INITIATION OF COVERAGE REPORT

ENERGY TRANSITION & SUSTAINABLE INVESTING

WATER TOWER RESEARCH

Arq, Inc.

ARQ: Significant EBITDA Growth from Execution and Expansion into Faster-Growth Markets

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Graham Mattison
graham.mattison@watertowerresearch.com
727-300-4702

KEY POINTS

- **A diversified environmental technology company focused on developing and providing solutions for air, water, and soil purification.** Arq is a leading producer of powdered activated carbon (PAC) and is expanding into the faster-growing and higher-margin granular activated carbon (GAC) market, which should drive significant EBITDA growth in the coming years.
- **Focus on execution and cash flow.** Since new CEO Bob Rasmus took the helm in 2H23, Arq has delivered improving performance with its foundational and cash-generating PAC business through operational efficiencies, better contracting terms, and penetration of new markets. At the same time, the company is using its PAC business as a springboard into the higher-growth, more profitable, and broader GAC markets.
- **Capacity expansion into GAC opens new and fast-growing market opportunities.** These include groundwater remediation, specialty gas purification (such as renewable natural gas/biomethane), and addressing polyfluoroalkyl substances (PFAS), also known as forever chemicals, which were included in the April 2024 Environmental Protection Agency (EPA) regulations. Arq is building out its GAC capacity at its existing Red River plant in Louisiana (commissioning expected in 4Q24, first production in 1Q25) and the company recently announced contracts with multiple new customers in different end markets that commit 52% of GAC nameplate capacity under construction.
- **New CEO aligned with shareholders.** Bob Rasmus, who was appointed CEO in 2023, negotiated to receive a cash salary of just $50,000 per year, with the rest of his compensation in equity. He also purchased ~1 million shares upon joining Arq and currently owns about 2.5% of the shares outstanding, which includes 25,000 shares he purchased as part of the September equity raise.
- **Growth opportunities beyond PAC and GAC markets.** Arq has been developing additional products and applications that could add materially to EBITDA within three to five years (we do not have any contributions from the new products in our model). These include a new colloidal carbon product (CCP) platform that can be used at contaminated soil and groundwater remediation treatment sites and Arq powder, which is a lower-carbon footprint additive component for asphalt.
- **Balance sheet strengthened with recent capital raise.** On September 20, Arq raised ~$29 million in gross proceeds (including the greenshoe) through the sale of ~5.5 million shares at $5.25. The company now has sufficient funds to complete the GAC expansion project, which removes an overhang on the shares and offers multiple options to replace the existing higher-cost debt that carries collateral restrictions.

KEY STATISTICS

Ticker:Exchange	ARQ:NASDAQ
Current Price	$5.71
52-Week Range	$1.60-$8.26
Average Volume (30-Day)	285,644
Shares Outstanding (MM)	41.3
Market Cap ($MM)	$235.7
Enterprise Value ($MM)	$237.0
Fiscal Year-End	December

ESTIMATES

EPS

	2023A	2024E	2025E	2026E	2027E
1Q	($0.32)A	($0.09)A			
2Q	($0.21)A	($0.06)A			
3Q	($0.07)A	$0.02E			
4Q	$0.10A	($0.02)E			
FY	($0.42)A	($0.15)E	$0.00E	$0.20E	$0.61E

EBITDA ($MM)

	2023A	2024E	2025E	2026E	2027E
1Q	($7.7)A	($1.1)A			
2Q	($3.0)A	$0.5A			
3Q	$0.9A	$3.3E			
4Q	$7.2A	$1.9E			
FY	($2.6)A	$4.6E	$11.1E	$20.1E	$38.7E

Revenue ($MM)

	2023A	2024E	2025E	2026E	2027E
1Q	$20.8A	$21.7A			
2Q	$20.4A	$25.4A			
3Q	$29.8A	$30.2E			
4Q	$28.1A	$28.7E			
FY	$99.2A	$106.1E	$131.4E	$157.5E	$187.5E

COMPANY OVERVIEW

Arq, Inc. is a diversified environmental technology company focused on developing and providing solutions for air, water, and soil purification. The company is a leading producer of activated carbon (AC) (~23% of North American market share), which is used for contaminant removal in various applications, including mercury removal from power plants, water purification, specialty gas cleaning, and soil and groundwater remediation. Formerly known as Advanced Emissions Solutions (ADES), Arq and its predecessor companies have been at the forefront of providing cutting-edge products to control mercury and other contaminants for power generation and industrial companies since 1997. The January 2024 rebranding to Arq reflects a new focus on growth following the appointment of Bob Rasmus as CEO, the transformational acquisition of UK-based Arq, and the strategic expansion into the faster-growing GAC markets.

Arq is currently a leading supplier of PAC that it produces using lignite at its Red River plant in Louisiana, which has been in operation since 2011. The primary end market for PAC has been mercury control for coal-fired power plants, but the company has been increasing its presence in the water market as well. In October 2023, Arq began the expansion of the Red River site to add an incremental 25 million pounds of GAC capacity to meet the growing market demand from water, soil/groundwater remediation, gas purification, and PFAS. Initial GAC production is on track for 1Q25, and the company already has contracts for 52% of GAC nameplate capacity under construction.

Today, Arq is a vertically integrated AC producer working to provide innovative environmental solutions for a cleaner future. The company is focused on improving its foundational and cash-generating PAC business through execution and better contracting terms, while using it as a springboard into the higher-growth and more profitable GAC market.

Key Considerations

Expansion into the higher-margin and higher-growth GAC market well underway. Arq is in the late stages of building out incremental GAC production that we expect to drive higher margins than its PAC business as well as significant growth tailwinds from groundwater remediation, specialty gas purification (such as renewable natural gas/biomethane), and addressing PFAS.

The foundational PAC business provides a stable and cash flow positive platform to support the higher-margin and growth GAC business. By focusing on efficiency, customer diversification, and eliminating negative margin contracts (which were 24% of sales in 2023 but none in 2025), the PAC business has been transformed over the past 18 months and is now generating positive cash flow. In addition to its cash flow contributions, the PAC business helps support the entry into the GAC market through economies of scale, existing infrastructure, manufacturing processes, and industry relationships.

Impressive turnaround in the past 12 months; there is more room to run. In the past five quarters, the new team has significantly increased gross margin to the upper-30% range from the low-20% range, as well as reduced operating expenses, integrated the Arq acquisition, and positioned the company to expand into faster-growing markets. Management remains focused on execution, operating efficiency, and cost controls, which along with better pricing as older contracts roll off, should drive further margin expansion. This should be amplified as the higher-margin GAC business contributions start to ramp in 2025.

Forecast EBITDA ramp highlights improved profitability of GAC and the operating leveraging in the business model. We expect Arq to generate EBITDA of $69.6 million in 2028, up from ($2.6) million in 2023 and our estimate of $4.6 million in 2024. The growth in EBITDA is driven by contributions from the new GAC capacity, improved performance of the PAC business, and an ongoing focus on efficiency and cost controls.

Already permitted expansion plans give the option to add incremental GAC capacity quickly as demand accelerates. The 25 million pound per year GAC production line under development at Red River is the first of five modular GAC production lines that are fully permitted and could be built in response further demand growth, which would increase the company's nameplate GAC capacity to ~125 million pounds per year. The Corbin facility has ample feedstock to support further growth, and we expect that the next 25 million pounds of new capacity could be online within 18 months. The company see itself as having a two- to three-year head start on any competitor's potential expansion, which would have to secure feedstock and get through a permitting process that should take at least two years or more before construction could begin. A greenfield expansion would likely take even longer as the land and feedstock would have to be secured and the permitting and financing for a new build new "carbon" plant would be very challenging in today's environment (despite the fact that the carbon would be used to reduce pollution).

The concentration of AC producers should support market discipline around supply and pricing. Today, the North American market has consolidated to three main producers of AC, of which Arq represents about ~23%. The market is very competitive, however, we expect the market players to be very disciplined about bringing on new capacity given the periods of oversupply/low pricing the market has seem in the past years. While we do expect to

see existing players add some capacity as demand increases, the incumbents should benefit more from higher pricing rather than incremental capacity that could depress pricing for years to come. It is highly unlikely that a new player would enter the market given the permitting hurdles, raw material supply and location challenges, and the cost of greenfield construction. We note that the last significant additional domestic greenfield AC capacity was in 2008 in anticipation of emissions control demands for coal-fired powerplants (that failed to fully materialize), and the new capacity was only made possible through the support and long-term supply contracts from a major Texas utility who has since gone bankrupt.

