conditions. Although we have attempted to identify factors that would cause actual actions, events or results to differ materially from those disclosed in the forward-looking statements or information, there may be other factors that cause actual results, performances, achievements or events not to be anticipated, estimated or intended. Accordingly, readers should not place undue reliance on forward-looking statements or information. Any forward-looking statements are expressly qualified in their entirety by this cautionary statement. The information contained herein is stated as of the current date and subject to change after that date and the Company does not undertake any obligation to update publicly or to revise any of the forward-looking statements, whether as a result of new information, future events or otherwise, except as may be required by applicable securities laws.

Description of Business

Northstar Clean Technologies Inc. ("Northstar" or the "Company") is a Canadian-based clean technology company focused on the sustainable recovery and reprocessing of asphalt shingles. Northstar has developed a proprietary design process for taking discarded asphalt shingles, otherwise destined for already over-crowded landfills, and extracting the liquid asphalt for use in new hot mix asphalt, shingle manufacturing and asphalt flat roof systems, and aggregate and fiber for use in construction products and other industrial applications. Focused on the circular economy, Northstar plans to reprocess used or defective asphalt shingle waste back into its three primary components for reuse/resale at its first commercial scale up facility in Calgary, Alberta (the "Empower Calgary Facility"). As an emerging innovator in sustainable processing, Northstar's mission is to be the leader in the recovery and reprocessing of asphalt shingles in North America, extracting the recovered components from asphalt shingles that would otherwise be sent to landfill.

Northstar has developed a proprietary design process known as the Bitumen Extraction & Separation Technology ("BEST") technology, to break down the components of single-use asphalt shingles that would otherwise be sent to a landfill, into market quality products. The component parts of an asphalt shingle are approximately 50% aggregate, 25% fibre and 25% liquid asphalt (the "Products"). Once reprocessed, the Products can be used in a variety of applications, including road asphalt, new asphalt shingle manufacturing, construction products, and other industrial applications. The Company hopes to be able to sell these components to paving companies, cement companies, roofing companies, shingle manufacturers and other industrial and construction product manufacturers, who may benefit from a supply of low carbon, reprocessed products. The Company's proprietary process was developed over the last decade with technical and scientific assistance from the United Kingdom and

NORTHSTAR CLEAN TECHNOLOGIES INC.

Management's Discussion and Analysis

December 31, 2023

Alberta. The Company plans to reprocess used and defective asphalt shingles into their component parts for reuse/resale and thereby seeks to eliminate their disposal in landfills.

On November 8, 2022, the Company announced that it has been issued a patent for the Company's front-end technology for reprocessing asphalt shingles by the United States Patent and Trademark Office ("USPTO"). This patent is expected to remain in force until 2042. Further, Northstar has filed follow-on continuation patent applications with the USPTO as well as an application for patent approval in Canada and Patent Cooperation Treaty international application.

The Company filed a preliminary prospectus dated April 15, 2021, an amended and restated preliminary prospectus dated May 7, 2021, and a final prospectus dated June 18, 2021. The Company raised \$12,241,312.30 on the issue of 34,975,178 Units at a price of \$0.35 per Unit. Each Unit is comprised of one common share in the capital of the Company (each, a "Share") and one-half of one transferable common share purchase warrant (each whole warrant, a "Warrant"). Each Warrant entitled the holder thereof to acquire one Share (each, a "Warrant Share") at a price of \$0.50 per Warrant Share for a period of two years. The Warrants formerly traded on the TSX Venture Exchange (the "TSX-V") under the symbol 'ROOF.WT'. The Warrant Shares expired as of June 23, 2023.

The Company listed its common shares on the TSX-V and began publicly trading on the TSX-V under the symbol 'ROOF' on July 13, 2021. On January 11, 2022, the Company's common shares commenced trading on the OTCQB Venture Market (the "OTCQB") under the ticker symbol 'ROOOF'. In addition, on January 11, 2022, the Company's common shares became eligible for book-entry and depository services at the Depository Trust Company ("DTC"), which facilitates electronic clearing and settlement of transfers in the United States.

The head office and principal address of the Company is located at 1110-396 11th Ave SW, Calgary, Alberta, T2R 0C5 and its current facility is located at 7046 Brown Street, Delta, British Columbia, Canada, V4G 1G8 (the "Empower Pilot Facility"). The Company's registered and records office is also located at 7046 Brown Street, Delta, British Columbia, Canada, V4G 1G8.

On January 18, 2022, the Company incorporated Empower Environmental Solutions Calgary Ltd. under the laws of the Alberta Business Corporations Act, and on January 20, 2022, the Company incorporated Empower Environmental Solutions Toronto West Ltd. under the laws of the Ontario Business Corporations Act to facilitate possible expansion into those markets.

Outlook and growth strategy

As an emerging innovator in sustainable processing, Northstar's mission is to be the leader in the recovery and reprocessing of asphalt shingles in North America, extracting the recovered components from asphalt shingles that would otherwise be sent to landfill. The Company has the Empower Pilot Facility in Delta, BC and is in the development stages for advancing its Empower Calgary Facility in Calgary, AB.

Empower Pilot Facility – Delta, BC

The Empower Pilot Facility is located at 7046 Brown Street in Delta, British Columbia. The Empower Pilot Facility is located on a 4.23 acre property with a 20,000 square foot building. The site of the Empower Pilot Facility has a large yard for storage and collection of asphalt shingles, and is conveniently located for roofing companies, roofing contractors, and waste haulers throughout the Metro Vancouver area. The Company has leased the Empower Pilot Facility and surrounding lands pursuant to the Empower Lease for a period of five years from January 1, 2021 with an option to extend for an additional five years.

In 2022, the production from the Empower Pilot Facility delivered significant results in several key areas:

1. The production proved the Company's proprietary BEST technology with shingle feedstock processed into aggregate, fiber and asphalt.
2. The process enabled the supply of Products to potential customers for detailed testing, research & development. This testing helped secure the long-term offtake agreement for the Empower Calgary Facility and allowed subsequent successful testing with a number of shingle and flat roof manufacturers. Importantly, the testing results supported the Company's view that the asphalt produced by the BEST technology may be suitable for all three target market sectors of road paving, asphalt shingle manufacturing and flat roof manufacturing.
3. The production of Products generated valuable feedback for the design of the Empower Calgary Facility from customers, vendors and from the production process itself. The feedback is being incorporated into the detailed design process, which

NORTHSTAR CLEAN TECHNOLOGIES INC.

Management's Discussion and Analysis

December 31, 2023

commenced in Q4 2023 and was more than 75% complete at the end of Q1 2024, for the Empower Calgary Facility by the Company's vendors and as part of the integrated facility design led by the Company's engineering contractor, BBA Engineering Ltd. ("BBA"). In the Company's view, the feedback, derived from operations at the Empower Pilot Facility, helps de-risk the Empower Calgary Facility design.

Given the success of the detailed testing, research & development activities described above, the Company through 2024 will focus resources, including manpower, capital and G&A costs, on the Empower Calgary Facility. The Company plans to operate the Empower Pilot Plant Facility as an "on demand" facility that is focused on providing potential partners and customers with Product for R&D, manufacturing and product testing.

Empower Calgary Facility – Calgary, AB

On March 17, 2022, the Company announced that the Board of Directors of the Company approved the selection of the City of Calgary, Alberta, Canada as the planned site location for the Company's Empower Calgary Facility, the Company's first commercial scale up facility for reprocessing asphalt shingles. On February 24, 2023, Northstar announced that its wholly owned subsidiary Empower Environmental Solutions Calgary Ltd. signed a long-term 15-year lease agreement with Mook Group of Companies (the Landlord) for an industrial-zoned property of 3.98 acres located in Rocky View County, a municipal district adjacent to the City of Calgary, Alberta, as the site for the Company's Empower Calgary Facility. The lease is for an initial term of 15 years, with two extension options of five years each. The Landlord has been issued a development permit from Rocky View County. Based on management's knowledge at this point in time, the Company believes this is the only permit or approval required to collect asphalt shingles and commence construction and operation of the Empower Calgary Facility.

