

PROSPECTUS SUPPLEMENT
(To Prospectus dated February 27, 2024)



2,374,481 Shares of Common Stock

We are offering 2,374,481 shares of our common stock, par value \$0.01 per share (“common stock”). The public offering price for each share is \$3.50.

Our common stock is listed on The Nasdaq Global Select Market, or Nasdaq, under the symbol “FEAM”. Our CHESS Depositary Interests (“CDIs”) are listed on the Australian Securities Exchange under the symbol “5EA” with ten CDIs representing an interest in one share of our common stock. On August 21, 2025, the last reported sale price of our common stock was \$4.57 per share.

Investing in our common stock involves a high degree of risk. You should carefully read and consider the risks that are described in the “[Risk Factors](#)” section beginning on page S-12 of this prospectus supplement, on page 12 of the accompanying prospectus and in the documents incorporated by reference into this prospectus supplement and the accompanying prospectus before making a decision to invest in our securities.

	Per Share	Total
Public offering price	\$ 3.50	\$ 8,310,683.50
Underwriting discounts and commissions ⁽¹⁾	\$ 0.245	\$ 581,747.84
Proceeds, before expenses, to us	\$ 3.255	\$ 7,728,935.66

(1) See “Underwriting” for additional disclosure regarding the underwriting discounts and commissions and estimated offering expenses.

Our largest stockholders, BEP Special Situations IV LLC (“Bluescape”) and Ascend Global Investment Fund SPC, for and on behalf of Strategic SP (“Ascend”), have, severally and not jointly, each indicated an interest in purchasing (directly or through related entities) approximately \$350,000 in shares of common stock in this offering at the public offering price. Any shares of common stock to be purchased by Bluescape and Ascend in this offering will not be subject to a lock-up agreement with the underwriter. Because indications of interest are not a binding agreement or commitment to purchase, either Bluescape and Ascend may determine to purchase more, less or no shares in this offering or the underwriter may determine to sell more, less or no shares to Bluescape and Ascend.

The aggregate market value of our outstanding common stock held by non-affiliates is approximately \$24,932,055.20, which was calculated based on 4,794,626 shares of outstanding common stock that were held by non-affiliates as of August 20, 2025 and a price per share of \$5.20, the closing price of our common stock on August 11, 2025. Pursuant to General Instruction I.B.6. of Form S-3, in no event will we sell securities pursuant to the registration statement of which this prospectus supplement forms a part with a value more than one-third of the aggregate market value of our common stock held by non-affiliates in any 12-month period, so long as the aggregate market value of our common stock held by non-affiliates is less than \$75.0 million. During the prior 12-calendar-month period that ends on, and includes, the date of this prospectus supplement, we have not offered any securities pursuant to General Instruction I.B.6. of Form S-3.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus supplement or the accompanying prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The shares will be ready for delivery on or about August 25, 2025.

Konik Capital Partners

a division of T.R. Winston & Co.

The date of this prospectus supplement is August 21, 2025.

TABLE OF CONTENTS

	Page
PROSPECTUS SUPPLEMENT	
<u>ABOUT THIS PROSPECTUS SUPPLEMENT</u>	S-ii
<u>PROSPECTUS SUPPLEMENT SUMMARY</u>	S-1
<u>THE OFFERING</u>	S-4
<u>RISK FACTORS</u>	S-12
<u>SELECTED FINANCIAL DATA</u>	S-8
<u>SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS</u>	S-9
<u>USE OF PROCEEDS</u>	S-13
<u>UNDERWRITING</u>	S-11
<u>DESCRIPTION OF CAPITAL STOCK</u>	S-14
<u>LEGAL MATTERS</u>	S-20
<u>EXPERTS</u>	S-20
<u>WHERE YOU CAN FIND MORE INFORMATION; INCORPORATION BY REFERENCE</u>	S-22

	Page
PROSPECTUS	
<u>ABOUT THIS PROSPECTUS</u>	1
<u>TRADEMARKS AND TRADE NAMES</u>	2
<u>SELECTED DEFINITIONS</u>	2
<u>CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS</u>	3
<u>CAUTIONARY NOTE REGARDING RESERVES</u>	7
<u>CAUTIONARY NOTE REGARDING EXPLORATION STAGE COMPANIES</u>	9
<u>CAUTIONARY NOTE REGARDING EMERGING GROWTH COMPANY STATUS</u>	9
<u>CAUTIONARY NOTE REGARDING INDUSTRY AND MARKET DATA</u>	9
<u>5E ADVANCED MATERIALS, INC.</u>	10
<u>RISK FACTORS</u>	12
<u>USE OF PROCEEDS</u>	13
<u>DESCRIPTION OF CAPITAL STOCK</u>	14
<u>PLAN OF DISTRIBUTION</u>	17
<u>LEGAL MATTERS</u>	20
<u>EXPERTS</u>	20
<u>WHERE YOU CAN FIND MORE INFORMATION</u>	20
<u>INCORPORATION BY REFERENCE</u>	<u>21</u>

ABOUT THIS PROSPECTUS SUPPLEMENT

This document contains two parts. The first part is this prospectus supplement, which describes the specific terms of this offering and also supplements and updates information contained in the accompanying prospectus and the documents incorporated by reference into this prospectus supplement and the accompanying prospectus. The second part is the accompanying prospectus, which provides more general information, some of which may not apply to this offering. If the information contained or incorporated by reference in this prospectus supplement differs or varies from the information contained in the accompanying prospectus or in any document incorporated by reference that was filed with the Securities and Exchange Commission, or the SEC, before the date of this prospectus supplement, you should rely on the information set forth in this prospectus supplement.

You should rely only on the information contained or incorporated by reference in this prospectus supplement, the accompanying prospectus and in any free writing prospectus we may provide to you in connection with this offering. Neither we nor the underwriter has authorized any other person to provide you with any information that is different. If anyone provides you with different or inconsistent information, you should not rely on it. We are offering to sell, and seeking offers to buy, shares of our common stock only in jurisdictions where offers and sales are permitted. The distribution of this prospectus supplement and the offering of the common stock in certain jurisdictions may be restricted by law. Persons outside the United States who come into possession of this prospectus supplement must inform themselves about, and observe any restrictions relating to, the offering of the common stock and the distribution of this prospectus supplement outside the United States. This prospectus supplement does not constitute, and may not be used in connection with, an offer to sell, or a solicitation of an offer to buy, any securities offered by this prospectus supplement by any person in any jurisdiction in which it is unlawful for such person to make such an offer or solicitation.

The information contained in this prospectus supplement and the accompanying prospectus is accurate only as of the date of this prospectus supplement or the date of the accompanying prospectus, as applicable, and the information in the documents incorporated by reference in this prospectus supplement and the accompanying prospectus is accurate only as of the date of those respective documents, regardless of the time of delivery of this prospectus supplement and the accompanying prospectus or of any sale of our common stock. Our business, financial condition, results of operations and prospects may have changed since those dates. It is important for you to read and consider all information contained or incorporated by reference in this prospectus supplement and the accompanying prospectus in making your investment decision. You should read this prospectus supplement, the accompanying prospectus and any free writing prospectus that we have authorized for use in connection with this offering, as well as the documents incorporated by reference herein and therein and the additional information described under “Where You Can Find More Information; Incorporation by Reference” in this prospectus supplement and in the accompanying prospectus, before investing in our common stock.

In this prospectus supplement, unless the context otherwise indicates, the terms “5E,” the “Company,” “we,” “our” and “us” or similar terms refer to 5E Advanced Materials, Inc. and its subsidiaries. When we refer to “you,” we mean the potential holders of the applicable series of securities.

This prospectus supplement and the accompanying prospectus and the documents incorporated herein and therein by reference include trademarks, service marks and trade names owned by us or other companies. All trademarks, service marks and trade names included or incorporated by reference into this prospectus supplement or the accompanying prospectus are the property of their respective owners. Solely for convenience, trademarks and trade names referred to in this prospectus supplement or the accompanying prospectus, including logos, artwork and other visual displays, may appear without the ® or TM symbols, but such references are not intended to indicate, in any way, that their respective owners will not assert, to the fullest extent under applicable law, their rights thereto. We do not intend our use or display of other companies’ trade names or trademarks to imply a relationship with, or endorsement or sponsorship of us by, any other companies.

This prospectus supplement and the accompanying prospectus and the documents incorporated herein and therein by reference include estimates regarding market and industry data that we prepared based on our management’s knowledge and experience in the markets in which we operate, together with information obtained from various sources, including publicly available information, industry reports and publications, surveys, our customers, distributors, suppliers, trade and business organizations and other contacts in the markets in which we operate. In some

cases, we do not expressly refer to the sources from which this data is derived. Management estimates are derived from publicly available information released by independent industry analysts and third-party sources, as well as data from our internal research, and are based on assumptions made by us upon reviewing such data and our knowledge of such industry and markets which we believe to be reasonable.

In presenting this information, we have made certain assumptions that we believe to be reasonable based on such data and other similar sources and on our knowledge of, and our experience to date in, the markets for the products we distribute. Market share data is subject to change and may be limited by the availability of raw data, the voluntary nature of the data gathering process and other limitations inherent in any statistical survey of market shares. In addition, customer preferences are subject to change.

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights information contained elsewhere in or incorporated by reference into this prospectus supplement or the accompanying prospectus. This summary is not complete and does not contain all of the information that you should consider in making your investment decision. Before investing in our common stock, you should carefully read the entire prospectus supplement, the accompanying prospectus, and the documents incorporated by reference in this prospectus supplement and the accompanying prospectus carefully, including “Risk Factors,” “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” our financial statements and related notes incorporated by reference in this prospectus supplement and the accompanying prospectus, and the exhibits to the registration statement of which this prospectus supplement and the accompanying prospectus are a part.

Company Overview

We are a development stage company focused on becoming a vertically integrated global leader and supplier of specialty boron and advanced boron derivative materials whose mission is to enable decarbonization, increase food security, and ensure domestic supply of critical materials. Our business strategy and objectives are to develop capabilities ranging from upstream extraction and product sales of boric acid, lithium carbonate and potentially other calcium co-products, to downstream boron advanced material processing and development. Our vision is to safely process boric acid and lithium carbonate through sustainable best practices. We hold 100% of the rights through ownership and lode claims filed with the United States Bureau of Land Management in the 5E Boron Americas (Fort Cady) Complex located in southern California (the “Project”), through our wholly owned subsidiary 5E Boron Americas LLC. Our Project is underpinned by a mineral resource that includes boron and lithium, with the boron being contained in a conventional boron mineral known as colemanite. In 2022, our facility was designated as Critical Infrastructure by the U.S. Department of Homeland Security’s Cybersecurity and Infrastructure Security Agency. We believe the Project represents one of the most compelling domestic critical material projects in the United States as a strategically located operation that targets stable long-term demand, with a defined pathway to production and a low-cost, high margin and profitable financial profile.

We hold 100% of the ownership rights in the Project through our wholly owned subsidiary, 5E Boron Americas, LLC (f/k/a Fort Cady (California) Corporation). Through a multi-phased approach, we plan to develop the Project into a large-scale boron and lithium complex. The Project is based on a conventional colemanite deposit, which is a hydrated calcium borate mineral found in evaporite deposits, and we believe it is one of the largest known new conventional boron deposits globally. The deposit hosts a mineral resource and mineral reserve from which we intend to extract and process into boric acid, boron advanced materials, lithium carbonate, and other calcium co-products on a commercial scale. These materials are scarce in resource, currently subject to supply risk as a large portion of their consumption in the United States is sourced from foreign producers and are essential for supporting critical industries. When the Project is successfully developed, we believe that we can become an important supplier helping to provide supply security for these materials in the United States. The importance of the Project has been recognized by it being designated as Critical Infrastructure by the Department of Homeland Security’s Cybersecurity and Infrastructure Security Agency. The Project is also expected to serve as an important supply source of boric acid that we intend to process and develop into boron specialty and advanced materials over time.

In November 2023, the U.S. Environmental Protection Agency (“EPA”) provided authorization to begin in-situ mining operations pursuant to an Underground Injection Control permit and in January 2024, we began well-field injection with hydrochloric acid and water to begin extracting valuable minerals from the Project in the form of a Pregnant Leach Solution (“PLS”). The initial high-quality run-of-mine head grade of boric acid provided validation of our initial operational assumptions.