CEO is aligned with shareholders. Bob Rasmus, who was appointed CEO in 2023, negotiated to receive a cash salary of just $50,000 per year, with the rest of his compensation in equity. He also purchased ~1 million shares upon joining the company, purchased an additional ~25,000 shares as part of the September equity raise, and currently owns about 2.5% of the shares outstanding. Management and the Board of Directors collectively own about own about 20% of the company.

Recent GAC contract wins further mitigate expansion risks. Fifty-two percent of the new capacity has already been contracted (more than six months ahead of production) with multiple companies in different end markets. The contracts support the market's confidence in the company's product quality as GAC is not fungible. It is a technical sale and the product must meet the customer's stringent specifications. Arq has stated that it is very confident that 100% of capacity will be fully contracted when production begins in 1Q25.

Vertical integration provides control over input cost and supply and also enhances margins. Arq is the only vertically integrated domestic supplier with direct control of its raw material supply for the production of PAC and GAC. The ownership of the supply chain provides both supply certainty and gives flexibility around raw materials. Further, this is a differentiating factor that can help drive better margins and provide a competitive advantage by qualifying Arq for benefits from the federal Build America, Buy America Act, and other state and local programs.

Growth potential from newer products beyond PAC and GAC. Arq has been developing additional products and applications that could add to EBITDA within three to five years (we do not have any contributions from the new products in our model). These include a new CCP platform that can be used at contaminated soil and groundwater remediation treatment sites and Arq powder, which is a lower-carbon footprint additive component for asphalt.

Low-carbon footprint through the use of coal waste as a feedstock for GAC. Arq uses a patented process that transforms bituminous coal waste (also called fines) into Arq powder that is used as the feedstock for producing GAC. In addition to the cost and supply benefits, the Arq process has significant environmental benefits versus mining virgin coal for a feedstock, including potentially lower Scope 1 and 2 CO2 emissions by 40%. This is a potentially significant competitive advantage as GAC users (particularly municipalities and utilities) look to reduce their carbon footprint throughout their supply chain.

November election outcomes unlikely to have any near-term material impact on the business. Demand for Arq's products is driven primarily by consumer demand and existing regulations. We do not see either candidate's proposed policies as having a material impact on the AC market and the initial PFAS regulations were enacted during the previous Trump administration. Further, market moves following an election are typically short-lived and often run counter to prevailing narratives advanced by the new administration. For example, the Biden administration was widely seen as bad for the energy stocks (canceling the Keystone Pipeline, Green New Deal, etc.), yet energy has been one of the best, if not the best, performing market sectors during the Biden administration.

We do not see a near- or medium-term risk to AC demand from coal-fired power generation in the US. While coal-fired power has declined precipitously since 2009 (both in absolute tons burned and as a percentage of the grid) due to low natural gas prices and regulations, coal is still ~16% of the US power grid and coal used in the power space has seen some slight growth in recent years. As demand for AI datacenters and electric vehicles (EVs) grows, the need for reliable baseload power should grow.

Increases in natural gas prices could provide an unexpected tailwind. Lower natural gas prices have negatively affected Arq's PAC sales in recent quarters as current low gas pricing helps the competitive position of gas-fired power versus coal. Year to date, natural gas prices have averaged $2.10/MMbtu, well below the average of $4.37/MMbtu from 2010-2020 and $4.31/MMbtu from 2000-2010. Should natural gas prices increase in the coming years, we expect to see more demand from the lower-priced baseload coal plants.

Upcoming Catalysts

The announcement of additional GAC contracts. In August, Arq announced it had contracted 52% of the new line's capacity with multiple contracts with companies in different end markets and it remains highly confident that it will have 100% of capacity contracted by 1Q25. Further capacity commitments should boost confidence in demand for GAC, earnings potential, and the potential to support demand for additional capacity.

3Q24 earnings announcement. We expect the company to post another solid quarter when it reports in early November, which should show further margin growth from pricing, operating efficiencies, and contract management. We also expect to hear updates on the new GAC capacity, contracting status, and remaining capital spend.

Recent Events

Raises ~$29 million through equity issuance. On September 20, the company sold ~5.5 million shares (including the greenshoe) at $5.25 a share in a public market equity issuance. The funds will support the buildout of the GAC expansion at Red River and also greatly expand the company's options for negotiating new debt financings to replace the $10 million CFG loan that is both high cost and restrictive in terms of covenants and assets pledges.

Brings construction and project management of GAC expansion in-house. On September 17, the company terminated its agreements with contractor Wieland-Davco after determining that certain timing and budget efficiencies could be achieved by conducting construction and project management functions internally. There is no change to the timeline or cost of commissioning and first production, and we expect that this move will give the company better control over the project and positions it to be ready to begin work on the potential next phases of GAC production.

Strong 2Q24 results. On August 12, Arq reported Y/Y revenue growth of 24%, a 16% increase in average selling price (fifth consecutive quarterly increase), and positive adjusted EBITDA of $0.5 million versus negative $3 million in 2Q23. The quarter also showed continued execution toward the company's stated targets and progress on the GAC growth projects.

New GAC contracts for the Red River expansion. In August, Arq announced it had signed supply contracts for 52% of nameplate capacity of its GAC expansion at its Red River facility. The contracts are with multiple companies who will be using the GAC in a variety of end markets, helping to diversify the company's customer base and its end market concentration.

EPA announces new PFAS rule. In April 2024, the EPA issued the first national drinking water standard to address PFAS. It is estimated that one-third of the public water systems will require PFAS treatment facilities, which should drive a significant increase in the demand for GAC.

ARQ added to the Russell Index. On July 1, 2024, the company was added to the added to the broad-market Russell 3000® Index and the Russell 2000® Index.

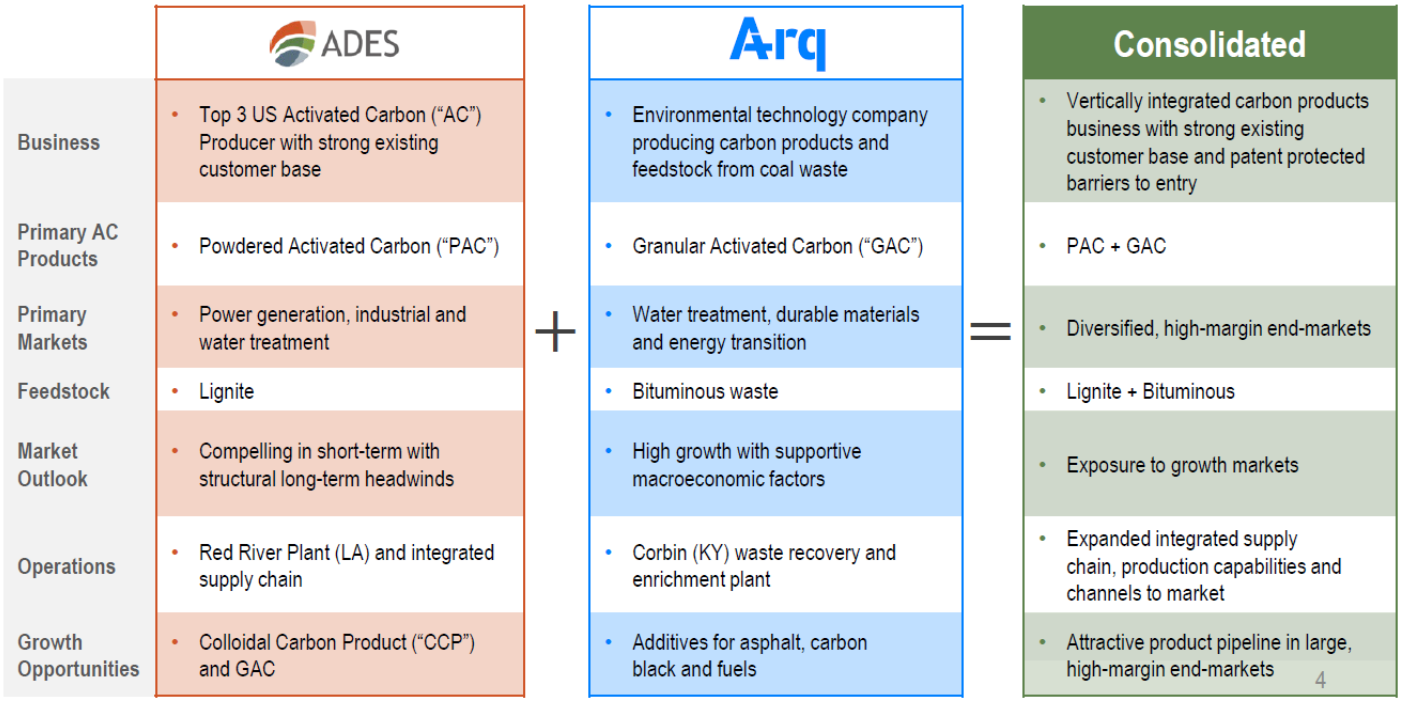
COMPANY DESCRIPTION

Arq is a diversified environmental technology company focused on developing and providing solutions for air, water, and soil purification. The company is a leading producer of AC (~23% share of the North American market) that is used for contaminant removal in various applications, including mercury removal from power plants, water purification, specialty gas cleaning, and soil and groundwater remediation.