On October 6, 2022, Northstar announced the execution of a term sheet with McAsphalt Industries ("McAsphalt") for a 5-year (with automatic 3-year renewal options) take-or-pay offtake agreement with McAsphalt, whereby McAsphalt will purchase, on an exclusive basis, 100% of the liquid asphalt production from the Calgary Empower Facility. Subsequently, on March 2, 2023, Northstar announced the execution of the McAsphalt Offtake Agreement with McAsphalt. The key commercial terms of the contract remain unchanged from the original McAsphalt Offtake Term Sheet, as previously disclosed by the Company on October 6, 2022.

On September 1, 2023, the Company formally took occupancy and gained access to the site for the Empower Calgary Facility in Rocky View County, AB. On September 12, 2023, the Company and the Landlord completed site development work (commenced in May 2023), which included the installation of lighting, fencing and foundations for the weigh scale; installation of required electrical work, paving of the parking lot; and landscaping at the front of the site. On September 27, 2023, the Company hosted its official site opening event, which was attended by government representatives, members of industry and included representatives from the Company, Emissions Reduction Alberta, Business Development Bank of Canada and the TMX Group.

Based on the independent front-end engineering design ("FEED") study announced on March 31, 2022, the Calgary Empower Facility is expected to be the Company's first modular scale up facility and is expected to be designed and engineered with an estimated capacity of 150–200 tpd. The Company commenced detailed engineering design and commenced long-lead item equipment orders for the Empower Calgary Facility in Q4 2023. Subsequent to year end, the Company started receiving asphalt shingles from IKO Industries Ltd. ("IKO") at the Calgary Facility and as of the date of this MD&A, detailed engineering design was more than 75% complete. The scale up facility's build and design are part of the Company's planned national roll out and expansion strategy to operate asphalt shingle reprocessing facilities across Canada and the United States.

Sequence development events at the Empower Calgary Facility, some of which are done in parallel, are expected as follows:

- Detailed engineering design and procurement;
- Operational personnel and contractor hiring;
- Secure additional supply agreements for feedstock;
- Commence construction;
- Commence commissioning and ramp up;
- Commence commercial operations; and
- Commercial production.

NORTHSTAR CLEAN TECHNOLOGIES INC.
Management's Discussion and Analysis
December 31, 2023

KEY DEVELOPMENTS - 2023

Q1 2023

- On January 30, 2023, Northstar announced that on January 20, 2023, the Landlord for the land for Northstar's Empower Calgary Facility received a conditional development permit from Rocky View County. The Conditional Development Permit was issued to the Landlord and includes standard conditions that need to be completed prior to issuance of a development permit. As of the date of the MD&A, all conditions have been met.
- On February 13, 2023, the Company announced that Northstar's Empower Calgary Facility was approved for a non-repayable government grant of up to approximately \$7.1 million by Emissions Reduction Alberta ("ERA"), an Alberta-based government entity funded by the Government of Alberta. The lead applicant organization was Empower Calgary, a wholly owned subsidiary of Northstar, and the net proceeds received by the Company from the government grant will be used to further design, construct and commission the Empower Calgary Facility. On July 31, 2023, the Company entered into a contribution agreement with ERA for the government grant award.
- On February 14, 2023, Northstar announced that it received notice from the Canadian Patent Office ("CPO") that its patent application has been approved for fast track due to Northstar's green technology.
- On February 24, 2023, Northstar announced that its wholly owned subsidiary Empower Environmental Solutions Calgary Ltd. signed a long-term 15-year lease agreement with Mook Group of Companies for an industrial-zoned property of 3.98 acres located in Rocky View County, as the site for the Company's planned scale-up facility in Calgary. The lease is for an initial term of 15 years, with two extension options of five years each. All municipal permits have been received to proceed with construction, collection of asphalt shingles and production. On September 1, 2023, the Company formally took occupancy of the site.
- On February 28, 2023, Northstar closed \$625,000 in a non-brokered private placement of non-transferable unsecured convertible debentures. The convertible debentures bear an interest of 10% per year, paid semi-annually in arrears, and mature 36 months from the date of issue.
- On March 2, 2023, Northstar announced the execution of a definitive take-or-pay offtake agreement with McAsphalt for 100% of liquid asphalt production from its Empower Calgary Facility. The key commercial terms of the Offtake Agreement are unchanged from the binding term sheet announced by the Company on October 6, 2022.
- On March 8, 2023, Northstar announced that numerous major domestic and international asphalt shingle and flat roofing manufacturers (the "Manufacturers") successfully completed their detailed research and development testing of Northstar's liquid asphalt for use in asphalt shingles and flat roofing systems.
- On March 14, 2023, Northstar announced that it received an environmental awareness award from Waste Management Association of British Columbia.

Q2 2023

- On April 19, 2023, Northstar announced that it closed a non-brokered private placement of 18,195,367 units of the Company at a purchase price of \$0.15 per unit for aggregate gross proceeds of \$2,729,305. Each unit consists of one common share of the Company and one common share purchase warrant of the Company, with each warrant entitling the holder thereof to acquire one additional common share at an exercise price of \$0.20 per warrant share for a period of 36 months following the closing date of the private placement. As part of the transaction, 511,819 broker warrants were issued at a price of \$0.20 with an expiry of 3 years.
- On April 20, 2023, Northstar announced updated preliminary economics, an updated internal capital estimate (following the initial independent capital estimate completed by BBA as part of the FEED announced in March 2022), and provided a corporate update on funding progression for the Empower Calgary Facility.
- On May 11, 2023, Northstar provided an update on site development work at the Empower Calgary Facility, stating

NORTHSTAR CLEAN TECHNOLOGIES INC.

Management's Discussion and Analysis

December 31, 2023

that the Landlord was progressing well with preparing the land for construction, and also released an updated investor presentation.

- On May 30, 2023, Northstar announced the completion of milestones required to commence detailed engineering.

Q3 2023

- On July 7, 2023, Northstar announced that it executed a binding credit agreement (the "Credit Agreement") with the Business Development Bank of Canada ("BDC") for \$8.75 million in non-revolving project level debt (the "BDC Financing"), following the non-binding term sheet that was announced on June 15, 2023. The Company intends to use the proceeds for the development and construction of its Empower Calgary Facility. The following is a summary of the material terms of the Credit Agreement in effect as of the date of this MD&A:

- BDC will provide a senior secured loan of up to \$8.75 million;
- 15-year repayment period, with a 2-year interest only payment period;
- Fixed 5-year interest rate of 7.95% payable monthly;
- Covenants: maintain Fixed Charge Coverage Ratio equal to or greater than 1.10:1.00

The BDC Financing is subject to a one-time fee of \$43,750, which has already been paid by Northstar, and an annual fee of \$1,000. In connection with the BDC Financing, the Company paid a finder's fee to Independent Traders Group Inc. ("ITG") of \$87,500 in cash and will issue \$87,500 in common share purchase warrants exercisable at \$0.35 per common share of the Company for a period of 24 months or up to 36 months subject to TSXV approval.

- On July 31, 2023, Northstar announced that its wholly owned subsidiary, Empower Environmental Solutions Ltd., and ERA signed a contribution agreement whereby ERA will fund up to \$7,088,856 in government grants for the development and construction of the Empower Calgary Facility.
- On July 31, 2023, Northstar completed an arm's length significant strategic investment with Allmine Paving LLC ("Allmine"), a party and subsidiary of TAMKO Building Products LLC ("TAMKO"), one of America's largest independent manufacturers of residential roofing shingles, commercial roofing products and waterproofing solutions. The Company closed a \$8,480,979 (US\$6,424,984) non-brokered private placement (the "TAMKO Private Placement") of preferred shares (each, a "Preferred Share") in the capital of the Company, as Phase 1 of TAMKO's strategic investment (the "Strategic Investment"). In connection with the Strategic Investment, the Company entered into an investor rights agreement which granted certain rights to TAMKO, including the right to appoint a director to the Company's Board.

