UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d)
OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended: **December 31, 2024**

Commission file number**: 000-33067**

BIRCHTECH CORP.

(Exact name of registrant as specified in its charter)

Delaware	**87-0398271**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

1810 Jester Drive, Corsicana, Texas 75109
(Address of principal executive offices) (Zip Code)

Registrant's telephone number, including area code: **(614) 505-6115**

Securities registered pursuant to Section 12(b) of the Act: None.

Securities registered pursuant to Section 12(g) of the Act: Common Stock, $0.001 par value

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.
Yes ☐ No ☒

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act.
Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or emerging growth company. See the definition of "large accelerated filer", "accelerated filer", "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.:

Large accelerated filer	☐	Non-accelerated filer	☒
Accelerated filer	☐	Smaller reporting issuer	☒
		Emerging growth company	☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☐

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

Indicate by check mark whether the registrant is a shell company (as defined by Rule 12b-2 of the Exchange Act). Yes☐ No ☒

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the registrant as of June 30, 2024, the last business day of the registrant's most recently completed second fiscal quarter, was approximately $49,379,000.

The number of shares outstanding of the Common Stock ($.001 par value) of the Registrant as of the close of business on March 31, 2025 was96,228,153.

DOCUMENTS INCORPORATED BY REFERENCE: None.

BIRCHTECH CORP.
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CERTAIN DEFINED TERMS

As used in this document, unless the context otherwise requires, references to:

"AC" means activated carbon.

"BAC" means brominated powdered activated carbon.

"Birchtech Corp.," the "Company," "we," "us," and "our" means Birchtech Corp. and its consolidated subsidiaries, or any or all of them, as the context may require.

"EGUs" means electric generating units.

"EPA" means the U.S. Environmental Protection Agency.

"ESP" means electro-static precipitators.

"GAC" means granular activated carbon.

"Hg" means mercury.

"MATS" means Mercury and Air Toxics Standards established by the EPA to limit hazardous air pollutants emitted by coal- and oil-fired power plants.

"MCLs" means maximum contaminant levels.

"MW" means megawatts.

"NOX" means oxides of nitrogen.

"PAC" means powdered activated carbon.

"PFAS" means per-and polyfluoroalkyl substances, which are a group of synthetic chemicals also known as "forever chemicals".

"PFOS" means perfluorooctane sulfonate, which is a specific type of chemical within the PFAS group.

"SCR" means selective catalytic reduction.

"SDWA" means the U.S. Safe Drinking Water Act enacted in 1974 to protect public drinking water supplies throughout the United States.

"SEA®" means the Company's proprietary sorbent enhancing additive.

"SOX" means oxides of sulfur.

EXPLANATORY NOTE

This Annual Report on Form 10-K for the fiscal year ended December 31, 2024 (“Annual Report on Form 10-K”) of Birchtech Corp. (the “Company,” “us,” our”) includes a restatement of the following financial statements (collectively, the “Restated Financial Statements”) as appearing in the Company’s Annual Reports on Form 10-K for the fiscal years ended December 31, 2023 and 2022 and its Quarterly Reports on Form 10-Q for the quarterly periods ended March 31, June 30 and September 30 in each of 2024 and 2023 (collectively, the “Prior Periodic Reports”):

1. Our consolidated balance sheets as of December 31, 2023 and as of December 31, 2022, our consolidated statements of operations and consolidated statements of cash flows for the years ended December 31, 2023 and December 31, 2022 and the accumulated deficit in our consolidated statements of stockholders’ equity as of December 31, 2023 and January 1, 2023 (see Note 2, “Restatement of Previously Issued Financial Statements” in Part II, Item 8 of this Annual Report on Form 10-K); and

2. Our unaudited condensed consolidated balance sheets as of March 31, June 30 and September 30 in each of 2024 and 2023, our unaudited condensed consolidated statements of operations for the three months ended March 31, the three months and six months ended June 30, and the three months and nine months ended September 30 in each of 2024 and 2023, and our unaudited condensed consolidated statements cash flows for the three months ended March 31, the six months ended June 30, and the nine months ended September 30 in each of 2024 and 2023 (see Note 16, “Restatement of Quarterly Financial Information (Unaudited)” in Part II, Item 8 of this Annual Report on Form 10-K).

Restatement Overview

As disclosed by the Company in Item 4.02 of the Form 8-K filed on March 31, 2025, in connection with the preparation of this Annual Report, management identified an error in the previously reported financial statements related to the under recognition of revenue during the year ended December 31, 2022 and, therefore, the Prior Periodic Reports would need to be restated. See, Note 2, “Restatement of Previously Issued Financial Statements” and Note 16, “Restatement of Quarterly Financial Information (Unaudited)” in the notes to the consolidated financial statements included in this Annual Report on Form 10-K.

The Items of this Annual Report on Form 10-K that restate information in the Prior Periodic Reports as a result of the Restated Financial Statements include:

1. Part II., Item 7., Management’s Discussion and Analysis of Financial Condition and Results of Operations; and

2. Part II., Item 8., Financial Statements and Supplementary Data.

We have not filed and do not intend to file amendments to our Prior Periodic Reports. Accordingly, investors should rely only on the Restated Financial Statements and related disclosures included in this Annual Report on Form 10-K for the applicable information or in future filings with the SEC (as applicable).

FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K contains “forward-looking statements” that are made pursuant to the safe harbor provisions of the U.S. Private Securities Litigation Reform Act of 1995 or applicable Canadian securities laws (collectively, “forward-looking statements”). Forward-looking statements reflect management’s current expectations regarding our future growth, results of operations, cash flows, performance and business prospects, and opportunities, as well as assumptions made by, and information currently available to, our management. Forward-looking statements are generally identified by using words such as “anticipate,” “believe,” “plan,” “expect,” “intend,” “will,” and similar expressions, but these words are not the exclusive means of identifying forward-looking statements. These statements involve known and unknown risks, uncertainties and other factors that may cause actual results or events to differ materially from those anticipated in such forward-looking statements. Such risks include, without limitation, the following:

- changes in general economic and business conditions;
- risks related to our industry, including regulatory changes and competitive pressures;
- the loss of major customers;
- dependence and availability and retention of key suppliers;
- risks related to advancement in technologies;
- lack of diversification in the Company’s business;
- risks related to intellectual property, including the ability to protect intellectual property and the success of any patent litigation;
- changes in demand for coal as a fuel source for electricity production;
- development and growth of the Company’s new technologies, particularly in the water treatment market;
- ability to retain key personnel;
- share price volatility;
- the potential that dividends may never be declared; and
- other factors described in the “*Risk Factors*” section of this report and in other filings with the U.S. Securities and Exchange Commission or Canadian securities regulators.

Further, any forward-looking statement speaks only as of the date on which it is made, and we undertake no obligation to update any forward-looking statement to reflect events or circumstances after the date on which the statement is made or to reflect the occurrence of unanticipated events. New factors emerge from time to time, and it is not possible for us to predict which factors will arise. In addition, we cannot assess the impact of each factor on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements. We qualify all of the information presented in this report, and particularly our forward-looking statements, by these cautionary statements.

Except to the extent required by applicable laws or rules, we undertake no obligation to publicly update or revise any forward-looking statement, whether written or oral, that may be made from time to time, whether as a result of new information, future events, or otherwise.

Item 1. Business.

General

We are a provider of specialty activated carbon technologies, delivering innovative solutions for air and water purification. We provide patented and proprietary technologies for mercury emissions capture to the coal-fired utility sector, and are developing disruptive water purification technologies with a specialization on forever chemicals such as PFAS and PFOS.

Products and Services

Mercury Emissions

We provide mercury capture solutions driven by our patented two-part Sorbent Enhancement Additive (SEA®) process using a powerful combination of science and engineering. Our leading-edge services have been shown to achieve mercury emissions removal at a significantly lower cost and with less operational impact to coal-fired power plants than other used methods, while maintaining and/or increasing power plant output and preserving the marketability of byproducts for beneficial use. We design systems and materials tailored and formulated specifically to each customer's coal-fired units. Our mercury removal technologies and systems will achieve mercury removal levels which meet or exceed the 2012 Coal- and Oil-Fired Electric Utility Steam Generating Units National Emission Standards for Hazardous Air Pollutants, as revised, known as the MATS, requirements with lower cost and plant systems impacts than typical PAC or BAC sorbent injection systems. Our products have been shown to be successful across a myriad of fuel and system types, tunable to any configuration, and environmentally friendly, allowing for the recycling of fly ash for beneficial use.

Our SEA® technology provides total mercury control with solutions that are based on a thorough scientific understanding of actual and probable interactions involved in mercury capture in coal-fired flue gas. A complete understanding of the complexity of mercury-sorbent-flue gas interactions and chemisorption mechanisms allows for optimal control strategy and product formulation, resulting in effective mercury capture. Combined with a thorough proprietary audit of the plant and its configuration and instrumentation, we believe our complete science and engineering approach for mercury-sorbent-flue gas interactions are well-understood, highly predictive, and critical to delivering total mercury control.

The SEA® approach to mercury capture is specifically tailored for each application to match a customer's coal type and boiler configuration for optimal results. Our two-pronged solution consists of a front-end additive(s) put on the coal or directly into the boiler in minimal amounts combined with a back-end sorbent injection solution to ensure maximum mercury capture. We believe our two-part process uses fewer raw materials than other mercury capture systems and causes less disruption to plant operations. We believe our additives and sorbents, which are designed to meet or exceed the mercury mitigation requirements of our customers, offer superior performance and the lowest possible feed rates when compared to other solutions on the market. Our processes also preserve fly ash which can be sold and recycled for beneficial use.

In order to evaluate each customer's needs, we finely tune the combustion chemistry using our technologies and specially formulated products. In order to achieve optimal results, we bring mercury emission analytics to the field for our demonstrations as opposed to collecting samples for laboratory analysis while our team analyzes the entire plant's performance once compliance testing has begun. As a result, we are able to offer customers:

- Assessment of existing systems and suggested improvements;
- Assessment and guidance of mercury capture and emissions;
- Optimal design of the injection strategy and appropriate equipment layout and installation;
- Sorbent optimization using flow modeling for a customized, low-cost plan for each unit;
- Emission testing for mercury and other trace metals with our mobile laboratory; and
- Ongoing research toward improved technology for mercury capture and rapid-response scientific support for emission or combustion issues as operations and regulations change.

Water Treatment

In April 2024, we announced the introduction of our new division to address the potable (drinking) water market with new sorbent technologies under development. These new technologies involve less use of activated carbon and are a much more environmentally friendly approach to water treatment.

AC is a form of carbon that has been processed to have a large surface area and a high degree of porosity. This gives it the ability to adsorb a wide range of substances, making it highly effective at removing particles, toxins and impurities. GAC and similar agglomerated activated carbons (or shaped activated carbons) are a form of activated carbon that is specifically produced in a granular, coarse form, as opposed to powdered or pelletized forms. This granularity allows for better flow through filtration systems, which makes it ideal for use in applications that require a continuous flow of air, water or liquids. GAC is commonly used in water filtration systems, including municipal water treatment plants. It is particularly effective at removing chlorine, organic compounds, pesticides, heavy metals, and other contaminants. Reactivated GAC is spent GAC that has been restored for reuse, making it more sustainable and cost-effective.

Utilizing renewal raw materials allows us to develop and provide shaped activated carbon that can compete with other commercially available GAC options, and provide a superior activated carbon technology to remove contaminants (including PFAS) from potable water. While pending PFAS regulations are projected to significantly increase overall GAC demand, our products are expected to be successfully applied regardless of PFAS regulations reflecting significant competitive advantages (i.e., renewable raw material sources, low arsenic content, and overall performance) to presently available GAC products for the water market. In addition, our product(s) may provide inherent performance advantages such as lower pressure drop relative to existing carbon products in the marketplace today.

We continue to improve our product line with the development of new technologies, supported with two new state of the art laboratories which we opened in 2024, one located in Pennsylvania and the other located in North Dakota. Both locations were selected to be near our research and development team members. In addition to supporting the development of new technologies, the laboratories will be able to offer other services such as carbon activation, thermal reactivation, and regeneration, contaminant analysis and carbon evaluations and recommendations. These labs will enable us to tailor and optimize products for our customers' needs and assist water utilities in implementing strategies to lower compliance costs, as well as provide a continued path to commercialization of our technologies.

Industry Background and Governmental Regulations

The market for mercury removal from power plant emissions in the United States have largely been driven by federal regulations.

On December 21, 2011, the EPA announced MATS for power plants in the U.S. The MATS rule is intended to reduce air emissions of heavy metals, including mercury ("Hg"), from all major U.S. power plants burning coal or oil, which are the leading source of non-natural mercury emissions in the U.S. Existing power plants were granted three years (plus a potential one-year extension in cases of hardship, ruled on by state EPAs where the plant is domiciled) from April 16, 2012 to comply with the new emission limits. The MATS rule applies to EGUs that are larger than 25 MW that burn coal or oil for the purpose of generating electricity for sale and distribution through the national electric grid to the public, and includes investor-owned units, as well as units owned by the federal government, municipalities, and cooperatives that provide electricity for commercial, industrial, and residential uses. At the time of MATS being promulgated, there were approximately 1,250 coal-fired EGUs affected by this rule. Many EGUs have since shut down as a result of regulation and competitive disadvantages to newer or gas-fired EGUs and renewable energy sources (e.g. wind, solar). We believe that at the end of 2024, there are approximately 210 coal-fired EGUs remaining in the power market which make up the large mercury-emissions control market into which we sell.

The final MATS rule identifies two subcategories of coal-fired EGUs, four subcategories of oil-fired EGUs, and a subcategory for units that combust gasified coal or solid oil (integrated gasification combine cycle or "IGCC" units) based on the design, utilization, and/or location of the various types of boilers at different power stations. The rule includes emission standards and/or other requirements for each subcategory. The rule set nationwide emission limits estimated to reduce mercury emissions in coal-fired plants by about 90%.

In addition to the U.S. federal MATS rule, more than 20 states currently have regulations that limit mercury emissions and are similar to or more restrictive than the MATS rule.

There are several choices of pollution control technologies available to reduce mercury emissions, but they do not all work consistently or cost-effectively for every plant design or for all of the various types of coal. The most common technology employed to reduce mercury emissions is a sorbent injection system which provides for the injection of PAC or BAC into the flue-gas of an EGU after the boiler itself but in front of the ESP. Such injections have proven effective with many coals, especially at reduction levels of 70% or less. At required mercury reduction levels above 80%, these injection systems require substantial injection rates which often have severe operational issues including over-loading the ESP and rendering the fly ash unfit for sale to concrete companies, and at times even causing combustion concerns with the fly ash itself.

Mercury is also removed as a co-benefit by special pollution control equipment installed to remove SOX and NOX. To achieve very high levels of SOX reduction, large, complex, and expensive (with capital costs in the hundreds of millions of dollars for a medium-sized EGU) systems called scrubbers can be installed in the plant exhaust system, typically just before the flue-gas goes up the stack for release. As a co-benefit to their primary mission, scrubbers have been shown to remove significant quantities of oxidized mercury. Mercury is typically found in two basic forms in coal: elemental and oxidized. The amount of each form varies in any given seam of coal and is affected by the other natural elements (such as chlorine) which might also be present in the coal. We believe that about 30-40% of the mercury in the post-combustion flue-gas exists in the oxidized state for power plants burning low-rank coal and about 60-70% for power plants burning high-rank coals. Mercury is found in only trace amounts in coal making it difficult to remove from coal or from the flue-gas when combusted with the coal. It is in the burning of millions of tons of coal that these trace amounts become problematic and is why MATS was promulgated.

The other major pollution control system which contributes significantly to the co-benefits of mercury removal is an SCR system which can be installed to achieve high levels of removal of NOX. SCRs are also very large and expensive systems (costing hundreds of millions of dollars in capital costs to install on a medium-size EGU) that are typically installed just after the flue-gas exits from the unit boiler. As a co-benefit, SCRs have been shown to oxidize a considerable percentage of the elemental mercury in many types of coal. If the EGU then has a combination of an SCR and a scrubber, we estimate that the EGU might achieve an over-all reduction of 80-85% of the mercury in power plants that burn high-rank coals. The exact level of mercury emission reductions depends on the designs of these systems, the types of coal being burned and the operations of the power plant.

We believe that a large percentage of the coal-fired EGUs in the U.S. employ some sort of sorbent injection system to achieve the very low mercury emission levels required by the MATS rule, with either the sorbent injection system as the primary removal method or such a system being employed as a supplemental system to SCR/scrubber combinations to achieve the emission limits.

In the United States, potable water treatment is regulated primarily by the EPA under the Safe Drinking Water Act (“SDWA”), which establishes standards to ensure that water is safe for human consumption. The SDWA was originally passed by Congress in 1974 to protect public health by regulating the nation’s public drinking water supply. The law was amended in 1986 and 1996 and requires many actions to protect drinking water and its sources—rivers, lakes, reservoirs, springs, and ground water wells. (The SDWA does not regulate private wells which serve fewer than 25 individuals.) The SDWA authorizes the EPA to set national health-based standards for drinking water to protect against both naturally-occurring and man-made contaminants that may be found in drinking water. The SDWA covers water quality standards, treatment processes, and monitoring requirements for public water systems.

The EPA has set maximum contaminant levels (“MCLs”) for specific contaminants in drinking water. These include: microbial contaminants like bacteria, viruses, and protozoa (e.g., E. coli, cryptosporidium); inorganic contaminants like lead, arsenic, and nitrates; organic contaminants like pesticides and solvents; radionuclides like radon and uranium; and, disinfectants and disinfection by-products like chlorine and trihalomethanes (THMs). Water systems must treat water to meet these MCLs or achieve a level that minimizes the risk to public health.

In April 2024, the EPA issued the first-ever national, enforceable drinking water standard to protect communities from exposure to harmful per-and polyfluoroalkyl substances (“PFAS”), also known as “forever chemicals”. The Rule sets limits for five individual PFAS: PFOA, PFOS, PFNA, PFHxS, and HFPO-DA (known as GenX Chemicals). The Rule also sets a hazard index level for two or more of four PFAS as a mixture: PFNA, PFHxS, HFPO-DA, and PFBS. Under the Rule, public water systems must monitor these PFAS and will have three years to complete initial monitoring (by 2027), followed by ongoing compliance monitoring. Water systems must also provide the public with information on the levels of these PFAS in their drinking water beginning in 2027. Public water systems will have five years (by 2029) to implement solutions that reduce these PFAS if monitoring shows that drinking water levels exceed the MCLs set forth in the Rule. Beginning in five years (2029), public water systems that have PFAS in drinking water which violates one or more of these MCLs must take action to reduce levels of these PFAS in their drinking water and must provide notification to the public of the violation.

The EPA has indicated that once implemented, these limits will reduce tens of thousands of PFAS-attributable illnesses or deaths and will reduce PFAS exposure for approximately 100 million Americans served by public drinking water systems.

The EPA has indicated that compliance with this Rule is estimated to cost approximately $1.5 billion annually. The Infrastructure Investment and Jobs Act has dedicated $9 billion to help communities impacted by PFAS pollution in drinking water. In addition, another $12 billion in Infrastructure Investment and Jobs Act funding is available to communities to make general drinking water improvements, including addressing PFAS chemicals. Estimated costs include water system monitoring, communicating with customers, and – if necessary – installing treatment technologies.

In addition to the national standards established by the EPA which states are required to implement and enforce, individual states have the authority to impose stricter regulations than those set by the EPA. Many states have already set their own standards for PFAS, often more stringent than federal standards, in response to the growing public health concerns. States also run their own monitoring programs and inspections to ensure compliance with federal and state regulations.

Marketing and Our Growth Strategy

Mercury Emissions

Our marketing efforts have principally focused on the North American market to date, and particularly the United States.

In the U.S. market, our success depends, in part, on the success of demonstrations performed with utility customers and the resulting contract awards to meet the MATS requirements in the long-term period and its operational performance with EGUs under contract.

In Canada, there are the 2000 Canada-wide Standards for Mercury Emissions and the 2006 Canada-wide Standards for Mercury Emissions from Coal-Fired Electric Power Generation Plants among all the provinces which was initially implemented in 2010, with caps in mercury emissions for each of the provinces. We believe that we have the most effective technology for the EGUs and that we maintain a strong patent position for our mercury emissions technologies in Canada.

Our marketing strategy is designed to grow our mercury capture solutions in the North American region by building and maintaining the reputation and trust of our work among its customers – specifically by carrying out successful demonstrations performed with utility customers and the resulting contract awards to meet the MATS requirements in the long-term period and sustaining our operational performance with EGUs under contract – and developing new, and refining our existing, unique emissions technologies. We believe that by offering proven and innovative service offerings, we can attract more customers and partners to our services, creating a network growth effect. We expect that the continuing pursuit of infringers of our patented technologies will yield further licensing and supply agreements (see “Patent Enforcement” below).

We believe that these targeted marketing initiatives are the most efficient and cost-effective strategy to sustain the growth of both new and existing customers.

At the present time, there are 16 EGUs in the U.S. that currently use our SEA® technologies and buy product from us.

Patent Enforcement

We believe that a significant percentage of coal-fired power plants in the United States have adopted and are infringing upon our two-part Sorbent Enhancement Additive (SEA®) process for mercury removal from coal-fired power plants.

Beginning in 2019, we began to actively enforce our patent rights against unauthorized use of our patented technologies, and have since initiated patent litigation in various jurisdictions against multiple infringers, claiming infringement of our patents related to our two-part process for mercury removal from coal-fired power plants. See Part I, Item 3. “Legal Proceedings”. We view such litigation as a last resort. Our goal and overall strategy is to convert infringers to our supply chain of sorbent products for mercury removal, or otherwise license our patents to them on a non-exclusive basis in connection with their respective coal-fired power plants.

Other Possible Markets for Our Emissions Technologies

In May 2017, the European Union and seven of its member states ratified the Minamata Convention on Mercury. The Minamata Convention on Mercury is a global treaty to protect human health and the environment from the adverse effects of mercury. This Convention was a result of three years of meeting and negotiating, after which the text of the Convention was approved by delegates representing approximately 140 countries in January 2013 in Geneva. As of September 2020, 123 countries have joined the Convention. It is expected that over the next few decades, this international agreement will enhance the reduction of mercury pollution from the targeted activities responsible for the major release of mercury to the environment. Specific emissions limits are being developed by the European Union, although the timing of any enactment of such is uncertain. Any such regulations may lead to additional business opportunities for our mercury control technologies within the European Union although there are no such prospects at the present time.

With regard to business opportunities in China and other Asian countries, there currently exists no specific mandate for mercury capture that requires specific control technology. Nevertheless, we are optimistic of the prospects for mercury emissions regulations in China and Southeast Asia in the coming years.

Water Treatment

Initially, we intend to focus our marketing efforts on municipalities that have limited resources and engineering experience and offer shaped activated carbons (including reactivated GAC), testing and consulting services.

While the initial focus for our water treatment technologies will be on the potable water market, we expect that our technologies will also be valuable for industrial wastewater remediation. Industrial wastewater is the liquid waste generated by industrial activities, including manufacturing, processing, and production facilities. It often contains pollutants such as organic matter, heavy metals, chemicals, oils, and other contaminants that must be treated before being discharged into the environment or reused. We believe our water treatment technologies will be well suited to treat such industrial wastewater in an optimal and cost-effective manner.

Additional Business Opportunities

We also maintain a license with respect to certain intellectual property owned by Dakin Holdings Ltd. consisting of a proprietary compound of materials engineered to treat a boiler to improve the combustion process and thereby reduce overall emissions, while improving boiler efficiency during the combustion of all types of fuels at power plants (the “Dakin IP”). We believe the Dakin IP can be an effective supplement to our mercury emissions removal business at coal-fired power plants and provide an additional revenue stream utilizing our present infrastructure. However, there can be no assurance that such license will lead to any significant revenues. For additional information, see Part III, Item 13. “Certain Relationships and Related Transactions, and Director Independence”.

Patents and Trademarks

Our SEA® technology was originally developed by the University of North Dakota’s Energy and Environmental Research Center. It was tested and refined on numerous operating coal-fired EGUs, with the founder of our wholly owned subsidiary participating with the Energy and Environmental Research Center on these tests since 2008. The Energy and Environmental Research Center Foundation, a non-profit entity, obtained patents on this technology. Between 2009 and 2017, we maintained an exclusive worldwide license with respect to this patented technology, which applied to various domestic and foreign patents and patent applications. Such formed the basis of our mercury control technology. On April 24, 2017, we acquired from The Energy and Environmental Research Center Foundation all such patent rights, including all patents and patents pending, domestic and foreign, relating to the foregoing technology.

We have a patent portfolio relating to mercury removal of 34 granted patents worldwide, consisting of 26 U.S. patents and 8 foreign patents (Canada, Germany, European Patent Office and China) with expiration dates ranging from August 2025 to September 2034. We believe that our patent position for mercury removal is strong in the U.S. and such other foreign countries. In addition, in 2024, we filed 2 provisional patent applications in the U.S. relating to water treatment.

Competition

We operate in highly competitive industries that are characterized by a diverse range of participants, including companies that operate in both the mercury capture and water treatment industries. Our major competitors in the mercury capture and water treatment markets includes companies such as Arq, Inc. (formerly Advanced Emissions Solutions, Inc.), Norit Activated Carbon, Calgon Carbon Corporation, and Nalco Company LLC (also known as Nalco Water, an Ecolab company). Many of our competitors employ larger sales staff and are well established in the market with greater financial and operational resources. However, in most head-to-head tests with competitor products in the mercury capture market, our SEA® technology has consistently performed better in mercury removal, at lower projected costs. We believe that our SEA® technology is superior to offerings of our competitors and, with our highly experienced staff, we have shown that we can compete effectively in this market. In the water treatment market, our competitive strategy will focus on delivering tailored and cost-effective water treatment solutions, innovative technologies, and exceptional customer service to meet the specific needs of our clients. While the industry faces ongoing regulatory and technological advancements, we believe our industry expertise and focus on customer relationships will position us to effectively compete and grow within the water treatment market.

Raw Materials

We buy all the raw materials needed to implement our technologies and provide our formulated products from third-party suppliers. Suppliers of our raw materials include large companies that have provided materials for decades and have an international presence. When we use PAC as one component of our sorbent material, we buy it in the market from large activated carbon manufacturers. We believe that we have excellent relationships with our current suppliers. If any of our suppliers should become unavailable to us for any reason, there are a number of other suppliers that we believe can be contracted with to supply the raw materials that we need. However, the availability and price of those raw materials can be impacted by factors beyond our control including any price increases due to inflation. If such suppliers cannot meet our demand for such raw materials on a timely basis or at acceptable prices or if we are unable to offset any such increases that might occur with price adjustments to our customers, such could have a negative effect on our operations.

Seasonality

Our products and services for mercury capture are connected to the power market. This market has changed over recent years, creating a greater proportional residential load demand. With this shift in demand and load, we have experienced some seasonal changes in billing cycles as our current customer concentration is in the Southwestern United States, where many of our customers decrease capacity in such winter months, unless there are abnormally low temperatures during such winter months. The price and availability of natural gas and renewables can also influence the amount of generation provided by coal-fired plants.

In the water treatment market, we expect there will be a greater demand for our products and services in the summer months when higher temperatures lead to more water usage and warmer temperatures tend to promote algae growth and create ideal conditions for bacteria, viruses and parasites to thrive.

Employees

We currently have 12 full-time and 3 part-time employees. Our employees are not represented by labor unions. We believe that relations with our employees are good.

Corporate Information

We were originally incorporated on July 19, 1983 in the State of Utah and subsequently domesticated as a Delaware corporation in February 2007. Effective on October 17, 2024, as part of our rebranding, we changed our corporate name from Midwest Energy Emissions Corp. to Birchtech Corp.

Our wholly owned subsidiary, MES, Inc., was originally incorporated in December 2008 in the State of North Dakota. Effective on June 21, 2011, we completed a merger transaction (the "Merger") whereby MES, Inc. (then called Midwest Energy Emissions Corp.) became our wholly owned subsidiary. As a result of the Merger, our business began to focus on the delivery of mercury capture technologies to power plants.

Our mercury emissions business is sometimes referred to and known as "ME_2C"® which is a trademark of the Company.

Our principal place of business is located at 1810 Jester Drive, Corsicana, Texas 75109, which location we have maintained for manufacturing and distribution of our products since 2015. Our telephone number is (614) 505-6115. Our corporate website address is http://www.birchtech.com.

Available Information

We file with or submit to the SEC annual, quarterly and current periodic reports, proxy statements and other information meeting the informational requirements of the Exchange Act. The SEC maintains an Internet website that contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC at www.sec.gov. Our SEC filings are also available on our website at www.birchtech.com. Information on or connected to our website is neither part of, nor incorporated by reference into, this Form 10-K or any other report filed with or furnished to the SEC.

We are a "smaller reporting company" as defined in the Exchange Act and may take advantage of certain of the scaled disclosures available to smaller reporting companies. A company will qualify as a smaller reporting company if either (i) its public float is less than $250 million, or (ii) its revenues as of its most recently completed fiscal year for which audited financial statements are available were less than $100 million and it has no public float or a public float of less than $700 million.

Item 1A. Risk Factors.

In your evaluation of the Company and our business, you should carefully consider the risks and uncertainties described below, together with the information included elsewhere in this report and the other documents we file with the SEC. The following factors describe the risks and uncertainties that we consider significant to the operation of our business but should not be considered a complete listing of all potential risks and uncertainties that could adversely affect our operating results, financial position or liquidity. Additionally, our business is subject to the same general risks and uncertainties that affect many other companies, such as but not limited to the overall economic conditions, changes in laws or accounting rules, fluctuations in interest and exchange rates or other disruptions of expected economic and business conditions.

Risks Related to Our Company

Demand for our mercury emissions services and products is largely driven by coal consumption by North American electricity power generating plants. Any significant changes that diminish the use of coal as a primary fuel source for electricity production may adversely affect our business.

North American coal-fired electricity generating units comprise the basis of the market for our services and products. Regulations mandating or incentivizing the purchase of power from renewable energy sources (e.g., wind, solar, hydroelectric, geothermal) and/or the phasing out of coal-fired power plants could lessen the demand for electricity from such plants and overall reduce the number of coal-fired electricity generating units and the amount of coal burned, thereby decreasing the demand for our services and products which could adversely affect our business. The phasing out of coal-fired plants has already had a negative effect on our results of operations. Continued promulgation of these regulations in North America is affected by, among other things, politics, perceived environmental impact, and public favor.

The risks associated with technological change may make our products and services less marketable.

The market into which we sell our products and services is characterized by periodic technological change as well as evolving industry standards and regulations. The nature of such market will require that we continually improve and/or modify the performance, features, and reliability of our products and services, particularly in response to possible competitive offerings. Unless we are able to enhance, improve, and/or modify existing products in a timely manner or to develop and introduce new products that incorporate new technologies or conform with evolving industry standards and regulations, our products and services may be rendered less marketable.

Our industry is highly competitive. If we are unable to compete effectively with competitors having greater resources than we do, our financial results could be adversely affected.

We operate in highly competitive industries that are characterized by a diverse range of participants, including companies that operate in both the mercury capture and water treatment industries. Our major competitors in the mercury capture and water treatment markets includes companies such as Arq, Inc. (formerly Advanced Emissions Solutions, Inc.), Norit Activated Carbon, Calgon Carbon Corporation, and Nalco Company LLC (also known as Nalco Water, an Ecolab company). Many of our competitors employ larger sales staff and are well established in the market with greater financial and operational resources. Our ability to compete successfully depends in part upon our ability to offer superior technology, including a superior team of technical personnel. If we are unable to maintain our competitive position, we could lose market share to our competitors which is likely to adversely impact our financial results.

We may not be able to successfully protect our intellectual property rights.

We have a patent portfolio relating to mercury removal of 35 granted patents worldwide, consisting of 27 U.S. patents and 8 foreign patents (Canada, Germany and China) with expiration dates ranging from August 2025 to September 2034. While we actively pursue new patents and technological advancements to replace expiring patents, there is no guarantee that future patents will be granted, or that they will be able to provide and/or allow us to maintain the same level of market protection. As a result, we may not be able to successfully protect proprietary aspects of our technology.

With regard to our water treatment technologies, we have to date filed two provisional patent applications in the U.S. relating to water treatment. However, provisional applications do not provide enforceable patent rights unless they are converted into non-provisional applications and successfully granted by the U.S. Patent and Trademark Office. There is no assurance that our pending provisional applications will result in issued patents, or that any patents granted will provide meaningful protection against competitors.

We may not be successful in patent litigation.

Patent litigation, like most types of commercial litigation, can be expensive, time-consuming, and unpredictable. Any such litigation may require us to spend a substantial amount of time and money and could distract management from our day-to-day operations. There is no assurance that we will be successful in any such litigation. Moreover, in an infringement proceeding, a court may decide that one or more of our patents are not valid or enforceable, or a court may refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover the technology in question. An adverse result in any litigation could put one or more of our patents at risk of being invalidated, held unenforceable, or interpreted narrowly and could put our patent applications at risk of not issuing.

On March 1, 2024, following a five-day jury trial, a federal jury in the U.S. District Court for the District of Delaware awarded a $57.1 million patent infringement verdict in our favor against a group of defendants. Nevertheless, the ultimate success in this litigation against this group of defendants still remains uncertain due to other possible factors including, but not limited to, the results of any post-trial motions and applications, appeals and any collectability issues.

We depend on third-party suppliers for materials needed to implement our technologies; availability of raw materials and volatility in price could impact our results of operations.

We buy all the raw materials needed to implement our technologies and provide uniquely formulated products from third-party suppliers. Suppliers of our raw materials include large companies that have provided materials for decades and have an international presence. We believe that we have excellent relationships with our current suppliers. If any of our suppliers should become unavailable to us for any reason, there are a number of other suppliers that we believe can be contracted with to supply the raw materials that we need. However, the availability and price of those raw materials can be impacted by factors beyond our control including any price increases due to inflation. If such suppliers cannot meet our demand for such raw materials on a timely basis or at acceptable prices or if we are unable to offset any such increases that might occur with price adjustments to our customers, such could have a negative effect on our operations.

We are dependent on key customers. A significant adverse change in such relationships could adversely impact our results of operations and financial condition.

Our customers are concentrated, so the loss of one or more key customers or a material reduction in business performed for them could cause us to experience a decline in net sales, which could adversely affect our financial results. In addition, there can be no assurance that such customers will not experience financial difficulties or other problems which could delay such customers in paying for product and services on a timely basis or at all. Any problems with such customers can be expected to have an adverse impact on our results of operations and financial condition.

We rely on a small number of key employees. The loss of more than one of these employees could disrupt our operations and future growth.

We have a limited number of employees and we depend on the continued services and performance of our key personnel. The loss of more than one member of this team could disrupt our operations and negatively impact our projected future growth. In addition, as we continue to grow, we cannot guarantee we will continue to attract and retain the personnel we need to maintain our competitive position.

Our lack of diversification increases the risk of an investment in the Company.

Our business lacks significant diversification and to date has been dependent on the success of our mercury emission control technologies. As a result, we are impacted more acutely by factors affecting our industry or the regions in which we operate than we would if our business were more diversified, enhancing our risk profile. While we are in the process of developing new technologies, particularly in the water treatment market, no assurance can be made that any such new technologies currently under development will be commercialized or result in a significant revenue stream.

Low gas prices can negatively impact our results of operations; mild weather could also have corresponding effects on the demand for coal.

Our mercury-emissions control technologies are used by coal-fired power plants primarily in the United States. At such times that gas prices remain low for sustained periods of time or such prices drop substantially, power suppliers will likely rely more upon gas-fired units rather than coal plants in meeting their power needs. Historically, gas prices have been volatile and are likely to remain volatile in the future due to numerous factors beyond our control. Although market prices for natural gas have recently remained relatively high, we cannot predict when such prices may decline and remain low for an extended period of time which, in such event, will likely cause a weaker demand for our products. In addition, mild winter months in the U.S. will also result in less of a power demand which will also be expected to negatively impact our operations.

Our insurance coverage may not be adequate to protect us from all business risks.

We may be subject, in the ordinary course of business, to claims resulting from products liability, employment-related actions, class action lawsuits, accidents, acts of God, and other actions against us. Additionally, our insurance coverage may be insufficient to cover all existing and future claims against us. We may be compelled to expend significant time and resources defending any such claims, and a loss that is uninsured or which exceeds policy limits may require us to pay substantial amounts, which could adversely affect our financial condition and operating results.

Litigation resulting from disputes with customers may result in substantial costs, liabilities, and loss of revenues.

From time to time, we may be faced with disputes with our customers over the provisions of supply contracts relating to, among other things, pricing, quality, quantity, and the existence of specified conditions beyond our or our customers' control that impact performance obligations under the particular contract. In the event such disputes occur, we may not be able to resolve those disputes in a satisfactory manner which could have a material adverse effect on our business, financial condition, and results of operations.

Revenues are generated under contracts or blanket purchase orders that must be renegotiated periodically.

Substantially all of our revenues to date have been generated under contracts or blanket purchase orders which expire periodically or which must be frequently renegotiated, extended, or replaced. Whether these contracts or blanket purchase orders are renegotiated, extended, or replaced is often subject to factors that may be beyond our control, including an extremely competitive marketplace for the services we offer. We cannot assure you that the costs and pricing of our services can remain competitive in the marketplace or that we will be successful in renegotiating our contracts and blanket purchase orders.

Business interruptions could significantly disrupt our operations and could have a material adverse impact on us.

Our operations, and those of our suppliers, and other contractors and consultants, could be subject to geopolitical events, natural disasters, power and other infrastructure failures or shortages, public health pandemics or epidemics, extreme weather events, including hurricanes, wildfires and prolonged droughts, and other natural or man-made disasters or business interruptions. Any of such occurrences may disrupt our operations, damage our facilities, affect our supply chains, disrupt our workforce, and impact our business relationships with other third parties. Any such disruptions or losses we incur could have a material adverse effect on our financial results and our ability to conduct business as expected.

Any disruptions to our information technology systems or breaches of our network security could interrupt our operations, compromise our reputation, and expose us to and costly response measures and could have a material adverse effect on our business operations.

We rely on information technology systems, including third-party hosted servers and cloud-based servers, to keep business, financial, and corporate records, communicate internally and externally, and operate other critical functions. If any of our internal systems or the systems of our third-party providers are compromised due to computer virus, unauthorized access, malware, and the like, then sensitive documents could be exposed or deleted, and our ability to conduct business could be impaired. Cyber incidents can result from deliberate attacks or unintentional events. These incidents can include, but are not limited to, unauthorized access to our systems, computer viruses or other malicious code, denial of service attacks, malware, ransomware, phishing, human error, or other events that result in security breaches or give rise to the manipulation or loss of sensitive information or assets. Cyber incidents can be caused by various persons or groups, including disgruntled employees and vendors, activists, organized crime groups, and state-sponsored and individual hackers. Cyber incidents can also be caused or aggravated by natural events, such as earthquakes, floods, fires, power loss, and telecommunications failures. The risk of cybersecurity breach has generally increased as the number, intensity, and sophistication of attempted attacks from around the world has increased. While we have certain cyber security procedures in place, given the evolving nature of these threats, there can be no assurance that we will not suffer material losses in the future due to cyber-attacks.

Maintaining and improving our financial controls may divert management's attention and increase costs.

We are subject to the requirements of the Exchange Act, including the requirements of the Sarbanes-Oxley Act of 2002. The requirements of these rules and regulations have increased in recent years, causing an increase in legal and financial compliance costs, and make some activities more difficult, time-consuming, or costly and may also place undue strain on our personnel, systems, and resources. Such rules and regulations require, among other things, that we maintain effective disclosure controls and procedures and internal control over financial reporting. This can be difficult to do. In this regard, our management concluded our internal control over financial reporting was not effective as of December 31, 2024. While certain remedial actions have been completed, we continue to actively plan for and implement additional control procedures to improve our overall control environment and expect these efforts to continue throughout the rest of 2025 and beyond. As a result of this and similar activities, management's attention may be diverted from other business concerns, which could have a material adverse effect on our business, financial condition, and results of operations. Further, investors could lose confidence in our financial reports, and our stock price may be adversely affected, if our internal controls over financial reporting continue to be found not to be effective by management or if we make disclosure of existing or potential significant deficiencies or material weaknesses in those controls in the future. Relatedly, if we fail to remediate any such material weakness in the future, we may not be able to accurately report our financial condition or results of operations.

Liquidity risk could impair our ability to fund operations and jeopardize our financial condition.

Liquidity, i.e., ready access to funds, is essential to our business. Our access to external sources of financing could be impaired by factors that are specific to us or others that may be outside of our control. As a result, such liquidity risk could impair our ability to funds operations and jeopardize our financial condition.

Discretion in the use of available funds

Management has discretion concerning the use of our available funds, as well as the timing of their expenditure. As a result, investors will be relying on the judgment of management for the application of our available funds. The results and the effectiveness of the application of the available funds are uncertain. If the available funds are not applied effectively, the results of our operations may suffer. Stockholders may not agree with the manner in which management chooses to allocate and spend our available funds.

