EcoSynthetix Inc.

Consolidated Financial Statements
December 31, 2021 and December 31, 2020
(expressed in US dollars)

Independent auditor's report

To the Shareholders of EcoSynthetix Inc.

Our opinion

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the financial position of EcoSynthetix Inc. and its subsidiaries (together, the Company) as at December 31, 2021 and 2020, and its financial performance and its cash flows for the years then ended in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board (IFRS).

What we have audited
The Company's consolidated financial statements comprise:

- the consolidated balance sheets as at December 31, 2021 and 2020;
- the consolidated statements of operations and comprehensive loss for the years then ended;
- the consolidated statements of shareholders' equity for the years then ended;
- the consolidated statements of cash flows for the years then ended; and
- the notes to the consolidated financial statements, which include significant accounting policies and other explanatory information.

Basis for opinion

We conducted our audit in accordance with Canadian generally accepted auditing standards. Our responsibilities under those standards are further described in the *Auditor's responsibilities for the audit of the consolidated financial statements* section of our report.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Independence
We are independent of the Company in accordance with the ethical requirements that are relevant to our audit of the consolidated financial statements in Canada. We have fulfilled our other ethical responsibilities in accordance with these requirements.

Key audit matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements for the year ended December 31, 2021. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Key audit matter	How our audit addressed the key audit matter
Inventory *Refer to note 2 – Summary of significant accounting policies and note 8 – Inventory to the consolidated financial statements.* As at December 31, 2021, the Company held inventory of $2,073,800. The Company's inventory consists of raw materials and finished goods. Inventory is valued at the lower of cost, determined on a first-in, first-out basis, and net realizable value. Inventory costs include the costs of material, contract manufacturing costs, and an allocation of fixed manufacturing overhead costs related to depreciation based on normal production volumes. Net realizable value is the estimated selling price less applicable selling expenses. We considered this a key audit matter due to the magnitude of the inventory balance, and the high degree of audit effort required in performing procedures related to the inventory.	Our approach to addressing the matter included the following procedures, among others: ● Observed the inventory count process for a sample of locations near year-end and performed independent test counts. ● Tested a sample of inventory items to relevant invoices to assess the accuracy of the costs of material and contract manufacturing costs for raw materials and finished goods. ● Assessed the reasonableness of the allocation of fixed manufacturing overhead costs related to depreciation by performing analytical procedures. ● Tested that inventory at year-end was recorded at the lower of cost and net realizable value by comparing the cost for a sample of inventory items as at December 31, 2021 to the actual unit selling prices less applicable selling expenses of the sampled inventory items sold after year-end.

Other information

Management is responsible for the other information. The other information comprises the Management's Discussion and Analysis.

Our opinion on the consolidated financial statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the consolidated financial statements, our responsibility is to read the other information identified above and, in doing so, consider whether the other information is materially inconsistent with the consolidated financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated.

If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of management and those charged with governance for the consolidated financial statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with IFRS, and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Company's financial reporting process.

Auditor's responsibilities for the audit of the consolidated financial statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Canadian generally accepted auditing standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As part of an audit in accordance with Canadian generally accepted auditing standards, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Company to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Company to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

The engagement partner on the audit resulting in this independent auditor's report is Scott Gilfillan.

PricewaterhouseCoopers LLP

Chartered Professional Accountants, Licensed Public Accountants

Waterloo, Ontario
February 24, 2022

EcoSynthetix Inc.

Consolidated Balance Sheets

As at December 31, 2021 and December 31, 2020

(expressed in US dollars)

	2021	2020
Assets		
Current assets		
Cash	42,226,816	16,637,161
Short-term investments (note 6)	-	25,344,575
Accounts receivable (note 7)	1,912,390	1,794,594
Inventory (note 8)	2,073,800	2,134,389
Government grants receivable (note 9)	6,676	122,218
Prepaid expenses	91,930	69,633
	46,311,612	46,102,570
Non-current assets		
Property, plant and equipment (note 10)	4,670,089	5,620,805
Total assets	50,981,701	51,723,375
Liabilities		
Current liabilities		
Trade accounts payable and accrued liabilities (note 11)	2,363,630	1,179,097
Non-current liabilities		
Lease liability (note 12)	820,045	1,072,287
Total liabilities	3,183,675	2,251,384
Shareholders' Equity		
Common shares (note 15)	492,297,041	490,259,923
Contributed surplus	9,851,991	10,383,334
Accumulated deficit	(454,351,006)	(451,171,266)
Total shareholders' equity	47,798,026	49,471,991
Total liabilities and shareholders' equity	50,981,701	51,723,375

Approved by the Board of Directors

(signed)	**(signed)**
Paul Lucas, Chair	Jeff MacDonald, Chief Executive Officer

The accompanying notes are an integral part of these consolidated financial statements.

EcoSynthetix Inc.

Consolidated Statements of Operations and Comprehensive Loss

For the years ended December 31, 2021 and December 31, 2020

(expressed in US dollars)

	2021	2020
Net sales (note 18)	18,161,891	13,662,711
Cost of sales (notes 8, 10 and 19)	14,190,221	10,924,338
Gross profit on sales	3,971,670	2,738,373
Expenses (notes 9, 10 and 19)		
Selling, general and administrative	5,382,396	4,333,649
Research and development	1,831,440	1,412,315
	7,213,836	5,745,964
Loss from operations	(3,242,166)	(3,007,591)
Net interest income (note 12)	62,426	605,497
Net loss and comprehensive loss	(3,179,740)	(2,402,094)
Basic and diluted loss per common share (note 20)	(0.06)	(0.04)
Weighted average number of common shares outstanding	57,410,885	57,196,584

The accompanying notes are an integral part of these consolidated financial statements.

EcoSynthetix Inc.

Consolidated Statements of Shareholders' Equity

For the years ended December 31, 2021 and December 31, 2020

(expressed in US dollars)

	Common shares	Contributed surplus	Accumulated deficit	Total
Balance – December 31, 2019	490,590,406	10,351,658	(448,769,172)	52,172,892
Share-based compensation (note 14)	-	783,822	-	783,822
Common share options exercised (note 15)	1,514,052	(639,465)	-	874,587
Restricted share units converted (note 14)	112,681	(112,681)	-	-
Common shares repurchased (note 15)	(1,957,216)	-	-	(1,957,216)
Net loss and comprehensive loss	-	-	(2,402,094)	(2,402,094)
Balance – December 31, 2020	490,259,923	10,383,334	(451,171,266)	49,471,991
Share-based compensation (note 14)	-	937,260	-	937,260
Common share options exercised (note 15)	2,526,216	(756,866)	-	1,769,350
Restricted share units converted (note 14)	483,274	(483,274)	-	-
Deferred share units converted (note 14)	228,463	(228,463)	-	-
Common shares repurchased (note 15)	(1,200,835)	-	-	(1,200,835)
Net loss and comprehensive loss	-	-	(3,179,740)	(3,179,740)
Balance – December 31, 2021	492,297,041	9,851,991	(454,351,006)	47,798,026

The accompanying notes are an integral part of these consolidated financial statements.

