



Leading Technologies For Cleaner Air & Water

Investor Presentation
February 2025

OTCQB: BCHT
TSX: BCHT



Forward Looking Statements

With the exception of historical information contained in this presentation, content herein may contain "forward-looking statements" that are made pursuant to the Safe Harbor Provisions of the U.S. Private Securities Litigation Reform Act of 1995 or forward-looking information under applicable Canadian securities laws (collectively, "forward-looking statements"). 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. Forward-looking statements in this presentation include statements relating to expected developments and growth in Birchtech's business. These statements are based on management's current expectations and are subject to uncertainty and changes in circumstances. You are cautioned that forward-looking statements involve risks and uncertainties that could cause actual results to differ materially from the statements made.

This presentation also contains estimates and other statistical data made by independent parties and by the Company relating to market size and growth and other data about our industry. This data involves a number of assumptions and limitations, and you are cautioned not to give undue weight to such estimates. Neither the Company nor any other person makes any representation as to the accuracy or completeness of such data or undertakes any obligation to update such data after the date of this presentation. In addition, the Company's potential market share, projections, assumptions, and estimates of the Company's future performance and the future performance of the markets in which we operate are necessarily subject to a high degree of uncertainty and risk due to a variety of factors. These and other factors could cause results or outcomes to differ materially from those expressed in the estimates made by the Company.

Except as expressly required by the federal securities laws, we undertake no obligation to update such factors or to publicly announce the results of any of the forward-looking statements contained herein to reflect future events, developments, or changed circumstances or for any other reason. Investors are cautioned that all forward-looking statements involve risks and uncertainties, including those detailed in Birchtech's filings with the Securities and Exchange Commission.

Disclaimer:

This presentation is for information purposes only and does not constitute an offer to sell or the solicitation of an offer to buy any securities. Any such offer will only be made in compliance with applicable securities laws and subject to execution of definitive documents.

Birchtech Overview

Birchtech develops activated carbon technologies & provides consulting services to remove mercury from the air we breathe & forever chemicals from the water we drink

- **Our team includes THE LEADING activated carbon experts in the U.S.**, allowing us to drive environmental technology innovation in air & water

Clean Air Technologies

- Established, core business
- Reducing mercury emissions
- Patented SEA® Sorbent Technology used at 40% of U.S. coal-fired power plants¹

\$260M

Revenues generated (to-date & expected)²

Water Purification

- New entrant into multi-billion-dollar market for PFAS/PFOS removal ("forever chemicals")
- Applies activated carbon expertise to treat water
- Near-term EPA regulations for PFAS compliance

\$1.5B

In annual PFAS compliance costs⁶

- **Strong IP Portfolio & Successful Enforcement Strategy:**
 - 35 total patents (and new provisional patent applications for the water business)
 - Successfully secured \$35M in license agreements and income from legal claims from infringing parties to-date
 - Additional \$57M awarded by jury (in final review by the court, considering willfulness of the damages)
- **Regulatory Tailwinds:** U.S. EPA regulations provide long-term tailwinds for both air (MATS regulation) & water purification (PFAS/PFOS regulations for U.S. water utilities beginning 2027)^{1,3}



OTCQB: BCHT • TSX: BCHT

Share Price⁴ \$0.61

Market Cap⁴ \$58.2M

Q3 2024 Revenue⁵ \$5.2M

Q3 2024 Gross Margin⁵ 30.5%

TTM Revenues & Income from Legal Claims⁵ \$43.8M

Shares Outstanding⁵ 96M

Float 66M

Insider Ownership 21%

- 1) Management Estimates
- 2) Revenues generated to-date & income pending from jury award
- 3) PFAS/PFOS regulations utility costs from Black & Veatch
- 4) USD, As of 2/6/2025
- 5) As of 9/30/2024
- 6) EPA Estimate

Customized Solutions for Cleaner Air & Water

The Problem

Coal used at utilities & water contaminants in various geographic regions vary greatly across the U.S.