In April 2024, we commenced operation of our small-scale boron facility (the “SSF”), which has served as a foundation for the design, engineering, and cost optimization for our proposed large-scale complex, as well as serving as the source of product for our customer qualification and offtake contract efforts. The SSF is an essential step in the overall Project development plan and is serving as our initial extraction and processing facility. Shortly after we began to process the PLS at the SSF we produced our first batch of boric acid. During July 2024, we sent out our first samples of boric acid produced at the SSF to potential customers, and during April 2025, we were notified by a leading global specialty glass manufacturer that they had successfully produced specialty glass utilizing our boric acid. As of June

2025, we were aware of approximately 14 customers who had successfully qualified our boric acid through a combination of laboratory evaluation, field trials and truckload-scale shipments. We believe that the progress observed in our customer qualification efforts will facilitate discussions with stakeholders about funding options for Phase 1 of the commercial facility and securing commercial contracts for our future products.

Concurrently with the commissioning of wellfield and start-up of the SSF, during January 2024 we selected Fluor Corporation (“Fluor”) as our Engineering, Procurement and Construction Management Firm (“EPC”) service provider to lead our FEL-2 engineering program. During August 2025, Fluor completed the FEL-2 engineering for our proposed commercial scale facility, which culminated in the issuance of a S-K 1300 compliant Preliminary Feasibility Study (the “PFS”). The PFS included a capital estimate of approximately \$435 million to construct the proposed commercial-scale facility capable of producing 130,000 short tons of boric acid per annum, inclusive of \$55 million for contingency and approximately \$13 million of owner’s costs, and resulted in approximately 41% of the Project’s total resource being converted into approximately 5.3 million short tons of boric acid reserves, and a resultant 39.5 year mine life. We plan to commence commercial construction in the second half of calendar year 2026 and are targeting initial commercial production in the second half of calendar year 2028.

We plan to continue to operate the SSF for the foreseeable future to provide additional boric acid to potential customers, advance the design of our commercial-scale wellfield design and operating methods, and refine the production process for our two proposed byproducts; calcium chloride and gypsum.

While our immediate focus is on our efforts to establish the proposed commercial-scale facility and our ability to commercially produce salable products, including boric acid, calcium chloride and gypsum, we remain dedicated to opportunistically developing downstream boron advanced materials processing capabilities to extract greater value out of the boron supply chain.

Recent Developments

Unaudited Financial Information as of June 30, 2025

While we have not finalized the audit of our financial results as of and for the year ended June 30, 2025, we expect to report that we had approximately \$3.8 million of cash, cash equivalents and short-term investments as of June 30, 2025. This amount is preliminary, has not been audited and is subject to change pending completion of our audited financial statements as of and for the year ended June 30, 2025, and any changes could be material. Additional information and disclosures would be required for a more complete understanding of our financial position and results of operations as of and for the year ended June 30, 2025, which are not available as of the date of this prospectus supplement.

The unaudited financial data included in this prospectus supplement has been prepared by, and is the responsibility of, management of the Company. Our independent registered public accounting firm, PricewaterhouseCoopers LLP, has not audited, reviewed, compiled, or applied agreed-upon procedures with respect to the preliminary financial data set forth above. Accordingly, PricewaterhouseCoopers LLP does not express an opinion or any other form of assurance with respect thereto. It is possible that we or PricewaterhouseCoopers LLP may identify items that require us to make adjustments to the preliminary financial data set forth above and any changes could be material. We expect to complete our audited financial statements as of and for the year ended June 30, 2025 subsequent to the completion of this offering. Accordingly, undue reliance should not be placed on this preliminary estimate.

Corporate Information

American Pacific Borates Limited, our former parent company (“ABR”), was incorporated in October 2016 under the laws of Western Australia for the purpose of acquiring the rights in the Project from Atlas Precious Metals, Inc. The acquisition of Fort Cadiz (California) Corporation was completed in May 2017 and ABR’s ordinary shares were subsequently admitted for official quotation on the ASX in July 2017.

We were incorporated in the State of Delaware on September 23, 2021, as a wholly owned subsidiary of ABR for the purposes of effecting the Reorganization (as defined in the accompanying prospectus dated February 27, 2024).

Following completion of the Reorganization, ABR became a wholly owned subsidiary of 5E Advanced Materials, Inc.

Our principal executive offices are located at 9329 Mariposa Road, Suite 210, Hesperia, California 92344. Our telephone number is (442) 221-0225. Our website address is www.5eadvancedmaterials.com. The information contained on, or that can be accessed through, our website is not incorporated by reference into this prospectus supplement and should not be considered a part of this prospectus supplement.

Implications of Being an Emerging Growth Company

We are an “emerging growth company”, as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. An emerging growth company may take advantage of specified reduced reporting and other burdens that are otherwise applicable generally to public companies. Some of these exemptions include:

- we are required to report only two years of audited financial statements and only two years of related selected financial data and Management’s Discussion and Analysis of Financial Condition and Results of Operations disclosure;
- we are not required to engage an auditor to report on our internal control over financial reporting pursuant to Section 404(b) of the Sarbanes-Oxley Act of 2002, as amended, or the Sarbanes-Oxley Act;
- we are permitted to take advantage of extended transition periods for complying with new or revised accounting standards which allows an emerging growth company to delay the adoption of some accounting standards until those standards would otherwise apply to private companies;
- we are not required to submit certain executive compensation matters to stockholder advisory votes, such as “say-on-pay,” “say-on-frequency,” and “say-on-golden parachutes;” and
- we are not required to comply with certain disclosure requirements related to executive compensation, such as the requirement to disclose the correlation between executive compensation and performance and the requirement to present a comparison of our Chief Executive Officer’s compensation to our median employee compensation.

We will remain an emerging growth company until the earlier of (1) June 30, 2027, (2) the last day of the fiscal year in which we have total annual gross revenue of at least \$1.235 billion, (3) the last day of the fiscal year in which the market value of our common stock that is held by non-affiliates exceeds \$700 million as of the prior December 31st, and (4) the date on which we have issued more than \$1.0 billion in non-convertible debt during the prior three-year period. We have chosen to take advantage of some but not all of these available exemptions. We have elected to adopt the reduced requirements with respect to our financial statements and the related selected financial data and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” disclosure. As a result, the information that we provide to stockholders may be different than the information you may receive from other public companies in which you hold equity.

We are also a “smaller reporting company,” meaning that the market value of our shares held by non-affiliates plus the proposed aggregate amount of gross proceeds to us as a result of this offering is less than \$700 million and our annual revenue was less than \$100 million during the most recently completed fiscal year. We may continue to be a smaller reporting company after this offering if either (i) the market value of our shares held by non-affiliates is less than \$250 million or (ii) our annual revenue was less than \$100 million during the most recently completed fiscal year and the market value of our shares held by non-affiliates is less than \$700 million. If we are a smaller reporting company at the time we cease to be an emerging growth company, we may continue to rely on exemptions from certain disclosure requirements that are available to smaller reporting companies. Specifically, as a smaller reporting company, we may choose to present only the two most recent fiscal years of audited financial statements in our Annual Report on Form 10-K and, similar to emerging growth companies, smaller reporting companies have reduced disclosure obligations regarding executive compensation.

THE OFFERING

Common stock offered by us	2,374,481 shares of our common stock.
Common stock to be outstanding after this offering	22,441,260 shares of our common stock.
Use of proceeds	We currently intend to use the net proceeds from this offering for the operation of our SSF, wellfield development and analysis, advanced planning for FEL-3 engineering, general corporate purposes, including, without limitation, working capital, advances to or investments in our subsidiaries and general and administrative matters. See “Use of Proceeds.”
Indications of Interest	Our largest stockholders, BEP Special Situations IV LLC (“Bluescape”) and Ascend Global Investment Fund SPC, for and on behalf of Strategic SP (“Ascend”), have, severally and not jointly, each indicated an interest in purchasing (directly or through related entities) approximately \$350,000 in shares of common stock in this offering at the public offering price. Any shares of common stock to be purchased by Bluescape and Ascend in this offering will not be subject to a lock-up agreement with the underwriter. Because indications of interest are not a binding agreement or commitment to purchase, either Bluescape and Ascend may determine to purchase more, less or no shares in this offering or the underwriter may determine to sell more, less or no shares to Bluescape and Ascend.
Risk factors	Investing in our common stock involves a high degree of risk. See the “Risk Factors” section of this prospectus supplement and in the documents incorporated by reference in this prospectus supplement.
Lock-up agreements	We, and our officers and directors have agreed with the underwriter, subject to certain exceptions, for a period of 90 days following the closing of this offering, not to sell, transfer or otherwise dispose of, directly or indirectly, any shares of our capital stock or any securities convertible into or exercisable or exchangeable for shares of capital stock for such applicable period. See “Underwriting.”
Market for common stock	Our common stock is listed on Nasdaq under the symbol “FEAM”. Our CDIs are listed on the ASX under the symbol “5EA” with ten CDIs representing an interest in one share of our common stock.

The number of shares of common stock to be outstanding after this offering is based on 20,066,779 shares of our common stock outstanding as of August 20, 2025 and excludes:

- 647 thousand options outstanding as of August 20, 2025, with a weighted-average exercise price of \$18.31 per share;
- 33 thousand restricted share and performance share awards (“Awards”) outstanding as of August 20, 2025; and
- 6,096,465 shares of common stock issuable upon exercise of warrants outstanding as of August 20, 2025, at a weighted average exercise price of \$4.6770 per share.

Except as otherwise indicated, all information in this prospectus supplement assumes:

- no exercise of outstanding options or settlement of outstanding Awards mentioned above; and
- no exercise of the outstanding warrants mentioned above.

RISK FACTORS

You should consider carefully the risks described below and discussed under the section captioned “Risk Factors” contained in our Annual Report on Form 10-K for the year ended June 30, 2024, and as updated by our subsequent filings under the Securities Exchange Act of 1934, as amended, or the Exchange Act, including our Quarterly Reports on Form 10-Q for the periods ended September 30, 2024, December 31, 2024 and March 31, 2025, which are incorporated by reference in this prospectus supplement and the accompanying prospectus in their entirety, together with other information in this prospectus supplement, the accompanying prospectus and the information and documents incorporated by reference in this prospectus supplement and the accompanying prospectus, and any free writing prospectus that we have authorized for use in connection with this offering before you make a decision to invest in our common stock. If any of the following events actually occur, our business, operating results, prospects or financial condition could be materially and adversely affected. This could cause the trading price of our common stock to decline and you may lose all or part of your investment. The risks described below are not the only ones that we face. Additional risks not presently known to us or that we currently deem immaterial may also affect our business operations.

There is substantial doubt regarding our ability to continue as a going concern. Following this offering, we will still need to raise substantial additional funding, which may not be available on acceptable terms, if at all, to be able to continue as a going concern and advance our Project.

There is substantial doubt regarding our ability to continue as a going concern. Our existence in our current form is dependent upon our ability to obtain additional capital. Our cash and cash equivalents following this offering will not be sufficient to fund our long-term operations. Raising funds in the current economic environment is challenging and financing may not be available in sufficient amounts or on acceptable terms, if at all. The issuance of additional securities, whether equity or debt, or the possibility of such issuance, may cause the market price of our common stock to decline. The sale of additional equity or debt securities may dilute the ownership of existing stockholders.

Following this offering, we will need to obtain additional financing to continue as a going concern and to continue our ongoing development and proposed operations.

Following this offering, we will still require significant additional funds in the future through equity or debt financings, government funding or grants, private capital, royalty agreements or customer prepayments, or other strategic alliances with third parties, either alone or in combination to fund our business plan and to complete our mining exploration initiative. Our business plan, which includes the development of the Project, has required and will continue to require substantial capital expenditures. We will require financing to fund our engineering phases, development, construction, and initial commercial production activities and are required to raise additional capital in respect of continuing our proposed mining exploration program, pre-production activities, including the Small-Scale Facility, legal, operational set-up, general and administrative, marketing, employee salaries and other related expenses. For example, in September 2024, we received and have previously announced a non-binding letter of intent from the Export-Import Bank of the United States (“EXIM”) for a loan-backed guarantee on project debt financing of up to \$285 million for our proposed commercial scale facility. We have had continued engagement with representatives from EXIM on the loan package, but we cannot make any assurances that the loan package will be finalized on a timely basis, on the currently proposed terms, or at all.