Possible inability to continue as a going concern.

Based on our current cash levels and burn rate, amongst other things, we believe our cash and financial resources may be insufficient to meet our anticipated needs for the next twelve months, which raises substantial doubt about our ability to continue as a going concern within one year from the issuance date of the financial statements included elsewhere in this Annual Report. The financial statements included elsewhere in this Annual Report have been prepared on a going concern basis, which contemplates the realization of assets and the satisfaction of liabilities in the normal course of business. The financial statements do not include any adjustments relating to the recoverability and classification of asset amounts or the classification of liabilities that might be necessary should we be unable to continue as a going concern within one year after the date the financial statements are issued.

In addition to maintaining the revenue stream from our legacy mercury emissions control business, our plans and expectations over the next twelve months to mitigate such financial condition include receiving additional cash inflows from the judgment expected in connection with the $57.1 million jury verdict awarded to us in March 2024, additional licensing revenues and product sales from the other patent litigation recently commenced, and revenues from our entry into the water treatment business. During 2024, we opened two new state of the art laboratories and have added personnel to support our entry into the water business which we believe will lead to a vibrant new revenue stream. In addition, management is exploring additional financing opportunities. While management believes these plans will alleviate substantial doubt, there is no assurance that they will be successfully realized or implemented.

Our board of directors concluded in 2025 that we needed to restate previously issued financial statements as a result of a change in accounting for a certain license agreement.

On March 28, 2025, our board of directors, along with our audit committee and with management and, following dialogue with our auditors, concluded that our previously issued financial statements for the periods ended December 31, 2023 and 2022 included in the Company's Annual Reports of Form 10-K, March 31, 2024, June 30, 2024, and September 30, 2024, March 31, 2023, June 30, 2023, and September 30, 2023, included in the Company's Quarterly Reports of Form 10-Q, should no longer be relied upon as a result of the change in accounting for a certain license agreement. We concluded that the Company should have recognized the entire proceeds receivable pursuant to the agreement as revenue during the year ended December 31, 2022. The Company should also have recognized the financing component of the licensing agreement during the fiscal years ended December 31, 2023 and 2024. Such restatement could cause uncertain sentiment in the investment community.

Risks Related to Regulation

Any significant changes in environmental regulations related to mercury emissions and potable water treatment could have a major impact on us.

Our business relies heavily on environmental regulations governing emissions from coal-fired power plants and regulations related to water treatment. In the United States, the Mercury and Air Toxics Standards (MATS) rule, issued by the U.S. Environmental Protection Agency (EPA) in 2011, is intended to reduce air emissions of heavy metals, including mercury ("Hg"), from all major U.S. power plants burning coal or oil, which are the leading source of non-natural mercury emissions in the U.S. Potable water treatment is regulated primarily by the EPA under the Safe Drinking Water Act ("SDWA"), which establishes standards to ensure that water is safe for human consumption. In April 2024, the EPA issued the first-ever national, enforceable drinking water standard to protect communities from exposure to harmful per-and polyfluoroalkyl substances ("PFAS"), also known as "forever chemicals". The Rule sets limits for five individual PFAS: PFOA, PFOS, PFNA, PFHxS, and HFPO-DA (known as GenX Chemicals). Any changes, rollbacks or delays in these regulations could significantly impact the Company's financial performance and growth prospects.

Since being enacted, the MATS Rule has been subject to legal challenges which may continue.

Since being enacted in 2011, the MATS regulation has been subject to legal challenge. In June 2015, the U.S. Supreme Court, in*Michigan v. EPA* , held that the EPA unreasonably failed to consider costs in determining whether it is "appropriate and necessary" to regulate hazardous air pollutants, including mercury, from power plants, but left the rule in place. In April 2016, the EPA issued a supplemental finding in response to the *Michigan* decision and found that, after a consideration of costs, it remained appropriate and necessary to regulate such emissions from coal- and oil-fired power plants. In May 2020, the EPA, then under the first Trump Administration, reversed the determination, finding that, after weighing the costs of compliance against certain benefits of the regulation, the 2016 supplemental finding was erroneous but left the MATS rule in place. Upon taking office, the Biden Administration in January 2021 directed the EPA to review the previous Administration's actions on various environmental matters including the withdrawal of the May 2020 "appropriate and necessary" determination, for conformity with Biden Administration environmental policy. On February 9, 2022, the EPA proposed to revoke the May 2020 finding and reaffirm the EPA's 2016 finding. On February 15, 2023, the EPA reaffirmed that it remains appropriate and necessary to regulate hazardous air pollutants, including mercury, from power plants after considering cost, and revoked the May 2020 finding. On April 3, 2023, the EPA issued a proposal to strengthen and update MATS. The newly inaugurated second Trump Administration has indicated potential shifts in environmental policies, which may include revisiting existing regulations such as MATS. In this regard, on March 12, 2025, the newly appointed EPA administrator under the Trump Administration announced plans to roll back dozens of environmental regulations including the reconsideration of the MATS regulation.

The results of the 2024 United States presidential election has created regulatory uncertainty.

The outcome of the 2024 U.S. presidential election has introduced significant uncertainty regarding future environmental regulations, particularly those affecting mercury emissions from power plants. The newly inaugurated administration has signaled potential shifts in environmental policy, including possible rollbacks of existing regulations and changes in enforcement priorities. For instance, if the administration weakens or repeals the MATS Rule, such regulatory changes could materially impact our operations. In addition, any weakening, rollback, or delayed implementation of PFAS-related regulations could reduce demand for our water treatment technologies, testing services, or remediation solutions, negatively impacting our growth prospects.

Uncertainty of and variability in international environmental regulations could restrict our ability to expand outside of the United States

While the focus of our business has been North America, and particularly the United States, in order to expand our business internationally, we would expect that more restrictive international environmental regulations will need to be enacted for the purpose of mercury control from power plant emissions. In May 2017, the European Union and seven of its member states ratified the Minamata Convention on Mercury. The Minamata Convention on Mercury is a global treaty to protect human health and the environment from the adverse effects of mercury. Specific emissions limits are being developed by the European Union, although the timing of any enactment of such is uncertain. With regard to business opportunities in China and other Asian countries, there currently exists no specific mandate for mercury capture that requires specific control technology, such as we offer. Any delay in enactment of more restrictive international regulations or the lack thereof could restrict any efforts and our ability to attract business in Europe and Asia for our emissions technologies.

With regard to our water treatment technologies, we intend to focus on the U.S. market. In the event we seek to expand our water treatment business internationally, we will face a complex array of international water treatment regulations, which vary significantly across countries and may be subject to frequent changes. This regulatory variability introduces uncertainty and potential compliance challenges should we seek to expand globally.

Risks Associated with our Common Stock

There is a limited trading market for our common stock.

Our common stock is currently traded in Canada on the Toronto Stock Exchange (“TSX”) under the symbol “BCHT” and is quoted in the United States on the OTCQB operated by OTC Markets Group Inc. under the symbol “BCHT”. Historically, the trading volume for our common stock has been limited. Accordingly, investors may find it more difficult to buy and sell our shares. These factors may have an adverse impact on the trading and price of our common stock.

Our stock price may be volatile, which could result in substantial losses to investors and litigation.

In addition to changes to market prices based on our results of operations and the factors discussed elsewhere in this "*Risk Factors*" section, the market price of and trading volume for our common stock may change for a variety of other reasons, not necessarily related to our actual operating performance. The capital markets have experienced extreme volatility that has often been unrelated to the operating performance of particular companies. These broad market fluctuations may adversely affect the trading price of our common stock. In addition, the average daily trading volume of the securities of small companies can be very low, which may contribute to future volatility. Factors that could cause the market price of our common stock to fluctuate significantly include:

- the results of operating and financial performance and prospects of other companies in our industry;
- strategic actions by us or our competitors, such as acquisitions or restructurings;

- announcements of innovations, increased service capabilities, new or terminated customers, or new, amended, or terminated contracts by our competitors;
- the public's reaction to our press releases, other public announcements, and filings with the SEC;
- lack of securities analyst coverage or speculation in the press or investment community about us or market opportunities in our industry or about the market for coal-fired power in the U.S. or abroad;
- changes in government policies in the United States and in foreign countries, if we are able to derive significant business outside of the United States;
- changes in earnings estimates or recommendations by securities or research analysts who track our common stock or failure of our actual results of operations to meet those expectations;
- market and industry perception of our success, or lack thereof, in pursuing our growth strategy;
- changes in accounting standards, policies, guidance, interpretations, or principles;
- any lawsuit involving us, our services, or our products;
- arrival and departure of key personnel;
- sales of common stock by us, our investors or members of our management team; and
- changes in general market, economic and political conditions in the United States, and global economies or financial markets, including those resulting from natural or man-made disasters.

Any of these factors, as well as broader market and industry factors, may result in large and sudden changes in the trading volume of our common stock and could seriously harm the market price of our common stock, regardless of our operating performance. This may prevent you from being able to sell your shares at or above the price you paid for your shares of our common stock, if at all. In addition, following periods of volatility in the market price of a company's securities, stockholders often institute securities class action litigation against that company. Our involvement in any class action suit or other legal proceeding could divert our senior management's attention and could adversely affect our business, financial condition, results of operations, and prospects.

Shares eligible for future sale may have adverse effects on our share price.

Sales of substantial amounts of shares or the perception that such sales could occur may adversely affect the prevailing market price for our shares. We may issue additional shares in subsequent public offerings or private placements to make new investments or for other purposes. We are not required to offer any such shares to existing shareholders on a preemptive basis. Therefore, it may not be possible for existing shareholders to participate in such future share issuances, which may dilute the existing shareholders' interests in us.

We do not anticipate paying any cash dividends on our capital stock in the foreseeable future.

We have never declared or paid any cash dividends on our capital stock, and we do not anticipate paying any cash dividends on our capital stock in the foreseeable future. Any determination to pay dividends in the future will be at the discretion of our Board of Directors. Accordingly, capital appreciation, if any, of our common stock may be your sole source of gain for the foreseeable future.

We may need additional capital in the future, which may not be available on acceptable terms or at all, to continue investing in our business and to finance acquisitions and other strategic transactions.

We may need additional capital in the future, which may not be available on acceptable terms or at all, to among other things, continue investing in our business, pursue acquisitions and other strategic transactions. Future financings may involve the issuance of debt, equity, and/or securities convertible into or exercisable or exchangeable for our equity securities. These financings may not be available to us on commercially reasonable terms or at all if and when we require funding. If we are able to consummate such financings, the trading price of our common stock could be adversely affected and/or the terms of such financings may adversely affect the interests of our existing stockholders. Any failure to obtain additional working capital, if and when required, could have a material adverse effect on our business and financial condition and may result in a decline in our stock price.

Our officers and directors are entitled to indemnification from us for liabilities under our articles of incorporation, which could be costly to us and may discourage the exercise of stockholder rights.

Our articles of incorporation provide that we possess and may exercise all powers of indemnification of our officers, directors, employees, agents, and other persons and our bylaws also require us to indemnify our officers and directors as permitted under the provisions of the Delaware General Corporate Law. The foregoing indemnification obligations could result in our incurring substantial expenditures to cover the cost of settlement or damage awards against directors and officers. These provisions and resultant costs may also discourage us from bringing a lawsuit against directors, officers, and employees for breaches of their fiduciary duties, and may similarly discourage the filing of derivative litigation by our stockholders against our directors, officers, and employees even though such actions, if successful, might otherwise benefit the Company and stockholders.

Our common stock is currently characterized as a "penny stock" under SEC rules. It may be more difficult to resell securities classified as "penny stock."

Our common stock is currently characterized as a "penny stock" under applicable SEC rules (generally defined as non-exchange traded stock with a per-share price below $5.00). These rules impose additional sales practice requirements on broker-dealers that recommend the purchase or sale of penny stocks to persons other than those who qualify as "established customers" or "accredited investors." For example, broker-dealers must determine the appropriateness for non-qualifying persons of investments in penny stocks. Broker-dealers must also provide, prior to a transaction in a penny stock not otherwise exempt from the rules, a standardized risk disclosure document that provides information about penny stocks and the risks in the penny stock market. The broker-dealer also must provide the customer with current bid and offer quotations for the penny stock, disclose the compensation of the broker-dealer and its salesperson in the transaction, furnish monthly account statements showing the market value of each penny stock held in the customer's account, provide a special written determination that the penny stock is a suitable investment for the purchaser, and receive the purchaser's written agreement to the transaction.

U.S. legal remedies available to an investor in "penny stocks" may include the following:

- If a "penny stock" is sold to the investor in violation of the requirements listed above, or other federal or states securities laws, the investor may be able to cancel the purchase and receive a refund of the investment.

- If a "penny stock" is sold to the investor in a fraudulent manner, the investor may be able to sue the persons and firms that committed the fraud for damages.

These requirements may have the effect of reducing the level of trading activity, if any, in the secondary market for a security that becomes subject to the penny stock rules. The additional burdens imposed upon broker-dealers by such requirements may discourage broker-dealers from effecting transactions in our securities, which could severely limit the market price and liquidity of our securities. These requirements may restrict the ability of broker-dealers to sell our common stock and may affect your ability to resell our common stock.

Many brokerage firms will discourage or refrain from recommending investments in penny stocks. Most institutional investors will not invest in penny stocks. In addition, many individual investors will not invest in penny stocks due, among other reasons, to the increased financial risk generally associated with these investments.

For these reasons, penny stocks may have a limited market and, consequently, limited liquidity. We can give no assurance at what time, if ever, our common stock will not be classified as a "penny stock" in the future.

If we cannot continue to satisfy the continued listing requirements, of the TSX, our securities may be delisted from the TSX, which could negatively impact the price of our securities and your ability to sell them.

On July 20, 2023, our shares of common stock began to trade on the TSX Venture Exchange ("TSXV"). On October 9, 2024, we received conditional approval to list our shares on the TSX and graduate from the TSXV to the TSX, and on November 12, 2024, our shares commenced trading on the TSX. We cannot assure you that our securities will continue to be listed on the TSX. In order to maintain our listing on the TSX, we will be required to comply with certain rules of the TSX, including those regarding a minimum public float, and various additional requirements. We may not be able to continue to satisfy these requirements and applicable rules. If we are unable to satisfy the TSX criteria for maintaining our listing, our securities could be subject to delisting from the TSX.

If the TSX subsequently delists our securities from trading, we could face significant consequences, including:

- a limited availability for market quotations for our securities;
- reduced liquidity with respect to our securities;
- limited amount of news and analyst coverage; and
- a decreased ability to issue additional securities or obtain additional financing in the future.

Potential future sales pursuant to Rule 144.

Many of the shares of our common stock presently held by management and others are "restricted securities" as that term is defined in Rule 144, promulgated under the United States Securities Act of 1933, as amended. Under Rule 144, a person (or persons whose shares are aggregated) who has satisfied a certain holding period, may, under certain circumstances, sell such shares or a portion of such shares. Such holding periods have already been satisfied in many instances. Therefore, actual sales or the prospect of sales of such shares under Rule 144 in the future may depress the price of our common stock.

Except as required by the Federal Securities Law, we do not undertake any obligation to release publicly any revisions to any forward-looking statements to reflect events or circumstances after the date of this report or for any other reason.

Item 1B. Unresolved Staff Comments.

We are a smaller reporting company as defined by Rule 12b-2 of the Securities Exchange Act of 1934 and are not required to provide the information under this item.

Item 1C. Cybersecurity.

Cybersecurity Risk Management and Strategy

We recognize the importance of assessing, identifying, and managing material risks associated with cybersecurity threats, as such term is defined in Item 106(a) of Regulation S-K. Based on our small size and limited number of employees and consultants, we rely extensively on information technology systems managed by third party major service providers to securely process, store and transmit our data to conduct business. Our employees and consultants utilize end point security tools, such as firewalls and anti-virus protection, to protect our data. To date, we have not engaged any assessors, consultants, auditors or other third parties in connection with our risk management system or processes, and believe that, given our size, our current approach to manage cybersecurity risks is adequate.

In connection with our use ofthird-party services providers, we have certain processes in place to oversee and identify cybersecurity risks from threats and incidents. We are not aware of having experienced any material cybersecurity incidents. We are not aware of any existent cybersecurity threats that would materially affect, or are reasonably likely to materially affect the Company, including our business strategy, results of operations or financial condition. However, there could be cybersecurity threats or incidents in the future that may adversely affect our business. For more information, please refer to Part I, Item 1A. "Risk Factors" in this Annual Report on Form 10-K.

Our overall strategy in combatting known cybersecurity risks includes a variety of individual tactics, including:

- the use of antivirus software, virtual private networks, email security, as well as other software to prevent and detect data intrusions.
- the deployment of updates and patches as they are available and maintaining the current versions of major software to reduce the exposure to vulnerabilities.
- the review of the security procedures used by third parties that may host or otherwise have access to the Company's data.
- if necessary, the use of third-party security experts if and when an incident is detected.

Governance

Our Executive Vice President of Operations oversees risks of cybersecurity threats and will report, as necessary, to the Board of Directors, including promptly reporting any cybersecurity incidents that may pose a significant risk to us. To date, our Executive Vice President of Operations has not had to report any cybersecurity incidents to the Board. Our Executive Vice President of Operations has over 25 years of experience in the industry and has overseen the day-to-day operations of the Company for over 10 years. Among other things, he has been responsible for day-to-day access management, network security and data protection solutions. Our Board of Directors has oversight of management to eliminate cybersecurity risks.

Item 2. Properties.

We lease a warehouse in Corsicana, Texas consisting of approximately 20,000 square feet which we use for manufacturing and distribution of our products. As of December 2019, we relocated our corporate headquarters to such location which corporate headquarters prior thereto were maintained in Lewis Center, Ohio. Such lease in Corsicana, Texas expires March 31, 2029.

Since August 2024, we have leased laboratory space in Grand Forks, North Dakota, and since November 2024, we have leased additional laboratory space in State College, Pennsylvania. Each lease has a three-year term, with an option to extend for an additional term of three years. Such laboratories are used for research and development and will be able to offer other services such as carbon activation, thermal reactivation, and regeneration, contaminant analysis and carbon evaluations and recommendations.

Item 3. Legal Proceedings.

On July 17, 2019, we initiated patent litigation against certain defendants in the U.S. District Court for the District of Delaware for infringement of certain United States patents owned by the Company. These patents relate to our two-part Sorbent Enhancement Additive (SEA®) process for mercury removal from coal-fired power plants. Named as defendants in the lawsuit were (i) Vistra Energy Corp., AEP Generation Resources Inc., NRG Energy, Inc., Talen Energy Corporation, and certain of their respective affiliated entities, all of which are owners and/or operators of coal-fired power plants in the United States, and (ii) Arthur J. Gallagher & Co., DTE REF Holdings, LLC, CERT Coal Holdings LLC, Chem-Mod LLC, and certain of their respective affiliated entities, and additional named and unnamed defendants, all of which operate or are involved in operations of coal facilities in the United States. In the lawsuit, we allege that each of the defendants has willfully infringed certain of our patents and seek unspecified damages, attorneys' fees, costs and injunctive relief.

During 2020, each of the four major utility defendants in the above action filed petitions for Inter Partes Review with the United States Patent and Trademark Office, seeking to invalidate certain claims to the patents which are subject to the litigation. Between July 2020 and January 2021, we entered into agreements with each of the four major utility defendants in such action which included certain monetary arrangements and pursuant to which we have dismissed all claims brought against each of them and their affiliates, and such parties have withdrawn from petitions for Inter Partes Review with the United States Patent and Trademark Office. Such agreements entered into with such parties provide each of them and their affiliates with a non-exclusive license to certain Company patents (related to the Company's two-part Sorbent Enhancement Additive (SEA®) process) for use in connection with such parties' coal-fired power plants.

Subsequently, and as a result of certain rulings by the Court, certain defendants were dismissed in the action, certain defendants were added and certain originally named defendants remained in the action. A jury trial was scheduled for November 13, 2023.

On November 9, 2023, we entered into a confidential binding term sheet with Arthur J. Gallagher & Co., and various of its affiliated entities (collectively "AJG"), and DTE Energy Resources LLC and various of its affiliated entities (collectively "DTE"), to resolve the patent litigation. Pursuant to the term sheet, all claims and counterclaims asserted by the parties in such patent litigation have been dismissed with prejudice, although such term sheet does not affect any other claim brought against the remaining CERT defendants. The financial aspects of the term sheet remain confidential pursuant to its terms.

In addition, effective November 9, 2023, Alistar Enterprises, LLC ("Alistar"), one of the remaining CERT defendants, entered into a settlement agreement with us which provided that all claims and counterclaims asserted in the action between the Company and Alistar be dismissed with prejudice. The financial terms of such settlement remain confidential.

Effective as of December 28, 2023, and in connection with the term sheet described above, the Company, along with its wholly-owned subsidiary, MES, Inc., and (a) Chem-Mod LLC ("Chem-Mod"), (b) Arthur J. Gallagher & Co. and AJG Coal, LLC, and (c) DTE Energy Co. and DTE Energy Resources, LLC, entered into a paid license of U.S. Patent No. 8,168,147, U.S. Patent No. 10,343,114, U.S. Patent No. 10,589,225, U.S. Patent No. 10,596,517 and U.S. Patent No. 10,668,430 and their foreign equivalents and related patent applications and patents, which licenses the use of refined coal or the Chem-Mod Solution in conjunction with activated carbon. This license applies to Chem-Mod and certain of its licensees, sub-licensees, and their customers, for the remaining term of such patents. By its terms, the license does not cover the use of activated carbon with coal that is not either refined coal or coal made by or for use with the Chem-Mod Solution in a manner authorized by the license. The parties to the license have mutually released all claims that any past use of the Chem-Mod Solution in connection with the production or use of refined coal with activated carbon by entities other than the CERT defendants and their customers infringes the asserted patents and related intellectual property, and all claims that could have been brought challenging the validity of such patents.

The remaining CERT defendants and their customers (for activities relating to the CERT defendants) are not included within the scope of the license. The Court rescheduled the trial as to the claims against the remaining CERT defendants to begin on February 26, 2024.

Following a five-day trial, on March 1, 2024, a federal jury in the U.S. District Court for the District of Delaware awarded a $57.1 million patent infringement verdict in favor of the Company against the remaining group of CERT defendants. Such group of affiliated defendants included multiple limited liability companies with refined coal industry operations, including CERT Operations II LLC, CERT Operations IV LLC, CERT Operations V LLC, and CERT Operations RCB LLC. The jury determined that these defendants infringed our patented technologies for mercury emissions and were liable for willful infringement, along with inducing and contributory infringement. Following the trial, various post-trial motions and applications were made by the parties. We are awaiting rulings from the Court.

In July 2024, we commenced three patent infringement lawsuits against multiple defendants, including coal-fired power utilities, in three separate U.S. District Courts in Arizona, Iowa and Missouri. Such lawsuits claim infringement of the Company's patent rights related to the Company's mercury emissions reduction technologies. Named as defendants in the action filed in the U.S. District Court for the District of Arizona are Tucson Electric Power Co., San Carlos Resources, Inc., Salt River Project Agricultural Improvement and Power District, Tri-State Generation and Transmission Association, Inc., Springerville Unit 3 Holding LLC, and Springerville Unit 3 Partnership LP. Named as defendants in the action filed in the U.S. District Court for the Southern District of Iowa are Berkshire Hathaway Energy Company, MidAmerican Energy Company, PacifiCorp, Alliant Energy Corporation, Interstate Power and Light Company, and Wisconsin Power and Light Company, and named as defendants in the action filed in the U.S. District Court for the Eastern District of Missouri are Ameren Corp. and Union Electric Co. In each lawsuit, we request a trial by jury against the defendants and seek damages, costs, and legal expenses, along with a finding of willful infringement by the defendants, and an injunction prohibiting the defendants from further acts of infringement.

Effective as of October 8, 2024, we entered into agreement with one of the utilities and an affiliated entity named as defendants in the patent infringement lawsuit commenced by the Company in July 2024 in the U.S. District Court in Arizona (the "Arizona Action"). Such agreement provides such parties and their affiliates with a non-exclusive license to certain Company patents related to the Company's two-part Sorbent Enhancement Additive (SEA®) process for use in connection with a certain designated coal-fired power plant operated by such utility. The agreement includes a one-time license fee which has been received by us, and provides the Company with a right of first refusal for certain of such utility's product supply for mercury emissions capture at such designated power plant. Such lawsuit will continue against the other non-affiliated defendants named in the Arizona Action.

On December 17, 2024, a United States Judicial Panel on Multidistrict Litigation ordered that the above three patent infringement lawsuits be consolidated and centralized in the Southern District of Iowa (the "Transfer Order").

Effective as of January 7, 2025, we entered into agreement with another one of the utilities named as a defendant in the Arizona Action. Such agreement provides such party and its affiliates with a non-exclusive license to certain Company patents related to the Company's two-part Sorbent Enhancement Additive (SEA®) process for use in connection with a certain designated coal-fired power plant operated by such utility. The agreement includes a one-time license fee which has been received by us, and provides the Company with the right to be included in such party's bidding process for certain product supply for mercury emissions capture at such party's designated power plant.

In January 2025, we commenced another patent infringement lawsuit against four defendants in the U.S. District Court for the Western District of Missouri. Such lawsuit claims infringement of the Company's patent rights related to the Company's mercury emissions reduction technologies. Named as defendants in the action are Evergy, Inc., Evergy Metro Inc., Evergy Missouri West, Inc. and Evergy Kansas Central, Inc. In the lawsuit, we request a trial by jury against the defendants and seek damages, costs, and legal expenses, along with a finding of willful infringement by the defendants, and an injunction prohibiting the defendants from further acts of infringement. In February 2025, such lawsuit was consolidated with and transferred to the Southern District of Iowa pursuant to the Transfer Order.

In January and February 2025, certain of the defendants in the patent infringement lawsuits which have been consolidated and centralized in the Southern District of Iowa filed petitions for Inter Partes Review with the United States Patent and Trademark Office, seeking to invalidate certain claims to the patents which are subject to the litigation.

Other than the foregoing, there are no material pending legal proceedings to which we are a party or to which any of our property is subject, nor are there any such proceedings known to be contemplated by governmental authorities. None of our directors, officers, or affiliates are involved in a proceeding adverse to our business or has a material interest adverse to our business.

Item 4. Mine Safety Disclosures.

Not applicable.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.

Market

Our shares of common stock are quoted on the OTCQB operated by OTC Markets Group Inc. under the symbol "BCHT", and are traded on the Toronto Stock Exchange ("TSX") also under the symbol "BCHT". We began trading on the TSX on November 12, 2024. Between July 10, 2023 and November 12, 2024, our shares of common stock were traded on the TSX Venture Exchange ("TSXV"). Prior to October 17, 2024, our shares of common stock were quoted and traded under the symbol "MEEC". Effective on October 17, 2024, we changed our corporate name from Midwest Energy Emissions Corp. to Birchtech Corp. As it relates to the OTCQB, over-the-counter market quotations reflect inter-dealer prices, without retail mark-up, mark-down or commission and may not necessarily represent actual transactions.

Recent Sales of Unregistered Securities

None.

Share Repurchase Program

We purchased no equity securities during year ended December 31, 2024, and have no program in place at the present time to buy any equity securities in the future.

Holders

As of March 31, 2025, there were 385 stockholders of record of our common stock. The number of holders of record does not include holders who are beneficial owners, but whose securities are held in "nominee" or "street name" by brokers or other nominees. The approximate number of beneficial stockholders is estimated to be 2,500.

Dividends

We have not declared any cash dividends to date and have no current plan to do so in the foreseeable future.

Transfer Agent

The transfer agent and registrar for our common stock is Transfer Online, Inc., 512 SE Salmon Street, Portland, Oregon 97214. The co-transfer agent and registrar for our common stock in Canada is TSX Trust Company at its offices in Toronto, Ontario, Canada.

Securities Authorized for Issuance under Equity Compensation Plans

The following table shows information, as of December 31, 2024, with respect to each equity compensation plan under which our common stock is authorized for issuance:

Plan Category	Number of securities to be issued upon exercise of outstanding options, warrants and rights (a)	Weighted-average exercise price of outstanding options, warrants and rights (b)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)) (c)
Equity compensation plans approved by security holders, terminated	100,000	$ 1.20	0
Equity compensation plans approved by security holders	9,200,000	$ 0.57	5,741,306
Total	9,300,000	$ 0.58	5,741,306

Equity Incentive Plans

On July 3, 2023, the Board approved and adopted the Company's Amended and Restated 2014 Equity Incentive Plan (the (the "2014 Plan") and the Company's Amended and Restated 2017 Equity Incentive Plan (the "2017 Plan") which amended the Company's previously adopted 2014 Equity Incentive Plan and 2017 Equity Incentive Plan. Stockholder approval was obtained on December 5, 2023. On October 29, 2024, the Board approved certain non-material amendments to the 2014 Plan and 2017 Plan which amendments were made in connection with the listing of the Company's shares on the TSX and graduation from the TSXV to the TSX.

The following is a brief description of the material features of the 2014 Plan and 2017 Plan as of the date of this report. The description below is qualified in its entirety by reference to the full text of the 2014 Plan and 2017 Plan.

2014 Plan

The 2014 Plan was first approved by the Board of Directors on January 10, 2014. The 2017 Plan replaced the 2014 Plan, which was terminated by the Board of Directors on April 28, 2017. As a result of such termination, no additional awards may be granted under the 2014 Plan but previously granted awards shall remain outstanding in accordance with their terms and conditions. As of December 31, 2024, 100,000 options (representing 0.10% of the issued and outstanding shares) and no other types of award were outstanding under the 2014 Plan.

The 2014 Plan is administered by the Board, or it may be administered by a committee of the Board comprised of no fewer than two members of the Board. Eligible participants under the 2014 Plan include officers, employees of, or consultants to, the Company or any of its subsidiaries, or any person to whom an offer of employment is extended, or any person who is a non-employee director of the Company.

Options granted under the 2014 Plan may (i) qualify as incentive stock options ("ISOs") within the meaning of Section 422 of the Internal Revenue Code of 1986, as amended (the "Code"), (ii) not qualify as ISOs, or (iii) both. To qualify as an ISO, an Option must meet certain requirements set forth in the Code. The term of each Option is fixed by the Board and may not exceed ten years from the date the Option is granted.

The Board may determine and provide in the applicable award agreement that vesting or other terms of an award may be accelerated in the event of change of control (as defined in the 2014 Plan) of the Company, subject to stockholder approval if required by applicable stock exchange listing rules. In the event of any merger, reorganization, consolidation, recapitalization, share dividend, share split, combination of shares or other change in the Company's corporate structure affecting the shares, an adjustment or substitution may be made as approved by the Board.

Awards under the 2014 Plan are non-assignable and non-transferable, except by will or by the laws of descent and distribution and pursuant to beneficiary designations for rights, payments or other benefits following a participant's death. If a participant ceases to be employed or engaged with the Company, the participant's awards will expire 12 months after cessation resulting from death, disability or retirement, or 90 days after cessation resulting from a termination by the Company without cause or for any other reason. If a participant's employment with the Company is terminated for cause, all rights to any further payments, vesting or exercisability with respect to any award terminate immediately.

The Board may amend or modify the 2014 Plan and any award under the 2014 Plan, provided that amendments will be subject to stockholder approval where required by applicable stock exchange listing rules or if the Board otherwise deems necessary or advisable. Any amendment or modification that adversely affects any award requires the consent of the participant.

2017 Plan

The 2017 Plan was adopted by the Board on February 9, 2017. The 2017 Plan will terminate on the tenth anniversary of the date of its initial adoption by the Board, unless earlier terminated by the Board. As amended by the Board on July 3, 2023, the maximum number of shares of common stock that may be issued under the 2017 Plan after July 3, 2023 is 14,078,459, and to the extent any award (or portion thereof) outstanding under the 2014 Plan expires, terminates or is cancelled, surrendered or forfeited for any reason on or after July 3, 2023, the shares of common stock subject to such award (or portion thereof) shall be added to and increase the foregoing limit, to a maximum of 4,775,000 additional shares of common stock. Since July 3, 2023, the foregoing limit increased to a total of 3,425,000 shares of common stock at December 31, 2024 as a result of the expiration or forfeiture of awards under the 2014 Plan subsequent to July 3, 2023. As at December 31, 2024, there were 9,200,000 options and 50,000 RSUs outstanding under the 2017 Plan (representing 9.61% of the issued and outstanding shares, and 5,741,306 shares of common stock (representing 5.97% of the issued and outstanding shares) available for future grant under the 2017 Plan.

Administration. The 2017 Plan is administered by the Board (the "Administrator"). Subject to the policies of the TSX, the Administrator has full authority to determine who will receive awards and to determine the types of awards to be granted as well as the amounts, terms, and conditions of any awards. Each award shall be evidenced by a written or electronic award agreement in the form approved by the Administrator and, if required by the Administrator, executed by the recipient of the award. Awards shall vest at such time or times and subject to such terms and conditions as shall be determined by the Administrator at the time of grant. The Administrator has the right to determine any questions that may arise regarding the interpretation and application of the provisions of the 2017 Plan and to make, administer, and interpret such rules and regulations as it deems necessary or advisable. Determinations of the Administrator made under the 2017 Plan are conclusive and bind all parties.

Eligibility. Eligible recipients under the 2017 Plan include the Company's officers, directors, employees, and consultants of the Company or one of its subsidiaries. Investor relations service providers may not receive any awards other than options.

Stock Options. Stock options granted under the 2017 Plan may be ISOs within the meaning of Section 422 of Code, or nonqualified stock options ("NSOs") which are not intended to qualify as incentive stock options. The award agreement for a stock option will indicate if the stock option is intended as an ISO; otherwise it will be deemed to be an NSO. To qualify as an ISO, a stock option must meet certain requirements set forth in the Code. The per share exercise price of a stock option granted under the 2017 Plan shall not be less than the greater of (a) 100% of the Fair Market Value (as defined in the 2017 Plan) of a share of common stock on the date the stock option is granted and (b) the minimum price permitted by the rules and policies of any stock exchange on which the shares of common stock are then listed, except that with respect to an incentive stock option granted to a person who, at the time of grant, owns more than 10% of the total combined voting power of all classes of stock of the Company, the exercise price may not be less than 110% of the Fair Market Value of the Company's common stock on the date of grant.

Stock Appreciation Rights. The Administrator may grant Stock Appreciation Rights, or SARs, under the 2017 Plan. A SAR entitles the holder upon exercise to receive an amount in cash or common stock or a combination thereof (as determined by the Administrator) computed by reference to appreciation in the value of a share of common stock above a base amount which may not be less than fair market value on the date of grant.

Restricted Shares Units. A restricted share unit, or "RSU", represents the right to receive on the respective scheduled vesting or payment date for such RSU, one share of common stock. An award of RSUs may be subject to the attainment of specified performance goals or targets, forfeitability provisions and such other terms and conditions as the Administrator may determine, subject to the provisions of the 2017 Plan. Subject to the restrictions imposed under the terms and conditions of the 2017 Plan and the applicable award agreement, each recipient of a RSU shall have no rights as a stockholder with respect to such RSU until such time as shares of common stock are issued to the recipient.

Performance Awards. The Administrator may also make awards subject to the satisfaction of specified performance criteria. Performance awards may consist of common stock or cash or a combination of the two. The performance criteria used in connection with a particular performance award will be determined by the Administrator.

General Provisions Applicable to All Awards. Unless otherwise expressly provided in (or pursuant to) the 2017 Plan and permitted by applicable law and the rules and policies of any stock exchange on which the shares of common stock are then listed (including the TSX), no awards may be assigned or transferred other than by will or by the laws of descent and distribution. During a recipient's lifetime an ISO and, except as the Administrator may provide, other non-transferable awards requiring exercise may be exercised only by the recipient. Shares delivered under the 2017 Plan may consist of either authorized but unissued or treasury shares. The number of shares delivered upon exercise of a stock option is determined net of any shares transferred by the optionee to the Company (including through the holding back of shares that would otherwise have been deliverable upon exercise) in payment of the exercise price or tax withholding.

Subject to the terms of the 2017 Plan and the rules and policies of any stock exchange (including the TSX) on which the shares of common stock are then listed, awards may be exercised by a reduction in the number of shares otherwise deliverable pursuant to the award (a "net exercise") or pursuant to a "cashless exercise" with a third party who provides financing for the purposes of (or who otherwise facilitates) the purchase or exercise of awards. Any award granted or issued to a participant who is a director, officer, employee, consultant or management company employee must expire no later than twelve (12) months following the date the participant ceases to be an eligible participant under the 2017 Plan.

Limitations on Awards. Except where permitted by the policies of the TSX (including, without limitation, upon obtaining any disinterested stockholder approval required therefor) and so long as the shares of common stock are listed on the TSX, the aggregate number of shares of common stock:

(a) Issuable to any one participant (and any companies wholly owned by such participant), pursuant to awards granted or issued in any twelve (12) month period under the 2017 Plan and all of the Company's other security-based compensation arrangements, shall not exceed five percent (5%) of the number of issued and outstanding shares of common stock at the date the award is granted;

(b) Issuable to any one consultant, pursuant to awards granted or issued in any twelve (12) month period under the 2017 Plan and all of the Company's other security-based compensation arrangements, shall not exceed two percent (2%) of the number of issued and outstanding shares of common stock at the time the award is granted to the said consultant under the 2017 Plan;

(c) Issuable to all investor relations service providers, pursuant to awards granted or issued in any twelve (12) month period under the 2017 Plan and all of the Company's other security-based compensation arrangements, shall not exceed two percent (2%) of the number of issued and outstanding shares of common stock at the time of any grant of an award under the 2017 Plan to an investor relations service provider;

(d) Issuable to insiders of the Company (as a group), pursuant to awards granted or issued under the 2017 Plan and all of the Company's other security-based compensation arrangements, shall not exceed ten percent (10%) of the number of issued and outstanding shares of common stock at any time; and

(e) Issued to all insiders of the Company (as a group), pursuant to awards granted or issued in any twelve (12) month period under the 2017 Plan and all of the Company's other security-based compensation arrangements, shall not exceed ten percent (10%) of the number of issued and outstanding shares of common stock at the time of any grant of an award under the 2017 Plan to an insider.

Furthermore, no award granted under the 2017 Plan, other than options, may vest before the date that is one year following the date of grant or issue. In accordance with TSX policies, and subject to TSX approval to the contrary, and provided that the shares of common stock are then listed on the TSX, options granted to investor relations service providers must vest (and not otherwise be exercisable) in stages over a minimum of twelve (12) months as provided in the 2017 Plan.

Change in Control. In the event of a Change in Control (as defined in the 2017 Plan), each then-outstanding option and SAR shall automatically become fully vested, all restricted shares then outstanding shall automatically fully vest free of restrictions, and each other award granted under the 2017 Plan that is then outstanding shall automatically become vested and payable to the holder of such award unless the Administrator has made appropriate provision for the substitution, assumption, exchange, or other continuation of the award pursuant to the Change in Control. Notwithstanding the foregoing, the Administrator, in its sole and absolute discretion, may choose (in an award agreement or otherwise) to provide for full or partial accelerated vesting of any award upon a Change in Control.

Amendment. Subject to obtaining the necessary regulatory approvals or stockholder approval (including, where applicable, disinterested stockholder approval) as required pursuant to the rules and policies of the TSX, as in effect from time to time, so long as the shares of common stock are listed on the TSX, the Board may at any time terminate or, from time to time, amend, modify, or suspend the 2017 Plan, in whole or in part, and the Administrator may amend any outstanding award for any purpose which may at the time be permitted by law. The Administrator may not, however, alter the terms of an award so as to affect adversely the recipient's rights under the award without the recipient's consent, unless the Administrator expressly reserved the right to do so at the time of the award. Disinterested stockholder approval must be obtained for any reduction in the exercise price of a stock option, or the extension of the term of a stock option, if the participant is an insider of the Company at the time of the proposed amendment.

Termination of Awards. For stock options or SARs, unless the award agreement provides otherwise, the exercise period will expire: (i) three (3) months after the last day that the participant is employed by or provides services to the Company; (ii) where termination is due to death or disability, twelve (12) months after the last day that the participant is employed by or provides services to the Company; or (iii) immediately upon a participant's termination for cause. Unless the award agreement provides otherwise, RSUs that are subject to restrictions at the time that a participant's employment or service is terminated shall be forfeited to the Company. The Administrator will, in its absolute discretion, determine the effect of all matters and questions relating to a termination of employment.

Annual Burn Rate

The following table sets forth the annual burn rate of awards granted under the 2017 Plan for the last three fiscal years. The annual burn rate is the number of securities granted under the 2017 Plan during the applicable year divided by the weighted average number of shares of common stock outstanding for the applicable fiscal year.

	2022	2023	2024
Weighted Average Number of Shares Outstanding	90,025,209	97,452,397	95,290,548
Awards Granted under the 2017 Plan	1,200,000	500,000	1,050,000
Annual Burn Rate – 2017 Plan	1.33%	0.51%	1.10%

Item 6. [Reserved].