EcoSynthetix Inc.

Consolidated Statements of Cash Flows

For the years ended December 31, 2021 and December 31, 2020

(expressed in US dollars)

	2021	**2020**
Cash provided by (used in)		
Operating activities		
Net loss and comprehensive loss	(3,179,740)	(2,402,094)
Items not affecting cash		
Depreciation (note 10)	1,380,832	1,439,504
Share-based compensation (note 14)	937,260	783,822
Other	60,361	(87,486)
Changes in non-cash working capital		
Accounts receivable (note 7)	(272,807)	184,998
Inventory (note 8)	(31,615)	152,390
Government grants receivable (note 9)	115,542	(7,262)
Prepaid expenses	(22,297)	6,340
Trade accounts payable and accrued liabilities (note 11)	1,141,956	(219,409)
Interest on short-term investments		
Interest received on short-term investments	358,740	1,037,522
Accrued interest on short-term investments	(14,165)	(661,549)
	474,067	226,776
Investing activities		
Purchase of property, plant and equipment (note 10)	(379,976)	(248,146)
Receipts of government grants related to property, plant and equipment (note 10)	67,418	-
Receipts on mature short-term investments (note 6)	25,000,000	75,000,000
Purchase of short-term investments (note 6)	-	(65,000,000)
	24,687,442	9,751,854
Financing activities		
Principal payments made on lease liability (note 12)	(249,246)	(192,989)
Common shares repurchased (note 15)	(1,200,835)	(1,957,216)
Exercise of common share options (notes 14 and 15)	1,924,361	719,576
	474,280	(1,430,629)
Effect of exchange rate changes on cash	(46,134)	113,447
Change in cash during the year	25,589,655	8,661,448
Cash – Beginning of year	16,637,161	7,975,713
Cash – End of year	42,226,816	16,637,161

The accompanying notes are an integral part of these consolidated financial statements.

(expressed in US dollars, unless otherwise noted)

1 Business operations

EcoSynthetix Inc. (EcoSynthetix or the Company) is engaged in the development and commercialization of environmentally friendly, bio-based technologies as replacement solutions for synthetic, petrochemical-based adhesives and other related products in the Americas, Europe, Middle East and Africa (EMEA) and Asia Pacific. EcoSynthetix is incorporated and domiciled in Canada. The address of its registered office is 3365 Mainway, Burlington, Ontario, Canada.

2 Summary of significant accounting policies

Statement of compliance

These consolidated financial statements have been authorized for issuance by the Board of Directors of the Company on February 24, 2022.

Basis of preparation

The consolidated financial statements have been prepared under International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB), using the historical cost convention.

Use of estimates and judgments

The preparation of consolidated financial statements in accordance with IFRS requires management to make judgments, estimates and assumptions that affect the application of accounting policies and the reported amounts of assets, liabilities, income and expenses. These estimates are based on management's best knowledge of current events and actions that the Company may undertake in the future. Actual results could differ from those estimates.

Significant estimates made by the Company include estimates of useful lives of property, plant and equipment, share-based compensation, allowances for expected credit losses (ACL), provisions for inventory that are carried in excess of net realizable value and the realizability of deferred income tax assets.

Property, plant and equipment are tested for impairment at the end of each reporting period or when events or changes in circumstances indicate the carrying amounts may not be recoverable. The Company applies significant judgment in the determination of the recoverable amount of machinery and equipment, due to the specialized nature of the assets. For the purpose of measuring recoverable amounts, assets are grouped at the lowest levels for which there are separately identifiable cash inflows (cash-generating units or CGUs). The recoverable amount is the higher of an asset's fair value less costs to sell and value in use (which is the present value of the expected future cash flows of the relevant asset or CGU). An impairment loss is recognized for the amount by which the asset's carrying amount exceeds its recoverable amount. Non-financial assets that have been impaired previously are reviewed for possible reversal of impairment at each reporting date.

The Company has determined it has a single CGU, assessed as the entity as a whole, due to the interdependence of the Company's assets and liabilities in generating cash inflows.

(expressed in US dollars, unless otherwise noted)

Basis of consolidation

The consolidated financial statements of the Company consolidate the accounts of EcoSynthetix and all of its subsidiaries. All intercompany transactions, balances and unrealized gains and losses from intercompany transactions are eliminated on consolidation.

Subsidiaries are all entities wholly owned and controlled by the Company and include the following entities:

- EcoSynthetix Ltd.
- EcoSynthetix Corporation
- EcoSynthetix B.V.

Foreign currency translation

i) Functional and presentation currency

Items included in the financial statements of each consolidated entity in the Company's consolidated financial statements are measured using the currency of the primary economic environment in which the entity operates (the functional currency). The consolidated financial statements are presented in US dollars, which is the Company's reporting currency.

ii) Transactions and balances

Foreign currency transactions are translated into the functional currency using the exchange rates prevailing at the dates of the transactions. Foreign currency exchange gains and losses resulting from the settlement of foreign currency transactions and from the translation at year-end exchange rates of monetary assets and liabilities denominated in currencies other than the Company's functional currency are recognized in the consolidated statements of operations and comprehensive loss.

Cash

Cash consists of deposits held with banks.

Financial instruments

Financial assets and financial liabilities are recognized when the Company becomes a party to the contractual provisions of the financial instrument. Financial assets are derecognized when the rights to receive cash flows from the financial assets have expired or have been transferred and the Company has transferred substantially all risks and rewards of ownership. Financial assets and financial liabilities are offset and the net amount is reported in the consolidated balance sheets when there is a legally enforceable right to offset the recognized amounts and there is an intention to settle on a net basis, or to realize the financial asset and settle the financial liability simultaneously.

(expressed in US dollars, unless otherwise noted)

The Company determines the classification of financial assets and liabilities at initial recognition. The Company's financial assets are classified into one of the following three categories:

- Amortized cost – If the financial asset is held within a business model whose objective is to hold financial assets in order to collect contractual cash flows and the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding (held to collect).