Formerly known as Advanced Emissions Solutions (NASDAQ:ADES), the company has been at the forefront of providing cutting-edge products to control mercury and other contaminants for power generation and industrial companies since 1997.

In February 2023, ADES acquired 100% of the equity of the subsidiaries of Arq Limited, a UK-based environmental technology company founded in 2015 that developed a novel process for producing specialty carbon products from coal mining waste. The acquisition of Arq's technology and its Corbin Kentucky processing facility gave the company an entry into the faster-growing GAC market through its high-quality feedstock that has lower operating costs and reduced environmental footprint versus conventional producers.

Figure 1: Arq Acquisition Overview



Source: Company reports, Water Tower Research

The January 2024 rebranding to Arq reflects a new focus on growth following the appointment of Bob Rasmus as CEO, the transformational acquisition of UK-based Arq, and the strategic expansion into the GAC markets.

Company Operations

Today, Arq has its corporate headquarters and R&D facilities in Denver (Greenwood Village, CO), its Red River AC plant in Coushatta, Louisiana, along with long-term leases for the plant's lignite feedstock, and its facility in Corbin, Kentucky, which produces bituminous coal waste feedstock for GAC production at Red River.

Figure 2: Arq Facilities

Source: Company reports, Water Tower Research

Red River

The Red River facility is the site of the company's flagship AC manufacturing facility in Coushatta, Louisiana. The purpose-built facility, which was brought online in 2010, was originally designed for annual PAC production capacity of 125-150 million pounds, with the potential to double its annual output to meet the expected ramp in demand for mercury control at coal-fired power plants from the federal Clean Air Mercury Rule (CAMR), which later became the Mercury and Air Toxics Standards (MATS). In 2007, the company stated that the capital cost for the initial production line would be about $260 million.

The AC plant is supplied by a nearby lignite mine that the company controls through ownership and long-term leases for mineral rights and right-of-use purposes that expire at varying dates over the next 30 years and contain options to renew.

The actual production capacity at Red River was never made public when the plant was owned by a private company. Since its 2018 acquisition, the capacity has not been released for competitive reasons, however, it is reported that the Red River plant has an annual PAC output of about 100 million pounds per year.

Following the Arq merger, the company embarked upon an expansion at the Red River plant to allow for the incremental production of GAC using waste feedstock from its Corbin, Kentucky facility. The expansion plan has five potential phases, all of which are permitted and have the support of the State of Louisiana though incentives and tax breaks.

Construction of the initial phase began in late fall 2023 and, through design enhancements, will add 25 million pounds per year of GAC capacity that will be incremental to the existing PAC capacity at the plant. Total cost of the expansion project (which includes upgrades at Corbin) is expected to be $60-70 million in 2024. The upgrades at Corbin were commissioned in 2Q24 and the company expects the new line at Red River to be commissioned from Q424 with first product deliveries in 1Q25.

Figure 3: Red River AC Plant

Source: Company reports, Water Tower Research

Corbin

The Corbin facility uses a patented manufacturing process to convert bituminous coal waste (also called fines) into carbon powder known as Arq powder that is used as the feedstock for GAC produced at Red River. The facility, which is located at a dormant US Steel coal preparation site (also called coal washing station), was built for ~$80 million in 2019. In addition to creating the feedstock for the GAC production, the company is developing the Arq powder for other markets, including its use as a lower-carbon footprint additive component for asphalt.

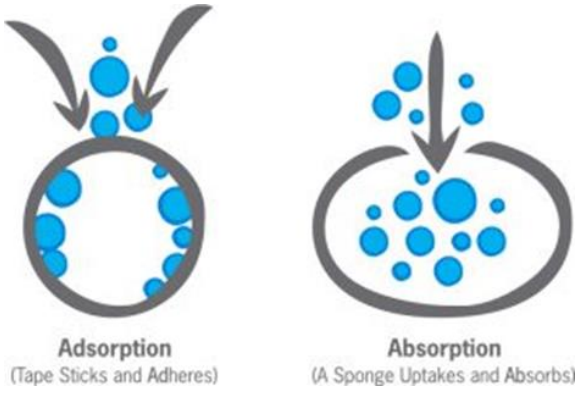
Figure 4: Corbin, Kentucky Facility

Source: Company reports, Water Tower Research

Activated Carbon (AC) Overview

AC (also called activated charcoal or activated coal) is a specialized sorbent material that is used to remove impurities, contaminants, and pollutants in a wide range of industries such as water purification, power plant emissions control, industrial gas purification, and soil remediation. When the carbon is "activated" (either through a heat treatment or chemical treatment), its surface area is massively expanded, resulting in a highly porous substance that can adsorb and remove organic compounds from liquids and gases. In adsorption, organic molecules contained in a liquid or gas are attracted and bound to the surface of the pores of the AC, while the liquid or gas is passed through. Adsorption (where items adhere) is different from absorption (items are taken in).

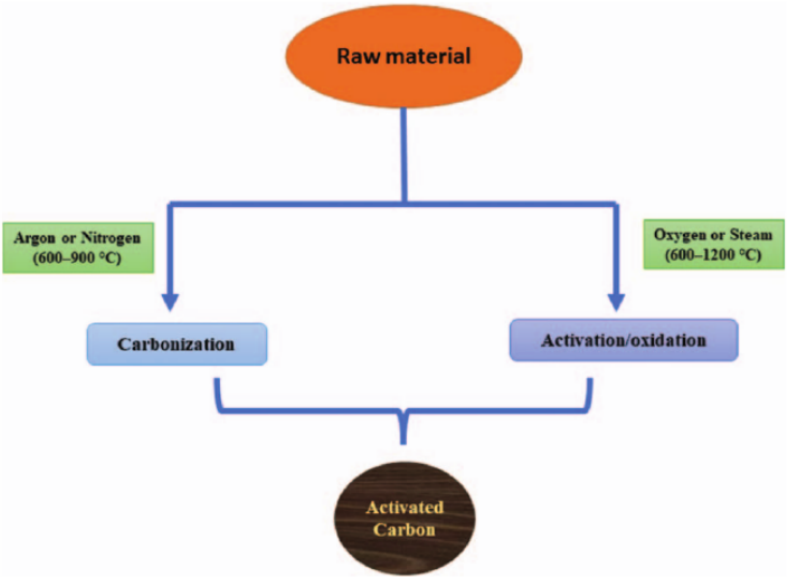
Figure 5: Adsorption vs. Absorption



Source: Kuraray, Water Tower Research

The activation process can be thought of like making popcorn: when the kernel is exposed to high heat, it transforms into a fluffy and light material with a much higher surface to volume ratio.

Figure 6: Activation Process



Source: Royal Society of Chemistry, Water Tower Research

Raw Materials

AC may be made from any carbonaceous material such as bamboo, coconut husk, willow peat, wood, lignite, coal, and petroleum pitch, however not all raw materials cannot be made into the same quality of AC. Different raw materials are used in different end markets based on price and availability, but more importantly iodine ratios, ash content, and particle size distribution. Bituminous coal is typically the highest-quality raw material, but sub-bituminous or lignite coal can be more effective in certain applications (such as air pollution control) due to its pore structures.