The Strategic Investment is intended to include two phases:

- i. Phase 1: \$8,480,979 (US\$6,424,984) of Preferred Shares (closed); and
- ii. Phase 2: Approximately \$4,720,000 (US\$3,580,000) of unsecured three-year convertible debentures to be purchased in two tranches and conditional on the attainment of certain milestones as agreed upon by the parties:
 - Tranche 1: Approximately \$2,376,000 (US\$1,790,000)
 - Tranche 2: Approximately \$2,376,000 (US\$1,790,000)

The Company issued 29,244,756 Preferred Shares in the private placement at a price of C\$0.29 per Preferred Share, for aggregate cash consideration of \$8,480,979 (US\$6,424,984). The Company's Preferred Shares are not listed on the TSX Venture Exchange. Each Preferred Share is convertible, at the sole option of its holder, at any time and from time to time, into one common share (each, a "Common Share") of the Company on a one-for-one basis and provides the holder with voting rights and dividend rights together and pari passu with the Common Shares on an "as-converted" basis. Upon closing of the Private Placement, TAMKO, through its wholly owned subsidiary, holds approximately 18.75% of the Company's issued and outstanding Common Shares, assuming the full conversion of the Preferred Shares into Common Shares. As part of the transaction, the Company signed a Memorandum of Understanding with TAMKO which granted them exclusivity rights and licensing for 3 future US facilities.

- On August 11, 2023, Northstar announced that the Board agreed to increase the size of the Board from six (6) to seven (7) directors and appointed a new director, Mr. Jeffrey D. Beyer to the Board. Mr. Beyer is a nominee from TAMKO, as part of the investor rights agreement.

NORTHSTAR CLEAN TECHNOLOGIES INC.

Management's Discussion and Analysis

December 31, 2023

- On September 12, 2023, Northstar announced that the landlord had completed the site work at the Empower Calgary Facility, which included the installation of lighting, fencing and foundations for the weigh scale; installation of required electrical work, paving of the parking lot; and landscaping at the front of the site.
- On September 27, 2023, Northstar held a site opening event at the Empower Calgary Facility.

Q4 2023

- On October 16, 2023, Northstar announced the commencement of detailed engineering design for the Empower Calgary Facility, alongside its engineering contractor BBA. Detailed engineering design included the following key deliverables: (i) final piping & instrumentation diagrams, (ii) plant layout design, (iii) issued for construction drawings, (iv) tender packages for equipment procurement, (v) assembly plans, and (vi) commissioning procedures.
- On November 1, 2023, Northstar announced the procurement of long-lead item equipment, including the placing of orders for three major long-lead items for the Empower Calgary Facility. These items will be manufactured off-site and will be delivered to Calgary as skid-mounted pieces of equipment. The total value of orders placed was approximately \$3.3 million.
- On November 21, 2023, Northstar announced a private placement offering of up to \$3.5 million of unsecured convertible debenture units. The debenture units will bear interest at a rate of 12.5% per annum and mature three years from the date of issue. Each debenture unit is comprised of (i) one 12.5% unsecured convertible debenture in the principal amount of \$5,000.00 convertible into common shares of the Company, and (ii) 25,000 common share purchase warrants that entitle the holder to purchase one additional common share at a price of \$0.30 per warrant share until the maturity date. The principal amount may be converted into a common share of the Company at \$0.20 per conversion share.
- On December 21, 2023, Northstar announced the first tranche closing of its previously announced private placement of convertible debenture units and announced the transition of its Chief Financial Officer. As part of the first tranche, the Company closed on aggregate gross proceeds of \$2.26 million. TAMKO subscribed in the private placement. Net proceeds received by the Company are expected to be used for general corporate purposes and added contingency for the Empower Calgary Facility. As part of the Chief Financial Officer transition the Company appointed Mr. Christopher Park as Interim Chief Financial Officer effective January 1, 2024.

Subsequent to Q4 2023

- On January 8, 2024, Northstar and IKO, Canada's leading asphalt shingle manufacturer, announced a binding five-year manufacturing waste asphalt shingle supply agreement for the Empower Calgary Facility. Under the terms of the Supply Agreement, IKO will supply all their manufacturing waste asphalt shingles produced at their Calgary facility to Northstar, diverting shingles that would otherwise be destined for landfills. The shingles will be reprocessed at Northstar's Empower Calgary Facility for an initial term of five years with mutual extension options.
- On January 18, 2024, Northstar announced the first delivery of asphalt shingles from IKO at the Empower Calgary Facility. The Company was subsequently paid a tipping fee by IKO on a per tonne basis for the waste shingles, representing the Company's first revenue from the Empower Calgary Facility.
- On February 16, 2024, Northstar announced the second tranche closing of aggregate gross proceeds of \$1.375 million of its previously announced private placement of convertible debenture units. Combined with the first tranche, the private placement was oversubscribed with total proceeds of \$3.635 million, compared to the Company's targeted amount of \$3.5 million.
- On April 8, 2024, the Company received the Government of Alberta's TIER Fund approval through Emissions Reduction Alberta ("ERA") for the Company's formal submission related to the first milestone for the government grant following the completion of detailed engineering design, which includes detailed drawings, data sheets and specifications 75% at issued for construction or issued for procurement stage, for its planned asphalt shingle reprocessing facility in Calgary, AB.
- On April 15, 2024, the Company subsequently announced that it had received \$1,340,722 from ERA following the

NORTHSTAR CLEAN TECHNOLOGIES INC.
Management's Discussion and Analysis
December 31, 2023

approval of the Company's formal submission related to the first milestone for the non-repayable project-level government grant. This payment is the first of four funding milestones for the Empower Calgary Facility as part of the executed Contribution Agreement of up to \$7.088 million.

PERFORMANCE SUMMARY

The following is a summary of the significant transactions that occurred during the year ended December 31, 2023 and for the previous period to the report date hereof:

- (a) During the year ended December 31, 2023:
- the Company spent \$2,305,218 on acquisitions of property, plant and equipment.
 - the Company spent \$778,194 in research and development expenses.
 - Non-brokered private placement of 18,195,367 units for gross proceeds of \$2,729,305.
 - Non-brokered private placement of 29,244,746 preferred shares for gross proceeds of \$8,480,979.
 - Brokered and non-brokered private placements of unsecured convertible debentures for gross proceeds of \$2,885,000.
- (b) During the year ended December 31, 2022:
- On January 18, 2022, the Company incorporated Empower Environmental Solutions Calgary Ltd.
 - On January 20, 2022, the Company incorporated Empower Environmental Solutions Toronto West Ltd.
 - the Company spent \$797,095 on acquisitions of property, plant equipment.
 - the Company spent \$1,575,828 in research and development expenses.
 - The company closed \$1,440,000 non-brokered private placement of unsecured convertible debentures.

