

**Rating**  
**BUY**  
Initiating

**Target Price**  
**\$55.00**  
Initiating

March 12, 2024

All figures in CAD unless otherwise stated

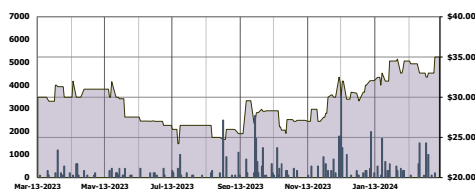
BQE Water Inc.	BQE:TSXV
Rating	BUY
Target Price	\$55.00
Return to Target	57%

Market Data	
Share Price	\$35.00
Average Daily Volume	290.0
FD ITM Shares (M)	1.3
Market Cap (\$M)	\$44.9
Cash (\$M)	\$6.7
Debt (\$M)	\$1.6
Enterprise Value (\$M)	\$39.8

FYE Jan 31	2023E	2024E	2025E
Proportional Revenue (\$M)	\$21.5	\$23.7	\$25.8
Revenue (\$M)	\$15.9	\$17.8	\$19.8
Gross Margin (%)	48%	49%	49%
Adj. EBITDA (\$M)	\$4.7	\$6.2	\$7.2
Adj. EBITDA Margin (%)	22%	26%	28%
Net Income (\$M)	\$2.8	\$4.8	\$5.5
EPS (Basic)	\$2.22	\$3.87	\$4.39
FCFF (\$M)	\$2.3	\$3.6	\$5.4

Valuation	2023E	2024E	2025E
EV/EBITDA	8.5x	6.4x	5.5x
P/E	15.8x	9.1x	8.0x
FCF Yield (%)	6%	9%	14%
EV/Sales	1.9x	1.7x	1.5x

Please refer to the applicable disclosures on the back page  
Source: Atrium Research, CapitalIQ, Company Documents



BQE Water is a service provider specializing in water treatment and management for mining, smelting, and refining businesses. BQE Water invests in innovation and has developed unique intellectual property through the commercialization of several new technologies at mine sites around the world for organizations including Glencore, Codelco, Jiangxi Copper, Freeport-McMoRan and South32. BQE Water is headquartered in Vancouver, Canada.

Nicholas Cortellucci, CFA | Equity Research Analyst | ncortellucci@atriumresearch.ca | 647-391-3314  
Ben Pirie | Equity Research Analyst | bpirie@atriumresearch.ca | 647-688-9661

### What you need to know:

- BQE's recurring revenue is growing as a percentage of total revenue, making its business more predictable and stable.
- The Company has major tailwinds from increasing environmental regulations on water discharge as well as increasing mining capex.
- BQE's EBITDA margins have been steadily improving over the past five years due to its asset-light model, reaching 22% in 2023E.
- BQE trades at 5.5x 2025E EBITDA, a significant discount to its peers.

BQE Water (BQE:TSXV, BTQNF:OTC) is a leading provider of water treatment services for mining and metallurgical processing clients globally. BQE uses innovative solutions and a holistic approach to water management throughout the project life cycle to drive regulatory compliance and social responsibility. Over the past five years, BQE has grown proportional revenue (including its share of JV revenue) at a 17% CAGR and adjusted EBITDA at a 32% CAGR; We believe it can sustain these growth rates while recurring revenue becomes a larger portion of its business and ESG tailwinds support demand. **We are initiating coverage on BQE Water with a BUY rating and target price of \$55.00/share.**

### Investment Thesis Summary

**Growing Stream of Recurring Revenue.** Recurring revenue represents over 30% of BQE's proportional revenue through the production of clean water and tolling fees from various long-term contracts. This figure has increased from 13% in 2020 as BQE's clients advance their projects into production; we expect recurring revenue to represent 44% of proportional revenue by 2025.

**Tailwinds in Environmental Regulations & Mining Capex.** Environmental regulations for water discharge have been getting increasingly strict over the years. Additionally, we believe we are in the early innings of a mining capex cycle where hundreds of new mines will be opened, playing into BQE's value proposition.

**Highly Profitable & Improving.** BQE has been steadily increasing its EBITDA margins from negative levels a decade ago to 22% in 2023E. BQE's business model is asset-light as its clients pay for the capex required for the water management plants. As such, we expect profitability to continue scaling upward with size.

**Unique IP Protects & Drives Growth.** BQE has unique IP in areas of crucial importance for miners to meet regulations and/or reduce costs and risks. Regulations drive the demand for BQE's IP in selenium, sulphate, ammonia, thiosalts, cyanide, and trace heavy metals removal.

**Clean Balance Sheet & Capital Structure.** BQE has an excellent balance sheet, with \$6.7M in cash (and growing) and no interest-bearing debt. Its capital structure is incredibly tight with only 1.3M shares, having not raised equity since 2018. 46% of BQE's stock is held by three private investors and 8% by management/board.

**Value Stock in a High Multiple Industry.** BQE trades at 6.4x/5.5x 2024E/2025E EBITDA compared to engineering service firms at 14.1x/12.8x and water treatment firms at 11.5x/10.3x. Furthermore, there have been several acquisitions in the water treatment space over the last few years, which average 15x trailing EBITDA. We value BQE using 9.0x 2025E EBITDA, translating to our \$55.00/share target.

### Catalysts

- Financial Results & Increasing Recurring Revenue – Ongoing
- New Contract Announcements – Ongoing
- Share Repurchases – 2024

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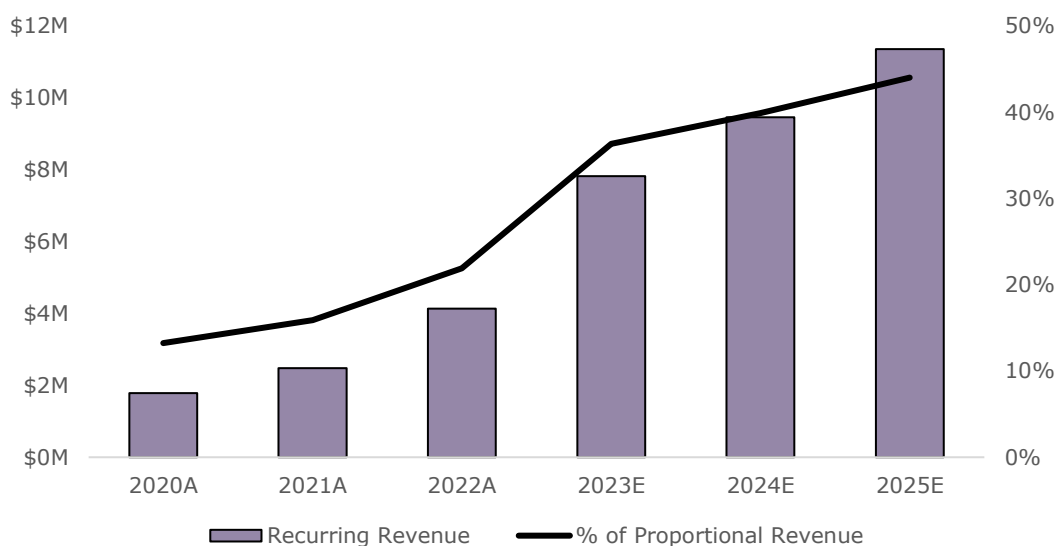
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## Investment Thesis

**We are initiating coverage on BQE Water Inc. (BQE:TSX, BTQNF:OTC, UL5A:FRA) with a BUY rating and a target price of \$55.00/share.** BQE is a leading provider of water treatment services for mining and metallurgical processing clients globally. The Company uses its unique IP and a holistic approach to water management throughout the project life cycle to drive environmental regulatory compliance and social responsibility. BQE has deployed 30 treatment systems internationally. On an annual basis, BQE produces over 20M m<sup>3</sup> of clean water discharged into the environment, recovers over 4,000 tons of valuable metals, and recycles over 1,000 tons of sodium cyanide. All BQE installations have either eliminated or reduced waste compared to off-the-shelf solutions offered by others. Over the past five years, BQE has grown proportional revenue (which includes its share of JV revenue) at a 17% CAGR and adjusted EBITDA at a 32% CAGR.

## Growing Stream of Recurring Revenue

Over 30% of BQE's revenue is recurring through the production of clean water and tolling fees (from long-term operations contracts). This figure has been increasing over the years as BQE takes on new projects that move past the development stage, transitioning to the recurring model as their mines move into production. Over the last five years, recurring revenue has quadrupled but technical services revenue has only doubled, demonstrating the transition to a higher multiple business. BQE's clients are incredibly sticky, as the Company services mines across the development/permitting stage (~5 years), operating stage (15+ years), and closure phase (5+ years). This is evident through BQE retaining the Jiangxi Copper Mine for 19 years and the Raglan Mine (Glencore) for 21 years. The market has not picked up on the transition to the highly scalable recurring revenue yet, leading to BQE trading at a steep discount to fellow water treatment firms. We expect recurring revenue (water treatment fees) to represent 44% of proportional revenue by 2025 compared to 13% in 2020 and 36% in 2023E.



**Figure 1: Increasing Recurring Revenue (Water Treatment Fees)**

BQE aims to sign two new projects per year in the operational stage, having signed South32 and the Yukon Government in 2023 and three new projects in 2022. The opportunity ahead of BQE is massive with over 4,800 operating mines globally with almost 100,000 mines in development and closure, compared to the 30 plants BQE has built thus far. Having major producers sign on for the long term tells us that BQE's technology and business model are highly sustainable and will be able to attract new clients. The average project spans over 30 years and generates \$28M in revenue, which breaks down as \$2M for the development/permitting stage (5+ years), \$24M for the mine operation stage (15+ years), and \$2M for the closure stage (5+ years). As such, BQE's revenue growth should accelerate as the years go on since new projects reach the mine operation phase where most of BQE's revenue and EBITDA are generated. Technical services revenue (corresponding to mine development and permitting) was up 60% in 2022 and 31% through Q3/23, indicating that additional recurring revenue is on the horizon.

### Tailwinds in Environmental Regulations & Mining Capex

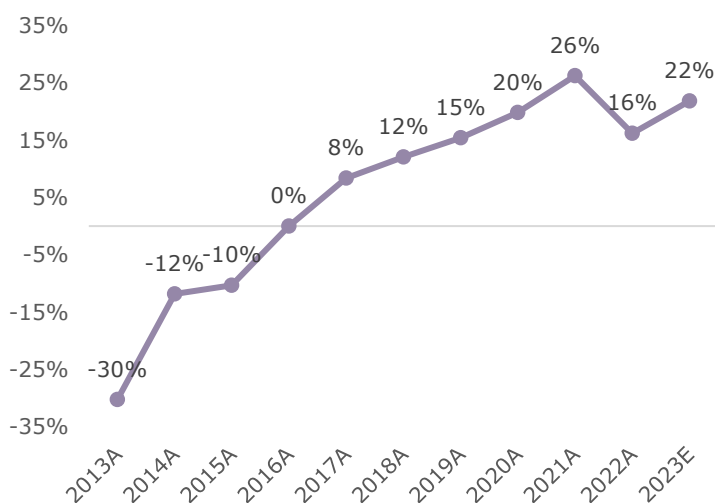
Over the past two decades, environmental regulations regarding contaminants in water stored and/or discharged have become increasingly strict globally. In North America in particular, selenium has been at the forefront of contaminant regulations after the discovery of impeded reproduction and deformities in fish. Additionally, in the past, mines used to store excess contaminated water on-site but this is now being banned by most jurisdictions, providing increased demand for water management systems. These factors, combined with the increased importance of indigenous relations in mining, have created a rapidly growing water treatment market in the mining industry.

Furthermore, we believe we are in the nascent stages of a new mining capex cycle. We anticipate that the current shortage of supply, coupled with heightened metal prices and robust demand, will catalyze a surge in new mining ventures over the next decade. The International Energy Agency estimates that global battery and minerals supply chains need to expand tenfold to meet the projected critical minerals needs by 2030; creating a whole new suite of clients for BQE to target. This creates an incredibly large TAM for BQE across operating mines and mines in development.