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations.

You should read the following discussion and analysis of our financial condition and results of operations together with our consolidated financial statements and the related notes appearing elsewhere in this report. Some of the information contained in this discussion and analysis or set forth elsewhere in this report, including information with respect to our plans and strategy for our business, includes forward-looking statements that involve risks, uncertainties, and assumptions. You should read the "Forward-Looking Statements" and "Risk Factors" sections of this report for a discussion of important factors that could cause actual results to differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis.

Unless indicated otherwise, references in this discussion and analysis to the "Company," "we," "us," or "our" refer collectively to Birchtech Corp. (formerly Midwest Energy Emissions Corp.) and its consolidated subsidiaries.

Restatements of Previously Issued Consolidated Financial Statements

As described in Note 2—Restatement of Previously Issued Financial Statements, for the period ended December 31, 2024, management identified an error in the previously reported financial statements related to the under recognition of revenue during the year ended December 31, 2022. The Company entered into a license agreement for which it should have recognized the entire proceeds receivable pursuant to the agreement as revenue during the year ended December 31, 2022. The Company should also have recognized the financing component of the licensing agreement during the fiscal years ended December 31, 2023 and 2024. As a result, the consolidated financial statements appearing elsewhere in this report reflect this restatement.

Overview

Business Operations

We are a provider of specialty activated carbon technologies, delivering innovative solutions for air and water purification. We provide patented and proprietary technologies for mercury emissions capture to the coal-fired utility sector, and are developing disruptive water purification technologies with a specialization on forever chemicals such as PFAS and PFOS.

Mercury Emissions

We provide mercury capture solutions driven by our patented two-part Sorbent Enhancement Additive (SEA®) process using a powerful combination of science and engineering. Our leading-edge services have been shown to achieve mercury emissions removal at a significantly lower cost and with less operational impact to coal-fired power plants than other used methods, while maintaining and/or increasing power plant output and preserving the marketability of byproducts for beneficial use. We design systems and materials tailored and formulated specifically to each customer's coal-fired units. Our mercury removal technologies and systems will achieve mercury removal levels which meet or exceed the 2012 Coal- and Oil-Fired Electric Utility Steam Generating Units National Emission Standards for Hazardous Air Pollutants, as revised, known as the MATS, requirements with lower cost and plant systems impacts than typical PAC or BAC sorbent injection systems. Our products have been shown to be successful across a myriad of fuel and system types, tunable to any configuration, and environmentally friendly, allowing for the recycling of fly ash for beneficial use. North America is currently the largest market for our emissions technologies.

Our SEA® technology provides total mercury control with solutions that are based on a thorough scientific understanding of actual and probable interactions involved in mercury capture in coal-fired flue gas. A complete understanding of the complexity of mercury-sorbent-flue gas interactions and chemisorption mechanisms allows for optimal control strategy and product formulation, resulting in effective mercury capture. Combined with a thorough proprietary audit of the plant and its configuration and instrumentation, we believe our complete science and engineering approach for mercury-sorbent-flue gas interactions are well-understood, highly predictive, and critical to delivering total mercury control.

We believe that a significant percentage of coal-fired power plants in the United States have adopted and are infringing upon our two-part Sorbent Enhancement Additive (SEA®) process for mercury removal from coal-fired power plants.

Beginning in 2019, we began to actively enforce our patent rights against unauthorized use of our patented technologies, and have since initiated patent litigation in various jurisdictions against multiple infringers, claiming infringement of our patents related to our two-part process for mercury removal from coal-fired power plants. We view such litigation as a last resort. Our goal and overall strategy is to convert infringers to our supply chain of sorbent products for mercury removal, or otherwise license our patents to them on a non-exclusive basis in connection with their respective coal-fired power plants.

Water Treatment

In April 2024, we announced the introduction of our new division to address the potable (drinking) water market with new sorbent technologies under development. These new technologies involve less use of activated carbon and are a much more environmentally friendly approach to water treatment.

AC is a form of carbon that has been processed to have a large surface area and a high degree of porosity. This gives it the ability to adsorb a wide range of substances, making it highly effective at removing particles, toxins and impurities. GAC and similar agglomerated activated carbons (or shaped activated carbons) are a form of activated carbon that is specifically produced in a granular, coarse form, as opposed to powdered or pelletized forms. This granularity allows for better flow through filtration systems, which makes it ideal for use in applications that require a continuous flow of air, water or liquids. GAC is commonly used in water filtration systems, including municipal water treatment plants. It is particularly effective at removing chlorine, organic compounds, pesticides, heavy metals, and other contaminants. Reactivated GAC is spent GAC that has been restored for reuse, making it more sustainable and cost-effective.

Utilizing renewal raw materials allows us to develop and provide shaped activated carbon that can compete with other commercially available GAC options, and provide a superior activated carbon technology to remove contaminants (including PFAS) from potable water. While pending PFAS regulations are projected to significantly increase overall GAC demand, our products are expected to be successfully applied regardless of PFAS regulations reflecting significant competitive advantages (i.e., renewable raw material sources, low arsenic content, and overall performance) to presently available GAC products for the water market. In addition, our product(s) may provide inherent performance advantages such as lower pressure drop relative to existing carbon products in the marketplace today.

While the initial focus for our water treatment technologies will be on the potable water market, we expect that our technologies will also be valuable for industrial wastewater remediation. Industrial wastewater is the liquid waste generated by industrial activities, including manufacturing, processing, and production facilities. It often contains pollutants such as organic matter, heavy metals, chemicals, oils, and other contaminants that must be treated before being discharged into the environment or reused. We believe our water treatment technologies will be well suited to treat such industrial wastewater in an optimal and cost-effective manner.

Other Recent Developments

On February 27, 2024, and pursuant to a Debt Restructuring Agreement entered into on such date with AC Midwest Energy LLC ("AC Midwest"), we made an approximate $9.0 million principal payment against an approximate $13.2 million unsecured note held by AC Midwest Energy LLC ("AC Midwest") and repaid in full the remaining principal balance of approximately $272,000 due on a secured note held by AC Midwest. As part of the restructuring, we negotiated a reduction in the profit participation preference held by AC Midwest from approximately $17.7 million to $7.9 million (the "Restructured Profit Share"). Such Restructured Profit Share is "non-recourse" and shall only be paid from net litigation proceeds from claims relating to our intellectual property. In addition, pursuant to the Debt Restructuring Agreement, in March 2024, we were able to facilitate the private sale of certain shares of common stock held by AC Midwest and received a $960,000 credit toward the remaining balance due on the unsecured note. In August 2024, we repaid in full the remaining principal balance of approximately $3.2 million due on the unsecured note held by AC Midwest. As a result, the only remaining debt obligation to AC Midwest is the "non-recourse" Restructured Profit Share.

Following a five-day trial, on March 1, 2024, we were awarded a $57.1 million patent infringement verdict by a federal jury in the U.S. District Court for the District of Delaware against a remaining group of defendants in the lawsuit commenced by us in 2019. Such group of affiliated defendants included multiple limited liability companies with refined coal industry operations, including CERT Operations II LLC, CERT Operations IV LLC, CERT Operations V LLC, and CERT Operations RCB LLC. The jury determined that these defendants infringed our patented technologies for mercury emissions and were liable for willful infringement, along with inducing and contributory infringement. Following the trial, various post-trial motions and applications were made by the parties. We are awaiting rulings from the Court.

In April 2024, the EPA issued the first-ever national, enforceable drinking water standard to protect communities from exposure to harmful per-and polyfluoroalkyl substances ("PFAS"), also known as "forever chemicals". The Rule sets limits for five individual PFAS: PFOA, PFOS, PFNA, PFHxS, and HFPO-DA (known as GenX Chemicals). The Rule also sets a hazard index level for two or more of four PFAS as a mixture: PFNA, PFHxS, HFPO-DA, and PFBS. Under the Rule, public water systems must monitor these PFAS and will have three years to complete initial monitoring (by 2027), followed by ongoing compliance monitoring. Water systems must also provide the public with information on the levels of these PFAS in their drinking water beginning in 2027.

In May 2024, we announced the appointment of David Mazyck to head our new division to address the potable (drinking) water market with new sorbent technologies under development.

In addition, in May 2024, we announced the appointment of Dennis Baranik as Director of National Sales. Mr. Baranik will oversee product sales and IP licensing in the Company's core business for mercury emissions capture as well as support both product and business development for the water market.

In July 2024, we commenced three patent infringement lawsuits against 14 defendants, including coal-fired power utilities, in three separate U.S. District Courts in Arizona, Iowa and Missouri. In January 2025, we commenced another patent infringement lawsuit against four defendants in the U.S. District Court for the Western District of Missouri. Such lawsuit claims infringement of the Company's patent rights related to the Company's mercury emissions reduction technologies. The United States Judicial Panel on Multidistrict Litigation has ordered that such patent infringement lawsuits be consolidated and centralized in the Southern District of Iowa.

Effective as of October 8, 2024, we entered into agreement with one of the utilities and an affiliated entity named as defendants in the patent infringement lawsuit commenced by the Company in July 2024 in Arizona. Such agreement provides such parties and their affiliates with a non-exclusive license to certain Company patents for use in connection with a certain designated coal-fired power plant operated by such utility. The agreement includes a one-time license fee and provides the Company with a right of first refusal for certain of such utility's product supply for mercury emissions capture at such designated power plant.

Effective as of January 7, 2025, we entered into agreement with another one of the utilities named as a defendant in the Arizona action. Such agreement provides such party and its affiliates with a non-exclusive license to certain Company patents for use in connection with a certain designated coal-fired power plant operated by such utility. The agreement includes a one-time license fee and provides the Company with the right to be included in such party's bidding process for certain product supply for mercury emissions capture at such party's designated power plant.

In January 2025, we commenced another patent infringement lawsuit against four defendants in the U.S. District Court for the Western District of Missouri. Such lawsuit claims infringement of the Company's patent rights related to the Company's mercury emissions reduction technologies. Named as defendants in the action are Evergy, Inc., Evergy Metro Inc., Evergy Missouri West, Inc. and Evergy Kansas Central, Inc. In the lawsuit, we request a trial by jury against the defendants and seek damages, costs, and legal expenses, along with a finding of willful infringement by the defendants, and an injunction prohibiting the defendants from further acts of infringement. In February 2025, such lawsuit was consolidated with and transferred to the Southern District of Iowa.

Effective on October 17, 2024, as part of our rebranding, we changed our corporate name from Midwest Energy Emissions Corp. to Birchtech, Inc. pursuant to a certificate of amendment to our certificate of incorporation filed with the State of Delaware, and on October 17, 2024 our common stock commenced trading under the ticker symbol "BCHT".

On October 9, 2024, we received conditional approval to list our shares of common stock on the Toronto Stock Exchange ("TSX") and graduate from the TSX Venture Exchange ("TSXV") to the TSX. On November 12, 2024, our shares commenced trading on the TSX under the ticker symbol "BCHT".

Results of Operations

Revenues

We generated revenues of approximately $17,406,000 and $17,625,000 (as restated) for the years ended December 31, 2024 and 2023, respectively. Such revenues were primarily derived from sorbent product sales which were approximately $14,482,000 and $17,093,000 for the years ended December 31, 2024 and 2023, respectively. Revenues can be dependent on natural gas prices, extreme weather, and the maintenance and downtime requirements of customer plants. The decrease in revenues from the prior year was primarily due to the mix of plants running in 2024 resulting in decreased product revenues for 2024 compared to the prior year, offset by an increase in licensing revenues for 2024 compared to 2023.

Licensing revenues were approximately $2,808,000 and $388,000 (as restated) for the years ended 2024 and 2023, respectively. Such increase was primarily due to a new licensing agreement which was entered into in 2024 with a utility.

Equipment sales and other revenues for the years ended December 31, 2024 and 2023 were approximately $116,000 and $145,000, respectively. This decrease was primarily due to a decrease in demonstrations and consulting revenues offset by an increase in equipment sales revenues in 2024 compared to 2023.

Cost of Sales

Cost of sales were approximately $10,305,000 and $12,172,000 for the years ended December 31, 2024 and 2023, respectively. The decrease in cost of sales of approximately $1,867,000 was primarily attributable to decreased product sales in 2024 compared to the prior year, together with a decrease in the Company's cost of carbon in 2024 compared to 2023.

Gross Profit

Gross profit was approximately $7,101,000 and $5,453,000 (as restated) for the years ended December 31, 2024 and 2023, respectively. This increase in gross profit of approximately $1,648,000 was primarily due to higher licensing revenues in 2024 compared to 2023, which typically carry higher margins than product sales, thus contributing to the overall improvement in gross profit.

Operating Expenses

Operating expenses consisted of selling, general and administrative expenses ("SG&A") and an impairment loss of $43,000 in 2024 and SG&A and an impairment loss of approximately $220,000 in 2023. SG&A expenses were approximately $14,216,000 and $14,207,000 for the years ended December 31, 2024 and 2023, respectively. Although total SG&A expenses were largely unchanged in 2024 compared to the prior year, there were significant variances in individual categories. Increases in salaries and wages, including bonus compensation and engagement of new senior personnel, increases in Board fees and increased stock-based compensation, were largely offset by reduced professional fees in 2024 compared to 2023. The decrease in professional fees was mainly due to two settlement agreements reached in the fourth quarter of 2023 with various defendants in our patent litigation. These agreements led to significant legal fees paid in 2023 to the patent litigation firm handling the cases, with no comparable expenses incurred in 2024.

Operating Loss

Our operating loss was approximately $7,158,000 and $8,973,000 (as restated) for the years ended December 31, 2024 and 2023, respectively. Such decrease in operating loss was primarily due to our increased gross profit in 2024 compared to 2023 coupled with total operating expenses remaining relatively unchanged from year to year.

Other Income (Expense)

During the years ended December 31, 2024 and 2023, we had income from legal claims of $0 and approximately $27,608,000, respectively. The income from legal claims in 2023 consisted of two settlement agreements reached in the fourth quarter of 2023 with various defendants in our patent litigation.

Interest expense related to the financing of capital was approximately $267,000 and $1,362,000 for the years ended December 31, 2024 and 2023, respectively. The approximate breakdown of interest expense for the years ended December 31, 2024 and 2023 is as follows:

	Year Ended December 31,	
	2024	**2023**
Interest expense on notes payable	$ 4,000	$ 24,000
Other interest expense	21,000	2,000
Amortization of discount of notes payable	242,000	1,336,000
	$ 267,000	$ 1,362,000

Loss on change in fair value of profit share liability were approximately $3,959,000 and $11,210,000 for the years ended December 31, 2024 and 2023, respectively. The change is primarily attributed to the modification of the terms of the profit share liability (see Note 8 to the consolidated financial statements).

Net Income (Loss)

For the year ended December 31, 2024, we had a net loss of approximately $10,802,000 compared to net income of approximately $5,668,000 (as restated) for the year ended December 31, 2023. Such change was primarily due to no income from legal claims in 2024 compared to $27,608,000 in 2023, offset by an increase in gross profit in 2024 compared to 2023, and a decrease in the loss on change in fair value of profit share recognized in 2024 compared to 2023.

Liquidity and Capital Resource

We had approximately $3,456,000 in cash on our balance sheet at December 31, 2024 compared to approximately $20,940,000 at December 31, 2023. Total current assets were approximately $6,099,000 and total current liabilities were approximately $8,806,000 at December 31, 2024, resulting in a working capital deficiency of approximately $2,707,000. This compares to total current assets of approximately $24,995,000 (as restated) and total current liabilities of approximately $2,183,000 at December 31, 2023, resulting in working capital of approximately $21,812,000 (as restated). Our accumulated deficit was approximately $72.8 million at December 31, 2024 compared to $62.0 million (as restated) at December 31, 2023. Additionally, we had a net loss in the amount of approximately $10,802,000 and cash used in operating activities of approximately $4,105,000 for the year ended December 31, 2024.

Based on the Company's current cash levels and burn rate, discussed above, the Company believes its cash and financial resources may be insufficient to meet the Company's anticipated needs for the twelve months following the date of issuance of the financial statements for the year ended December 31, 2024, included elsewhere in this Annual Report, which raises substantial doubt about the Company's ability to continue as a going concern within one year from the issuance date of the financial statements.

In addition to maintaining the revenue stream from our legacy mercury emissions control business, our plans and expectations over the next twelve months to mitigate such financial condition include receiving additional cash inflows from the judgment expected in connection with the $57.1 million jury verdict awarded to us in March 2024, additional licensing revenues and product sales from the other patent litigation recently commenced, and revenues from our entry into the water treatment business. During 2024, we opened two new state of the art laboratories and have added personnel to support our entry into the water business which we believe will lead to a vibrant new revenue stream. In addition, management is exploring additional financing opportunities. While management believes these plans will alleviate substantial doubt, there is no assurance that they will be successfully realized or implemented.

Total Assets

Total assets were approximately $10,261,000 at December 31, 2024 versus approximately $28,311,000 (as restated) at December 31, 2023. The change in total assets is primarily attributable to an approximate $17,484,000 decrease in cash and an approximate $1,253,000 decrease in accounts receivable, offset by an increase in property and equipment.

Total Liabilities

Total liabilities were approximately $9,069,000 at December 31, 2024 versus approximately $28,250,000 at December 31, 2023. The decrease is primarily attributable to a decrease in outstanding debt as a result of the modification of the terms of the profit share liability, the repayment of the secured note and the repayment of the unsecured note.

Operating Activities

Net cash (used in) provided by operating activities consists of net income (loss), adjusted by certain non-cash items, and changes in operating assets and liabilities.

Net cash used in operating activities was approximately $4,105,000 for the year ended December 31, 2024 compared to net cash provided by operating activities of approximately $19,226,000 for the year ended December 31, 2023. The increase in net cash provided by operating activities was primarily due to the following: (i) a net loss of $10.5 million in 2024 compared to net income of $5.9 million in 2023; (ii) loss on change in fair value of profit share of $4.0 million in 2024 compared to $11.2 million in 2023; and (iii) certain other changes in operating assets and liabilities including accounts receivable, inventory, prepaid expenses and other assets, accrued salaries, and accounts payable and accrued liabilities.

Investing Activities

The Company had net cash used in investing activities of approximately $809,000 for the year ended December 31, 2024 for the purchase of a truck and lab equipment compared to no cash used in investing activities for the year ended December 31, 2023.

Financing Activities

Net cash used in financing activities was approximately $12,569,000 for the year ended December 31, 2024 compared to approximately $210,000 provided by financing activities for the year ended December 31, 2023. During the year ended December 31, 2024, we repaid the remaining principal of approximately $272,000 on the AC Midwest secured note and approximately $12,315,000 of the principal remaining on the AC Midwest unsecured note. During the years ended December 31, 2024 and 2023, we received approximately $17,500 and $210,000, respectively, from the exercise of stock options.

Critical Accounting Policies and Estimates

Our discussion and analysis of our financial conditions and results of operation are based upon the accompanying consolidated financial statements which have been prepared in accordance with the generally accepted accounting principles in the U.S. The preparation of the consolidated financial statements requires that we make estimates and assumptions that affect the amounts reported in assets, liabilities, revenues, and expenses. We use estimates in accounting for, among other items, profit share liability, revenue recognition, allowance for credit losses, stock-based compensation, income tax provisions, excess and obsolete inventory reserve and impairment of intellectual property. We base these estimates on various assumptions and experience that we believe to be reasonable. The following critical accounting policies are those that are important to the presentation of our financial condition and results of operations. These policies require management's most difficult, complex, or subjective judgments, often as a result of the need to make estimates of matters that are inherently uncertain.

The following critical accounting policies affect our more significant estimates used in the preparation of our consolidated financial statements. In particular, our most critical accounting policies relate to the recognition of revenue, and the valuation of our stock-based compensation.

Property and Equipment

Property and equipment are stated at cost. When retired or otherwise disposed, the related carrying value and accumulated depreciation are removed from the respective accounts and the net difference less any amount realized from disposition, is reflected in earnings. For consolidated financial statement purposes, equipment is recorded at cost and depreciated using the straight-line method over their estimated useful lives of 2 to 5 years. Leasehold improvements are recorded at cost and depreciated using the straight-line method over the life of the lease.

Expenditures for repairs and maintenance which do not materially extend the useful lives of property and equipment are charged to operations. Management reviews the carrying value of our property and equipment for impairment on an annual basis.

Intellectual Property

Intellectual property is recorded at cost and amortized over its estimated useful life of 15 years. Management reviews intellectual property for impairment when events or changes in circumstances indicate the carrying amount of an asset or asset group may not be recoverable. In the event that impairment indicators exist, a further analysis is performed and if the sum of the expected undiscounted future cash flows resulting from the use of the asset or asset group is less than the carrying amount of the asset or asset group, an impairment loss equal to the excess of the asset or asset group's carrying value over its fair value is recorded. Management considers historical experience and all available information at the time the estimates of future cash flows are made, however, the actual cash values that could be realized may differ from those that are estimated.

Recoverability of Long-Lived and Intangible Assets

Long-lived assets and certain identifiable intangibles held and used by us are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Events relating to recoverability may include significant unfavorable changes in business conditions, recurring losses or a forecasted inability to achieve break-even operating results over an extended period. We evaluate the recoverability of long-lived assets based upon forecasted undiscounted cash flows. Should impairment in value be indicated, the carrying value of the long-lived and/or intangible assets would be adjusted, based on estimates of future undiscounted cash flows.

The Company has evaluated the recoverability of the carrying value of the Company's property and equipment, right of use asset and intellectual property. After completing the assessment of property and equipment for impairment as of December 31, 2024 and 2023, the Company recorded an impairment expense related to property and equipment of $43,000 (2023 - $219,707) which is included in Impairment loss in the Company's consolidated statements of operations. The expense was primarily related to the impairment of construction in process costs where management determined that the undiscounted future cash flows were not sufficient to recover the carrying value of these assets over the estimated useful life.

Stock-Based Compensation

We account for stock-based compensation awards in accordance with the provisions of ASC 718, Compensation-Stock Compensation, which requires equity-based compensation, be reflected in the consolidated financial statements over the period of service which is typically the vesting period based on the estimated fair value of the awards.

Fair Value of Financial Instruments

The fair value hierarchy has three levels based on the inputs used to determine fair value, which are as follows:

- Level 1 - Unadjusted quoted prices available in active markets for the identical assets or liabilities at the measurement date.
- Level 2 - Unadjusted quoted prices in active markets for similar assets or liabilities, or unadjusted quoted prices for identical or similar assets or liabilities in markets that are not active, or inputs other than quoted prices that are observable for the asset or liability.
- Level 3 - Unobservable inputs that cannot be corroborated by observable market data and reflect the use of significant management judgment. These values are generally determined using pricing models for which the assumptions utilize management's estimates of market participant assumptions.

The fair value hierarchy requires the use of observable market data when available. In instances where the inputs used to measure fair value fall into different levels of the fair value hierarchy, the fair value measurement has been determined based on the lowest level input significant to the fair value measurement in its entirety. Our assessment of the significance of a particular item to the fair value measurement in its entirety requires judgment, including the consideration of inputs specific to the asset or liability.

Revenue Recognition

We record revenue in accordance with ASC 606, Revenue from Contracts with Customers. The core principle of the guidance is that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. To achieve that core principle, an entity should apply the following steps:

Step 1: Identify the contract(s) with a customer.
Step 2: Identify the performance obligations in the contract.
Step 3: Determine the transaction price.
Step 4: Allocate the transaction price to the performance obligations in the contract.
Step 5: Recognize revenue when (or as) the entity satisfies a performance obligation.

Revenue is recognized when we satisfy our performance obligation under the contract by transferring the promised product to its customer that obtains control of the product. A performance obligation is a promise in a contract to transfer a distinct product to a customer. Most of our contracts have a single performance obligation, as the promise to transfer products or services is not separately identifiable from other promises in the contract and, therefore, not distinct.

Revenue is measured as the amount of consideration we expect to receive in exchange for transferring products. As such, revenue is recorded net of returns, allowances, customer discounts, and incentives. Sales and other taxes are excluded from revenues. Invoiced shipping and handling costs are included in revenue.

Disaggregation of Revenue

We generated revenue for the years ended December 31, 2024 and 2023 by (i) delivering product to our commercial customers, (ii) completing and commissioning equipment projects at commercial customer sites and (iii) performing demonstrations of our technology at customers with the intent of entering into long term supply agreements based on the performance of our products during the demonstrations and (iv) licensing our technology to customers.

Revenue for product sales is recognized at the point of time in which the customer obtains control of the product, at the time title passes to the customer upon shipment or delivery of the product based on the applicable shipping terms.

Licensing revenue includes the licensing of the Company's intellectual property ("IP"). Revenue for IP rights is accounted for based on the nature of the promise to grant the license. In determining whether our promise is to provide a right to access our IP or a right to use our IP, we consider the nature of our IP to which the customer will have rights. IP is either functional IP which has significant standalone functionality or symbolic IP which does not have significant standalone functionality. Revenue from functional IP is recognized at the point in time when control of the distinct license is transferred to the customer. Revenue from symbolic IP is recognized over the access period to our IP.

The licenses provide the customer with the right to use our patented technologies as they exist at a point in time when the license is granted, for the duration of the contract term. The patented technology has stand-alone functionality, and we have no obligation to provide any future updates. During the year ended December 31, 2024 the Company recognized $2,773,750 (2023 - $356,250) of revenue for licenses for which revenue was recognized at a point in time and $34,375 (2023 - $31,250) for licenses for which revenue was recognized over time.

When a license arrangement contains payment terms beyond one year, a significant financing component may exist. The significant financing component is calculated as the difference between the stated value and present value of the license fees and is recognized as interest income over the payment period.

Variable consideration is recorded as revenue only to the extent that a significant reversal of cumulative revenue recognized is not probable of occurring when the uncertainty associated with the variable consideration is subsequently resolved. Significant judgment is required in estimating variable consideration for the performance obligation identified in the contract and this judgment involves assessing factors outside of our influence.

Revenue for equipment sales is recognized upon commissioning and customer acceptance of the installed equipment per the terms of the purchase contract.

Revenue for demonstrations and consulting services is recognized when performance obligations contained in the contract have been completed, typically the completion of necessary field work and the delivery of any required analysis per the terms of the agreement.

Income Taxes

We follow the asset and liability method of accounting for income taxes under FASB ASC 740, "Income Taxes." Deferred tax assets and liabilities are recognized for the estimated future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases. Deferred income tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that included the enactment date. Valuation allowances are established, when necessary, to reduce deferred tax assets to the amount expected to be realized.

FASB ASC 740 prescribes a recognition threshold and a measurement attribute for the financial statement recognition and measurement of tax positions taken or expected to be taken in a tax return. For those benefits to be recognized, a tax position must be more likely than not to be sustained upon examination by taxing authorities. There were no unrecognized tax benefits as of December 31, 2024 and 2023. We are currently not aware of any issues under review that could result in significant payments, accruals or material deviation from our position. We are no longer subject to tax examinations by tax authorities for years prior to 2020.

We may be subject to potential examination by federal, state, and city taxing authorities in the areas of income taxes. These potential examinations may include questioning the timing and amount of deductions, the nexus of income among various tax jurisdictions, and compliance with federal, state, and city tax laws. Our management does not expect that the total amount of unrecognized tax benefits will materially change over the next twelve months.

In December 2023, the FASB issued ASU 2023-09, Improvements to Income Tax Disclosures, which requires disaggregated information about our effective tax rate reconciliation as well as information on income taxes paid. The guidance will first be effective in our annual disclosures for the year ending December 31, 2025, and should be applied on a prospective basis with the option to apply retrospectively. Early adoption is permitted. The Company is in the process of assessing the impact of ASU 2023-09 on our disclosures.

Recently Issued Accounting Standards

Recently issued, but not yet effective accounting pronouncements, that when adopted, may have a material effect on the accompanying consolidated financial statements are as follows:

Issued in June 2021, FASB Accounting Standards Update (ASU) No. 2016-13, *Measurement of Credit Losses on Financial Instruments* adds to U.S. GAAP an impairment model known as the current expected credit loss (CECL) model, which is based on expected losses rather than incurred losses. This guidance is effective for fiscal years beginning after December 15, 2022, including interim periods within those fiscal years. Early application of the amendments is permitted. Effective January 1, 2023, the Company adopted ASU No. 2016-13. The adoption of ASU No. 2016-13 did not have a material effect on the accompanying consolidated financial statements.

In November 2023, the FASB issued ASU No. 2023-07, *Segment Reporting (Topic 280): Improvements to Reportable Segment Disclosures*, which amends and enhances the disclosure requirements for reportable segments. All disclosure requirements under this standard will also be required for public entities with a single reportable segment. The new standard will be effective for the Company for fiscal years beginning after December 15, 2023, including interim periods within fiscal years beginning after December 15, 2024. The Company adopted ASU 2023-07 effective for its Annual Report on Form 10-K for the year ended December 31, 2024 and subsequent interim periods. Since ASU 2023-07 addresses only disclosures, the adoption of ASU 2023-07 did not have a significant impact on its consolidated financial statements.

In December 2023, the FASB issued ASU 2023-09, *Income Taxes (Topic 740): Improvements to Income Tax Disclosures*, which is intended to provide enhancements to annual income tax disclosures. The standard will require more detailed information in the rate reconciliation table and for income taxes paid, among other enhancements. The standard is effective for years beginning after December 15, 2024 and early adoption is permitted. The Company is evaluating this standard to determine if adoption will have a material impact on the Company's consolidated financial statements.

In November 2024, the FASB issued ASU No. 2024-03, *Income Statement – Reporting Comprehensive Income – Expense Disaggregation Disclosures (Subtopic 220-40): Disaggregation of Income Statement Expenses*. This ASU requires entities to disaggregate expense items in the notes to the financial statements and requires disclosure of specified information related to purchases of inventory, employee compensation, depreciation, and intangible asset amortization. The amendments in this ASU are effective for annual periods beginning after December 15, 2026, and interim periods beginning after December 15, 2027. Companies have the option to apply the guidance either on a retrospective or prospective basis, and early adoption is permitted. The Company is currently evaluating the impact of the ASU on its consolidated financial statements and related disclosures. In January 2025, the FASB issued ASU No. 2025-01, *Income Statement – Reporting Comprehensive Income – Expense Disaggregation Disclosures (Subtopic 220-40): Clarifying the Effective Date*. This ASU amends the effective date of ASU No. 2024-03 to clarify that all public business entities are required to adopt the guidance in annual reporting periods beginning after December 15, 2026, and interim periods within annual reporting periods beginning after December 15, 2027. Early adoption of ASU No. 2024-03 is permitted.

Non-GAAP Financial Measures

Adjusted EBITDA

To supplement our consolidated financial statements presented in accordance with GAAP and to provide investors with additional information regarding our financial results, we consider and are including herein Adjusted EBITDA, a Non-GAAP financial measure. We view Adjusted EBITDA as an operating performance measure and, as such, we believe that the GAAP financial measure most directly comparable to it is net income (loss). We define Adjusted EBITDA as net income adjusted for interest and financing fees, income taxes, depreciation, amortization, stock-based compensation, and other non-cash income and expenses. We believe that Adjusted EBITDA provides us an important measure of operating performance because it allows management, investors, debtholders and others to evaluate and compare ongoing operating results from period to period by removing the impact of our asset base, any asset disposals or impairments, stock based compensation and other non-cash income and expense items associated with our reliance on issuing equity-linked debt securities to fund our working capital.

Our use of Adjusted EBITDA has limitations as an analytical tool, and this measure should not be considered in isolation or as a substitute for an analysis of our results as reported under GAAP, as the excluded items may have significant effects on our operating results and financial condition. Additionally, our measure of Adjusted EBITDA may differ from other companies' measure of Adjusted EBITDA. When evaluating our performance, Adjusted EBITDA should be considered with other financial performance measures, including various cash flow metrics, net income and other GAAP results. In the future, we may disclose different non-GAAP financial measures in order to help our investors and others more meaningfully evaluate and compare our future results of operations to our previously reported results of operations.

The following table shows our reconciliation of net income (loss) to adjusted EBITDA for the years ended December 31, 2024 and 2023, respectively:

	For the Year Ended	
	December 31, 2024	**December 31, 2023 (as restated)**
	(In thousands)	
Net income (loss)	$ (10,802)	$ 5,668
Non-GAAP adjustments:		
Depreciation and amortization	248	259
Interest	267	1,362
Change in fair value of profit share	3,959	11,210
Impairment of property and equipment	43	220
Income Taxes	(289)	473
Stock based compensation	1,089	520
Adjusted EBITDA	$ (5,485)	$ 19,712

Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

We are a smaller reporting company as defined by Rule 12b-2 of the Securities Exchange Act of 1934 and are not required to provide the information under this item.

Item 8. Financial Statements and Supplementary Data

BIRCHTECH CORP. AND SUBSIDIARIES
(formerly Midwest Energy Emissions Corp.)
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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of Birchtech Corp.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Birchtech Corp (the Company) as of December 31, 2024 and 2023, and the related consolidated statements of operations, stockholders' deficit, and cash flows for the two years in the period ended December 31, 2024, and the related notes (collectively referred to as the financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2024 and 2023, and the results of its operations and its cash flows for the two years in the period ended December 31, 2024, in conformity with accounting principles generally accepted in the United States of America.

Restatement of Prior Periods

As discussed in Note 2, the December 31, 2023 consolidated financial statements have been restated to correct a misstatement.

Emphasis of Matter Regarding Going Concern

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 3 to the financial statements, the Company has identified conditions, including a net loss and net cash used in operations, that raise substantial doubt about the Company's ability to continue as a going concern. Management's plans in regard to these matters are described in Note 3. The financial statements do not include any adjustments that might results from the outcome of this uncertainty.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's consolidated financial statements based on our audit. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits, we are required to obtain an understanding of internal control over financial reporting, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provides a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Valuation of Profit Share Liability

Description of the Matter

As of December 31, 2024, the Company recorded a profit share liability of $6.85 million. As discussed in Note 8 to the financial statements, the Company entered into a profit participation preference (the "profit share liability") with AC Midwest Energy LLC as part of its Unsecured Note Financing Agreement. The Company calculates the fair value of the profit share liability on a quarterly basis utilizing management estimates. The fair value of the profit share liability is calculated using a discounted cash flow model based on estimated future cash payments. The fair value of the profit share liability is determined on a Level 3 measurement.

Inherent in the valuation of Level 3 financial instruments are certain significant judgments and estimates related to forecasted cash flows. Changes in these assumptions can significantly impact the valuation of the profit share liability and the gain or loss on change in fair value that is recorded. This required a high degree of auditor judgment and an increased extent of effort when performing audit procedures to evaluate the reasonableness of management's forecasted cash flows.

How We Addressed the Critical Audit Matter in Our Audit

To test the profit share liability calculation as of December 31, 2024, we performed the following procedures among others, by which we:

- Obtained and reviewed the Unsecured Note Agreement and evaluated management's assessment of the terms of the agreement.
- Evaluated the assumptions regarding the probabilities related to the timing and amount of cash flows by comparing historical information and current events.
- Utilized our internal valuation specialist to assist in the assessment of the appropriateness of the valuation methodology and the reasonableness of the discount rate applied, including consideration of conditions affecting market rates.
- Tested the clerical accuracy of the profit share liability calculation.

/s/ Rosenberg Rich Baker Berman, P.A.

We have served as the Company's auditor since 2023.
Somerset, New Jersey
March 31, 2025

BIRCHTECH CORP. AND SUBSIDIARIES
(formerly Midwest Energy Emissions Corp.)
CONSOLIDATED BALANCE SHEETS

	December 31, 2024	December 31, 2023 (as restated)
ASSETS		
Current assets		
Cash	$ 3,456,082	$ 20,939,762
Accounts receivable	1,823,232	3,076,462
Inventory	621,813	795,164
Prepaid expenses and other assets	198,185	183,621
Total current assets	6,099,312	24,995,009
Security deposits	6,615	5,175
Property and equipment, net	2,350,688	1,595,958
Right of use asset - operating lease	305,142	10,639
Intellectual property, net	1,499,463	1,704,063
Total assets	$ 10,261,220	$ 28,310,844
LIABILITIES AND STOCKHOLDERS' DEFICIT		
Current liabilities		
Accounts payable and accrued expenses (related party $37,500 and $107,454 at December 31, 2024 and December 31, 2023, respectively)	$ 1,702,998	$ 1,558,450
Income tax payable	-	437,821
Current portion of operating lease liability	42,733	11,157
Customer credits	167,000	167,000
Accrued salaries	39,280	8,936
Profit share liability – related party	6,853,858	-
Total current liabilities	8,805,869	2,183,364
Operating lease liability, net of current portion	263,490	-
Secured note payable, net of discount – related party	-	239,466
Unsecured note payable, net of discount and issuance costs – related party	-	10,979,723
Profit share liability – related party	-	14,847,937
Total liabilities	9,069,359	28,250,490
Commitments and contingencies (Note 10)		
Stockholders' equity (deficit)		
Preferred stock, $0.001 par value: 2,000,000 shares authorized, no shares issued	-	-
Common stock, $0.001 par value; 150,000,000 shares authorized 96,178,153 and 94,360,107 shares issued and outstanding as of December 31, 2024 and December 31, 2023 respectively.	96,178	94,360
Additional paid-in capital	73,848,919	61,917,119
Accumulated deficit	(72,753,236)	(61,951,125)
Total stockholders' equity (deficit)	1,191,861	60,354
Total liabilities and stockholders' equity (deficit)	$ 10,261,220	$ 28,310,844

See accompanying notes to these consolidated financial statements.

BIRCHTECH CORP. AND SUBSIDIARIES
(formerly Midwest Energy Emissions Corp.)
CONSOLIDATED STATEMENTS OF OPERATIONS

	For the Year Ended December 31, 2024	For the Year Ended December 31, 2023 (as restated)
Product revenue	$ 14,481,784	$ 17,092,996
License revenue	2,808,125	387,500
Other revenue	116,276	144,874
Revenues	$ 17,406,185	$ 17,625,370
Cost of sales	(10,305,076)	(12,172,374)
Gross profit	7,101,109	5,452,996
Operating expenses:		
Impairment loss	(43,000)	(219,707)
Selling, general and administrative expenses (related party of $1,116,064 and $554,410)	(14,216,377)	(14,206,761)
Total operating expenses	(14,259,377)	(14,426,468)
Operating loss	(7,158,268)	(8,973,472)
Other income (expense)		
Income from legal claims	-	27,607,776
Interest expense (related party of $245,724 and $1,360,623)	(267,458)	(1,362,401)
Loss on change in fair value of profit share and unsecured note	(3,959,065)	(11,209,677)
Interest income	293,524	79,301
Total other (expense) income	(3,932,999)	15,114,999
(Loss) income before provision for income taxes	(11,091,267)	6,141,527
Income tax benefit (expense)	289,156	(473,213)
Net (loss) income	$ (10,802,111)	$ 5,668,314
Basic & Diluted (loss) income per share:		
Basic net (loss) income per share	$ (0.11)	$ 0.06
Diluted net (loss) income per share	$ (0.11)	$ 0.06
Weighted average common shares outstanding:		
Basic	95,290,548	94,171,695
Diluted	95,290,548	97,452,397

See accompanying notes to these consolidated financial statements.

BIRCHTECH CORP. AND SUBSIDIARIES
(formerly Midwest Energy Emissions Corp.)
CONSOLIDATED STATEMENT OF STOCKHOLDERS' DEFICIT

	Year Ended December 31, 2024				
	Common Stock		Additional Paid-in	Accumulated	
	Shares	Par Value	Capital	(Deficit)	Total
Balance - January 1, 2024 (as restated)	94,360,107	$ 94,360	$ 61,917,119	$ (61,951,125)	$ 60,354
Stock issued for cashless exercise of options	1,706,194	1,706	(1,706)	-	-
Stock issued for exercise of warrants	25,000	25	17,475	-	17,500
Stock issued for cashless exercise of warrants	86,852	87	(87)	-	-
Gain on modification of related party debt	-	-	10,827,195	-	10,827,195
Share based payments	-	-	1,088,923	-	1,088,923
Net loss	-	-	-	(10,802,111)	(10,802,111)
Balance – December 31, 2024	96,178,153	$ 96,178	$ 73,848,919	$ (72,753,236)	$ 1,191,861

	Year Ended December 31, 2023				
	Common Stock		Additional Paid-in	Accumulated	
	Shares	Par Value	Capital	Deficit	Total
Balance – January 1, 2023 (as previously reported)	93,087,796	$ 93,088	$ 61,188,442	$ (68,698,389)	$ (7,416,859)
Restatement adjustment	-	-	-	1,078,950	1,078,950
Balance – January 1, 2023 (as restated)	93,087,796	$ 93,088	$ 61,188,442	$ (67,619,439)	$ (6,337,909)
Share based compensation expense	-	-	520,449	-	520,449
Stock issued for cashless exercise of options	422,311	422	(422)	-	-
Stock issued for cash exercise of options	850,000	850	208,650	-	209,500
Net income	-	-	-	5,668,314	5,668,314
Balance December 31, 2023 (as restated)	94,360,107	$ 94,360	$ 61,917,119	$ (61,951,125)	$ 60,354

See accompanying notes to these consolidated financial statements.