If we are unable to raise adequate funds, we may have to delay, reduce the scope of or eliminate some or all of our business plan expenditures, and the failure to procure such required financing could have a material and adverse effect on our business, liquidity, financial condition and results of operations as well as our ability to continue as a going concern. If we are unable to continue as a going concern, we might have to liquidate our assets and the values we receive for our assets in liquidation or dissolution could be significantly lower than the values reflected in our financial statements. The inclusion of the going concern explanatory paragraph by our auditors, our lack of cash resources and our potential inability to continue as a going concern may materially adversely affect our business, share price, and our ability to raise new capital or to enter into critical contractual relations with third parties due to concerns about our ability to meet our contractual obligations.

Obtaining additional funding will be subject to various additional factors, including investor acceptance of our business plan, the status of our development program and ongoing results from our exploration and development efforts. If we are not able to secure adequate additional funding when needed, we will need to re-evaluate our operating plan and may be forced to make significant reductions in spending, extend payment terms with suppliers, liquidate assets where possible, limit, suspend or curtail planned development programs and cease operations entirely. Having insufficient funds may also require us to relinquish rights to assets and technology that we would otherwise prefer to develop ourselves, or on less favorable terms than we would otherwise choose. The foregoing actions and circumstances could materially adversely impact our business, liquidity, results of operations and future prospects.

Any such required financing may not be available in amounts or on terms acceptable to us or at all, and the failure to procure such required financing could have a material and adverse effect on our business, financial condition and results of operations, or threaten our ability to continue as a going concern. In addition, if we are unsuccessful in raising the required funds, we may need to modify our operational plans to continue as a going concern, and we may have to delay, reduce the scope of or eliminate some or all of our planned development activities or proposed exploration programs at the Project and elsewhere. In the event additional capital resources are unavailable, we may also be forced to sell some or all of our properties in an untimely fashion or on less than favorable terms. Any of these factors could harm our operating results.

Until successful commercial production is achieved from the Project, allowing for the generation of sufficient revenue to fund our continuing operations, we will continue to incur operating and investing net cash outflows associated with, among other things, developing the Project, maintaining our properties and undertaking ongoing exploration and optimization activities. As a result, we rely on access to capital markets as a source of funding for our capital and operating requirements. We require additional capital to fund our ongoing operations, define mineralization and bring the Project into production, which will require funds for construction and working capital. We cannot assure you that such additional funding will be available to us on satisfactory terms, or at all, or that we will be successful in commencing and maintaining commercial borates or lithium extraction, production of boron advanced materials, or that our sales projections for these and other products will be realized.

Depending on the type and the terms of any financing we pursue, stockholders' rights and the value of their investment in our common stock could be reduced. Any additional equity financing will dilute stockholdings, and new or additional debt financing, if available, may involve restrictions on financing and operating activities. In addition, if we issue secured debt securities, the holders of the debt would have a claim to our assets that would be prior to the rights of shareholders until the debt is paid. Interest on such debt securities would increase costs and negatively impact operating results. If the issuance of new securities results in diminished rights to holders of our common stock and, the market price of our common stock could be negatively impacted. Any sale of securities will also need to comply with the applicable rules of the stock exchanges on which our securities are listed or quoted for trading. Further, strategic collaboration or royalty agreements may provide us with non-dilutive or minimally dilutive financing but adversely impact our future results of operations or capital resources. Following this offering, there is no guarantee that we will be able to secure any additional funding or be able to secure funding which will provide us with sufficient funds to meet our objectives, which may adversely affect our business and financial position.

We have broad discretion as to the use of proceeds from this offering and may not use the proceeds effectively.

We have not designated any portion of the net proceeds from this offering to be used for any particular purpose. Our management will retain broad discretion as to the allocation of the proceeds and may spend these proceeds in ways in which you may not agree. The failure of our management to apply these funds effectively could result in unfavorable returns and uncertainty about our prospects, each of which could cause the price of our common stock to decline.

You may experience future dilution as a result of future equity offerings.

In order to raise additional capital, we may in the future offer additional shares of our common stock or other securities convertible into or exchangeable for our common stock at prices that may not be the same as the price per share in this offering. We may sell shares of our common stock or other securities in any other offering at a price per share that is less than the price per share paid by any investors in this offering, and investors purchasing shares of common stock or other securities in the future could have rights superior to existing stockholders. The price per share

at which we sell additional shares of our common stock, or securities convertible or exchangeable into common stock, in future transactions may be higher or lower than the price per share paid by any investors in this offering.

Following this offering, our largest stockholders will continue to control a significant percentage of our voting power and be able to exert significant control over the direction of our business.

Our largest stockholders, Bluescape, Meridian Investments Corporation (“Meridian”) and Ascend, hold a majority of our outstanding shares of common stock prior to this offering and will continue to hold a majority of our outstanding shares after this offering. If Meridian, Ascend and Bluescape were to choose to act together, they would be able to control all matters submitted to our stockholders for approval, as well as our management and affairs. For example, these parties, if they choose to act together, could control the election of directors and approval of any merger, consolidation or sale of all or substantially all of our assets. This concentration of ownership control may delay, defer or prevent a change in control, entrench our management or the board of directors, or impede a merger, consolidation, takeover or other business combination involving us that other stockholders may desire. These parties may have interests that are different than those of other stockholders. Meridian, Ascend and Bluescape also hold warrants to purchase up to an aggregate of 5,632,692 shares of common stock which, if exercised prior to their expiration date in March 2026, would increase their voting power and ability to exert control over our business.

Bluescape and Ascend have, severally and not jointly, each indicated an interest in purchasing (directly or through related entities) approximately \$350,000 in shares of common stock in this offering at the public offering price. Any shares of common stock to be purchased by Bluescape and Ascend in this offering will not be subject to a lock-up agreement with the underwriter. Because indications of interest are not a binding agreement or commitment to purchase, either Bluescape and Ascend may determine to purchase more, less or no shares in this offering or the underwriter may determine to sell more, less or no shares to Bluescape and Ascend.

A substantial number of shares of common stock may be sold in the market following this offering, which may depress the market price for our common stock.

Sales of a substantial number of shares of our common stock in the public market following this offering could cause the market price of our common stock to decline. Shares of our common stock held by Meridian, Ascend and Bluescape are registered for resale on effective registration statements, and Meridian, Ascend and Bluescape have contractual rights requiring us, subject to certain exceptions and limitations, to facilitate underwritten offerings for their holdings.

In connection with this offering, we and our directors and executive officers have agreed that for a period of 90 days from the closing date of this offering, subject to certain exceptions, we or they will not sell, dispose of or hedge any shares of our common stock or securities convertible into or exchangeable or exercisable for any shares of our common stock without the prior written consent of the underwriter. See the section titled “Underwriting” for a more complete description of the lock-up agreements with the underwriter. Sales of a substantial number of such shares upon expiration or release of these lock-up agreements, or the perception that such sales or sales by Meridian, Ascend or Bluescape may occur, could cause our market price to fall or make it more difficult for you to sell your common stock at a time and price that you deem appropriate.

SELECTED FINANCIAL DATA

On February 14, 2025, we effected a 1-for-23 reverse stock split of our common stock. The par value per share of common stock remained unchanged at \$0.01 per share, and the total number of authorized shares of our common stock was unchanged. Our historical financial statements incorporated by reference into this prospectus supplement that preceded the reverse stock split are presented without giving effect to the reverse stock split. Except where the context otherwise requires, share numbers in this prospectus supplement reflect the 1-for-23 reverse stock split of our common stock.

The following selected financial data has been derived from our audited consolidated financial statements included in our Annual Report on Form 10-K for the year ended June 30, 2024, as adjusted to reflect the reverse stock split. Our unaudited financial statements included in our Quarterly Report on Form 10-Q for the nine months ended March 31, 2025 and filed on May 15, 2025 gave effect to the reverse stock split. Our historical results are not indicative of the results that may be expected in the future.

In addition, the historical financial information presented below for the years ended June 30, 2024 and 2023 does not present any pro forma impact of the transactions contemplated by our Restructuring Support Agreement, dated January 14, 2025, which were consummated in March 2025.

As Reported, Prior to Effect of 1-for-23 Reverse Stock Split (in thousands, except per share amounts):

	Years Ended June 30,	
	2024	2023
Net loss	\$ (62,013)	\$ (30,624)
Net loss per common share —basic and diluted	\$ (1.18)	\$ (0.70)
Weighted average common shares outstanding — basic and diluted	52,523	43,842
Shares of common stock outstanding at period end	63,318	44,187

As Adjusted for 1-for-23 Reverse Stock Split (in thousands, except per share amounts):

	Years Ended June 30,	
	2024	2023
Net loss	\$ (62,013)	\$ (30,624)
Net loss per common share —basic and diluted	\$ (27.15)	\$ (16.07)
Weighted average common shares outstanding — basic and diluted	2,284	1,906
Shares of common stock outstanding at period end	2,753	1,921

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement, the accompanying prospectus, and the documents we have filed with the SEC that are incorporated by reference in this prospectus supplement and the accompanying prospectus contain forward-looking statements regarding future events and our future results that are based on our current expectations, estimates, forecasts and projections as well as the current beliefs and assumptions of our management, including about our business, our financial condition, our results of operations, our operating requirements and utilization of our capital resources, and the industry and environment in which we operate. Statements that include words such as “believe,” “may,” “will,” “estimate,” “continue,” “anticipate,” “would,” “could,” “should,” “intend” and “expect,” variations of these words, and similar expressions, are intended to identify forward-looking statements. These forward-looking statements speak only as of the date of this prospectus supplement and the accompanying prospectus and are subject to risks, uncertainties and assumptions that are difficult to predict. Therefore, actual results may differ materially and adversely from those expressed in any forward-looking statements. Factors that might cause or contribute to such differences, and other factors that we believe affect our performance, include those discussed in the sections titled “Risk Factors” and “Management’s Discussion and Analysis of Financial Conditions and Results of Operations” in our Annual Report on Form 10-K for the year ended June 30, 2024 and in our Quarterly Reports on Form 10-Q for the periods ended September 30, 2024, December 31, 2024 and March 31, 2025, incorporated by reference herein, and in other reports we file with the SEC. While forward-looking statements are based on the reasonable expectations of our management at the time that they are made, you should not rely on them. We undertake no obligation to revise or update publicly any forward-looking statements for any reason, whether as a result of new information, future events or otherwise, except as may be required by law.

USE OF PROCEEDS

We estimate that the net proceeds from this offering, after deducting estimated underwriting discounts and commissions and offering expenses, payable by us, will be approximately \$7.3 million.

We currently intend to use the net proceeds from this offering, together with our existing cash, cash equivalents and marketable securities, primarily for the operation of our SSF, wellfield development and analysis, advanced planning for FEL-3 engineering, general corporate purposes, including, without limitation, working capital, advances to or investments in our subsidiaries and general and administrative matters.

The amounts and timing of our actual expenditures will depend on numerous factors, including the factors described under “Risk Factors” in this prospectus supplement, the accompanying prospectus and in the documents incorporated by reference herein and therein, as well as the amount of cash used in our operations. We may find it necessary or advisable to use the net proceeds for other purposes, and our management will have broad discretion in the application of the net proceeds to us from this offering, including for any of the purposes described above. Pending the use of the net proceeds from this offering, we intend to invest the net proceeds in interest-bearing, investment-grade securities, certificates of deposit or government securities.

UNDERWRITING

We have entered into an underwriting agreement dated August 21, 2025 with Konik Capital Partners, LLC, a division of T.R. Winston & Co., as the representative of the underwriters in this offering. Subject to the terms and conditions of the underwriting agreement, the underwriters have agreed to purchase the number of our shares of common stock set forth opposite its name below.

Underwriters	Number of Shares of Common Stock
Konik Capital Partners, LLC, <i>a division of T.R. Winston & Co.</i>	2,374,481
Total	2,374,481

A copy of the underwriting agreement will be filed as an exhibit to a Current Report on Form 8-K and incorporated by reference into the registration statement of which this prospectus supplement is part.