Selected Annual Information

	Year Ended December 31, 2023	Year Ended December 31, 2022	Year Ended December 31, 2021
Loss and comprehensive loss	\$ 6,671,927	\$ 8,200,936	\$ 7,207,912
Basic and diluted loss per share	0.06	0.08	0.08
Total assets	17,875,045	6,829,057	12,374,613
Total liabilities	12,437,648	4,044,550	3,102,023

SUMMARY OF QUARTERLY RESULTS

	December 31, 2023	September 30, 2023	June 30, 2023	March 31, 2023
Total assets	\$ 17,875,045	\$ 17,013,792	\$ 6,703,697	\$ 6,019,542
Property, plant and equipment	5,040,686	3,135,979	3,103,004	3,210,572
Working capital (deficit)	5,173,113	6,632,707	(305,037)	(1,428,964)
Shareholders' equity (deficit)	5,437,397	9,534,558	2,373,552	1,323,233
General and administrative expenses	2,018,036	1,492,793	1,509,714	1,462,207
Loss and comprehensive loss	(1,887,706)	(1,399,574)	(1,696,078)	(1,688,569)
Basic and diluted loss per share	(0.02)	(0.01)	(0.01)	(0.02)

NORTHSTAR CLEAN TECHNOLOGIES INC.**Management's Discussion and Analysis****December 31, 2023**

	December 31, 2022	September 30, 2022	June 30, 2022	March 31, 2022
Total assets	\$ 6,829,057	\$ 7,123,935	\$ 8,532,713	\$ 10,180,750
Property, plant and equipment	3,286,540	3,318,021	3,329,674	3,235,492
Working capital (deficit)	(419,585)	397,412	1,739,915	3,661,725
Shareholders' equity	2,784,507	6,756,306	5,697,220	7,510,032
General and administrative expenses	1,906,416	1,430,191	1,664,057	1,769,094
Loss and comprehensive loss	(2,267,507)	(1,960,482)	(1,940,007)	(2,032,940)
Basic and diluted loss per share	(0.03)	(0.02)	(0.02)	(0.02)

Results of Operations

The following discussion addresses the operating results of the Company for the three months and years ended December 31, 2023, compared with December 31, 2022.

For the Three-Month Period Ended December 31, 2023:**Loss and comprehensive loss for the period**

The Company had a loss and comprehensive loss for the three-month period ended December 31, 2023, of \$1,887,706 (December 31, 2022 - \$2,267,507). The net decrease of \$379,801 in the loss and comprehensive loss for the three-month period ended December 31, 2023 compared to the three-month period ended December 31, 2022 was mainly due to an increase of \$64,601 in revenue, an increase of \$111,620 in general and administrative expenses, a decrease in research and development expenses of \$535,390, an increase in other items of \$114,445 mainly consisting of foreign exchange losses and interest income. The changes in revenue, general and administrative, research and development expenses and other income are noted below.

Revenue

During the three-month period ended December 31, 2023, the Company reported revenue of \$64,601 (December 31, 2022 – \$Ni). This is due to the Company starting to collect shingles in 2023 and receiving tipping fees in exchange, as well as receiving income from recycling the metal and wood waste received in the shingle bins.

Other income

During the three-month period ended December 31, 2023, the Company reported interest income of \$1,958 (December 31, 2022 - \$4,522) and a foreign exchange loss of \$113,965 (December 31, 2022 – \$2,085), compared to the three-month period ended December 31, 2022. Interest income is due from a net investment in sublease and the exchange loss is mostly unrealized and relates to US dollars held by the Company.

Research and development expenses ("R&D")

During the three-month period ended December 31, 2023, the Company reported R&D of \$30,656 compared to \$566,047 for the three-month period ended December 31, 2022. The items that caused the \$535,391 decrease is noted in the following:

In comparison to the three-month period ended December 31, 2022:

- Contract consulting fees decreased by \$120,939 due to the Company using less consultants than in the prior year.
- Repairs and maintenance of \$5,352 (December 31, 2022 - \$9,253) decreased by \$3,901 due to less repairs done on certain pieces of equipment.
- Site materials of \$42,164 (December 31, 2022 - \$452,715) decreased by \$410,551 mainly due to equipment rentals that were sent back to the vendor that were no longer needed and decrease in chemicals and supplies due to production ceasing.

Research and development expenses decreased overall as the Company transitioned to developing the Empower Calgary Facility during Q4 2023.

NORTHSTAR CLEAN TECHNOLOGIES INC.

Management's Discussion and Analysis

December 31, 2023

General and administrative expenses

General and administrative expenses of \$2,018,036 (December 31, 2022 - \$1,906,416) are primarily comprised of advertising and promotion, bank charges & interest, consulting fees, depreciation, insurance, IT & communications, office expenses, professional fees, rent and utilities, share-based compensation, transfer agent and regulatory fees, travel, and wages & benefits. The net increase was \$111,433 compared to the three-month period ended December 31, 2022. Items that caused the net decrease are noted in the following:

In comparison to the three-month period ended December 31, 2022:

- Advertising and promotion of \$104,042 (December 31, 2022 - \$101,736) increased by \$2,306 which is materially consistent with the prior year period.
- Bank charges and interest of \$213,990 (December 31, 2022 - \$59,243) increased by \$154,747 due to increases in interest and accretion expenses related to increase in convertible debentures and leased liabilities.
- Consulting of \$17,585 (December 31, 2022 - \$39,449) decreased by \$21,864 due to the Company reducing consulting fees while also capitalizing consulting fees directly related to the Empower Calgary Facility's development.
- Depreciation of \$337,168 (December 31, 2022 - \$289,605) increased by \$47,563 due to an increase in right of use asset depreciation related to Empower Calgary Facility's new lease.
- Insurance of \$29,300 (December 31, 2022 - \$28,402) was consistent with the prior year.
- IT and Communications of \$21,225 (December 31, 2022 - \$35,502) decreased by \$14,277 as the Company's IT needs were less this year compared to the previous year.
- Office and miscellaneous of \$53,723 (December 31, 2022 - \$11,281) increased by \$42,442 increased due to an increase in licenses.
- Operating costs of \$28,494 (December 31, 2022 - \$Nil) increased by \$28,494 as these costs relate to the disposal of garbage received in the shingle bins.
- Professional fees of \$78,908 (December 31, 2022 - \$178,582) decreased by \$99,674 as legal and accounting fees were higher in the prior year due to the completion of certain securities based transactions and specific business transactions.
- Rent and utilities of \$58,707 (December 31, 2022 - \$161,621) decreased by \$102,914 due to a decrease in rent payments due to the Calgary head office being terminated at the end of March 2023 along with a decrease in utilities and ground maintenance at the Delta Pilot Facility.
- Share-based compensation of \$165,482 (December 31, 2022 - \$123,619) increased by \$41,863 due to the vesting of the stock options restricted stock units, and performance stock units on historical issuances.
- Transfer agent and regulatory fees of \$32,477 (December 31, 2022 - \$33,538) decreased by \$1,061 which is materially consistent with the prior year period.
- Travel of \$30,396 (December 31, 2022 - \$39,763) decreased by \$9,367 as the Company reduced travel to decrease its burn rate.
- Wages and benefits of \$846,539 (December 31, 2022 - \$804,260) increased by \$42,279 as additional staff members were added as the Company transitioned to developing Calgary and certain staff members received bonuses which was offset by the capitalization of wages into the Empower Calgary Facility.

For the Year Ended December 31, 2023:

Loss and comprehensive loss for the period

The Company had a loss and comprehensive loss for the year ended December 31, 2023, of \$6,671,927 (December 31, 2022 - \$8,200,936). The net decrease of \$1,529,009 in the loss and comprehensive loss for the year ended December 31, 2023 compared to the year ended December 31, 2022 was mainly due to an increase of \$206,440 in revenue, a decrease of \$287,008 in general and administrative expenses, a decrease in research and development expenses of \$797,634, an increase in other items of \$21,130 mainly consisting of foreign exchange gains, loss on tax receivable and interest income, and an change in income and investment tax recoveries of \$17,455. The changes in revenue, general and administrative, research and development expenses, and other income are noted below.

NORTHSTAR CLEAN TECHNOLOGIES INC.

Management's Discussion and Analysis

December 31, 2023

Revenue

During the year ended December 31, 2023, the Company reported revenue of \$206,440 (December 31, 2022 – \$Nil). This is due to the Company starting to collect shingles in 2023 and receiving tipping fees in exchange as well as receiving income from recycling the metal and wood waste received in the shingle bins.