The Solution

Leveraging decades of expertise, Birchtech offers each customer a tailored solution using activated carbon in air & water treatment

The Result

Customized solutions are **more economical & effective** at capturing mercury (air) and treating municipal & industrial wastewater, while reducing environmental footprint & meeting EPA regulations

Mercury Removal

Over-Exposure to Mercury can Lead to:

- **Neurological Damage:** Mercury exposure can harm the nervous system, particularly in developing fetuses and young children, affecting cognitive function, motor skills, and memory
- **Cardiovascular Effects:** In adults, mercury exposure has been linked to increased risks of high blood pressure and heart disease
- **Pregnancy Risks:** Mercury exposure during pregnancy can result in developmental delays, brain damage, and other birth defects



Comprehensive Water Treatment Solutions

Exposure to PFAS/PFOS Chemicals can Lead to:

- **Pregnancy Risks:** High blood pressure in pregnant women, decreased fertility, low birth weight & bone variations, among others
- **Increased cancer risk & reduced ability of the body's immune system** to fight infections, including reduced vaccine responses



Our Go-To Market Strategy

Growing Our Air Business, Defending of our IP Portfolio & Moving Rapidly Into Water Treatment



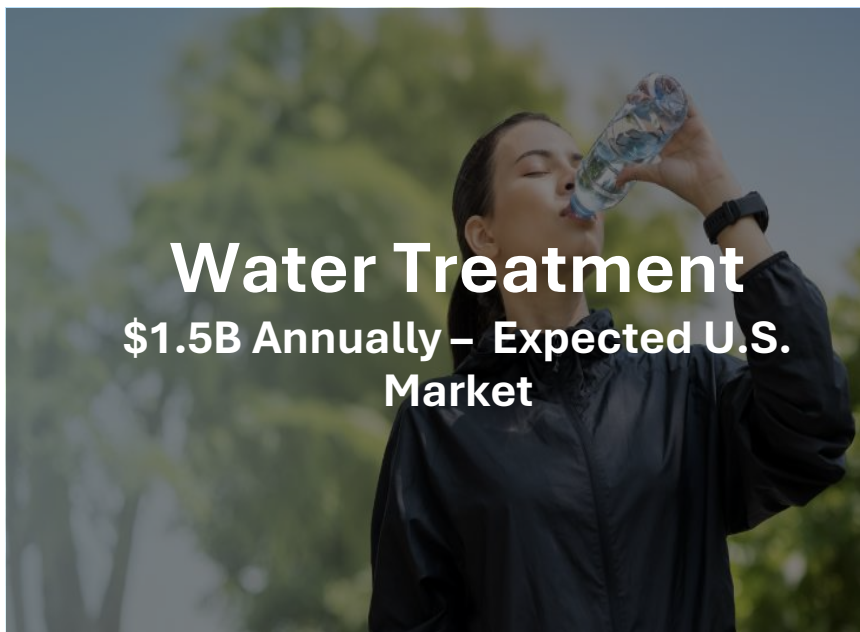
Mercury Emissions - SEA®

- Developed in early-2000s, 1st US Contract in 2011 - \$60 Million+ spent on R&D with 35 Active Patents
- Variations of proprietary SEA® technology believed to be in use at 40% of U.S. coal-fired power plants that are using sorbent technologies (others use expensive infrastructure)



SEA® Patent Enforcement Action

- Numerous Utilities have recognized the strength of Birchtech's patents through license/supply agreements
- **Secured \$35M in income from legal claims & license agreements, plus additional consideration in settlements; won \$57M jury award for 'willful infringement'**
- Infringing power plants engaged in ongoing discussions, with new suits and legal actions underway alongside world-class counsel



Potable Water Treatment Solutions

- PFAS/PFOS regulations will impose significant financial burdens on U.S. water utilities, with compliance costs estimated at \$1.5B annually over the next five years
- Two new world-class lab centers focused on Carbon Development, enabling the creation of advanced water treatment solutions for nationwide utility testing
- New tech launching with commercialization to begin this year to help utilities stay ahead of evolving regulations, with Activated Carbon recognized as the “best available technology” by the EPA



Patented Technologies to Remove Mercury From Power Plant Emissions

Our Established, Legacy Air Business

Customized Solutions for Coal-Fired Power Plants to Reduce Mercury Emissions

- **Coal-fired powerplants account for 16% of U.S. power** & is projected to remain a significant fuel source through 2050
- Our **patented SEA[®] Technology** is a two-part system that helps coal-fired power plants **meet or exceed EPA regulations** at a **lower cost** than competitors
 - **Part 1:** SEA (halide mixture that oxidizes elemental mercury) injected directly into the boiler
 - **Part 2:** A back-end sorbent injection system (injects activated carbon)
- Our team **customizes solutions** to match fuel type & boiler configurations
- Custom-built material handling center in Texarkana supports existing supply business, expected to support new product development and distribution for water purification solutions
- **Air business revenue run-rate to ramp to at least \$40M by the end of 2026:**
 - Current Customers under contract (TTM Revenues of \$16.2M, excluding income from legal claims)¹
 - IP settlement agreements from infringing parties (\$35M+)
- Ongoing post-trial outreach aims to convert technology users to customers, with new litigation underway and additional suits expected



