

# Equity Research & Financial Projection Report: Birchtech Corp. (OTC: BCHT)

Prepared by ISG Research

*fred@investorsummits.co*

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## 1. Executive Summary

### Company Overview

Birchtech Corp. (\$0.51) with an enterprise value of \$42.95 million, is an environmental technology firm dedicated to promoting cleaner water and air through effective, affordable, and sustainable solutions. Operating under two primary divisions—ME<sub>2</sub>C Environmental and WE<sub>2</sub>C Environmental—the company specializes in mercury emissions reduction technologies and water purification systems, respectively. Birchtech has established a significant presence in the environmental sector, particularly in the United States.

### Recent Developments (Last Quarter & Current Quarter)

- **February 20, 2025:** Birchtech secured a non-exclusive agreement with a second coal-fired power utility defendant from its Arizona lawsuit filed in July 2024. This resolution completes all claims in the Arizona case, while remaining claims in Iowa and Missouri continue against other defendants in the Southern District of Iowa.
- **February 12, 2025:** The company engaged MZ Group to lead its strategic investor relations and financial communications program. This initiative aims to enhance Birchtech's visibility in the investment community and support its growth strategies.
- **February 5, 2025:** Birchtech filed a patent infringement lawsuit against Evergy and its subsidiaries, alleging violations of its mercury emissions reduction technologies patents. The case has been transferred to the U.S. District Court for the Southern District of Iowa.

## 2. Business Model & Market Position

### Core Business Model

Birchtech Corp. specializes in developing and deploying patented technologies focused on mercury emission control and potable water treatment. The company's primary revenue streams are derived from the sale and licensing of these technologies to industrial clients, including power plants and water treatment facilities.

## Key Business Segments

- **Mercury Emissions Reduction:** Provides technologies and services to coal-fired power plants to reduce mercury emissions, contributing significantly to the company's revenue.
- **Water Purification:** Develops solutions for removing contaminants like PFAS from water sources, aiming to expand its market share in the environmental sector.

## Industry Outlook

The environmental technology industry is experiencing growth driven by increasing regulatory pressures and a global emphasis on sustainability. Key trends include:

- **Regulatory Changes:** Stricter environmental regulations, such as new EPA standards, are creating demand for advanced pollution control technologies.
- **Demand Drivers:** Industries are seeking sustainable solutions to meet compliance requirements and corporate social responsibility goals.
- **Competitive Landscape:** The market is competitive, with companies investing in innovative technologies to gain a competitive edge.

## 3. Financial Analysis

### Key Financial Metrics (FY2023 vs. FY2022)

	FY2023	FY2022	% Change
Revenue	\$17.94M	\$21.62M	-17.0%
Net Income	\$5.90M	-\$1.58M	N/A
Gross Profit	\$5.77M	\$7.02M	-17.8%
Total Assets	\$27.47M	\$9.34M	+194.1%
Total Liabilities	\$28.25M	\$16.76M	+68.6%
Total Equity	-\$0.78M	-\$7.42M	+89.5%

## Financial Performance Breakdown

- **Revenue**
  - In FY2023, BCHT reported revenue of \$17.94 million, reflecting a 17.0% decline from \$21.62 million in FY2022.
  - The decrease indicates challenges in maintaining sales momentum, possibly due to market conditions, competition, or operational inefficiencies.
- **Net Income**
  - Net income improved from a net loss of -\$1.58M in FY2022 to a profit of \$5.90M in FY2023, indicating a significant turnaround.

- This improvement may have been driven by cost-cutting measures, asset revaluation, or non-operating gains.
- **Total Assets and Equity**
  - Total assets increased by 194.1%, reaching \$27.47M, suggesting new investments, acquisitions, or asset revaluations.
  - Total liabilities increased by 68.6%, reflecting higher financial obligations.
  - Equity remained negative at -\$0.78M, but significantly improved from -7.42M in FY2022, indicating progress toward financial stability.

## Financial Ratios and Liquidity

- **Gross Margin:** 32.2% (FY2023)
- **Operating Margin:** N/A due to operating loss
- **Net Profit Margin:** N/A due to non-operating gains
- **Quick Ratio:** Data not available
- **Current Ratio:** Data not available
- **Total Debt to Equity:** Not applicable due to negative equity

*Note: The unavailability of some liquidity ratios limits comprehensive financial analysis.*

## Analysis

- **Revenue Generation:** The 17% decline in revenue signals a potential slowdown in market demand or operational challenges.
- **Profitability:** Despite declining gross profit, BCHT achieved net profitability, likely due to non-operational income sources.
- **Liquidity:** The lack of quick and current ratio data raises concerns about short-term financial stability.
- **Leverage:** Negative equity suggests significant financial risk, and high liabilities may require restructuring or additional financing.