Other income

During the year ended December 31, 2023, the Company reported interest income of \$10,402 (December 31, 2022 - \$19,703), other income of \$25,316 (December 31, 2022 – \$12,136), a loss on tax receivable of \$Nil (December 31, 2022 - \$130,522), and a foreign exchange gain of \$85,083 (December 31, 2022 –\$988 loss), compared to the year ended December 31, 2022. Other income relates to a hydro rebate at the Delta Pilot Facility and the exchange gain is mostly unrealized and relates to US dollars held by the Company.

Research and development expenses (“R&D”)

During the year ended December 31, 2023, the Company reported R&D of \$778,194 compared to \$1,575,828 for the year ended December 31, 2022. The items that caused the \$797,634 decrease is noted in the following:

In comparison to the year ended December 31, 2022:

- Contract consulting fees of \$283,306 (December 31, 2022 - \$477,539) decreased by \$194,233 due to the Company using less consultants than in the prior year.
- Repairs and maintenance of \$90,290 (December 31, 2022 - \$18,347) increased by \$71,943 due to some major repairs done on the rotochopper equipment and other large equipment, and some electrical work.
- Site materials of \$404,598 (December 31, 2022 - \$1,079,942) decreased by \$675,344 mainly due to the return of certain equipment rentals and less supplies needed as production is minimized.

Research and development expenses decreased overall as the Company transitioned to developing the Empower Calgary Facility during Q4 2023.

General and administrative expenses

General and administrative expenses of \$6,482,750 (December 31, 2022 - \$6,769,758) are primarily comprised of advertising and promotion, bank charges & interest, consulting fees, depreciation, insurance, IT & communications, office expenses, professional fees, rent and utilities, share-based compensation, transfer agent and regulatory fees, travel, and wages & benefits. The net decrease was \$287,008 compared to the year ended December 31, 2022. Items that caused the net decrease are noted in the following:

In comparison to the year ended December 31, 2022:

- Advertising and promotion of \$312,403 (December 31, 2022 - \$609,334) decreased by \$296,931 as the Company focused on decreasing its monthly burn rate.
- Bank charges and interest of \$638,262 (December 31, 2022 - \$228,589) increased by \$409,673 due to increases in interest and accretion expenses related to increase in convertible debentures and leased liabilities.
- Consulting of \$201,533 (December 31, 2022 - \$276,664) decreased by \$75,131 due to the Company reducing consulting fees while also capitalizing consulting fees directly related to the Empower Calgary Facility's development.
- Depreciation of \$1,120,283 (December 31, 2021 - \$1,075,999) increased by \$44,284 due to an increase in right of use asset depreciation related to Empower Calgary Facility's new lease.
- Insurance of \$112,083 (December 31, 2022 - \$128,060) decreased by \$15,977 due to the renewal rates for D&O and property and plant liability insurance.
- IT and Communications of \$89,448 (December 31, 2022 - \$159,386) decreased by \$69,938 due to the Company incurring ERP consulting fees in the previous year.
- Office and miscellaneous of \$79,687 (December 31, 2022 - \$55,133) increased by \$24,554 due to an increase in licenses.
- Operating costs of \$75,456 (December 31, 2022 - \$Nil) increased by \$75,456 as these costs relate to the disposal of garbage received in the shingle bins.

NORTHSTAR CLEAN TECHNOLOGIES INC.

Management's Discussion and Analysis

December 31, 2023

- Professional fees of \$465,118 (December 31, 2022 - \$591,795) decreased by \$126,677 due to the Company having a contract Director of Finance in the prior year which was offset by increased costs related to the preparation of the SR&ED claims.
- Rent and utilities of \$306,502 (December 31, 2022 - \$426,116) decreased by \$119,614 due to a decrease in rent payments due to the Calgary head office being terminated at the end of March 2023 which was partially offset by an increase in the Empower Pilot Facility payments and an increase due to the new Empower Calgary Facility lease.
- Share-based compensation of \$545,787 (December 31, 2022 - \$656,932) decreased by \$111,145 due to the vesting of the stock options restricted stock units, and performance stock units on historical issuances.
- Transfer agent and regulatory fees of \$116,522 (December 31, 2022 - \$106,671) increased by \$9,851 mainly due to additional TSXV fees, offset by the timing of the renewal of the OTC Markets application fee which occurred in Q1 of the prior year but was renewed again in December 2022 rather than January 2023.
- Travel of \$131,460 (December 31, 2022 - \$226,945) decreased by \$95,485 as the Company reduced travel to decrease its burn rate.
- Wages and benefits of \$2,288,206 (December 31, 2022 - \$2,228,134) increased by \$60,072 as the Company hired an additional executive staff member during and certain staff members received a pay increase and bonus which was offset by the capitalization of wages into the Empower Calgary Facility.

LIQUIDITY AND CAPITAL RESOURCES

The Company's development of asphalt processing activities has been funded to date primarily through the issuance of common shares, debt or loan financings, and grant financings, and the Company expects that it will continue to be able to utilize this source of financing until it develops cash flow from its reprocessing operations. Other than as discussed herein, the Company is not aware of any trends, demands, commitments, events or uncertainties that may result in its liquidity either materially increasing or decreasing at present or in the foreseeable future. Material increases or decreases in the Company's liquidity will be substantially determined by the success or failure of its commercialization of a proprietary process technology for the reprocessing of asphalt shingles and the extraction and recovery of asphalt, fiber and aggregate to be sold and used in asphalt pavement, shingle manufacturing, construction products, and other industrial applications, as well as its continued ability to raise capital.

During the year ended December 31, 2023 the Company completed the following financing transactions:

- On February 28, 2023, the Company issued \$625,000 of unsecured Convertible Debentures in a non-brokered private placement;
- On April 19, 2023, the Company issued 18,195,367 units in a non-brokered private placement for gross proceeds of \$2,729,305;
- On July 31, 2023 the Company closed a non-brokered private placement to TAMKO of 29,244,756 Preferred Shares at a price of \$0.29 per Preferred Share for aggregate proceeds of \$8,480,979 (US\$6,424,984); and
- On December 21, 2023, the Company closed a convertible debenture private placement in the amount of \$2,260,000.

The Company anticipates spending significant capital resources on the development and construction of its Empower Calgary Facility over the next twelve months which is estimated to have a capital cost of \$17,500,000 including a contingency of \$1,700,000, of which, \$2,011,106 had been incurred as at December 31, 2023. After the Empower Calgary Facility has been built, management is expecting that each additional facility constructed afterward will cost approximately \$15,000,000 due to one-time costs incurred during the development of the Empower Calgary Facility such as engineering detailed design.

To fund the development and construction of its Empower Calgary Facility the Company, in addition to financing transactions completed during the year and cash of \$7,648,311 as of December 31, 2023, has secured senior secured debt with BDC for \$8,750,000 and a government grant from ERA in the amount of \$7,088,856. In addition, the Company will be funding construction with tipping fees from receiving roofing shingles from IKO which began in January 2024.

Drawing on the senior secured debt and ERA grant are subject to achieving a number of conditions precedent and milestones. Subsequent to December 31, 2023 the Company achieved detailed engineering design which, among other criteria, was required to receive ERA milestone 1 payment in the amount of \$1,340,722.

NORTHSTAR CLEAN TECHNOLOGIES INC.
Management's Discussion and Analysis
December 31, 2023

The Company assesses its financing requirements and its ability to access equity or debt markets on an ongoing basis. The assessment considers: the stage and success of the Company's evaluation activities to date; the continued participation of the Company's partners in evaluation activities; and financial market conditions. It is possible that future economic events and global conditions may result in further volatility in the financial markets which could negatively impact the Company's ability to access equity or debt markets in the future.