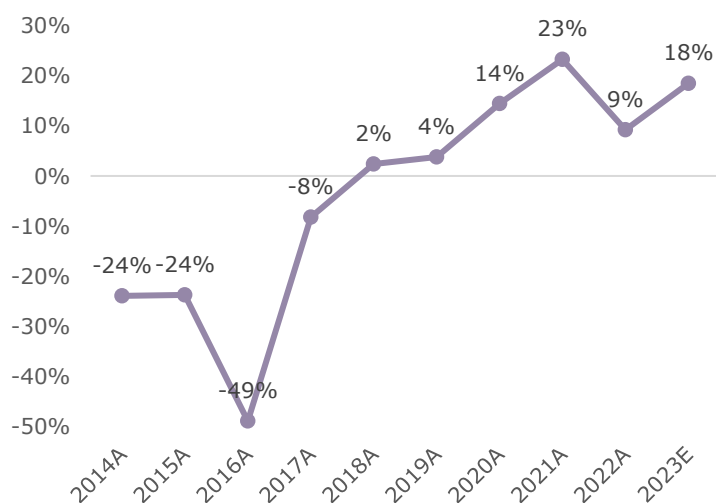
### Highly Profitable & Improving

While profitability has been quite lumpy through BQE’s history when looking on a quarterly basis, EBITDA margins have reached record levels recently and have steadily increased on an annual basis. When looking at the last ten years, adjusted EBITDA margin has improved YoY every single year aside from 2022 due to poor performance from BQE’s China JV (Figure 2). We find this very impressive given that proportional revenue compounded at 11% over that same period. We see a similar trend with ROE, which has scaled upward nearly every year, now reaching 18% in 2023E (Figure 3).

In Q3/23, EBITDA margins reached 34%, improving from the solid 25% in Q2 and 24% seen in Q3 last year. While Q2 and Q3 are BQE’s seasonally stronger quarters, we are expecting 22% EBITDA margins in 2023 compared to 16% in 2022. We attribute the recent improvements to operating leverage, pricing power, and rising commodity prices (for the sale of recovered metals revenue). This is evident through the decreasing G&A as a percent of revenue, which was 21% in 2020A vs. 15% in 2023E. We note that BQE’s business model is asset-light since its clients pay for the capex (equipment) required for the water management plants. We expect these levels to continue and conservatively assume a 26% EBITDA margin for 2024 with further margin expansion to 28% in 2025 as additional projects move into the operations phase.



**Figure 2: Adjusted EBITDA Margin History**



**Figure 3: ROE History**

### Selenium Technology is Disruptive & Provides Growth Opportunities

Selenium is released into water through the oxidation of minerals exposed to air and moisture during mining for metals including gold, base metals, coal, uranium, and more. This has come into the crosshairs of government bodies around the globe, establishing strict regulations for selenium discharge. Canada and the U.S. have led this regulatory change, with other countries expected to follow in the coming years. Management has stated that of the ~35 projects in the environment impact assessment (EIA) stage in Canada, ~25 have identified selenium as a concern. However, these new regulations also apply to operating mines and some closed mines as well.

Only five years ago, selenium could not be properly detected in water and thus was not measured or regulated; therefore, this is still a nascent market where BQE can command a market-leading presence. BQE has the only non-biological solution on the market which can selectively remove selenium from mine waters to less than 1 ppb, producing only a small quantity of non-hazardous solid by-product; meeting the strictest government regulations. BQE commissioned its first plant in 2020 and has since grown its selenium client base significantly (see Recent Contracts section).

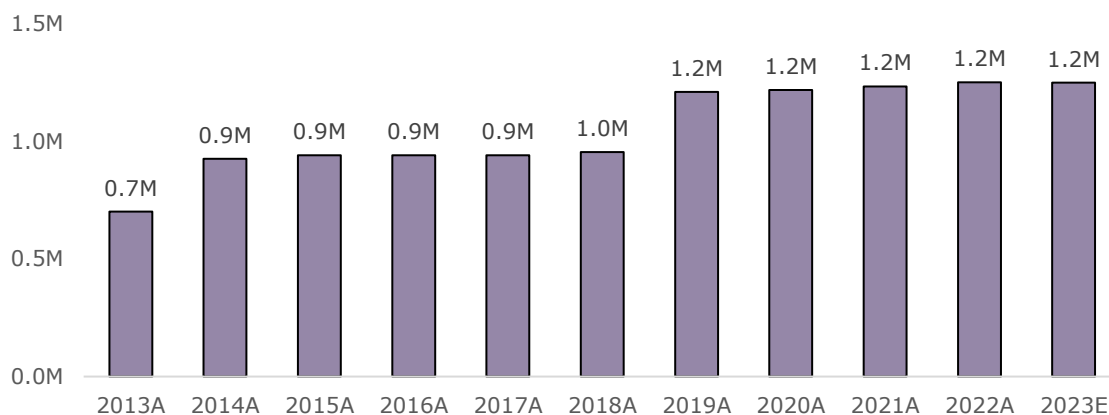
The same selenium technology is also applicable to the remediation of coal ash ponds. Decades of power generation using coal combustion has left large tonnage of ash containing selenium stored in often unlined ponds. Environmental and human risks associated with ash ponds have been well demonstrated by the failure of the Kingston ash pond, the spill in Tennessee, and the threat of major impact to the Mobile River Delta ecosystem by Alabama Power coal ash ponds. BQE has commissioned and is now operating the first application of its selenium technology as part of an ash pond remediation project in the eastern U.S. Due to the high level of consolidation in the U.S. utility market where a limited number of players own the majority of ash ponds and the presence of selenium in coal supplied to power plants across the U.S., it is very likely that the Company will be able to leverage the success of this first installation to grow its presence in this new market segment.

### Social Responsibility at its Core

Through its role as a guarantor of clean water production at mine sites throughout the project life, BQE's business model aligns with the interests of local communities who value a clean environment as an essential element of life. BQE has already formed two partnerships with indigenous community-based organizations to create opportunities for meaningful involvement of the communities in the protection of aquatic environments and otherwise share the benefits of long-term contracts with the communities. This promotes transparency and helps build bridges between mining projects and local communities. In this way, BQE's socially responsible business helps mining companies secure social acceptability for their projects.

### Clean Balance Sheet & Capital Structure

BQE has an excellent balance sheet, with \$6.7M in cash, only \$0.2M in interest-free government loans, and \$1.4M in office lease liabilities (over the next ten years). This will allow the Company to continue taking on large projects without diluting shareholders as it breaks even on a FCF basis. The Company's capital structure is incredibly tight, only having 1.3M shares outstanding and just 45% in free float. Furthermore, BQE has not raised equity since 2018 (rare for a Canadian micro-cap) and began repurchasing shares in 2023 with \$277K deployed through Q3/23. Management has outlined that it will not need additional cash moving forward due to its asset-light model. As such, we believe that once investors get wind of the fundamentals behind the BQE story, the capital structure will allow for significant upside.

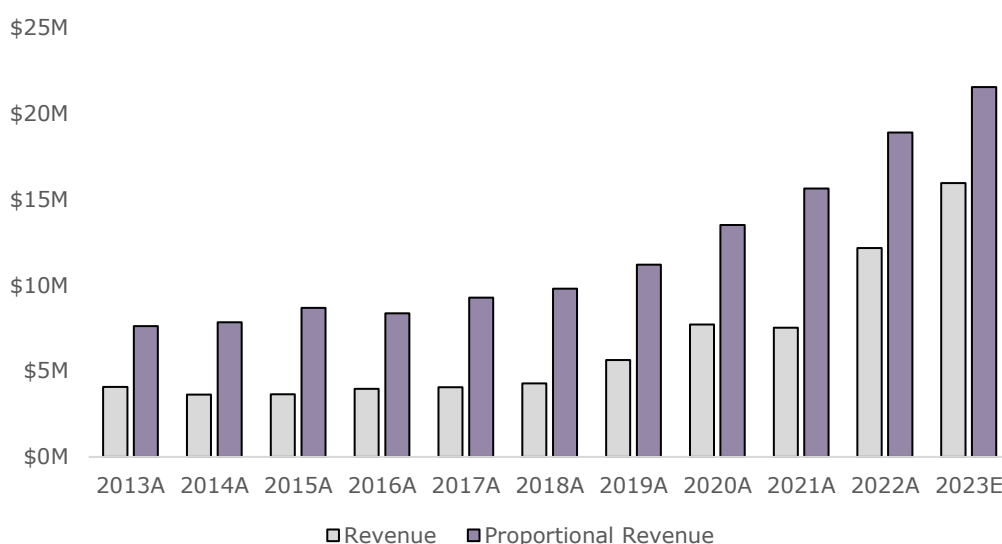


**Figure 4: Basic Shares Outstanding History**

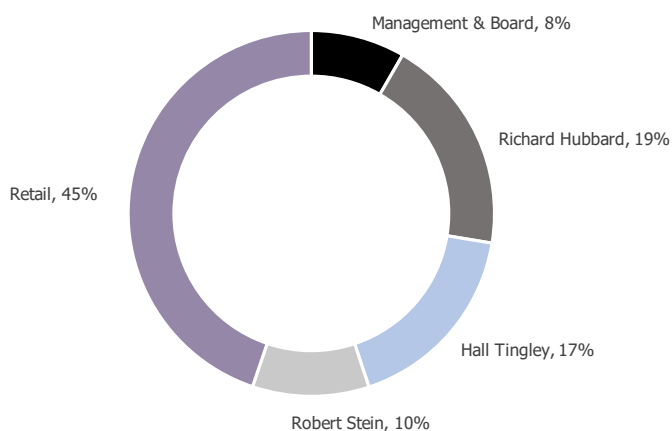
### Management & Track Record

BQE has a highly motivated and incentivized management team, which is led by CEO David Kratochvil and Chairman Peter Gleeson who own 2% and 4% respectively. Mr. Kratochvil initially joined the Company in 2001 then re-joined in 2014 as CEO, having a technical background in commercially developing water technologies. The remaining members of the management team and board are highly technical in the field of water technology and capital markets. The stock is tightly held with management & board owning 8% and 46% held by three private investors (Figure 6).

The team has a stellar track record over its history, growing revenue at a 15% CAGR over the last ten years and a 30% CAGR over the last five years. This is further demonstrated by proportional revenues which compounded at 11% over the last ten years and 17% over the last five years. Over this period, profitability has also scaled up well, with adjusted EBITDA margins going from -30% in 2013 to 22% in 2023E. This translated into strong stock price performance with BQE stock up 280% over the last five years (30% annually) and 433% over the last ten years (18% annually). Given management’s technical experience and relationships in the mining industry, paired with their proven history of growing the Company, we are highly confident in the execution of BQE’s expansion.



**Figure 5: Revenue Growth Track Record**



**Figure 6: Ownership Summary**



## **Valuation**

### **Peer Group Analysis**

Due to BQE's unique business model and industry positioning, we break down our comparable companies universe into three groups, engineering services companies, water/wastewater treatment companies, and mining services companies. BQE's fast-growing operations segment is similar to the water group in terms of recurring revenue growth and margins while BQE's technical services are more akin to the engineering services group. The environmental focus of BQE, regulatory drivers that underpin the value of BQE's IP, and its ability to generate recurring revenue shields BQE from cycles in the mining business. The fact that the Company grew organically during the period of low capital spending by the mining industry between 2016 and 2023 demonstrates that, unlike mining services companies, BQE offers organic growth regardless of the stage of the commodity cycle while it can clearly be expected to capitalize on the tailwinds created by mining capex. We think that the link to mining services has led to the deep discount that BQE trades at relative to the other two groups.

The engineering services group trades at 14.1x/12.8x 2024E/2025E EBITDA while the group is expected to post a 7% sales CAGR from 2022 to 2025E with 9% EBITDA margins on average. In comparison to BQE, the engineering services companies don't generate recurring revenue and their margins are not protected by IP. While engineering services are 100% driven by capital spending (which is minimal after the initial mine construction), these firms offer protection against commodity cycles via diversification to other industry sectors.