We have been advised by the underwriters that they propose to offer the shares of common stock directly to the public at the public offering price set forth on the cover page of this prospectus supplement. Any shares of common stock sold by the underwriters to securities dealers will be sold at the public offering price.

The underwriting agreement provides that the underwriters' obligation to purchase the shares of common stock we are offering is subject to conditions contained in the underwriting agreement.

No action has been taken by us or the underwriters that would permit a public offering of the shares of common stock in any jurisdiction outside the United States where action for that purpose is required. None of our shares of common stock included in this offering may be offered or sold, directly or indirectly, nor may this prospectus supplement or any other offering material or advertisements in connection with the offer and sales of any of the shares of common stock offered hereby be distributed or published in any jurisdiction except under circumstances that will result in compliance with the applicable rules and regulations of that jurisdiction. Persons who receive this prospectus supplement are advised to inform themselves about and to observe any restrictions relating to this offering of shares of common stock and the distribution of this prospectus supplement. This prospectus supplement is neither an offer to sell nor a solicitation of any offer to buy the shares of common stock in any jurisdiction where that would not be permitted or legal.

The underwriters have advised us that they do not intend to confirm sales to any account over which they exercise discretionary authority.

Bluescape and Ascend have, severally and not jointly, each indicated an interest in purchasing (directly or through related entities) approximately \$350,000 in shares of common stock in this offering at the public offering price. Any shares of common stock to be purchased by Bluescape and Ascend in this offering will not be subject to a lock-up agreement with the underwriter. Because indications of interest are not a binding agreement or commitment to purchase, either Bluescape and Ascend may determine to purchase more, less or no shares in this offering or the underwriter may determine to sell more, less or no shares to Bluescape and Ascend.

Underwriting Discount and Expenses

The following table summarizes the underwriting discount and commission to be paid to the underwriters by us.

	Per Share ⁽¹⁾	Total
Public offering price	\$ 3.50	\$ 8,310,683.50
Underwriting discount and commission ⁽²⁾	\$ 0.245	\$ 581,747.84
Proceeds to us, before expenses	\$ 3.255	\$ 7,728,935.66

(1) The public offering price and underwriting discount corresponds to a public offering price per share of common stock of \$3.50 (\$3.255 net of the underwriting discount).

(2) We have also agreed to reimburse the representative at closing for legal expenses incurred by it in connection with the offering up to \$120,000.

We estimate that our total offering expenses for this offering, net of the underwriting discount and commission, will be approximately \$0.4 million.

Listing

Our shares of common stock are listed on Nasdaq under the symbol “FEAM.” Our CDIs are listed on the Australian Securities Exchange under the symbol “5EA” with ten CDIs representing an interest in one share of our common stock.

The last reported sales price of our shares of common stock on August 21, 2025, was \$4.57 per share. The actual public offering price was determined between us, the underwriter and the investors in the offering, and may be at a discount to the current market price of our common stock.

Lock-Up Agreements

Our directors, officers and certain stockholders have entered into lock-up agreements in connection with this offering. Under these agreements, these individuals have agreed, subject to specified exceptions, not to sell or transfer any shares of common stock or securities convertible into, or exchangeable or exercisable for, our common stock during a period ending ninety (90) days following the closing of this offering. Specifically, these individuals have agreed, in part, not to sell, hypothecate, pledge or otherwise dispose of (or enter into any transaction which is designed to, or might reasonably be expected to, result in the disposition (whether by actual disposition or effective economic disposition due to cash settlement or otherwise), or establish or increase a put equivalent position or liquidate or decrease a call equivalent position within the meaning of Section 16 of the Exchange Act, with respect to, any shares of our common stock or securities convertible, exchangeable or exercisable into shares of our common stock beneficially owned by them.

Notwithstanding these limitations, these shares of common stock may be transferred under limited circumstances, including, without limitation, by gift, will or intestate succession.

In addition, we have agreed that we will not conduct any issuances of our shares of common stock for a period of ninety (90) days following closing of this offering.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Computershare Trust Company N.A.

Determination of Offering Price

The public offering price of the shares of common stock offered by this prospectus supplement was determined by negotiation between us and the underwriters. Among the factors that were considered in determining the public offering price were as follows:

- our history and our prospects;

- the industry in which we operate;
- our past and present operating results;
- the previous experience of our executive officers; and
- the general condition of the securities markets at the time of this offering.

The public offering price stated on the cover page of this prospectus supplement should not be considered an indication of the actual value of the shares of common stock sold in this offering. That price is subject to change as a result of market conditions and other factors and we cannot assure you that the shares of common stock sold in this offering can be resold at or above the public offering price.

Stabilization, Short Positions and Penalty Bids

The underwriters may engage in syndicate covering transactions stabilizing transactions and penalty bids or purchases for the purpose of pegging, fixing or maintaining the price of our common stock:

- Syndicate covering transactions involve purchases of securities in the open market after the distribution has been completed in order to cover syndicate short positions. Such a naked short position would be closed out by buying securities in the open market. A naked short position is more likely to be created if the underwriters are concerned that there could be downward pressure on the price of the securities in the open market after pricing that could adversely affect investors who purchase in the offering.
- Stabilizing transactions permit bids to purchase the underlying security so long as the stabilizing bids do not exceed a specific maximum.
- Penalty bids permit the underwriters to reclaim a selling concession from a syndicate member when the securities originally sold by the syndicate member are purchased in a stabilizing or syndicate covering transaction to cover syndicate short positions.

These syndicate covering transactions, stabilizing transactions, and penalty bids may have the effect of raising or maintaining the market prices of our securities or preventing or retarding a decline in the market prices of our securities. As a result the price of our common stock may be higher than the price that might otherwise exist in the open market. Neither we nor the underwriters make any representation or prediction as to the effect that the transactions described above may have on the price of our common stock. These transactions may be effected on Nasdaq, in the over-the-counter market or on any other trading market and, if commenced, may be discontinued at any time.

In connection with this offering, the underwriters also may engage in passive market making transactions in our common stock in accordance with Regulation M during a period before the commencement of offers or sales of shares of our common stock in this offering and extending through the completion of the distribution. In general, a passive market maker must display its bid at a price not in excess of the highest independent bid for that security. However, if all independent bids are lowered below the passive market maker's bid that bid must then be lowered when specific purchase limits are exceeded. Passive market making may stabilize the market price of the securities at a level above that which might otherwise prevail in the open market and, if commenced, may be discontinued at any time.

Neither we, nor the underwriters make any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the prices of our securities. In addition, neither we nor the underwriters make any representation that the underwriters will engage in these transactions or that any transactions, once commenced will not be discontinued without notice.

Other Relationships

In the ordinary course of their business activities, the underwriters and their affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers. Such investments and securities activities may involve security and/or instruments of ours or our affiliates. The underwriters and their

affiliates may also make investment recommendations and/or publish or express independent research views in respect of such securities or financial instruments and may hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

Indemnification

We have agreed to indemnify the underwriters against certain liabilities, including certain liabilities arising under the Securities Act, or to contribute to payments that the underwriters may be required to make for these liabilities.

Electronic Distribution

This prospectus supplement and the accompanying prospectus may be made available in electronic format on websites or through other online services maintained by the underwriters or by their affiliates. In those cases, prospective investors may view offering terms online and prospective investors may be allowed to place orders online. Other than this prospectus supplement and the accompanying prospectus in electronic format, the information on the underwriters' websites or our website and any information contained in any other websites maintained by the underwriters or by us is not part of this prospectus supplement, the accompanying prospectus or the registration statement of which this prospectus supplement and the accompanying prospectus forms a part, has not been approved and/or endorsed by us or the underwriters in their capacity as underwriters, and should not be relied upon by investors.

Notice to Prospective Investors in Singapore

Singapore SFA Product Classification — In connection with Section 309B of the SFA and the CMP Regulations 2018, unless otherwise specified before an offer of shares, we have determined, and hereby notify all relevant persons (as defined in Section 309A(1) of the SFA), that the shares are “prescribed capital markets products” (as defined in the CMP Regulations 2018) and Excluded Investment Products (as defined in MAS Notice SFA 04-N12: Notice on the Sale of Investment Products and MAS Notice FAA-N16: Notice on Recommendations on Investment Products).

This prospectus supplement and accompanying prospectus have not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus supplement and accompanying prospectus and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the shares may not be circulated or distributed, nor may the shares be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than:

- a) to an institutional investor (as defined in Section 4A of the Securities and Futures Act (Chapter 289) of Singapore, as modified or amended from time to time, or the SFA) pursuant to Section 274 of the SFA;
- b) to a relevant person (as defined in Section 275(2) of the SFA) pursuant to Section 275(1) of the SFA, or any person pursuant to Section 275(1A) of the SFA, and in accordance with the conditions specified in Section 275 of the SFA; or
- c) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the shares are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

- a) a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or
- b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary of the trust is an individual who is an accredited investor, securities or securities-based derivatives contracts (each term as defined in Section 2(1) of the SFA) of that corporation or the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferred within six

months after that corporation or that trust has acquired the shares pursuant to an offer made under Section 275 of the SFA except:

- i. to an institutional investor or to a relevant person, or to any person arising from an offer referred to in Section 275(1A) or Section 276(4)(i)(B) of the SFA;
- ii. where no consideration is or will be given for the transfer;
- iii. where the transfer is by operation of law;
- iv. as specified in Section 276(7) of the SFA; or
- v. as specified in Regulation 37A of the Securities and Futures (Offers of Investments) (Securities and Securities-based Derivatives Contracts) Regulations 2018.

DESCRIPTION OF CAPITAL STOCK

Description of Capital Stock

The following description of our capital stock is a summary. The complete text of our Amended and Restated Certificate of Incorporation, as amended (the “Amended and Restated Certificate of Incorporation”), and Second Amended and Restated Bylaws (the “Bylaws”) are each included as exhibits to the registration statement of which this prospectus supplement forms a part and are incorporated by reference herein. Our authorized capital stock is 380,000,000 shares divided into 360,000,000 shares of common stock, par value of \$0.01 per share, and 20,000,000 shares of preferred stock, par value of \$0.01 per share.

Common Stock

Except as otherwise required by law, as provided in our Amended and Restated Certificate of Incorporation, as amended or as provided in the resolution or resolutions, if any, adopted by our Board of Directors (our “Board”) with respect to any series of the preferred stock, the holders of our common stock will exclusively possess all voting power. Each holder of shares of common stock will be entitled to one vote for each share held by such holder. Our Amended and Restated Certificate of Incorporation and Bylaws provide that a majority in voting power of the shares entitled to vote, present in person or represented by proxy, will constitute a quorum at all meetings of stockholders for the transaction of business. When a quorum is present, the affirmative vote of a majority of the votes cast is required to take action, unless otherwise specified by law, our Bylaws or our Amended and Restated Certificate of Incorporation, and except for any action to amend, alter or repeal our Bylaws, which shall require the affirmative vote of at least 66 2/3% of the voting power of the shares of then-outstanding voting stock entitled to vote generally in the election of directors, voting together as a single class. Subject to the rights of holders of any series of outstanding preferred stock, holders of shares of our common stock will have equal rights of participation in the dividends and other distributions in cash, stock or property of the Company when, as and if declared thereon by our Board from time to time out of assets or funds legally available therefor and will have equal rights to receive the assets and funds of the Company available for distribution to stockholders in the event of any liquidation, dissolution or winding up of the affairs of the Company, whether voluntary or involuntary.