- Fair value through other comprehensive income (FVOCI) – If the financial asset is held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets and the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

- Fair value through profit or loss (FVPL) – A financial asset is measured at FVPL unless it is measured at amortized cost or through other comprehensive income.

The Company's financial assets measured at amortized cost include cash, short-term investments, accounts receivable and government grants receivable. The Company does not have any financial assets measured at FVOCI or FVPL. The Company's financial liabilities, trade accounts payable and accrued liabilities and lease liability, are measured at amortized cost. Financial assets and liabilities included in this category are initially recognized at fair value (net of transaction costs, if applicable) and are subsequently measured at amortized cost using the effective interest rate method less allowances for losses.

A financial asset is derecognized when its contractual right to the cash flows that compose the financial asset expire or substantially all the risks and rewards of the asset are transferred. A financial liability is derecognized when the obligation under the liability is discharged, cancelled or expired. Gains and losses on derecognition are recognized in net income (loss). If a financial instrument is modified and does not result in derecognition, the gross carrying value of the financial instrument is revised and the modification gain or loss is recognized in net income (loss).

The Company applies a simplified approach to measure an ACL where the loss allowance is always equal to lifetime expected credit losses (ECL). The Company assesses whether there has been a significant increase in credit risk since initial recognition of a financial asset and both the ECL and ACL measurement at each reporting date. Increases or decreases in the ACL are recognized as impairment gains and losses in net income (loss).

Inventory

Inventory is valued at the lower of cost, determined on a first-in, first-out basis, and net realizable value. Inventory costs include the costs of material, contract manufacturing costs, and an allocation of fixed manufacturing overhead costs, related to depreciation based on normal production volumes. Net realizable value is the estimated selling price less applicable selling expenses.

(expressed in US dollars, unless otherwise noted)

Property, plant and equipment

Property, plant and equipment are stated at cost less accumulated depreciation and accumulated impairment losses. Cost includes expenditures that are directly attributable to the acquisition of the asset. Subsequent costs are included in the asset's carrying amount or recognized as a separate asset, as appropriate, only when it is probable that future economic benefits associated with the item will flow to the Company and the cost can be measured reliably. The carrying amount of a replaced asset is derecognized when replaced. Repairs and maintenance costs are charged to the consolidated statements of operations and comprehensive loss during the year in which they are incurred.

Depreciation is calculated on a straight-line method to reduce the cost of the asset to its residual value over its estimated useful life. The depreciation period applicable to each category of property, plant and equipment is as follows:

Leasehold improvements	remaining lease term
Computer hardware	3 years
Machinery and equipment	2 – 15 years

Useful lives and residual values are reviewed and adjusted, if appropriate, at the end of each reporting period.

An asset's carrying amount is written down immediately to its recoverable amount if the asset's carrying amount is greater than its estimated recoverable amount. Gains and losses on disposals of property, plant and equipment are determined by comparing the proceeds with the carrying amount of the asset and are included as part of other gains and losses in the consolidated statements of operations and comprehensive loss.

Leases

The Company assesses whether a contract is, or contains, a lease. A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period in exchange for consideration. To assess whether a contract conveys the right to control the use of an identified asset, the Company assesses whether:

- the contract involves the use of an identified asset. This may be specified explicitly or implicitly and should be physically distinct or represent substantially all the capacity of a physically distinct asset. If the supplier has a substantive substitution right, then the asset is not identified; and

- the Company has the right to direct the use of the asset. The Company has the right when it has the decision-making rights that are most relevant to changing how and for what purpose the asset is used. In rare cases where the decision about how and for what purpose the asset is used is predetermined, the Company has the right to direct the use of the asset if either:

  - the Company has the right to operate the asset; or

  - the Company designed the asset in a way that predetermines how and for what purpose it will be used.

(expressed in US dollars, unless otherwise noted)

The right-of-use asset is initially measured at cost, which comprises the initial amount of the lease liability adjusted for any lease payments made at or before the commencement date, plus any initial direct costs incurred and an estimate of costs to dismantle and remove the underlying asset or to restore the underlying asset or the site on which it is located, less any lease incentives received. The right-of-use asset is subsequently depreciated using the straight-line method from the commencement date to the earlier of the end of the useful life or the end of the lease term. The estimated useful lives of right-of-use assets are determined on the same basis as those of property, plant and equipment. In addition, the right-of-use asset is periodically reduced by impairment losses, if any, and adjusted for certain remeasurements of the lease liability.

The lease liability is initially measured at the present value of the lease payments that are not paid at the commencement date, discounted using the interest implicit in the lease or, if that rate cannot be readily determined, the Company's incremental borrowing rate. The Company uses its incremental borrowing rate as the discount rate. Lease payments include fixed payments, variable payments, amounts expected to be payable under a residual guarantee and payments under a purchase option, extension option and termination penalties if the Company is reasonably certain it will exercise those options or terminate the lease early.

The lease liability is measured at amortized cost using the effective interest method. It is remeasured when there is a change in future lease payments arising from a change in an index or rate, if there is a change in the Company's estimate of the amount expected to be payable under a residual value guarantee, or if the Company changes its assessment of whether it will exercise a purchase, extension or termination option.

When the lease liability is remeasured in this way, a corresponding adjustment is made to the carrying amount of the right-of-use asset or is recorded in profit or loss if the carrying amount of the right-of-use asset has been reduced to zero.

Provisions

Provisions are recognized when the Company has a present legal or constructive obligation as a result of past events, it is more likely than not that an outflow of resources will be required to settle the obligation, and the amount can be reliably estimated. Provisions are measured at management's best estimate of the expenditure required to settle the obligation at the end of the reporting period and are discounted to present value where the effect is material. The Company performs evaluations to identify onerous contracts and, where applicable, records provisions for such contracts.

Research and product development costs

Expenditures during the research phase are expensed as incurred. Expenditures during the development phase are expensed as incurred, unless it is probable that future economic benefits that are attributable to the asset will flow to the Company and the cost of the asset can be measured reliably. No development costs have been capitalized to date.

(expressed in US dollars, unless otherwise noted)

Government grants

Government grants include government funding for research and product development. Research and product development funding is recognized when there is reasonable assurance the Company has complied with the conditions attached to the funding arrangement and is recognized as the applicable costs are incurred. Research and product development funding is presented as a reduction in research and product development expenses, unless it is for the reimbursement of an asset, in which case it is accounted for as a reduction in the carrying amount of the applicable asset. Government grants also include grants awarded for the purposes of providing immediate financial support to the Company as compensation for expenses or losses incurred. Upon qualification of a grant to provide immediate financial support, the awarded grant is recognized as a reduction in selling, general and administrative or research and development expenditures.