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BIRCHTECH CORP. AND SUBSIDIARIES
(formerly Midwest Energy Emissions Corp.)
CONSOLIDATED STATEMENTS OF CASH FLOWS

	For the year Ended December 31, 2024	For the year Ended December 31, 2023 (as restated)
Cash flows from operating activities		
Net (loss) income	$ (10,802,111)	$ 5,668,314
Adjustments to reconcile net (loss) income to net cash provided by operating activities:		
Stock-based compensation – amortization of prepaid services	-	486,667
Stock-based compensation	1,088,923	33,782
Amortization of discount of notes payable	241,444	1,336,171
Amortization of right to use assets	31,782	40,924
Amortization of patent rights	204,600	205,534
Depreciation expense	11,702	12,927
Impairment loss	43,000	219,707
Non-cash interest revenue	(57,191)	(79,301)
Loss on change in fair value of profit share	3,959,065	11,209,677
Changes in operating assets and liabilities		
Accounts receivable	1,310,421	859,396
Inventory	173,351	195,967
Prepaid expenses and other assets	(16,004)	88,772
Accrued salaries	30,344	(58,542)
Accounts payable and accrued liabilities	144,547	(1,388,385)
Income tax payable	(437,821)	437,821
Operating lease liability	(31,219)	(43,394)
Net cash (used in) provided by operating activities	(4,105,167)	19,226,037
Cash flows used in investing activities		
Purchase of property and equipment	(809,432)	-
Net cash used in investing activities	(809,432)	-
Cash flows from financing activities		
Proceeds from exercise of stock options	17,500	209,500
Repayment of secured notes payable	(271,686)	-
Repayment of unsecured notes payable	(12,314,895)	
Net cash (used in) provided by financing activities	(12,569,081)	209,500
Net (decrease) increase in cash and cash equivalents	(17,483,680)	19,435,537
Cash and cash equivalents - beginning of period	20,939,762	1,504,225
Cash and cash equivalents - end of period	$ 3,456,082	$ 20,939,762
SUPPLEMENTAL CASH FLOW INFORMATION:		
Cash paid during the period for:		
Interest	$ 4,023	$ 19,721
Income taxes	$ 143,269	$ -
SUPPLEMENTAL DISCLOSURE OF NON-CASH TRANSACTIONS		
Capital from related party debt extinguishments	$ 10,827,195	$ -
Recognition of ROU asset and operating lease liability	$ 326,285	$ -

See accompanying notes to these consolidated financial statements.

BIRCHTECH CORP. AND SUBSIDIARIES
(formerly Midwest Energy Emissions Corp.)
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
December 31, 2024

Note 1 - Organization

Birchtech Corp. and MES, Inc.

Birchtech Corp., formerly Midwest Energy Emissions Corp. (together with its consolidated subsidiaries, the "Company"), is organized under the laws of the State of Delaware. Effective on October 17, 2024, Midwest Energy Emissions Corp. changed its corporate name to Birchtech, Inc. pursuant to a certificate of amendment to its certificate of incorporation filed with the State of Delaware. MES, Inc. is incorporated in the State of North Dakota. MES, Inc. is a wholly owned subsidiary of Birchtech Corp. The Company is a provider of specialty activated carbon technologies and provides patented sorbent technologies for mercury emissions capture for the coal-fired utility sector and is developing water purification technologies with a specialization on forever chemicals such as PFAS and PFOS.

ME2C Sponsor LLC and ME2C Acquisition Corp.

ME2C Sponsor LLC is a limited liability company formed in the State of Delaware and is a wholly owned subsidiary of Birchtech Corp. and owns 85% of ME2C Acquisition Corp. A decision was made in January 2023 to liquidate these entities which are inactive.

Note 2 – Restatement of Previously Issued Financial Statements

Description of Restatement Adjustments

In connection with the preparation of the Company's consolidated financial statements as of and for the period ended December 31, 2024, management identified an error in the previously reported financial statements related to the recognition of revenue during the year ended December 31, 2022. The Company entered into a license agreement for which it should have recognized the entire proceeds receivable pursuant to the agreement as revenue during the year ended December 31, 2022. The Company should also have recognized the financing component of the licensing agreement during the fiscal years ended December 31, 2023 and 2024. As a result, the consolidated financial statements reflect the recognition of this additional revenue during the year ended December 31, 2022, removes the revenue recognized and records the financing component of the arrangement during annual and interim periods in the fiscal year ending December 31, 2023 and the interim periods in the fiscal year ending December 31, 2024.

The following tables reflect the impact of the restatement to the specific line items presented in the Company's previously reported consolidated financial statements as of December 31, 2022 and for the year ended December 31, 2023. The accompanying applicable notes to consolidated financial statements have been updated to reflect the effects of the restatement.

The impact of the restatement to the consolidated statements of stockholders' equity (deficit) includes a decrease of $843,251 in accumulated deficit as of December 31, 2023 and a $1,078,950 decrease to the accumulated deficit as of January 1, 2023.

The amounts in the "As previously reported" columns are amounts derived from the Company's previously filed consolidated financial statements. The amounts in the "Restatement adjustments" columns present the impact of the following adjustments:

- The recognition of the licensing revenue during the year ended December 31, 2022.
- The removal of the licensing revenue recorded during the year ended December 31, 2023.
- The recording of the financing component during the year ended December 31, 2023.

The amounts in the "As restated" columns are the updated amounts including the impacts from the restatement.

Audited Financial Statements

The following table presents the impact of the financial statement adjustments on the Company's previous reported consolidated Balance Sheet as of December 31, 2023:

CONSOLIDATED BALANCE SHEETS

	DECEMBER 31, 2023		
	As previously reported	Adjustment	As restated
ASSETS AND STOCKHOLDERS' EQUITY (DEFICIT)			
Accounts receivable	$ 2,233,211	$ 843,251	$ 3,076,462
Total current assets	24,151,758	843,251	24,995,009
Total assets	27,467,593	843,251	28,310,844
Stockholders' equity (deficit)			
Accumulated deficit	(62,794,376)	843,251	(61,951,125)
Total stockholders' equity (deficit)	(782,897)	843,251	60,354
Total liabilities and stockholders' equity (deficit)	$ 27,467,593	$ 843,251	$ 28,310,844

The following table presents the impact of the financial statement adjustments on the Company's previously reported Consolidated Statement of Operations for the year ended December 31, 2023:

CONSOLIDATED STATEMENT OF OPERATIONS

	FOR THE YEAR ENDED DECEMBER 31, 2023		
	As previously reported	Adjustment	As restated
Revenue	$ 17,940,370	$ (315,000)	$ 17,625,370
Gross Profit	5,767,996	(315,000)	5,452,996
Operating (loss) income	(8,658,472)	(315,000)	(8,973,472)
Interest income	-	79,301	79,301
Total other income	15,035,698	79,301	15,114,999
Income (loss) before provision for income taxes	6,377,226	(235,699)	6,141,527
Net income (loss)	$ 5,904,013	$ (235,699)	$ 5,668,314
Net loss per common share - basic and diluted:	$ 0.06	$ -	$ 0.06

The following table presents the impact of the financial statement adjustments on the Company's previously reported Consolidated Statements of Changes in Stockholder's Equity for the years ended December 31, 2023 and 2022:

	Accumulated Deficit		
	As Reported	**Adjustment**	**As Restated**
Balance – January 1, 2022	$ (67,116,913)	$ -	$ (67,116,913)
Net loss	(1,581,476)	1,078,950	(502,526)
Balance December 31, 2022	(68,698,389)	1,078,950	(67,619,439)
Net income	5,904,013	(235,699)	5,668,314
Balance December 31, 2023	$ (62,794,376)	$ (843,251)	$ (61,951,125)

The following table presents the impact of the financial statement adjustments on the Company's previously reported Consolidated Statement of Cash Flows for the year ended December 31, 2023:

CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS

	FOR THE YEAR ENDED DECEMBER 31, 2023		
	As previously reported	**Adjustment**	**As restated**
Cash flows from operating activities			
Net income (loss)	$ 5,904,013	$ (235,699)	$ 5,668,314
Adjustments to reconcile net loss to net cash			
Non-cash interest income	-	(79,301)	(79,301)
Changes in operating assets and liabilities			
Accounts receivable	544,396	315,000	859,396
Net cash provided by operating activities	$ 19,226,037	$ -	$ 19,226,037

Note 3 – Going Concern and Financial Condition

Under ASC 205-40, *Presentation of Financial Statements—Going Concern*, the Company has the responsibility to evaluate whether conditions and/or events raise substantial doubt about its ability to meet its future financial obligations as they become due within one year after the date that the financial statements are issued. As required by ASC 205-40, this evaluation shall initially not take into consideration the potential mitigating effects of plans that have not been fully implemented as of the date the financial statements are issued. Management has assessed the Company's ability to continue as a going concern in accordance with the requirements of ASC 205-40.

The accompanying consolidated financial statements have been prepared on a going concern basis, which contemplates the realization of assets and the satisfaction of liabilities in the normal course of business. As reflected in the consolidated financial statements, the Company had a net loss of approximately $10.8 million and cash used in operating activities of approximately $4.1 million for the year ended December 31, 2024; had cash of approximately $3.5 million at December 31, 2024; and an accumulated deficit of approximately $72.8 million at December 31, 2024. The Company's working capital deficiency at December 31, 2024 was approximately $2.7 million. The aforementioned factors raise substantial doubt about the Company's ability to continue as a going concern within one year from the issuance date of the financial statements.

In addition to maintaining its revenue stream from its legacy mercury emissions control business, the Company's plans and expectations over the next twelve months to mitigate such financial condition include receiving additional cash inflows from the judgment expected in connection with the $57.1 million jury verdict awarded to the Company in March 2024, additional licensing revenues and product sales from the other patent litigation recently commenced, and revenues from the Company's entry into the water treatment business. During 2024, the Company opened two new state of the art laboratories and have added personnel to support our entry into the water business which the Company believes will lead to a vibrant new revenue stream. In addition, management is exploring additional financing opportunities. While management believes these plans will alleviate substantial doubt, there is no assurance that they will be successfully realized or implemented.

The accompanying consolidated financial statements do not include any adjustments relating to the recoverability and classification of asset amounts or the classification of liabilities that might be necessary should the Company be unable to continue as a going concern within one year after the date the financial statements are issued.

Note 4 - Basis of Presentation and Summary of Significant Accounting Policies

Basis of Presentation

The accompanying consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America ("GAAP") and pursuant to the rules and regulations promulgated by the United States Securities and Exchange Commission ("SEC").

Principles of Consolidation

The consolidated financial statements include the accounts of Birchtech Corp. (formerly Midwest Energy Emissions Corp.) and its wholly-owned subsidiaries, MES, Inc. and ME2C Sponsor LLC, and ME2C Acquisition Corp. which is 85% owned by ME2C Sponsor LLC. Intercompany balances and transactions have been eliminated in consolidation.

Use of Estimates

The preparation of consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, valuation of equity issuances and disclosures of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenue and expenses during the reporting period. The Company uses estimates in accounting for, among other items, profit share liability, revenue recognition, allowance for credit losses, stock-based compensation, income tax provisions, excess and obsolete inventory reserve and impairment of intellectual property. Actual results could differ from those estimates.

Inventory

Inventories are stated at the lower of cost (first-in, first-out basis) or net realizable value. Inventories are periodically evaluated to identify obsolete or otherwise impaired products and are written off when management determines usage is not probable. The Company estimates the balance of excess and obsolete inventory by analyzing inventory by age using last used and original purchase date and existing sales pipeline for which the inventory could be used. As of December 31, 2024 and 2023, the Company had no valuation allowance.

Property and Equipment

Property and equipment are stated at cost. When retired or otherwise disposed, the related carrying value and accumulated depreciation are removed from the respective accounts and the net difference less any amount realized from disposition, is reflected in earnings. For consolidated financial statement purposes, equipment is recorded at cost and depreciated using the straight-line method over their estimated useful lives of 2 to 5 years. Leasehold improvements are recorded at cost and depreciated using the straight-line method over the life of the lease.

Expenditures for repairs and maintenance which do not materially extend the useful lives of property and equipment are charged to operations. Management reviews the carrying value of our property and equipment for impairment on an annual basis.

Intellectual Property

Intellectual property is recorded at cost and amortized over its estimated useful life of 15 years. Management reviews intellectual property for impairment when events or changes in circumstances indicate the carrying amount of an asset or asset group may not be recoverable. In the event that impairment indicators exist, a further analysis is performed and if the sum of the expected undiscounted future cash flows resulting from the use of the asset or asset group is less than the carrying amount of the asset or asset group, an impairment loss equal to the excess of the asset or asset group's carrying value over its fair value is recorded. Management considers historical experience and all available information at the time the estimates of future cash flows are made, however, the actual cash values that could be realized may differ from those that are estimated.

Recoverability of Long-Lived and Intangible Assets

Long-lived assets and certain identifiable intangibles held and used by the Company are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Events relating to recoverability may include significant unfavorable changes in business conditions, recurring losses or a forecasted inability to achieve break-even operating results over an extended period. The Company evaluates the recoverability of long-lived assets based upon forecasted undiscounted cash flows. Should impairment in value be indicated, the carrying value of the long-lived and/or intangible assets would be adjusted, based on estimates of future undiscounted cash flows.

The Company has evaluated the recoverability of the carrying value of the Company's property and equipment, right of use asset and intellectual property. After completing the assessment of property and equipment for impairment as of December 31, 2024 and 2023, the Company recorded an impairment expense related to property and equipment of $43,000 (2023 - $219,707) which is included in Impairment loss in the Company's consolidated statements of operations and comprehensive income (loss). The expense was primarily related to the impairment of construction in process costs where management determined that the undiscounted future cash flows were not sufficient to recover the carrying value of these assets over the estimated useful life.

Stock-Based Compensation

We account for stock-based compensation awards in accordance with the provisions of ASC 718, Compensation-Stock Compensation, which requires equity-based compensation, be reflected in the consolidated financial statements over the period of service which is typically the vesting period based on the estimated fair value of the awards.

Fair Value of Financial Instruments

The fair value hierarchy has three levels based on the inputs used to determine fair value, which are as follows:

☐ *Level 1* — Unadjusted quoted prices available in active markets for the identical assets or liabilities at the measurement date.

☐ *Level 2* — Unadjusted quoted prices in active markets for similar assets or liabilities, or unadjusted quoted prices for identical or similar assets or liabilities in markets that are not active, or inputs other than quoted prices that are observable for the asset or liability.

☐ *Level 3* — Unobservable inputs that cannot be corroborated by observable market data and reflect the use of significant management judgment. These values are generally determined using pricing models for which the assumptions utilize management's estimates of market participant assumptions.

The fair value hierarchy requires the use of observable market data when available. In instances where the inputs used to measure fair value fall into different levels of the fair value hierarchy, the fair value measurement has been determined based on the lowest level input significant to the fair value measurement in its entirety. The Company's assessment of the significance of a particular item to the fair value measurement in its entirety requires judgment, including the consideration of inputs specific to the asset or liability.

The profit share liability is the only item measured at fair value on a recurring basis by the Company at December 31, 2024 and December 31, 2023. The profit share liability is considered to be Level 3 measurements.

Financial instruments include cash, accounts receivable, accounts payable, and short-term debt. The carrying amounts of these financial instruments approximated fair value at December 31, 2024 and December 31, 2023 due to their short-term maturities.

The fair value of the notes payable at December 31, 2023 approximated the carrying amount, as the notes were recently issued at interest rates prevailing in the market. The fair value of the notes payable was determined on a Level 2 measurement. Discounts on issued debt, as well as debt issuance costs, are amortized over the term of the individual notes.

At December 31, 2024, the fair value of the profit share liability is calculated using a discounted cash flow model based on estimated future cash payments. The fair value of the profit share liability at December 31, 2023 was also calculated using a discounted cash flow model based on estimated future cash payments. At December 31, 2024 and December 31, 2023, the fair value of the profit share liability was determined on a Level 3 measurement. These values are determined using pricing models for which the assumptions utilized management's estimates. Significant unobservable inputs include a discount rate of approximately 14.55% and the projection of future cash flows.

The following tables present the Company's liabilities that are measured at fair value on a recurring basis and are categorized using the fair value hierarchy.

	Total	Fair Value Measurement as of December 31, 2024		
		Level 1	Level 2	Level 3
Liabilities:				
Profit share liability – related party (1)	$ 6,853,858	$ -	$ -	$ 6,853,858
Total Liabilities	$ 6,853,858	$ -	$ -	$ 6,853,858

	Total	Fair Value Measurement as of December 31, 2023		
		Level 1	Level 2	Level 3
Liabilities:				
Profit share liability – related party (1)	$ 14,847,937	$ -	$ -	$ 14,847,937
Total Liabilities	$ 14,847,937	$ -	$ -	$ 14,847,937

(1) See Note 8 - Related Party

The following tables present the Company's liabilities that are measured at fair value on a non-recurring basis and are categorized using the fair value hierarchy.

	Total	Fair Value Measurement as of December 31, 2024		
		Level 1	Level 2	Level 3
Assets:				
Property and equipment (Construction in progress)	$ 1,545,000	$ -	$ -	$ 1,545,000
Total Assets	$ 1,545,000	$ -	$ -	$ 1,545,000

	Total	Fair Value Measurement as of December 31, 2023		
		Level 1	Level 2	Level 3
Assets:				
Property and equipment (Construction in progress)	$ 1,588,000	$ -	$ -	$ 1,588,000
Total Assets	$ 1,588,000	$ -	$ -	$ 1,588,000

Revenue Recognition

The Company records revenue in accordance with ASC 606, *Revenue from Contracts with Customers.* The core principle of the guidance is that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. To achieve that core principle, an entity should apply the following steps:

Step 1: Identify the contract(s) with a customer.
Step 2: Identify the performance obligations in the contract.
Step 3: Determine the transaction price.
Step 4: Allocate the transaction price to the performance obligations in the contract.
Step 5: Recognize revenue when (or as) the entity satisfies a performance obligation.

Revenue is recognized when the Company satisfies its performance obligation under the contract by transferring the promised product to its customer that obtains control of the product. A performance obligation is a promise in a contract to transfer a distinct product to a customer. Most of the Company's contracts have a single performance obligation, as the promise to transfer products or services is not separately identifiable from other promises in the contract and, therefore, not distinct.

Revenue is measured as the amount of consideration the Company expects to receive in exchange for transferring products. As such, revenue is recorded net of returns, allowances, customer discounts, and incentives. Sales and other taxes are excluded from revenues. Invoiced shipping and handling costs are included in revenue.

Disaggregation of Revenue

The Company generated revenue for the years ended December 31, 2024 and 2023 by (i) delivering product to its commercial customers, (ii) completing and commissioning equipment projects at commercial customer sites and (iii) performing demonstrations of its technology at customers with the intent of entering into long term supply agreements based on the performance of the Company's products during the demonstrations and (iv) licensing its technology to customers.

Revenue for product sales is recognized at the point of time in which the customer obtains control of the product, at the time title passes to the customer upon shipment or delivery of the product based on the applicable shipping terms.

Licensing revenue includes the licensing of the Company's intellectual property ("IP"). Revenue for IP rights is accounted for based on the nature of the promise to grant the license. In determining whether the Company's promise is to provide a right to access its IP or a right to use its IP, the Company considers the nature of its IP to which the customer will have rights. IP is either functional IP which has significant standalone functionality or symbolic IP which does not have significant standalone functionality. Revenue from functional IP is recognized at the point in time when control of the distinct license is transferred to the customer. Revenue from symbolic IP is recognized over the access period to the Company's IP.

The licenses provide the customer with the right to use the Company's patented technologies as they exist at a point in time when the license is granted, for the duration of the contract term. The patented technology has stand-alone functionality, and the Company has no obligation to provide any future updates. During the year ended December 31, 2024 the Company recognized $2,773,750 (2023 - $356,250) of revenue for licenses for which revenue was recognized at a point in time and $34,375 (2023 - $31,250) for licenses for which revenue was recognized over time.

When a license arrangement contains payment terms beyond one year, a significant financing component may exist. The significant financing component is calculated as the difference between the stated value and present value of the license fees and is recognized as interest income over the payment period.

Variable consideration is recorded as revenue only to the extent that a significant reversal of cumulative revenue recognized is not probable of occurring when the uncertainty associated with the variable consideration is subsequently resolved. Significant judgment is required in estimating variable consideration for the performance obligation identified in the contract and this judgment involves assessing factors outside of our influence.

Revenue for equipment sales is recognized upon commissioning and customer acceptance of the installed equipment per the terms of the purchase contract.

Revenue for demonstrations and consulting services is recognized when performance obligations contained in the contract have been completed, typically the completion of necessary field work and the delivery of any required analysis per the terms of the agreement.

The following table presents sales by operating segment disaggregated based on the type of product for the years ended December 31, 2024 and 2023. All sales were in the United States.

	December 31, 2024	December 31, 2023
Product revenue	$ 14,481,784	$ 17,092,996
License revenue	2,808,125	387,500
Demonstrations & Consulting revenue	36,000	90,000
Equipment revenue	80,276	54,874
	$ 17,406,185	$ 17,625,370

Accounts receivable and allowance for credit losses

Accounts receivable are presented net of an allowance for credit losses. The Company maintains allowances for credit losses. The Company reviews the accounts receivable on a periodic basis and makes general and specific allowances when there is doubt as to the collectability of individual balances. In evaluating the collectability of individual receivable balances, the Company considers many factors, including the age of the balance, a customer's payment history, its current credit-worthiness and current economic trends. Accounts are written off after exhaustive efforts at collection.

Management believed that the accounts receivable were fully collectable and no allowance for credit losses was deemed to be required on its accounts receivable at December 31, 2024. The Company historically has not experienced significant uncollectible accounts receivable. As of December 31, 2024 and December 31, 2023, the Company's allowance for credit losses was $0, and the Company recorded $0 of bad debt expense for both the years ended December 31, 2024 and 2023.

Income Taxes

The Company follows the asset and liability method of accounting for income taxes under FASB ASC 740, *Income Taxes*. Deferred tax assets and liabilities are recognized for the estimated future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases. Deferred income tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that included the enactment date. Valuation allowances are established, when necessary, to reduce deferred tax assets to the amount expected to be realized.

FASB ASC 740 prescribes a recognition threshold and a measurement attribute for the financial statement recognition and measurement of tax positions taken or expected to be taken in a tax return. For those benefits to be recognized, a tax position must be more likely than not to be sustained upon examination by taxing authorities. There were no unrecognized tax benefits as of December 31, 2024 and 2023. The Company is currently not aware of any issues under review that could result in significant payments, accruals or material deviation from its position. The Company is no longer subject to tax examinations by tax authorities for the years prior to 2020.

The Company may be subject to potential examination by federal, state, and city taxing authorities in the areas of income taxes.

These potential examinations may include questioning the timing and amount of deductions, the nexus of income among various tax jurisdictions, and compliance with federal, state, and city tax laws. Management does not expect that the total amount of unrecognized tax benefits will materially change over the next twelve months.

Basic and Diluted Income (Loss) Per Common Share

Income (loss) per share – basic is calculated by dividing net income (loss) by the weighted average number of shares of stock outstanding during the year, including shares issuable without additional consideration. Income per share – assuming dilution is calculated by dividing net income by the weighted average number of shares outstanding during the year adjusted for the effect of dilutive potential shares from options and warrants calculated using the treasury stock method and the if-converted method for preferred stock. There were no dilutive potential common shares for year ended December 31, 2024, because the Company incurred a net loss and basic and diluted losses per common share are the same. There are 3,280,702 dilutive stock options and no dilutive warrants for the year ended December 31, 2023 as the Company reported net income for the period.

We calculate basic earnings per share by dividing net income by the weighted-average number of common shares outstanding during the reporting period. Diluted earnings per share reflects the effects of potentially dilutive securities. The summary of the basic and diluted earnings per share calculations for the years ended December 31, 2024 and 2023:

	2024	2023
Basic:		
Net Income (Loss)	$ (10,802,111)	$ 5,668,314
Weighted-average shares outstanding	95,290,548	94,171,695
Basic	$ (0.11)	$ 0.06

	2024	2023
Diluted:		
Net Income (Loss)	$ (10,802,111)	$ 5,668,314
Weighted-average shares outstanding	95,290,548	94,171,695
Effect of diluted securities – stock options	-	3,280,702
Weighted-average shares used in the calculation of diluted earnings per share	95,290,548	97,452,397
Diluted earnings (loss) per share	$ (0.11)	$ 0.06

Total common stock equivalents excluded from dilutive loss per share are as follows:

	December 31, 2024	December 31, 2023
Stock Options	9,300,000	9,650,000
Warrants	-	2,550,000
Total common stock equivalents excluded from dilutive loss per share	9,300,000	12,200,000

Concentration of Credit Risk

Financial instruments that subject the Company to credit risk consist of cash and equivalents on deposit with financial institutions and accounts receivable. The Company's cash as of December 31, 2024 and December 31, 2023 is maintained at high-quality financial institutions and has not incurred any losses to date. Accounts are guaranteed by the Federal Deposit Insurance Corporation (FDIC) up to $250,000. At December 31, 2024, the Company had $2,956,082 (2023 - $20,439,762) in excess of FDIC limits.

Customer and Supplier Concentration

For the year ended December 31, 2024, three customers represented 32%, 13%, and 10% of the Company's revenues, and for the year ended December 31, 2023, three customers represented 28%, 23%, and 11% of the Company's revenues.

At December 31, 2024, three customers represented 32%, 26% and 9% of the Company's accounts receivable, and at December 31, 2023, four customers represented 32%, 27%, 10% and 8% of the Company's accounts receivable.

For the year ended December 31, 2024, two suppliers represented 51% and 35% of the Company's purchases. For the year ended December 31, 2023, 91% of the Company's purchases related to three suppliers. At December 31, 2024 and 2023, 68% and 68% of the Company's accounts payable and accrued expenses related to two vendors, respectively. The Company believes there are numerous other suppliers that could be substituted should a supplier become unavailable or non-competitive.

Contingencies

Certain conditions may exist which may result in a loss to the Company, but which will only be resolved when one or more future events occur or fail to occur. The Company's management and its legal counsel assess such contingent liabilities, and such assessment inherently involves an exercise of judgment. In assessing loss contingencies related to legal proceedings that are pending against the Company, or unasserted claims that may result in such proceedings, the Company's legal counsel evaluates the perceived merits of any legal proceedings or unasserted claims as well as the perceived merits of the amount of relief sought or expected to be sought therein.

If the assessment of a contingency indicates that it is probable that a material loss has been incurred and the amount of the liability can be estimated, the estimated liability would be accrued in the Company's consolidated financial statements. If the assessment indicates that a potentially material loss contingency is not probable but is reasonably possible, or is probable but cannot be estimated, the nature of the contingent liability, together with an estimate of the range of possible loss if determinable and material, would be disclosed.

Loss contingencies considered remote are generally not disclosed unless they arise from guarantees, in which case the guarantees would be disclosed.

Recently Issued Accounting Standards

Issued in June 2021, FASB Accounting Standards Update (ASU) No. 2016-13, *Measurement of Credit Losses on Financial Instruments* adds to U.S. GAAP an impairment model known as the current expected credit loss (CECL) model, which is based on expected losses rather than incurred losses. This guidance is effective for fiscal years beginning after December 15, 2022, including interim periods within those fiscal years. Early application of the amendments is permitted. Effective January 1, 2023, the Company adopted ASU No. 2016-13. The adoption of ASU No. 2016-13 did not have a material effect on the accompanying consolidated financial statements.

In November 2023, the FASB issued ASU No. 2023-07, *Segment Reporting (Topic 280): Improvements to Reportable Segment Disclosures*, which amends and enhances the disclosure requirements for reportable segments. All disclosure requirements under this standard will also be required for public entities with a single reportable segment. The new standard will be effective for the Company for fiscal years beginning after December 15, 2023, including interim periods within fiscal years beginning after December 15, 2024. The Company adopted ASU 2023-07 effective for its Annual Report on Form 10-K for the year ended December 31, 2024 and subsequent interim periods. Since ASU 2023-07 addresses only disclosures, the adoption of ASU 2023-07 did not have a significant impact on its consolidated financial statements.

In December 2023, the FASB issued ASU 2023-09, *Income Taxes (Topic 740): Improvements to Income Tax Disclosures*, which is intended to provide enhancements to annual income tax disclosures. The standard will require more detailed information in the rate reconciliation table and for income taxes paid, among other enhancements. The standard is effective for years beginning after December 15, 2024 and early adoption is permitted. The Company is evaluating this standard to determine if adoption will have a material impact on the Company's consolidated financial statements.

In November 2024, the FASB issued ASU No. 2024-03, *Income Statement – Reporting Comprehensive Income – Expense Disaggregation Disclosures (Subtopic 220-40): Disaggregation of Income Statement Expenses.* This ASU requires entities to disaggregate expense items in the notes to the financial statements and requires disclosure of specified information related to purchases of inventory, employee compensation, depreciation, and intangible asset amortization. The amendments in this ASU are effective for annual periods beginning after December 15, 2026, and interim periods beginning after December 15, 2027. Companies have the option to apply the guidance either on a retrospective or prospective basis, and early adoption is permitted. The Company is currently evaluating the impact of the ASU on its consolidated financial statements and related disclosures. In January 2025, the FASB issued ASU No. 2025-01, *Income Statement – Reporting Comprehensive Income – Expense Disaggregation Disclosures (Subtopic 220-40): Clarifying the Effective Date*. This ASU amends the effective date of ASU No. 2024-03 to clarify that all public business entities are required to adopt the guidance in annual reporting periods beginning after December 15, 2026, and interim periods within annual reporting periods beginning after December 15, 2027. Early adoption of ASU No. 2024-03 is permitted.

Note 5 - Inventory

Inventory was comprised of the following at December 31, 2024 and December 31, 2023:

	December 31, 2024	December 31, 2023
Raw Materials	$ 169,527	$ 200,496
Spare Parts	-	17,912
Finished Goods	452,286	576,756
	$ 621,813	$ 795,164

Note 6 - Property and Equipment, Net

Property and equipment at December 31, 2024 and December 31, 2023 are as follows:

	December 31, 2024	December 31, 2023
Equipment & installation	$ 1,096,979	$ 1,095,139
Leasehold improvements	117,512	101,821
Trucking equipment	911,377	845,102
Lab equipment	725,626	-
Office equipment, computer equipment and software	1,874	1,874
Total equipment	2,853,368	2,043,936
Less: accumulated depreciation	(2,047,680)	(2,035,978)
Construction in process	1,545,000	1,588,000
Property and equipment, net	$ 2,350,688	$ 1,595,958

The Company uses the straight-line method of depreciation over estimated useful lives of 2 to 5 years. During the year ended December 31, 2024 and 2023 depreciation expense was $11,702 and $12,927, respectively. At December 31, 2024, lab equipment included $725,626 of lab equipment not yet placed in service.

At December 31, 2024 and 2023, the Company concluded that Company's plant construction in process asset had become impaired based on the existing and anticipated future economic outlook. As a result, the Company impaired the asset to reduce the carrying value to fair value. Estimated fair value of the impaired long-lived asset is based on the estimated cost to replace the asset. As a result of the uncertain cash flows related to the Company's capitalized construction costs, the Company has recorded an impairment charge of $43,000 (2023 - $219,707).

Note 7 - Intellectual Property

License and patent costs capitalized as of December 31, 2024 and December 31, 2023 are as follows:

	December 31, 2024	December 31, 2023
Licenses and patents	$ 3,068,995	$ 3,068,995
Less: Accumulated amortization	(1,569,532)	(1,364,932)
Intellectual property, net	$ 1,499,463	$ 1,704,063

Amortization expense for the year ended December 31, 2024 and 2023 was $204,600 and $205,534, respectively. Estimated annual amortization for each of the next 5 years and thereafter is as follows:

Annual amortization for the years ended:	
December 31, 2025	$ 204,600
December 31, 2026	204,600
December 31, 2027	204,600
December 31, 2028	204,600
December 31, 2029	204,600
Thereafter	476,463
Total	$ 1,499,463

Note 8 - Related Party

Secured Note Payable

On November 29, 2016, pursuant to a restated financing agreement entered with AC Midwest Energy, LLC ("AC Midwest") on November 1, 2016, the Company closed on a secured note with AC Midwest (the "AC Midwest Secured Note"), which was to mature on December 15, 2018. AC Midwest is wholly-owned by a stockholder of the Company. The AC Midwest Secured Note is guaranteed by MES, is non-convertible and bears interest at a rate of 15.0% per annum, payable quarterly in arrears on or before the last day of each fiscal quarter. On February 25, 2019, per Amendment No. 3 to the Amended and Restated Financing Agreement, AC Midwest extended the maturity date from December 15, 2018 to August 25, 2022.

On October 28, 2022, the Company, along with MES, and AC Midwest, executed Amendment No. 4 to the Amended and Restated Financing Agreement pursuant to which the maturity date of the AC Midwest Secured Note was extended to August 25, 2025. In addition, the interest rate on the remaining principal balance was reduced from 15.0% to 9.0% per annum. The Company has accounted for the extension as debt extinguishment with a related party. As such the Company recorded a capital contribution of $54,983 for the year ended December 31, 2022 on this exchange which is related to the difference in fair value of the note on the date of the exchange.

On February 27, 2024, the Company paid AC Midwest $275,625 representing the remaining principal balance under the AC Midwest Secured Note of $271,686 plus interest of $3,939. As a result of the repayment of the remaining principal balance under the AC Midwest Secured Debt, the Company and AC Midwest executed a Satisfaction and Discharge of Secured Debt confirming the cancellation of the AC Midwest Secured Note.

As of December 31, 2024 and December 31, 2023, total principal of $0 and $271,686, respectively, was outstanding on this note. Interest expense for the years ended December 31, 2024 and 2023 was $4,279 and $43,955, respectively.

Amortized discount recorded as interest expense for the years ended December 31, 2024 and 2023 was $32,220 and $19,504, respectively. As of December 31, 2024 and 2023, the unamortized balance of the discount was $Nil and $32,220, respectively.

Unsecured Note Payable

The Company has the following unsecured note payable - related party outstanding as of December 31, 2024 and December 31, 2023:

	December 31, 2024	December 31, 2023
Unsecured note payable	$ 13,154,931	$ 13,154,931
Repayments	(12,314,895)	-
Less fair value adjustment on extinguishment, net of amortized discount of $1,965,984 and $1,547,536, respectively	(960,000)	(2,175,208)
Plus fair value adjustment	119,964	-
Total unsecured note payable	-	10,979,723
Less current portion	-	-
Unsecured note payable, net of current portion	$ -	$ 10,979,723

On November 29, 2016, pursuant to a restated financing agreement entered with AC Midwest on November 1, 2016, the Company closed on an unsecured note with AC Midwest (the “AC Midwest Subordinated Note”), which was to mature on December 15, 2020. On February 25, 2019, the Company, entered into an Unsecured Note Financing Agreement (the “Unsecured Note Financing Agreement”) with AC Midwest, pursuant to which AC Midwest issued an unsecured note in the principal amount of $ 13,154,931 (the “AC Midwest Unsecured Note”), which represented the outstanding principal and accrued and unpaid interest at closing. The AC Midwest Unsecured Note, which replaced the AC Midwest Subordinated Note, was scheduled to mature on August 25, 2022 and bear a zero cash interest rate.

The Company determined that the rate of interest on the AC Midwest Subordinated Note was a below market rate of interest and determined that a discount of $6,916,687 should be recorded. This discount was based on an applicable market rate for unsecured debt for the Company of 21% and is being amortized as interest expense over the life of the loan.

On August 30, 2022, AC Midwest agreed to an extension of the maturity date of the AC Midwest Unsecured Note (and AC Midwest Secured Note) from August 25, 2022 to September 30, 2022. Such extension was expected to provide the Company sufficient time in which to conclude the process of negotiating certain changes and modifications to such financing arrangements. On September 28, 2022, AC Midwest agreed to an additional short-term extension of such maturity date from September 30, 2022 to October 31, 2022. The Company has accounted for the extension as debt extinguishment with a related party. As such the Company recorded a capital contribution of $ 488,274 on this exchange which is related to the difference in fair value of the note on the date of the exchange.

On October 28, 2022, the Company, along with MES, and AC Midwest, executed Amendment No. 1 to Unsecured Note Financing Agreement pursuant to which the maturity date of the AC Midwest Unsecured Note was extended to August 25, 2025. In addition, the parties agreed that the Profit Share (see "Profit Share" below) be increased by $4,500,000 from $13,154,931 (representing 1.0 times the original principal amount) to $17,654,931. The Company has accounted for the extension as debt extinguishment with a related party. As such the Company recorded a capital contribution of $3,234,469 on this exchange which is related to the difference in fair value of the note on the date of the exchange.

On February 27, 2024, the Company entered into an Unsecured Debt Restructuring Agreement (the "Debt Restructuring Agreement") with AC Midwest which replaces and supersedes the Unsecured Note Financing Agreement. Pursuant to the Debt Restructuring Agreement, on February 27, 2024, the Company (i) paid AC Midwest $ 9,040,000 as a reduction in the outstanding principal balance of the AC Midwest Unsecured Note, and (ii) issued to AC Midwest a new unsecured replacement note representing the remaining outstanding principal balance of the Unsecured Note in the principal amount of $4,114,931 (the "New Note"). In addition, within 30 days, the Company would either facilitate the private sale to third parties of certain shares of common stock of the Company held by AC Midwest for a purchase price of no less than $960,000, which amount shall be applied as a credit against the principal balance due on the New Note dollar for dollar, or pay AC Midwest $960,000 toward the principal balance due on the New Note. The private sale of shares for the purchase price of $960,000 was completed on March 11, 2024. Any remaining principal balance on the New Note shall be due August 27, 2024 (the "New Note Maturity Date"), which is six months from February 27, 2024. Until repaid in full, the New Note shall accrue interest at a rate equal to SOFR plus 2.0% per annum. The New Note completely replaced and superseded the AC Midwest Unsecured Note, which shall be of no further force and effect.

On August 26 and 27, 2024, the Company repaid AC Midwest the remaining principal of $3,154,931 on the New Note together with accrued interest of $119,964. As a result, the only remaining debt obligation under the Debt Restructuring Agreement is the profit participation as described below.

The Company has accounted for the February 27, 2024 modification as debt extinguishment with a related party. As such the Company recorded a capital charge of $1,005,984 on this exchange which is related to the difference in fair value of the New Note on the date of the exchange. The New Note represented a hybrid instrument and the Company elected to apply fair value option accounting to the New Note. Cash flows of the hybrid instrument in its entirety are discounted at an appropriate rate for the applicable duration of the instrument. Interest on the interest-bearing portion of the instrument that is held to maturity is aggregated as loss on change in fair value of profit share and unsecured note in the consolidated statements of operations.

Amortized discount recorded as interest expense for the years ended December 31, 2024 and 2023 was $209,224 and $1,316,667, respectively. As of December 31, 2024 and 2023, the unamortized balance of the discount was $Nil and $2,175,208, respectively.

Profit Share

Pursuant to the Unsecured Note Financing Agreement, AC Midwest was also entitled to a "non-recourse" profit participation preference equal to 1.0 times the original principal amount of the AC Midwest Unsecured Note which on October 28, 2022 was increased to $17,654,931 (the "Profit Share"). Prior to maturity, the outstanding principal, as well as the Profit Share, were to be paid from Net Litigation Proceeds from claims relating to the Company's intellectual property, Net Revenue Share, Adjusted Free Cash Flow and Equity Offering Net Proceeds (as such terms are defined in the Unsecured Note Financing Agreement). Any remaining principal balance due on the Unsecured Note would be due and payable in full on the maturity date. The Profit Share, however, if not paid in full on or before the maturity date would remain subject to the Unsecured Note Financing Agreement until full and final payment.

Pursuant to the Debt Restructuring Agreement, AC Midwest was granted a profit participation preference equal to $7,900,000 (the "Restructured Profit Share") which replaces and supersedes the terms and conditions of the Profit Share in the amount of $17,654,931 provided for in the Unsecured Note Financing Agreement, which shall be of no further force and effect. The Restructured Profit Share is "non-recourse" and shall only be paid from Net Litigation Proceeds (as defined in the Debt Restructuring Agreement) from claims relating to the Company's intellectual property. Following the receipt of any Net Litigation Proceeds, the Company shall prepay any remaining principal balance of the New Note and pay the Restructured Profit Share in an amount equal to 75.0% of such Net Litigation Proceeds until the New Note and Restructured Profit Share have been paid in full. The Restructured Profit Share, if not paid in full on or before the New Note Maturity Date, shall remain subject to the terms of the Debt Restructuring Agreement.

In addition to facilitating the private sale to third parties as described above, AC Midwest granted the Company the exclusive right until December 31, 2024 to facilitate the sale of all or a portion of the remaining balance of the shares of common stock of the Company held by AC Midwest, which proceeds above a certain amount will be applied as a credit against the Restructured Profit Share dollar for dollar (the "Facilitation Credit"). As of December 31, 2024, the Company had not facilitated the sale of any portion of the remaining shares held by AC Midwest. As a result, no Facilitation Credit has been issued to the Company.