CDIs

CDIs confer the beneficial ownership of our common stock on each CDI holder, with the legal title to such securities held by an Australian depositary entity, CHESS Depositary Nominees Pty Ltd. (the “Depositary Nominee”). The Depositary Nominee will be the registered holder of those shares of our common stock held for the benefit of holders of CDIs. The Depositary Nominee does not charge a fee for providing this service. Ten CDIs will represent an interest in one share of our common stock. Holders of CDIs will not hold the legal title to the underlying shares of our common stock to which the CDIs relate, as the legal title will be held by the Depositary Nominee. Each holder of CDIs will, however, have a beneficial interest in the underlying shares in our common stock. Each holder of CDIs that elects to vote at a stockholders meeting will be entitled to one vote for every 10 CDIs held by such holder. In order to vote at a stockholder meeting, a CDI holder may:

- instruct the Depositary Nominee, as legal owner of the shares of common stock, to vote the common stock represented by their CDIs to vote the shares of our common stock represented by their CDIs in a particular manner. A voting instruction form will be sent to holders of CDIs and must be completed and returned to the share registry for the CDIs prior to a record date fixed for the relevant meeting, or the Voting Instruction Receipt Time, which is notified to CDI holders in the voting instructions included in a notice of meeting;
- inform us that they wish to appoint themselves or a third party as the Depositary Nominee’s proxy with respect to our shares of common stock underlying the holder’s CDIs for the purposes of attending and voting at the meeting. The instruction form must be completed and returned to the share registry for the CDI prior to the CDI Voting Instruction Receipt Time; or

- convert their CDIs into shares of our common stock and vote those shares at the meeting. The conversion must be undertaken prior to a record date fixed by the Board for determining the entitlement of members to attend and vote at the meeting. If the holder later wishes to sell their investment on the ASX, it would first be necessary to convert those shares of common stock back to CDIs. Further details on the conversion process are set out below.

Voting instruction forms and details of these alternatives are included in each notice of meeting sent to CDI holders by the Company.

Conversion of CDIs to shares of common stock

CDI holders may at any time convert their CDIs to a holding of shares of common stock by instructing the share registry for the CDIs, either:

- Directly in the case of CDIs held on the issuer sponsored sub-register operated by the Company (holders of CDIs will be provided with a CDI issuance request form to return to the share registry for the CDIs); or
- Through their “sponsoring participant” (usually their broker) in the case of CDIs which are held on the CHESSE sub-register (in this case, the sponsoring broker will arrange for completion of the relevant form and its return to the share registry for the CDIs).

In both cases, once the share registry for the CDIs has been notified, it will arrange the transfer of the relevant number of shares of common stock from the Depositary Nominee into the name of the CDI holder in book entry form or, if requested, deliver the relevant shares of common stock to their DTC participant in the United States Central Securities Depository. The share registry for the CDIs will not charge a fee for the conversion (although a fee may be payable by market participants). Holding shares of common stock will, however, prevent a person from selling their shares of common stock on the ASX, as only CDIs can be traded on that market.

Conversion of shares of common stock to CDIs

Shares of common stock may be converted into CDIs and traded on the ASX. Holders of shares of common stock may at any time convert those shares to CDIs by contacting the Company’s transfer agent. The underlying shares of common stock will be transferred to the Depositary Nominee, and CDIs (and a holding statement for the corresponding CDIs) will be issued to the relevant security holder. No trading in the CDIs may take place on the ASX until this conversion.

The Company’s transfer agent will not charge a fee to a holder of shares of common stock seeking to convert their shares of common stock to CDIs, although a fee may be payable by market participants.

In either case, it is expected that each of the above processes will be completed within 24 hours, provided that the Company’s transfer agent is in receipt of a duly completed and valid request form. No guarantee can, however, be given about the time required for this conversion to take place.

Dividends and Other Shareholder Entitlements

Holders of CDIs are entitled to receive all the direct economic benefits and other entitlements in relation to the underlying shares of common stock that are held by the Depositary Nominee, including dividends and other entitlements that attach to the underlying shares of common stock.

It is possible that marginal differences may exist between the resulting entitlement of a holder of CDIs and the entitlements that would have accrued if a holder of CDIs held their holding directly as shares of common stock. As the ratio of CDIs to common stock is not one-to-one, and any entitlement will be determined on the basis of shares of common stock rather than CDIs, a holder of CDIs may not always benefit to the same extent (e.g., from the rounding up of fractional entitlements). We will, however, be required by the ASX Settlement Rules to minimize any such

differences where legally permissible. If a cash dividend or any other cash distribution is declared in a currency other than Australian dollars, we currently intend to convert that dividend or other cash distribution to which a holder of CDIs is entitled to Australian dollars and distribute it to the relevant holder of CDIs in accordance with their entitlement.

Due to the need to convert dividends from United States dollars to Australian dollars in the above mentioned circumstances, holders of CDIs may potentially be advantaged or disadvantaged by exchange rate fluctuations, depending on whether the Australian dollar weakens or strengthens against the United States dollar during the period between the resolution to pay a dividend and conversion into Australian dollars.

Takeovers

If a takeover bid is made in respect of any of our common stock of which the Depositary Nominee is the registered holder, the Depositary Nominee is prohibited from accepting the offer made under the takeover bid except to the extent that acceptance is authorized by the CDI holders in respect of the shares of common stock represented by their holding of CDIs.

The Depositary Nominee must accept a takeover offer in respect of shares of common stock represented by a holding of CDIs if the relevant holder of CDIs instructs it to do so and must notify the entity making the takeover bid of the acceptance.

Preferred Stock

Our Board is authorized to provide, out of the unissued shares of preferred stock, for one or more series of preferred stock and, with respect to each such series, to fix the number of shares constituting such series and the designation of such series, the voting powers, if any, of the shares of such series, and the preferences and relative, participating, optional or other special rights, if any, and any qualifications, limitations or restrictions thereof, of the shares of such series, as are stated in the resolution or resolutions providing for the issuance of such series adopted by the Board. The authority of the Board with respect to each series of preferred stock includes determination of the following:

- the designation of the series;
- the number of shares of the series;
- the dividend rate or rates on the shares of that series, whether dividends will be cumulative and, if so, from which date or dates, and the relative rights of priority, if any, of payment of dividends on shares of that series;
- whether the series will have voting rights in addition to the voting rights provided by law and, if so, the terms of such voting rights;
- whether the series will have conversion privileges and, if so, the terms and conditions of such conversion, including provision for adjustment of the conversion rate in such events as the Board determines;
- whether or not the shares of that series will be redeemable, in whole or in part, at the option of the Company or the holder thereof and, if made subject to such redemption, the terms and conditions of such redemption, including the date or dates upon or after which they will be redeemable, and the amount per share payable in case of redemptions, which amount may vary under different conditions and at different redemption rates;
- the terms and amount of any sinking fund provided for the purchase or redemption of the shares of such series;
- the rights of the shares of that series in the event of voluntary or involuntary liquidation, dissolution or winding up of the Company, and the relative rights of priority, if any, of payment of shares of that series;
- the restrictions, if any, on the issue or reissue of any additional preferred stock; and
- any other relative rights, preferences and limitations of that series.

Investor Designation Rights

Pursuant to the terms of an investor and registration rights agreement to which we are a party, each of BEP Special Situations IV LLC and Ascend Global Investment Fund SPC for and on behalf of Strategic SP has the right to designate two individuals to our Board, and we are required to appoint or nominate such persons to our Board. Such party's respective designation right will continue for so long as each such party beneficially owns 25% of our common stock, and one director to serve on the Company's Board for so long as each such party beneficially owns 10% of our common stock, in each case including any shares of common stock previously issued or issuable to such party in connection with its exercise of the warrants issued to such party on March 13, 2025, and otherwise without regard to any of the limitations on exercise of such warrants. The size of our Board was also reduced to four directors pursuant to the terms of this agreement.

LEGAL MATTERS

The validity of the issuance of the securities offered hereby will be passed upon by our counsel, Latham & Watkins LLP. The underwriter is being represented in connection with this offering by Ellenoff Grossman & Schole LLP.

EXPERTS

The financial statements incorporated in this Prospectus by reference to the Annual Report on Form 10-K for the year ended June 30, 2024 have been so incorporated in reliance on the report (which contains an explanatory paragraph relating to the Company's ability to continue as a going concern as described in Note 1 to the financial statements) of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION; INCORPORATION BY REFERENCE

We file reports, proxy statements and other information with the SEC. The SEC maintains a web site that contains reports, proxy and information statements and other information about issuers, such as us, who file electronically with the SEC. The address of that website is <http://www.sec.gov>.

Our web site address is www.5eadvancedmaterials.com. These website addresses, and the website addresses included in any documents incorporated by reference herein, are not intended to function as hyperlinks, and the information contained on such websites and on the SEC's website is not incorporated by reference in this prospectus supplement and the accompanying prospectus, and you should not consider it a part of this prospectus supplement and the accompanying prospectus.

This prospectus supplement and the accompanying prospectus incorporate important business and financial information about us that is not included in or delivered with this prospectus supplement and the accompanying prospectus. The information incorporated by reference is considered to be part of this prospectus supplement and the accompanying prospectus, except for any information superseded by information in this prospectus supplement and the accompanying prospectus. This prospectus supplement and the accompanying prospectus incorporate by reference the documents set forth below that have previously been filed with the SEC:

- Our Annual Report on Form 10-K for the year ended June 30, 2024, filed with the SEC on [September 9, 2024](#).
- Our Quarterly Reports on Form 10-Q for the quarters ended September 30, 2024, December 31, 2024 and March 31, 2025, filed with the SEC on [November 13, 2024](#), [February 13, 2025](#) and [May 15, 2025](#), respectively.
- Our Current Reports on Form 8-K (and any amendments thereto on Form 8-K/A) filed with the SEC on [August 26, 2024](#), [August 28, 2024](#), [September 16, 2024](#), [September 16, 2024](#), [November 1, 2024](#), [November 21, 2024](#), [December 4, 2024](#), [December 10, 2024](#), [January 14, 2025](#), [January 21, 2025](#), [January 24, 2025](#), [February 12, 2025](#), [February 18, 2025](#), [March 4, 2025](#), [March 5, 2025](#), [March 13, 2025](#), [August 7, 2025](#) and [August 19, 2025](#) (excluding any information furnished pursuant to Item 2.02 or Item 7.01 of any such Current Report on Form 8-K), respectively.
- The description of our common stock contained in the registration statement on Form 10-12B, filed with the SEC on [February 10, 2022](#), and any amendment or report filed with the SEC for the purpose of updating the description.

We are also incorporating by reference additional documents that we may file with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act (excluding any information furnished pursuant to Item 2.02 or Item 7.01 on any current report on Form 8-K and any corresponding information furnished under Item 9.01 or included as an exhibit) after the date of this prospectus supplement and prior to the completion of this offering contemplated hereby, but excluding any information furnished to, rather than filed with, the SEC.

You may request a free copy of any of the documents incorporated by reference in this prospectus supplement by writing or telephoning us at the following address:

5E Advanced Materials, Inc.
9329 Mariposa Road, Suite 210
Hesperia, CA 92344
(442) 221-0225

Exhibits to the filings will not be sent, however, unless those exhibits have specifically been incorporated by reference in those documents.

PROSPECTUS



\$50,000,000 Common Stock

5E Advanced Materials, Inc. (the “Company”) may offer and sell from time to time, in one or more offerings, shares of the Company’s common stock, par value \$0.01 per share (the “Common Stock”).

We may sell Common Stock in one or more offerings in amounts, at prices and on terms to be determined at the time of the applicable offering. The aggregate initial offering price of all Common Stock sold by us will not exceed \$50,000,000.

This prospectus describes some of the general terms that may apply to these offerings. We will provide specific terms of these offerings in one or more supplements to this prospectus. This prospectus may not be used to sell Common Stock unless accompanied by a prospectus supplement. A prospectus supplement may add, update or change information contained in this prospectus. You should read this prospectus and the accompanying prospectus supplement carefully before you invest.

Our Common Stock may be offered directly, through agents designated from time to time by us, or to or through underwriters or dealers. If any agents or underwriters are involved in the sale of any of our Common Stock, their names, and any applicable purchase price, fee, commission or discount arrangement between or among them, will be set forth in the applicable prospectus supplement or other offering materials.

You should read this prospectus and any prospectus supplement or amendment carefully before you invest in our Common Stock. Our Common Stock is listed on the Nasdaq Global Select Market (“Nasdaq”) under the symbol “FEAM.” On February 16, 2024, the last reported sale price of our Common Stock on Nasdaq was \$1.30 per share.

We are an “emerging growth company” under federal securities laws and are subject to reduced public company reporting requirements. Investing in our Common Stock involves a high degree of risk. See the section titled “[Risk Factors](#)” beginning on page 12.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

The date of this prospectus is February 27, 2024.