Figure 7: Typical Raw Materials for AC

Source: Kuraray, Water Tower Research

AC can be categorized into different classes based on its physical appearance. The main categories are:

Powdered Activated Carbon (PAC): PAC is the most common form of AC and is produced by grinding raw carbonaceous materials such as coal, wood, or coconut shells into fine particles.

Granular Activated Carbon (GAC): GAC consists of larger granules with more extended contact time and better flow characteristics compared with PAC. GAC, which can only be made from materials that are high in carbon, such as coal, coconut shells, peat and wood, is utilized in both liquid- and gas-phase applications, such as groundwater remediation, air purification, and gas purification in industrial processes.

Colloidal activated carbon (CAC or CCP): CAC a specialized form of AC, with particles milled to less than 2 microns in size and suspended in a liquid and then used in situ (in place) to remove contaminants from groundwater.

Market Uses and Demand

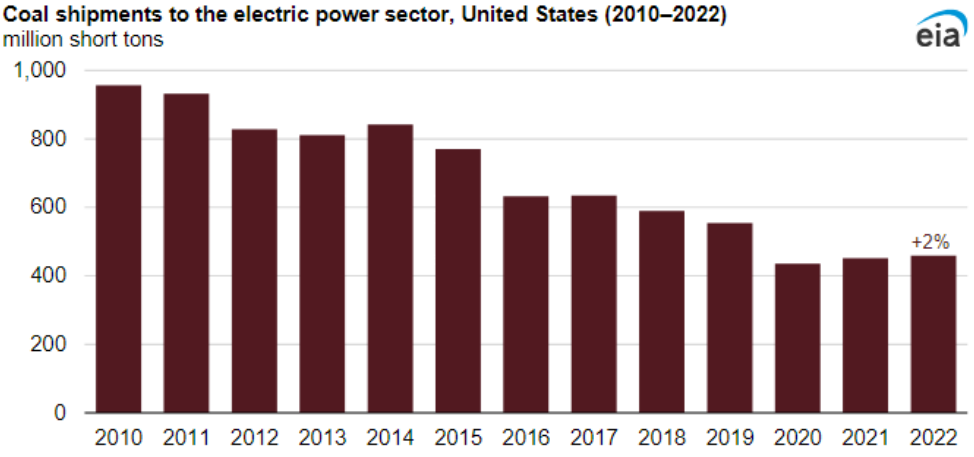
AC is used in a wide range of applications, including industrial demand, water filtration, wastewater, medical, air pollution control, and the food and beverage industry. Typical consumers might encounter activated carbon inside of the water filter for drinking water or a fish tank or in their N-95 masks. The industry has typically grown in line with GDP but has seen periods of faster growth due to regulations, such as the mandates to remove mercury emissions from coal-fired power plants. Key markets for Arq include the following.

Mercury Emission Control from Coal-Fired Power Plants

Arq's predecessor companies were at the forefront of developing the technology to remove mercury emissions from coal-fired power plants and the company has multiple patents around the process. PAC, because of its pore structures, is a well-established and cost-effective solution for mercury control. The PAC is slowly fed into the flue gas post combustion where the mercury is adsorbed by the AC, which is then captured in the fabric filters (used to collect particulate matter as part of the overall emissions control train). Demand for mercury control has been driven by federal and state regulations as well as individual consent decrees made by specific plants.

US coal-fired power has declined precipitously over the past 15 years due to a combination of environmental regulations, growth in renewable power such as wind and solar, and the impact of the fracking revolution that has driven a 75% drop in natural gas prices since 2008. Today, natural gas generates about 43% of US electricity, up from ~20% of US electric power generation in 2010, while coal has declined to ~16% of US generation. However, coal used to generate electricity has actually seen a slight rebound in recent years due to natural gas price volatility and increased need for baseload electric power to support new datacenters (AI and Bitcoin) as well as power to charge the growing fleet of EVs.

Figure 8: Coal Used for Power Generation

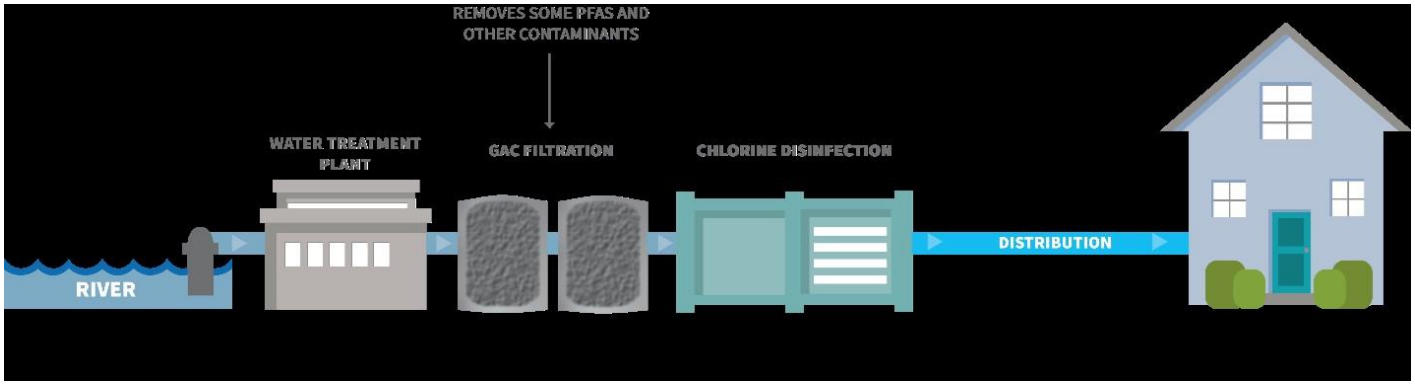


Source: EIA, Water Tower Research

Water Markets

AC has long been used to filter out tastes, odors, and other impurities from drinking water, both at water utility sites and with end users (AC filters in water dispensers, Brita filters, etc.).

Figure 9: Example of Water Treatment Systems Using GAC



Source: EPA, Water Tower Research

On April 10, 2024, the EPA issued the first-ever national, legally enforceable drinking water standard to reduce PFAS, also known as forever chemicals, lowering the permissible levels of these chemicals in US drinking water by more than 90% from prior EPA guidance. The rule sets limits for five individual PFAS: PFOA, PFOS, PFNA, PFHxS, and HFPO-DA (also known as GenX chemicals).

GAC filtration is dominant technology used to address PFAS given its high removal rates (77-99%), proven technology track record, and low cost. Other solutions to remove PFAS include anion exchange (also called ion exchange or IX), advanced oxidation, and high-pressure membranes. However, these solutions pose cost, reliability, and other technological challenges versus GAC.

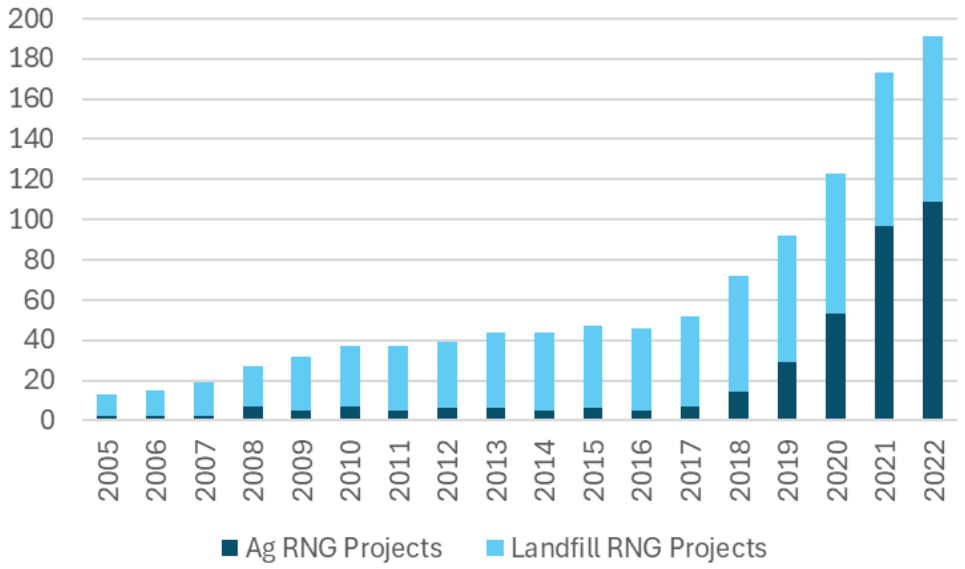
The new rules are expected to drive near and longer-term demand for remediation products using GAC. The EPA's rules bring maximum contaminant levels to 4.0 parts per trillion, down from 70 parts per trillion, which will require 3-5x from GAC. While we recognize that final implementation of federal environment rules can be delayed through court challenges and administration changes, much of the near-term demand will be underpinned by companies looking to get ahead of compliance deadlines, in response to specific consent decrees or agreements made between companies and local and federal environmental agencies and growing public demand to remove unsafe chemicals from their drinking water.