The water group trades at 11.5x/10.3x 2024E/2025E EBITDA while the group is expected to post a 9% sales CAGR from 2022 to 2025E with 17% EBITDA margins on average. The water treatment group generates recurring revenue from the sale of commodity products and services dominated by domestic water and wastewater markets. While this makes their businesses very stable and resilient, it does impose a cap on margins similar to the regulated utility businesses.

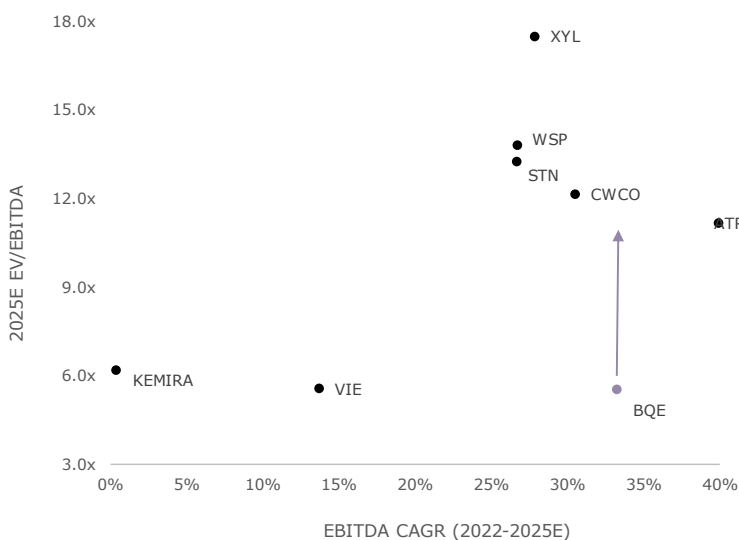
The mining services group trades at a much lower 3.9x/3.3x 2024/2025E EBITDA given the depressed nature of the sector despite a solid 4% expected sales CAGR and 15% EBITDA margins. Unlike the engineering services and water groups, mining services do not offer any protection against cyclicity in the mining capex. Their valuation compares to BQE which trades at 6.4x/5.5x 2024E/2025E EBITDA with one of the highest growth rates in the group despite BQE's business being well shielded from the cyclicity in the mining capex. We are expecting BQE to grow revenue at an 18% CAGR from 2022A-2025E and a 33% EBITDA CAGR. Furthermore, for 2023, BQE has one of the highest EBITDA margins out of the three groups.

When looking at specific peers, we think the best comparable is BluMetric (BLM:TSXV, \$11M mkt cap), which provides solutions for environmental issues including environmental engineering, industrial hygiene, renewable energy solutions, water and wastewater treatment, and environmental contracting and management. The stock is similarly illiquid yet trades at 12.7x 2023A EBITDA, a strong premium to BQE with less growth and lower margins. Another close comparable is the recently acquired, H2O Innovations (acquired for 18x trailing EBITDA), which is mentioned in the Precedent Transactions section below.

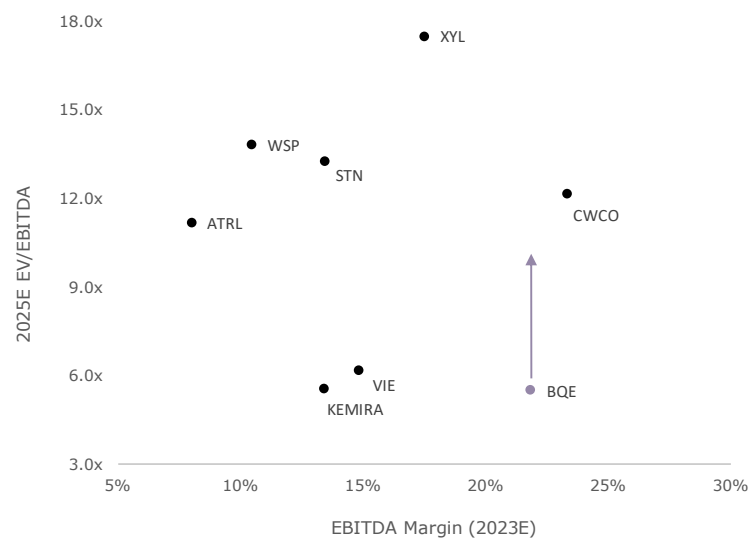
As such, BQE has justification for a much higher multiple, yet the lack of liquidity has made it difficult for institutions to initiate a position. We believe BQE's business more closely aligns with the water group given the focus on IP, rather than the capital-intensive mining services group, while the technical services segment aligns with the engineering services group. Weighing these factors, we choose to value BQE on 9x 2025E EBITDA, translating to our \$55.00/share target price. This is further reinforced by the precedent transactions section below.

Company	Ticker	Mkt Cap (\$C)	EV (\$C)	Sales CAGR (2022A-2025E)	EBITDA CAGR (2022A-2025E)	EBITDA Margin 2023E	EV/EBITDA		
							2023E	2024E	2025E
<b>Engineering Services</b>									
WSP Global Inc.	WSP	\$27,923	\$31,814	1%	27%	10%	21.1x	15.1x	13.8x
Stantec Inc.	STN	\$12,883	\$14,262	12%	27%	13%	20.9x	14.8x	13.3x
SNC-Lavalin Group Inc.	ATRL	\$9,866	\$11,508	8%	40%	8%	16.7x	12.5x	11.2x
BluMetric Environmental Inc.	BLM	\$11	\$14	N/A	N/A	3%	12.7x	N/A	N/A
<b>Average</b>				<b>7%</b>	<b>31%</b>	<b>9%</b>	<b>17.8x</b>	<b>14.1x</b>	<b>12.8x</b>
<b>Water &amp; Wastewater Treatment</b>									
Veolia Environnement Sa	VIE	\$30,692	\$59,593	4%	14%	13%	6.7x	5.9x	5.6x
Xylem Inc.	XYL	\$41,128	\$43,443	17%	28%	17%	25.0x	19.2x	17.5x
Kemira Oyj	KEMIRA	\$3,871	\$4,689	-7%	0%	15%	6.3x	5.9x	6.2x
Consolidated Water Co. Ltd.	CWCO	\$613	\$557	22%	31%	23%	10.3x	15.1x	12.2x
<b>Average</b>				<b>9%</b>	<b>18%</b>	<b>17%</b>	<b>12.1x</b>	<b>11.5x</b>	<b>10.3x</b>
<b>Mining Services</b>									
NRW Holdings Limited	NWH	\$1,221	\$1,362	4%	11%	11%	4.8x	4.6x	4.5x
Major Drilling Group Internation:	MDI	\$679	\$579	4%	8%	20%	4.0x	4.6x	4.1x
Foraco International Sa	FAR	\$264	\$369	9%	18%	23%	3.2x	2.8x	2.6x
Vertex Resource Group Ltd.	VTX	\$45	\$179	8%	25%	16%	4.6x	4.5x	N/A
Orbit Garant Drilling Inc.	OGD	\$20	\$58	1%	20%	8%	3.4x	4.8x	3.5x
Geodrill Limited	GEO	\$84	\$80	-3%	-16%	16%	2.9x	2.2x	2.1x
<b>Average</b>				<b>4%</b>	<b>11%</b>	<b>15%</b>	<b>3.8x</b>	<b>3.9x</b>	<b>3.3x</b>
<b>Universe Average</b>				<b>6%</b>	<b>18%</b>	<b>14%</b>	<b>10.2x</b>	<b>8.6x</b>	<b>8.0x</b>
<b>BQE Water Inc.</b>	<b>BQE</b>	<b>\$45</b>	<b>\$40</b>	<b>18%</b>	<b>33%</b>	<b>22%</b>	<b>8.5x</b>	<b>6.4x</b>	<b>5.5x</b>

**Figure 7: Peer Group Analysis (Source: Capital IQ)**



**Figure 8: EV/EBITDA vs. EBITDA CAGR (Source: Capital IQ)**



**Figure 9: EV/EBITDA vs. EBITDA Margin (Source: Capital IQ)**



**Precedent Transactions**

There have been several acquisitions in the water technology industry over the last five years, with billions of dollars being deployed by strategic and financial buyers. Most recently, Canadian firm H2O Innovation was acquired by Ember Infrastructure for \$395M or 18x trailing EBITDA. Similar to BQE, H2O was also transitioning to a recurring revenue model. H2O ended FY22 with \$184M in revenue (+28% YoY) and \$18M in adjusted EBITDA (10% margin). While it is unlikely that BQE will reach this scale organically over the next few years, it can certainly attract financial and strategic buyers looking for relevant technology, recurring revenue, and high margins.

The multiples of the transactions in the space have averaged 15.0x (Figure 10), a solid premium to the public comparables above. While all of these acquisitions are much larger than BQE’s current size, we note that H2O Innovation was rolling up smaller firms in the industry over the past few years in the \$5M-30M range, typically paying 8.0x EBITDA. At the group average of 15x, BQE would be worth \$89/share and at the H2O Innovation average of 8x, BQE would be worth \$49/share. Furthermore, this demonstrates that if BQE can grow into a larger player, its multiple will drastically increase.

Target	Acquirer	Date	Transaction Size (US\$M)	EV/Sales (Trailing)	EV/EBITDA (Trailing)
SUEZ	Veolia Environmental	April 2021	\$24,500	1.5x	8.7x
AquaVenture Holdings	Culligan	March 2020	\$1,100	5.4x	14.6x
MEMCOR	DuPont	October 2019	\$110	1.8x	12.5x
Avista Technologies	Kurita Water	May 2019	\$82	2.9x	N/A
U.S. Water Services	Kurita Water	February 2019	\$270	1.6x	N/A
ProAct Services	Evoqua Water	June 2018	\$132	2.5x	11.0x
Evoqua Water	Xylem	May 2023	\$7,500	3.8x	25.0x
H2O Innovation	Ember Infrastructure	October 2023	\$395	1.6x	18.0x
<b>Average</b>				<b>2.6x</b>	<b>15.0x</b>

**Figure 10: Precedent Transactions**



**Figure 11: Competitive Landscape (Source: Company Documents)**

### Target Price Derivation

As mentioned above, we value BQE based on 9.0x 2025E EBITDA of \$7.2M, translating to our target price of \$55.00/share. We view this as a fairly conservative multiple given that water treatment and engineering services stocks trade at over 10x and transactions in the industry have occurred at 15x. We expect this multiple expansion to occur as the market sees recurring revenue becomes a larger portion of total revenue over the coming years. Our target price represents a 57% upside. The target price is equivalent to 12x 2025E earnings and an 8% FCF yield (2025E). If we do not expect any multiple expansion on BQE's current 8.5x 2023E EBITDA, our target price would be \$52/share or a 49% upside. Additionally, BQE has a \$26.9M tax loss carryforward (Figure 38) which we do not include in our target price for simplicity.

EBITDA Multiple Valuation	
2025E EBITDA (\$M)	\$7.2
EV/EBITDA Multiple	9.0x
Enterprise Value	\$65.1
(+) Cash	\$6.7
(-) Debt	\$1.6
Equity Value	\$70.2
<b>Target Price (Rounded)</b>	<b>\$55.00</b>
<i>Upside</i>	57%

		2025E EBITDA Multiple				
		7.0x	8.0x	9.0x	10.0x	11.0x
2025E EBITDA	\$5M	\$33.00	\$37.00	\$41.00	\$45.00	\$49.00
	\$6M	\$38.00	\$43.00	\$48.00	\$53.00	\$57.00
	\$7M	\$43.00	\$49.00	<b>\$55.00</b>	\$60.00	\$66.00
	\$8M	\$49.00	\$55.00	\$62.00	\$68.00	\$75.00
	\$9M	\$54.00	\$62.00	\$69.00	\$76.00	\$83.00

Figure 12: Target Price Derivation

Figure 13: Sensitivity Analysis

### Discounted Cash Flow

As seen below, our DCF assumes a 14% WACC and 12.0x exit multiple, reiterating our target price of \$55.00/share. This assumes very modest growth beyond 2026 and similar margins and FCF conversion. We believe these figures are conservative given the Company's track record of growth and precedent transactions in the industry. Sensitivity analysis on our DCF can be found in the appendix.