Net cash used in operating activities for the period ended December 31, 2023 was \$4,501,739 compared to \$5,687,091 for the period ended December 31, 2022, consisting primarily of the operating loss for the period and the change in non-cash items.

Net cash used in investing activities for the period ended December 31, 2023, was \$1,594,574 compared to \$647,889 used in investing activities during the period ended December 31, 2022. The change consisted of cash used for the acquisition of property, plant and equipment of \$1,684,070 (December 31, 2022 - \$716,853), the acquisition of intangible assets of \$16,782 (December 31, 2022 - \$26,036), proceeds from government grants on PPE of \$Nil (December 31, 2022 - \$100,000), and refundable deposits paid \$106,278 (December 31, 2022 - \$5,000).

Net cash increases in financing activities for the period ended December 31, 2023 was \$12,541,155 compared to \$1,500,270 during the period ended December 31, 2022 which consisted of \$2,650,861 from convertible debentures (December 31, 2022 - \$1,398,704), \$2,652,533 from proceeds from issuance of common shares (December 31, 2022 - \$750,000), \$8,409,523 from proceeds from issuance of preferred shares (December 31, 2022 - \$Nil), \$131,250 in deferred costs (December 31, 2022 - \$Nil), \$121,250 in loan repayments (December 31, 2022 - \$90,000), \$712,109 in lease payments made on leased premises (December 31, 2022 - \$634,367), \$31,903 in cash settled PSU payments (December 31, 2022 - \$Nil) and \$175,250 in interest paid (December 31, 2022 - \$Nil).

OFF-BALANCE SHEET ARRANGEMENTS

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

RELATED PARTY TRANSACTIONS

- (a) As at December 31, 2023, accounts payable and accrued liabilities include \$672,690 (December 31, 2022 - \$754,656) owing to companies with certain directors in common and companies controlled by certain directors and officers or former directors. The amounts are unsecured, non-interest bearing and due on demand.
- (b) Key management personnel include those persons having authority and responsibility for planning, directing and controlling the activities of the Company as a whole. During the years presented the Company paid or accrued the following key management personnel compensation to directors, officers, and/or companies controlled by directors and officers and/or companies with certain directors in common:

	December 31, 2023	December 31, 2022
Advertising, marketing and promotion	\$ 81,750	\$ 55,800
Consulting fees	24,000	42,000
Professional fees	-	80,000
Share-based compensation	391,569	453,994
Wages and benefits	1,391,915	1,166,210
	<u>\$ 1,889,234</u>	<u>\$ 1,798,004</u>

- (c) During the year ended December 31, 2021, the Company acquired equipment in the amount of \$270,000 plus GST and PST from a company with certain controlled by a former officer of the Company.
- (d) During the year ended December 31, 2023, the amount of \$325,000 (December 31, 2022 - \$360,000) was received in convertible debenture proceeds by officers or directors of the Company.
- (e) As at December 31, 2023 prepaids includes \$Nil (December 31, 2022 - \$45,000) to a company controlled by a director.
- (f) During the year ended December 31, 2023, 401,757 common shares were issued to key management personnel for equity-settled RSUs and PSUs for 92,712 and 309,045 common shares, respectively.

NORTHSTAR CLEAN TECHNOLOGIES INC.
Management's Discussion and Analysis
December 31, 2023

COMMITMENTS

Lease Commitments

Calgary

Northstar's wholly owned subsidiary, Empower Environmental Solutions Calgary Ltd., negotiated a new lease for the planned scale up facility in Rocky View County, near Calgary, Alberta effective August 18, 2023 for an initial term of 15-years with an option to extend for two additional 5 year terms.

The basic annual rents are as follows:

- from August 18, 2023 to August 17, 2028 - \$346,516 per annum
- from August 18, 2028 to August 17, 2033 - \$381,168 per annum, and
- from August 18, 2033 to August 17, 2038 - \$419,284 per annum

Estimated additional rents are approximately \$120,000 per annum.

Delta

Northstar's wholly owned subsidiary, Empower Environmental Solutions Ltd., has a 5-year lease for the pilot facility in Delta, BC, which expires December 2025, but has a 5 year renewal option. The basic annual rents remaining are as follows:

- from January 1, 2023 to December 31, 2024 - \$583,563 per annum
- from January 1, 2025 to December 31, 2025 - \$609,838 per annum

Estimated additional rents are approximately \$126,000 per annum.

Loans Payable

	Equipment Loan
Loans payable:	
Balance – December 31, 2021	239,015
Accrued interest	2,363
Repayment of loan	(92,363)
Interest accretion on low interest loan	18,946
Balance – December 31, 2022	167,961
Less current portion	(121,250)
Long term portion	\$ 46,711
Balance – December 31, 2022	167,961
Accrued interest	1,250
Repayment of loan	(121,250)
Interest accretion on low interest loan	10,511
Balance – December 31, 2023	58,472
Less current portion	(58,472)
Long term portion	\$ -

Equipment loan:

The Company acquired \$270,000 of equipment from a company controlled by a former officer of the Company during the year. The term of the loan is 30 months, beginning January 1, 2022 and ending June 30, 2024. The loan carries an annual interest rate of 1% per annum, secured by the equipment and repayable in monthly instalments of \$5,000 plus interest for the first 6 months and \$10,000 per month plus interest from 7th month until fully paid. Interest payments begin in July 2022. The equipment loan was recognized as the present value using a 10% market rate of interest. The difference was recognized as a

NORTHSTAR CLEAN TECHNOLOGIES INC.
Management's Discussion and Analysis
December 31, 2023

shareholder contribution in reserves on low interest loan. The amount outstanding as at December 31, 2023 was \$58,472 (December 31, 2022 - \$167,961). The principal payments due within 1 year are \$60,000.

Senior Secured Debt:

During the year the Company entered into binding Letter of Offer credit agreement with the Business Development Bank of Canada ("BDC") for project financing (the "BDC Financing") of the Empower Calgary Facility of up to \$8,750,000 in non-revolving senior secured debt. The Company will use the proceeds from the BDC Financing for the development and construction of its Empower Calgary Facility in Calgary, AB.

The following is a summary of the material terms of the BDC Financing:

- BDC will provide a senior secured project loan of up to \$8,750,000;
- 15-year repayment period, with a 2-year interest only payment period; and
- Fixed 5-year interest rate of 7.95% payable monthly.

The BDC Financing is subject to a one-time fee of \$43,750, which has already been paid by Northstar and recorded in the deferred costs, and an annual fee of \$1,000.

In connection with the BDC Financing, the Company paid a finder's fee to of \$87,500 in cash, recorded in the deferred costs, and subsequent to year ended December 31, 2023, issued 250,000 common share purchase warrants exercisable at \$0.35 per common share of the Company expiring on July 5, 2026, with the fair value of \$87,500. The financing and payment of the finder's fee remain subject to regulatory and exchange approvals to the extent required.

Drawing on the debt is subject to a number of conditions precedent and is secured with a first security interest over the assets of Empower Environmental Solutions Calgary Ltd. and guarantees from Northstar Clean Technologies Inc. and Empower Environmental Solutions Ltd. supported by a first security interest from both guarantors.

As of December 31, 2023, the Company has not drawn any funds from the senior secured debt.

Convertible Debentures

Balance – December 31, 2021	\$ -
Additions	924,179
Accretion	4,229
Accrued interest	6,000
Balance – December 31, 2022	934,408
Less current portion	6,000
Long term portion	\$ 928,408
 Balance – December 31, 2022	 \$ 934,408
Additions	1,854,770
Accretion	173,072
Accrued interest	203,931
Interest paid	(175,250)
Balance – December 31, 2023	2,990,931
Less current portion	34,681
Long term portion	\$ 2,956,250

Refer to the Company's audited financial statements for the year end December 31, 2023 for full convertible debenture terms. Principal payments due within 2-5 years are \$4,325,000.