Renewable Natural Gas

GAC is also used in the production of renewable natural gas (RNG). RNG, which can be made from landfill gases, animal waste, and decomposition and digestion of organic matter, requires impurities to be filtered out before the gas can be considered "pipeline quality" and able to be used in the grid or to power cars and trucks (diesel replacement). GAC has proven to be a very effective method to remove impurities and Arq is working with multiple RNG producers to supply its GAC products.

RNG has seen significant growth in recent years, both in the US and globally, given its very low and in most cases negative carbon footprint. From 2017 to 2022, the number of landfill-based RNG projects grew by more than 80%, while agricultural digester (manure) RNG projects grew nearly 15-fold and by 2022 outnumbered landfill RNG projects.

Figure 10: Growth in RNG



Source: EPA, Water Tower Research

Figure 11: RNG Growth Outlook

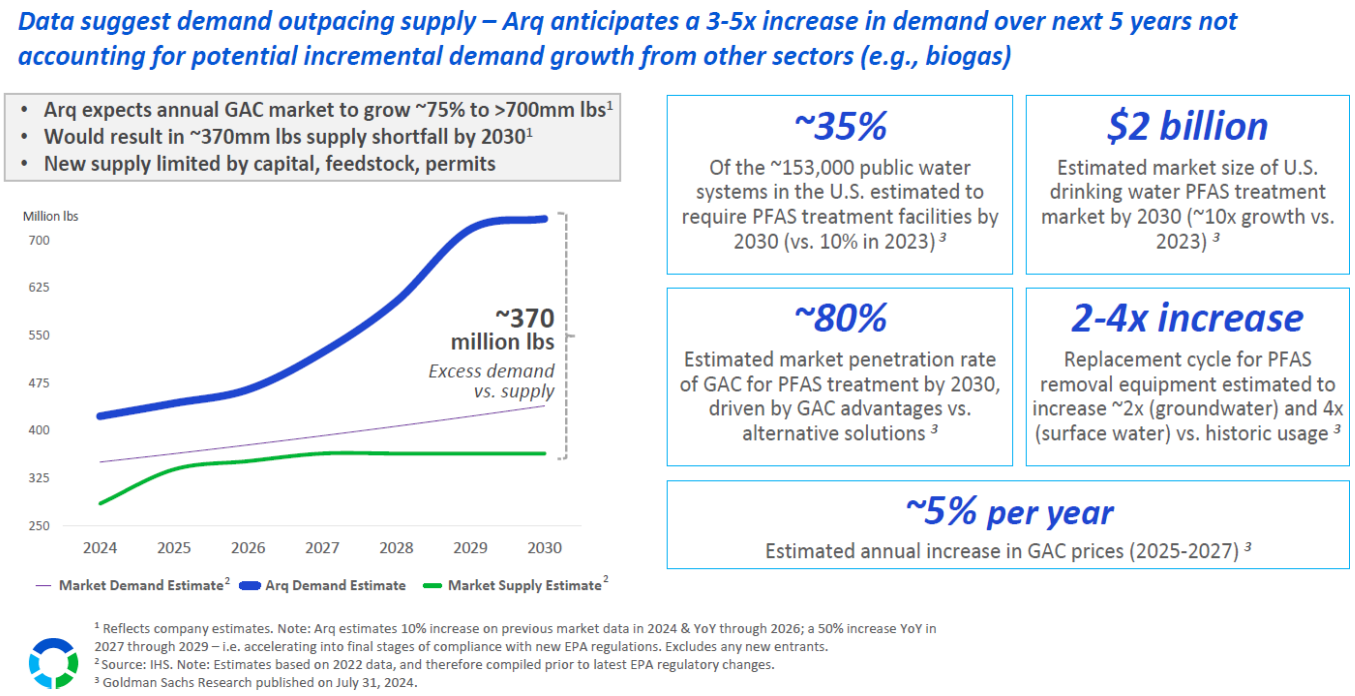
Source: Coalition for RNG, Water Tower Research

Numerous state and federal incentives and tax credits help offset the higher costs of RNG versus fossil fuel natural gas, and many companies are active in the RNG space both as producers and consumers, including Waste Management, BP, Exxon, Amazon, UPS, and several metro transits networks. An important development in the growth of RNG for trucking has been the 2024 launch of a 15-liter natural gas-powered engine from Cummins that addresses the largest segment of the on-road trucking market. Multiple industry players see the new engine and growing supply as helping grow natural gas-powered trucking by 5x, from 2% today to 10% in the next five to 10 years.

Demand Outlook

Demand for PAC is expected to remain at its historical growth rates of GDP, but GAC demand is widely expected to see rapid growth in the coming years from multiple end markets.

Figure 12: Expected Demand for GAC



Source: Company reports, Water Tower Research

While it is likely that more capacity will come online to meet the increased GAC demand, we expect the market players to be disciplined in adding new capacity based on oversupplied conditions seen in recent years and fewer market players than in past years. Further, anyone looking to add incremental capacity will need to overcome permitting challenges and construction costs. We see Arq as well-positioned to be able to add capacity quickly should demand support it as the Red River expansion plans are already permitted and would be built onto an existing plant. The company has stated that it believes it has at least a two-year head start versus competitors in terms of adding additional GAC capacity.

MANAGEMENT

Robert "Bob" Rasmus – Chief Executive Officer. Bob Rasmus has been the Chief Executive Officer of Arq since July 2023. Between 2012 and 2020, he founded and served as Chief Executive Officer and director of Hi-Crush, Inc., a fully integrated provider of proppant and logistics services for hydraulic fracturing operations. Prior to Hi-Crush, he was a Co-Founder and Managing Partner of Red Oak Capital Management, and was President of Thunderbolt Capital Corp., a venture firm focused on start-up and early-stage private equity investments. He has a Bachelor of Arts in Government and International Relations from the University of Notre Dame.

Jeremy "Deke" Williamson – Chief Operating Officer. Deke Williamson, who joined Arq in 2023, has more than 20 years of industrial manufacturing experience. Prior to joining Arq, he held various positions at Hi-Crush, Inc. and was previously the plant manager at Southeast Missouri Stone. He holds both an MBA and a Bachelor of Science degree in Business Management from the University of Phoenix.

Joe Wong – Chief Technology Officer. Dr. Wong has more than 35 years of industry leadership experience in research & development, product development, and business growth in specialty materials. He joined Arq's portfolio of companies in 2011 after three years of private consulting and 21 years with MeadWestvaco Corporation in senior leadership positions for the specialty chemicals and research & development sectors. He holds a PhD in Chemical Engineering from the University of Texas.

Stacia Hansen – Chief Accounting Officer. Stacia Hansen joined Arq's portfolio of companies in 2015 and previously served as Director of Financial Reporting and Manager of Financial Reporting. She has more than 12 years accounting experience and expertise in financial reporting, technical accounting, and Sarbanes-Oxley Act compliance. Prior to Arq, she worked in Assurance Services at Ernst & Young, LLP. She is a certified public accountant and graduated with a Bachelor of Science and a Master of Accountancy from the University of Denver.

RISKS

Additional delays and cost increases for construction timelines and production ramp-up for upgrades at Red River. The expansion project has incurred cost increases and delays due to a number of factors, including weather, inflation, and design changes. There is no certainty that the construction of and commencement and ramp-up of production at this facility will occur on time and on budget.

Demand for Arq's products and services depends primarily on environmental laws and regulations. Uncertainty as to the future of such laws and regulations, changes to such laws and regulations, or the granting of extensions of compliance deadlines have had and can have a material effect on the company's financial performance and outlook.