TABLE OF CONTENTS

	Page
<u>ABOUT THIS PROSPECTUS</u>	1
<u>TRADEMARKS AND TRADE NAMES</u>	2
<u>SELECTED DEFINITIONS</u>	2
<u>CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS</u>	3
<u>CAUTIONARY NOTE REGARDING RESERVES</u>	7
<u>CAUTIONARY NOTE REGARDING EXPLORATION STAGE COMPANIES</u>	9
<u>CAUTIONARY NOTE REGARDING EMERGING GROWTH COMPANY STATUS</u>	9
<u>CAUTIONARY NOTE REGARDING INDUSTRY AND MARKET DATA</u>	9
<u>5E ADVANCED MATERIALS, INC.</u>	10
<u>RISK FACTORS</u>	12
<u>USE OF PROCEEDS</u>	13
<u>DESCRIPTION OF CAPITAL STOCK</u>	14
<u>PLAN OF DISTRIBUTION</u>	17
<u>LEGAL MATTERS</u>	20
<u>EXPERTS</u>	20
<u>WHERE YOU CAN FIND MORE INFORMATION</u>	20
<u>INCORPORATION BY REFERENCE</u>	21

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission (the “SEC”) using a “shelf” registration process. By using a shelf registration statement, we may sell shares of our Common Stock from time to time and in one or more offerings.

This prospectus provides you with a general description of the shares of Common Stock that we may offer. Each time we sell Common Stock, we will provide a prospectus supplement that will contain specific information about the terms of the offered shares and the offering, including a detailed description of the specific amount or amounts of Common Stock to be offered, the prices of the shares of Common Stock, the name of any agent, underwriter or dealer to or through which the shares of Common Stock may be sold and a description of any arrangement with such agent, underwriter or dealer, and information about any securities exchange or automated quotation system on which the shares will be listed.

A prospectus supplement may also add, update or change information included in this prospectus. Any statement contained in this prospectus will be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in such prospectus supplement modifies or supersedes such statement. Any statement so modified will be deemed to constitute a part of this prospectus only as so modified, and any statement so superseded will be deemed not to constitute a part of this prospectus. You should rely only on the information contained in this prospectus, any applicable prospectus supplement and any related free writing prospectus together with the additional information to which we refer you to in the sections of this prospectus entitled “Where You Can Find More Information” and “Incorporation by Reference.”

We have not authorized anyone to provide any information or to make any representations other than those contained in this prospectus, any accompanying prospectus supplement or any free writing prospectus we have prepared. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. This prospectus is an offer to sell only the Common Stock offered hereby and only under circumstances and in jurisdictions where it is lawful to do so. No dealer, salesperson or other person is authorized to give any information or to represent anything not contained in this prospectus, any applicable prospectus supplement or any related free writing prospectus. This prospectus is not an offer to sell Common Stock, and it is not soliciting an offer to buy Common Stock, in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus or any prospectus supplement is accurate only as of the date on the front of those documents, regardless of the time of delivery of this prospectus or any applicable prospectus supplement, or any sale of a security. Our business, financial condition, results of operations and prospects may have changed since those dates.

This prospectus contains or incorporates by reference summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to herein have been filed, will be filed or will be incorporated by reference as exhibits to the registration statement of which this prospectus is a part, and you may obtain copies of those documents as described below under “Where You Can Find More Information” and “Incorporation by Reference.”

For investors outside the United States: We have not taken any actions that would permit the possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than in the United States. Persons outside the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the offering and distribution of this prospectus outside the United States.

This prospectus does not contain all of the information included in the registration statement of which it forms a part. For further information, we refer you to the entire registration statement, including its exhibits. Statements contained in this prospectus about the provisions or contents of any contract, agreement or other document are not necessarily complete. For each of these contracts, agreements or documents filed as an exhibit to the registration statement, we refer you to the actual exhibit for a more complete description of the matters involved.

When used in this prospectus and any prospectus supplement, unless otherwise specified or the context otherwise requires, the terms the “Company,” “we,” “our,” and “us” refer to 5E Advanced Materials Inc. together with its consolidated subsidiaries unless the context suggests otherwise.

TRADEMARKS AND TRADE NAMES

This document contains references to trademarks and service marks belonging to other entities. Solely for convenience, trademarks and trade names referred to in this prospectus may appear without the ® or ™ symbols, but such references are not intended to indicate, in any way, that the applicable licensor will not assert, to the fullest extent under applicable law, its rights to these trademarks and trade names. We do not intend our use or display of other companies’ trade names, trademarks or service marks to imply a relationship with, or endorsement or sponsorship of us by, any other companies.

SELECTED DEFINITIONS

“ABR” refers to American Pacific Borates Limited, a company incorporated under the laws of Australia.

“ASX” refers to the Australian Securities Exchange.

“CDI” refers to a CHESS Depositary Interest.

“Common Stock” refers to the Company’s common stock, par value \$0.01 per share.

“Company” refers to 5E Advanced Materials, Inc., a Delaware corporation.

“Corporations Act” refers to the Australian Corporations Act, 2001 (Cth).

“Exchange Act” means the Securities Exchange Act of 1934, as amended.

“Nasdaq” refers to The Nasdaq Global Select Market.

“Reorganization” refers to the transactions pursuant to which, among other things, we (i) issued (a) to eligible shareholders of ABR either one share of our Common Stock for every ten ordinary shares of ABR or one CDI over our Common Stock for every one ordinary share of ABR, in each case, as held on the Scheme record date and (b) to ineligible shareholders proceeds from the sale of the CDIs to which they would otherwise be entitled by a broker appointed by ABR, who sold the CDIs in accordance with the terms of a sale facility agreement and remitted the proceeds to ineligible shareholders, (ii) cancelled each of the outstanding options to acquire ordinary shares of ABR and issued replacement options representing the right to acquire shares of our Common Stock on the basis of a one replacement option for every ten existing ABR options held, (iii) maintained an ASX listing for its CDIs, with each CDI representing 1/10th of a share of Common Stock, (iv) delisted ABR’s ordinary shares from the ASX, and (v) became the parent company to ABR.

“Scheme” refers to a statutory Scheme of Arrangement under Australian law under Part 5.1 of the Corporations Act.

“SEC” means the U.S. Securities and Exchange Commission. “Securities Act” means the Securities Act of 1933, as amended.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, any accompanying prospectus supplement and the documents incorporated by reference herein and therein may include statements that express our and our subsidiaries' opinions, expectations, beliefs, plans, objectives, assumptions or projections regarding future events or future results and therefore are, or may be deemed to be, "forward-looking statements." These forward-looking statements can generally be identified by the use of forward-looking terminology, including the terms "believes," "estimates," "anticipates," "expects," "seeks," "projects," "forecasts," "intends," "plans," "may," "will" or "should" or, in each case, their negative or other variations or comparable terminology. These forward-looking statements include all matters that are not historical facts. They may appear in a number of places throughout this prospectus, any accompanying prospectus supplement and the documents incorporated by reference herein and therein and these forward-looking statements reflect management's expectations regarding our future growth, results of operations, operational and financial performance and business prospects and opportunities. Such forward-looking statements are based on available current market material and management's expectations, beliefs and forecasts concerning future events impacting our business. Factors that may impact such forward-looking statements include, but are not limited to, statements concerning:

- The timing, completion and estimated production capacity of our proposed small-scale facility ("SSF") and proposed large-scale complex;
- The outputs from our proposed SSF and their impact on future estimates and potential studies regarding our proposed large-scale complex;
- Unanticipated costs or delays associated with our proposed SSF;
- Use of our injection-recovery wells for extraction once our proposed SSF and large-scale complex is complete;
- Our ability to successfully and economically extract boron and lithium from colemanite and lithium rich minerals;
- The quantities of resources we expect to be able to extract and our production capabilities;
- The timing of completing and the expected ability of our proposed SSF facility to serve as a foundation for future design, engineering and cost optimization for our proposed large-scale complex;
- Our ability to secure the requisite funding for the successful engineering, development, construction, completion and operation of our proposed facilities;
- The timing and viability of achieving initial commercial production;
- Our ability to commercialize our output and to enter into commercial agreements;
- The total addressable market for materials we intend on producing and selling, including its current size, growth trajectory and the underlying factors that may drive growth in the overall market size;
- The cost and availability of natural gas and electricity;
- Our ability to timely and successfully reach anticipated full commercial production capacity;
- Our ability to achieve and maintain profitability and to develop and maintain positive cash flow from our proposed operating activities;
- Our ability to enter into and deliver product under binding supply agreements;
- Our ability to acquire and maintain the necessary mining licenses, permits and access rights;
- Our ability to acquire and maintain the necessary mineral property interests and related water rights;
- The demand for borates and lithium and the market for their end-use applications; and
- Our ability to develop downstream advanced materials capabilities.

These forward-looking statements are subject to a number of risks and uncertainties, including:

- Our ability to implement and recognize benefits from certain reduced spending measures;
- The substantial doubt regarding our ability to continue as a going concern and our need to raise substantial additional funding, which may not be available on acceptable terms, if at all, to be able to continue as a going concern and advance the Fort Cady Project (the “Project”);
- Our limited operating history in the borates and lithium industries and no revenue from our proposed extraction operations at our properties;
- Our need for substantial additional financing, both in the near-term and long-term, to execute our business plan and our ability to access capital and the financial markets;
- Our status as an exploration stage company dependent on a single project with no known mineral reserves and the inherent uncertainty in estimates of mineral resources;
- Our lack of history in mineral production and the significant risks associated with achieving our business strategies, including our downstream processing ambitions;
- We have incurred significant net operating losses to date and we anticipate incurring continued losses for the foreseeable future;
- Risks and uncertainties relating to the development of the Project in Newberry Springs, CA;
- Risks related to our ability to prepare and update further technical and economic analysis of the Project, and the timing thereof;
- Our dependence on a single project;
- Risks related to our ability to achieve and maintain profitability and to develop positive cash flow from our operating activities;
- Risks, including changes in technology, that could adversely affect the demand for end use applications that require borates, lithium, and related minerals and compounds;
- Our long-term success is dependent on our ability to enter into and deliver product under supply agreements;
- Risks related to estimates of our total addressable market;
- The costs and availability of natural gas, electricity, and water;
- Uncertain global economic conditions and the impact this may have on our business and plans;
- Macroeconomic risks;
- Government efforts to combat inflation, along with other interest rate pressures arising from an inflationary economic environment, could lead to higher financing and project completion costs.
- Risks associated with our ongoing investment in the Project;
- Risks associated with the required infrastructure at the Project;
- Risks related to the titles of our mineral property interests and related water rights;
- Any restrictions on our ability to obtain, recycle, and dispose of water on site;
- Risks related to land use restrictions on our properties;
- Risks related to volatility in prices or demand for borates, lithium, and other minerals;
- Fluctuations in the U.S. dollar relative to other currencies;
- Risks related to mineral exploration and development;
- Risks related to equipment shortages and supply chain disruptions;

- Risks associated with any of our customers, suppliers, or any third parties not implementing ethical or legal business practices in compliance with applicable laws and regulations;
- Competition from new or current competitors in the mineral exploration and mining industry;
- Risks associated with consolidation in the markets in which we operate and expect to operate;
- Risks related to compliance with environmental and regulatory requirements, reclamation requirements, the potential generation and disposal of hazardous waste, climate change, and the proposed SEC rules on climate-related disclosures;
- Risks related to our ability to acquire and maintain necessary mining licenses, permits, or access rights;
- Litigation risk;
- Risks related to our main operations being located in California and our engagement with local communities;
- Our dependence on key management and third parties;
- Risks related to potential acquisitions, joint ventures, and other investments;
- Risks related to public health threats, including the novel coronavirus, that may continue to cause disruptions to our operations or may have a material adverse effect on our development plans and financial results;
- Information technology risks;
- Risks and costs relating to the Reorganization;
- Risks related to the possible dilution of our Common Stock;
- Risks related to our stock price and trading volume volatility;
- Risks relating to the development of an active trading market for our Common Stock;
- Risks related to our status as an emerging growth company;
- Risks related to technology systems and security breaches;
- A shortage of skilled technicians and engineers;
- Risks related to technology systems and security breaches;
- Our facilities of operations could be adversely affected by outside events outside of our control, such as natural disasters, climate change, wars, or health epidemics or pandemics;
- Risks and uncertainties related to the COVID-19 pandemic;
- Our increased costs as a result of being a U.S. listed public company;
- Strategic actions, including acquisitions and dispositions of investments, including but not limited to integrations of acquiring investments;
- Risks associated with the Convertible Notes;
- Risk of insufficient cash flow to service the Convertible Notes;
- Risk of foreclosure on our assets if we default on the Convertible Notes;
- Risk of dilution of the ownership interest of our existing stockholders if the Convertible Notes are converted;
- Risk of adverse impact on the price of our Common Stock if the Convertible Notes are converted;
- Risks associated with limitations on our ability to raise money through equity offerings and to incur additional indebtedness imposed by the Amended and Restated Note Purchase Agreement; and

- Any other risks described elsewhere in this registration statement or the documents incorporated herein by reference.