						DCF	
	FY24E	FY25E	FY26E	FY27E	FY28E		
Revenue (\$M)	15.9	17.8	19.8	21.5	22.9	Sum of PV FCFFs	\$13.4
EBITDA (\$M)	4.7	6.2	7.2	7.8	8.3	FY28E EBITDA	\$8.3
FCFF (\$M)	2.3	3.6	5.4	4.6	4.6	Exit Multiple	12.0x
PV of FCFF	2.0	2.8	3.7	2.8	2.1	Terminal Value	\$99.0
						PV of Terminal Value	\$52.0
						Enterprise Value	\$65.4
						(+) Cash	\$6.7
						(-) Debt	\$1.6
						Equity Value	\$70.5
						<b>Target Price (Rounded)</b>	<b>\$55.00</b>
						<i>Upside</i>	57%

Figure 14: DCF Summary

**Tear Sheet**

Market Data		Capital Structure	
Ticker	BQE:TSXV	Basic Shares Outstanding (M)	1.2
Stock Price	\$35.00	Warrants (M)	0.0
Rating	BUY	Options (M)	0.1
Target Price	\$55.00	FD Shares (M)	1.3
Upside	57%	FD ITM Shares (M)	1.3
Market Cap (\$M)		Ownership	
Cash (\$M)	\$6.7	Management & Board	8%
Debt (\$M)	\$1.6	Other Insiders	47%
EV (\$M)	\$39.8	Retail	45%

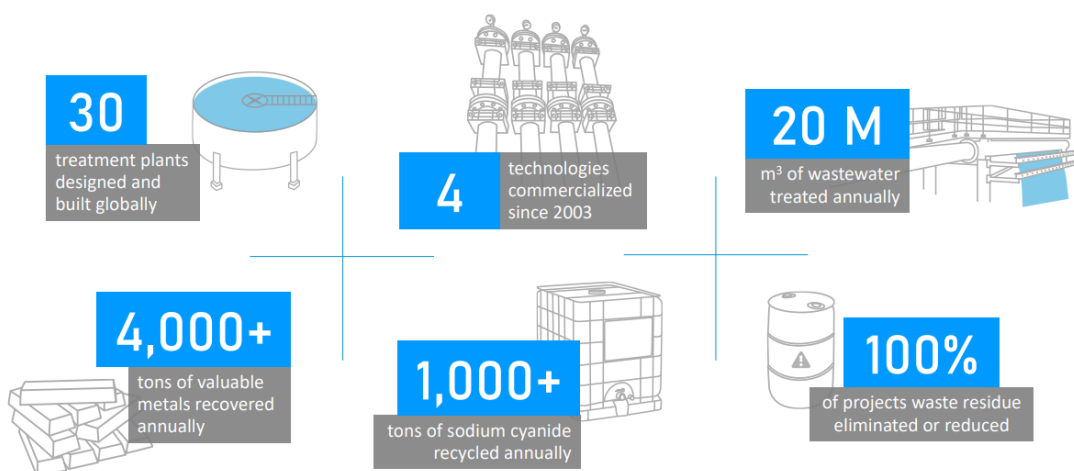
  

Financial Estimates												
	2022A	Q1/23A	Q2/23A	Q3/23A	Q4/23E	2023E	Q1/24E	Q2/24E	Q3/24E	Q4/24E	2024E	2025E
<b>Revenue (\$M)</b>	<b>12.2</b>	<b>2.7</b>	<b>4.2</b>	<b>6.2</b>	<b>2.8</b>	<b>15.9</b>	<b>2.9</b>	<b>4.5</b>	<b>6.9</b>	<b>3.5</b>	<b>17.8</b>	<b>19.8</b>
<b>Proportional Revenue (\$M)</b>	<b>18.9</b>	<b>3.6</b>	<b>5.8</b>	<b>8.0</b>	<b>4.2</b>	<b>21.5</b>	<b>4.1</b>	<b>6.2</b>	<b>8.5</b>	<b>5.0</b>	<b>23.7</b>	<b>25.8</b>
% YoY	21%	1%	12%	40%	-5%	14%	14%	7%	7%	17%	10%	9%
<b>Gross Profit (\$M)</b>	<b>5.1</b>	<b>1.0</b>	<b>2.0</b>	<b>3.3</b>	<b>1.3</b>	<b>7.6</b>	<b>1.1</b>	<b>2.3</b>	<b>3.8</b>	<b>1.6</b>	<b>8.8</b>	<b>9.7</b>
Gross Margin	42%	37%	48%	53%	45%	48%	40%	50%	55%	45%	49%	49%
<b>Adj. EBITDA (\$M)</b>	<b>3.1</b>	<b>(0.1)</b>	<b>1.5</b>	<b>2.7</b>	<b>0.6</b>	<b>4.7</b>	<b>0.6</b>	<b>1.7</b>	<b>2.7</b>	<b>1.1</b>	<b>6.2</b>	<b>7.2</b>
Adj. EBITDA Margin	16%	-2%	25%	34%	14%	22%	16%	28%	32%	21%	26%	28%
Net Income (\$M)	1.2	(0.3)	0.6	2.1	0.4	2.8	0.4	1.4	2.3	0.8	4.8	5.5
EPS (Basic)	0.93	(0.27)	0.49	1.71	0.29	2.22	0.32	1.09	1.83	0.62	3.87	4.39
FCFF (\$M)	(0.5)	(0.4)	(0.6)	0.6	2.8	2.3	(0.2)	1.1	2.0	0.9	3.6	5.4

**Figure 15: Tear Sheet**

**Company Overview**  
**Business Model**

BQE Water specializes in water treatment for mining and metallurgical processing globally. The Company uses innovative solutions and a holistic approach to water management throughout the project lifecycle to drive environmental regulatory compliance and social responsibility. BQE has 30 treatment plants deployed globally using its various commercialized technologies. On an annual basis, BQE treats 20M m<sup>3</sup> of wastewater, recovers over 4,000 tons of valuable metals, and recycles over 1,000 tons of sodium cyanide; leading to 100% of project waste being eliminated or reduced.



**Figure 16: Company Overview (Source: Company Documents)**

There are three major factors driving increases in spending by mining firms on water treatment, 1) Production needs, 2) Government regulations, and 3) Social & sustainability. Regarding production, 90% of mineral processes utilize water, meaning that a secure water supply is needed for operations and recycling water is an effective way to reduce costs. Regarding regulations, governments around the globe have implemented stricter limits for contaminants in water and are banning the storage of excess water on site (this is the main reason why clients bring on BQE). BQE helps mines meet their permitting requirements while reducing capex and opex in the long term. And lastly, mines want to have the least possible environmental impact and waste generation, leading to positive relations with indigenous communities and the public. From a financial perspective, BQE's technologies allow mines to increase metal and byproduct recovery, extend project life, get permitted faster, and reduce the risk of environmental issues.



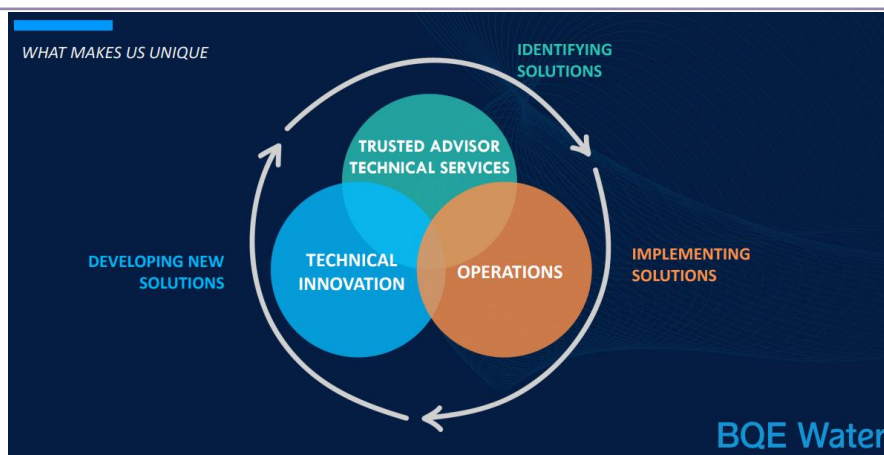
**Figure 17: Importance of Water in Mining (Source: Company Documents)**

### **Project Lifecycle**

The typical project for BQE spans over 30 years (presuming contract renewals) including 5+ years in development/permitting, 15+ years in mine operation, and 5+ years in mine closure (sometimes 20+ years). Across the average 30 years, BQE generates over \$28M in revenue which breaks down as ~\$2M in development/permitting (\$400K annually), ~\$24M in mine operation (\$1.6M annually), and ~\$2M in mine closure (\$400K annually). We remind readers that a small percentage of mines in development actually go into production so revenue cannot be modelled using this schedule simplistically. Management has guided for 45-50% gross margin on average through all three project stages. We note that the Company is sole source with 60% of its contracts, highlighting the strength of its IP portfolio as well as the lack of competition in the space. Furthermore, it is important to note that this is an asset-light model for BQE because its clients pay for the capex (\$20M-\$30M) required for the water management project while BQE provides its expertise and IP. Its revenue is typically structured as performance-based, including a guaranteed base fee plus additional revenue for the volume of water treated.

### **Strategy**

BQE's strategy involves becoming a trusted provider of holistic water solutions and environmental compliance to its clients, from exploration to mine closure over 20+ years. The focus on clean water production (which incentivizes BQE to arrive at well-functioning treatment plant operations as soon as possible), aligns interests with miners. Getting involved early in the mine planning and permitting process allows BQE to innovate and develop new solutions for projects that have 5 to 10 years prior to the start of production. The cycle of innovation continues once plants start operating as the feedback from operating data is a continuous source of sustaining innovation, as seen in the graphic below. BQE is one of the few players in the industry focusing on the extreme long-term; in fact, BQE's plants often stay operating even through changes of ownership of the mine or when put into care and maintenance (i.e., during COVID), showing how critical its services are.



**Figure 18: Company Strategy (Source: Company Documents)**

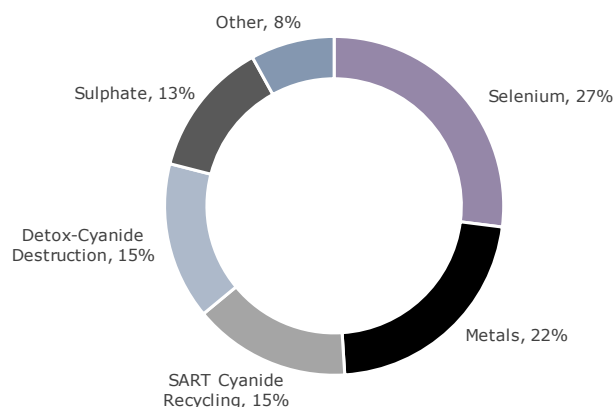
The Company serves mines across different stages using a variety of services as seen in Figure 19. For mines in development, BQE will provide lab & pilot testing, water studies, and permitting. For active/operating mines, this includes plant engineering, commissioning, operations, and optimization services. Lastly, for closed/legacy mines, BQE can provide operational expertise for transitioning from active to passive water treatment. As such, the Company can become long-term partners with its clients and generate recurring revenue for over 50 years in some cases.