The Company has accounted for the February 27, 2024 modification as debt extinguishment with a related party. As such the Company recorded a capital contribution of $11,833,179 on this exchange which is related to the difference in fair value of the Restructured Profit Share on the date of the exchange.

The Company is utilizing the methodology behind the ASC 815, *Derivatives and Hedging* and ASC 480, *Distinguishing Liabilities from Equity* to determine how to account for the profit-sharing portion of the note payable. Although the transaction is not indexed to MEEC's common stock the profit sharing has the characteristics of a freestanding financial instrument because the profit sharing is not callable by the lender, it will be paid out past the maturity of the Unsecured Note Payable and, the fair value will fluctuate over time based on payment predictions. The Profit Share was determined to have a fair value of $3,389,043 upon grant. The fair value of the Profit Share upon grant included $3,422,400 attributed to the Facilitation Credit which reduced the fair value of the Profit Share liability. At December 31, 2024, the Facilitation Credit had expired and the fair value attributed to the feature was $0. This increased the fair value of the Profit Share at December 31, 2024, and increased the loss on change in fair value of the profit share recorded during the year ended December 31, 2024 by $3,422,400. The discounted cash flow model assumptions used at December 31, 2024 to calculate the Profit Share liability included: the projected full repayment of the profit share liability of $7,900,000 upon the receipt of Net Litigation Proceeds in 2025, and an annual market interest rate of 14.55%. The discounted cash flow model assumptions used at December 31, 2023 to calculate the Profit Share liability included: the projected full repayment of the profit share liability of $17,654,931 upon the receipt of Net Litigation Proceeds in 2025, and an annual market interest rate of 14.55%. The profit share liability will be marked to market every quarter utilizing management's estimates.

The following are the changes in the profit share liability (the only Level 3 financial instrument) during the years ended December 31, 2024 and 2023:

Profit Share as of January 1, 2023	$	3,638,260
Addition		-
Loss on change in fair value of profit share		11,209,677
Profit Share as of December 31, 2023	$	14,847,937
Profit Share as of January 1, 2024	$	14,847,937
Modification		(11,833,179)
Loss on change in fair value of profit share		3,839,100
Profit Share as of December 31, 2024	$	6,853,858

Related Party Transactions

Kaye Cooper Kay & Rosenberg, LLP provides certain legal services to the Company and was paid $431,444 and $393,111 for the years ended December 31, 2024 and 2023, respectively, for legal services rendered and disbursement incurred. David M. Kaye, a Director of the Company, is a partner of the law firm. At December 31, 2024 and December 31, 2023, $37,500 and $33,333, respectively, was owed to the firm for services rendered.

On January 31, 2023, the Company entered into a License and Supply Agreement with Dakin Holdings Ltd., a company incorporated in Barbados ("Dakin"), effective as of January 1, 2023 (the "Dakin Agreement"), pursuant to which Dakin has granted to the Company (i) a limited license to manufacture and produce for Dakin products comprising certain intellectual property owned by Dakin (the "Dakin IP"), and (ii) an exclusive license to commercialize the Dakin IP in the United States. In addition, the Company shall pay Dakin a license fee of $12,500 per month for a three-year period commencing as of the effective date and ending December 31, 2025, and pay Dakin a royalty on all sales in the United States of the products comprising the Dakin IP made by the Company. On November 18, 2024, the parties entered into an amendment to the Dakin Agreement which eliminated all further monthly license fees after September 30, 2024. Dakin is a company owned and controlled by the Company's Chief Executive Officer and President. The Dakin Agreement is for a term of ten years unless terminated earlier under certain circumstances as set forth therein. For the years ended December 31, 2024 and 2023, Dakin incurred $112,500 and $150,000 license fees. At December 31, 2024 and 2023, $Nil and $25,000 was owed to Dakin for license fees.

On May 28, 2024, the Company entered into an Administrative Services Agreement with Greenberg Enterprises, LLC ("Greenberg Enterprises"), pursuant to which Greenberg Enterprises will be paid for certain administrative support provided to the Company since January 1, 2024 and administrative support to be provided in the future to the Company including but not limited to general office and technical support, project management and support, and vendor relations support. Such agreement was terminated effective in December 2024. During the year ended December 31, 2024, Greenberg Enterprises provided $237,020 for administrative services and $335,100 for expense reimbursement. At December 31, 2024, $Nil was owed to Greenberg Enterprises pursuant to the agreement. Greenberg Enterprises is a company owned and controlled by Christopher Greenberg, Chairman of the Board of the Company.

Note 9 - Operating Leases

On July 1, 2015, the Company entered into a five-year lease for warehouse space in Corsicana, Texas. The Company is also responsible for the pro rata share of the projected monthly expenses for the property taxes. The current pro rata share is $882. On June 1, 2019, the lease was extended to March 31, 2024, and on March 28, 2024, the lease was further extended for an additional five years from March 31, 2024 to March 31, 2029. Rent is $3,750 monthly until March 31, 2026 and then $3,866 per month until March 31, 2029. The Company recorded a right of use asset and an operating lease liability of $161,728. This amount represents the difference between the value from the remaining lease and the extended lease.

On August 1, 2024, the Company entered into a 3-year lease for laboratory space in Grand Forks, North Dakota. The lease contains an option to extend for a further three years that the Company is reasonably certain to exercise. As a result, the additional three year extension is included as part of the least term. Rent is $1,400 monthly until July 31, 2027, and then effectively $1,540 per month until July 31, 2030. Upon commencement of the lease the Company recorded a right of use asset and an operating lease liability of $69,615.

On November 22, 2024, the Company entered into an approximate 3-year lease for laboratory space in State College, Pennsylvania, commencing December 15, 2024 and ending November 30, 2027. The lease contains an option to extend for a further three years that the Company is reasonably certain to exercise. As a result, the additional three year extension is included as part of the lease term. Rent is $1,800 monthly until November 30, 2025, $1,860 monthly thereafter until November 30, 2026, and $1,920 monthly thereafter until November 30, 2027. During the option period, rent is $1,980 monthly from December 1, 2027 to November 30, 2028, $2,040 monthly thereafter through November 30, 2029, and $2,100 monthly thereafter through November 30, 2030. Upon commencement of the lease the Company recorded a right of use asset and an operating lease liability of $94,942.

For the years ended December 31, 2024 and 2023, the Company recorded an operating lease right of use asset and liabilities as follows:

	December 31, 2024	December 31, 2023
Right of use asset - operating lease	$ 305,142	$ 10,639
Current portion of operating lease liability	42,733	11,157
Operating lease liability	306,233	-

Future remaining minimum lease payments under these non-cancelable leases are as follows:

For the twelve months ended December 31,	
2025	$ 83,460
2026	85,224
2027	86,992
2028	88,692
2029	54,618
Thereafter	33,880
Total	432,866
Less discount	(126,643)
Total lease liabilities	306,223
Less current portion	(42,733)
Operating lease obligation, net of current portion	$ 263,490

The weighted average remaining lease term for operating leases is 5.2 years and the weighted average discount rate used in calculating the operating lease asset and liability is 14.55%. For the years ended December 31, 2024 and 2023, payments on lease obligations were $52,871 and $45,000, respectively, and amortization on the right of use assets was $31,782 and $40,924, respectively.

For the years ended December 31, 2024 and 2023, the Company's lease cost consists of the following components, each of which is included in costs and expenses within the Company's consolidated statements of operations:

	December 31, 2024	December 31, 2023
Operating lease costs	$ 53,595	$ 45,310

Note 10 - Commitments and Contingencies

Fixed Price Contract

The Company's multi-year contracts with its commercial customers contain fixed prices for product. These contracts expire between 2023 and 2025 and expose the Company to the potential risks associated with rising material costs during that same period.

Legal proceedings

On July 17, 2019, the Company initiated patent litigation against certain defendants in the U.S. District Court for the District of Delaware for infringement of certain United States patents owned by the Company. These patents relate to the Company's two-part Sorbent Enhancement Additive (SEA®) process for mercury removal from coal-fired power plants. Named as defendants in the lawsuit were (i) Vistra Energy Corp., AEP Generation Resources Inc., NRG Energy, Inc., Talen Energy Corporation, and certain of their respective affiliated entities, all of which are owners and/or operators of coal-fired power plants in the United States, and (ii) Arthur J. Gallagher & Co., DTE REF Holdings, LLC, CERT Coal Holdings LLC, Chem-Mod LLC, and certain of their respective affiliated entities, and additional named and unnamed defendants, all of which operate or are involved in operations of coal facilities in the United States. In the lawsuit, the Company alleges that each of the defendants has willfully infringed certain of the Company's patents and seeks unspecified damages, attorneys' fees, costs and injunctive relief.

During 2020, each of the four major utility defendants in the above action filed petitions for Inter Partes Review with the United States Patent and Trademark Office, seeking to invalidate certain claims to the patents which are subject to the litigation. Between July 2020 and January 2021, we entered into agreements with each of the four major utility defendants in such action which included certain monetary arrangements and pursuant to which we have dismissed all claims brought against each of them and their affiliates, and such parties have withdrawn from petitions for Inter Partes Review with the United States Patent and Trademark Office. Such agreements entered into with such parties provide each of them and their affiliates with a non-exclusive license to certain Company patents (related to the Company's two-part Sorbent Enhancement Additive (SEA®) process) for use in connection with such parties' coal-fired power plants.

Subsequently, and as a result of certain rulings by the Court, certain defendants were dismissed in the action, certain defendants were added and certain originally named defendants remained in the action. A jury trial was scheduled for November 13, 2023.

On November 9, 2023, the Company entered into a confidential binding term sheet with Arthur J. Gallagher & Co., and various of its affiliated entities (collectively "AJG"), and DTE Energy Resources LLC and various of its affiliated entities (collectively "DTE"), to resolve the patent litigation. Pursuant to the term sheet, all claims and counterclaims asserted by the parties in such patent litigation have been dismissed with prejudice, although such term sheet does not affect any other claim brought against the remaining CERT defendants. The financial aspects of the term sheet remain confidential pursuant to its terms.

In addition, effective November 9, 2023, Alistar Enterprises, LLC ("Alistar"), one of the remaining CERT defendants, entered into a settlement agreement with the Company which provided that all claims and counterclaims asserted in the action between the Company and Alistar be dismissed with prejudice. The financial terms of such settlement remain confidential.

Effective as of December 28, 2023, and in connection with the term sheet described above, the Company, along with its wholly-owned subsidiary, MES, Inc., and (a) Chem-Mod LLC ("Chem-Mod"), (b) Arthur J. Gallagher & Co. and AJG Coal, LLC, and (c) DTE Energy Co. and DTE Energy Resources, LLC, entered into a paid license of U.S. Patent No. 8,168,147, U.S. Patent No. 10,343,114, U.S. Patent No. 10,589,225, U.S. Patent No. 10,596,517 and U.S. Patent No. 10,668,430 and their foreign equivalents and related patent applications and patents, which licenses the use of refined coal or the Chem-Mod Solution in conjunction with activated carbon. This license applies to Chem-Mod and certain of its licensees, sub-licensees, and their customers, for the remaining term of such patents. By its terms, the license does not cover the use of activated carbon with coal that is not either refined coal or coal made by or for use with the Chem-Mod Solution in a manner authorized by the license. The parties to the license have mutually released all claims that any past use of the Chem-Mod Solution in connection with the production or use of refined coal with activated carbon by entities other than the CERT defendants and their customers infringes the asserted patents and related intellectual property, and all claims that could have been brought challenging the validity of such patents.

The remaining CERT defendants and their customers (for activities relating to the CERT defendants) are not included within the scope of the license. The Court rescheduled the trial as to the claims against the remaining CERT defendants to begin on February 26, 2024.

Following a five-day trial, on March 1, 2024, a federal jury in the U.S. District Court for the District of Delaware awarded a $57.1 million patent infringement verdict in favor of the Company against the remaining group of CERT defendants. Such group of affiliated defendants included multiple limited liability companies with refined coal industry operations, including CERT Operations II LLC, CERT Operations IV LLC, CERT Operations V LLC, and CERT Operations RCB LLC. The jury determined that these defendants infringed our patented technologies for mercury emissions and were liable for willful infringement, along with inducing and contributory infringement. Following the trial, various post-trial motions and applications were made by the parties. We are awaiting rulings from the Court.

In July 2024, the Company commenced three patent infringement lawsuits against multiple defendants, including coal-fired power utilities, in three separate U.S. District Courts in Arizona, Iowa and Missouri. Such lawsuits claim infringement of the Company's patent rights related to the Company's mercury emissions reduction technologies. Named as defendants in the action filed in the U.S. District Court for the District of Arizona are Tucson Electric Power Co., San Carlos Resources, Inc., Salt River Project Agricultural Improvement and Power District, Tri-State Generation and Transmission Association, Inc., Springerville Unit 3 Holding LLC, and Springerville Unit 3 Partnership LP. Named as defendants in the action filed in the U.S. District Court for the Southern District of Iowa are Berkshire Hathaway Energy Company, MidAmerican Energy Company, PacifiCorp, Alliant Energy Corporation, Interstate Power and Light Company, and Wisconsin Power and Light Company, and named as defendants in the action filed in the U.S. District Court for the Eastern District of Missouri are Ameren Corp. and Union Electric Co. In each lawsuit, the Company requests a trial by jury against the defendants and seeks damages, costs, and legal expenses, along with a finding of willful infringement by the defendants, and an injunction prohibiting the defendants from further acts of infringement.

Effective as of October 8, 2024, the Company entered into agreement with one of the utilities and an affiliated entity named as defendants in the patent infringement lawsuit commenced by the Company in July 2024 in the U.S. District Court in Arizona (the "Arizona Action"). Such agreement provides such parties and their affiliates with a non-exclusive license to certain Company patents related to the Company's two-part Sorbent Enhancement Additive (SEA®) process for use in connection with a certain designated coal-fired power plant operated by such utility. The agreement includes a one-time license fee which has been received by the Company, and provides the Company with a right of first refusal for certain of such utility's product supply for mercury emissions capture at such designated power plant. Such lawsuit will continue against the other non-affiliated defendants named in the Arizona Action.

On December 17, 2024, a United States Judicial Panel on Multidistrict Litigation ordered that the above three patent infringement lawsuits be consolidated and centralized in the Southern District of Iowa for coordinated or consolidated pretrial proceedings (the "Transfer Order").

See “Note 16 – Subsequent Events” for information on an agreement entered into with another party named as a defendant in the Arizona Action, along with information of the commencement of additional patent litigation and filing of petitions for Inter Partes Review with the United States Patent and Trademark Office.

Except for the foregoing disclosures, the Company is not presently aware of any other material pending legal proceedings to which the Company is a party or of which any of its property is the subject.

Litigation, including patent litigation, is inherently subject to uncertainties. As such, there can be no assurance that the Company will be successful in litigating and/or settling any of these claims. The Company expenses legal costs relating to patent litigation as incurred.

Note 11 - Stock Based Compensation

Stock Based Compensation

The Company accounts for stock-based compensation awards in accordance with the provisions of ASC 718, which addresses the accounting for employee stock options which requires that the cost of all employee stock options, as well as other equity-based compensation arrangements, be reflected in the unaudited condensed consolidated financial statements over the vesting period based on the estimated fair value of the awards.

Stock based compensation consists of the amortization of common stock, stock options, restricted share units and warrants issued to employees, directors and consultants. For the years ended December 31, 2024 and 2023, stock-based compensation expense amounted to $1,088,922 and $520,449, respectively. Such expense is classified in selling, general and administrative expenses.

On July 3, 2023, the Board of Directors of the Company approved and adopted the Company’s Amended and Restated 2014 Equity Incentive Plan (the “2014 Plan”) and the Company’s Amended and Restated 2017 Equity Incentive Plan (the “2017 Plan”) which amended the Company’s previously adopted 2014 Equity Incentive Plan and 2017 Equity Incentive Plans. Such amendments were made in accordance with the requirements of the TSX Venture Exchange. The 2014 Equity Incentive Plan was first approved by the Board on January 10, 2014. The 2017 Equity Incentive Plan replaced the 2014 Equity Incentive Plan, which was terminated by the Board on April 28, 2017. As a result of such termination, no additional awards may be granted under the 2014 Equity Incentive Plan but previously granted awards shall remain outstanding in accordance with their terms and conditions. The 2017 Plan was adopted by the Board on February 9, 2017. As amended by the Board on July 3, 2023, the maximum number of shares of common stock that may be issued under the 2017 Plan after July 3, 2023 is 14,078,459, and to the extent any award (or portion thereof) outstanding under the 2014 Plan expires, terminates or is cancelled, surrendered or forfeited for any reason on or after July 3, 2023, the shares of common stock subject to such award (or portion thereof) shall be added to and increase the foregoing limit, to a maximum of 4,775,000 additional shares of common stock. (On July 3, 2023, there were 4,775,000 options and no other types of awards outstanding under the 2014 Plan.) On October 29, 2024, the Board approved certain non-material amendments to the 2014 Plan and 2017 Plan which amendments were made in connection with the listing of the Company’s shares on the Toronto Stock Exchange (“TSX”) and graduation from the TSX Venture Exchange to the TSX. As of December 31, 2024, there were 5,741,306 shares remaining available for issuance under the 2017 Plan.

Common Stock

On November 8, 2022, the Company issued a total of 3,000,000 shares of common stock to the Chief Executive Officer. These shares of common stock were valued at $960,000 in accordance with FASB ASC Topic 718. The fair value of the shares will be amortized as an expense over the vesting period. The shares became fully vested on November 8, 2024. The expense for the years ended December 31, 2024 and 2023 was $402,666 and $486,667, respectively.

Stock Options

On February 1, 2023, the Company issued (i) 850,000 shares of common stock to the Company’s Chairman of the Board upon a cash exercise of options to purchase an aggregate of 850,000 shares of common stock at exercise prices ranging from $0.19 to $0.27 per share or $209,500 in the aggregate, (ii) 110,000 shares of common stock to the Company’s Chief Executive Officer upon a cashless exercise of an option to purchase 250,000 shares of common stock at an exercise price of $0.28 per share based upon a market price of $0.50 per share as determined under the terms of the option, and (iii) 155,000 shares of common stock to a director of the Company upon a cashless exercise of an option to purchase 250,000 shares of common stock at an exercise price of $0.19 per share based upon a market price of $0.50 per share as determined under the terms of the option.

On February 20, 2023, the Company issued 17,858 shares of common stock to the Company's Senior Vice President and Chief Technology Officer upon a cashless exercise of an option to purchase 50,000 shares of common stock at an exercise price of $0.27 per share based upon a market price of $0.42 per share as determined under the terms of the option.

Between February 21, 2023 and February 23, 2023, the Company issued an aggregate of 29,022 shares of common stock to three employees and one former employee upon a cashless exercise of options to purchase an aggregate of 80,000 shares of common stock at an exercise price of $0.27 per share based upon market prices ranging from $0.42 to $0.43 per share as determined under the terms of the options.

On March 8, 2023, and pursuant to an advisor agreement dated March 1, 2023 with a nonaffiliated third party, the Company granted a nonqualified stock option under the 2017 Equity Incentive Plan to such third party to acquire 125,000 shares of the Company's common stock at an exercise price of $0.40 per share, representing the fair market value of the common stock on the date of grant as determined under the 2017 Equity Incentive Plan. Fifty percent of the option shall vest and become exercisable on September 1, 2023, and the remaining fifty percent shall vest and become exercisable on March 1, 2024. The option will expire five years after the date of grant. Based on a Black-Scholes valuation model, these options were valued at $30,933, in accordance with FASB ASC Topic 718. The fair value of the shares was being amortized to selling, general and administrative expenses within the Company's consolidated statements of operations over twelve months. The valuation assumptions included an expected duration of 2.9 years, volatility of 98%, discount rate of 4.71% and dividends of $0. On September 30, 2023, the advisor agreement was terminated resulting in 50.0% of the option remaining unvested and unexercisable.

On April 4, 2023, and pursuant to a consulting agreement effective April 1, 2023 with a nonaffiliated third party, the Company granted a nonqualified stock option under the 2017 Equity Incentive Plan to such third party to acquire 250,000 shares of the Company's common stock at an exercise price of $0.39 per share, representing the fair market value of the common stock on the date of grant as determined under the 2017 Equity Incentive Plan. Fifty percent of the option shall vest and become exercisable on October 1, 2023 and the remaining fifty percent shall vest and become exercisable on April 1, 2024. The option will expire five years after the date of grant. Based on a Black-Scholes valuation model, these options were valued at $59,690, in accordance with FASB ASC Topic 718. The fair value of the shares was being amortized to selling, general and administrative expenses within the Company's consolidated statements of operations over twelve months. The valuation assumptions included an expected duration of 2.9 years, volatility of 98%, discount rate of 3.60% and dividends of $0. On August 28, 2023, the consulting agreement was terminated resulting in the option remaining unvested and being deemed terminated.

On May 26, 2023, a new director was appointed to the Board of Directors and was granted a nonqualified stock option to acquire 125,000 shares of the Company's common stock exercisable at $0.41 per share. Fifty percent of the option shall vest and become exercisable on November 26, 2023, and the remaining fifty percent shall vest and become exercisable on May 26, 2024. The option will expire five years after the date of grant. Based on a Black-Scholes valuation model, these options were valued at $30,527, in accordance with FASB ASC Topic 718. The fair value of the shares is being amortized to selling, general and administrative expenses within the Company's consolidated statements of operations over twelve months. During the years ended December 31, 2024 and 2023, the Company recognized $12,211 and $18,316, respectively, of stock-based compensation. The valuation assumptions included an expected duration of 2.88 years, volatility of 97%, discount rate of 4.23% and dividends of $0.

On June 5, 2023, the Company issued 1,629 shares of common stock to the Company's Senior Vice President and Chief Technology Officer upon a cashless exercise of an option to purchase 6,875 shares of common stock at an exercise price of $0.29 per share based upon a market price of $0.38 per share as determined under the terms of the options.

On June 6, 2023, the Company issued an aggregate of 3,426 shares of common stock to an employee upon a cashless exercise of options to purchase an aggregate of 7,655 shares of common stock at exercise prices ranging from $0.17 to $0.29 per share based upon a market price of $0.38 per share as determined under the terms of the options.

On June 7, 2023, the Company issued 1,352 shares of common stock to a director upon a cashless exercise of an option to purchase 6,250 shares of common stock at an exercise price of $0.29 per share based upon a market price of $0.37 per share as determined under the terms of the options.

On June 28, 2023, the Company issued (i) 5,213 shares of common stock to the Company's Chief Executive Officer upon a cashless exercise of options to purchase an aggregate of 24,687 shares of common stock at exercise prices ranging from $0.21 to $0.29 per share based upon a market price of $0.30 per shares as determined under the terms of the options, (ii) 4,125 shares of common stock to the Company's Senior Vice President and Chief Technology Officer upon a cashless exercise of an option to purchase 13,750 shares of common stock at an exercise price of $0.21 per share based upon a market price of $0.30 per share as determined under the terms of the option, and (iii) 1,875 shares of common stock to a director upon a cashless exercise of an option to purchase 6,250 shares of common stock at an exercise price of $0.21 per share based upon a market price of $0.30 per share as determined under the terms of the options.

On July 28, 2023, the Company issued (i) 8,007 shares of common stock to the Company's Chief Executive Officer upon a cashless exercise of an option to purchase 16,458 shares of common stock, (ii) 6,690 shares of common stock to the Company's Senior Vice President and Chief Technology Officer upon a cashless exercise of an option to purchase 13,750 shares of common stock, and (iii) 3,041 shares of common stock to a director upon a cashless exercise of an option to purchase 6,250 shares of common stock. All of such options had an exercise price of $0.17 per share and such share issuances were based upon a volume weighted average price ("VWAP") of $0.3311 per share as determined under the terms of the options.

On September 29, 2023, the Company issued (i) 5,555 shares of common stock to the Company's Chief Executive Officer upon a cashless exercise of an option to purchase 16,458 shares of common stock, (ii) 4,641 shares of common stock to the Company's Senior Vice President and Chief Technology Officer upon a cashless exercise of an option to purchase 13,750 shares of common stock, (iii) 2,109 shares of common stock to a director upon a cashless exercise of an option to purchase 6,250 shares of common stock, and (iv) 1,033 shares of common stock to an employee upon a cashless exercise of an option to purchase 3,062 shares of common stock. All of such options had an exercise price of $0.26 per share and such share issuances were based upon a VWAP of $0.3925 per share as determined under the terms of the options.

On October 30, 2023, the Company issued 1,450 shares of common stock to an employee upon a cashless exercise of an option to purchase 3,062 shares of common stock at any exercise price of $0.20 per share based upon a VWAP of $0.3799 per share as determined under the term of the options.

On October 31, 2023, the Company issued (i) 8,346 shares of common stock to the Company's Chief Executive Officer upon a cashless exercise of an option to purchase 16,458 shares of common stock, (ii) 6,973 shares of common stock to the Company's Senior Vice President and Chief Technology Officer upon a cashless exercise of an option to purchase 13,750 shares of common stock, and (iii) 3,169 shares of common stock to a director upon a cashless exercise of an option to purchase 6,250 shares of common stock. All of such options had an exercise price of $0.20 per share and such share issuances were based upon a VWAP of $0.4058 per share as determined under the terms of the options.

On November 29, 2023, the Company issued 2,001 shares of common stock to an employee upon a cashless exercise of an option to purchase 3,062 shares of common stock at an exercise price of $0.33 per share based upon a VWAP of $0.9527 per share as determined under the term of the options.

On November 30, 2023, the Company issued (i) 9,104 shares of common stock to the Company's Senior Vice President and Chief Technology Officer upon a cashless exercise of an option to purchase 13,750 shares of common stock at an exercise price of $0.33 per share, (ii) 4,138 shares of common stock to a director upon a cashless exercise of an option to purchase 6,250 shares of common stock at an exercise price of $0.33 per share, and (iii) 9,400 shares of common stock to a former employee upon a cashless exercise of options to purchase a total of 18,750 shares of common stock, with exercises prices of ranging from $0.25 to $0.33 per share. All of such share issuances were based upon a VWAP of $0.9768 per share as determined under the terms of the options.

On December 11, 2023, the Company issued (i) 10,278 shares of common stock to the Company's Senior Vice President and Chief Technology Officer upon a cashless exercise of an option to purchase 13,750 shares of common stock, and (ii) 4,672 shares of common stock to a director upon a cashless exercise of an option to purchase 6,250 shares of common stock. All of such options had an exercise price of 0.25 per share and such share issuances were based upon a VWAP of $0.9902 per share as determined under the terms of the options.

On December 13, 2023, the Company issued 2,204 shares of common stock to an employee upon a cashless exercise of an option to purchase 3,062 shares of common stock at an exercise price of $0.25 per share based upon a VWAP of $0.8931 per share as determined under the term of the options.

On January 15, 2024, the Company granted nonqualified stock options to certain directors, executive officers and employees to acquire an aggregate of 1,000,000 shares of the Company's common stock under the 2017 Plan. The options granted are exercisable at $0.88 per share, representing the fair market value of the common stock on the date of grant as determined under the 2017 Plan. The options are fully vested and exercisable as of the date of grant and will expire five years thereafter. Based on a Black-Scholes valuation model, these options were valued at $632,214, in accordance with FASB ASC Topic 718, which was expensed on the issuance date in selling, general and administrative expenses within the Company's consolidated statements of operations. The valuation assumptions included an expected duration of 5 years, volatility of 93%, discount rate of 3.84% and dividends of $0.

On February 27, 2024, the Company issued 9,285 shares of common stock to a former employee upon a cashless exercise of an option to purchase 18,750 shares of common stock covered by an option to purchase a total of 100,000 shares of common stock, with an exercise price of $0.27 per share. Such share issuance was based upon a VWAP of $0.9230 per share as determined under the terms of the option.

On June 24, 2024, the Company issued (i) 886,456 shares of common stock to the Company's Chief Executive Officer upon a cashless exercise of an option to purchase 1,500,000 shares of common stock at an exercise price of $0.27 per share, and (ii) 672,867 shares of common stock to the Company's Senior Vice President and Chief Technology Officer upon a cashless exercise of options to purchase an aggregate of 1,600,000 shares of common stock at exercise prices ranging from $0.27 to $0.45 per share. Such share issuances were based upon a VWAP of $0.6601 per share as determined under the terms of the options.

On June 28, 2024, the Company issued (i) 46,409 shares of common stock to an employee upon a cashless exercise of options to purchase an aggregate of 300,000 shares of common stock at exercise prices ranging from $0.27 to $0.61 per share, (ii) 44,065 shares of common stock to an employee upon a cashless exercise of an option to purchase 75,000 shares of common stock covered by an option to purchase a total of 100,000 shares of common stock with an exercise price of $0.27 per share, and (iii) 15,000 shares of common stock to a former employee upon a cashless exercise of an option to purchase 25,531 shares of common stock covered by an option to purchase a total of 500,000 shares of common stock with an exercise price of $0.27 per share. Such share issuances were based upon a VWAP of $0.6546 per share as determined under the terms of the options.

On August 3, 2024, the Company issued 32,112 shares of common stock to a former consultant upon a cashless exercise of an option to purchase 62,500 shares of common stock, with an exercise price of $0.40 per share. Such share issuance was based upon a VWAP of $0.8227 per share as determined under the terms of the option.

A summary of stock option activity is presented below:

	Number of Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life (years)	Aggregate Intrinsic Value
December 31, 2023	17,037,500	$ 0.53	1.47	6,970,750
Grants	1,000,000	0.88		
Expirations	(5,155,719)	0.64		
Exercised	(3,581,781)	0.35		
December 31, 2024	9,300,000	$ 0.58	1.75	12,500
Options exercisable at:				
December 31, 2024	9,300,000	0.58	1.75	12,500

The aggregate intrinsic value in the table above represents the total intrinsic value, based on the Company's closing stock price of $0.51 as of December 31, 2024 (the last trading day of the month of December 2024), which would have been received by the option holders had all option holders exercised their options as of that date.

Stock options exercised during the year ended December 31, 2024 include none that were exercised for cash and 3,581,781 which were a cashless exercise.

Restricted Share Units

On January 15, 2024, the Company granted 50,000 restricted share units ("RSUs") to a director pursuant to the 2017 Plan. The RSUs will vest one year from the date of grant on January 15, 2025. Once vested, each RSU represents the right to receive one share of the Company's common stock. These shares of common stock were valued at $43,500 in accordance with FASB ASC Topic 718. The fair value of the shares will be amortized as an expense over the vesting period. The shares become fully vested on January 15, 2025. The expense for the year ended December 31, 2024 was $41,832.

Note 12 - Warrants

The Company utilized a Black-Scholes options pricing model to value warrants at the issuance date. This model requires the input of highly subjective assumptions such as the expected stock price volatility and the expected period until the warrants are exercised. When calculating the value of warrants issued, the Company uses a volatility factor, a risk-free interest rate and the life of the warrant for the exercise period.

No warrants were issued during the years ended December 31, 2024 and 2023. The following warrants were exercised during the years ended December 31, 2024 and 2023:

On June 17, 2024, the Company issued an aggregate of 16,665 shares of common stock to certain warrant holders upon the cashless exercise of warrants to purchase an aggregate of 600,000 shares of common stock at an exercise price of $0.70 per share based upon a market value of $0.72 per share as determined under the terms of the warrants.

On June 18, 2024, the Company issued 3,521 shares of common stock to a certain warrant holder upon the cashless exercise of a warrant to purchase 250,000 shares of common stock at an exercise price of $0.70 per share based upon a market value of $0.71 per share as determined under the terms of the warrant.

On August 5, 2024, the Company issued 66,666 shares of common stock to a certain warrant holder upon the cashless exercise of a warrant to purchase 400,000 shares of common stock at an exercise price of $0.70 per share based upon a market value of $0.84 per share as determined under the terms of the warrant.

On August 22, 2024, the Company issued 25,000 shares of common stock to a certain warrant holder upon a cash exercise of a warrant to purchase 25,000 shares of common stock at an exercise price of $0.70 per share or $17,500 in the aggregate.

The following is a summary of the Company's warrant activity:

	Number of Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life (years)	Aggregate Intrinsic Value
December 31, 2023	2,550,000	$ 0.70	0.60	$ -
Grants	-	-	-	-
Expirations	(1,275,000)	0.70	-	-
Exercised	(1,275,000)	0.70	-	-
December 31, 2024	-	$ -	-	$ -
Warrants exercisable at:				
December 31, 2024	-	$ -	-	$ -

The following table summarizes information about common stock warrants outstanding at December 31, 2024:

Outstanding and Exercisable			
Exercise Price	Number Outstanding	Weighted Average Remaining Contractual Life (years)	Weighted Average Exercise Price
$ -	-	-	$ -

Note 13 – Taxes

Below is breakdown of the income tax provisions for the years ended December 31:

	2024	2023
Federal		
Current	$ -	$ -
Deferred	-	-
State and local		
Current	(303,321)	473,000
Deferred	-	-
Income tax provision	$ (303,321)	$ 473,000

The expected tax expense (benefit) based on the statutory rate is reconciled with actual tax expense (benefit) as follows:

	For the Year Ended December 31, 2024	For the Year Ended December 31, 2023
U.S. federal statutory rate	21.0%	21.0%
State taxes	1.9%	9.8%
Deferred tax asset adjustments	(11.5)%	4.3%
Non-deductible amortization of debt discount	(0.4)%	-%
Other non-deductible items	(0.1)%	1.9%
Non-taxable change in profit share liability	(8.6)%	41.7%
Change in valuation allowance	(0.3)%	(70.3)%
Income tax provision	2.6%	8.4%

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. Significant components of the Company's deferred tax assets and liabilities are as follows at December 31:

	2024	2023
Deferred tax assets:		
Net operating loss carryforwards	$ 3,595,000	$ 2,751,000
Stock based compensation	799,000	1,517,000
Other	152,000	186,000
Total deferred tax assets	4,546,000	4,454,000
Deferred tax liability:		
IRC Section 481(a) adjustment	(125,000)	-
Valuation Allowance	(4,421,000)	(4,454,000)
Net deferred tax asset	$ -	$ -

As of December 31, 2024, the Company has U.S. federal net operating loss carryovers ("NOLs") of approximately $16,632,000 available to offset taxable net income in a given year of which $3,769,000 expires from 2035 through 2037 and $12,863,000 does not expire. The Company also has state NOL carryforwards of approximately $2,306,000 which start to expire in 2025. If not used, these NOLs may be subject to limitation under Internal Revenue Code Section 382 should there be a greater than 50% ownership change as determined under the regulations.

In assessing the realization of deferred tax assets, management considers whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon future generation for taxable income during the periods in which temporary differences representing net future deductible amounts become deductible. Management considers the scheduled reversal of deferred tax liabilities, projected future taxable income and tax planning strategies in making this assessment. After consideration of all the information available, Management believes that significant uncertainty exists with respect to future realization of the deferred tax assets and has therefore established a full valuation allowance. For the years ended December 31, 2024 and 2023, the valuation allowance (decreased) by ($33,000) and $(3,973,000), respectively.

The Company evaluated the provisions of ASC 740-10 related to the accounting for uncertainty in income taxes recognized in an enterprise's financial statements. ASC 740-10 prescribes a comprehensive model for how a company should recognize, present, and disclose uncertain positions that the Company has taken or expects to take in its tax return. For those benefits to be recognized, a tax position must be more-likely-than-not to be sustained upon examination by taxing authorities. Differences between tax positions taken or expected to be taken in a tax return and the net benefit recognized and measured pursuant to the interpretation are referred to as "unrecognized benefits." A liability is recognized (or amount of net operating loss carry forward or amount of tax refundable is reduced) for unrecognized tax benefit because it represents an enterprise's potential future obligation to the taxing authority for a tax position that was not recognized as a result of applying the provisions of ASC 740-10.

There were no unrecognized tax benefits as of December 31, 2024. The Company is no longer subject to tax examinations by tax authorities for years prior to 2020. If applicable, interest costs related to the unrecognized tax benefits are required to be calculated and would be classified as "Other expenses – Interest" in the statement of operations. Penalties would be recognized as a component of "General and administrative." No interest or penalties on unpaid tax were recorded during the years ended December 31, 2024 and 2023, respectively. As of December 31, 2024 and 2023, no liability for unrecognized tax benefits was required to be reported. The Company does not expect any significant changes in its unrecognized tax benefits in the next year.

Note 14 – Segment and Geographic Information

The Company's chief operating decision maker ("CODM") is the Chief Executive Officer (the "CEO"). The Company is a provider of specialty activated carbon technologies and, at December 31, 2024, had one operating segment, which entails the providing of patented sorbent technologies for mercury emissions capture for the coal-fired utility sector in the United States.

There are no segment managers who are held accountable for operations, operating results or plans for levels or components below the consolidated unit level. Accordingly, management has determined that the Company has a single operating and reportable segment. The accounting policies related to operating and reportable segments are the same as those described in Note 4, "Basis of Presentation and Summary of Significant Accounting Policies". The primary measure of segment profit or loss is consolidated net income as presented below and is used the by CEO for the purpose of evaluating segment performance and allocation of budget to support business expansion, new product development and operational efficiencies.

	2024	2023
Material sales	$ 14,481,784	$ 17,092,996
License fees	2,808,125	387,500
Other revenues	116,276	144,874
Total revenues	17,406,185	17,625,370
Material costs	(7,686,447)	(8,898,747)
Blending and milling	(377,598)	(769,167)
Shipping	(1,081,781)	(1,380,051)
Other cost of goods sold	(700,279)	(652,688)
Compensation and benefits	(6,148,100)	(2,577,473)
Stock-based compensation	(1,088,922)	(573,783)
Amortization and depreciation	(248,084)	(228,962)
Consulting fees	(879,800)	(109,381)
Professional fees	(4,722,313)	(9,717,572)
General and administrative	(1,588,129)	(1,471,311)
Change in fair value of profit share	(3,959,065)	(11,209,677)
Interest expense	(267,458)	(1,362,401)
Impairment loss	(43,000)	(219,707)
Income tax benefit (expense)	289,156	(473,213)
Income from legal claims	-	27,607,776
Interest income	293,524	79,301
Segment net (loss) income	(10,802,111)	5,668,314
Reconciliation of profit or loss		
Adjustments and reconciling items	-	-
Consolidated net (loss) income	$ (10,802,111)	$ 5,668,314

The segment assets are not reviewed by the CODM at a different asset level or category and is reviewed at the consolidated level.

Note 15 - Subsequent Events

On January 2, 2025, and pursuant to an investor relations consulting agreement effective as of January 1, 2025 with a nonaffiliated third party, the Company granted a nonqualified stock option under the 2017 Plan to such third party to acquire 250,000 shares of the Company's common stock at an exercise price of $0.51 per share, representing the fair market value of the common stock on the date of grant as determined under the 2017 Plan. Twenty-five percent of the option shall vest and become exercisable three months following the grant date and twenty-five percent shall vest every three months thereafter such that the option shall be fully vested one year following the grant date. The option will expire three years after the grant date.

Effective as of January 7, 2025, the Company entered into agreement with another one of the utilities named as a defendant in the Arizona Action (see "Note 10 – Commitments and Contingencies"). Such agreement provides such party and its affiliates with a non-exclusive license to certain Company patents related to the Company's two-part Sorbent Enhancement Additive (SEA®) process for use in connection with a certain designated coal-fired power plant operated by such utility. The agreement includes a one-time license fee which has been received by the Company, and provides the Company with the right to be included in such party's bidding process for certain product supply for mercury emissions capture at such party's designated power plant.

On January 9, 2025, the Company granted a nonqualified stock option under the 2017 Plan to a new director, who was elected to the Board on December 30, 2024, to acquire 100,000 shares of the Company's common stock at an exercise price of $0.56 per share, representing the fair market value of the common stock on the date of grant as determined under the 2017 Plan. The option is fully vested and exercisable as of the grant date and will expire five years thereafter.

On January 15, 2025, the Company issued 50,000 shares of common stock to a director due to the vesting on such date of 50,000 restricted share units ("RSUs") which had previously been granted on January 15, 2024 pursuant to the 2017 Plan and had a one-year vesting period.

In January 2025, the Company commenced another patent infringement lawsuit against four defendants in the U.S. District Court for the Western District of Missouri. Such lawsuit claims infringement of the Company's patent rights related to the Company's mercury emissions reduction technologies. Named as defendants in the action are Evergy, Inc., Evergy Metro Inc., Evergy Missouri West, Inc. and Evergy Kansas Central, Inc. In the lawsuit, the Company requests a trial by jury against the defendants and seek damages, costs, and legal expenses, along with a finding of willful infringement by the defendants, and an injunction prohibiting the defendants from further acts of infringement. In February 2025, such lawsuit was consolidated with and transferred to the Southern District of Iowa pursuant to the Transfer Order (see "Note 10 – Commitments and Contingencies").