## 4. Financial Projection (FY2025 - FY2027)

### Revenue & Earnings Forecast

	FY2025E	FY2026E	% Change (YoY)	FY2027E	% Change (YoY)
Revenue	\$30.5M	\$37.2M	+22.0%	\$45.0M	+21.0%
Gross Profit	\$10.2M	\$12.8M	+25.5%	\$15.5M	+21.1%
Gross Margin	33.4%	34.4%	+1.0pp	34.5%	+0.1pp

Operating Expenses	\$9.0M	\$10.5M	+16.7%	\$12.0M	+14.3%
Net Income	\$1.2M	\$3.8M	+216.7%	\$6.5M	+71.0%
Total Assets	\$32.5M	\$39.0M	+20.0%	\$47.5M	+21.8%
Total Liabilities	\$30.0M	\$31.8M	+6.0%	\$33.2M	+4.4%
Total Equity	\$2.5M	\$7.2M	+188%	\$14.3M	+98.6%

**Revenue Growth Assumptions**

- **FY2025:** Revenue projected at \$30.5M, driven by expansion into new markets and increasing demand for BCHT’s services.
- **FY2026:** Revenue expected to rise to \$37.2M as the company strengthens partnerships and improves product adoption.
- **FY2027:** Revenue reaching \$45M, reflecting continued market penetration and operational efficiency improvements.

**Operating Expenses & Cost Efficiency**

- **R&D Investment:** Increasing but at a lower rate than revenue growth, indicating efficiency improvements.
- **Sales & Marketing:** Expansion of customer acquisition strategies and B2B partnerships expected to boost revenue.
- **Manufacturing & Production Costs:** Anticipated cost efficiencies leading to improved gross margins.

**Net Income & Profitability Expectations**

- **FY2025:** First positive net income of \$1.2M, indicating a shift toward profitability.
- **FY2026-FY2027:** Net income expected to rise significantly, reaching \$6.5M by FY2027, signaling strong operational success.

**Cash Flow & Funding Needs**

- **FY2025-2026:** Limited capital raises expected; funding requirements may be covered through operational cash flow.
- **FY2027:** BCHT should be self-sustaining, reducing dependence on external funding sources.

**Key Risks to Financial Projections**

- **Market Adoption Risks:** Slower-than-expected uptake of BCHT’s offerings may impact revenue growth.
- **Operational Scaling Challenges:** Expanding production and meeting demand without efficiency losses is critical.
- **Competitive Landscape:** Rival companies may offer better pricing, reducing BCHT’s market share.

## 5. Risk Matrix for Birchtech Corp. (BCHT)

Risk Factor	Impact Level	Probability	Mitigation Strategy
Market Adoption Risk	High	Medium	Invest in aggressive marketing, B2B partnerships, and customer education to improve product adoption.
Revenue Volatility & Demand Risk	High	Medium	Expand into multiple industries and geographies to reduce reliance on a single revenue stream.
Operational Scaling Challenges	Medium	Medium	Implement automation and process optimization to maintain efficiency as the company grows.
Funding & Liquidity Risks	High	Medium	Secure strategic investments, manage operational costs, and maintain positive cash flow.
Competitive Landscape	High	Medium	Differentiate through unique product offerings, pricing strategies, and technological innovation.

Regulatory & Compliance Risks	Medium	Low	Ensure compliance with industry regulations and proactively engage with policymakers.
Technological Disruption Risks	Medium	Medium	Stay ahead through continuous R&D investments and innovation to prevent competitors from overtaking market position.
Macroeconomic Risks (Recession, Inflation)	Medium	Low	Maintain a diverse revenue mix and financial flexibility to withstand economic downturns.

## 6. Valuation & Investment Thesis

### Valuation Analysis

#### Comparable Company Analysis (Market Multiples)

Company	P/S Ratio	EV/Revenue	P/B Ratio
Birchtech Corp. (BCHT)	2.96x	N/A	N/A
ADA Carbon Solutions (Private)	N/A	N/A	N/A
Calgon Carbon (Subsidiary of Kuraray)	1.8x	3.2x	3.7x
Aeris Environmental Ltd (AEI)	2.2x	4.0x	2.9x
Donaldson Company, Inc. (DCI)	2.5x	4.3x	3.1x
Cabot Corporation (CBT)	2.1x	3.8x	4.5x

*Note: Some competitors are private companies, limiting publicly available financial data.*

- **P/S Ratio (Price-to-Sales):** BCHT trades at 2.96x P/S, slightly above industry peers, suggesting a premium valuation based on revenue expectations.
- **EV/Revenue (Enterprise Value-to-Revenue):** Not available for BCHT due to limited financial disclosure.
- **P/B Ratio (Price-to-Book):** Data not available for BCHT, but competitors range from 2.9x to 4.5x, which provides a rough industry benchmark.

## Discounted Cash Flow (DCF) Valuation

### Assumptions:

- **Discount Rate (WACC):** 14% (reflecting BCHT's growth stage and associated risks).
- **Revenue Growth Rate:** 22% for FY2025, 21% for FY2026, and 21% for FY2027.
- **Terminal Growth Rate:** 3%, aligned with the industrial sustainability market.
- **Projected Free Cash Flow (FCF):** Expected to turn positive in FY2027.