✓ More Effective

✓ Less Product

✓ Lower Cost

¹⁾ As of Q3 (9/30/2024)

High Margin, Recurring Revenues

With Multiple Opportunities to Scale

We generate revenue in our core mercury emissions technologies from two primary sources:

- 1. Product Sales with Consulting Services (Recurring)** – Ongoing supply of proprietary SEA[®] material & sorbent material. Supply customers receive regular field analyses, optimized design of injection services, stack emission testing to ensure that our product applications are optimized with plant operations and infrastructure
- 2. Licensing Agreement Revenues** – Royalties and fees from technology adoption by utilities and industrial partners

Long-Term Supply Clients and/or License Agreement Partners



\$2M

Average Annual Revenue per Power Utility Customer

3-5 Years

Typical Contract Length

+30%

Gross Margins

Litigation Strategy Update

Offering Defendants Long-Term Supply Contracts or Licensing Agreements

- In 2019, the Company filed an IP patent infringement suit based on unauthorized use of its patented technologies for mercury emissions capture, alleging that the refined coal Defendants caused significant business harm and obtained significant value from their use of the Company's technologies
- We are taking a **business-first approach** to litigation, which has resulted in licensing revenues & long-term supply agreements. Upon settlement or court ruling of infringement:
 - We are requesting that customers **pay us a licensing fee until their current supply contracts expire** with competitors
 - We then seek to **lock in long-term supply contracts**, which often offer attractive economics for both parties
- Success To-Date:
 - **Many utilities** have settled or entered into license agreements, resulting in **over \$35M plus additional consideration in settlements** (structured as long-term supply and licensing agreements)
 - In February 2024, **\$57M was awarded by jury** for willful infringement (final judgment expected in 1H 2025)
- **Ongoing Litigation & New Suits** – Infringing power plants remain engaged in discussions, with additional lawsuits & legal actions underway.

\$57M+

Awarded by Jury with final judgment expected in 1H 2025

\$25M+

Additional expected annual product supply revenues

100%

Success rate in enforcing our intellectual property rights to-date

Illustrative Customer Economics for Air

Current Customers & Flow Through Economics of Patent Protection Strategy

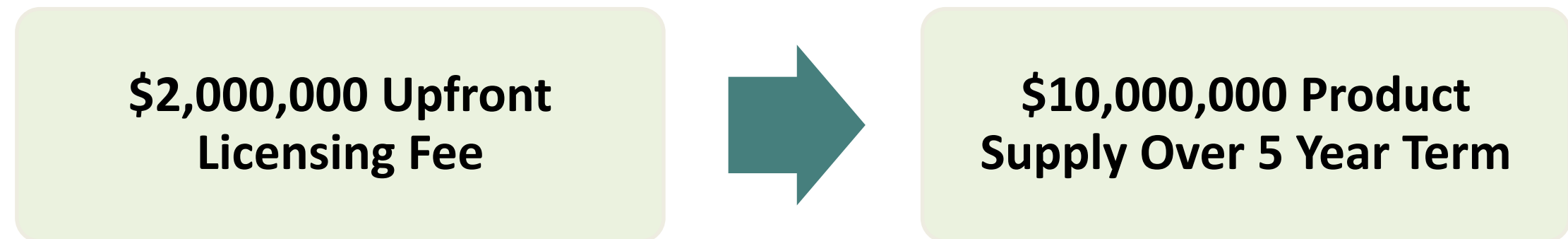
Current Customer Example

Annual

Annual Supply Agreement (per EGU)	\$2,000,000
Cost of Sales	\$1,400,000
Gross Profit	\$600,000

- Current revenue run-rate of \$16.2M TTM & stable customer base with long-term contracts and 30%+ gross margins on product sales

IP License/Supply Agreement Customer Example



- Clients that either settle or lose in an IP infringement suit typically have supply agreements in place with competitors.
- Our business-first approach to IP litigation may allow customers to pay a nominal licensing fee until the existing supply agreement ends
- Following the expiration of supply agreements with competitors, we seek long-term supply agreements, which generate a 30%+ gross margin profile

A revenue run rate of \$25 million creates significant operating leverage, resulting in EBITDA margins of +30%

Note: Example shown above is applicable to negotiated settlements only that do not require protracted litigation from Birchtech.