In January and February 2025, certain of the defendants in the patent infringement lawsuits which have been consolidated and centralized in the Southern District of Iowa filed petitions for Inter Partes Review with the United States Patent and Trademark Office, seeking to invalidate certain claims to the patents which are subject to the litigation.

On March 19, 2025, the Company announced that its Board of Directors authorized a share repurchase program under which the Company may purchase up to $5.0 million of its common stock. Purchases under the share repurchase program may be made from time to time, in such amounts as management deems appropriate, through a variety of methods, which may include open market purchases, privately negotiated transactions, block trades, accelerated share repurchase transactions, purchases through 10b5-1 trading plans, or by any combination of such methods. The timing and amount of any repurchases pursuant to the share repurchase program will be determined based upon a variety of factors, including general market conditions, share price, corporate and regulatory requirements and limitations, corporate liquidity requirements and priorities, and other factors. The Company anticipates that any repurchases will not occur before the second half of 2025. The share repurchase program does not have an expiration date, does not require the Company to repurchase any specific number of shares of its common stock, if any, and may be modified, suspended or terminated at any time without notice.

Note 16 – Restatement of Quarterly Financial Information (Unaudited)

As described in Note 2—Restatement of Previously Issued Financial Statements, for the period ended December 31, 2024, management identified an error in the previously reported financial statements related to the recognition of revenue during the year ended December 31, 2022. The Company entered into a license agreement for which it should have recognized the entire proceeds receivable pursuant to the agreement as revenue during the year ended December 31, 2022. The Company should also have recognized the financing component of the licensing agreement during the fiscal years ended December 31, 2023 and 2024. As a result, the consolidated financial statements reflect the recognition of this additional revenue during the year ended December 31, 2022, removes the revenue recognized and records the financing component of the arrangement during annual and interim periods in the fiscal year ending December 31, 2023 and the interim periods in the fiscal year ending December 31, 2024. The following tables present the effect of the restatement on the Company's previously reported:

- unaudited condensed consolidated balance sheets as of March 31, 2023, June 30, 2023, and September 30, 2023;
- unaudited condensed consolidated balance sheets as of March 31, 2024, June 30, 2024, and September 30, 2024;
- unaudited condensed consolidated statements of operations for the three months ended March 31, 2023, the three months and six months ended June 30, 2023, and the three months and nine months ended September 30, 2023;
- unaudited condensed consolidated statements of operations for the three months ended March 31, 2024, the three months and six months ended June 30, 2024, and the three months and nine months ended September 30, 2024;
- unaudited condensed consolidated statements of cash flows for the three months ended March 31, 2023, the six months ended June 30, 2023, and the nine months ended September 30, 2023; and
- unaudited condensed consolidated statements of cash flows for the three months ended March 31, 2024, the six months ended June 30, 2024, and the nine months ended September 30, 2024.

The values as previously reported were derived from the previously filed Quarterly Reports on Form 10-Q for the periods ended March 31, 2023, June 30, 2023, September 30, 2023, March 31, 2024, June 30, 2024, and September 30, 2024. These restatements do not result in a reclassification between cash flows from operating activities, cash flows from investing activities, or cash flows from financing activities in the unaudited condensed consolidated statements of cash flows for the periods presented. The restatements only impact net loss in the unaudited condensed consolidated statements of changes in stockholders' equity (deficit) in the periods presented.

The following table presents the impact of the financial statement adjustments on the Company's previous reported consolidated Balance Sheet as of March 31, 2023:

CONSOLIDATED BALANCE SHEETS

	MARCH 31, 2023		
ASSETS AND STOCKHOLDERS' EQUITY (DEFICIT)	**As previously reported**	**Adjustment**	**As restated**
Accounts receivable	$ 696,933	$ 788,408	$ 1,485,341
Total current assets	4,313,535	788,408	5,101,943
Total assets	8,051,939	788,408	8,840,347
Stockholders' equity (deficit)			
Accumulated deficit	(70,145,373)	788,408	(69,356,965)
Total stockholders' equity (deficit)	(8,504,314)	788,408	(7,715,906)
Total liabilities and stockholders' equity (deficit)	$ 8,051,939	$ 788,408	$ 8,840,347

The following table presents the impact of the financial statement adjustments on the Company's previously reported Consolidated Statement of Operations for the three months ended March 31, 2023:

CONSOLIDATED STATEMENT OF OPERATIONS

	FOR THE THREE MONTHS ENDED MARCH 31, 2023		
	As previously reported	**Adjustment**	**As restated**
Revenue	$ 3,012,749	$ (315,000)	$ 2,697,749
Interest income	-	24,458	24,458
Total costs and expenses	4,439,945	(24,458)	4,415,487
Loss before provision for income taxes	(1,427,196)	(290,542)	(1,717,738)
Net loss	$ (1,446,984)	$ (290,542)	$ (1,737,526)
Net loss per common share - basic and diluted:	$ (0.02)	$ -	$ (0.02)

The following table presents the impact of the financial statement adjustments on the Company's previously reported Consolidated Statement of Cash Flows for the three months ended March 31, 2023:

CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS

	FOR THE THREE MONTHS ENDED MARCH 31, 2023		
	As previously reported	Adjustment	As restated
Cash flows from operating activities			
Net income (loss)	$ (1,446,984)	$ (290,542)	$ (1,737,526)
Adjustments to reconcile net loss to net cash			
Non-cash interest income	-	(24,458)	(24,458)
Changes in operating assets and liabilities			
Accounts receivable	2,080,674	315,000	2,395,674
Net cash provided by operating activities	$ 777,564	$ -	$ 777,564

The following table presents the impact of the financial statement adjustments on the Company's previous reported consolidated Balance Sheet as of June 30, 2023:

CONSOLIDATED BALANCE SHEETS

	JUNE 30, 2023		
ASSETS AND STOCKHOLDERS' EQUITY (DEFICIT)	As previously reported	Adjustment	As restated
Accounts receivable	$ 2,043,328	$ 806,281	$ 2,849,609
Total current assets	4,968,663	806,281	5,774,944
Total assets	8,645,146	806,281	9,451,427
Stockholders' equity (deficit)			
Accumulated deficit	(70,909,843)	806,281	(70,103,562)
Total stockholders' equity (deficit)	(9,131,190)	806,281	(8,324,909)
Total liabilities and stockholders' equity (deficit)	$ 8,645,146	$ 806,281	$ 9,451,427

The following table presents the impact of the financial statement adjustments on the Company's previously reported Consolidated Statement of Operations for the three and six months ended June 30, 2023:

CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS

	FOR THE THREE MONTHS ENDED JUNE 30, 2023			FOR THE SIX MONTHS ENDED JUNE 30, 2023		
	As previously reported	Adjustment	As restated	As previously reported	Adjustment	As restated
Revenues	$ 4,111,721	$ -	$ 4,111,721	$ 7,124,469	$ (315,000)	$ 6,809,469
Interest income	-	17,873	17,873	-	42,331	42,331
Total costs and expenses	4,875,876	(17,873)	4,858,003	9,315,819	(42,331)	9,273,488
Net loss before provision for income taxes	(764,155)	17,873	(746,282)	(2,191,350)	(272,669)	(2,464,019)
Net loss	$ (764,470)	$ 17,873	$ (746,597)	$ (2,211,454)	$ (272,669)	$ (2,484,123)
Net loss per common share - basic and diluted:	$ (0.01)	$ -	$ (0.01)	$ (0.02)	$ (0.01)	$ (0.03)

The following table presents the impact of the financial statement adjustments on the Company's previously reported Consolidated Statement of Cash Flows for the six months ended June 30, 2023:

CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS

	FOR THE SIX MONTHS ENDED JUNE 30, 2023		
	As previously reported	Adjustment	As restated
Cash flows from operating activities			
Net income (loss)	$ (2,211,454)	$ (272,669)	$ (2,484,123)
Adjustments to reconcile net loss to net cash			
Non-cash interest income	-	(42,331)	(42,331)
Changes in operating assets and liabilities			
Accounts receivable	734,279	315,000	1,049,279
Net cash provided by operating activities	$ 232,492	$ -	$ 232,492

The following table presents the impact of the financial statement adjustments on the Company's previous reported consolidated Balance Sheet as of September 30, 2023:

CONSOLIDATED BALANCE SHEETS

	SEPTEMBER 30, 2023		
ASSETS AND STOCKHOLDERS' EQUITY (DEFICIT)	**As previously reported**	**Adjustment**	**As restated**
Accounts receivable	$ 2,549,022	$ 824,559	$ 3,373,581
Total current assets	6,074,162	824,559	6,898,721
Total assets	9,681,503	824,559	10,506,062
Stockholders' equity (deficit)			
Accumulated deficit	(71,737,345)	824,559	(70,912,786)
Total stockholders' equity (deficit)	(9,856,227)	824,559	(9,031,668)
Total liabilities and stockholders' equity (deficit)	$ 9,681,503	$ 824,559	$ 10,506,062

The following table presents the impact of the financial statement adjustments on the Company's previously reported Consolidated Statement of Operations for the three and nine months ended September 30, 2023:

CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS

	FOR THE THREE MONTHS ENDED SEPTEMBER 30, 2023			FOR THE NINE MONTHS ENDED SEPTEMBER 30, 2023		
	As previously reported	**Adjustment**	**As restated**	**As previously reported**	**Adjustment**	**As restated**
Revenues	$ 6,747,256	$ -	$ 6,747,256	$ 13,871,725	$ (315,000)	$ 13,556,725
Interest income	-	18,278	18,278	-	60,609	60,609
Total costs and expenses	7,574,758	(18,278)	7,556,480	16,910,681	(60,609)	16,850,072
Net loss before provision for income taxes	(827,502)	18,278	(809,224)	(3,038,956)	(254,391)	(3,293,347)
Net loss	$ (827,502)	$ 18,278	$ (809,224)	$ (3,038,956)	$ (254,391)	$ (3,293,347)
Net loss per common share - basic and diluted:	$ (0.01)	$ -	$ (0.01)	$ (0.03)	$ -	$ (0.03)

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The following table presents the impact of the financial statement adjustments on the Company's previously reported Consolidated Statement of Cash Flows for the nine months ended September 30, 2023:

CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS

	FOR THE NINE MONTHS ENDED SEPTEMBER 30, 2023		
	As previously reported	**Adjustment**	**As restated**
Cash flows from operating activities			
Net income (loss)	$ (3,038,956)	$ (254,391)	$ (3,293,347)
Adjustments to reconcile net loss to net cash			
Non-cash interest income	-	(60,609)	(60,609)
Changes in operating assets and liabilities			
Accounts receivable	228,585	315,000	543,585
Net cash provided by operating activities	$ 786,144	$ -	$ 786,144

The following table presents the impact of the financial statement adjustments on the Company's previous reported consolidated Balance Sheet as of March 31, 2024:

CONSOLIDATED BALANCE SHEETS

	MARCH 31, 2024		
ASSETS AND STOCKHOLDERS' EQUITY (DEFICIT)	**As previously reported**	**Adjustment**	**As restated**
Accounts receivable	$ 1,667,856	$ 547,367	$ 2,215,223
Total current assets	13,670,201	547,367	14,217,568
Total assets	17,083,765	547,367	17,631,132
Stockholders' equity (deficit)			
Accumulated deficit	(65,353,367)	547,367	(64,806,000)
Total stockholders' equity (deficit)	8,255,523	547,367	8,802,890
Total liabilities and stockholders' equity (deficit)	$ 17,083,765	$ 547,367	$ 17,631,132

The following table presents the impact of the financial statement adjustments on the Company's previously reported Consolidated Statement of Operations for the three months ended March 31, 2024:

CONSOLIDATED STATEMENT OF OPERATIONS

	FOR THE THREE MONTHS ENDED MARCH 31, 2024		
	As previously reported	**Adjustment**	**As restated**
Revenue	$ 3,556,766	$ (315,000)	$ 3,241,766
Gross profit	1,443,284	(315,000)	1,128,284
Operating loss	(2,083,492)	(315,000)	(2,398,492)
Other income	35,516	19,116	54,632
Total other income (expense)	(475,499)	19,116	(456,383)
Loss before provision for income taxes	(2,558,991)	(295,884)	(2,854,875)
Net loss	$ (2,558,991)	$ (295,884)	(2,854,875)
Net loss per common share - basic and diluted:	$ (0.03)	$ -	$ (0.03)

The following table presents the impact of the financial statement adjustments on the Company's previously reported Consolidated Statement of Cash Flows for the three months ended March 31, 2024:

CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS

	FOR THE THREE MONTHS ENDED MARCH 31, 2024		
	As previously reported	**Adjustment**	**As restated**
Cash flows from operating activities			
Net income (loss)	$ (2,558,991)	$ (295,884)	$ (2,854,875)
Adjustments to reconcile net loss to net cash			
Non-cash interest income	-	(19,116)	(19,116)
Changes in operating assets and liabilities			
Accounts receivable	565,355	315,000	880,355
Net cash provided by operating activities	$ (439,220)	$ -	$ (439,220)

The following table presents the impact of the financial statement adjustments on the Company's previous reported consolidated Balance Sheet as of June 30, 2024:

CONSOLIDATED BALANCE SHEETS

	JUNE 30, 2024		
ASSETS AND STOCKHOLDERS' EQUITY (DEFICIT)	**As previously reported**	**Adjustment**	**As restated**
Accounts receivable	$ 1,784,437	$ 559,775	$ 2,344,212
Total current assets	11,327,736	559,775	11,887,511
Total assets	14,749,740	559,775	15,309,515
Stockholders' equity (deficit)			
Accumulated deficit	(71,512,689)	559,775	(70,952,914)
Total stockholders' equity (deficit)	2,232,979	559,775	2,792,754
Total liabilities and stockholders' equity (deficit)	$ 14,749,740	$ 559,775	$ 15,309,515

The following table presents the impact of the financial statement adjustments on the Company's previously reported Consolidated Statement of Operations for the three and six months ended June 30, 2024:

CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS

	FOR THE THREE MONTHS ENDED JUNE 30, 2024			FOR THE SIX MONTHS ENDED JUNE 30, 2024		
	As previously reported	**Adjustment**	**As restated**	**As previously reported**	**Adjustment**	**As restated**
Revenues	$ 3,361,433	$ -	$ 3,361,433	$ 6,918,199	$ (315,000)	$ 6,603,199
Gross profit	1,060,600	-	1,060,600	2,503,884	(315,000)	2,188,884
Operating loss	(3,573,510)	-	(3,573,510)	(5,657,002)	(315,000)	(5,972,002)
Interest income	109,787	12,408	122,195	145,303	31,524	176,827
Total other income (expense)	(2,585,466)	12,408	(2,573,058)	(3,060,965)	31,524	(3,029,441)
Net loss before provision for income taxes	(6,158,976)	12,408	(6,146,568)	(8,717,967)	(283,476)	(9,001,443)
Net loss	$ (6,159,322)	$ 12,408	$ (6,146,914)	$ (8,718,313)	$ (283,476)	$ (9,001,789)
Net loss per common share - basic and diluted:	$ (0.07)	$ -	$ (0.07)	$ (0.09)	$ (0.01)	$ (0.10)

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The following table presents the impact of the financial statement adjustments on the Company's previously reported Consolidated Statement of Cash Flows for the six months ended June 30, 2024:

CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS

	FOR THE SIX MONTHS ENDED JUNE 30, 2024		
	As previously reported	Adjustment	As restated
Cash flows from operating activities			
Net income (loss)	$ (8,718,313)	$ (283,476)	$ (9,001,789)
Adjustments to reconcile net loss to net cash			
Non-cash interest income	-	(31,524)	(31,524)
Changes in operating assets and liabilities			
Accounts receivable	448,774	315,000	763,774
Net cash provided by operating activities	$ (3,122,619)	$ -	$ (3,122,619)

The following table presents the impact of the financial statement adjustments on the Company's previous reported consolidated Balance Sheet as of September 30, 2024:

CONSOLIDATED BALANCE SHEETS

	SEPTEMBER 30, 2024		
ASSETS AND STOCKHOLDERS' EQUITY (DEFICIT)	As previously reported	Adjustment	As restated
Accounts receivable	$ 1,930,396	$ 572,465	$ 2,502,861
Total current assets	7,590,707	572,465	8,163,172
Total assets	11,654,860	572,465	12,227,325
Stockholders' equity (deficit)			
Accumulated deficit	(71,982,925)	572,465	(71,410,460)
Total stockholders' equity (deficit)	1,913,874)	572,465	2,486,339
Total liabilities and stockholders' equity (deficit)	$ 11,654,860	$ 572,465	$ 12,227,325

The following table presents the impact of the financial statement adjustments on the Company's previously reported Consolidated Statement of Operations for the three and nine months ended September 30, 2024:

CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS

	FOR THE THREE MONTHS ENDED SEPTEMBER 30, 2024			FOR THE NINE MONTHS ENDED SEPTMEER 30, 2024		
	As previously reported	Adjustment	As restated	As previously reported	Adjustment	As restated
Revenues	$ 5,236,990	$ -	$ 5,236,990	$ 12,155,189	$ (315,000)	$ 11,840,189
Gross profit	1,594,919	-	1,594,919	4,098,803	(315,000)	3,783,803
Operating loss	(1,107,431)	-	(1,107,431)	(6,764,433)	(315,000)	(7,079,433)
Interest income	67,966	12,690	80,656	213,269	44,214	257,483
Total other income (expense)	342,992	12,690	355,682	(2,717,973)	44,214	(2,673,759)
Net loss before provision for income taxes	(764,439)	12,690	(751,749)	(9,482,406)	(270,786)	(9,753,192)
Net loss	$ (470,236)	$ 12,690	$ (457,546)	$ (9,188,549)	$ (270,786)	$ (9,459,335)
Net loss per common share - basic and diluted:	$ (0.00)	$ -	$ (0.00)	$ (0.10)	$ -	$ (0.10)

The following table presents the impact of the financial statement adjustments on the Company's previously reported Consolidated Statement of Cash Flows for the nine months ended September 30, 2024:

CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS

	FOR THE NINE MONTHS ENDED SEPTEMBER 30, 2024		
	As previously reported	Adjustment	As restated
Cash flows from operating activities			
Net income (loss)	$ (9,188,549)	$ (270,786)	$ (9,459,335)
Adjustments to reconcile net loss to net cash			
Non-cash interest income	-	(44,214)	(44,214)
Changes in operating assets and liabilities			
Accounts receivable	302,815	315,000	617,815
Net cash provided by operating activities	$ (3,274,785)	$ -	$ (3,274,785)

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure.

None.

Item 9A. Controls and Procedures.

Report of Disclosure Controls and Procedures

Regulations under the Exchange Act require public companies to maintain “disclosure controls and procedures,” which are defined as controls and other procedures that are designed to ensure that information required to be disclosed by the issuer in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission’s rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by an issuer in the reports that it files or submits under the Exchange Act is accumulated and communicated to the issuer’s management, including its principal executive and principal financial officers, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure.

Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we have evaluated the effectiveness, the design and operations of our disclosure controls and procedures as of the end of the period covered by this report. Based on that evaluation, the principal executive officer and principal financial officer determined that as of December 31, 2023, the Company’s disclosure controls and procedures were ineffective as a result of material weaknesses in our internal control over financial reporting.

Management’s Annual Report on Internal Control over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rules 13a-15(f) and 15d-15(f). Under the supervision and with the participation of our management, including our principal executive officer and our principal financial officer, the Company conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in *Internal Control - Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission in 2013 (COSO).

Our internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles in the United States of America. Our internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the Company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the Company’s assets that could have a material effect on the financial statements.

Despite these controls, because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Therefore, even those systems determined to be effective can provide only reasonable assurance of achieving their control objectives. Furthermore, smaller reporting companies, like us, face additional limitations. Smaller reporting companies employ fewer individuals and can find it difficult to employ resources for complicated transactions and effective risk management. Additionally, smaller reporting companies tend to utilize general accounting software packages that lack a rigorous set of software controls.

Our management, including our Chief Executive Officer and Principal Financial Officer, assessed the effectiveness of our internal control over financial reporting as of December 31, 2024 based on the criteria established in “Internal Control - Integrated Framework” issued by the Committee of Sponsoring Organizations of the Treadway Commission in 2013. This evaluation included review of the documentation of controls, evaluation of the design effectiveness of controls, testing of the operating effectiveness of controls and a conclusion on this evaluation. Based on this evaluation, our management concluded our internal control over financial reporting was not effective as of December 31, 2024. The ineffectiveness of our internal control over financial reporting was due to the following material weaknesses which are indicative of many small companies: (i) lack of a sufficient complement of personnel commensurate with the Company’s reporting requirements; and (ii) insufficient written documentation or training of our internal control policies and procedures which provide staff with guidance or framework for accounting and disclosing financial transactions.

This annual report does not include an attestation report of our registered public accounting firm regarding our internal controls over financial reporting. Management's report was not subject to attestation by our registered public accounting firm pursuant to Section 404(c) of the Sarbanes-Oxley Act that permit us to provide only management's report in this annual report.

Despite the existence of the material weaknesses above, we believe that our consolidated financial statements contained in this Form 10-K fairly present our financial position, results of operations and cash flows as of and for the periods presented in all material respects.

Changes in Internal Control over Financial Reporting

Except as discussed below, there have been no changes in our internal control over financial reporting (as such term is defined in Rules 13a-15(f) and 15d-15 (f) under the Exchange Act) during the fourth quarter of 2023 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Material Weaknesses

In connection with our annual audit for the year ended December 31, 2024, management determined that controls as described above constitute material weaknesses in disclosure controls and procedures and internal control over financial reporting. As a result, it was determined that control deficiencies that constitutes material weaknesses in the design and operation of our internal control over financial reporting was present. Management believes that these material weaknesses did not have an effect on our financial results. However, management believes that the lack of these items results in ineffective internal controls, which could result in a material misstatement in our financial statements in future periods.

The material weakness described above did not result in a material misstatement to the consolidated financial statements as of December 31, 2024 and the year then ended presented in this Annual Report on Form 10-K; however, the material weakness did result in a material misstatement to the consolidated financial statements during the year ended December 31, 2022 which resulted in the restatement of the consolidated financial statements as of and for the years ended December 31, 2023 and December 31, 2022, and as of and for the interim quarterly periods during the years ended December 31, 2024 and 2023 presented in this Annual Report on Form 10-K and labeled as restated.

Remediation

During 2023, certain actions were taken to address certain aspects of the material weaknesses disclosed above. Effective as of March 1, 2023, we retained a certified public accountant to assist with bookkeeping and accounting services, and as of September 1, 2023, we hired a new financial consulting firm to assist us in bookkeeping and preparing financial statements for our SEC filings, assist us in evaluating our internal controls over financial reporting and assist us in other related matters. Such new firm has replaced the financial consulting firm which had been provided service to the Company since the fourth quarter of 2019 and such new firm has taken on additional responsibilities. In addition, as of November 1, 2023, we appointed a new Chief Financial Officer with over 15 years of experience in accounting and financial control for both private and publicly listed companies to provide fractional Chief Financial Officer services. We also have made efforts in 2023 and 2024 to strengthen our overall control environment by improving our documented internal control policies and staff training.

Although we believe that these efforts effectively strengthen our disclosure control processes and procedures, our management team intends to continue to actively plan for and implement additional control procedures to improve our overall control environment and expect these efforts to continue throughout 2025 and beyond. Due to the nature of the remediation process, the need to have sufficient resources to retain additional staff to devote to such efforts and further segregate duties, and the need to allow adequate time after implementation to evaluate and test the effectiveness of the controls, no assurance can be given as to the timing of achievement of remediation.

Item 9B. Other Information.

None.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspection.

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

The following table sets forth certain information as of the date of this report about our executive officers and members of our board of directors.

Name	Age	Positions and Offices Held with the Company
Richard MacPherson	69	President, Chief Executive Officer, Secretary, Director
Christopher Greenberg	58	Chairman of the Board, Director
John Pavlish	66	Senior Vice President and Chief Technology Officer
James Trettel	56	Executive Vice President of Operations
Fiona Fitzmaurice	43	Chief Financial Officer
David M. Kaye	70	Director
Troy Grant	51	Director
Mitzi H. Coogler	54	Director

Executive Officers

Richard MacPherson has been a Director of the Company since June 2011, has served as President and Chief Executive Officer of the Company since March 2015 and was appointed as Secretary of the Company in June 2023. Mr. MacPherson is the founder of MES, Inc. (current subsidiary and operating company of the Company) and had been its Chief Executive Officer from 2008 until 2011. From 2011 to March 2015, Mr. MacPherson served as Vice President of Business Development of the Company. Since 2008, Mr. MacPherson has worked with industry leading scientists and engineers to bring the Company's technology from the R&D phase, through multiple product development stages, to the final commercialization phase, acting as the lead on all required initiatives and activities. He has been a senior-level executive in the services industry for over 25 years. Mr. MacPherson brings extensive start-up and business development knowledge, applied and proven through his corporate experience throughout the United States and Canada. He has worked in multiple industries, such as electric utilities, communications, and marketing, as well as in several entrepreneurial ventures in the communications, hospitality, geological, and real estate development industries. We believe that Mr. MacPherson's deep experience in business and strong leadership skills, coupled with being the founder of our operating subsidiary and his extensive knowledge of our technology, qualifies him to serve on our board.

John Pavlish has been Senior Vice President and Chief Technical Officer of the Company since November 2014. Prior to joining the Company, Mr. Pavlish was a Senior Research Advisor and the Director of the Center for Air Toxic Metals at the Energy & Environmental Research Center in Grand Forks, North Dakota. He has over 25 years of mercury-related experience and is regarded as an international expert on the topic of mercury. His primary areas of interest and expertise include research, technical consultation, and development of mercury control technologies, in particular, for coal combustion and gasification systems. He is an inventor of a number of patented mercury control technologies and has years of experience in development and testing of these technologies for commercial application. Over the last 20 years, he has spent much of his time evaluating the efficacy of a number of different mercury control technologies/approaches and their cost-competitiveness in the commercial market. Mr. Pavlish also has years of power plant experience and has worked for engineering/consulting company Black & Veatch, where he served as Unit Leader/System Engineer. Mr. Pavlish is a professional engineer, a member of the American Society of Mechanical Engineers, and a member of the Air & Waste Management Association. He serves on numerous professional and technical committees and is a U.S. Representative on the Mercury Emissions from Coal International Experts Working Group on Reducing Emissions from Coal and a member of the United Nations Environment Programme Global Mercury Partnership, Reduction of Mercury Releases from Coal Combustion. Mr. Pavlish has published over 200 papers, articles, and reports on various mercury-related topics and issues.

James Trettel has been Vice President of Operations since January 2014 and Executive Vice President of Operations since June 2024. Mr. Trettel possesses over 25 years of experience in the dry bulk material handling industry. During 2012 and 2013, he was the owner and operator of Solid Foundation Services, LLC, a firm specializing in deep foundation installations for the gas and oilfield industry, while providing technical consulting services to the Company. Prior to 2012, he provided project management and engineering duties for numerous multi-million dollar turn-key contracts while employed at Advanced Bulk and Conveying Inc. starting in 2004. Additionally, Mr. Trettel has overseen day to day operations for 14 years as the VP of J&B Industrial Sales Company Inc. of sales, systems, and engineering organization specializing in bulk material handling. Mr. Trettel has extensive field experience with systems operating in a large variety of industry sectors including coal fired utilities. Mr. Trettel graduated Cum Laude with a B.S. degree in Mechanical Engineering.

Fiona Fitzmaurice has been Chief Financial Officer since November 2023. She is a chartered accountant with over 15 years of experience in accounting and financial control for both private and publicly listed companies. She has significant experience as CFO for exploration companies and has been involved in numerous private placements, prospectus filings, flow-through financings and corporate audits. Ms. Fitzmaurice currently serves as CFO of the following companies: Metavista3D Inc. (TSXV:DDD) since November 2024; Exploits Discovery Corp. (CSE:NFLD) since December 2022; Digicann Ventures Inc. (CSE:DCNN) since October 2021; Provenance Gold Corp. (CSE:PAU) since May 2021; and MacDonald Mines Exploration Ltd. (TSXV:BMK) since December 2019. She has also served as Controller of Noront Resources Ltd. (TSXV:NOT) from May 2015 to December 2022; CFO of Honey Badger Exploration Inc. (TSXV:TUF) from December 2019 to November 2020; CFO of Pasofino Gold Limited (TSXV:VEIN) from July 2017 to March 2020; and CFO of Mojave Jane Brands (CSE:JANE) from October 2017 to July 2019. Ms. Fitzmaurice currently holds a charted certified qualification from ACCA (Association of Chartered Certified Accountants) having received her certification in Ireland in 2008. She holds a bachelor's degree in accounting and finance from Athlone Institute of Technology, Ireland.

Directors

Please see the information regarding **Richard MacPherson** under "Executive Officers" above.

Christopher Greenberg has been a director of the Company since June 2013 and Chairman of the Board since December 2014. Beginning in 1997, Mr. Greenberg and his wife co-owned multiple Express Employment Professionals franchises. Express Employment Professionals is a staffing agency that provides full time and temporary job placement, human resources services and consulting. In 2003, Mr. Greenberg and his wife co-founded Global Safety Network, which grew into a leading, national provider of workforce risk management solutions. Mr. Greenberg served as its Chief Executive Officer from 2003 to May 2021. In 2015, Mr. Greenberg and his wife also co-founded Greenberg Enterprises, which provides business management and consulting services. Global Safety Network was sold in June 2022 and their final Express Employment Professionals franchise was sold in January 2023. These recent business sales have enabled Mr. Greenberg to devote additional time towards the growth of Greenberg Enterprises and its related entities. As an entrepreneur and operating Executive, Mr. Greenberg has demonstrated his ability to lead diverse professional teams to higher levels of achievement in a variety of highly competitive industries, cutting-edge markets, and fast-paced environments. He has strong business and technical qualifications with a track record of more than 30 years of hands-on experience in strategic planning, business development, project management, mergers and acquisitions, and partnerships. We believe that Mr. Greenberg's deep experience in business, along his strong entrepreneurial and executive management background, qualifies him to serve on our board.

David M. Kaye has been a director of the Company since June 2019 and acted as Secretary from December 2019 to June 2023. Mr. Kaye is an attorney and has been a partner in the law firm of Kaye Cooper Kay & Rosenberg, LLP, located in Roseland, New Jersey, since the firm's inception in February 1996. Since 1980, Mr. Kaye has been a practicing attorney in the New York City metropolitan area specializing in business, corporate, and securities matters. From March 2006 to June 2011, Mr. Kaye was a director of China Youth Media, Inc., resigning from such position effective with the merger between the Company with MES, Inc. which was completed in June 2011. From December 2000 to October 2009, Mr. Kaye also served on the Board of Directors of Dionics, Inc. Mr. Kaye received his B.A. from George Washington University (1976) and his J.D. from the Benjamin N. Cardozo School of Law, Yeshiva University (1979). We believe that Mr. Kaye's deep experience in business and transactional matters and working with public companies qualifies him to serve on our board.

Troy Grant has been a director of the Company since May 2023. Mr. Grant, a graduate from St. Francis Xavier University with a Bachelor of Commerce degree, has extensive experience in investment financing, predominantly focusing on raising significant funding across global platforms and management of strategic operations. For the past 10 years, his career has been dedicated to his role as Chief Executive Officer (CEO) with Elcora Advanced Materials Corp. (TSXV: ERA). Elcora was founded in 2011 and has been successfully structured as a vertically integrated battery material company with mining assets in Sri Lanka and Morocco. As CEO, in addition to responsibility for the overall strategic operations, including exploration, business development and implementation of the company vision, Mr. Grant works diligently to raise equity and advance assets. Mr. Grant also currently serves as a director and member of the Audit Committee of several publicly listed companies, including Elcora Advanced Materials Corp., i3 Interactive Inc. (CSE: BETS), Auxly Cannabis Group Inc. (TSX: XLY), and Cleantech Power Corp. (formerly, Alkaline Fuel Cell Power Corp.) (NEO: PWWR). We believe Mr. Grant's deep public company experience in Canada and his strong background in business and investment financing qualifies him to serve on our board.

Mitzi H. Coogler has been a director of the Company since Decemb23 2024. Ms. Coogler is a certified public accountant and has maintained an accounting practice since 2014 in Northport, Alabama specializing in management support and guidance for closely held businesses. Since November 2023, she has been Chief Financial Officer of JT Harrison Construction Co., Inc., located in Northport, Alabama, which provides design, general contracting and construction management services. From November 2017 to December 2021, she served as Chief Executive Officer and a member of the Board of Directors of Southeast Cancer Network, Inc., located in Tuscaloosa, Alabama. From February 2018 to July 2022, she also served as Chief Financial Officer of closely held businesses wholly or majority owned by Dr. Scott Drummond (deceased). From January 2005 to January 2014, she was a shareholder/employee of Echols, Coogler & Associates, P.C., an accounting firm, located in Tuscaloosa, Alabama. Ms. Coogler received her B.S. in accounting from University of Alabama in 1993. We believe Ms. Coogler's extensive financial, accounting and transactional experience qualifies her to serve on our board.

There are no family relationships between any of the directors and executive officers of the Company.

Board of Directors

The Board of Directors has a stewardship responsibility to supervise the management of and oversee the conduct of the business of the Company, provide leadership and direction to management, evaluate management, set policies appropriate for the business of the Company and approve corporate strategies and goals. The day-to-day management of the business and affairs of the Company is delegated by the Board of Directors to the executive officers of the Company. The Board of Directors gives direction and guidance through the CEO to management and keeps management informed of its evaluation of the executive officers in achieving and complying with goals and policies established by the Board of Directors.

The Board of Directors exercises its independent supervision over management by its policies that (a) periodic meetings of the Board of Directors be held to obtain an update on significant corporate activities and plans; and (b) all material transactions of the Company are subject to prior approval of the Board of Directors. To facilitate open and candid discussion among its independent directors, such directors are encouraged to communicate with each other directly to discuss ongoing issues pertaining to the Company.

Composition of Our Board of Directors

Our Board currently consists of four members. There are no contractual obligations regarding the election of our directors. We do not currently have a standing nominating committee and the functions of identifying, evaluating, and selecting candidates for the Board are performed by the Board as a whole. The Board will, from time to time, assesses potential candidates to fill perceived needs on the Board based on required skills, expertise, independence and other factors. In considering whether to nominate any particular candidate for election to the Board, the Board uses various criteria to evaluate each candidate, including the candidate's ability to further the interest of the stockholders through their established record of professional accomplishment, the ability to contribute positively to the collaborative culture among Board members, knowledge of our business, understanding of the competitive landscape, professional and personal experiences, and expertise relevant to our growth strategy. The Board does not set specific minimum qualifications or assign specific weights to particular criteria and no particular criterion is a prerequisite for a prospective nominee. Our directors hold office until their successors have been elected and qualified or until the earlier of their resignation or removal.

Majority Voting Policy

The Board has adopted a Majority Voting Policy. In an uncontested election of directors, any nominee who receives a greater number of votes "withheld" than votes "for" (i.e., the nominee is not elected by at least a majority (50% +1) of the votes cast with respect to his/her election) is required to tender his/her resignation to the Board promptly following a stockholders meeting. The directors will consider the offer of resignation and, except in exceptional circumstances, will recommend that the Board accept the resignation. The Board will make its decision within 90 days following a stockholders meeting and announce it in a press release, including the reasons for rejecting the resignation, if applicable. The nominee will not participate in any deliberations on the resignation offer. The policy does not apply in circumstances involving contested director elections.

Audit Committee

The Audit Committee is comprised of Christopher Greenberg, David M. Kaye, and Troy Grant. The Audit Committee's charter requires that such committee shall consist of no fewer than three directors. Each member of the Audit Committee shall be an independent director of the Company if required to satisfy the independence requirements of any exchange on which the Company's securities may be listed and any other applicable regulatory requirements. If the Company's securities are listed on the TSX, a majority of the members of the Audit Committee must be individuals who are not officers, employees, or control persons of the Company, or any of its associates or affiliates. The Audit Committee is appointed by the Board of Directors to assist the Board in fulfilling its oversight responsibility by reviewing the accounting and financial reporting processes of the Company and its subsidiaries, our internal control and disclosure control system, and the audits of our financial statements. In this regard, the Audit Committee shall approve our retention of independent auditors and pre-approve any audit or non-audit services performed by them. It shall review with such accountants the arrangements for, and the scope of, the audit to be conducted by them. It also shall review with the independent accountants and with management the results of audits and various other financial and accounting matters affecting us.

Each member of the Audit Committee must be able to read and understand fundamental financial statements, including the Company's balance sheet, income statement, and cash flow statement, at the time of his or her appointment to the Audit Committee. In addition, at least one member must have past employment experience in finance or accounting, requisite professional certification in accounting, of any other comparable experience or background which results in the individual's financial sophistication, including being or having been a chief executive officer, chief financial officer or other senior officer with financial oversight responsibilities. Unless otherwise determined by the Board, at least one member of the Audit Committee shall be a "financial expert", as defined by applicable rules of the Securities and Exchange Commission and such securities exchange or market on which the Company's securities are traded.

The full text of our audit committee charter is posted on the investor relations portion of our website at http://www.birchtech.com. We do not incorporate the information contained on, or accessible through, our corporate website into this proxy statement, and you should not consider it a part of this proxy statement.

Other Committees

The Board of Directors has no committees at the present time other than the Audit Committee.

Separation of CEO and Chairman Roles

The Board does not have a formal policy regarding the separation of the roles of CEO and Chairman of the Board as the Board believes it is in the best interest of the Company and our stockholders to make that determination based on the position and direction of the Company and the membership of the Board. At this time, the Board has determined that separating the role of Chairman from the role of CEO is in the best interest of the Company and our stockholders. This structure permits our President and CEO to devote more time to focus on the strategic direction and management of our day-to-day operations.

Risk Oversight

It is management's responsibility to manage risk and bring to the Board's attention the most material risks to the Company. The Board has oversight responsibility of the processes established to report and monitor systems for material risks applicable to the Company. The full Board, or the committees, if any, appointed by the Board, shall regularly review enterprise-wide risk management, which includes treasury risks, financial and accounting risks, legal and compliance risks, and other risk management functions.

Ethical Business Conduct

Directors of Delaware corporations are subject to the fiduciary duties of care and loyalty which includes the subsidiary duties of good faith, oversight and disclosure. The Board of Directors has found that the fiduciary duties placed on individual directors by applicable laws and legal requirements have helped to ensure that the Board of Directors operates independently of management and in the best interests of the Company.

In addition, the Board of Directors has adopted a written code of ethics and business conduct (the "Code of Conduct"), which outlines a set of ethical standards by which each director, officer and employee of the Company should conduct his or her business. The objective of the Code of Conduct is to provide guidelines for maintaining our commitment to honesty, integrity, and ethical behavior. The Code of Conduct addresses conflicts of interest, protection of our assets, confidentiality, fair dealing with customers, suppliers, competitors and employees, insider trading, compliance with laws, and reporting any illegal or unethical behavior. As part of the Code of Conduct, any person subject to the Code of Conduct is required to avoid or fully disclose interests or relationships that are harmful or detrimental to our best interests or that may give rise to real, potential, or the appearance of conflicts of interest. Our Board of Directors will have ultimate responsibility for the stewardship of and monitoring compliance with the Code of Conduct. Directors, officers, and employees may be required periodically to review the Code of Conduct and acknowledge in writing their understanding of and compliance with the Code. Our Code of Business Conduct and Ethics reflects the foregoing principles. A copy of the Code of Conduct is available free of charge to any person on written or telephone request to Birchtech Corp., 1810 Jester Drive, Corsicana, Texas 75109 or (614) 505-6115.

We intend to satisfy the disclosure requirement under Item 5.05 of Form 8-K relating to amendments to or waivers from any provision of the code of ethics and business conduct applicable to our Chief Executive Officer and Chief Financial Officer by posting such information on our website http://www.birchtech.com.

Financial Experts

The Board of Directors has not appointed any directors as "audit committee financial experts" as defined under Item 407 of Regulation S-K promulgated pursuant to the Securities Exchange Act of 1934, as amended, insofar that our common stock is not presently a listed security in the United States.

Delinquent Section 16(a) Reports

Section 16(a) of the Securities Exchange Act of 1934 requires the Company's directors and executive officers, and owners of more than ten percent of the Company's Common Shares ("10% stockholders"), to file with the Securities and Exchange Commission (the "SEC") initial reports of ownership and reports of changes in ownership of Common Shares of the Company. Executive officers, directors and 10% stockholders are required by SEC regulations to furnish the Company with copies of all forms they file pursuant to Section 16(a).

To the Company's knowledge, based on review of the copies of such reports furnished to the Company, and with respect to the officers and directors, representations that no other reports were required, during the year ended December 31, 2024, all Section 16(a) filing requirements applicable to its executive officers, directors and 10% stockholders were complied with.

Item 11. Executive Compensation.

The following discussion relates to the compensation of our named executive officers, as determined under applicable SEC rules for smaller reporting companies like us, for the years ended December 31, 2023 and 2022, consisting of Richard MacPherson, our President and Chief Executive Officer, John Pavlish, Senior Vice President, and James Trettel, Executive Vice President of Operations.