	Mines in Development	Active Mines	Closed / Legacy Mines
<b>Timeframe</b>	<b>Permitting to Production</b> 5-10 years	<b>Operating Life</b> Base metals: 20 years Precious metals: 10 years	<b>Closure Time Horizons</b> 20+ years Successful ~5 years Unsuccessful ~ perpetuity
<b>Clients</b>	Juniors Aspiring new producers Established producers	Top, mid tier, & small producers	Governments Top tier producers
<b>Applicable Services</b>	Lab & pilot testing Water studies Permitting	Commissioning Operations Plant Optimization & Design Cyanide Management	Operations transitioning from active to passive treatment
<b>Size</b>	10x more than operating mines	Canada & US: 25% of current operating mines	10x more than operating mines

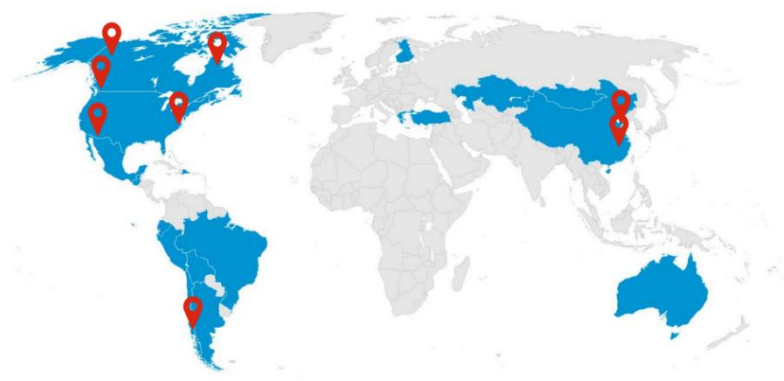
**Figure 19: Market Segments (Source: Company Documents)**

**Revenue Breakdown**

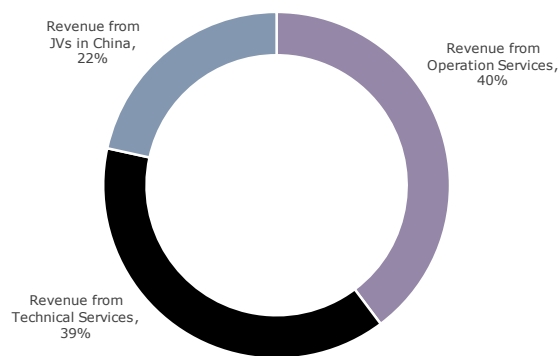
BQE’s revenue is well diversified across different technologies, geographies, and clients. The most significant IP relates to selenium and metals, as seen in Figure 20. The Company’s footprint spans globally but a majority of its revenue comes from Canada (48%) and the U.S. (41%), not including its China JVs. Its clients include various majors including Glencore, South32, Anglo American, Freeport-McMoRan, Jiangxi Copper, Agnico Eagle, Cameco, and more. BQE’s customer profile is fairly concentrated with four clients representing 75% of revenue in its last quarter. On a segmented basis, as of Q3, 40% of proportional revenue came from the recurring operation services segment, while 39% of proportional revenue came from technical services, and 22% came from its China JV.



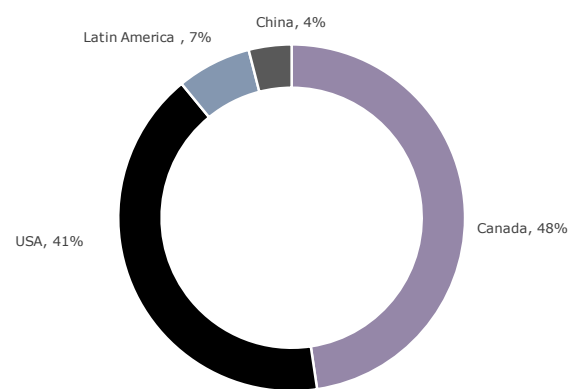
**Figure 20: Project Diversification by IP (Source: Company Documents)**



**Figure 21: BQE Offices & Commercial Operations (Source: Company Documents)**



**Figure 22: Proportional Revenue by Segment (Q3/23)**



**Figure 23: Revenue by Geography (Q3/23)**

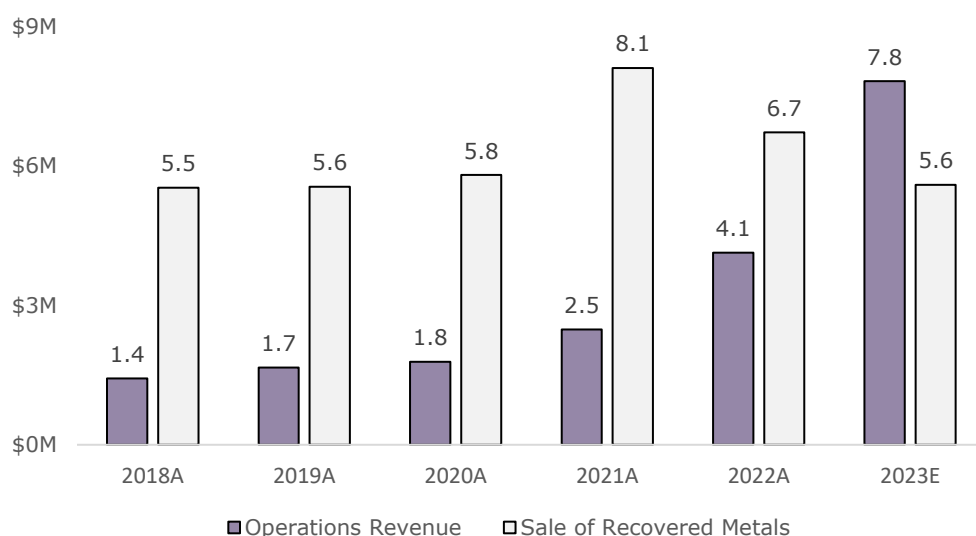
*Operational Services*

BQE’s operational services segment includes the operation or technical supervision of water treatment plants, which generate recurring revenues from three main sources: sales of recovered metals, water treatment fees and operations support fees. Water treatment fees are tolling fees charged per cubic metre of clean water treated and discharged, monthly fees, hourly fees, or a combination of them. Support fees are earned for the Company’s expertise linked to the achievement of operational targets and delivered through supervisory and ongoing operational support services. BQE currently has eight clients receiving ongoing recurring operational services as seen in the table below. This includes a 50% JV with Jiangxi Copper Company and a 20% JV with MWT. We note that BQE’s sale of recovered metals revenue is highly levered to the copper price, which we are bullish on over the coming decade.

Over the past five years, operations revenue has grown at a 40% CAGR while the sale of recovered metals has been flat (yet posted growth in 2021 and 2022, Figure 25). This further demonstrates the transition to recurring operational services revenue.

Operation	Location	Revenue Source
JCC-BQE Joint Venture	Jiangxi Province, China	Sale of Recovered Metals
MWT-BQE Joint Venture	Shandong Province, China	Sale of Recovered Metals
Raglan Mine for Glencore	Norhtern Quebec, Canada	Water Treatment Fees
Minto Mine for Government of Yukon	Yukon, Canada	Water Treatment Fees
Zhongkuang Metallurgical Facilities for MWT	Shandong Province, China	Operations Support Fees
Zhaojin Metallurgical Facilities for MWT	Shandong Province, China	Operations Support Fees
Power Utility Ash Pond for WesTech	Eastern USA	Water Treatment Fees
Base Metal Project for a Metal Producer	Southwest USA	Water Treatment Fees

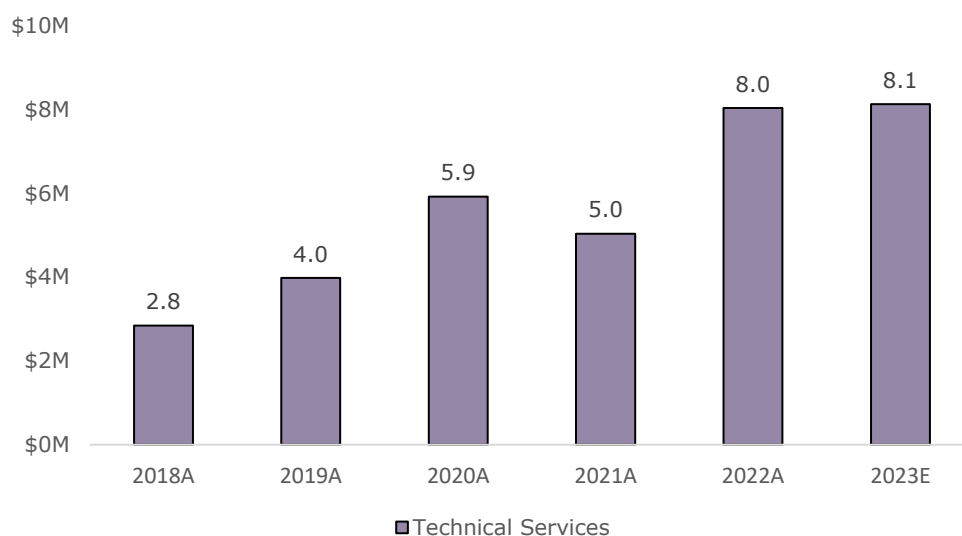
**Figure 24: Operations Client Base (Source: Company Documents)**



**Figure 25: Operations & Sale of Recovered Metals Revenue**

*Technical Services*

BQE Water’s technical expertise and IP are applicable globally across broad areas of water management in the form of consulting and technical services revenue. Consulting services help mining companies define water problems, identify opportunities for improving project performance, and present solutions to address specific water management issues. Such services include feasibility & assessment studies, toxicity investigations, process engineering design, treatment plant commissioning and plant optimization. Technical innovation services offer our clients beneficial design and technological improvements drawn from unique knowledge and expertise acquired from ongoing plant operations services. This also provides BQE with opportunities to develop new technologies, through either laboratory treatability assessments or field pilot demonstrations. This segment has grown at a 23% CAGR over the past five years and serves as a leading indicator for operations revenue as clients typically transition from technical services to operations as mines go into production.

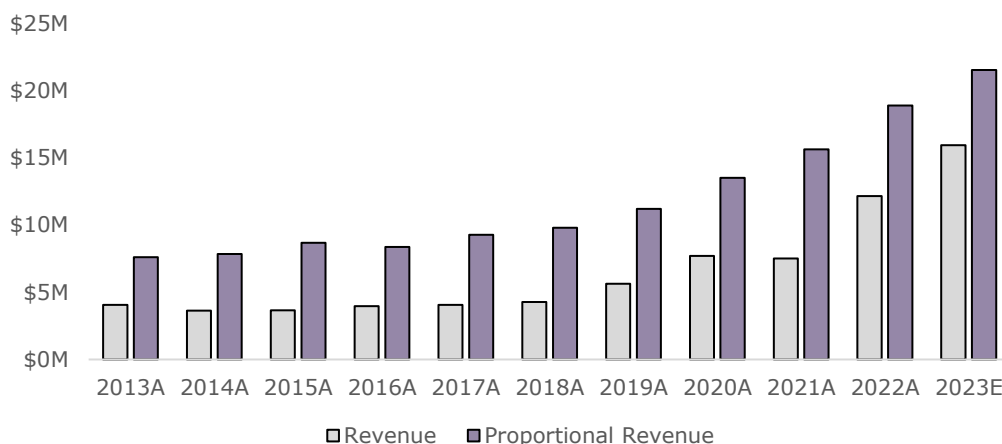


**Figure 26: Technical Services Revenue**



### History

BQE was founded in 1997 in Vancouver and went public on the Vancouver Stock Exchange (now the TSXV) in 1999. The Company was previously named "BioteQ Environmental Technologies Inc." until the name was changed to "BQE Water Inc" in 2017. The Company is headquartered in Vancouver and has over 100 employees. Over the last ten years, proportional revenue has grown at an 11% CAGR, while adjusted EBITDA margins have scaled from -30% to 25%.



**Figure 27: Proportional Revenue & Adjusted EBITDA History**

### Technology & Products

The sections below delve into each specific technology in BQE's IP portfolio. BQE's IP is at the forefront of environmental issues that governments are becoming increasingly strict on. While we are not experts on this subject, there are several technical papers for those who want more information; read [here](#).

#### Metals

Dissolved metals in mine water have been coming under increased regulatory scrutiny to include stricter limits covering additional constituents not previously regulated. BQE's solutions remove metals to meet ultra-low discharge limits, recover metals with appreciable value, reduce/eliminate waste sludge production, and reduce water treatment life cycle costs. This serves various metals that can be recovered for value including cobalt, copper, molybdenum, nickel, rhenium, silver, and zinc. However, this also serves metals that must be removed for environmental compliance alone, including, antimony, arsenic, bismuth, cadmium, iron, lead, and mercury.