The failure of tariffs placed on US imports of Chinese AC to adequately address the impact of low-priced imports from China. The company faces competition in the US from low-priced imports of AC products, which at times have been sold at less than fair value. The US has an anti-dumping duty order on steam AC products from China that was extended for five years in 2023. If the anti-dumping regulations do not adequately address these imports, or the tariffs are removed or not renewed, it could negatively affect demand and/or pricing of the company's products and sales outlook.

The market for AC is highly competitive. Some of the competitors are significantly larger and more established than Arq, which could affect the ability to compete for new customers. Moreover, development of other pollution control technologies that compete with Arq could also affect the company's outlook.

Reduction of coal consumption by North American electricity power generators could result in less demand. If utilities significantly reduce the number of coal-fired electricity generating units or the amount of coal burned without a corresponding increase in the services required at the remaining units, the company could see a materially adverse impact on its PAC business, financial condition, and results of operations.

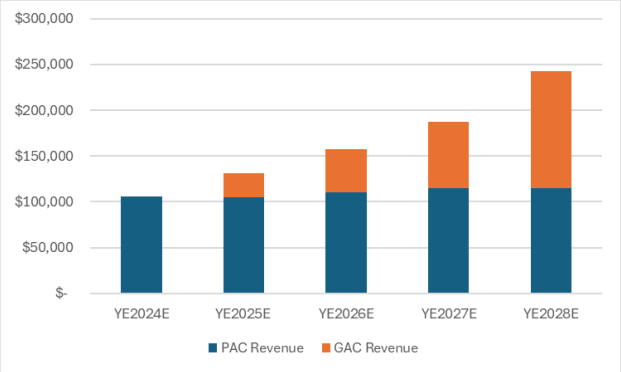
The impact, if any, of the performance guarantees and indemnifications made by Tinuum Group (of which 42.5% is owned by Arq) is unknown. To date, the company has never been required to make any payments under such guarantees and the company is not aware of any actual or threatened requests or claims for payment. However, should any obligations be triggered in the future, it could have a negative impact on the company's financial condition and future cash flow.

FINANCIALS

Financial Performance and Forecast EBITDA Outlook

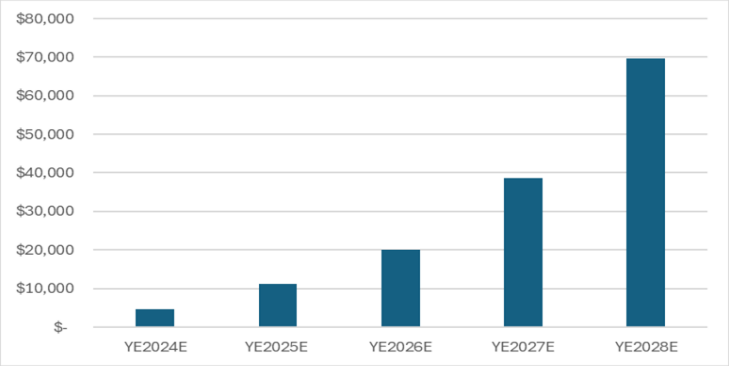
Arq reported positive EBITDA in 2Q24, up from negative EBITDA of $2.9 million in 2Q23, due to improved PAC pricing, operational efficiency, and company-wide cost controls. We forecast significant EBITDA growth in the coming years, driven by improved performance from PAC as new pricing takes effect and older and lower-margin contracts roll off. Starting in 2H25, EBITDA will receive a boost as the higher-margin GAC production comes online. We see potential for upward revisions to our estimates as the market for GAC is expected to tighten due to multiple demand tailwinds.

Figure 13: Revenue Mix ($MM)



Source: Water Tower Research

Figure 14: EBITDA Growth ($MM)



Source: Water Tower Research

The first phase of the GAC expansion at Red River is scheduled to begin production in 1Q25 and should ramp throughout 2025. Given the multiple demand drivers for the GAC market, in 1H26 we expect the company will begin adding another 25 million pounds of annual capacity, which would cost ~$70 million, be complete within 12-18 months, and provide a payback inside of three years. Our 2028 EBITDA estimate of $69.6 million, up from $38.7 million in 2027, reflects a full year of 50 million pounds of GAC capacity.

Figure 15: Financial Outlook

	2022A	2023A	2024E	2025E	2026E	2027E	2028E
Revenues	$ 102,987	$ 99,183	$ 106,135	$ 131,400	$ 157,500	$ 187,500	$ 242,500
Gross Profit	$ 22,522	$ 31,860	$ 38,295	$ 49,000	$ 61,000	$ 80,600	$ 112,500
Gross Margin	*21.9%*	*32.1%*	*36.1%*	*37.3%*	*38.7%*	*43.0%*	*46.4%*
EBITDA	$ (1,687)	$ 123	$ 4,654	$ 11,127	$ 20,127	$ 38,727	$ 69,627
EBITDA Margin	*na*	*0.1%*	*4.4%*	*8.5%*	*12.8%*	*20.7%*	*28.7%*

Source: Water Tower Research

There is not an easily definable peer group of companies for Arq as there are no pure-play AC producers listed in the US and prior to 2023, the publicly traded predecessor company (ADES) was valued on contributions from a now-ended tax credit. The best group of comparable companies includes environmental remediation, specialty chemical, and other pollution control services firms.

Figure 16: Peer Comparison

Ticker	Security Name	Last	YTD %Chg	Div Yld (%)	Mkt Cap (mm)	PE FY1	PE FY2	EV/EBITDA FY1	EV/EBITDA FY2	EBITDA CAGR 2024-2027
4-Oct-24										
ALB	Albemarle Corporation	$ 102.09	-29.34%	1.6	$ 11,999	480.4	39.6	14.9	12.3	11.3%
CBT	Cabot Corporation	$ 110.48	32.31%	1.6	$ 6,057	15.7	14.1	9.0	8.2	6.2%
CECO	CECO Environmental Corp.	$ 27.67	36.44%	0.0	$ 967	30.9	21.8	15.3	12.2	6.9%
EMN	Eastman Chemical Company	$ 109.00	21.35%	3.0	$ 12,738	14.2	12.2	9.6	8.8	8.3%
ECL	Ecolab Inc.	$ 251.02	26.55%	0.9	$ 71,425	37.7	33.5	22.2	20.7	11.4%
ERII	Energy Recovery, Inc.	$ 16.90	-10.30%	0.0	$ 976	50.6	29.0	27.7	18.9	15.5%
HDSN	Hudson Technologies, Inc.	$ 7.60	-43.66%	0.0	$ 346	13.2	8.7	7.3	5.3	na
KURRY	Kuraray Co., Ltd. Unsponsored ADR	$ 45.62	50.39%	1.6	$ 5,093	na	na	na	na	na
KWR	Quaker Houghton	$ 164.97	-22.70%	1.2	$ 2,955	19.8	17.3	10.7	9.9	4.3%
MEG	Montrose Environmental Group Inc	$ 22.55	-29.82%	0.0	$ 772	--	--	11.5	10.2	5.9%
NVEE	NV5 Global Inc	$ 91.86	-17.33%	0.0	$ 1,496	17.8	16.4	10.8	10.0	28.0%
XYL	Xylem Inc.	$ 133.47	16.71%	1.1	$ 32,419	31.4	27.8	19.3	17.6	7.5%
AVERAGE					**$ 12,270**	**71.2**	**22.0**	**14.4**	**12.2**	**10.5%**
ARQ	Arq, Inc.	$ 5.71	91.61%	-	$ 236	--	20.4	48.5	9.9	80.0%