Fiscal Year 2024 and 2023 Summary Compensation Table

Name and Principal Position	Year	Salary ($)	Bonus ($)	Stock Awards ($) (4)	Option Awards ($) (4)	All Other Compensation ($) (5)	Total ($)
Richard MacPherson, President and Chief Executive Officer, Director (1)	2024	879,818	1,250,000	402,666	189,664	140,244	2,862,392
	2023	495,000	-	486,667	-	105,314	1,086,981
John Pavlish, Senior Vice President (2)	2024	488,625	550,000	-	63,221	22,143	1,123,989
	2023	415,000	-	-	-	38,262	453,262
James Trettel, Executive Vice President of Operations (3)	2024	552,500	600,000	-	126,443	23,217	1,302,160
	2023	400,000	-	-	-	21,533	421,533

(1) Mr. MacPherson was appointed President and Chief Executive Officer in March 2015. From November 1, 2022 to December 31, 2023, Mr. MacPherson's annual base salary was $495,000. From January 1, 2024 to May 31, 2024, Mr. MacPherson's annual base salary was $745,000. See "Executive Employment Agreements" below for information on the amended and restated employment agreement entered into with Mr. MacPherson effective June 1, 2024. During 2022, Mr. MacPherson was granted a retention stock bonus award in the amount of 3,000,000 shares of common stock. Such award was granted on November 8, 2022, which shares vested 25.0% every six months from the date of grant and became fully vested on November 8, 2024. During 2024, Mr. MacPherson was granted a five-year nonqualified stock option to acquire 300,000 shares of common stock exercisable at $0.88 per share

(2) Mr. Pavlish was appointed Senior Vice President in November 2014. From January 1, 2023 to December 31, 2023, Mr. Pavlish's annual base salary was $415,000. From January 1, 2024 to May 31, 2024, Mr. Pavlish's annual base salary was $480,000. See "Executive Employment Agreements" below for information on the amended and restated employment agreement entered into with Mr. Pavlish effective June 1, 2024. During 2024, Mr. Pavlish was granted a five-year nonqualified stock option to acquire 100,000 shares of common stock exercisable at $0.88 per share.

(3) Mr. Trettel was appointed Vice President of Operations in January 2014. From November 1, 2022 to December 31, 2023, Mr. Trettel's annual based salary was $400,000. From January 1, 2024 to May 31, 2024, Mr. Trettel's annual base salary was $500,000. During 2022, Mr. Trettel was granted a five-year nonqualified stock option to acquire 500,000 shares of common stock exercisable at $0.21 per share. See "Executive Employment Agreements" below for information on the employment agreement entered into with Mr. Trettel effective June 1, 2024. During 2024, Mr. Trettel was granted a five-year nonqualified stock option to acquire 200,000 shares of common stock exercisable at $0.88 per share.

(4) Represents the dollar amount recognized for consolidated financial statement reporting purposes of restricted stock awards and stock option awards granted to the executive officers computed in accordance with FASB ASC Topic 718. For a discussion of valuation assumptions, see Note 11 to our consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2024. The dollar amount shown in the "Stock Awards" column for Mr. MacPherson reflects the grant date fair values recognized in 2023 and 2024 for the retention stock award granted in November 2022 which was subject to a vesting schedule. The full amount for the entire grant was $960,000. The dollar amounts shown in the "Option Awards" column for Mr. MacPherson, Mr. Pavlish and Mr. Trettel reflect the grant date fair value recognized for stock options granted in 2024. There can be no assurance the amounts determined in accordance with FASB ASC Topic 718 will ever be realized. The following table provides information concerning the stock options granted to the executive officers:

Name	Year	Stock Options (#)	FASB ASC Topic 718 Value ($)
Richard MacPherson	2024	300,000	189,664
	2023	-	-
John Pavlish	2024	100,000	63,221
	2023	-	-
James Trettel	2024	200,000	126,443
	2023	-	-

(5) The amounts shown for 2024 and 2023 in the "All Other Compensation" column are comprised of the following:

Name	Year	401k Match ($)	Life Insurance Premiums ($)	Auto Allowance ($)	Perquisites and Other Benefits ($) (1)
Richard MacPherson	2024	-	96,600	27,785	15,859
	2023	-	56,350	28,155	20,809
John Pavlish	2024	13,833	-	-	8,310
	2023	13,047	-	-	25,215
James Trettel	2024	17,217	-	-	6,000
	2023	15,533	-	-	6,000

(1) The amount for each of Messrs. MacPherson, Pavlish and Trettel includes $6,000 for a home office allowance in 2024 and 2023. The amount for each of Messrs. MacPherson and Pavlish also includes $9,859 and $2,310, respectively, for medical expense reimbursement in 2024 and $14,809 and $5,075, respectively, for medical expense reimbursement in 2023. In addition, the amount for Mr. Pavlish in 2023 includes a gross up for taxes of $14,140 in connection with the exercise of stock options.

Executive Employment Agreements

On June 7, 2024, the Company entered into an amended and restated employment agreement with Richard MacPherson, effective as of June 1, 2024, pursuant to which Mr. MacPherson will continue to serve as President and Chief Executive Officer of the Company. The agreement has a term of three years which after such three-year term will automatically renew for successive one-year periods unless otherwise terminated by either party prior to the next applicable renewal period. Mr. MacPherson is entitled to a base salary of $1,000,000 per year, which may be increased from time to time solely at the discretion of the Board of Directors (or committee thereof). Mr. MacPherson shall be eligible to receive bonus compensation in such amounts and at such times as the Board (or committee thereof) at its sole discretion shall from time to time determine and which shall not exceed $1,000,000 annually. He is entitled to participate in benefit plans that are made available to executive employees of the Company, and is entitled to certain other benefits. He is also entitled to receive equity awards subject to the sole discretion of the Board (or committee thereof). The agreement also provides for certain severance payments in the event the agreement is terminated by the Company without cause or terminated by Mr. MacPherson for good reason (as such terms are defined in the agreement).

On June 7, 2024, the Company also entered into an amended and restated employment agreement with John Pavlish, effective as of June 1, 2024, pursuant to which Mr. Pavlish will continue to serve as Senior Vice President and Chief Technology Officer of the Company. The agreement has a term of three years which after such three-year term will automatically renew for successive one-year periods unless otherwise terminated by either party prior to the next applicable renewal period. Mr. Pavlish is entitled to a base salary of $500,000 per year, which may be increased from time to time solely at the discretion of the Board of Directors (or committee thereof). Mr. Pavlish shall be eligible to receive bonus compensation in such amounts and at such times as the Board (or committee thereof) at its sole discretion shall from time to time determine and which shall not exceed $500,000 annually. He is entitled to participate in benefit plans that are made available to executive employees of the Company, and is entitled to certain other benefits. He is also entitled to receive equity awards subject to the sole discretion of the Board (or committee thereof). The agreement also provides for certain severance payments in the event the agreement is terminated by the Company without cause or terminated by Mr. Pavlish for good reason (as such terms are defined in the agreement).

On June 7, 2024, the Company also entered into an employment agreement with James Trettel, effective as of June 1, 2024, pursuant to which Mr. Trettel will serve as Executive Vice President of Operations of the Company. The agreement has a term of three years which after such three-year term will automatically renew for successive one-year periods unless otherwise terminated by either party prior to the next applicable renewal period. Mr. Trettel is entitled to a base salary of $600,000 per year, which may be increased from time to time solely at the discretion of the Board of Directors (or committee thereof). Mr. Trettel shall be eligible to receive bonus compensation in such amounts and at such times as the Board (or committee thereof) at its sole discretion shall from time to time determine and which shall not exceed $500,000 annually. He is entitled to participate in benefit plans that are made available to executive employees of the Company, and is entitled to certain other benefits. He is also entitled to receive equity awards subject to the sole discretion of the Board (or committee thereof). The agreement also provides for certain severance payments in the event the agreement is terminated by the Company without cause or terminated by Mr. Trettel for good reason (as such terms are defined in the agreement).

Outstanding Equity Awards as of December 31, 2024

The following table sets forth certain information about the number of unexercised nonqualified stock options held as of December 31, 2024 by each executive named in the Summary Compensation Table.

	Option Awards			
Name	Number of securities underlying unexercised options (#) exercisable	Number of securities underlying unexercised options (#) unexercisable	Option Exercise Price ($)	Option Expiration Date
Richard MacPherson	500,000	-	0.19	07/08/2025
	500,000	-	0.58	12/14/2025
	750,000	-	0.78	11/22/2026
	300,000	-	0.88	01/15/2029
John Pavlish	500,000	-	0.19	07/08/2025
	500,000	-	0.58	12/14/2025
	500,000	-	0.78	11/22/2026
	500,000	-	0.21	05/31/2027
	100,000	-	0.88	01/15/2029
James Trettel	500,000	-	0.19	07/08/2025
	500,000	-	0.58	12/14/2025
	500,000	-	0.78	11/22/2026
	500,000	-	0.21	05/31/2027
	200,000	-	0.88	01/15/2029

Other Benefits

Our executive officers are eligible to participate in all of our employee benefit plans, such as medical and dental, our employee stock purchase plan, and our 401(k) plan, in each case on the same basis as other employees, subject to applicable law, should such benefits exist. Our 401(k) plan allows eligible employees to defer a portion of their compensation before federal income tax to a qualified trust. All employees who are at least 21 years of age are eligible to participate in the 401(k) plan. The participants may choose from multiple investment options for the investment of their deferred compensation. In addition, we match 100% of each participant's salary deferral, for the first 4% of their salary, with a cash contribution. For the years ended December 31, 2024 and 2023, we contributed $71,909 and $55,487, respectively, to the 401(k) plan. We also provide vacation and other paid holidays to all employees, including our executive officers, which are comparable to those provided at peer companies. Certain other perquisites and benefits are provided to our executive officers as reflected in the tables above.

Policies Regarding Recovery of Awards

Our board has not adopted a policy that requires us to make retroactive adjustments to any cash or equity-based incentive compensation paid to executive officers (or others) where the payment was predicated upon the achievement of financial results that were subsequently the subject of a restatement. However, we may implement a clawback policy in accordance with the requirements of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 and the regulations that will be issued under that act.

Tax and Accounting Treatment of Compensation

Section 162(m) of the Internal Revenue Code places a limit of $1.0 million per person on the amount of compensation that we may deduct in any one year with respect to our Chief Executive Officer and certain of our other executive officers. While the board of directors considers deductibility factors when making compensation decisions, the board also looks at other considerations, such as providing our executive officers with competitive and adequate incentives to remain with us and increase our business operations, financial performance, and prospects, as well as rewarding extraordinary contributions.

We account for equity compensation paid to our employees under the rules of FASB ASC Topic 718, which requires us to estimate and record an expense for each award of equity compensation over the service period of the award. Accounting rules also require us to record cash compensation as an expense at the time the obligation is accrued. We have not tailored our executive compensation program to achieve particular accounting results.

Policies on Ownership, Insider Trading, Hedging, and 10b5-1 Plans

We do not have formal stock ownership guidelines for our employees or directors, because the board of directors is satisfied that stock and option holdings among our employees or directors, are sufficient at this time to provide motivation and to align this group's interests with those of our stockholders. In addition, we believe that stock ownership guidelines are rare in companies at our stage, which means that ownership requirements would put us at a competitive disadvantage when recruiting and retaining high-quality executives.

We have established an insider trading policy which provides guidelines to officers, directors and employees with respect to transactions in the Company's securities. The Company's insider trading policy prohibits certain actions by such individuals relating to buying and selling common stock of the Company, and discourages certain other actions in other situations. Such individuals are authorized to enter into trading plans established according to Section 10b5-1 of the Exchange Act with an independent broker-dealer. Under these plans, the individual must not exercise any influence over the amount of the securities to be traded, the price at which they are to be traded or the date of the trade. The plan must either specify the amount, pricing and timing of transactions in advance or delegate discretion on these matters to an independent third party. Such plans provide a defense from insider trading liability. As of December 31, 2024, no director or named executive officer had a trading plan in place.

Stockholder Advisory Vote on Executive Compensation

Our Company held an advisory vote on executive compensation in 2024 and takes such action annually. The Board intends to periodically reevaluate our executive compensation philosophy and practices in light of our performance, needs and developments, including the outcome of future non-binding advisory votes by our stockholders.

Director Compensation

Director Compensation Table for Year Ended December 31, 2024

The following table sets forth information regarding the compensation for 2024 of each non-executive member of the board of directors (Ms. Coogler was elected to the board of directors on December 30, 2024):

Name	Fees Earned or Paid in Cash ($)	Stock Awards ($) (1)	Option Awards ($) (1)	Total ($)
Christopher Greenberg	150,000	-	126,443	276,443
David M. Kaye	75,000	-	63,221	138,221
Troy Grant	100,000	43,500	-	143,500
Mitzi H. Coogler	-	-	-	-

(1) Represents the aggregate grant date fair value computed in accordance with FASB ASC Topic 718. For a discussion of valuation assumptions, see Note 11 to our consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2024. There can be no assurance the amounts determined in accordance with FASB ASC Topic 718 will ever be realized. The following table provides information concerning the restricted stock units ("RSUs") and stock options granted to the Directors for 2024:

Name	Stock Awards (#)	FASB ASC Topic 718 Value	Stock Options (#)	FASB ASC Topic 718 Value
Christopher Greenberg	-	-	200,000	126,443
David M. Kaye	-	-	100,000	63,221
Troy Grant	50,000(1)	43,500	-	-

(1) On January 15, 2024, the Company granted 50,000 RSUs to Mr. Grant. The RSUs vest one year from the grant of grant on January 15, 2025. Once vested, each RSU represents the right to receive one share of the Company's common stock.

For 2024, Mr. Greenberg's compensation for serving as Chairman of the Board was $150,000, and each of Mr. Kaye and Mr. Grant were paid $75,000 for serving on the Board. On September 19, 2024, Mr. Greenberg resigned as chairperson of the Audit Committee and Mr. Grant was appointed chairperson in his place and will be paid $75,000 annually for serving in such position in addition to the fee paid for his serving on the Board. Effective as of January 1, 2025, Ms. Coogler shall be paid $75,000 annually for serving on the Board.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.

The following table sets forth certain information known to us regarding beneficial ownership of our common stock as March 31, 2025 by:

- each person or group of affiliated persons known by us to be the beneficial owner of more than five percent of our capital stock;
- each of our named executive officers;
- each of our directors; and
- all of our executive officers and directors as a group.

The column entitled "Percentage of Shares Beneficially Owned" is calculated based on 96,228,153 shares of common stock outstanding as of March 31, 2025.

We have determined beneficial ownership in accordance with the rules of the SEC, and the information is not necessarily indicative of beneficial ownership for any other purpose. These rules generally attribute beneficial ownership of securities to persons who possess sole or shared voting power or investment power with respect to those securities as well as any shares of common stock that the person has the right to acquire within 60 days of March 31, 2025 through the exercise of stock options or other rights. These shares are deemed to be outstanding and beneficially owned by the person holding those options for the purpose of computing the percentage ownership of that person, but they are not treated as outstanding for the purpose of computing the percentage ownership of any other person. Unless otherwise indicated, the persons or entities identified in this table have sole voting and investment power with respect to all shares shown as beneficially owned by them.

Except as otherwise noted below, the address for persons listed in the table is c/o the Company at 1810 Jester Drive, Corsicana, Texas 75109.

Name of Beneficial Owner	Number of Shares Beneficially Owned	Percentage of Shares Beneficially Owned (9)
Richard MacPherson	14,754,403(1)	15.01%
Christopher Greenberg	6,230,533(2)	6.42%
John Pavlish	3,920,110(3)	3.98%
James Trettel	3,036,935(4)	3.07%
David M. Kaye	750,356(5)	*
Troy Grant	325,000(6)	*
Mitzi H. Coogler	110,000(7)	*
Alterna Core Capital Assets Fund II, L.P., et al	9,300,000(8)	9.66%
All current directors and executive officers as a group (8 persons)	29,152,337	27.86%

* Less than one percent of the outstanding shares of common stock of the Company.

(1) Includes 12,704,403 shares owned by Mr. MacPherson and 2,050,000 shares which Mr. MacPherson has the right to acquire upon exercise of options.

(2) Includes 5,422,533 shares owned by Mr. Greenberg, 5,000 shares owned by Mr. Greenberg with his wife, 3,000 shares owned by Mr. Greenberg's wife, and 800,000 shares which Mr. Greenberg has the right to acquire upon exercise of options.

(3) Includes 1,770,110 shares owned by Mr. Pavlish and 2,150,000 shares which Mr. Pavlish has the right to acquire upon exercise of options.

(4) Includes 136,935 shares owned by Mr. Trettel, 200,000 owned by Mr. Trettel's wife, and 2,700,000 shares which Mr. Trettel has the right to acquire upon exercise of options.

(5) Includes 275,356 shares owned by Mr. Kaye and 475,000 shares which Mr. Kaye has the right to acquire upon exercise of options.

(6) Includes 200,000 shares owned by Mr. Grant and 125,000 shares which Mr. Grant has the right to acquire upon exercise of options.

(7) Includes 10,000 shares owned by Ms. Coogler with her husband, as joint tenants, and 100,000 shares which Ms. Coogler has the right to acquire upon exercise of options.

(8) Represents 9,300,000 shares owned and based solely upon and according to information reported in filings made to the SEC, jointly filed by and on behalf of certain reporting persons identified below (the "Reporting Persons"). The Reporting Persons are Alterna Core Capital Assets Fund II, L.P., Alterna Capital Partners LLC, Alterna General Partner II LLC, AC Midwest Energy LLC, Eric M. Press, Roger P. Miller, and Earle Goldin. The address for the Reporting Persons is 10 Corporate Drive, Suite 2204, Bedford, NH 03110.

(9) Applicable percentage ownership for each stockholder is based on 96,228,153 shares of common stock outstanding as of March 31, 2025 plus any securities that stockholder has the right to acquire within 60 days of March 31, 2025 pursuant to options, warrants, conversion privileges, or other rights. Beneficial ownership is determined in accordance with the rules of the Securities and Exchange Commission and generally includes voting or investment power with respect to securities. Shares of common stock that a person has the right to acquire beneficial ownership of upon the exercise or conversion of options, convertible stock, warrants, or other securities that are currently exercisable or convertible or that will become exercisable or convertible within 60 days of March 31, 2025 are deemed to be beneficially owned by the person holding such securities for the purpose of computing the percentage of ownership of such person, but are not treated as outstanding for the purpose of computing the percentage ownership of any other person.

Item 13. Certain Relationships and Related Transactions, and Director Independence.

Other than the compensation agreements and other arrangements described under Item 11. Executive Compensation and the transactions described below, since January 1, 2024, there has not been and there is not currently proposed, any transaction or series of similar transactions to which we were, or will be, a party in which the amount involved exceeded, or will exceed, the lesser of (i) $120,000 or (ii) one percent of the average of our total assets for the last two completed fiscal years, and in which any director, executive officer, holder of five percent or more of any class of our capital stock, or any member of the immediate family of, or entities affiliated with, any of the foregoing persons, had, or will have, a direct or indirect material interest.

On February 27, 2024, we entered into an Unsecured Debt Restructuring Agreement (the "Debt Restructuring Agreement") with AC Midwest Energy LLC ("AC Midwest") which replaced and superseded the Unsecured Note Financing Agreement and Reaffirmation of Guaranty entered into with AC Midwest on February 25, 2019, as amended on October 28, 2022 (the "Unsecured Note Financing Agreement").

Pursuant to the Unsecured Note Financing Agreement, prior to February 27, 2024, AC Midwest was the holder of an unsecured note with a principal amount outstanding of $13,154,930.61 which was issued on February 25, 2019 (the "Unsecured Note"). The Unsecured Note was scheduled to mature on August 25, 2025 and bears a zero cash interest rate. Pursuant to the Unsecured Note Financing Agreement, AC Midwest was also entitled to a "non-recourse" profit participation preference equal to $17,654,930.60 (the "Profit Share"). Prior to maturity, the outstanding principal, as well as the Profit Share, were to be paid from Net Litigation Proceeds from claims relating to the Company's intellectual property, Net Revenue Share, Adjusted Free Cash Flow and Equity Offering Net Proceeds (as such terms are defined in the Unsecured Note Financing Agreement). Any remaining principal balance due on the Unsecured Note would be due and payable in full on the maturity date. The Profit Share, however, if not paid in full on or before the maturity date would remain subject to the Unsecured Note Financing Agreement until full and final payment.

Prior to February 27, 2024, there also remained outstanding to AC Midwest a principal balance of $271,686.10 due under a secured noted of the Company issued on November 29, 2016 in the original principal amount of $9,646,686, which had a maturity date of August 25, 2025 (the "Secured Note"). The Secured Note had been issued pursuant to an Amended and Restated Financing Agreement and Reaffirmation of Guaranty, dated as of November 1, 2016, as amended on June 14, 2018, September 12, 2019, February 25, 2019 and October 28, 2022 (the "Restated Financing Agreement").

Pursuant to the Debt Restructuring Agreement, on February 27, 2024, we (i) paid AC Midwest $9,040,000 as a reduction in the outstanding principal balance of the Unsecured Note, (ii) issued to AC Midwest a new unsecured replacement note representing the remaining outstanding principal balance of the Unsecured Note in the principal amount of $4,114,930.60 (the "New Note"), and (iii) paid AC Midwest $275,625.55 representing the remaining principal balance under the Secured Note of $271,686.10 plus interest of $3,939.45. In addition, within 30 days, we would either facilitate the private sale to third parties of certain shares of common stock of the Company held by AC Midwest for a purchase price of no less than $960,000, which amount shall be applied as a credit against the principal balance due on the New Note dollar for dollar, or pay AC Midwest $960,000 toward the principal balance due on the New Note. The private sale of shares for the purchase price of $960,000 was completed on March 11, 2024. Any remaining principal balance on the New Note shall be due August 27, 2024 (the "Maturity Date"), which is six months from February 27, 2024. Until repaid in full, the New Note shall accrue interest at a rate equal to SOFR plus 2.0% per annum. The New Note completely replaced and superseded the Unsecured Note, which shall be of no further force and effect. On August 26 and 27, 2024, the Company repaid AC Midwest the remaining principal of $3,154,931 on the New Note together with accrued interest of $119,164. As a result, the only remaining debt obligation under the Debt Restructuring Agreement is the profit participation as described below.

In addition, pursuant to the Debt Restructuring Agreement, AC Midwest shall be entitled to a profit participation preference equal to $7,900,000 (the "Restructured Profit Share"). The Restructured Profit Share is "non-recourse" and shall only be paid from Net Litigation Proceeds (as defined in the Debt Restructuring Agreement) from claims relating to our intellectual property. Following the receipt of any Net Litigation Proceeds, we shall prepay any remaining principal balance of the New Note and pay the Restructured Profit Share in an amount equal to 75.0% of such Net Litigation Proceeds until the New Note and Restructured Profit Share have been paid in full. The Restructured Profit Share completely replaces and supersedes the terms and conditions of the Profit Share in the amount of $17,654,930.60 provided for in the Unsecured Note Financing Agreement, which shall be of no further force and effect. The Restructured Profit Share, if not paid in full on or before the Maturity Date, shall remain subject to the terms of the Debt Restructuring Agreement.

In addition to facilitating the private sale to third parties as described above, AC Midwest granted the Company the exclusive right until December 31, 2024 to facilitate the sale of all or a portion of the remaining balance of the shares of common stock of the Company held by AC Midwest, which proceeds above a certain amount will be applied as a credit against the Restructured Profit Share dollar for dollar (the "Facilitation Credit"). As of December 31, 2024, the Company had not facilitated the sale of any portion of the remaining shares held by AC Midwest. As a result, no Facilitation Credit has been issued to the Company.

AC Midwest beneficially owns, or controls or directs, directly or indirectly, 9.67% of the outstanding shares of our common stock.

Kaye Cooper Kay & Rosenberg, LLP provides certain legal services to the Company and was paid $431,444 for the year ended December 31, 2024 for legal services rendered and disbursement incurred. David M. Kaye, a Director of the Company, is a partner of the law firm. At December 31, 2024, $37,500 was owed to the firm for services rendered.

On January 31, 2023, we entered into a License and Supply Agreement with Dakin Holdings Ltd., a company incorporated in Barbados ("Dakin"), effective as of January 1, 2023 (the "Dakin Agreement"), pursuant to which Dakin has granted to the Company (i) a limited license to manufacture and produce for Dakin products (the "Dakin Products") comprising certain intellectual property owned by Dakin as described below (the "Dakin IP"), and (ii) an exclusive license to commercialize the Dakin IP in the United States. Dakin is a company owned and controlled by Richard MacPherson, the Company's Chief Executive Officer and President. The Dakin Agreement is for a term of ten years unless terminated earlier under certain circumstances as set forth therein. Under the Dakin Agreement, Dakin shall purchase from the Company 100% of Dakin's requirements for the Dakin Products containing the Dakin IP for all sales of the Dakin Products outside of the United States, subject to the availability of the products from the Company, at a pricing formula set forth in the Dakin Agreement. The Company shall pay Dakin a license fee of $12,500 per month for a three-year period commencing as of the effective date, and pay Dakin a royalty on all sales of the Dakin Products made by the Company in the United States. The Company has also agreed to provide Dakin with technical support as requested by Dakin at such technical support rates set forth in the Dakin Agreement subject to adjustment. On November 18, 2024, the parties entered into an amendment to the Dakin Agreement which eliminated all further monthly license fees after September 30, 2024. The Dakin IP consists of a proprietary compound of materials engineered to treat a boiler to improve the combustion process and thereby reduce overall emissions, while improving boiler efficiency during the combustion of all types of fuels at power plants. For the year ended December 31, 2024, Dakin incurred $112,500 license fees. At December 31, 2024, Dakin was owed $0 from the Company for license fees.

On May 28, 2024, the Company entered into an Administrative Services Agreement with Greenberg Enterprises, LLC ("Greenberg Enterprises"), pursuant to which Greenberg Enterprises will be paid for certain administrative support provided to the Company since January 1, 2024 and administrative support to be provided in the future to the Company including but not limited to general office and technical support, project management and support, and vendor relations support. Such agreement was terminated effective in December 2024. During the year ended December 31, 2024, Greenberg Enterprises provided $237,020 for administrative services and $335,100 for expense reimbursement. At December 31, 2024, Greenberg Enterprises was owed $0 from the Company pursuant to the agreement. Greenberg Enterprises is a company owned and controlled by Christopher Greenberg, Chairman of the Board of the Company.

Director Independence

The Board currently consists of five members, four of whom are viewed as being independent within the meaning of Canadian National Instrument 58-101 – *Disclosure of Corporate Governance Practices* ("NI 58-101"). For this purpose, a director is independent if he or she has no direct or indirect "material relationship" with the Company, as defined in NI 58-101. A "material relationship" is a relationship which could, in the view of the Board, be reasonably expected to interfere with the exercise of the director's independent judgment. An individual who has been an employee or executive officer of the Company within the last three years is considered to have a material relationship with the Company. Christopher Greenberg, David M. Kaye, Troy Grant and Mitzi H. Coogler are independent for the purposes of NI 58-101. Richard MacPherson is not independent for the purposes of NI 58-101 as he is also an executive officer of the Company.

Item 14. Principal Accounting Fees and Services.

Independent Registered Public Accounting Firm's Fees

The following table sets forth the fees billed or billable by Rosenberg Rich Baker Berman, P.A., our principal accountants effective as of September 11, 2023, and Marcum LLP, our former principal accountants, for audit and non-audit services rendered to us. These fees are categorized as audit fees, audit-related fees, tax fees, and all other fees. The nature of the services provided in each category is described following the table.

	Year Ended December 31,	
	2024	2023
Principal Accounting Fees		
Audit fees (1)	$ 190,816	$ 233,151
Audit-related fees (2)	$ 0	$ 12,875
Tax fees	$ 0	$ 0
All other fees	$ 0	$ 0
Total aggregate fees	$ 190,816	$ 246,026

(1) The aggregate audit fees billed or expected to be billed for professional services rendered by Rosenberg Rich Baker Berman, P.A., our principal accountants effective as of September 11, 2023, for the audit of our consolidated financial statements included in our annual report on Form 10-K and review of our interim consolidated financial statements included in quarterly reports, and other services normally provided in connection with statutory and regulatory filings was $163,000 and $131,000 for the years ended December 31, 2024 and 2023,respectively. The aggregate audit fees billed for professional services rendered by Marcum LLP, our former principal accountants, for the audit of our consolidated financial statements included in our annual report on Form 10-K and review of our interim consolidated financial statements included in quarterly reports, and other services normally provided in connection with statutory and regulatory filings was $27,816 and $102,151 for the years ended December 31, 2024 and 2023, respectively.

(2) The aggregate fees billed for audit-related professional services rendered by Marcum LLP consisting of work performed in connection with transitioning of auditors and review of workpapers was $12,875 for the year ended December 31, 2023.

All fees described above were pre-approved by the Board.

Pre-Approval Policies and Procedures of the Audit Committee

The audit committee has not set any pre-approval policies and procedures as of December 31, 2024.

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PART IV

Item 15. Exhibits and Financial Statement Schedules.

(a) The financial statements identified below and required by Part II, Item 8 of this Form 10-K are set forth above.

(1) Financial Statements

Report of Independent Registered Public Accounting Firm
Consolidated Balance Sheet as of December 31, 2024 and 2023
Consolidated Statements of Operations for Years Ended December 31, 2024 and 2023
Consolidated Statements of Stockholders' Equity (Deficit) for Years Ended December 31, 2024 and 2023
Consolidated Statements of Cash Flows for Years Ended December 31, 2024 and 2023
Notes to Consolidated Financial Statements

(2) Financial Statement Schedules

All other schedules have been omitted because of the absence of the conditions under which they are required or because the required information, where material, is shown in the financial statements or the notes thereto.

(3) Exhibits.

Exhibit	Description	Filed Herewith	Form	Incorporated by Reference Filing Date
3.1	Certificate of Incorporation and amendments thereto through November 25, 2014		10-K	03/20/2015
3.2	Certificate of Amendment filed with the Secretary of State of Delaware effective on October 17, 2024		8-K	10/17/2024
3.3	Second Amended and Restated By-laws		8-K	11/15/2024
4.1	Description of Securities	☒		
10.1	Closing Agreement by and among Midwest Energy Emissions Corp., MES, Inc. and Energy & Environmental Research Center Foundation effective as of April 21, 2017		10-Q	08/21/2017
10.2	Assignment of Patents by and between Energy & Environmental Research Center Foundation and Midwest Energy Emissions Corp. dated April 24, 2017		10-Q	08/21/2017
10.3	Amended and Restated Employment Agreement with Richard MacPherson dated as of June 7, 2024		8-K	06/13/2024
10.4	Amended and Restated Employment Agreement with John Pavlish dated as of June 7, 2024		8-K	06/13/2024
10.5	Employment Agreement with James Trettel dated as of June 7, 2024		8-K	06/13/2024
10.6	License and Supply Agreement with Dakin Holdings Ltd. dated as of January 31, 2023		8-K	02/03/2023
10.7	First Amendment to License and Supply Agreement with Dakin Holdings Ltd. dated as of November 18, 2024	☒		
10.8	Amended and Restated 2014 Equity Incentive Plan, as amended October 29, 2024		8-K	11/15/2024
10.9	Amended and Restated 2017 Equity Incentive Plan, as amended October 29, 2024		8-K	11/15/2024
10.10	Form of Option Award Agreement (Amended and Restated 2017 Equity Incentive Plan)	☒		
10.11	Form of Restricted Share Unit Award Agreement (Amended and Restated 2017 Equity Incentive Plan)	☒		

10.12	Unsecured Debt Restructuring Agreement among Midwest Energy Emissions Corp., MES, Inc. and AC Midwest Energy LLC dated as of February 27, 2024		8-K	03/04/2024
10.13	Majority Voting Policy		8-K	11/15/2024
14.1	Code of Ethics and Business Conduct (revised as of December 2, 2024)	☒		
19.1	Insider Trading Policy (last modified December 2, 2024)	☒		
21.1	Subsidiaries of the registrant	☒		
31.1	Certification by Principal Executive Officer, required by Rule 13a-14(a) or Rule 15d-14(a) of the Exchange Act	☒		
31.2	Certification by Principal Financial Officer, required by Rule 13a-14(a) or Rule 15d-14(a) of the Exchange Act	☒		
32.1	Certification by Principal Executive Officer, required by Rule 13a-14(b) or Rule 15d-14(b) of the Exchange Act and Section 1350 of Chapter 63 of Title 18 of the United States Code	☒		
32.2	Certification by Principal Financial Officer, required by Rule 13a-14(b) or Rule 15d-14(b) of the Exchange Act and Section 1350 of Chapter 63 of Title 18 of the United States Code	☒		
101.INS	Inline XBRL Instance Document			
101.SCH	Inline XBRL Taxonomy Extension Schema Document			
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document			
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document			
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document			
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document			
104	Cover Page Interactive Data File (formatted as inline XBRL and contained in Exhibit 101)			

Item 16. Form 10-K Summary.

None.

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SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

BIRCHTECH CORP.

Date: March 31, 2025

By: */s/ Richard MacPherson*
Richard MacPherson
President and Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacity and on the dates indicated.

Signature	Title	Date
/s/ Richard MacPherson Richard MacPherson	President, Chief Executive Officer and Director (Principal Executive Officer)	March 31, 2025
/s/ Fiona Fitzmaurice Fiona Fitzmaurice	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	March 31, 2025
/s/ Christopher Greenberg Christopher Greenberg	Chairman of the Board and Director	March 31, 2025
/s/ David M. Kaye David M. Kaye	Director	March 31, 2025
/s/ Troy Grant Troy Grant	Director	March 31, 2025
/s/ Mitzi H. Coogler Mitzi H. Coogler	Director	March 31, 2025

EXHIBIT 4.1

DESCRIPTION OF THE REGISTRANT'S SECURITIES REGISTERED PURSUANT TO SECTION 12 OF THE SECURITIES EXCHANGE ACT OF 1934

Birchtech Corp. ("we," "our" or the "Company") has one class of securities registered under Section 12 of the Securities Exchange Act of 1934, as amended: our common stock, par value $0.001 per share (the "Common Stock").

The following summary description of our Common Stock is based on the provisions of our Certificate of Incorporation, as amended (the "Certificate of Incorporation"), our Bylaws and the applicable provisions of the Delaware General Corporation Law ("DGCL"). This information is qualified entirely by reference to the applicable provisions of our Certificate of Incorporation, our Bylaws and the DGCL. Copies of our Certificate of Incorporation and our Bylaws are incorporated by reference as exhibits to the Annual Report on Form 10-K of which this Exhibit 4.1 is a part. We encourage you to read our Certificate of Incorporation, our Bylaws and the applicable provisions of the DGCL for additional information.

General

We are authorized to issue 150,000,000 shares of Common Stock and 2,000,000 shares of preferred stock, par value $0.001 per share (the "Preferred Stock"). The outstanding shares of our Common Stock are fully paid and nonassessable. We have no outstanding shares of Preferred Stock.

Common Stock

Each share of our Common Stock is entitled to one vote on all matters submitted to a vote of the stockholders, including the election of directors. Generally, all matters to be voted on by stockholders must be approved by a majority of the votes entitled to be cast by all shares of Common Stock that are present in person or represented by proxy. Holders of Common Stock representing a majority of our capital stock issued, outstanding and entitled to vote, represented in person or by proxy, are necessary to constitute a quorum at any meeting of our stockholders. Our Certificate of Incorporation does not provide for cumulative voting in the election of directors. Accordingly, the holders of Common Stock entitled to cast more than 50% of the votes cast at an election of directors can elect all of the directors. Holders of Common Stock have equal ratable rights to dividends from funds legally available therefor when, as and if declared by our board of directors; have no pre-emptive rights; no conversion rights; and, there are no redemption provisions applicable to the Common Stock.

Preferred Stock

Our board of directors has the authority to issue Preferred Stock in one or more classes or series and to fix the designations, powers, preferences and rights, and the qualifications, limitations or restrictions thereof, including dividend rights, conversion right, voting rights, terms of redemption, liquidation preferences and the number of shares constituting any class or series, without further vote or action by the stockholders.

Transfer Agent

The transfer agent and registrar for our common stock is Transfer Online, Inc., 512 SE Salmon Street, Portland, Oregon 97214. The co-transfer agent and registrar for our common stock in Canada is TSX Trust Company at its offices in Toronto, Ontario, Canada.

Market

Our shares of common stock are quoted on the OTCQB operated by OTC Markets Group Inc. under the symbol "BCHT", and are traded on the Toronto Stock Exchange ("TSX") also under the symbol "BCHT". We began trading on the TSX on November 12, 2024. Between July 10, 2023 and November 12, 2024, our shares of common stock were traded on the TSX Venture Exchange ("TSXV"). Prior to October 17, 2024, our shares of common stock were quoted and traded under the symbol "MEEC". Effective on October 17, 2024, we changed our corporate name from Midwest Energy Emissions Corp. to Birchtech Corp.

Anti-Takeover Effects of Our Certificate of Incorporation and Bylaws and Certain Provisions of the DGCL

Our Certificate of Incorporation and Bylaws contain provisions that could have an anti-takeover effect, including provisions that provide the following:

- the ability of our board of directors to determine the rights, preferences and privileges of our Preferred Stock and to issue the Preferred Stock without stockholder approval;
- advance notice requirements for election to our board of directors and for proposing matters that can be acted upon at stockholder meetings;
- vacancies on the board of directors may be filled by a majority of directors then in office, although less than a quorum;
- grant our board of directors the authority to increase or decrease the size of the board of directors;
- authorize our board of directors, by a majority vote, to amend the Bylaws;
- The DGCL provides that stockholders are not entitled to the right to cumulate votes in the election of directors unless a corporation's certificate of incorporation provides otherwise. Our Certificate of Incorporation and Bylaws do not provide for cumulative voting.

EXHIBIT 10.7

FIRST AMENDMENT TO LICENSE AND SUPPLY AGREEMENT

THIS FIRST AMENDMENT TO LICENSE AND SUPPLY AGREEMENT (the "First Amendment") is dated as of November 18, 2024, by and between DAKIN HOLDINGS LTD., a company incorporated under the laws of the Country of Barbados ("Dakin"), on the one hand, and BIRCHTECH CORP., formerly Midwest Energy Emissions Corp., a Delaware corporation, and its wholly-owned subsidiary, MES, INC., a North Dakota corporation (together, "Birchtech"), on the other hand.

RECITALS:

A. On January 31, 2023, the parties entered into a License and Supply Agreement (the "Agreement"), effective as of January 1, 2023, pursuant to which Dakin granted Birchtech certain license rights to intellectual property owned by Dakin (capitalized terms not otherwise defined herein shall have the meanings ascribed to them in the Agreement).

B. Pursuant to the Agreement, Dakin is entitled to a Monthly License Fee of $12,500 beginning January 1, 2023 and ending December 31, 2025 (the "License Fee End Date").

C. As of the date hereof, Birchtech has paid all Monthly License Fees through June 30, 2024.

D. The parties desire to amend the License Fee End Date and make such other changes as hereinafter set forth.

NOW, THEREFORE, in consideration of the premises and the mutual agreements contained herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto hereby agree as follows:

1. Recitals. The foregoing recitals are hereby incorporated in this First Amendment and made a part hereof by reference.

2. Birchtech. On and after the date hereof, any and all references in the Agreement to "ME2C" shall be deemed to refer to "Birchtech".

3. License Fees.

(a) As soon as practicable following the date hereof, Birchtech shall pay Dakin the sum of $37,500 representing the license fees due to Birchtech for the period of July 1, 2024 through September 30, 2024.

(b) The parties hereby agree that the License Fee End Date is hereby modified and changed to September 30, 2024 from December 31, 2025. Upon payment of the sum referenced in Section 3(a) above, no additional Monthly License Fees shall be due and payable from Birchtech to Dakin under the Agreement.

(c) Article 6 of the Agreement is hereby amended in its entirety to read as follows:

"**ARTICLE 6. LICENSE FEE**

6.01 As partial consideration for the License granted hereunder, Birchtech shall pay Dakin a non-refundable license fee of $12,500 per month beginning January 1, 2023 and ending September 30, 2024, payable at the beginning of each month (the "Monthly License Fee"). For clarification purposes, it is understood that no additional Monthly License Fees shall be due and payable during the Term after September 30, 2024. Notwithstanding the foregoing, in the event this Agreement is terminated prior to September 30, 2024, then the Monthly License Fee shall also terminate effective at such earlier termination."

4. Continuing Force and Effect. Except as expressly set forth in this First Amendment, the Agreement remains unmodified and in full force and effect.

5. References to Agreement. On and after the date hereof, each reference in the Agreement to "this Agreement", "hereunder", "hereof", or words of like import, shall mean and be a reference to the Agreement as amended hereby.

6. Counterparts. This First Amendment may be executed in one or more counterparts, each of which shall be deemed an original but all of which together will constitute one and the same instrument. The counterparts may be delivered by facsimile transmission or by electronic mail in portable document format (.pdf).