**Leveraging Expertise in Activated Carbon to Provide
Cleaner Potable Water for American Communities**

Technologies for Water Purification

Leveraging Our Team's Deep Experience with Activated Carbon

- **Targeting Multiple Markets:** Municipal & industrial wastewater, as well as Potable Water – Offering solutions for contamination challenges, regulatory compliance, and safe drinking water (including PFAS/PFOS removal).
- **Regulatory Tailwinds:**
 - Public water systems are required to begin monitoring for PFAS/PFOS "forever chemicals" by 2027
 - Measures to comply with Min. Contaminant Level by 2029
 - Expected \$1.5B in annual compliance costs
 - \$1B in federal funding allocated for water monitoring systems
- **Robust Gross Margin Profile:** Targeting 50% gross margin profile on Granular Activated Carbon (GAC) sales (both virgin and re-activated)
- **Launch Underway:** Secured an initial feedstock agreement to produce \$7M worth of coal-based virgin GAC product to establish initial relationships, availability expected 2H 2025



What?

Activated carbon is the primary material used to trap water contaminants, such as PFAS/PFOS (“Forever Chemicals”)



How?

With supply to municipalities with limited resources & engineering expertise with virgin GAC, reactivated GAC, testing & consulting services.

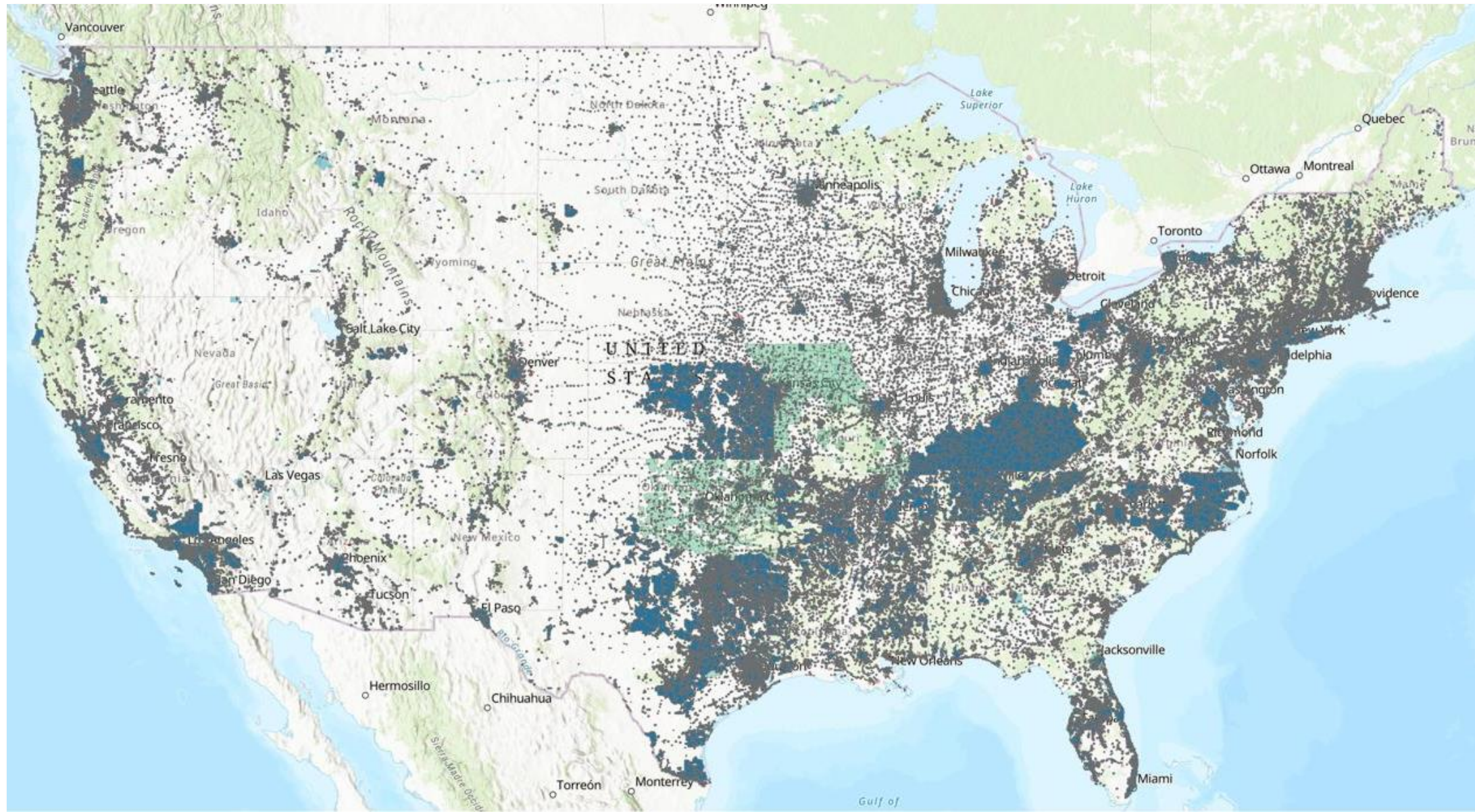


Result?

Our team tests specific water sources for contaminant levels to create custom GAC solutions, which ultimately, help **meet new EPA regulations, reduce expenses, forecast complete costs**

Harmful PFAS Contaminants Across the U.S.

Significant Number of Impacted Communities Across the U.S., with ~50,000 Water Utilities At Risk



PFAS Contamination Crisis – PolicyInnovation.org

- The number of U.S. communities confirmed to be contaminated with PFAS continues to grow at an alarming rate – 90% of the US population relies on almost 50,000 community water systems for their drinking water
- PFAS chemicals don't break down easily & exposure is linked to a range of health concerns, including increased cancer risk, decreased fertility & other harmful conditions
- **Each blue dot in the below map represents a utility that requires a unique activated carbon blend for compliant water treatment.** A more robust solution is required for effective change ahead of the EPA regulations going into effect

New Regulations Position Water Treatment Market for Growth

Many municipalities are working to meet EPA regulatory requirements for PFAS removal prior to the deadline

2027

Public water systems are required to begin monitoring for these "forever chemicals" by 2027, with continuous compliance monitoring thereafter

2029

Measures to comply with Maximum Contaminant Level (MCL) limits must be in place by 2029. \$1 billion in federal funding has been allocated for water monitoring systems

The volume of drinking water treated with GAC is **expected to increase by 2.5x – 4x** to comply with regulations & GAC "change out" frequency is **expected to increase by 2x – 4x**



The U.S. EPA has mandated that all municipalities complete initial sampling by 2027 and be in compliance with new PFAS limits by 2029