If any of these risks materialize or our assumptions prove incorrect, actual results could differ materially from the results implied by these forward-looking statements.

These and other factors that could cause actual results to differ from those implied by the forward-looking statements in this prospectus, any accompanying prospectus supplement and the documents incorporated by reference herein and therein are more fully described under the heading “Risk Factors” and elsewhere in this prospectus. The risks described under the heading “Risk Factors” are not exhaustive. Other sections of this prospectus and any accompanying prospectus supplement describe additional factors that could adversely affect the business, financial condition or results of operations of the Company. New risk factors emerge from time to time and it is not possible to predict all such risk factors, nor can the Company assess the impact of all such risk factors on the business of the Company or the extent to which any factor or combination of factors may cause actual results to differ materially from those contained in any forward-looking statements. All forward-looking statements attributable to the Company or persons acting on its behalf are expressly qualified in their entirety by the foregoing cautionary statements. The Company undertakes no obligation to update or revise publicly any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

CAUTIONARY NOTE REGARDING RESERVES

Unless otherwise indicated, all mineral resource estimates included in this prospectus have been prepared in accordance with, and are based on the relevant definitions set forth in, the SEC's Mining Disclosure Rules and Regulation S-K 1300 (each as defined below). Mining disclosure in the United States was previously required to comply with SEC Industry Guide 7 (the "SEC Industry Guide 7") under the Exchange Act. In accordance with the SEC's Final Rule 13-10570, Modernization of Property Disclosure for Mining Registrant, the SEC has adopted final rules, effective February 25, 2019, to replace SEC Industry Guide 7 with new mining disclosure rules (the "Mining Disclosure Rules") under sub-part 1300 (Title 17, Part 229, Items 601 and 1300 until 1305) of Regulation S-K of the Securities Act ("Regulation S-K 1300"). Regulation S-K 1300 replaces the historical property disclosure requirements included in SEC Industry Guide 7. Regulation S-K 1300 uses the Committee for Mineral Reserves International Reporting Standards ("CRIRSCO")-based classification system for mineral resources and mineral reserves and accordingly, under Regulation S-K 1300, the SEC now recognizes estimates of "Measured Mineral Resources," "Indicated Mineral Resources" and "Inferred Mineral Resources," and require SEC-registered mining companies to disclose in their SEC filings specified information concerning their mineral resources, in addition to mineral reserves. In addition, the SEC has amended its definitions of "Proven Mineral Reserves" and "Probable Mineral Reserves" to be substantially similar to international standards. The SEC Mining Disclosure Rules more closely align SEC disclosure requirements and policies for mining properties with current industry and global regulatory practices and standards, including the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, referred to as the "JORC Code." While the SEC now recognizes "Measured Mineral Resources," "Indicated Mineral Resources" and "Inferred Mineral Resources" under the SEC Mining Disclosure Rules, investors should not assume that any part or all of the mineral deposits in these categories will be converted into a higher category of mineral resources or into mineral reserves.

The following terms, as defined in Regulation S-K 1300, apply within this prospectus:

Measured Mineral Resource

("Measured" or "Measured Mineral Resource")

that is that part of a mineral resource for which quantity and grade or quality are estimated on the basis of conclusive geological evidence and sampling. The level of geological certainty associated with a measured mineral resource is sufficient to allow a qualified person to apply modifying factors in sufficient detail to support detailed mine planning and final evaluation of the economic viability of the deposit. Because a measured mineral resource has a higher level of confidence than the level of confidence of either an indicated mineral resource or an inferred mineral resource, a measured mineral resource may be converted to a proven mineral reserve or to a probable mineral reserve.

Indicated Mineral Resource

("Indicated" or "Indicated Mineral Resource")

is that part of a mineral resource for which quantity and grade or quality are estimated on the basis of adequate geological evidence and sampling. The level of geological certainty associated with an indicated mineral resource is sufficient to allow a qualified person to apply modifying factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit. Because an indicated mineral resource has a lower level of confidence than the level of confidence of a measured mineral resource, an indicated mineral resource may only be converted to a probable mineral reserve.

Inferred Mineral Resource

("Inferred" or "Inferred Mineral Resource")

is that part of a mineral resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. The level of

geological uncertainty associated with an inferred mineral resource is too high to apply relevant technical and economic factors likely to influence the prospects of economic extraction in a manner useful for evaluation of economic viability. Because an inferred mineral resource has the lowest level of geological confidence of all mineral resources, which prevents the application of the modifying factors in a manner useful for evaluation of economic viability, an inferred mineral resource may not be considered when assessing the economic viability of a mining project, and may not be converted to a mineral reserve.

Probable Mineral Reserve
("Probable" or "Probable Mineral Reserve")

is the economically mineable part of an indicated and, in some cases, a measured mineral resource.

Proven Mineral Reserve
("Proven" or "Proven Mineral Reserve")

is the economically mineable part of a measured mineral resource and can only result from conversion of a measured mineral resource.

The Company released an amended and restated technical report on Form 10-K/A with a revised report date of February 2, 2024, report date of May 11, 2023, and report effective date of April 1, 2023 (the "Amended

Initial Assessment Report"). The purpose of the Amended Initial Assessment Report is to support the disclosure of mineral resource estimates for the Project. The Amended Initial Assessment Report was prepared in accordance with the SEC's Mining Disclosure Rules and Regulation S-K Subpart 1300 and Item 601(b)(96) (technical report summary). The Amended Initial Assessment Report is discussed in Business and Properties and incorporated by reference as Exhibit 96.1 to this registration statement.

UNLESS OTHERWISE EXPRESSLY STATED, NOTHING CONTAINED IN THIS PROSPECTUS IS, NOR DOES IT PURPORT TO BE, A TECHNICAL REPORT SUMMARY PREPARED BY A QUALIFIED PERSON PURSUANT TO AND IN ACCORDANCE WITH THE REQUIREMENTS OF SUBPART 1300 OF SECURITIES EXCHANGE COMMISSION REGULATION S-K.

CAUTIONARY NOTE REGARDING EXPLORATION STAGE COMPANIES

We are an exploration stage company and do not currently have any known mineral reserves and cannot expect to have known mineral reserves unless and until an appropriate technical and economic study is completed for Fort Cady or any of our other properties that shows Proven or Probable Mineral Reserves as defined by Regulation S-K 1300. We currently do not have any Proven or Probable Mineral Reserves. There can be no assurance that Fort Cady or any of our other properties contains or will contain any such SEC-compliant Proven or Probable Mineral Reserves or that, even if such reserves are found, the quantities of any such reserves warrant continued operations or that we will be successful in economically recovering them.

CAUTIONARY NOTE REGARDING EMERGING GROWTH COMPANY STATUS

Section 102(b)(1) of the Jumpstart Our Business Startups Act (“JOBS Act”) exempts emerging growth companies from being required to comply with new or revised financial accounting standards until private companies (that is, those that have not had a Securities Act registration statement declared effective or do not have a class of securities registered under the Exchange Act) are required to comply with the new or revised financial accounting standards. The JOBS Act provides that a company can elect to opt out of the extended transition period and comply with the requirements that apply to non-emerging growth companies but any such election to opt out is irrevocable. We have elected not to opt out of such extended transition period which means that when a standard is issued or revised and it has different application dates for public or private companies, we, as an emerging growth company, can adopt the new or revised standard at the time private companies adopt the new or revised standard, until such time we are no longer considered to be an emerging growth company. At times, we may elect to adopt a new or revised standard early.

CAUTIONARY NOTE REGARDING INDUSTRY AND MARKET DATA

This prospectus includes information concerning our industry and the markets in which we will operate that is based on information from various sources including public filings, internal company sources, various third-party sources and management estimates. Our management estimates regarding our position, share and industry size are derived from publicly available information and its internal research, and are based on a number of key assumptions made upon reviewing such data and our knowledge of such industry and markets, which we believe to be reasonable. While we believe the industry, market and competitive position data included in this prospectus is reliable and is based on reasonable assumptions, such data is necessarily subject to a high degree of uncertainty and risk and is subject to change due to a variety of factors, including those described in “Cautionary Note Regarding Forward-Looking Statements,” “Risk Factors” and elsewhere in this prospectus. These and other factors could cause results to differ materially from those expressed in the estimates included in this prospectus. We have not independently verified any data obtained from third-party sources and cannot assure you of the accuracy or completeness of such data.

5E ADVANCED MATERIALS, INC.

Company Overview

We are focused on becoming a vertically integrated global leader and supplier of boron specialty and advanced materials, complemented by lithium co-product production. Our mission is to become a supplier of these critical materials to industries addressing global decarbonization, food, and domestic security. Boron and lithium products will target applications in the fields of electric transportation, clean energy infrastructure, such as solar and wind power, fertilizers, and domestic security. The business strategy and objectives are to develop capabilities ranging from upstream extraction and product sales of boric acid, lithium carbonate, and potentially other co-products, to downstream boron advanced material processing and development. The business is based on our large domestic boron and lithium resource, which is located in Southern California and designated as Critical Infrastructure by the Department of Homeland Security's Cybersecurity and Infrastructure Security Agency.

Recent Developments

Special Meeting of Stockholders

On January 12, 2024, we held a Special Meeting of Stockholders (the "Special Meeting") where the following matters were voted upon and approved by our stockholders:

1. An amendment to our certificate of incorporation to increase the number of authorized shares of Common Stock from 180,000,000 to 360,000,000 (the "Amended and Restated Certificate of Incorporation");
2. The issuance of up to \$35 million of our Common Stock at a price per share of \$1.025 (the "Securities Offering") to Ascend and 5ECAP, and including a \$10 million option to purchase shares of Common Stock to Bluescape; and
3. The issuance of additional shares of our Common Stock upon conversion of our Convertible Notes.

On January 12, 2024, we filed our Amended and Restated Certificate of Incorporation with the Secretary of State of the State of Delaware.

Restructuring Transactions

Amended and Restated Note Purchase Agreement

On January 18, 2024, we entered into the Amended and Restated Note Purchase Agreement, pursuant to which the Convertible Notes, as amended and restated, bear interest at 4.50% per annum, payable semi-annually, or 10.00% per annum if we elect to pay such interest through the delivery of additional Convertible Notes, and are convertible into 66,261,621 shares of Common Stock at a conversion price of \$1.5375 per share of Common Stock (assuming all accrued interest is paid-in-kind until maturity) in accordance with the terms of the Amended and Restated Note Purchase Agreement. The Convertible Notes mature on August 15, 2028. Following certain corporate events that may occur prior to the maturity date, we will, in certain circumstances, increase the conversion rate for a holder who elects to convert its Convertible Notes in connection with such a corporate event. In addition, the minimum cash covenant has been waived through June 28, 2024, with a reduction in such covenant thereafter from \$10 million to \$7.5 million.

In connection with the amendment and restatement, Ascend and Meridian each acquired twenty-five percent (25%) of the outstanding principal amount of the Convertible Notes (including accrued interest paid-in-kind) held by Bluescape.

First Closing of Private Placement

On January 18, 2024, pursuant to the Ascend Subscription Agreement and the Amended and Restated 5ECAP Subscription Agreement, we issued (i) 5,365,854 shares to Ascend at a price of \$1.025 per share, which shares include the placement fee paid to Ascend in shares of Common Stock and (ii) 5,365,854 shares of Common Stock to 5ECAP at a price of \$1.025 per share, which shares include the placement fee paid to 5ECAP in shares of Common Stock (the “First Closing”).