IN WITNESS WHEREOF, the parties have executed this First Amendment as of the date first above written.

DAKIN:

DAKIN HOLDINGS LTD.

By: */s/ Richard MacPherson*
Name: Richard MacPherson
Title: President

BIRCHTECH:

BIRCHTECH CORP.
MES, INC.

By: */s/ Christopher Greenberg*
Name: Christopher Greenberg
Title: Chairman of the Board

EXHIBIT 10.10

BIRCHTECH CORP.

OPTION AWARD AGREEMENT

UNDER THE AMENDED AND RESTATED 2017 EQUITY INCENTIVE PLAN

AGREEMENT by and between **BIRCHTECH CORP.**, a Delaware corporation (the "Corporation") and **[NAME OF PARTICIPANT]** (the "Participant"), dated as of **[INSERT DATE]** (the "Date of Grant").

WHEREAS, the Corporation maintains the Birchtech Corp. Amended and Restated 2017 Equity Incentive Plan (the "Plan") (capitalized terms used but not defined herein shall have the respective meanings ascribed thereto by the Plan);

WHEREAS, the Participant is [an officer of] [an employee of] [a director of] [a consultant to] the Corporation or one of its Subsidiaries; and

WHEREAS, the Administrator has determined that it is in the best interests of the Corporation and its shareholders to grant a Stock Option to the Participant subject to the terms and conditions set forth below.

NOW, THEREFORE, IT IS HEREBY AGREED AS FOLLOWS:

1. Grant of Stock Option.

The Corporation hereby grants the Participant an option (the "Option") to purchase **[INSERT NUMBER OF SHARES]** shares of Common Stock, subject to the following terms and conditions and subject to the provisions of the Plan. The Plan is hereby incorporated herein by reference as though set forth herein in its entirety.

The Option is hereby designated as a Nonqualified Stock Option.

2. Exercise Price.

The exercise price per share of Common Stock shall be **$[INSERT PRICE] USD**.

3. Exercisability.

[The Option shall vest immediately and be fully exercisable on the Date of Grant.]

[Subject to paragraph 4 below, the Option, to the extent that there has been no termination of the Participant's [employment] [service] and the Option has not otherwise expired or been forfeited, shall first become exercisable [insert schedule].]

4. Termination.

Unless earlier expired or forfeited, the Option shall, notwithstanding any other provision of this Agreement, expire in its entirety upon the fifth anniversary of the date hereof.

5. Exercisability Upon and After Termination of Employment or Service; Forfeiture.

If the Participant's employment or service with the Corporation or one of its Subsidiaries is terminated, the exercise period of the Option shall expire on the earliest of the following: (i) the time specified in paragraph 4 above; (ii) twelve (12) months after the last day that the Participant is employed by or provides services to the Corporation or one of its Subsidiaries; or (iii) immediately upon the Participant's termination for "Cause" (as defined in the Plan).

Notwithstanding anything herein to the contrary, in the event Participant violates any of the restrictive covenants contained in any agreement executed in connection with Participant's employment with or service to the Corporation or one of its Subsidiaries, as well as termination thereof, then the Option shall be forfeited and may not be exercised. The determination of whether such a violation has occurred will be determined by the Administrator in good faith and in its sole discretion.

6. Method of Exercise.

The Option may be exercised in whole or in part at any time during the term hereof by notice in the form required by the Corporation, together with payment of the aggregate exercise price and applicable withholding tax. Payment of the exercise price shall be made: (i) in cash or by cash equivalent acceptable to the Administrator, (ii) by payment in shares of Common Stock that have been held by the Participant for at least six months valued at the Fair Market Value of such shares on the date of exercise, (iii) by a "net exercise" arrangement in accordance with the Plan pursuant to which the Corporation will reduce the number of shares of Common Stock issued upon exercise, (iv) to the extent permitted by law and the Plan, through an open-market, broker-assisted sales transaction pursuant to which the Corporation is promptly delivered the amount of proceeds necessary to satisfy the exercise price, or (v) by a combination of the methods described above.

7. Miscellaneous.

(a) THE PLAN AND ALL RIGHTS HEREUNDER SHALL BE SUBJECT TO AND INTERPRETED IN ACCORDANCE WITH THE LAWS OF THE STATE OF DELAWARE, WITHOUT REFERENCE TO THE PRINCIPLES OF CONFLICTS OF LAWS, AND TO APPLICABLE FEDERAL SECURITIES LAWS. The use of captions in this Agreement is for convenience; the captions are not intended to provide substantive rights. The Board may at any time and from time to time and in any respect amend or modify this Agreement; provided, however, that no amendment or modification of this Agreement shall adversely affect the Option without the consent of the Participant (or, if and where applicable, a permitted transferee). If any provision of this Agreement shall be determined to be illegal or unenforceable by any court of law in any jurisdiction, the remaining provisions hereof and thereof shall be severable and enforceable in accordance with their terms, and all provisions shall remain enforceable in any other jurisdiction.

(b) The Administrator shall have such powers and authority as may be necessary or appropriate for the Administrator to carry out its functions as described in this Agreement and the Plan. The Administrator shall have discretionary authority to interpret this Agreement, to make factual determinations under this Agreement, and to make all other determinations necessary or advisable for the administration of this Agreement, including, without limitation, to correct any defect, to supply any omission or to reconcile any inconsistency in the Agreement. All interpretations, determinations and actions by the Administrator shall be final, conclusive, and binding upon all parties.

(c) All notices under the Plan must be in writing or delivered electronically, if to the Corporation, at its principal office, addressed to the attention of the Chief Executive Officer; and if to the Participant, at the address appearing in the Corporation's records.

(d) The failure of the Participant or the Corporation to insist upon strict compliance with any provision of this Agreement or the Plan, or to assert any right the Participant or the Corporation, respectively, may have under this Agreement or the Plan, shall not be deemed to be a waiver of such provision or right or any other provision or right of this Agreement or the Plan.

(e) Without limiting the Administrator's power and authority in connection herewith, the Administrator may require, as a condition to exercise, that the Participant represent and warrant that the shares of Common Stock are being acquired only for investment purposes and without any current intention to sell or distribute such shares.

(f) Nothing in this Agreement shall confer upon any Participant any right to continue in the service of the Corporation or any of its Subsidiaries, or interfere in any way with the right of the Corporation or any of its Subsidiaries to terminate the Participant's employment or other service relationship for any reason at any time.

(g) By his or her signature below, the Participant acknowledges that he or she has read the terms of the Plan and agrees to be bound by all provisions thereof.

(h) This Agreement contains the entire agreement between the parties with respect to the subject matter hereof and supersedes all prior agreements, written or oral, with respect thereto.

[signature page follows]

IN WITNESS WHEREOF, the Corporation and the Participant have executed this Agreement as of the day and year first above written.

BIRCHTECH CORP.

By: ______________________________
Name: Richard MacPherson
Title: Chief Executive Officer

[NAME OF PARTICIPANT]______________

Participant's Address:
[Address – line 1]
[Address – line 2]

EXHIBIT 10.11

BIRCHTECH CORP.

RESTRICTED SHARE UNIT AWARD AGREEMENT

UNDER THE AMENDED AND RESTATED 2017 EQUITY INCENTIVE PLAN

AGREEMENT by and between **BIRCHTECH CORP**., a Delaware corporation (the "Corporation") and **[NAME OF PARTICIPANT]** (the "Participant"), dated as of **[INSERT DATE]** (the "Date of Grant").

WHEREAS, the Corporation maintains the Birchtech Corp. Amended and Restated 2017 Equity Incentive Plan (the "Plan") (capitalized terms used but not defined herein shall have the respective meanings ascribed thereto by the Plan);

WHEREAS, the Participant is [an officer of] [an employee of] [a director of] [a consultant to] the Corporation or one of its Subsidiaries; and

WHEREAS, the Administrator has determined that it is in the best interests of the Corporation and its shareholders to grant a certain number of restricted share units to the Participant subject to the terms and conditions set forth below.

NOW, THEREFORE, IT IS HEREBY AGREED AS FOLLOWS:

1. Grant of Restricted Share Units. Pursuant to the terms and conditions herein and subject to the provisions of the Plan, the Corporation hereby grants the Participant **[INSERT NUMBER OF RSUs]** Restricted Share Units ("RSUs"). As used herein, the term "RSU" shall mean a non-voting unit of measurement which is deemed for bookkeeping purposes to be equivalent to one outstanding share of the Company's Common Stock (subject to adjustment as provided in the Plan).

2. Terms and Conditions of Award. The grant of the RSUs provided for herein shall be subject to the following terms, conditions and restrictions:

(a) Limitations on Rights Associated with RSUs. The Participant shall have no rights as a stockholder of the Company, no dividend rights and no voting rights with respect to the RSUs until such shares of Common Stock are actually issued to and held of record by the Participant.

(b) Restrictions. The RSUs and any interest therein, may not be sold, assigned, transferred, pledged, hypothecated or otherwise disposed of, until such time that the RSUs shall vest and become non-forfeitable. Any attempt to dispose of any RSU in contravention of the above restriction shall be null and void and without effect.

(c) Vesting. The RSUs shall vest and become non-forfeitable one (1) year from the Date of Grant (the "Vesting Date"), provided (i) there has been no termination of Participant's employment or service with the Corporation or one of its Subsidiaries on or prior to the Vesting Date, and (ii) the RSUs have not otherwise been forfeited as hereinafter set forth.

In the event Participant violates any of the restrictive covenants contained in any agreement executed in connection with Participant's employment with or service to the Corporation or one of its Subsidiaries, as well as termination thereof, at any time on or prior to the Vesting Date, then the RSUs shall be forfeited. The determination of whether such a violation has occurred will be determined by the Administrator in good faith and in its sole discretion.

(d) Delivery of Common Stock. As promptly as practical after the RSUs become vested and non-forfeitable, the Company shall distribute to the Participant the number of shares of Common Stock equal to the number of RSUs that so vested and became non-forfeitable. The Company shall issue the shares in book entry form (or certificate form, if requested by the Participant), which shares of Common Stock shall be registered in the name of the Participant. Delivery of any book entry form (or certificate form, if applicable), will be made to the Participant's last known address reflected on the books of the Company unless the Company is otherwise instructed in writing by the Participant.

3. Representations of the Participant. The Participant represents and warrants to the Company as follows:

(a) The Participant understands that the RSUs and the shares of Common Stock to be acquired thereunder have not been, and will not be, registered under the Securities Act of 1933, as amended (the "Act"), or the securities laws of any state by reason of a specific exemption from the registration provisions of the Act and the applicable state securities laws, the availability of which depends upon, among other things, the bona fide nature of the investment intent and the accuracy of the Participant's representations as expressed herein.

(b) The Participant acknowledges and understands that the shares of Common Stock to be acquired by the Participant pursuant to this Agreement are being acquired for investment purposes and not with a view to distribution or resale, nor with the intention of selling, transferring or otherwise disposing of all or any part of the shares of Common Stock for any particular price, or at any particular time, or upon the happening of any particular event or circumstances, except selling, transferring, or disposing such shares of Common Stock made in full compliance with all applicable provisions of the Act, the rules and regulations promulgated by the Securities and Exchange Commission thereunder, and applicable state securities laws.

(c) The Participant is aware that the shares of Common Stock to be acquired pursuant to this Agreement are and will be, when issued, "restricted securities" as that term is defined in Rule 144 of the general rules and regulations under the Act. The Participant acknowledges that such shares must be held indefinitely unless subsequently registered under the Act or unless an exemption from such registration is available. The Participant is aware of the provisions of Rule 144 promulgated under the Act which permit investors who have satisfied a certain holding period to resell under certain conditions such securities or a portion of such securities.

(d) The Participant understands that any and all certificates or other instruments representing the shares of Common Stock to be acquired pursuant to this Agreement and any and all securities issued in replacement thereof or in exchange therefor shall bear the following legend, or one substantially similar thereto, which the Participant has read and understands:

> "THE SECURITIES REPRESENTED HEREBY HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, OR ANY STATE SECURITIES LAWS AND NEITHER THE SECURITIES NOR ANY INTEREST THEREIN MAY BE OFFERED, SOLD, TRANSFERRED, PLEDGED OR OTHERWISE DISPOSED OF EXCEPT PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT UNDER SUCH ACT OR SUCH LAWS OR AN EXEMPTION FROM REGISTRATION UNDER SUCH ACT AND SUCH LAWS WHICH, IN THE OPINION OF COUNSEL FOR THIS CORPORATION, IS AVAILABLE."

4. Miscellaneous.

(a) THE PLAN AND ALL RIGHTS HEREUNDER SHALL BE SUBJECT TO AND INTERPRETED IN ACCORDANCE WITH THE LAWS OF THE STATE OF DELAWARE, WITHOUT REFERENCE TO THE PRINCIPLES OF CONFLICTS OF LAWS, AND TO APPLICABLE FEDERAL SECURITIES LAWS. The use of captions in this Agreement is for convenience; the captions are not intended to provide substantive rights. The Administrator may at any time and from time to time and in any respect amend or modify this Agreement; provided, however, that no amendment or modification of this Agreement shall adversely affect the RSUs without the consent of the Participant (or, if and where applicable, a permitted transferee). If any provision of this Agreement shall be determined to be illegal or unenforceable by any court of law in any jurisdiction, the remaining provisions hereof and thereof shall be severable and enforceable in accordance with their terms, and all provisions shall remain enforceable in any other jurisdiction.

(b) The Administrator shall have such powers and authority as may be necessary or appropriate for the Administrator to carry out its functions as described in this Agreement and the Plan. The Administrator shall have discretionary authority to interpret this Agreement, to make factual determinations under this Agreement, and to make all other determinations necessary or advisable for the administration of this Agreement, including, without limitation, to correct any defect, to supply any omission or to reconcile any inconsistency in the Agreement. All interpretations, determinations and actions by the Administrator shall be final, conclusive, and binding upon all parties.

(c) All notices under the Plan must be in writing or delivered electronically, if to the Corporation, at its principal office, addressed to the attention of the Chief Executive Officer; and if to the Participant, at the address appearing in the Corporation's records.

(d) The failure of the Participant or the Corporation to insist upon strict compliance with any provision of this Agreement or the Plan, or to assert any right the Participant or the Corporation, respectively, may have under this Agreement or the Plan, shall not be deemed to be a waiver of such provision or right or any other provision or right of this Agreement or the Plan.

(e) Nothing in this Agreement shall confer upon any Participant any right to continue in the service of the Corporation or any of its Subsidiaries, or interfere in any way with the right of the Corporation or any of its Subsidiaries to terminate the Participant's employment or other service relationship for any reason at any time.

(f) It is intended that the terms of this Agreement will not result in the imposition of any tax liability pursuant to Section 409A of the U.S. Internal Revenue Code. This Agreement shall be construed and interpreted consistent with that intent.

(g) By his or her signature below, the Participant acknowledges that he or she has read the terms of the Plan and agrees to be bound by all provisions thereof.

(h) This Agreement contains the entire agreement between the parties with respect to the subject matter hereof and supersedes all prior agreements, written or oral, with respect thereto. A signed copy of this Agreement which is received via facsimile or other electronic transmission shall be given the same effect for all purposes, as if it was an original.

[signature page follows]

IN WITNESS WHEREOF, the Corporation and the Participant have executed this Restricted Share Unit Award Agreement as of the day and year first above written.

BIRCHTECH CORP.

By: ______________________________
Name: Richard MacPherson
Title: Chief Executive Officer

[NAME OF PARTICIPANT]________________

Participant's Address:
[Address – line 1]
[Address – line 2]

EXHIBIT 14.1

CODE OF ETHICS AND BUSINESS CONDUCT FOR OFFICERS, DIRECTORS AND EMPLOYEES OF BIRCHTECH CORP. (THE "*COMPANY*")

A. Purpose

This Code of Ethics and Business Conduct (the "***Code***") addresses the Company's commitment to the honesty, integrity and ethical behavior of the Company's employees, officers and directors. These qualities are essential to the Company's reputation and success. This Code governs the actions and working relationships of the Company's employees, officers and directors with current and potential customers, consumers, fellow employees, competitors, government and self-regulatory agencies, investors, the public, the media, and anyone else with whom the Company has or may have contact. Each member of management of the Company has the added responsibility of setting an example by his or her personal performance, which should convey the Company's commitment to the highest ethical values. If you are ever unsure of the appropriate action, you are encouraged to take advantage of the Company's open door and informal environment and raise your concerns with appropriate management personnel.

B. Introduction

The Company and each of its employees, officers and directors must conduct their business affairs with the highest standards of honesty and integrity. Employees, officers and directors must also respect the rights of their fellow employees, officers, directors and third- parties. Your actions must be free from discrimination, libel, slander or harassment. Misconduct cannot be excused because it was directed or requested by another party. In this regard, you are expected to alert the Company in the manner set forth in **Section M (Reporting Violations)** whenever an illegal, dishonest or unethical act is discovered or suspected. You will not be penalized for reporting your discoveries or suspicions provided you have acted in good faith. Persons who violate this Code will be subject to disciplinary action, up to and including termination. Periodically, you may be required to review this Code and acknowledge in writing your understanding of and compliance with this Code.

C. Core Principles

1. Employees, officers and directors shall act with honesty and integrity and shall avoid actual or apparent conflicts of interest between personal and professional relationships and shall disclose to the audit committee any material transaction or relationship that reasonably could be expected to give rise to such conflict.

2. Employees, officers and directors shall endeavor to provide information that is full, fair, accurate, timely, and understandable in all reports and documents that the Company files with, or submits to, the Securities and Exchange Commission ("***SEC***") as well as other public filings or communications made by the Company.

3. Employees, officers and directors shall endeavor to faithfully comply with all laws, rules and regulations of federal, state, and local governments and applicable private or public regulatory agencies.

4. Employees, officers and directors shall act in good faith, responsibly, with due care, competence, and diligence and shall not knowingly or recklessly misrepresent material facts or allow their independent judgments to be subordinated.

5. Employees, officers and directors shall not use confidential information acquired in the course of their work for personal advantage and shall not buy or sell the Company's securities in violation of the securities laws or the Company's insider trading and stock pre-clearance policies.

6. Employees, officers and directors shall act responsibly in their use of and control over the Company's assets and resources.

D. Conflicts of Interest

A "conflict of interest" occurs when your private interest interferes or appears to interfere in any way with the interests of the Company. You must avoid all situations that might lead to a real or apparent material conflict between your self-interest and your duties and responsibilities as an employee, officer or director of the Company. Any position or interest, financial or otherwise, which could materially conflict with your performance as an employee, officer or director of the Company, or which affects or could reasonably be expected to affect your independence or judgment concerning transactions between the Company, its customers, suppliers or competitors or otherwise reflects negatively on the Company would be considered a conflict of interest. In addition, you may not exploit your position or relationship with the Company for personal gain. For example, there is a likely conflict of interest if you (i) cause the Company to engage in business transactions with relatives or friends; (ii) use nonpublic, client or vendor information for personal gain by you, relatives or friends (including securities transactions based on or while aware of such information); or (iii) compete, or prepare to compete, with the Company while still employed by, or serving as a director of, the Company.

E. Confidentiality

Nonpublic information regarding the Company or its businesses, employees, customers and suppliers is confidential. As a Company employee, officer or director you are trusted with confidential information. You are only to use such confidential information for the business purpose intended and not for personal gain (as further described in the Company's Insider Trading Policy). You may not share (or "tip") confidential information with anyone outside the Company (except for the Company's professional advisors in connection with their provision of services), including family and friends, or with other employees who do not need the information to carry out their duties. You remain under an obligation to keep all information confidential even if your employment or directorship ends.

F. Corporate Opportunities

Using confidential information about the Company or its businesses, employees, officers, directors, customers, consumers or suppliers for personal benefit or disclosing such information to others outside your normal duties is prohibited. All non-public information about the Company should be considered confidential. Employees, officers and directors are prohibited from:

- Personally benefiting from opportunities that are discovered through the use of the Company property, contacts, information or position.
- Accepting employment or engaging in a business (including consulting or similar arrangements) while employed by the Company that may conflict with the performance of your duties or the Company's interest.
- Soliciting, demanding, accepting or agreeing to accept anything of value from any person in conjunction with the performance of your employment or duties at the Company.
- Acting on behalf of the Company in any transaction in which you or your immediate family has a significant direct or indirect financial interest.

There are certain limited situations in which you may accept a personal benefit from someone with whom you transact business, such as:

- Accepting gifts not to exceed an aggregate total value of $500 per year from any one individual or entity in recognition of a commonly recognized events or occasions (such as a promotion, new job, wedding, retirement or holiday). Awards in recognition of service and accomplishment may also be accepted without violating these guidelines.

- Accepting something of value if the benefit is available to the general public under the same conditions on which it is available to you.

- Accepting meals, refreshments, travel arrangements and accommodations and entertainment of reasonable value in the course of a meeting or other occasion to conduct business or foster business relations if the expense would be reimbursed by the Company as a business expense if the other party did not pay for it.

G. Fair Dealing

No employee, officer and director may take unfair advantage of anyone, including the Company's customers, suppliers, competitors and employees. Additionally, no one may take advantage of another through manipulation, concealment, abuse of privileged information, misrepresentation of material facts, or any other unfair-dealing practices.

Employees must disclose prior to or at their time of hire the existence of any employment agreement, non-compete or non-solicitation agreement, confidentiality agreement or similar agreement with a former employer that in any way restricts or prohibits the performance of any duties or responsibilities of their positions with the Company. Copies of such agreements should be provided to the Company to permit evaluation of the agreement in light of the employee's position. In no event shall an employee use any trade secrets, proprietary information or other similar property acquired in the course of his or her employment with another employer in the performance of his or her duties for or on behalf of the Company.

H. Company Property

Employees, officers and directors must protect the Company's property and assets and ensure their efficient and proper use. Therefore, each employee, officer and director must safeguard the Company's property and assets from loss or theft and may not take such property for personal use. The Company's property includes confidential information, software, computers, office equipment, and supplies. You must appropriately secure all of the Company's property within your control to prevent its unauthorized use or theft. Using the Company's computers or communications systems to access or distribute personal "non-business related" information, data or graphics is strictly prohibited.

I. Protecting Yourself, Your Fellow Employees, and the World We Live In

We are committed to providing a drug-free, safe and healthy work environment, and to observing environmentally sound business practices. We will strive, at a minimum, to do no harm and where possible, to make the communities in which we work a better place to live. Each of us is responsible for compliance with environmental, health and safety laws and regulations.

J. Keeping Accurate & Complete Records; Covering up Mistakes; Falsifying Records

We must maintain accurate and complete Company records. Transactions between the Company and outside individuals and organizations must be promptly and accurately entered in our books in accordance with generally accepted accounting practices and principles. No one should rationalize or even consider misrepresenting facts or falsifying records. Mistakes should never be covered up; they should be immediately and fully disclosed to appropriate members of management. Falsification of any Company, client or third-party record is prohibited and will result in disciplinary action.

K. Use of and Third-Party Software

The Company's and third-party software may be distributed and disclosed only to employees authorized to use it and to clients in accordance with terms of a license agreement. Company and third-party software may not be copied without specific authorization and may only be used to perform assigned responsibilities. All third-party software must be properly licensed. The license agreements for such third-party software may place various restrictions on the disclosure, use and copying of software.

L. Fair Competition

The Company must comply with all applicable fair competition and antitrust laws. These laws attempt to ensure that businesses compete fairly and honestly and prohibit conduct seeking to reduce or restrain competition.

M. Reporting Violations

Any employee, officer or director who becomes aware or suspicious of any violation of this Code is required to contact the Company's Chief Legal Officer or General Counsel, or the Company's Chairman of the Board.

The Company encourages its employees, officers and directors to talk to supervisors, managers or other appropriate personnel to report and discuss any known or suspected criminal or unethical business activity involving the Company or its employees. Reporting the activity will not subject the employee to discipline absent a knowingly false report and the Company may not subject any person to adverse employment action who makes a good faith report pursuant to this Code.

N. Waivers

There shall be no waiver of any part of this Code except by a vote of the Board of Directors or a designated committee of the board of directors (currently no committee has been designated by the Board of Directors) which will ascertain whether a waiver is appropriate and ensure that the waiver is accompanied by appropriate controls designed to protect the Company. In the event that any waiver is granted, the waiver shall be promptly disclosed as required by applicable law or regulation or by the exchange listing rules applicable to the Company.

O. Conclusion

Each of the Company's employees, officers and directors is the guardian of the Company's ethics and reputation. Employees, officers and directors are encouraged to talk to supervisors, managers or other appropriate personnel when in doubt about the best and ethical course of action in a particular situation. While there are no universal rules, when in doubt, ask yourself the following questions:

- Will my actions be ethical in every respect and fully comply with the law and with the Company's policies?
- Will my actions have the appearance of impropriety?
- Will my actions be questioned by my supervisors, associates, clients, family or the general public?
- Am I trying to fool anyone, including myself, as to the propriety of my actions?

If you are uncomfortable with your answer to any of the above, you should not take the contemplated actions without first discussing them with appropriate management.

Revised as of December 2, 2024

EXHIBIT 19.1

BIRCHTECH CORP.

INSIDER TRADING POLICY

and Guidelines with Respect to
Certain Transactions in Company Securities

This Policy provides guidelines to employees, officers and directors of Birchtech Corp. (the "Company") with respect to transactions in the Company's securities.

Applicability of Policy

This Policy applies to all transactions in the Company's securities, including common stock, options for common stock and any other securities the Company may issue from time to time, such as preferred stock, warrants and convertible debentures, as well as to derivative securities relating to the Company's stock, whether or not issued by the Company, such as exchange-traded options. It applies to all officers of the Company, all members of the Company's Board of Directors, and all employees of, and consultants to, the Company and its subsidiaries/branches who receive or have access to Material Nonpublic Information (as defined below) regarding the Company. This group of people, members of their immediate families, and members of their households are sometimes referred to in this Policy as "Insiders." This Policy also applies to any person who receives Material Nonpublic Information from any Insider.

Any person who possesses Material Nonpublic Information regarding the Company is an Insider for so long as the information is not publicly known. Any employee can be an Insider from time to time, and would at those times be subject to this Policy.

Statement of Policy

General Policy

It is the policy of the Company to oppose the unauthorized disclosure of any nonpublic information acquired in the work-place and the misuse of Material Nonpublic Information in securities trading.

Specific Policies

1. **Trading on Material Nonpublic Information**. No director, officer or employee of, or consultant to, the Company, and no member of the immediate family or household of any such person, shall engage in any transaction involving a purchase or sale of the Company's securities, including any offer to purchase or offer to sell, during any period commencing with the date that he or she possesses Material Nonpublic Information concerning the Company, and ending at the close of business on the first Trading Day following the date of public disclosure of that information, or at such time as such nonpublic information is no longer material. As used herein, the term "Trading Day" shall mean a day on which national stock exchanges and the National Association of Securities Dealers, Inc. Automated Quotation System (NASDAQ) are open for trading.

2. **Tipping**. No Insider shall disclose ("tip") Material Nonpublic Information to any other person (including family members) where such information may be used by such person to his or her profit by trading in the securities of companies to which such information relates, nor shall such Insider or related person make recommendations or express opinions on the basis of Material Nonpublic Information as to trading in the Company's securities.

3. **Confidentiality of Nonpublic Information**. Nonpublic information relating to the Company is the property of the Company and the unauthorized disclosure of such information is forbidden.

Potential Criminal and Civil Liability
and/or Disciplinary Action

1. **Liability for Insider Trading**. Insiders may be subject to civil and criminal penalties and jail for engaging in transactions in the Company's securities at a time when they have knowledge of nonpublic information regarding the Company.

2. **Liability for Tipping**. Insiders may also be liable for improper transactions by any person (commonly referred to as a "tippee") to whom they have disclosed nonpublic information regarding the Company or to whom they have made recommendations or expressed opinions on the basis of such information as to trading in the Company's securities. The Securities and Exchange Commission (the "SEC") has imposed large penalties even when the disclosing person did not profit from the trading.

3. **Possible Disciplinary Actions**. Employees of the Company who violate this Policy shall also be subject to disciplinary action by the Company, which may include ineligibility for future participation in the Company's equity incentive plans or termination of employment.

Individual Responsibility

Every officer, director and employee has the individual responsibility to comply with this Policy against insider trading, regardless of whether the Company has recommended a trading window to that Insider or any other Insiders of the Company. The guidelines set forth in this Policy are guidelines only, and appropriate judgment should be exercised in connection with any trade in the Company's securities.

An Insider may, from time to time, have to forego a proposed transaction in the Company's securities even if he or she planned to make the transaction before learning of the Material Nonpublic Information and even though the Insider believes he or she may suffer an economic loss or forego anticipated profit by waiting.

Applicability of Policy to Inside Information
Regarding Other Companies

This Policy and the guidelines described herein also apply to Material Nonpublic Information relating to other companies, including the Company's customers, vendors or suppliers ("business partners"), when that information is obtained in the course of employment with, or other services performed on behalf of, the Company. Civil and criminal penalties, and termination of employment, may result from trading on inside information regarding the Company's business partners. All employees should treat Material Nonpublic Information about the Company's business partners with the same care required with respect to information related directly to the Company.

Definition of Material Nonpublic Information

It is not possible to define all categories of material information. However, information should be regarded as material if there is a reasonable likelihood that it would be considered important to an investor in making an investment decision regarding the purchase or sale of the Company's securities.

While it may be difficult under this standard to determine whether particular information is material, there are various categories of information that are particularly sensitive and, as a general rule, should always be considered material. Examples of such information may include:

- Financial results
- Projections of future earnings or losses
- Changes in the Company's financial guidance
- News of a pending or proposed merger
- News of the disposition of a subsidiary
- Impending bankruptcy or financial liquidity problems
- Changes in dividend policy
- New product announcements of a significant nature
- Significant product defects or modifications
- Significant pricing changes
- Stock splits
- New equity or debt offerings
- Acquisitions
- Significant litigation exposure due to actual or threatened litigation
- Major changes in senior management.

Either positive or negative information may be material.

Nonpublic information is information that has not been previously disclosed to the general public and is otherwise not available to the general public.

Certain Exceptions

1. **Certain Stock Plan Transactions**. The Company considers the following transactions to be exempt from this Policy (i) the grant or vesting of restricted stock units or restricted stock under the Company's equity plans, (ii) the grant, vesting or exercise of stock options under the Company's equity plans, (iii) elections to participate or the purchase of shares under employee or director stock purchase plans of the Company or (iv) other transactions in Company shares between an equity holder and the Company that do not involve the purchase or sale of shares in the public market (such as an election to have the Company withhold securities to cover tax obligations in connection with the vesting of restricted stock units or restricted stock) since the other party to the transaction is the Company itself. However, the terms of this Policy do apply to the subsequent sale of any Company shares acquired under (i), (ii), (iii) or (iv) above and such sales are not exempt from this Policy unless such subsequent sale is to the Company and is otherwise exempt under (iv) above.

2. **Transactions Pursuant to a Trading Plan that Complies with SEC Rules**. The SEC has enacted rules that provide an affirmative defense against alleged violations of U.S. federal insider trading laws for transactions pursuant to trading plans that meet certain requirements. In general, these rules, as set forth in Rule 10b5-1 under the Securities Exchange Act of 1934, provide for an affirmative defense if you enter into a contract, provide instructions or adopt a written plan for trading securities when you are not aware of material nonpublic information. The contract, instructions or plan must (i) specify the amount, price and date of the transaction, (ii) specify an objective method for determining the amount, price and date of the transaction and/or (iii) place any subsequent discretion for determining the amount, price and date of the transaction in another person who is not, at the time of the transaction, aware of material nonpublic information.

Transactions made pursuant to a written trading plan that (i) complies with the affirmative defense set forth in Rule 10b5-1 and (ii) is approved by the Company's Chief Legal Officer or General Counsel, are not subject to the restrictions in this Policy against trades made while aware of material nonpublic information or to the pre-clearance procedures or blackout periods established under this Policy. In approving a trading plan, the Company's Chief Legal Officer or General Counsel may, in furtherance of the objectives expressed in this Policy, impose criteria in addition to those set forth in Rule 10b5-1. You should therefore confer with the Company's Chief Legal Officer or General Counsel prior to entering into any trading plan.

The SEC rules regarding trading plans are complex and must be complied with completely to be effective. While trading plans are subject to review and approval by the Company, the individual adopting the trading plan is ultimately responsible for compliance with Rule 10b5-1 and ensuring that the trading plan complies with this Policy.

Trading plans must be filed with the Company's Chief Legal Officer or General Counsel. The Company may publicly disclose information regarding trading plans that you may enter into.

Additional Restrictions and Guidance

This section addresses certain types of transactions that may expose you and the Company to significant risks. You should understand that, even though a transaction may not be expressly prohibited by this section, you are responsible for ensuring that the transaction otherwise complies with other provisions in this Policy that may apply to the transaction, such as the general prohibition against insider trading as well as pre-clearance procedures and blackout periods, to the extent applicable.

1. **Short Sales**. Short sales (i.e., the sale of a security that must be borrowed to make delivery) and "selling short against the box" (i.e., a sale with a delayed delivery) with respect to Company securities are prohibited under this Policy for officers and directors. Short sales may signal to the market possible bad news about the Company or a general lack of confidence in the Company's prospects, and an expectation that the value of the Company's securities will decline. In addition, short sales are effectively a bet against the Company's success and may reduce the seller's incentive to improve the Company's performance. Due to these attributes of short sales and the fact that such sales may be deemed to conflict with the long-term goals of the Company, the Company discourages all employees from engaging in such transactions.

2. **Derivative Securities and Hedging Transactions**. If you are an officer or director, you are prohibited from engaging in transactions in publicly-traded options, such as puts and calls, and other derivative securities with respect to the Company's securities. This prohibition extends to any hedging or similar transaction designed to decrease the risks associated with holding Company securities. Even if you are not an officer or director, you should exercise caution when engaging in such transactions. Transactions in derivative securities may reflect a short-term and speculative interest in the Company's securities and may create the appearance of impropriety, even where a transaction does not involve trading on inside information. Trading in derivatives may also focus attention on short-term performance at the expense of the Company's long-term objectives. In addition, the application of securities laws to derivatives transactions can be complex, and persons engaging in derivatives transactions run an increased risk of violating securities laws if not careful. Due to these attributes of option trading and hedging transactions and the fact that such transactions may be deemed to conflict with the long-term goals of the Company, the Company discourages all employees from engaging in such transactions.

3. **Margin Accounts and Pledges**. Securities held in a margin account as collateral for a margin loan or pledged as collateral for a loan may be sold without your consent by the broker if you fail to meet a margin call or by the lender in foreclosure if you default on the loan. Because a margin call or foreclosure sale may occur at a time when you are aware of Material Nonpublic Information or otherwise are not permitted to trade in Company securities, the Company discourages holding Company securities in a margin account or pledging Company securities as collateral for a loan unless you have the clear financial capability to repay the loan without resort to the pledged securities. Any officer or director who wishes to pledge Company securities as collateral for a loan must obtain the prior approval of the Company's Chief Legal Officer or General Counsel to that arrangement.

4. **Placing Open Orders with Brokers**. You should exercise caution when placing open orders, such as limit orders or stop orders, with brokers, particularly where the order is likely to remain outstanding for an extended period of time. Open orders may result in the execution of a trade at a time when you are aware of Material Nonpublic Information or otherwise are not permitted to trade in Company securities, which may result in inadvertent insider trading violations, violations of this Policy and unfavorable publicity for you and the Company.

Additional Information for
Officers, Directors and Certain
Employees with Regular Access to
Material Nonpublic Information

Because officers, directors and certain employees routinely have access to Material Nonpublic Information, the Company has adopted additional guidelines and procedures applicable to such persons. (Employees subject to these additional guidelines and procedures will be notified that these guidelines and procedures apply to them).

1. **Recommended Trading Window**. The period beginning after the 15th of the last month of each calendar quarter and ending one Trading Day following the date of public disclosure of the financial results for that quarter, is a particularly sensitive period of time for transactions in the Company's stock from the perspective of compliance with applicable securities laws. This sensitivity is due to the fact that officers, directors and certain other employees will, during that period, often possess Material Nonpublic Information about the expected financial results for the quarter.

Accordingly, to ensure compliance with this Policy and applicable federal and state securities laws, the Company discourages all directors, officers and employees having access to the Company's internal financial statements or other Material Nonpublic Information from conducting transactions involving the purchase or sale of the Company's securities other than during the period (the "trading window") commencing at the close of business on the first Trading Day following the date of public disclosure of the financial results for a particular fiscal quarter or year and continuing until the 15th day of the last month of the next fiscal quarter.

From time to time, the Company may also recommend that directors, officers, selected employees and others suspend trading because of developments known to the Company and not yet disclosed to the public. In such event, such persons are advised not to engage in any transaction involving the purchase or sale of the Company's securities during such period and should not disclose to others the fact of such suspension of trading.

The purpose behind the suggested self-imposed "trading window" period is to help establish a diligent effort to avoid any improper transaction. An officer, director and certain other designated employees may choose not to follow this suggestion, but he or she should be particularly careful with respect to trading outside the trading window, since such person may, at such time, have access to Material Nonpublic Information regarding, among other things, the Company's anticipated financial performance for the quarter.

It should be noted, however, that even during the trading window, any person possessing Material Nonpublic Information concerning the Company should not engage in any transactions in the Company's securities until such information has been known publicly for at least one Trading Day, whether or not the Company has recommended a suspension of trading to that person. Trading in the Company's securities during the trading window should not be considered a "safe harbor," and all directors, officers and other persons should use good judgment at all times.

2. **Preclearance of Trades**. The Company has determined that all officers and directors and certain designated employees of the Company should refrain from trading in the Company's securities, even during the trading window, without first complying with the Company's "preclearance" process. Each officer and director should contact the Company's Chief Legal Officer or General Counsel prior to commencing any trade in the Company's securities. The Company may find it necessary, from time to time, to require compliance with the preclearance process from certain employees and consultants other than and in addition to officers and directors.

3. **Section 16 Matters for Officers and Directors**. Directors and officers of the Company must also comply with the reporting obligations and limitations on short-swing transactions set forth in Section 16 of the Securities Exchange Act of 1934, as amended. The practical effect of these provisions is that officers and directors who purchase and sell the Company's securities within a six-month period must disgorge all profits to the Company whether or not they had knowledge of any Material Nonpublic Information. Under these provisions, and so long as certain other criteria are met, neither the receipt of an option or restricted stock unit under the Company's incentive plans, nor the exercise of an option, is deemed a purchase under Section 16; however, the sale of any such shares is a sale under Section 16. Moreover, no officer or director may ever make a short sale of the Company's stock. The Company has provided, or will provide, separate memoranda and other appropriate materials to its officers and directors regarding compliance with Section 16 and its related rules.

Effective Date; Policy Subject to Revision

This Policy is effective as of February 1, 2020 and supersedes all previous policies of the Company concerning insider trading.

The Company may change or otherwise revise the terms of this Policy from time to time as the Company deems appropriate. The Company will take steps to inform all affected persons of any material changes or revisions to this Policy.

Inquiries

Please direct your questions as to any of the matters discussed in this Policy to the Company's Chief Legal Officer or General Counsel.

Last modified: December 2, 2024

EXHIBIT 21.1

Subsidiaries of Birchtech Corp.

Name	State of Incorporation or Formation	Assumed Names
MES, Inc.	North Dakota	Midwest Energy Emissions Corp. Birchtech Corp.

EXHIBIT 31.1

CERTIFICATION

I, Richard MacPherson, certify that:

1. I have reviewed this annual report on Form 10-K of Birchtech Corp.;

2. Based on my knowledge, this report does not contain any untrue statements of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiary, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation;

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonable likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: March 31, 2025

By: */s/ Richard MacPherson*
Richard MacPherson
President and Chief Executive Officer
(Principal Executive Officer)

EXHIBIT 31.2

CERTIFICATION

I, Fiona Fitzmaurice, certify that:

1. I have reviewed this annual report on Form 10-K of Birchtech Corp.;

2. Based on my knowledge, this report does not contain any untrue statements of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiary, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation;

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonable likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: March 31, 2025

By: */s/ Fiona Fitzmaurice*
Fiona Fitzmaurice
Chief Financial Officer
(Principal Financial Officer)

EXHIBIT 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE
SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Birchtech Corp. (the “Company”) on Form 10-K for the period ended December 31, 2024, as filed with the Securities and Exchange Commission (the “Report”), the undersigned certifies, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, to the best of the undersigned’s knowledge, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: March 31, 2025

By: */s/ Richard MacPherson*
Richard MacPherson
President and Chief Executive Officer

EXHIBIT 32.2

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE
SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Birchtech Corp. (the "Company") on Form 10-K for the period ended December 31, 2024, as filed with the Securities and Exchange Commission (the "Report"), the undersigned certifies, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, to the best of the undersigned's knowledge, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: March 31, 2025

By: */s/ Fiona Fitzmaurice*
Fiona Fitzmaurice
Chief Financial Officer
(Principal Financial Officer)