Anticipated compliance costs associated with new regulations are now expected to exceed **\$1.5 billion annually**. This substantial financial burden is driving an urgent need for innovative solutions

Our Proprietary Process for Water Purification

Reactivation & Expert Analysis –

Reactivated carbon expected to outperform virgin carbon providing a competitive edge

We are developing a full-service, novel approach to reach PFAS compliance with expert consultants. Our developing process includes:

- Deploying world-class consulting experience to client municipalities
- Thermal reactivation of carbon in our Design Center in State College, PA
- Obtaining water samples from municipalities to test performance of virgin GAC and reactivated GAC at our Testing Center in Grand Forks, ND
 - Rapid Small Scale Column Tests (RSSCT) - delivers cheap, fast & reliable results (compared to full-scale pilot tests)
- Cohesive look at all data and recommend the optimal solution (mix of virgin & reactive GAC) to meet compliance requirements
- Concurrently advancing next-gen GAC product for 2026 launch

Why Use Reactivated Carbon?

- **Reduces waste** (environmental sustainability)
 - Spent carbon can be re-used after thermal re-activation
- Lowers need for new carbon purchases (**reduces cost**)
 - **Virgin GAC pricing has increased 50% over the last 18 months**
 - Re-activated GAC costs ~50% less than virgin GAC



**Through thermal reactivation of spent activated carbon,
Birchtech offers a sustainable and cost-effective solution for water treatment plants**

Robust Infrastructure

Synergistic Lab & Plant Network for Developing Water Technologies

Planned Renewable GAC Manufacturing Facility

- **We expect to begin construction of a GAC facility (for production of virgin GAC & reactivation of carbon) in 2025 in Southeastern U.S.**
 - Targeting \$50M revenue capacity, expected to come online in second half of 2026
 - Strategic focus to create JVs with feedstock suppliers and co-locate facilities
 - Facility will incorporate advanced manufacturing processes to ensure high efficiency and minimal environmental impact
 - Expected to be financed through established, growing air business & debt

Development of Disruptive Technology Underway

- **Leveraging decades of experience, we are currently developing a disruptive GAC that offers superior benefits, including:**
 - More environmentally friendly
 - Better than virgin GAC on the market today
 - Optimized for versatility in various water treatment processes
 - Presents opportunities to produce activated carbon more easily with varied pore size distributions
 - Minimizes the introduction of unwanted byproducts and toxic elements



Company Leadership



Richard MacPherson

Chief Executive Officer

- Company founder who successfully led the early development and commercialization of the firm's SEA® technologies.
- Over 25+ years in Executive Management roles across Canada and the U.S. for various industries, including communications, industrial production, and internet marketing firms.