Revenue recognition

Revenue is recognized when the Company has satisfied its performance obligation as set out in the contract with the customer, the contract has commercial substance and it is probable that the Company will collect the consideration it is entitled to on performance of its obligations in the contract.

These criteria are met when transfer of control of goods has occurred, which is generally on shipment or delivery of goods to the customer, where they have legal title to and possession of the goods, and are therefore able to use and obtain substantially all of the benefits of the goods.

Revenue is measured as the transaction price that is allocated to the performance obligation as stipulated in the contract with the customer. Historical experience is used to estimate and provide for discounts and returns. Costs to fulfill or obtain contracts are not directly attributable to specific contracts or are not recoverable and are expensed as incurred.

Cost of sales and gross profit

Gross profit is derived from net sales, less cost of sales. Cost of sales includes raw material costs, contract manufacturing costs, freight costs and depreciation related to manufacturing equipment. Raw materials consist of the costs of natural feedstock and process chemicals.

Share capital

Common shares are classified as equity. The Company has classified all outstanding exchangeable shares of its subsidiaries as issued and outstanding of the parent company.

(expressed in US dollars, unless otherwise noted)

Share-based compensation

- Long-term incentive program (LTIP)

  The Company's LTIP is a variable element of compensation that will allow executive officers and certain senior managers to be recognized and rewarded for their sustained contributions to the Company's financial performance and growth. The Company's LTIP is composed of share options (SOs) and restricted share units (RSUs), each of which may be subject to performance and time based vesting conditions.

  SOs provide a right, but not an obligation, to purchase common shares of the Company at a stated price for a given period of time, subject to time based vesting conditions. The issuance of SOs is governed by the 2011 plan, which allows for the grant of SOs to the Company's employees, directors, senior officers and consultants with vesting of those SOs subject to the terms of the plan and the optionees' continued employment with the Company. Each tranche of a SO award is considered a separate award with its own vesting period and is recorded at fair value on the date of grant. The fair value of each tranche is measured at the date of grant using the Black-Scholes option pricing model. Compensation expense is recognized over the tranche's vesting period based on the number of awards expected to vest by increasing contributed surplus. The number of awards expected to vest is reviewed periodically with any impact being recognized in the consolidated statements of operations and comprehensive loss. Any contribution paid by an employee or director on the exercise of SOs is credited to common shares with any previously recognized compensation expense.

  The restricted share unit plan (RSU Plan) provides that restricted share unit awards (the RSUs) may be granted by a committee that administers the RSU Plan to full-time employees, officers and eligible contractors of the Company or an affiliate in a calendar year as a bonus for services rendered to the Company as determined at the sole discretion of the Board. The number of RSUs awarded will be credited to the participants' accounts effective on the grant date of the RSUs. Each RSU entitles the holder to receive common shares issued from the treasury of the Company. RSUs awarded cliff vest at the end of a three-year vesting period subject to continued employment with the Company. Compensation cost is calculated on a straight-line basis over the vesting period with a corresponding increase to contributed surplus. Forfeitures are estimated at the grant date and are revised to reflect a change in expected or actual forfeitures.

(expressed in US dollars, unless otherwise noted)

- SOs and RSUs with Performance Conditions

  Upon recommendation of the Compensation Committee, the Board may impose both performance and time based vesting conditions on SOs and RSUs. SOs and RSUs that contain performance and time based vesting conditions vest over a three-year period following the date of grant subject to the achievement of certain performance conditions. The Board establishes a minimum level of performance below which no vesting will occur at the time of the grant. SOs and RSUs with performance and time based vesting conditions can only be settled in common shares issued from treasury. The Board may, at its discretion at the time of grant or after, accelerate the vesting schedule to beyond one third of the grant in a year actual performance exceeds the LTIP target; however, in no event can the cumulative vesting exceed 100%. The Company has estimated the length of the expected vesting period at the grant date based on the most likely outcome of the performance conditions. The fair values of SOs and RSUs with performance and time based vesting conditions are recorded over the expected vesting period, subject to management's estimate of the achievement of the performance conditions. The fair values of the SOs and RSUs are recognized as compensation expense over the vesting period with a corresponding increase to contributed surplus.

  The Company has estimated the length of expected vesting period at the grant date based on the most likely outcome of the performance conditions. The Company will revise its estimate of the length of the vesting period, if necessary, if subsequent information indicates that the length of the vesting period differs from previous estimates and any change to compensation cost will be recognized in the period in which the revised estimate is made with a corresponding change to contributed surplus. Forfeitures are estimated at the grant date and are revised to reflect a change in expected or actual forfeitures.

  All SOs that contain performance and time based vesting conditions have an expiry between seven and ten years from the grant date. The exercise price is determined based on the average closing price of common shares on the Toronto Stock Exchange (TSX) five trading days immediately prior to the date as of which fair value is determined.

- Deferred Share Units (DSUs)

  The deferred share unit plan (DSU Plan) provides for awards of DSUs to non-employee directors of the Company. Under the DSU Plan, non-executive directors may receive a grant of DSUs in satisfaction of their annual retainer. Each DSU is equivalent to one common share and vests on a quarterly vesting schedule, with 25% of each award vesting each consecutive quarter. DSUs must be retained until the director leaves the Board, at which time the DSUs will be settled through common shares. In the event dividends are declared and paid, additional DSUs would be credited to reflect dividends paid on common shares. The number of DSUs to be awarded is determined based on the average closing price of the common shares on the TSX five trading days immediately prior to the date fair value is determined.

  The fair values of the DSUs are recognized as compensation expense over the vesting period with a corresponding increase to contributed surplus.

(expressed in US dollars, unless otherwise noted)

Income taxes

Income taxes comprise current and deferred income taxes. Income taxes are recognized in the consolidated statements of operations and comprehensive loss, except to the extent that they relate to items recognized directly in shareholders' equity, in which case the income taxes are also recognized directly in shareholders' equity.

Current income taxes are the expected income taxes payable on the taxable income for the year, using income tax rates enacted or substantively enacted, at the end of the reporting period, and any adjustment to income taxes payable in respect of previous years.

In general, deferred income taxes are recognized in respect of temporary differences arising between the income tax bases of assets and liabilities and their carrying amounts in the consolidated financial statements. Deferred income taxes are determined on a non-discounted basis using income tax rates and laws that have been enacted or substantively enacted at the consolidated balance sheet dates and are expected to apply when the deferred income tax asset or liability is settled. Deferred income tax assets are recognized to the extent that it is probable that the assets can be recovered.