NORTHSTAR CLEAN TECHNOLOGIES INC.

Management's Discussion and Analysis

December 31, 2023

Contract Commitments

As at December 31, 2023, the Company had contractual commitments to acquire property, plant and equipment for \$3,651,853 related to the development and construction of the Empower Calgary Facility.

CAPITAL MANAGEMENT

The Company's capital comprises its shareholders equity under management. The Company's objectives when managing capital are to safeguard the Company's ability to continue as a going concern in order to pursue the development of its processing technology and to maintain a flexible capital structure which optimizes the costs of capital at an acceptable risk.

The Company manages the capital structure and makes adjustments to it in light of changes in economic conditions and the risk characteristics of the underlying assets. To maintain or adjust the capital structure, the Company may attempt to issue new shares, issue new debt or convertible debt, enter into strategic partnerships, and/or acquire or dispose of assets.

In order to facilitate the management of its capital requirements, the Company prepares expenditure budgets that are updated as necessary depending on various factors, including successful capital deployment and general industry conditions. The Board of Directors does not establish quantitative return on capital criteria for management, but rather relies on the expertise of the Company's management to sustain future development of the business.

In order to maximize ongoing development efforts, the Company does not pay dividends. The Company's investment policy is to invest its short-term excess cash in highly liquid short-term interest-bearing investments with maturities of 365 days or less from the original date of acquisition, selected with regards to the expected timing of expenditures from continuing operations.

There have been no changes to the Company's approach to capital management during the period ended December 31, 2023. The Company is not subject to externally imposed capital requirements.

FAIR VALUE OF FINANCIAL INSTRUMENTS AND RISK MANAGEMENT

Financial Risk Management Objectives

The Company examines the various financial instrument risks to which it is exposed and assesses the impact and likelihood of those risks. These risks may include credit risk, liquidity risk, currency risk and interest rate risk. Where material, these risks are reviewed and monitored.

Liquidity and Capital Management

The Company manages its capital to ensure that it will be able to continue as going-concern while maximizing the return to shareholders through the optimization of debt and equity balances.

The capital of the Company consists of items included in Shareholders' Equity of \$5,437,397.

The Company manages its capital structure and makes adjustments in light of changes in economic conditions. To maintain or adjust the capital structure, the Company may issue equity or return capital to shareholders. There were no changes to the Company's approach to capital management during the year ended December 31, 2023. The Company is not subject to externally imposed capital requirements.

Credit risk

Credit risk is the risk that a counterparty to a financial instrument will fail to discharge an obligation or commitment that it has entered into with the Company. The carrying amounts of financial assets best represent the maximum credit risk exposure at the reporting date.

Cash is held with reputable banks in Canada. The long-term credit rating of these banks, as determined by Standard and Poor's, was A+.

NORTHSTAR CLEAN TECHNOLOGIES INC.

Management's Discussion and Analysis

December 31, 2023

Liquidity risk

Liquidity risk is the risk that the Company will not meet its financial obligations as they become due.

Accounts payables and accrued liabilities are paid in the normal course of business generally according to their terms. In the normal course of business, the Company enters into contracts that give rise to commitments for future minimum payments. As at December 31, 2023, the Company had \$7,648,311 cash to settle current liabilities of \$2,749,152.

Interest Rate Risk

Interest rate risk is the risk that the fair value or future cash flows of financial instruments will fluctuate because of changes in market interest rates. The Company is not subject to interest rate risk.

Foreign currency risk

Foreign currency risk is the risk that the fair value or future cash flows of an exposure will fluctuate because of changes in foreign exchange rates. The Company's exposure to the risk of changes in foreign exchange rates relates primarily to the Company's cash balances held in United States dollars and US dollar denominated payables.

As at December 31, 2023, the Company has certain monetary items denominated in United States dollars. Based on these net exposures, a 10% change of the Canadian dollar against the United States dollar would result in an impact on net loss of \$612,259 (2022 – \$Nil). The Company does not hedge its risk from changes in foreign currency exchange rates.

Force Majeure Events

The Company's operations may be adversely impacted by factors that are beyond the Company's control including pandemics, natural disasters, terrorism, labour disruptions, outbreaks of war, and other forms of economic, health or political disruptions. Such factors may not be foreseeable and may significantly adversely affect global economic conditions, including inflation, supply chain, global shipping, and currency volatility. While many of the restrictions imposed during the COVID-19 pandemic are now being eased globally, the Company's business may still be impacted through lingering or renewed effects of the pandemic, including through supply chain, financial constraints of its customers and suppliers, increasing costs, and difficulty attracting skilled labor, with a result that it may not be able to build, own and operate its Empower Pilot Facility and/or the Empower Calgary Facility within the anticipated timeframe or on budget. In some cases, such delays may result in liquidated damages, and may adversely affect the Company's operations.

The Russia-Ukraine war has drastically reduced capacity for Ukraine to supply goods and raw materials, such as steel. The sanctions imposed on Russia have also led to the reduced availability of Russian-produced steel and other products.

Climate change has increased the incidence of natural disasters caused by weather and climate extremes including heatwaves, droughts, forest fires, atmospheric rivers, torrential downpours and flooding.

Future incidents could significantly adversely affect the Company's operations either directly, or by affecting the businesses of its suppliers or customers. Other events and factors that are beyond the Company's control but that may have a significant adverse effect on the Company's operations include but are not limited to strikes and labour disruptions affecting the Company's suppliers or customers, and global political instabilities such as the outbreak of war, discussed below under "Macroeconomic and Geopolitical Risks and Uncertainties".

While the Company works to mitigate the effects of these uncontrollable events, there is no assurance that they will be effective in doing so in future, particularly when multiple events coincide, and they may negatively impact the Company's operations and profitability.

Unexpected Disruptions Affecting Projects and Operations

The Company's current and future operations can sometimes be subject to delays for a variety of reasons, including labour slowdowns, construction delays unrelated to the Company's products, technological malfunctions, defective materials, or workplace safety. Such delays may delay the recognition of revenue, discourage customers from doing business with the

NORTHSTAR CLEAN TECHNOLOGIES INC.

Management's Discussion and Analysis

December 31, 2023

Company, and may hurt the Company's reputation, affecting future sales prospects. The Company may lose sales and may not be able to replace those sales at an acceptable margin or at all. There can be no assurance that such delays will be overcome in a timely manner and to the satisfaction of the customer.

Furthermore, the Company enters into agreements which, consistent with industry standards, may include liquidated damages or termination provisions which may allow customers to claim amounts or terminate and not proceed with proposed projects.

Macroeconomic and Geopolitical Risks and Uncertainties

Macroeconomic and geopolitical risks and uncertainties may have a material adverse impact on the Company's operations. The Company procures a portion of its supplies and equipment from global suppliers. Economic, legal and political conditions globally could adversely affect the Company's ability to conclude sales and procure and timely deliver products. These factors may significantly adversely affect the availability and costs of raw materials and equipment, contribute to inflation and cause currency fluctuations, and cause market volatility, all of which could significantly impact the Company's revenues and profitability and its ability to raise capital as needed.

The Russia-Ukraine war and its related economic and political sanctions on global fuel sources has exacerbated an already challenged global shipping environment and supply chain challenges, for example. These conditions are beyond the Company's control and there can be no assurances that any mitigating actions by the Company or the Company's suppliers will be effective.

The Israel-Palestine war and its related economic and political tensions has created geopolitical risk globally, for example. These conditions are beyond the Company's control and there can be no assurances that any mitigating actions by the Company or the Company's suppliers will be effective.