John Pavlish

Senior VP, Chief Technology Officer

- 25+ years in mercury emission capture technology.
- Inventor of multiple patented mercury control technologies with commercial applications.
- Industry experience - Energy & Environmental Research Center, Director of Center for Air and Toxic Metals, and Black & Veatch Unit Leader.



Fiona Fitzmaurice

Chief Financial Officer

- Strong financial management with publicly listed companies in the exploration sector, including private placements, prospectus, flow-through financing, and corporate audits.
- Chartered accountant with 15+ years of experience in accounting and financial controls for companies listed on the TSXV and other major



Jim Trettel

Executive Vice President of Operations

- Mechanical Engineer and material handling expert.
- Senior project management background with expertise in coal utilities and supply chain.

Board of Directors



Chris Greenberg

Chairman

- Highly experienced in building successful businesses, with a 20-year track record in strategic planning, business development, and project management.
- Skilled in analyzing critical business needs and creating innovative solutions to enhance competitiveness, increase revenues, and improve customer service.



Richard MacPherson

Director

- Company founder who successfully led the early development and commercialization of the firm's SEA® technologies.
- Over 25+ years in Executive Management roles across Canada and the U.S. for various industries, including communications, industrial production, and internet marketing firms.



David M. Kaye

Director

- David is an attorney with the law firm of Kaye Cooper Kay & Rosenberg, LLP, New Jersey since the firm inception in Feb. 1996.
- Mr. Kaye specializes in business, corporate and securities matters.
- Mr. Kaye serves as Birchtech Corp.'s General Counsel



Troy Grant

Director

- CEO & Founder of Elcora Advance Materials Corp, an integrated battery material company with international operations.
- Director on the Audit Committees of publicly listed companies including Elcora Advanced Materials Corp. (TSXV: ERA), i3 Interactive Inc. (CSE: BETS), Auxly Cannabis Group Inc. (TSX: XLY).



Mitzi H. Coogler

Director

- Certified Public Accountant with over a decade of experience in accounting and management support for closely held businesses.
- Currently serving as CFO at JT Harrison Construction Co., Inc., specializing in design, contracting, and construction management services.
- Former CEO of Southeast Cancer Network and a shareholder at Echols, Coogler & Associates, P.C.