Deferred income taxes are provided on temporary differences arising on investments in subsidiaries and associates, except, in the case of subsidiaries, where the timing of the reversal of the temporary difference is controlled by the Company and it is probable that the temporary difference will not reverse in the foreseeable future. Deferred income tax assets and liabilities are presented as non-current.

Loss per share

Basic loss per common share is calculated based on the weighted average number of common shares outstanding for the year. Diluted loss per common share is calculated using the weighted average number of common shares outstanding for the year for basic net loss per common share plus the weighted average number of potential dilutive common shares that would have been outstanding during the year had potentially all common shares been issued at the beginning of the year or when the underlying share options or warrants were granted, if later, unless they were anti-dilutive.

3 COVID-19

The outbreak of COVID-19 and its variants, which was first declared by the World Health Organization to be a "pandemic" in March 2020, continues to impact worldwide economic activity. The governments of many countries, states, cities and other geographic regions have taken preventative or protective actions, such as imposing restrictions on travel and business operations and temporary closures of businesses. In addition, numerous other businesses have temporarily closed voluntarily. Such actions have created and continue to create disruption in global supply chains, increasing rates of unemployment and adversely impacting many industries.

(expressed in US dollars, unless otherwise noted)

During the year ended December 31, 2020, the impact of COVID-19 caused both the global demand for paper products to decrease and a decrease in the pricing of petroleum-related products with which the Company's products compete. This resulted in reduced sales volume, lower pricing and reduced gross profit for the Company. During the year ended December 31, 2021, the impacts of COVID-19 on sales volume and pricing partially diminished when compared to 2020 however the impact of COVID-19 on the global supply chain has resulted in increased raw material and freight costs for the Company. The impact of COVID-19 on the economy continues to keep interest rates low, reducing interest income earned on cash deposits and short-term investments. During the year ended December 31, 2021, the Company applied for and received government assistance under the Canada Emergency Wage Subsidy (CEWS) program and the Canada Emergency Rent Subsidy (CERS) program. There are no other direct impacts on the operating results of the Company or the consolidated financial statements. Given the dynamic nature of the COVID-19 pandemic, the extent to which the pandemic impacts the Company's operational results and financial performance will depend on future developments, which remain highly uncertain and cannot be accurately predicted at this time; these developments include the duration, scope and severity of the pandemic; the actions taken to contain or mitigate its impact; and the direct and indirect economic effects of the pandemic and related containment measures, among others.

4 Risk management and financial instruments

The Company has classified its financial instruments into one of the following categories: amortized cost, FVOCI and FVPL.

The Company's financial instruments were classified as follows at December 31, 2021:

	Amortized cost	FVOCI	FVPL	Total
Cash	42,226,816	-	-	42,226,816
Accounts receivable	1,912,390	-	-	1,912,390
Government grants receivable	6,676	-	-	6,676
Trade accounts payable and accrued liabilities	(2,363,630)	-	-	(2,363,630)
Lease liability	(820,045)	-	-	(820,045)
	40,962,207	-	-	40,962,207

The Company's financial instruments were classified as follows at December 31, 2020:

	Amortized cost	FVOCI	FVPL	Total
Cash	16,637,161	-	-	16,637,161
Short-term investments	25,344,575	-	-	25,344,575
Accounts receivable	1,794,594	-	-	1,794,594
Government grants receivable	122,218	-	-	122,218
Trade accounts payable and accrued liabilities	(1,179,097)	-	-	(1,179,097)
Lease liability	(1,072,287)	-	-	(1,072,287)
	41,647,164	-	-	41,647,164

(expressed in US dollars, unless otherwise noted)

The carrying amount of financial assets and financial liabilities at amortized cost approximates their fair values.

Liquidity risk

Liquidity risk is the risk the Company will encounter difficulty in meeting its financial obligations associated with financial liabilities that are settled by delivering cash or another financial asset. The Company's approach to managing liquidity risk is to ensure it will have sufficient liquidity to meet liabilities when due. The Company achieves this by maintaining sufficient cash. The Company monitors its financial position on a monthly basis and updates its expected use of cash resources based on the latest available data. The Company's trade accounts payable and accrued liabilities will be paid within the next 12 months.

Credit risk

Credit risk arises from the potential that a counterparty will fail to perform its obligations. The Company is exposed to credit risk from customers. As at December 31, 2021, the Company's two largest customers accounted for 35% (2020 – three customers at 64%) of trade accounts receivable. In order to minimize the risk of loss for accounts receivable, the Company's extension of credit to customers involves a review and approval by senior management. The majority of the Company's sales are invoiced with payment terms up to 60 days. The Company's objective is to minimize its exposure to credit risk from customers in order to prevent losses on financial assets by performing regular monitoring of overdue balances and to provide an ACL.

The Company's trade accounts receivable have a carrying amount of $1,716,442 at December 31, 2021 (2020 – $1,532,603), representing the maximum exposure to credit risk of those financial assets, exclusive of the ACL. The Company's exposure to credit risk for trade accounts receivable by geographic area at December 31 was as follows:

	2021 %	2020 %
Americas	24.0	39.0
EMEA	43.5	20.3
Asia Pacific	32.5	40.7
	100.0	100.0

(expressed in US dollars, unless otherwise noted)

The Company may also have credit risk relating to cash, which it manages by dealing with large chartered banks. The Company's objective is to minimize its exposure to credit risk in order to prevent losses on financial assets by placing its investments in lower risk deposits of these chartered banks. The Company's cash carrying amount is $42,226,816 as at December 31, 2021 (2020 – $16,637,161), representing the maximum exposure to credit risk of these financial assets. Approximately 84% (2020 – 96%) of the Company's cash at December 31, 2021 was held with one financial institution. The Company's exposure to credit risk relating to cash segmented by geographic area at December 31 was as follows:

	2021 %	2020 %
Canada	98.6	96.3
United States of America	0.7	2.2
The Netherlands	0.7	1.5
	100.0	100.0

Foreign currency risk

Foreign currency risk arises because of fluctuations in foreign currency exchange rates. The Company conducts a portion of its business activities in currencies other than the functional currency of the parent company (US dollars). This primarily includes Canadian dollar and euro denominated transactions. The Company's objective in managing its foreign currency risk is to minimize its net exposure to foreign currency cash flows by converting foreign denominated financial assets into US dollars to the extent practical to match the obligations of its financial liabilities. Financial assets and financial liabilities denominated in foreign currencies will be affected by changes in the exchange rate between the functional currency and these foreign currencies. This primarily includes cash, accounts receivable, government grants receivable, trade accounts payable and accrued liabilities and lease liability, which are denominated in foreign currencies. The Company realized foreign currency exchange losses in the year ended December 31, 2021 of $14,447 (2020 – realized losses of $55,965). The Company has unrealized foreign exchange losses in the year ended December 31, 2021 of $35,752 (2020 – unrealized gains of $48,333).