#### BioSulphide & ChemSulphide

Sulphide precipitation technologies use biological or chemical sources of sulphide to selectively remove dissolved metals from mining wastewater. The process works by adding the sulphide reagent to the wastewater under controlled conditions to precipitate the target metal, forming high-grade solid metal sulphides that can be easily dewatered for sale or disposal. The water can then be discharged safely to the environment or reused onsite. Recovering the dissolved metals as a commercial-grade concentrate eliminates/minimizes waste sludge production.



**Figure 28: BioSulphide & ChemSulphide Technology (Source: Company Documents)**

#### *Met-IX*

This technology applies BQE's selective ion exchange IP to treat wastewater containing very low levels of dissolved metals. The Met-IX process uses resins to selectively target the metal, removing it from the wastewater and producing a concentrated regenerant stream. ChemSulphide is often combined with Met-IX to treat the regenerant stream to recover the dissolved metals as a commercial-grade solid by-product. With the metal removed, the water is safe for discharge and no waste sludge is produced in this process.



**Figure 29: Met-IX Technology (Source: Company Documents)**

#### ***Sulphate***

Sulphate is a common by-product of mining operations as most metals are recovered from ore bodies that contain sulphur-based minerals that oxidize to sulphate when exposed to air. Sulphate is easily mobilized in waste streams and is subject to discharge limits ranging from 250 to 1,000 mg/L depending on jurisdiction. BQE's technologies remove sulphate without producing liquid brine waste and recover >95% of the water.

#### *Sulf-IX & Sulf-IXC*

Sulf-IX & Sulf-IXC are ion exchange-based technologies that use resins to selectively remove sulphate and hardness from process waters to produce treated water that meets discharge limits and generates gypsum by-product. The ion exchange reactions take place in fluidized bed reactors at rise rates that precipitate gypsum without scale formation on the resin beads. These technologies can improve water use efficiencies in applications such as cooling towers by removing sulphate to allow for increased water recirculation.



**Figure 30: Sulf-IX & Sulf-IXC Technology (Source: Company Documents)**

*Sulf-IX & Sulf-IXC Mobile Pilot Plant*

BQE also offers onsite field testing with a mobile pilot plant that demonstrates Sulf-IX and Sulf-IXC technologies to remove sulphate from wastewater. The product is housed in a single, self-contained insulated aluminum-sided trailer which can be deployed for field testing with fresh solution. The unit is fully instrumented and programmable for unattended operation.



**Figure 31: Sulf-IX & Sulf-IXC Mobile Pilot Plant (Source: Company Documents)**

**Selenium**

BQE's selenium technology selectively removes selenium from mine waters to less than 1 ppb, producing only a small quantity of non-hazardous solid by-products. The technology is highly adaptable to fluctuations in hydraulic flow and variable mass loads of selenium and is insensitive to cold mine water temperatures. Unlike biological solutions, Selen-IX can be ramped up or down instantly, allowing for a 9-5 operation if required. Furthermore, BQE's technology has no risk of acute fish toxicity while offering significant water treatment cost savings over a mine life.

*Selen-IX*

Selen-IX is a process that combines ion exchange and electrochemical reduction to selectively remove selenium from mining wastewater down to single-digit ppb levels. The process concentrates selenium into a small volume of brine solution that is treated with electrochemical cells to precipitate the selenium as a stable iron-selenium solid. After the solids are separated from the liquid, the brine solution is recycled back to the ion exchange circuit, eliminating waste liquid brine. XRD and TCLP analysis have verified the solids to be non-toxic. Selen-IX units are compact modules with a small footprint, which can be easily deployed into remote locations to treat multiple discharge points.



**Figure 32: Selen-IX (Source: Company Documents)**



### *Selen-IX Mobile Pilot Plant*

Selen-IX is also available in a mobile pilot plant for on-site field testing to demonstrate selenium removal and provide the preliminary design criteria required for a full-size plant. The product is housed in a self-contained insulated shipping container and is equipped with a field laboratory to provide analytical functionality. The plant is operable in any weather condition on a continuous basis by highly trained engineering and operational personnel but also includes full automation for unattended operation.



**Figure 33: Selen-IX Mobile Pilot Plant (Source: Company Documents)**

### **Cyanide/SART**

Cyanide leaching is widely used to extract gold from ore, but the process is negatively impacted by the presence of cyanide-soluble base metals such as copper and zinc. These metals form weak acid dissociable (WAD) complexes with the cyanide and thus compete for the cyanide. The result is high cyanide consumption, poor gold doré purity and high concentrations of copper-cyanide complexes in tailings that require costly destruction.

### *SART*

SART (sulphidation-acidification-recycling-thickening) breaks the base metal bond from the WAD complex and precipitates the metal as a commercial-grade concentrate. The cyanide is regenerated as free cyanide and recycled to the gold extraction circuit. BQE has designed and constructed full commercial-scale plants, provided process review and commissioning for a plant under construction, and carried out flowsheet development and testing programs for SART.

### **Technologies in Development**

BQE is currently developing new technologies for the removal of nitrogen species from water and arsenic stabilization. Additionally, BQE's selenium technology has further applications in the coal industry (ash pond closures) which provides another blue-sky scenario for revenue growth. BQE already has one contract for ash pond cleanup and its success should help prove to other coal mining firms that its expertise and technology transfers over to coal mines well. Coal ash clean-up is cited as one, if not the actual largest legacy environmental issue in the U.S.

### **Key Sectors**

#### **Mining**

Mining operations produce wastewater that typically contains various dissolved metals, sulphate, selenium, nitrate, ammonia, and cyanide that exceed environmental discharge regulations and limit/prevent water re-use. BQE aims to solve this problem through its various technologies that treat run-off, mine drainage, water rock seepage, tailings water, groundwater, and lime plant influent. This segment of the business treats metals, sulphate, selenium, and cyanide. These services allow clients to comply with environmental regulations, lower life cycle costs, faster permitting, eliminate/minimize waste residues, recover value from waste, recycle/reuse/conserves water, and manage technical risks.

### **Smelting & Refining**

Similar to the above, metal smelting and refining produce waste streams requiring treatment prior to discharge. These streams often contain valuable constituents that can be recovered for additional revenue. BQE's services in this segment cover the treatment of weak acid blow-down from gas scrubbers, arsenic removal and waste sludge minimization, recovery of metals, electrolyte purification, removal of impurities from electrolytes, and metallurgical dust processing. This typically includes metals and sulphate while providing similar benefits to the client as mentioned above.

### **Hydrometallurgy**

When metals are extracted from deposits using aqueous solutions, various purification and concentration processes leave behind undesirable constituents (metals, cyanide, and acid) that exceed environmental regulations. BQE aids in solving this issue through gold and silver complexed cyanidation circuits, acid and metal recovery, and decommissioning of copper heap leach operations. These services can improve metal recovery, recover cyanide and reduce cyanide destruction costs, eliminate/minimize residual toxic waste, eliminate/minimize transportation of toxic chemicals, and reduce technical risks.

### **Competitive Advantage**

#### **IP Portfolio**

BQE has patents on its metals, sulphate, and selenium technology. Its cyanide (SART) technology is open source, however, since the successful implementation of SART requires unique know-how related to BQE's patented BioSulphide and Chemsulphide technologies, BQE has established itself as a leader in SART having been involved in over 80% of the SART industrial applications globally. Furthermore, BQE is one of the few players in the space that uses a holistic approach, covering the whole project lifecycle. This allows BQE to create long-term relationships that generate recurring revenue. As such, there are incredibly high switching costs for mines as BQE has the IP and technical know-how to commission and operate these water treatment plants.

#### **Relationships with Majors**

BQE has strong relationships with majors including Glencore (21+ years as a client), Jiangxi Copper (19+ years as a client), South32, Anglo American, Freeport-McMoRan, and many more, having run successful plants for them in the past. This becomes an effective sales engine as these major producers have new mine operations coming online and new exploration projects every year that need BQE's services. This also serves as a moat since BQE is a proven service provider with 10+ years of relationship history with these firms.

### **Supply Chain**

BQE does not supply equipment, chemicals, or power to its clients but only services and thus BQE is only exposed to wage inflation. BQE has annual inflationary price increases included in its contracts. We remind readers that mines are being forced to take on water management projects from government authorities and thus, the inflationary effect on equipment and labour is not a concern.

### **Projects**

#### **Case Studies**

##### *Dexing – Jiangxi Copper Company*

BQE established a joint venture with Jiangxi Copper to build and operate water treatment plants in Dexing, China. BQE implemented ChemSulphide in 2008 to remove ferric iron and recover copper. The copper is recovered as a high-grade concentrate and the treated effluent is either discharged to the environment or recycled onsite. In 2014, a second ChemSulphide plant was commissioned to provide excess water treatment capacity and to support future mine expansion activities. The plants generate revenue from copper concentrate sales ensuring economic and environmental sustainability. As such, revenues from copper recovery resulted in a payback on the first plant in <3 years. The volume of water treated at the mine has increased from 16.8M m<sup>3</sup> in 2015 to over 20M m<sup>3</sup> in 2023E and copper recovered has scaled from 2.3Mlbs in 2015 to 2.5Mlbs in 2023E.

##### *Raglan – Glencore*

ChemSulphide was also selected to treat mine drainage at Glencore's Raglan Mine in Northern Quebec. The plant was built in 2003, replacing a low-density sludge lime plant. The plant produces effluent with nickel levels of <0.25 mg/L and recovers high-grade nickel concentrate. Following a storm, BQE built a modular and compact mobile Met-IX unit as an add-on. The plant treats over 1M m<sup>3</sup> of mine water within a 120-day period between spring and fall. The plant cut the cost per m<sup>3</sup> of water treated by 10% over 15 years.

*Silvertip Mine – JDS Silver*

BQE worked with the Silvertip Mine in Northern B.C. to develop a cost-effective water treatment solution to remove heavy metals which was integrated with overall site water management. In this case study, ChemSulphide was able to meet ultra-low limits for constituents of concern, be constructed using shipping containers, minimize solids residue generation, and treat a wide range of weed water quality, all while being cost-efficient.

*Commercial Demonstration Plant*

BQE entered into a development agreement with a U.S.-based mining company to apply Sulf-IX technology on mine water containing elevated levels of sulphate. This results in the transformation of mine water from a liability to a valuable product. The transformative approach involved reclaiming the mine water for reuse and generating clean, non-hazardous byproducts. By maximizing water recovery while eliminating liquid brine waste and the associated disposal costs, the lifecycle costs are significantly reduced.

*Mastra Mine – Koza Gold*

BQE worked with Koza Gold on the Mastra Mine in Turkey to design, construct, and commission a SART plant in a nine-month schedule to reduce metallurgical interference of copper to improve gold doré purity and comply with cyanide levels in tailings. This allowed the active gold mine to process all of its ore and avoid stockpiling high-grade ore with copper mineralization.

*Maricunga Mine – Kinross Gold*

BQE Water was contracted with Kinross to provide a process review and commissioning services for a SART plant at its open pit gold mine in Chile. The plant was able to recover up to 89% of the copper and 94% of the cyanide (NaCN) compared to its goal of 80%.

**Recent Contracts**

On January 31<sup>st</sup>, BQE announced that it had completed the commissioning phase and transitioned to the operating phase at a base metal mine in the Southwestern U.S. using Selen-IX. BQE Water is responsible for clean water production for environmental discharge and compensation for operations services consists of a base monthly fee and a supplemental fee for additional water treated over and above the base. Since the completion of commissioning, the plant has been operating 24/7 with an overall plant availability of more than 95%. It is expected to run year-round and treat up to 4,500 gallons of water per minute, the largest Selen-IX plant currently in operation.

On January 10<sup>th</sup>, BQE announced the successful completion of an on-site pilot demonstration of its Selen-IX process at the Coeur Wharf Mine in South Dakota (owned by Coeur Mining). This was the first critical step in implementing selenium treatment that meets the mine's permit conditions for its expansion. The project was then fast-tracked for full-scale implementation this year.

In August 2023, BQE announced that it entered into a contract with of Department of Energy, Mines, and Resources of the Yukon Government to provide expertise and support with water management at Minto Mine which was closed in May 2023. BQE will provide operational services (seasonal operation of existing water treatment plant and managing environment discharge) and technical services (assessing water management changes).