Financial Summary

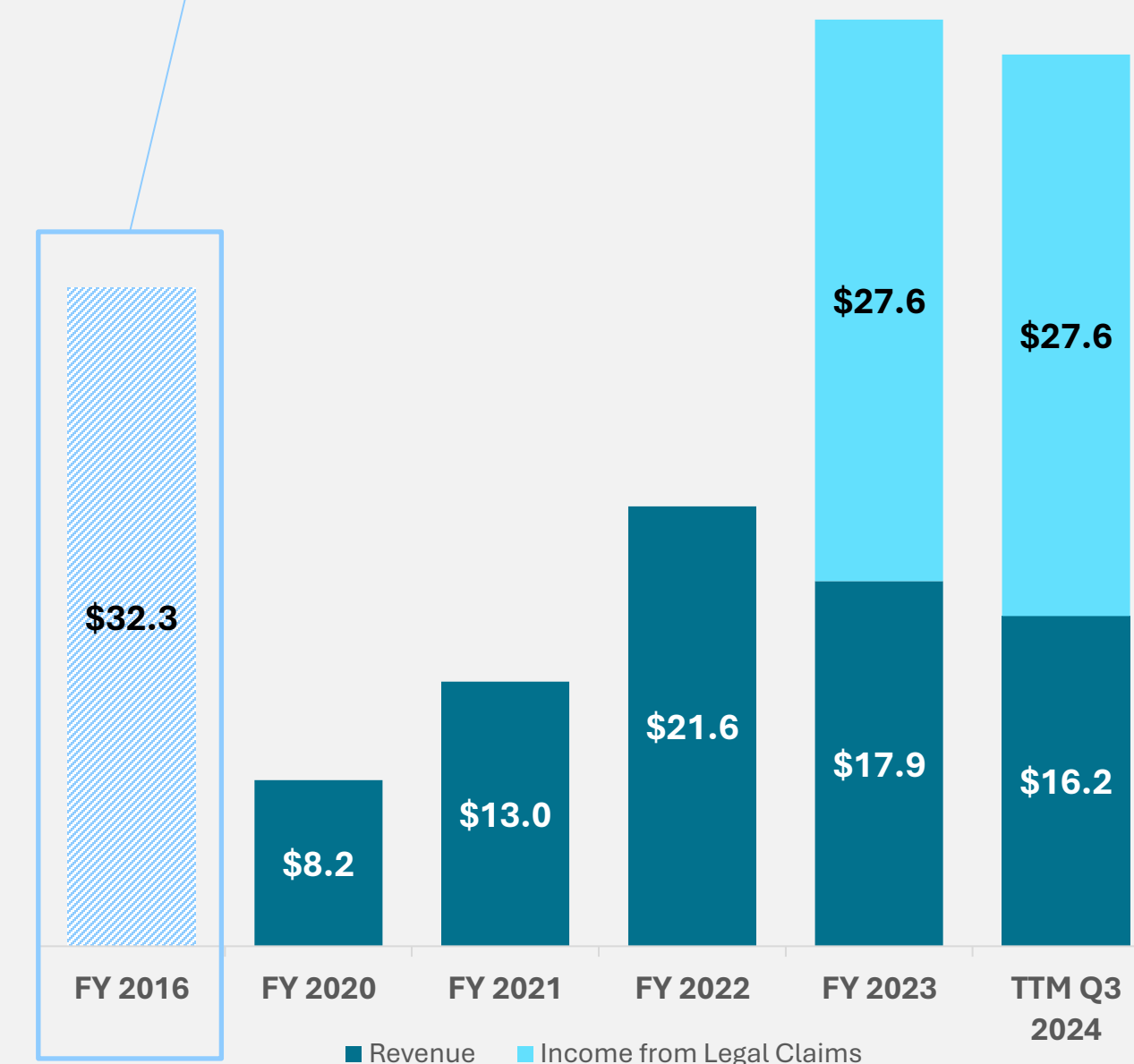
- **Recurring Revenue Base:** Air business provides strong recurring revenue base with +30% gross margins; water business to provide ~50% gross margins
- **Litigation Upside:** \$57M jury award & one-time licensing fees from new air business customers expected to provide meaningful cash to the business
- **Strong Cash Management:** Operating approximately at operating cash flow breakeven TTM with significant optionality for near-term cash upside from air business
- **Debt Repaid:** Repaid \$13.1M in debt in 2024, with no debt currently outstanding.

(USD \$ in Millions)	TTM as of Q3 2024	Fiscal 2023	Fiscal 2022	Fiscal 2021
Revenue	\$16.2	\$17.9	\$21.6	\$13.0
Income from Legal Claims	\$27.6	\$27.6	\$0.0	\$0.0
Gross Profit Margin	31.5%	32.2%	32.5%	39.0%
Net Income	(\$0.3)	\$5.9	(\$1.6)	(\$3.6)

(USD \$ in Millions)	Sep. 30, 2024	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2021
Cash & Cash Equivalents	\$4.4	\$20.9	\$1.5	\$1.4
Debt	\$0.0	\$11.2	\$9.9	\$12.5

*For the Q3 period ending Sept 30, 2024

Strong topline performance growing at 50% YoY via recurring revenue streams
Core business represented \$30M+ in topline sales prior to IP infringement



Revenue & Income from Legal Claims
(\$Millions)

Upcoming Catalysts in 2025

A Return to Growth, Settlements with Infringing Parties & Entrance Into \$1.5B Water Market



Following jury award of \$57 Million in March 2024, **final judgment from the U.S. Federal Court of Delaware expected in first half of 2025**



First commercial sales into water treatment market in mid-2025, following \$7M initial feedstock agreement secured in 2024



Targeting an uplisting to major U.S. exchange, expected in 2025



Increased revenues through additional settlements with infringing utilities in the form of licensing payments & new supply contracts



Sign strategic joint venture agreement with supplier of GAC inputs & co-locate facilities (creating efficiencies, securing supply & aligning economics)