If a shift in the Canadian dollar relative to the US dollar of 10% were to occur, the foreign currency exchange gain or loss on the net financial asset or liability would be $229,670 (2020 – $7,650) and this amount would be recorded in the consolidated statements of operations and comprehensive loss.

If a shift in the euro relative to the US dollar of 10% were to occur, the exchange gain or loss on the net financial asset or liability would be $55,327 (2020 – $29,101).

Interest rate risk

Interest rate risk arises because of the fluctuation in market interest rates. The Company's objective in managing interest rate risk is to maximize the return on its cash. The Company is subject to interest rate risk on its cash. If a shift in interest rates of 10% were to occur, the impact on the consolidated statements of operations and comprehensive loss for the year would be a $11,917 increase or decrease in net interest income (2020 – nominal amount).

(expressed in US dollars, unless otherwise noted)

5 Capital management

The Company's objective in managing capital is to ensure sufficient liquidity to pursue its growth strategy and fund research and product development, while at the same time taking a conservative approach toward financial leverage and management of financial risk. The Company's capital is composed of total shareholders' equity. The total capital at December 31, 2021 is $47,798,026 (2020 – $49,471,991). The Company's primary uses of capital are financing operations, non-cash working capital and capital expenditures. The Company currently funds these requirements from existing cash resources. The Company's objectives when managing capital are to ensure the Company will continue to have enough liquidity so that it can provide its products and services to its customers and returns to its shareholders. The Company monitors its capital on the basis of the adequacy of its cash resources to fund its business plan. In order to maximize the capacity to finance the Company's ongoing growth, the Company does not currently pay a dividend to holders of its common shares.

6 Short-term investments

During the year ended December 31, 2020, the Company purchased short-term investments maturing in January 2021 at annual interest rates between 0.5% and 2.35%. The carrying value of the short-term investments includes accrued interest and is recorded at amortized cost using the effective interest method.

	2021 $	2020 $
Short-term investment certificates	-	15,322,520
Term deposits	-	10,022,055
	-	25,344,575

7 Accounts receivable

	2021 $	2020 $
Trade accounts receivable	1,716,442	1,532,603
Commodity taxes receivable and other	195,948	261,991
	1,912,390	1,794,594

The aging of trade accounts receivable at each reporting date was as follows:

	2021 $	2020 $
Current	1,682,125	1,462,768
Past due 1 – 30 days	34,317	69,835
Past due 31 – 60 days	-	-
Past due 61 – 90 days	-	-
Past due greater than 91 days	-	-
	1,716,442	1,532,603

(expressed in US dollars, unless otherwise noted)

8 Inventory

	2021 $	2020 $
Raw materials	1,016,108	457,054
Finished goods	1,057,692	1,677,335
	2,073,800	2,134,389

The Company has a recorded provision of $8,882 (2020 – $18,871) against finished goods and raw materials inventory.

Inventories recognized as an expense during the year amounted to $11,632,260 (2020 – $9,090,803).

9 Government grants

The Company has a funding agreement of up to CA$2,072,207 with Bioindustrial Innovation Canada, which is funded by the Federal Government. As of the year ended December 31, 2021, the Company has claimed a total of CA$708,959 against the funding agreement. The investment was provided to develop new green resins for adhesive binders in wood products and covers reimbursement of eligible expenditures from April 2018 to April 2023. The investment is non-repayable unless the Company defaults on conditions contained in the funding agreement. The Company has met the conditions of the investment in fiscal 2021 and 2020. The Company recognized $37,167 (2020 – $139,254) in its operating results and has recognized $67,418 as a reduction of property, plant and equipment relating to an eligible purchase of machinery and equipment. During the year ended December 31, 2021, the Company collected cash of $112,293 (2020 – $240,034) relating to claims under the investment.

During the year ended December 31, 2021, the Company recognized claims under the CEWS program in the amount of $186,361 (2020 – $415,560), of which $139,771 (2020 – $318,629) is included as a reduction in selling, general and administrative expenses and $46,590 (2020 – $96,931) as a reduction in research and development expenses. The subsidy is provided by the Government of Canada and is a non-repayable wage subsidy on eligible remuneration paid, with subsidy rates varying depending on the amount of revenue decline during the period.

During the year ended December 31, 2021, the Company recognized claims under the CERS program in the amount of $69,582 (2020 – $35,375), of which $10,437 (2020 – $5,306) is included as a reduction in selling, general and administrative expenses and $59,145 (2020 – $30,069) as a reduction in research and development expenses. The subsidy is provided by the Government of Canada and is a non-repayable subsidy on commercial rent payments, with subsidy rates varying depending on the amount of revenue decline during the period.

(expressed in US dollars, unless otherwise noted)

10 Property, plant and equipment

The composition of the net carrying amount of the Company's property, plant and equipment is presented in the following table:

	Machinery and equipment	Leasehold improvements	Right-of-use asset	Computer hardware	Total
Cost					
January 1, 2020	16,224,684	828,005	1,561,149	90,091	18,703,929
Additions	248,146	-	100,610	-	348,756
Disposals	(394,402)	-	-	-	(394,402)
December 31, 2020	16,078,428	828,005	1,661,759	90,091	18,658,283
Additions	337,912	-	-	-	337,912
Disposals	(74,438)	-	-	-	(74,438)
December 31, 2021	16,341,902	828,005	1,661,759	90,091	18,921,757
Accumulated depreciation					
January 1, 2020	(10,834,090)	(828,005)	(222,372)	(90,091)	(11,974,558)
Depreciation expense	(1,216,991)	-	(240,331)	-	(1,457,322)
Disposals	394,402	-	-	-	394,402
December 31, 2020	(11,656,679)	(828,005)	(462,703)	(90,091)	(13,037,478)
Depreciation expense	(1,040,548)	-	(248,080)	-	(1,288,628)
Disposals	74,438	-	-	-	74,438
December 31, 2021	(12,622,789)	(828,005)	(710,783)	(90,091)	(14,251,668)
Net carrying amount					
December 31, 2020	4,421,749	-	1,199,056	-	5,620,805
December 31, 2021	3,719,113	-	950,976	-	4,670,089

The Company invested $337,912 (2020 – $248,146) in capital asset additions for the year ended December 31, 2021. The additions primarily relate to machinery and equipment for production and research and development. There were $25,354 capital asset additions included in trade accounts payable and accrued liabilities as at December 31, 2021 (2020 – $nil).