Source: Water Tower Research, FactSet

Figure 17: Income Statement

INCOME STATEMENT (000, except per share)	YE2022A	Mar-23	Jun-23	Sep-23	Dec-23	YE2023A	Mar 24 A	Jun 24 A	Sept 23 E	Dec 23 E	YE2024E	YE2025E	YE2026E	YE2027E	YE2028E
Total Revenues	**102,987.0**	20,805.0	20,445.0	29,829.0	28,104.0	**99,183.0**	21,740.0	25,405.0	30,240.0	28,750.0	**106,135.0**	**131,400.0**	**157,500.0**	**187,500.0**	**242,500.0**
Consumables cost of revenues	80,465.0	17,175.0	15,336.0	20,707.0	14,105.0	67,323.0	13,713.0	17,227.0	18,900.0	18,000.0	67,840.0	82,400.0	96,500.0	106,900.0	130,000.0
Gross Profit	**22,522.0**	**3,630.0**	**5,109.0**	**9,122.0**	**13,999.0**	**31,860.0**	**8,027.0**	**8,178.0**	**11,340.0**	**10,750.0**	**38,295.0**	**49,000.0**	**61,000.0**	**80,600.0**	**112,500.0**
Gross margin	*21.9%*	*17.4%*	*25.0%*	*30.6%*	*49.8%*	*32.1%*	*36.9%*	*32.2%*	*37.5%*	*37.4%*	*36.1%*	*37.3%*	*38.7%*	*43.0%*	*46.4%*
SG&A	28,140.0	11,283.0	7,994.0	8,936.0	7,664.0	37,383.0	7,666.0	7,011.0	7,200.0	8,000.0	29,877.0	34,000.0	37,000.0	38,000.0	39,000.0
R&D		732.0	774.0				1,625.0	929.0	1,000.0	1,000.0	4,554.0	4,000.0	4,000.0	4,000.0	4,000.0
Depreciation, amortization,	6,416.0	2,137.0	2,428.0	2,711.0	3,267.0	10,543.0	1,716.0	1,658.0	1,700.0	1,700.0	6,774.0	8,000.0	8,000.0	8,000.0	8,000.0
Gain on sale	-	(2,695.0)		-	-	(2,695.0)	-	-			-				
Other	34.0	-		-	(36.0)	(36.0)	-	-			-				
Total Operating Expense	**34,590.0**	**11,457.0**	**11,196.0**	**11,647.0**	**10,895.0**	**45,195.0**	**11,007.0**	**9,598.0**	**9,900.0**	**10,700.0**	**41,205.0**	**46,000.0**	**49,000.0**	**50,000.0**	**51,000.0**
Operating gain or loss	**(12,068.0)**	**(7,827.0)**	**(6,087.0)**	**(2,525.0)**	**3,104.0**	**(13,335.0)**	**(2,980.0)**	**(1,420.0)**	**1,440.0**	**50.0**	**(2,910.0)**	**3,000.0**	**12,000.0**	**30,600.0**	**61,500.0**
Earnings from equity method investment	3,541.0	638.0	462.0	412.0	111.0	1,623.0	-	-	-	-	-	-	-	-	-
Interest Expense	(336.0)	(534.0)	(834.0)	(787.0)	(859.0)	(3,014.0)	(791.0)	(829.0)	(800.0)	(800.0)	(3,220.0)	(3,000.0)	(3,000.0)	(3,000.0)	(4,000.0)
Other (loss) Income, net	155.0	182.0	603.0	725.0	1,120.0	2,630.0	352.0	311.0	-	-	663.0	-	-	-	-
Total Other Income	**3,360.0**	**286.0**	**231.0**	**350.0**	**372.0**	**1,239.0**	**(439.0)**	**(518.0)**	**(800.0)**	**(800.0)**	**(2,557.0)**	**(3,000.0)**	**(3,000.0)**	**(3,000.0)**	**(4,000.0)**
Gain/loss before income tax expense	(8,708.0)	(7,541.0)	(5,856.0)	(2,175.0)	3,476.0	(12,096.0)	(3,419.0)	(1,938.0)	640.0	(750.0)	(5,467.0)	-	9,000.0	27,600.0	57,500.0
Income Tax Expense	209.0	33.0	-	-	186.0	153.0	-	30.0	-	-	30.0	100.0	100.0	100.0	100.0
Net income or loss	**(8,917.0)**	**(7,574.0)**	**(5,856.0)**	**(2,175.0)**	**3,290.0**	**(12,249.0)**	**(3,419.0)**	**(1,968.0)**	**640.0**	**(750.0)**	**(5,497.0)**	**(100.0)**	**8,900.0**	**27,500.0**	**57,400.0**
Gain or loss per share	$ (0.48)	$ (0.32)	$ (0.21)	$ (0.07)	$ 0.10	$ (0.42)	$ (0.09)	$ (0.06)	$ 0.02	$ (0.02)	$ (0.15)	$ (0.00)	$ 0.20	$ 0.61	$ 1.28
Basic Shares	18,453	23,770	27,360	31,807	32,367	29,104	37,062	34,356	35,550	42,000	37,242	43,000	44,000	45,000	45,000
Diluted Shares	18,453	23,770	27,360	31,807	32,952	29,104	37,062	34,356	35,550	42,000	37,242	43,000	44,000	45,000	45,000
EBITDA Reconciliation															
Net gain (loss)	(8,917.0)	(7,574.0)	(5,856.0)	(2,175.0)	3,290.0	(12,249.0)	(3,419.0)	(1,968.0)	640.0	(750.0)	(5,497.0)	(100.0)	8,900.0	27,500.0	57,400.0
D&A	6,416.0	2,137.0	2,428.0	2,711.0	3,267.0	10,543.0	1,716.0	1,658.0	1,700.0	1,700.0	6,774.0	8,000.0	8,000.0	8,000.0	8,000.0
Amortization of upfront payments	508.0	127.0	127.0	127.0	127.0	508.0	127.0	127.0	127.0	127.0	127.0	127.0	127.0	127.0	127.0
Interest expense, net	97	289	308	224	346	1168	432	606	800.0	800.0	3,220.0	3,000.0	3,000.0	3,000.0	4,000.0
Tax	209.0	33.0	-	-	186.0	153.0	-	30.0	-	-	30.0	100.0	100.0	100.0	100.0
EBITDA	**(1,687.0)**	**(4,988.0)**	**(2,993.0)**	**887.0**	**7,216.0**	**123.0**	**(1,144.0)**	**453.0**	**3,267.0**	**1,877.0**	**4,654.0**	**11,127.0**	**20,127.0**	**38,727.0**	**69,627.0**
Cash from equity method	5,933.0	638.0	462.0	412.0	111.0	1,623.0	-	-							
Equity earnings	(3,541.0)	(638.0)	(462.0)	(412.0)	(111.0)	(1,623.0)	-	-							
Gain on sale	569.0	(2,695.0)	-	-	(0.4)	(2,732.0)	-	-							
Adjusted EBITDA	**1,274.0**	**(7,683.0)**	**(2,993.0)**	**887.0**	**7,215.6**	**(2,609.0)**	**(1,144.0)**	**453.0**	**3,267.0**	**1,877.0**	**4,654.0**	**11,127.0**	**20,127.0**	**38,727.0**	**69,627.0**
Y/Y sales growth						-3.7%	4.5%	24.3%	1.4%	2.3%	7.0%	23.8%	19.9%	19.0%	29.3%
Gross Margin	21.9%	17.4%	25.0%	30.6%	49.8%	32.1%	36.9%	32.2%	37.5%	37.4%	36.1%	37.3%	38.7%	43.0%	46.4%
SG&A as % of sales	27%	54%	39%	30%	27%	38%	35%	28%	24%	28%	28%	26%	23%	20%	16%
R&D as % of sales	na	4%	4%	na	na	na	7%	4%	3%	3%	4%	3%	3%	2%	2%
EBITDA margin	na	na	na	3.0%	25.7%	0.1%	-5.3%	1.8%	10.8%	6.5%	4.4%	8.5%	12.8%	20.7%	28.7%
Adj EBITDA margin	na	na	na	3.0%	25.7%	-2.6%	-5.3%	1.8%	10.8%	6.5%	4.4%	8.5%	12.8%	20.7%	28.7%