Begin construction of a GAC facility in Southeastern U.S. (for production of virgin GAC and reactivation of carbon)

Key Takeaways

The Right Team, Disruptive Technologies, Recognized IP and Regulatory Tailwinds

- **Our Team**

- We have world class experts in activated carbon, allowing us to create **customized and effective environmental technologies** for air & water

- **Regulatory Tailwinds**

- \$1 billion in federal funding has been allocated for water monitoring systems
- EPA regulations for U.S. water utilities to capture PFAS/PFOS beginning in 2027 & enforced in 2029

- **Large, Addressable Markets**

- **Stable, Profitable Air Business** – Revenue ramp underway, \$40M+ revenue opportunity
- **Massive, Underserved Water Business** – Custom solutions for municipalities to treat water economically & introducing disruptive new GAC technologies in \$1.5B U.S. water treatment market

- **Strong IP Portfolio & Successful Enforcement Strategy**

- \$57M awarded by jury (final judgment expected in 1H 2025)

- **Move into Water Business Underway**

- \$7M initial feedstock agreement secured
- Buildout of GAC facility commencing in 2025



Contact Information

Corporate Office

Manufacturing & Production Distribution Center

1810 Jester Drive, Corsicana, TX 75109

Main: 614-505-6115

www.birchtech.com

Investor Relations

Lucas A. Zimmerman

MZ North America

Main: +1 (949) 259-4987

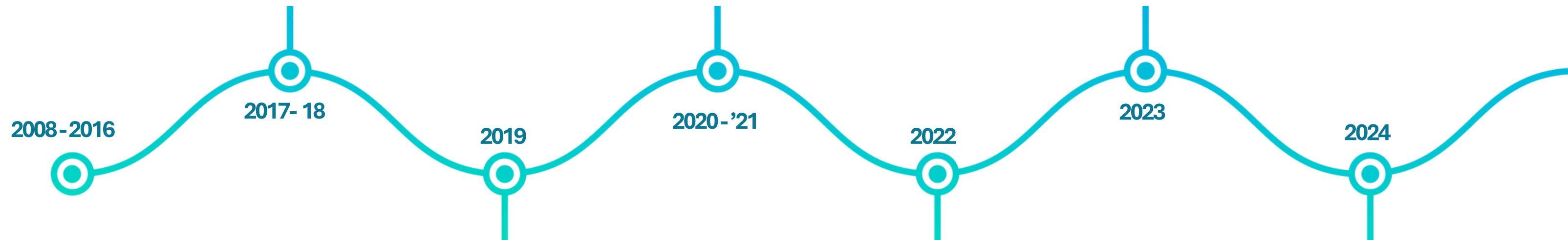
BCHT@mzgroup.us

Leading Technologies For Cleaner Water & Air



A Timeline of Success

- Starting revenue of \$32M, ME₂C acquires full patent rights of the SEA technology
- U.S. coal-fired industry adopts ME₂C's technology outside of patents
- Revenues drop to \$12.3M; Industry-wide infringement of SEA® technologies continues
- IP enforcement underway
- Rev increased due to IP efforts to \$13.2M in 2021 leading to 50% annual growth rate
- Initiated development of new technologies focused on coal ash and wastewater remediation
- New TSXV Listing, Canadian market expansion
- Solid revenues, strong cash on hand (\$2.5M) for Q3
- Agreements reached with major Defendants AJG, DTE, and Alistar
- New activated carbon technology for potable water underway



- ME₂C founded by Richard MacPherson, CEO, in 2008, SEA Tech tested with DOE and numerous utilities across the U.S.
- ME₂C gains first customer in 2011; U.S. EPA MATS regulation incites company growth – revenue reaches \$32M in 2016.

- Completed \$4M+ patent fortification to fight infringement
- Reorganized debt, expenses reduced by \$2M annually. \$2.6M raised covers future IP costs, legal fees
- Lawsuit against (4) major utilities and refined coal entities underway

- Core business growth rate continues at a 50% YoY rate of recurring revenue from IP enforcement successes and increased demand from coal-fired power
- Profitable with positive cash flow, year-end revenues \$21.6M+

- \$57M Jury Award received from trial with remaining CERT defendants in early March
- Outreach continues to U.S. Utilities operating SEA tech not under license
- Announcement for development of new potable water treatment technology
- U.S. EPA regulations announced for PFAS, PFOS limits, utilities' implementation begins 2027
- Midwest Energy Emissions Corp. rebrands to Birchtech Corp.