During the year ended December 31, 2021, the Company received $67,418 from its funding agreement with Bioindustrial Innovation Canada. The grant amount related to an eligible purchase of machinery and equipment purchased for research and development purposes.

During the year ended December 31, 2021, depreciation expense of $786,993 (2020 – $813,713) has been charged to cost of goods sold, $593,839 (2020 – $625,791) has been charged to research and development, and depreciation expense of $92,204 was expensed from inventory (2020 – capitalized into inventory $17,818).

(expressed in US dollars, unless otherwise noted)

11 Trade accounts payable and accrued liabilities

	2021 $	2020 $
Trade accounts payable	959,601	560,329
Short-term lease liability	255,930	238,707
Accrued liabilities	1,148,099	380,061
	2,363,630	1,179,097

Included in accrued liabilities as of December 31, 2021 is accrued variable employee compensation of $734,066 (2020 – $175,000).

12 Lease liability

The Company has one right-of-use asset under property, plant and equipment and corresponding lease liability for the lease associated with the Company's corporate headquarters located in the Centre of Innovation in Burlington, Ontario. The lease liability is measured at amortized cost by discounting the lease payments over the remaining term of the lease at the Company's incremental borrowing rate of 6.2%.

	2021 $	2020 $
Lease liability		
Short-term	255,930	238,707
Long-term	820,045	1,072,287
	1,075,975	1,310,994

During the year ended December 31, 2021, total cash payments of $318,281 (2020 – $268,344) were made on the lease liability. Cash payments include interest expense of $69,035 (2020 – $75,355) that is recognized in net interest income on the consolidated statements of operations and comprehensive loss and principal payments of $249,246 (2020 – $192,989).

13 Key management compensation

Key management personnel includes those individuals having authority and responsibility for planning, directing and controlling the activities of the Company directly or indirectly. Key management personnel includes the directors, chief executive officer, chief financial officer and other key members of the executive team. The compensation paid or payable to key management personnel for employee services is shown below:

	2021 $	2020 $
Salaries and other short-term employee benefits	1,701,798	1,223,305
Share-based payments	794,671	737,446
	2,496,469	1,960,751

(expressed in US dollars, unless otherwise noted)

14 Share-based compensation

At December 31, 2021, the Company had outstanding SOs to purchase 2,817,886 common shares of the Company. The SOs expire at various dates through May 7, 2028.

	Number of share options outstanding	Weighted average exercise price (CA$)
Outstanding – December 31, 2019	4,780,644	1.80
Share options granted	36,000	2.46
Share options forfeitures	(50,899)	6.16
Share options exercised	(563,306)	2.05
Outstanding – December 31, 2020	4,202,439	1.72
Share options granted	264,016	4.59
Share options forfeitures	(10,495)	5.02
Share options exercised	(1,638,074)	1.38
Outstanding – December 31, 2021	2,817,886	2.18

The weighted average contractual life of the outstanding SOs at December 31, 2021 is 3.07 years (2020 – 2.82 years). The total number of SOs exercisable at December 31, 2021 is 2,390,388 (2020 – 3,710,602), which have a weighted average exercise price of CA$2.18 (2020 – CA$1.64) per share.

	Number of share options outstanding	
	2021	2020
$1.00 – $1.50	754,906	2,343,317
$1.50 – $2.00	704,475	723,085
$2.00 – $2.50	636,085	642,164
$2.50 – $3.00	316,175	334,924
$3.00 – $3.50	138,229	142,449
$4.50 – $5.00	264,016	-
$5.00 – $5.50	4,000	16,500
	2,817,886	4,202,439

For the years ended December 31, the Company determined the fair values of SOs using the Black-Scholes option pricing model with the following assumptions for SO grants:

	2021	2020
Expected dividend yield	-%	-%
Risk-free interest rate	0.87%	0.66%
Expected share option life (in years)	5	6
Volatility	46.0%	51.5%

(expressed in US dollars, unless otherwise noted)

The aggregate fair value of SOs granted during the year is CA$491,070 (2020 – CA$42,840). The weighted average fair value of the SOs is CA$1.86 (2020 – CA$1.19) per share. During the fiscal year ended December 31, 2021, the Company recognized a share-based compensation expense of $283,712 (2020 – $338,200) related to SOs with a corresponding increase in contributed surplus.

For the year ended December 31, 2021, expected volatility is based on a review of historical volatilities for the Company.

The expected SO life is based on the employees' historical exercise behaviour.

The risk-free interest rate used for each grant is equal to the Canadian treasury bill rates in effect at the date of grant for instruments with a term similar to the expected life of the related SO.

a) Share options (SOs)

As at December 31, 2021, SOs to acquire an aggregate 2,817,886 (2020 – 4,202,439) common shares were outstanding. During the current fiscal year, the Company issued 264,016 (2020 – 36,000) SOs, 10,495 (2020 – nil) SOs expired and 1,638,074 (2020 – 563,306) common shares were issued pursuant to the exercise of SOs. As of December 31, 2021, 2,390,388 (2020 – 3,710,602) SOs are fully vested and the remaining 427,498 (2020 – 491,837) have time based vesting conditions. For the year ended December 31, 2021, the Company recognized share-based compensation expense of $283,712 (2020 – $338,200) relating to SOs.

b) Restricted share units (RSUs)

As at December 31, 2021, RSUs to acquire an aggregate 322,260 (2020 – 583,019) common shares were outstanding. 287,260 (2020 – 348,019) of the RSUs contain performance based and time based vesting criteria and 35,000 (2020 – 235,000) have time based vesting conditions. During the current fiscal year, the Company issued 206,797 RSUs (2020 – nil), 160,929 (2020 – 53,313) RSUs expired and 306,627 RSUs (2020 – 66,666) were converted into common shares. For the year ended December 31, 2021, the Company recognized share-based compensation expense of $433,565 (2020 – $203,846) related to RSUs.

c) Deferred share units (DSUs)

As at December 31, 2021, DSUs to acquire an aggregate 654,200 (2020 – 724,127) common shares were outstanding. During the fiscal year ended December 31, 2021, 80,982 DSUs (2020 – 178,375) were issued to non-employee Directors of the Company. During the current fiscal year, 14,784 (2020 – nil) expired and 136,125 (2020 – nil) DSUs were converted into common shares. During the fiscal year ended December 31, 2021, the Company recognized share-based compensation expense of $219,983 (2020 – $241,776) related to DSUs with a corresponding increase in contributed surplus.