Figure 18: Balance Sheet

BALANCE SHEET ($MM, except per share)	YE2023A	Mar 24 A	Jun 24 A	Sept 23 E	Dec 23 E	YE2024E	YE2025E	YE2026E	YE2027E	YE2028E
ASSETS										
Cash and cash equivalents	45,361	35,227	28,478	32,728	15,928	15,928	26,547	27,447	41,947	96,347
Receivables, net	16,192	10,927	15,812	15,812	15,812	15,812	15,812	15,812	15,812	15,812
Inventories, net	19,693	21,683	22,648	22,648	22,648	22,648	22,648	22,648	22,648	22,648
Prepaid expenses and other current assets	5,215	4,201	4,280	4,280	4,280	4,280	4,280	4,280	4,280	4,280
Total Current Assets	86,461	72,038	71,218	75,468	58,668	58,668	69,287	70,187	84,687	139,087
Restricted cash. Long-term	8,792	8,792	8,719	8,719	8,719	8,719	-	-	-	-
Property, plant, equipment , net	94,649	103,645	123,407	143,707	159,007	159,007	162,007	170,007	203,007	206,007
Other long-term assets	45,600	45,323	45,238	45,238	45,238	45,238	45,238	45,238	45,238	45,238
TOTAL ASSETS	**235,502**	**229,798**	**248,582**	**273,132**	**271,632**	**271,632**	**276,532**	**285,432**	**332,932**	**390,332**
LIABILITIES										
Accounts payable	14,603	12,538	16,795	16,795	16,795	16,795	16,795	16,795	16,795	16,795
Current portion of debt	2,653	2,535	2,419	2,419	2,419	2,419	2,419	2,419	2,419	2,419
Other current liabilities	5,792	6,894	7,393	7,393	7,393	7,393	7,393	7,393	7,393	7,393
Total current liabilities	23,048	21,967	26,607	26,607	26,607	26,607	26,607	26,607	26,607	26,607
Long-term debt, net of current portion	18,274	18,127	17,978	17,978	17,478	17,478	22,478	22,478	42,478	42,478
Other long-term liabilities	15,780	14,540	14,397	14,397	14,397	14,397	14,397	14,397	14,397	14,397
TOTAL LIABILITIES	**57,102**	**54,634**	**58,982**	**58,982**	**58,482**	**58,482**	**63,482**	**63,482**	**83,482**	**83,482**
STOCKHOLDER EQUITY										
Preferred stock at par	-	-	-	-	-	-	-	-	-	-
Common stock at par of $0.01	38	38	41	41	41	41	41	41	41	41
Treasury stock at cost	(47,692)	(47,692)	(47,692)	(47,692)	(47,692)	(47,692)	(47,692)	(47,692)	(47,692)	(47,692)
Additional paid-in capital	154,511	154,694	171,095	197,595	197,595	197,595	197,595	197,595	197,595	197,595
Retained earnings	71,543	68,124	66,156	64,206	63,206	63,206	63,106	72,006	99,506	156,906
TOTAL STOCKHOLDERS EQUITY	**178,400**	**175,164**	**189,600**	**214,150**	**213,150**	**213,150**	**213,050**	**221,950**	**249,450**	**306,850**
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY	**235,502**	**229,798**	**248,582**	**273,132**	**271,632**	**271,632**	**276,532**	**285,432**	**332,932**	**390,332**

Figure 19: Statement of Cash Flows

STATEMENT OF CASH FLOWS ($MM, except per share)	YE2023A	Mar 24 A	Jun 24 A	Sept 23 E	Dec 23 E	YE2024E	YE2025E	YE2026E	YE2027E	YE2028E
Cash flows from operating activities:										
Net loss	(12,249.0)	(3,419.0)	(1,968.0)	(1,950.0)	(1,500.0)	(8,837.0)	(100.0)	8,900.0	27,500.0	57,400.0
Adjustments to reconcile net loss to net cash used in operating activities:			-			-				
Depreciation and amortization	10,543.0	1,716.0	1,658.0	1,700.0	1,700.0	6,774.0	7,000.0	7,000.0	7,000.0	7,000.0
Stock-based compensation	2,648.0	782.0	653.0			1,435.0				
Operating lease expense	2,757.0	596.0	453.0	-	-	1,049.0	-	-	-	-
Amortization of debt discount	546.0	149.0	150.0	-	-	299.0	-	-	-	-
Gain on sale of mine	(2,648.0)	-	-	-	-	-	-	-	-	-
Earnings from equity method	(1,623.0)	-	-	-	-	-	-	-	-	-
Other	(111.0)	(19.0)	(36.0)	-	-	(55.0)	-	-	-	-
			-	-	-	-	-	-	-	-
Receivables	(2,264.0)	5,264.0	(4,884.0)	-	-	380.0	-	-	-	-
Prepaid expenses	4,777.0	1,067.0	(31.0)	-	-	1,036.0	-	-	-	-
Inventories	(2,571.0)	(1,240.0)	(253.0)	-	-	(1,493.0)	-	-	-	-
Other LS assets	(4,762.0)	(556.0)	(533.0)	-	-	(1,089.0)	-	-	-	-
Accounts payable	(12,061.0)	(3,481.0)	1,660.0	-	-	(1,821.0)	-	-	-	-
other current liabilities	(184.0)	1,190.0	370.0	-	-	1,560.0	-	-	-	-
operating lease liabilities	(168.0)	(592.0)	(194.0)	-	-	(786.0)	-	-	-	-
other LT liabilities	764.0	(931.0)	5.0	-	-	(926.0)	-	-	-	-
Net cash used in operating activities	**(16,606.0)**	**526.0**	**(2,950.0)**	**(250.0)**	**200.0**	**(2,474.0)**	**6,900.0**	**15,900.0**	**34,500.0**	**64,400.0**
Cash flows from investing activities:										
Acquisition of PP&E	(27,516.0)	(9,596.0)	(19,170.0)	(22,000.0)	(17,000.0)	(67,766.0)	(10,000.0)	(15,000.0)	(70,000.0)	(10,000.0)
Acquisition of mine development costs	(2,690.0)	(51.0)	(34.0)	-	-	(85.0)	-	-	-	
Cash and restricted cash acquired in business acquisitions	2,225.0	-	-	-	-	-	-	-	-	
payment for disposal of Marshall Mine	(2,177.0)	-	-	-	-	-	-	-	-	
Distribution from equity method	1,623.0	-	-	-	-	-	-	-	-	
Other			-	-	-	-	-	-	-	
Net cash (used in) provided by investing activities	**(28,535.0)**	**(9,647.0)**	**(19,204.0)**	**(22,000.0)**	**(17,000.0)**	**(67,851.0)**	**(10,000.0)**	**(15,000.0)**	**(70,000.0)**	**(10,000.0)**
Cash flows from financing activities:						-				
Repurchase of stock for tax withholdings	(230.0)	(599.0)	-	-	-	(599.0)				
Principal payment on finance lease obligations	(1,130.0)	(280.0)	(285.0)	-	-	(565.0)				
Principal payments on CTB loan		(134.0)	(134.0)	-	-	(268.0)				
New proceeds from stock issuance	16,220.0	-	15,751.0	26,500.0	-	42,251.0				
Net proceeds from CFG loan, net of discounts and issuing costs	8,522.0	-	-		-	-	(10,000.0)			
Proceeds from debt issuance	-	-	-			-	15,000.0		20,000.0	
Other	(473.0)		-	-	-	-				
Net cash provided by financing activities	**22,909.0**	**(1,013.0)**	**15,332.0**	**26,500.0**	**-**	**40,819.0**	**5,000.0**	**-**	**20,000.0**	**-**
Net (decrease) increase in cash, cash equivalents and restricted cash	(22,232.0)	(10,134.0)	(6,822.0)	4,250.0	(16,800.0)	(29,506.0)	1,900.0	900.0	(15,500.0)	54,400.0
Cash, cash equivalents and restricted cash at beginning of the period	76,432.0	54,153.0	44,019.0	37,197.0	41,447.0	24,647.0	24,647.0	26,547.0	27,447.0	11,947.0
Cash, cash equivalents and restricted cash at end of the period	**54,200.0**	**44,019.0**	**37,197.0**	**41,447.0**	**24,647.0**	**24,647.0**	**26,547.0**	**27,447.0**	**11,947.0**	**66,347.0**

ABOUT THE ANALYST

Graham Mattison
Senior Research Analyst

Graham Mattison brings more than 20 years of experience in equity research, investor relations, and corporate operations, growth, and development. Graham was the Investor Relations Officer for two NASDAQ-listed companies where he led multiple equity raises as well as managed an activist investor campaign, M&A and corporate restructuring, and a NASDAQ delisting and relisting.

Previously, he was a Senior Equity Research Analyst, most recently at Lazard Capital Markets, covering the industrial and cleantech industries. He began his career in Southeast Asia as an Investment Analyst for Daiwa Securities. He was also co-founder of an online residential real estate start-up that developed a web-based auction platform.

Graham received his BA in East Asian Studies with minors in Economics and History from Hobart College and his MBA in Finance with honors from the Thunderbird International Business School at Arizona State University. He is an Investor Relations Charter (IRC) holder from the National Investor Relations Institute.

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