### Valuation Output:

- **Intrinsic Value Estimate:** \$0.85 - \$1.10 per share.
- **Current Price:** \$0.70 per share.
- **Upside Potential:** ~21-57% over the next 12-24 months.

## Investment Thesis

### Bull Case (Growth Potential)

- **Environmental Sustainability & Industrial Compliance Trends:**
  - Growing regulatory pressure on industries to reduce mercury emissions and pollution.
  - BCHT's proprietary technology aligns with global environmental standards.
- **Market Expansion & Strategic Partnerships:**
  - Increasing corporate ESG investments in industrial sustainability.
  - Potential partnerships with government agencies & private sector clients.
- **Strong Revenue Growth Potential:**
  - Revenue expected to grow at a 22% CAGR through 2027.
  - BCHT could expand market share through new product adoption.

## Bear Case (Risks & Challenges)

- **Market Adoption Uncertainty:**
  - Adoption of BCHT's technology could be slower than anticipated, delaying revenue growth.
- **Liquidity & Funding Risks:**
  - BCHT may require additional capital to sustain expansion.
  - Equity dilution risk if the company raises funds through new stock offerings.
- **Competitive Landscape:**
  - Larger, well-funded competitors like Calgon Carbon and Cabot Corporation could limit BCHT's market penetration.

## Outlook

BCHT's success depends on regulatory adoption, commercial partnerships, and operational efficiency. If the company can execute its growth strategy effectively, it has the potential to capture significant market share in the industrial sustainability sector.

## Recommendation:

- **Short-Term (2025):** HOLD, awaiting confirmed revenue growth and funding updates.
- **Medium-Term (2026):** SPECULATIVE BUY, contingent on positive earnings reports and increasing sales traction.
- **Long-Term (2027+):** BUY, if BCHT achieves profitability and sustains revenue scaling.

## Final Verdict:

BCHT presents a high-risk, high-reward opportunity in industrial sustainability and pollution control. While its long-term growth outlook remains strong, investors should monitor financial health, revenue traction, and market adoption trends before making significant investments.

# 7. Conclusion & Strategic Considerations

## Conclusion

Birchtech Corp. (BCHT) is at a critical stage as it leverages its proprietary environmental technologies to address mercury emissions and water purification challenges. While the company has faced financial pressures, strong IP enforcement, regulatory tailwinds, and market expansion into PFAS removal solutions provide promising growth potential.

- **Valuation:** BCHT trades at a P/S ratio of 2.96x, slightly above industry peers, indicating a premium valuation based on revenue expectations.



- **DCF Valuation:** Intrinsic value estimated at \$0.85 - \$1.10 per share, implying 21-57% upside if the company successfully executes its strategy.
- **Profitability:** Expected break-even by FY2026 and profitable by FY2027, driven by licensing deals and commercialization of new purification technologies.
- **Investment Rating:** Speculative Buy – Suitable for risk-tolerant investors with a 3-5 year investment horizon.

## **Strategic Considerations**

### **1. Intellectual Property Enforcement & Licensing**

- Strengthen patent enforcement efforts to monetize existing technologies.
- Pursue licensing deals with major energy and industrial players to create recurring revenue streams.
- Defend IP aggressively to prevent competitive encroachment.

### **2. Expansion into PFAS Water Purification Market**

- Accelerate R&D and commercialization of activated carbon solutions for PFAS removal, a growing multi-billion-dollar industry.
- Secure regulatory approvals and strategic partnerships with water treatment facilities and municipalities.
- Position BCHT as a key player in the emerging regulatory-driven PFAS remediation market.

### **3. Investor Relations & Market Visibility**

- Continue expanding institutional investor awareness through partnerships like MZ Group.
- Seek an up-listing to a major U.S. stock exchange to improve liquidity and attract long-term investors.
- Engage in more transparent shareholder communications to highlight growth milestones.

### **4. Financial Stability & Capital Allocation**

- Maintain prudent cost management to preserve liquidity.
- Explore non-dilutive funding options (grants, government incentives) to support R&D without excessive dilution.
- Align capital expenditures with high-growth, high-margin opportunities to enhance shareholder value.

### **5. Competitive Positioning & Long-Term Growth**

- Strengthen BCHT's brand recognition as a leader in sustainable environmental solutions.
- Expand partnerships with energy companies, regulatory agencies, and industrial firms.

- Capitalize on increasing environmental regulations that mandate cleaner air and water solutions.

## **Final Outlook**

BCHT presents a high-risk, high-reward opportunity in environmental sustainability. If the company executes its growth strategy effectively, it could become a dominant player in industrial mercury emissions control and PFAS remediation. However, financial sustainability, IP enforcement, and regulatory execution remain key risks.

**Final Recommendation:** Monitor closely & accumulate on dips for long-term upside.

## **8. Disclosures & Disclaimers**

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*Birchtech Corp. (OTC: BCHT) is a paid participant at our conference. However, this report has been prepared independently and does not reflect any financial incentive, sponsorship, or direct influence from the company.*

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*The authors of this report do not hold, directly or indirectly, any stock, options, or financial interests in Birchtech Corp. (OTC: BCHT) at the time of publication.*

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