In May 2023, the Company reported that it successfully completed the performance test of the first industrial-scale water treatment plant combining nanofiltration with electroreduction to simultaneously remove sulphate and selenium from mine contact water at a mine in the US. This plant was commissioned in the summer of 2022, but the performance test was delayed due to a lack of site water.

In January 2023, BQE was awarded a contract for the design, construction, and operation of a SART plant to improve gold leaching efficiency and overall cyanide management at a gold metallurgical facility in Shandong Province, China owned by Shandong Gold Mining (state-owned). This represented BQE's third SART contract and includes two phases: 1) Engineering design, procurement, construction, plant commissioning and start-up, and 2) Onsite operations support services for five years in exchange for a quarterly fee based on plant performance.

In December 2022, the Company signed an operating services agreement for a water treatment plant utilizing Selen-IX for selenium removal at a base metal project in the Southwestern U.S. BQE Water will provide plant commissioning and operations services for an initial period of three years upon completion of the plant performance test. Compensation will consist of a base monthly fee per volume of water treated that meets discharge specifications and a supplemental fee for additional water treated for discharge.

## Financials

### Capital Structure & Balance Sheet

BQE has an incredibly clean capital structure with 1.25M basic shares outstanding and 90K options outstanding. The Company uses a DSU and RSU structure to incentivize employees which are paid out in cash rather than causing dilution. As of Q3, there were 10.6K DSUs outstanding and 20.4K RSUs outstanding. As mentioned above, BQE has not raised equity capital since 2018 (Figure 4) and has recently begun repurchasing shares (\$277K deployed so far). We find this to be quite rare for a company of its size. With its large cash balance of \$6.7M and rising profitability, BQE will be able to continue repurchasing shares (NCIB renewed in December 2023), initiate a dividend, or acquire new technologies/services.

BQE's balance sheet is in pristine condition with \$6.7M in cash, \$12.7M in current assets, and \$3.5M in net working capital. The total liabilities are only \$4.4M with the head office lease representing \$1.4M (over 10 ten years) and an interest-free government loan representing \$0.2M. With minimal capex requirements (<\$100K annually) and increasing margins, BQE is poised to continue generating cash; we are expecting \$5.4M in FCFF in 2024.

### Financial Forecast

Our financial forecast on a segmented basis can be found in the figure below. We reiterate that it is important to look at BQE on an annual basis as Q1 and Q4 are seasonality weaker due to weather, and Q2 and Q3 are the Company's strongest quarters each year. We are expecting BQE to grow revenue by 12% in 2024 and 11% in 2025 while proportional revenue lags slightly as JV revenue is flat. This assumes two new operations projects per year. We are looking for slight gross margin expansion from 48% in 2023 to 49% in 2024 and 2025, while EBITDA margins rise to 26% in 2024 and 28% in 2025. We also note that dividends from BQE's China JVs (~90% of income generated) are paid annually in Q3.

Financial Estimates													
	2022A	Q1/23A	Q2/23A	Q3/23A	Q4/23E	2023E	Q1/24E	Q2/24E	Q3/24E	Q4/24E	2024E	2025E	
Revenue from Operation Services	4.1	0.8	1.4	3.2	2.4	7.8	1.0	1.8	3.8	2.9	9.5	11.3	
Revenue from Technical Services	8.0	1.9	2.8	3.1	0.4	8.1	1.9	2.8	3.1	0.6	8.3	8.4	
<b>Revenue (\$M)</b>	<b>12.2</b>	<b>2.7</b>	<b>4.2</b>	<b>6.2</b>	<b>2.8</b>	<b>15.9</b>	<b>2.9</b>	<b>4.5</b>	<b>6.9</b>	<b>3.5</b>	<b>17.8</b>	<b>19.8</b>	
% YoY	62%	9%	54%	78%	-19%	31%	6%	9%	10%	25%	12%	11%	
Revenue from JVs in China	6.7	0.9	1.6	1.7	1.4	5.6	1.2	1.6	1.6	1.4	5.9	6.0	
<b>Proportional Revenue (\$M)</b>	<b>18.9</b>	<b>3.6</b>	<b>5.8</b>	<b>8.0</b>	<b>4.2</b>	<b>21.5</b>	<b>4.1</b>	<b>6.2</b>	<b>8.5</b>	<b>5.0</b>	<b>23.7</b>	<b>25.8</b>	
% YoY	21%	1%	12%	40%	-5%	14%	14%	7%	7%	17%	10%	9%	
COGS (\$M)	7.1	1.7	2.2	3.0	1.5	8.4	1.7	2.3	3.1	1.9	9.0	10.1	
<b>Gross Profit (\$M)</b>	<b>5.1</b>	<b>1.0</b>	<b>2.0</b>	<b>3.3</b>	<b>1.3</b>	<b>7.6</b>	<b>1.1</b>	<b>2.3</b>	<b>3.8</b>	<b>1.6</b>	<b>8.8</b>	<b>9.7</b>	
Gross Margin	42%	37%	48%	53%	45%	48%	40%	50%	55%	45%	49%	49%	
Share of Income from JVs (\$M)	1.5	0.1	0.4	0.4	(0.1)	0.7	0.3	0.4	0.4	0.4	1.5	1.5	
JV Net Margin	22%	9%	26%	22%	-10%	13%	25%	25%	25%	25%	25%	25%	
<b>EBIT (\$M)</b>	<b>1.4</b>	<b>(0.5)</b>	<b>1.0</b>	<b>2.3</b>	<b>0.4</b>	<b>3.2</b>	<b>0.4</b>	<b>1.5</b>	<b>2.5</b>	<b>0.9</b>	<b>5.4</b>	<b>6.4</b>	
EBIT Margin	7%	-13%	17%	29%	9%	15%	11%	25%	30%	17%	23%	25%	
<b>Adj. EBITDA (\$M)</b>	<b>3.1</b>	<b>(0.1)</b>	<b>1.5</b>	<b>2.7</b>	<b>0.6</b>	<b>4.7</b>	<b>0.6</b>	<b>1.7</b>	<b>2.7</b>	<b>1.1</b>	<b>6.2</b>	<b>7.2</b>	
Adj. EBITDA Margin	16%	-2%	25%	34%	14%	22%	16%	28%	32%	21%	26%	28%	
Net Income (\$M)	1.2	(0.3)	0.6	2.1	0.4	2.8	0.4	1.4	2.3	0.8	4.8	5.5	
EPS (Basic)	0.93	(0.27)	0.49	1.71	0.29	2.22	0.32	1.09	1.83	0.62	3.87	4.39	
FCFF (\$M)		<b>(0.5)</b>	<b>(0.4)</b>	<b>(0.6)</b>	<b>0.6</b>	<b>2.8</b>	<b>2.3</b>	<b>(0.2)</b>	<b>1.1</b>	<b>2.0</b>	<b>0.9</b>	<b>3.6</b>	<b>5.4</b>

**Figure 34: Segmented Financial Projections**



### *Blue-Sky Scenario*

Multiple factors can lead to a blue-sky scenario for BQE's financial performance including the list below. These scenarios are not included in our financial model, but we still see a decent probability of them occurring over the coming years. If this blue-sky scenario occurs, we can see adjusted EBITDA reaching \$13M in 2025 and the stock trading at 12x, leading to a \$126/share target price.

- 1) Higher Copper Prices – a 10-cent increase in the copper price should lead to \$450K in additional JV income. We are highly bullish on copper over the next decade.
- 2) Company Maker Projects – BQE is in conversations for a handful of very large water treatment operations projects (>\$100M in capex) based on providing technical services to these projects in the past. These contracts are with world-class assets with an operating life of over 30 years, which can result in >\$3.5M in annual recurring revenue per project.
- 3) New technologies prove fruitful – nitrogen, arsenic stabilization, ash pond cleanup.
- 4) Strategic acquisitions expand product and service offerings.

## **Industry Overview**

### ***Environmental Regulations & ESG***

Over the past decade, environmental regulations regarding contaminants in water discharge have become increasingly strict in North America. This comes on the back of the Mount Polley tailings facility dam breach and tailings spill in British Columbia, where 8 million cubic meters of tailings went into Polley Lake, Hazeltine Creek, and Quesnel Lake. In the past, mines stored excess contaminated water on-site, but this is now being challenged or banned by most jurisdictions, providing increased demand for water management systems. While we will not get into the specific discharge regulations as each region is different, we will note that the trend is towards stricter regulations for mines.

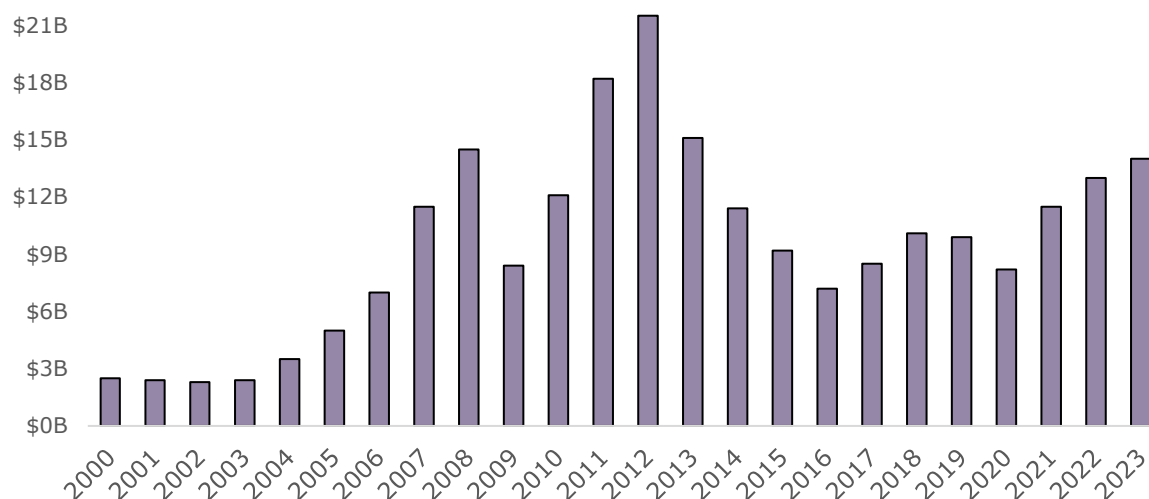
Selenium has been at the forefront of contaminant regulations after the discovery of impeded reproduction and deformities in fish such as curved spines, misshapen skulls, and abnormal gills. Selenium is a problem for coal mines but also reaches many other mineral extraction and processing activities. In fact, some regulators are forcing mines to prove they can have clean water before mining operations even start. As such, we expect BQE's expertise in selenium to become increasingly valuable over the coming years.

Additionally, indigenous relations have never been more prevalent for Canadian mining companies. This is reflected through a growing recognition of indigenous rights, interests, and perspectives in resource development. Several factors contribute to this shift, including legal and regulatory frameworks, ESG awareness, reconciliation efforts, and market and investor expectations. Water treatment plans at mines play a crucial role in not only positive relations with indigenous communities but also in safeguarding the health and well-being of these groups. As mentioned in this report, the benefits of BQE's plants specifically related to indigenous groups include protection of water quality, mitigation of environmental impacts, preservation of traditional lands, respect for indigenous rights and sovereignty, and long-term sustainable development.

### ***Increasing Mining Capex & Battery Metals Production***

Throughout history, the mining industry has exhibited cyclical patterns, typically spanning 5 to 10 years. These cycles are characterized by a sequence: underinvestment leading to a lack of supply, scarcity driving prices upward, elevated prices incentivizing overinvestment, and subsequent oversupply resulting in price declines, thus restarting the cycle. Presently, we find ourselves in the nascent stages of a new mining cycle. We anticipate that the current shortage of supply, coupled with heightened metal prices and robust demand, will catalyze a surge in new mining ventures over the next decade.

Approaching the peak of the mining market in 2012, there was a large influx of investment in mining capital expenditures and exploration activities, resulting in a surge in newly operational mines. However, following the market peak, there was a notable downturn in mining capital expenditures, particularly evident in global exploration spending (Figure 35). This imbalance between supply and demand has been exacerbated, and only in recent years have we observed a resurgence in exploration spending, an encouraging precursor to the development of new mines. Notably, this imbalance is compounded by the emergence of the battery metal industry, a dynamic which was absent in previous historical cycles.