(expressed in US dollars, unless otherwise noted)

15 Common shares

The authorized share capital of the Company consists of an unlimited number of common shares.

	Number of common shares	Share capital
Balance – December 31, 2019	57,902,441	490,590,406
Common share options exercised	563,306	1,514,052
Restricted share units converted	66,666	112,681
Common shares repurchased	(1,392,000)	(1,957,216)
Balance – December 31, 2020	57,140,413	490,259,923
Common share options exercised	1,638,074	2,526,216
Restricted share units converted	306,627	483,274
Deferred share units converted	136,125	228,463
Common shares repurchased	(292,000)	(1,200,835)
Balance – December 31, 2021	58,929,239	492,297,041

Share exchange

During the year ended December 31, 2021, the Company held a normal course issuer bid (the Bid) to repurchase a certain number of its outstanding common shares through the facilities of the TSX. The Company repurchased and cancelled 292,000 (2020 – 1,392,000) common shares for total consideration of $1,200,835 (2020 – $1,957,216).

16 Income taxes

The difference between income tax expense and the income taxes as computed based on the statutory rate is as follows:

	2021 $	2020 $
Net loss before income taxes	(3,179,740)	(2,402,094)
Income tax benefit at statutory rate	(842,631)	(636,555)
Cost (benefit) resulting from		
Research and development credit	(70,079)	(48,758)
Deferred income tax assets expired	255,674	11,664
Deferred income tax assets not recognized and other	657,036	673,649
	-	-

(expressed in US dollars, unless otherwise noted)

Estimated temporary differences in the timing of recognition of expenses for accounting and income tax purposes at December 31 result in deferred income taxes as follows:

	2021 $	2020 $
Estimated deferred income tax assets attributable to		
Net operating loss carry-forwards	24,612,380	24,120,518
Research and development credits	2,986,390	3,064,763
Other deferred income tax assets	3,523,793	3,327,948
Deferred income tax assets	31,122,563	30,513,229
Deferred income tax assets not recognized and other	(31,122,563)	(30,513,229)
Net deferred income tax assets	-	-

The estimated net operating loss carry-forwards and estimated research and development credits expire as follows:

	United States of America		Canada and the Netherlands	Canada
	Net operating loss carry-forwards	Research and development credits	Net operating loss carry-forwards	Research and development credits
2022	1,338,594	52,731	362,656	-
2023	1,321,285	44,965	2,044,635	-
2024	1,532,264	46,333	458,740	-
2025	1,629,456	47,245	234,654	-
2026	1,562,856	41,905	807,440	-
2027	2,011,361	35,351	23,017	-
2028	2,717,038	69,118	2,360	-
2029	2,854,334	63,226	-	-
2030	1,207,399	96,302	-	42,785
2031	3,927,982	-	18	343,305
2032	1,127,104	-	2,919,511	541,974
2033	10,855,248	-	7,699,309	634,338
2034	1,333,972	-	11,456,505	421,980
2035	1,058,892	-	17,573,238	367,353
2036	1,275,377	-	6,867,644	193,042
2037	-	-	-	210,608
2038	-	-	7,600,606	96,662
2039	-	-	2,406,587	94,134
2040	-	-	-	81,556
2041	-	-	4,276,707	91,753
	35,753,162	497,176	64,733,627	3,119,490

(expressed in US dollars, unless otherwise noted)

17 Commitments

During the normal course of operations, the Company may enter into feedstock contracts to secure raw material availability over a 12-month period based on market pricing at the time of purchase. At December 31, 2021, the Company was committed to purchases of feedstock of approximately $4,206,703. In addition to feedstock, over the next 12 months, the Company is also committed to purchasing $1,230,507 of other raw material and production related costs through the normal course of operations. There are no other commitments beyond the next 12-month period.

18 Segmented information and enterprise wide disclosures

Operating segments

The Company operates in one operating segment and generates revenue primarily from its biopolymer nanosphere technology platform. The operating segment is reported in a manner consistent with the internal reporting provided to the chief operating decision-maker (CODM). The chief executive officer has authority for resource allocation and assessment of the Company's performance and is, therefore, the CODM.

Sales by geographic location

Revenue is recognized when the transfer of control of goods has occurred, which is generally on shipment or delivery of goods to the customer.

The Company is domiciled in Canada. During the year ended December 31, 2021, revenue from external customers located in Canada was $2,695,562 (2020 – $2,502,013). The total revenue from external customers in the following regions is as follows:

	2021 $	2020 $
Americas	6,628,888	6,961,956
EMEA	5,779,802	3,081,508
Asia Pacific	5,753,201	3,619,247
	18,161,891	13,662,711

The revenue has been assigned to each jurisdiction, based on the location of the customer. In situations where a sale is made through a reseller, revenue associated with that sale is attributed to the geographic region of the end customer. During the year ended December 31, 2021, revenue attributable to individual countries representing greater than 10% of total revenues included Japan, United States, Germany and Canada, which represented 30%, 19%, 17% and 15%, respectively.

During the year ended December 31, 2020, revenue attributable to individual countries representing greater than 10% of total revenues included United States, Japan, Canada and Germany, which represented 26%, 25%, 18% and 15%, respectively.

(expressed in US dollars, unless otherwise noted)

Sales to major customers

The Company derives a significant portion of its revenues from certain customers. Three customers represented 30%, 15% and 14%, respectively, of total revenue for the year ended December 31, 2021 (2020 – three customers represented 25%, 18% and 12%, respectively). The concentrations listed do not necessarily apply to the same customer year over year.

Property, plant and equipment

The Company's property, plant and equipment, reported at their net carrying amount, are located in the following countries:

	2021 $	2020 $
Canada	1,397,491	1,846,820
United States of America	1,588,379	1,792,891
The Netherlands	1,684,219	1,981,094
	4,670,089	5,620,805

19 Expenses by nature

Additional information on the nature of amounts included in cost of sales, selling, general and administrative and research and development is as follows:

	2021 $	2020 $
Salaries and benefits	4,166,967	3,219,264
Share-based compensation	937,260	783,822
Government grants	(293,110)	(590,190)
Depreciation	1,380,832	1,439,504
Foreign exchange loss	50,199	7,632

20 Loss per share

Basic loss per share is calculated by dividing the profit attributable to equity holders of the Company by the weighted average number of common shares in issue during the year.

Diluted loss per share is equivalent to basic loss per share, as the consideration of potentially dilutive securities would be anti-dilutive.

21 Comparative figures

Certain comparative figures have been restated to conform to the current year's consolidated financial statement presentation.