Sourcing Equipment

The continuation of global transportation and logistics challenges may have a negative impact on the Company's ability to timely source products and capital equipment. To the Company's knowledge, none of the Company's suppliers or customers have entered into bankruptcy due to the COVID-19 pandemic, natural disaster or other adverse supply chain effects. The Company's purchasing plan identifies alternative sources of supply for equipment suppliers and product fabricators that are essential to the Company's business operations. In 2022, the global supply chain, which was already disrupted by the COVID-19 pandemic, was further impacted by the Russia-Ukraine war. The prices for goods and services continued to increase due to worldwide inflation. The Company is subject to a continued risk resulting from the COVID-19 pandemic, the war in Ukraine and other risks affecting the global supply chain.

Fair Value Measurements Recognized in the Statement of Financial Position

The following table summarizes the carrying values of the Company's financial instruments.

	December 31, 2023	December 31, 2022
Financial assets at amortized cost (i) and (ii)	\$ 7,669,626	\$ 1,114,166
Financial liabilities at amortized cost (iii)	\$ 5,095,111	\$ 2,385,089

(i) Cash

(ii) Trade receivables

(iii) Accounts payable and accrued liabilities and equity-based compensation payable and loans payable, and convertible debentures

The Company categorizes its financial assets and liabilities measured at the fair value into one of three different levels depending on the observability of the inputs used in the measurement.

The three levels are defined as follows:

- Level 1 - inputs to the valuation methodology are quoted prices (unadjusted) for identical assets or liabilities in active markets.

NORTHSTAR CLEAN TECHNOLOGIES INC.**Management's Discussion and Analysis****December 31, 2023**

- Level 2 - inputs to valuation methodology include quoted prices for similar assets and liabilities in active markets, and inputs that are observable for the asset or liability, either directly or indirectly, for substantially the full term of the financial instrument.
- Level 3 - inputs to the valuation methodology are unobservable and significant to the fair value measurement.

Cash is measured at fair value using Level 1 inputs and convertible debentures are measured using Level 2 inputs.

The fair values of other financial liabilities approximate their carrying value, due to their short-term nature or market rate of interest.

OUTSTANDING SHARE DATA AS AT DECEMBER 31, 2023 AND AS AT THE DATE OF THE MD&A:

- a) Authorized Share Capital:
Unlimited number of common shares without par value.
- b) Issued Share Capital:
126,710,381 common shares with a stated value of \$28,137,042.
29,244,756 preferred shares with a stated value of \$5,631,271.
- c) Outstanding stock options as at December 31, 2023:

Expiry Date	Exercise Price	Number of Options
December 15, 2024	\$ 0.35	475,000
February 16, 2026	\$ 0.35	2,500,000
June 12, 2026	\$ 0.35	300,000
July 12, 2026	\$ 0.35	2,100,000
December 15, 2026	\$ 0.35	400,000
February 7, 2027	\$ 0.35	200,000
April 19, 2027	\$ 0.35	260,854
August 30, 2027	\$ 0.35	20,000
March 2, 2028	\$ 0.21	11,000
September 7, 2028	\$ 0.21	1,145,472
October 4, 2028	\$ 0.21	25,000
Total Outstanding		7,437,326

- d) Outstanding share purchase warrants as at December 31, 2023:

	Expiry Date	Exercise Price	Number of Warrants
	July 13, 2026 ⁽¹⁾	\$ 0.279	4,596,268
Finders warrants	July 13, 2026 ⁽¹⁾	\$ 0.279	406,249
	July 13, 2026 ⁽¹⁾	\$ 0.465	490,615
Finders warrants	July 13, 2026 ⁽¹⁾	\$ 0.465	204,457
Broker warrants	December 15, 2025	\$ 0.350	157,200
Broker warrants	February 28, 2026	\$ 0.350	24,000
Broker warrants	April 19, 2026	\$ 0.200	511,819
	April 19, 2026	\$ 0.200	18,195,367
	December 21, 2026	\$ 0.300	11,300,000
Broker warrants	December 21, 2026	\$ 0.300	420,000
Outstanding and exercisable			36,305,975

NORTHSTAR CLEAN TECHNOLOGIES INC.
Management's Discussion and Analysis
December 31, 2023

⁽¹⁾ The warrants outstanding on acquisition were converted at a ratio of 1 old for 1.0747 new warrants on December 23, 2020 and the price was adjusted by the same ratio. All warrants were reissued on July 13, 2021, for a period of 5 years when the Company became publicly listed and commenced trading, with a new expiry date of July 13, 2026. These warrants are non-transferable.

e) Issued Restricted Stock Units and Performance Stock Units outstanding at December 31, 2023:

	Vesting Date	Issued	Cash Settled	Stock settled
2022 Restricted Stock Units	March 31, 2024	130,424	11,785	118,639
2022 Restricted Stock Units	March 31, 2025	130,424	11,785	118,639
2023 Restricted Stock Units	September 7, 2024	296,606	29,464	267,142
2023 Restricted Stock Units	March 31, 2025	296,606	29,464	267,142
2022 Actual Performance Stock Units	March 31, 2024	652,135	256,663	395,472
2022 Actual Performance Stock Units	March 31, 2025	652,135	256,663	395,472
2023 Maximum Performance Stock Units	September 7, 2024	4,449,103	2,445,533	2,003,570
2023 Maximum Performance Stock Units	March 31, 2025	4,449,103	2,445,533	2,003,570
Total Restricted Stock Units and Performance Stock Units		11,056,536	5,486,890	5,569,646

f) Shares held in escrow or pooling agreements: As of the date of this MD&A, there are currently 5,112,277 common shares, and 22,500 warrants held in escrow. In connection with the listing of the Common Shares for trading on the TSXV in July 2021, an aggregate of 17,040,927 Common Shares, and 75,000 Warrants were deposited in escrow with Computershare on June 18, 2021, of which 10% of such Common Shares were released from escrow on the date the Common Shares were listed on the TSXV, and 15% are to be release from escrow every six months thereafter, subject to the provisions provided for in NP 46-201.

g) As of the date of this MD&A the Company had the following outstanding:

- 127,432,533 common shares and 29,244,756 preferred shares;
- 7,698,326 stock options;
- 43,562,225 warrants; and
- 10,334,384 restricted and performance stock units.

SUBSEQUENT EVENTS

Subsequent to December 31, 2023:

- The Company closed the second and final tranche ("the Second Tranche") of its previously announced private placement offering of Convertible Debenture Units of the Company at a price of \$5,000 per Convertible Debenture Unit for gross proceeds of \$1,375,000. Each Convertible Debenture Unit consists of one 12.5% unsecured Convertible Debenture in the Principal Amount of \$5,000 and 25,000 Warrants, with each Warrant entitling the holder to purchase one additional common share at a price of \$0.30 per common share until February 16, 2027. The Company issued 6,875,000 Warrants in connection with the Convertible Debenture units.

As consideration for the services of the Agent in connection with the closing of the Second Tranche of the Brokered Offering, the Company paid to the Agent: a cash commission of \$11,200 and issued to the Agent 56,000 compensation warrants (the "Agent's Warrants"). Each Agent's Warrant is exercisable for a period of 36 months and entitles the holder to acquire one common share at an exercise price of \$0.30 per share. In connection with the closing of the Second Tranche of the Non-Brokered Offering, the Company paid finders fees in the aggregate amount of \$15,050 and issued 75,250 non-transferable broker warrants (the "Broker Warrants"), with each Broker Warrant exercisable for a period of 36 months and entitling the holder thereof to acquire one common share at an exercise price of \$0.30 per share.

NORTHSTAR CLEAN TECHNOLOGIES INC.
Management's Discussion and Analysis
December 31, 2023

- The Company granted 261,000 stock options to an employee of the Company at an exercise price of \$0.21 for a 5-year term.
- As a result of ERA's approval, the payment for the first milestone in the amount of \$1,340,722 had been received by the Company.
- The Company issued 722,152 common shares for equity-settled Restricted and Performance Stock Units.
- In connection with the BDC Financing, the Company issued 250,000 warrants for finder's fees, exercisable at \$0.35 and with an expiry date of July 5, 2026.