**Figure 35: Global Exploration Spending (Source: S&P Market Intelligence)**

It is estimated that global battery and minerals supply chains need to expand tenfold to meet the projected critical minerals needs by 2030, as per a report published by the International Energy Agency. The report found that the industry needs to build 50 more lithium mines, 60 more nickel mines, and 17 more cobalt mines by 2030 to meet global net carbon emissions goals. Another report from Benchmark Minerals states at least 384 new mines for graphite, lithium, nickel, and cobalt are required to meet demand by 2035. Whatever the exact number is, the mining industry will likely see its largest boom of new mines in history, playing into BQE’s value proposition.

Compounding this sizeable demand scenario depicted above, over the last decade, it has become more popular for mining companies to outsource specialized work in non-core areas, instead of having internal teams. We expect this trend to continue, further creating demand for BQE’s offering.

## Management

### **David Kratochvil – President, CEO, & Director**

In March 2014, David returned to BQE Water, where he had previously served as President & CTO and President & COO. Having initially joined the Company in 2001, David played a key role in advancing the commercial development of BQE Water's process technologies. Throughout his tenure, he has been responsible for overseeing plant design, engineering, and operations. David earned his PhD in Chemical Engineering and BioEngineering from McGill University and possesses over two decades of experience in wastewater treatment and chemical processing. He owns ~24K shares of BQE, equating to ~2% ownership.

### **Peter Gleeson – Executive Chairman**

Peter boasts a wealth of expertise encompassing over 30 years in executive management, investment analysis, and advisory roles on boards within the technology and mining sectors. Specializing in corporate finance and contract negotiation, Peter has actively contributed to the inception and expansion of various junior mining firms, notably playing a role in the development of PGM Ventures into Iberian Minerals Corporation. Throughout his career, Peter has been instrumental in assisting small to medium-sized companies in realizing their growth objectives and concurrently creating value for shareholders. Peter owns 49K shares of BQE equating to ~4% ownership.

### **Heman Wong – CFO**

As CFO, Heman is responsible for managing the company's finances, internal controls, financial reporting, investor relations, and corporate administration. Mr. Wong has a decade of experience in the environmental sector, having worked in both private and public companies. Heman is a member of the Chartered Professional Accountants of British Columbia. Mr. Wong owns ~5K shares of BQE.

### **Songlin Ye – Vice President, Asia**

In his role as VP of Asia, Songlin oversees the company's operations and development projects in China. Songlin possesses degrees in Environmental Engineering from both Canadian and Chinese universities and brings over two decades of experience in the environmental field to his position. Mr. Ye owns ~2K shares of BQE.

**Oscar Lopez – General Manager Latin America**

Serving as the General Manager of Latin America, Oscar oversees BQE Water's business development and project management initiatives in Chile and South America. With over two decades of experience in the chemical and metallurgical industry, Oscar is a seasoned Chemical Engineer.

**Brent Baker – Vice President, Engineering**

Brent heads the engineering team, ensuring the soundness of all design phases, from initial concepts to the issuance of construction design documentation. His contributions have been vital to project success, as he ensures the seamless integration of treatment process designs into discipline engineering and equipment procurement. Brent collaborates closely with the lab and technology development team to transform new innovations into practical and cost-effective designs. Holding a degree in Metals & Materials Engineering, Brent is a registered Professional Engineer in BC, boasting over 15 years of experience in the water treatment sector.

**Daniel Cook – Director, Operations & Commissioning**

Daniel serves as the leader of the global operations team and is responsible for overseeing environmental health and safety across all company functions. In his role, he ensures that operations are conducted safely and meet expectations, with a focus on well-trained personnel. Daniel also takes charge of pre-commissioning and commissioning activities, facilitating smooth transitions from engineering and construction to operations. With over 15 years of experience in water treatment, including expertise in process control and automation, Daniel provides valuable insights into engineering designs throughout various project stages, contributing to Hazard and Operability studies with practical operational experience.

**HC Liang – Director, Water Studies**

HC is at the forefront of the consultancy practice, specializing in water management, treatment, risk assessments, permitting, and fostering engagement with local communities and regulatory agencies. His expertise leads to practical solutions that enhance environmental outcomes. HC holds a Ph.D. in Inorganic Chemistry from the University of Illinois at Urbana-Champaign and a Master's in Environmental Engineering from Johns Hopkins University. With over 14 years of experience in environmental consulting, HC brings a particular focus on water issues within the mining sector.

**Christopher Fleming – Director**

With a career spanning 40 years, Christopher has predominantly focused on research and research management. Chris holds a Ph.D. in Chemistry from the University of Cape Town and is the author or co-author of 70 technical publications, holds 14 patents, and has contributed to several books on various aspects of extractive metallurgy. Joining Lakefield Research in 1990, he progressed to become General Manager in 1992 and later assumed the roles of VP and COO when the company was privatized in 1995 following a buyout from the previous owner, Falconbridge. Following SGS's acquisition of Lakefield Research, Chris took on the position of VP, Global Metallurgy, overseeing the company's metallurgical business worldwide. While Chris has retired from SGS management, he remains actively engaged as a Senior Metallurgist. He owns 21K shares, equating to 2% ownership.

**Rob Henderson – Director**

Rob is recognized as an eminent global leader in the mining sector. He possesses substantial international experience in the operation, construction, and acquisition of mineral properties. Trained as a chemical engineer, Rob has amassed 35 years of industry expertise, contributing to renowned mining companies including Great Panther Mining, Amerigo Resources, Kinross Gold, DeBeers, and Rand Mines. Furthermore, he has offered engineering services to international mining clients during his tenure with both SNC Lavalin and Hatch. Rob owns 3K shares of BQE equating to ~0.3% ownership.

**Sara Elford – Director**

Ms. Elford, a CFA Charterholder, possesses extensive experience in capital markets, having worked for over two decades as a sell-side equity research analyst with Canaccord Genuity and in investment banking with Wood Gundy and Kidder Peabody. Throughout her career, Sara covered a diverse range of industries, with a particular emphasis on emerging companies and technologies. Her expertise in this area was consistently acknowledged, earning her recognition as a top stock picker by StarMine multiple times. Over the past five years, Sara has applied her skills and experience as a strategic advisor and corporate director.

## Risks

### **Commodity Price & Regulatory Risk – Average**

The mining industry is subject to fluctuations in commodity prices and regulatory changes. BQE Water's projects are directly tied to the mining sector, making the company vulnerable to commodity price downturns and shifts in environmental regulations that may impact the demand for water treatment solutions and the revenue generated from the sale of recovered metals.

### **Global Economic & Geopolitical Risk – Average**

Economic downturns, geopolitical tensions, or adverse conditions in countries where BQE operates could impact the overall mining industry and, consequently, the demand for water treatment plants. Unforeseen events such as trade disputes, political instability, or global economic crises may affect BQE's business operations and financial stability. BQE generated a significant portion of its proportional revenue from China, which poses additional risk.

### **Revenue Concentration – Above Average**

In each quarter, over 70% of BQE's revenue relies on four clients due to the extensive scale of the projects undertaken. This poses a risk as the loss of a large client can lead to a significant decline in revenue. BQE's China JV has been performing poorly due to a lack of precipitation, but this has been mitigated through the rising recurring revenue from North America.

### **Technology and Innovation Risk – Average**

BQE Water's success relies on its ability to provide cutting-edge and efficient water treatment solutions. Risks associated with technological advancements, changes in industry standards, or the failure to adapt to emerging innovations could affect the company's competitiveness and market share.

### **Project Execution and Delivery Risk – Above Average**

Many of BQE's projects involve complex engineering, construction, and operational challenges. Delays, cost overruns, or technical issues in project execution could negatively impact BQE's reputation, relationships with clients, and overall financial performance.

## Appendix

### Awards

Since 2008, BQE has been the recipient of numerous prestigious industry awards, underscoring its dedication to achieving best-in-class status and maintaining excellence even after 16 years. Some of these awards include:

- Exporter of the Year – BC Export Awards (2023)
- Clean Technology – BC Export Awards (2023)
- MetSoc Innovation Award – BQE Water (2023)
- MetSoc Sustainability Award – David Kratochvil (2023)
- Technology Fast 50™ Recipient Awarded by Deloitte LLP (2022)
- Canada’s Clean50 Top Project Award for Kemess Selen-IX™ Plant for Selenium Removal (2022)
- Kirkpatrick Chemical Engineering Achievement Honor Award for Selen-IX™ Technology (2021)
- Engineers & Geoscientists British Columbia Environmental Award for Kemess Selen-IX™ Plant for Selenium Removal (2021)
- Water’s Next Awards – Projects and Technology: Wastewater for Selen-IX™ Technology (2020)
- HSBC Leadership in International Trade – Asia Pacific Award (2013)
- United Way Spirit Awards Welcome to the United Way Award, Small Organization (2013)
- Jiangxi Provincial Development & Reform Commission Technology Innovation Grant (2012)
- International Sites & Spills Expo Clean Tech Award (2011)
- Canada China Business Excellence Award for Outstanding SME Innovation and Best Practice (2010)
- CIM/Syncrude Award for Excellence in Sustainable Development (2010)
- Canada Export Achievement Award (2009)
- Jantzi/Macleans Top 50 Most Socially Responsible Corporations in Canada (2009)
- PDAC Award for Environmental and Social Responsibility Award (2009)
- Business in Vancouver Top 40 Under 40 – Awarded to David Kratochvil (2009)
- BC Export Award – Top 25 Exporter (2009)
- China Mining Environmental Protection Award (2008)
- Mines & Money Sustainable Development Award (2008)
- Globe Award for Environmental Excellence (2008)
- BC Export Award – Top New Exporter (2008)

		Exit EBITDA Multiple				
		10.0x	11.0x	12.0x	13.0x	14.0x
WACC	12%	\$52.00	\$55.00	\$59.00	\$63.00	\$67.00
	13%	\$50.00	\$53.00	\$57.00	\$60.00	\$64.00
	14%	\$48.00	\$51.00	<b>\$55.00</b>	\$58.00	\$62.00
	15%	\$46.00	\$50.00	\$53.00	\$56.00	\$59.00
	16%	\$45.00	\$48.00	\$51.00	\$54.00	\$57.00

**Figure 36: DCF Sensitivity Analysis**

<b>Entity</b>	<b>Country of incorporation and operation</b>	<b>Ownership interest as at Dec. 31, 2022</b>	<b>Ownership interest as at Dec. 31, 2021</b>
Biomet Mining Corporation	Canada	100%	100%
BioteQ Water (Chile) SpA	Chile	100%	100%
BioteQ Water Mexico S.A. de C.V.	Mexico	100%	100%
BQE Water (Hangzhou) Co. Ltd.	China	100%	100%
BQE Water Delaware, Inc.	USA	100%	100%

The joint ventures of the Company, which are accounted for under the equity method, are as follows:

<b>Entity</b>	<b>Country of incorporation and operation</b>	<b>Ownership interest as at Dec. 31, 2022</b>	<b>Ownership interest as at Dec. 31, 2021</b>
JCC-BioteQ Environmental Technologies Co. Ltd.	China	50%	50%
Shandong MWT BioteQ Environmental Technologies Co. Ltd.	China	20%	20%
BQE Water Nuvumiut Development Inc.	Canada	49%	49%

**Figure 37: Subsidiaries & JVs**

	\$
2026	1,290,024
2027	1,628,919
2028	1,951,879
2029	2,372,749
2030	965,964
2031	3,007,451
2032	3,735,949
2033	3,403,636
2034	2,414,568
2035	1,458,931
2036	584,241
2037	3,191,545
2038	312,657
2039	647,505
	26,966,018

**Figure 38: Tax Loss Carryforward by Year**

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**NOT RATED (N/R):** Atrium does not provide research coverage on the respective company.

RATING	COVERED COMPANIES
BUY	12
HOLD	0
SELL	0

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