Second Closing of Private Placement

On January 29, 2024, pursuant to the Amended and Restated 5ECAP Subscription Agreement, we issued 8,317,074 additional shares of Common Stock to 5ECAP, at a price of \$1.025 per share, which shares include the placement fee paid to 5ECAP in shares of Common Stock (the “Second Closing”).

Amended and Restated Investor and Registration Rights Agreement

On January 18, 2024, in connection with the Amended and Restated Note Purchase Agreement, we entered into the A&R IRRA. Pursuant to the A&R IRRA, the Company granted Ascend, 5ECAP, Meridian, and Bluescape registration rights, which are the subject of a separate resale registration statement.

Corporate Information

We were incorporated in the State of Delaware on September 23, 2021 for the purposes of effecting the Reorganization. Our principal executive offices are located at 9329 Mariposa Road, Ste 210, Hesperia, CA 92344 and our telephone number is (442) 221-0225. We maintain a website on the Internet at <http://www.5advancedmaterials.com>. Information contained on the website does not constitute a part of this prospectus. We have included our website address in this prospectus solely as an inactive textual reference.

Implications of Being a Smaller Reporting Company

We are a “smaller reporting company” meaning that the market value of our Common Stock held by non-affiliates is less than \$250.0 million measured on the last business day of our second fiscal quarter or our annual revenue is less than \$100.0 million during the most recent completed fiscal year and the market value of our Common Stock held by non-affiliates is less than \$700.0 million measured on the last business day of our second fiscal quarter. Accordingly, we may provide less public disclosure than larger public companies, including the inclusion of only two years of financial statements and only two years of management’s discussion and analysis of financial condition and results of operations disclosure. As a result, the information that we provide to our stockholders may be different than you might receive from other public reporting companies in which you hold equity interests.

RISK FACTORS

Investing in our Common Stock involves risk. Before making an investment decision, you should carefully consider the specific risks set forth under the caption “Risk Factors” in the applicable prospectus supplement and under the caption “Risk Factors” and elsewhere in our most recent Annual Report on Form 10-K, as amended, our Quarterly Report on Form 10-Q for the quarter ended December 31, 2023, any subsequently filed Quarterly Reports on Form 10-Q, any subsequently filed Current Reports on Form 8-K, our Definitive Proxy Statement filed with the SEC on December 18, 2023, which are incorporated by reference in this prospectus. See “Incorporation by Reference.”

USE OF PROCEEDS

Unless otherwise indicated in the applicable prospectus supplement, the net proceeds from the sale of any Common Stock offered by us pursuant to this prospectus will be used for general corporate purposes. General corporate purposes may include, without limitation:

- working capital;
- capital expenditures;
- advances to or investments in our subsidiaries;
- repayment of outstanding debt;
- repurchases of shares of our Common Stock, par value \$0.01 per share; and
- acquisitions of or investments in other businesses.

Pending any specific application described in the applicable prospectus supplement, net proceeds may be initially invested in short-term interest-bearing accounts, securities or similar investments.

DESCRIPTION OF CAPITAL STOCK

Description of Capital Stock

The following description of our capital stock is a summary. The complete text of our Amended and Restated Certificate of Incorporation and Bylaws are each included as exhibits to this registration statement and are incorporated by reference herein. Our authorized share capital is 380,000,000 divided into 360,000,000 shares of Common Stock, par value of \$0.01 per share, and 20,000,000 shares of preferred stock, par value of \$0.01 per share (“Preferred Stock”). As of February 16, 2024, there are approximately 63,285,836 shares of our Common Stock issued and outstanding held by approximately 19 record holders. As of February 16, 2024, no shares of Preferred Stock are issued and outstanding. The actual number of stockholders is considerably greater than the number of stockholders of record and includes stockholders who are beneficial owners but whose CDIs or shares of Common Stock are held in street name by brokers and other nominees.

Common Stock

Except as otherwise required by law, as provided in our Certificate of Incorporation or as provided in the resolution or resolutions, if any, adopted by our Board of Directors (our “Board”) with respect to any series of the Preferred Stock, the holders of our Common Stock will exclusively possess all voting power. Each holder of shares of Common Stock will be entitled to one vote for each share held by such holder. Subject to the rights of holders of any series of outstanding Preferred Stock, holders of shares of our Common Stock will have equal rights of participation in the dividends and other distributions in cash, stock or property of the Company when, as and if declared thereon by our Board from time to time out of assets or funds legally available therefor and will have equal rights to receive the assets and funds of the Company available for distribution to stockholders in the event of any liquidation, dissolution or winding up of the affairs of the Company, whether voluntary or involuntary.

CDIs

CDIs confer the beneficial ownership of our Common Stock on each CDI holder, with the legal title to such securities held by an Australian depositary entity, CHESS Depositary Nominees Pty Ltd. (the “Depositary Nominee”). The Depositary Nominee will be the registered holder of those shares of our Common Stock held for the benefit of holders of CDIs. The Depositary Nominee does not charge a fee for providing this service. Ten CDIs will represent an interest in one share of our Common Stock. Holders of CDIs will not hold the legal title to the underlying shares of our Common Stock to which the CDIs relate, as the legal title will be held by the Depositary Nominee. Each holder of CDIs will, however, have a beneficial interest in the underlying shares in our Common Stock. Each holder of CDIs that elects to vote at a stockholders meeting will be entitled to one vote for every 10 CDIs held by such holder. In order to vote at a stockholder meeting, a CDI holder may:

- instruct the Depositary Nominee, as legal owner of the shares of Common Stock, to vote the Common Stock represented by their CDIs to vote the shares of our Common Stock represented by their CDIs in a particular manner. A voting instruction form will be sent to holders of CDIs and must be completed and returned to the share registry for the CDIs prior to a record date fixed for the relevant meeting, or the Voting Instruction Receipt Time, which is notified to CDI holders in the voting instructions included in a notice of meeting;
- inform us that they wish to appoint themselves or a third party as the Depositary Nominee’s proxy with respect to our shares of Common Stock underlying the holder’s CDIs for the purposes of attending and voting at the meeting. The instruction form must be completed and returned to the share registry for the CDI prior to the CDI Voting Instruction Receipt Time; or
- convert their CDIs into shares of our Common Stock and vote those shares at the meeting. The conversion must be undertaken prior to a record date fixed by the Board for determining the entitlement of members to attend and vote at the meeting. If the holder later wishes to sell their investment on the ASX, it would first be necessary to convert those shares of Common Stock back to CDIs. Further details on the conversion process are set out below.

Voting instruction forms and details of these alternatives are included in each notice of meeting sent to CDI holders by the Company.

Conversion of CDIs to shares of Common Stock

CDI holders may at any time convert their CDIs to a holding of shares of Common Stock by instructing the share registry for the CDIs, either:

- Directly in the case of CDIs held on the issuer sponsored sub-register operated by the Company (holders of CDIs will be provided with a CDI issuance request form to return to the share registry for the CDIs); or
- Through their “sponsoring participant” (usually their broker) in the case of CDIs which are held on the CHESS sub-register (in this case, the sponsoring broker will arrange for completion of the relevant form and its return to the share registry for the CDIs).

In both cases, once the share registry for the CDIs has been notified, it will arrange the transfer of the relevant number of shares of Common Stock from the Depositary Nominee into the name of the CDI holder in book entry form or, if requested, deliver the relevant shares of Common Stock to their DTC participant in the United States Central Securities Depository. The share registry for the CDIs will not charge a fee for the conversion (although a fee may be payable by market participants). Holding shares of Common Stock will, however, prevent a person from selling their shares of Common Stock on the ASX, as only CDIs can be traded on that market.

Conversion of shares of Common Stock to CDIs

Shares of Common Stock may be converted into CDIs and traded on the ASX. Holders of shares of Common Stock may at any time convert those shares to CDIs by contacting the Company’s transfer agent. The underlying shares of Common Stock will be transferred to the Depositary Nominee, and CDIs (and a holding statement for the corresponding CDIs) will be issued to the relevant security holder. No trading in the CDIs may take place on the ASX until this conversion.

The Company’s transfer agent will not charge a fee to a holder of shares of Common Stock seeking to convert their shares of Common Stock to CDIs, although a fee may be payable by market participants.

In either case, it is expected that each of the above processes will be completed within 24 hours, provided that the Company’s transfer agent is in receipt of a duly completed and valid request form. No guarantee can, however, be given about the time required for this conversion to take place.

Dividends and Other Shareholder Entitlements

Holders of CDIs are entitled to receive all the direct economic benefits and other entitlements in relation to the underlying shares of Common Stock that are held by the Depositary Nominee, including dividends and other entitlements that attach to the underlying shares of Common Stock.

It is possible that marginal differences may exist between the resulting entitlement of a holder of CDIs and the entitlements that would have accrued if a holder of CDIs held their holding directly as shares of Common Stock. As the ratio of CDIs to Common Stock is not one-to-one, and any entitlement will be determined on the basis of shares of Common Stock rather than CDIs, a holder of CDIs may not always benefit to the same extent (e.g., from the rounding up of fractional entitlements). We will, however, be required by the ASX Settlement Rules to minimize any such differences where legally permissible. If a cash dividend or any other cash distribution is declared in a currency other than Australian dollars, we currently intend to convert that dividend or other cash distribution to which a holder of CDIs is entitled to Australian dollars and distribute it to the relevant holder of CDIs in accordance with their entitlement.

Due to the need to convert dividends from United States dollars to Australian dollars in the above mentioned circumstances, holders of CDIs may potentially be advantaged or disadvantaged by exchange rate fluctuations,

depending on whether the Australian dollar weakens or strengthens against the United States dollar during the period between the resolution to pay a dividend and conversion into Australian dollars.

Takeovers

If a takeover bid is made in respect of any of our Common Stock of which the Depositary Nominee is the registered holder, the Depositary Nominee is prohibited from accepting the offer made under the takeover bid except to the extent that acceptance is authorized by the CDI holders in respect of the shares of Common Stock represented by their holding of CDIs.

The Depositary Nominee must accept a takeover offer in respect of shares of Common Stock represented by a holding of CDIs if the relevant holder of CDIs instructs it to do so and must notify the entity making the takeover bid of the acceptance.

Preferred Stock

Our Board is authorized to provide, out of the unissued shares of Preferred Stock, for one or more series of Preferred Stock and, with respect to each such series, to fix the number of shares constituting such series and the designation of such series, the voting powers, if any, of the shares of such series, and the preferences and relative, participating, optional or other special rights, if any, and any qualifications, limitations or restrictions thereof, of the shares of such series, as are stated in the resolution or resolutions providing for the issuance of such series adopted by the Board. The authority of the Board with respect to each series of Preferred Stock includes determination of the following:

- the designation of the series;
- the number of shares of the series;
- the dividend rate or rates on the shares of that series, whether dividends will be cumulative and, if so, from which date or dates, and the relative rights of priority, if any, of payment of dividends on shares of that series;
- whether the series will have voting rights in addition to the voting rights provided by law and, if so, the terms of such voting rights;
- whether the series will have conversion privileges and, if so, the terms and conditions of such conversion, including provision for adjustment of the conversion rate in such events as the Board determines;
- whether or not the shares of that series will be redeemable, in whole or in part, at the option of the Company or the holder thereof and, if made subject to such redemption, the terms and conditions of such redemption, including the date or dates upon or after which they will be redeemable, and the amount per share payable in case of redemptions, which amount may vary under different conditions and at different redemption rates;
- the terms and amount of any sinking fund provided for the purchase or redemption of the shares of such series;
- the rights of the shares of that series in the event of voluntary or involuntary liquidation, dissolution or winding up of the Company, and the relative rights of priority, if any, of payment of shares of that series;
- the restrictions, if any, on the issue or reissue of any additional Preferred Stock; and
- any other relative rights, preferences and limitations of that series.

PLAN OF DISTRIBUTION

We may sell the Common Stock offered under this prospectus in one or more of the following ways (or in any combination) from time to time:

- to or through underwriters;
- through agents;
- through brokers or dealers;
- directly to purchasers, including through a specific bidding, auction or other process or in privately negotiated transactions;
- sales “at the market” to or through a market maker or into an existing trading market, on an exchange, or otherwise;
- through a combination of such methods; or
- through any other method permitted by applicable law.

A supplement to this prospectus will describe the particular terms of any offering of Common Stock, including the following:

- the names of any underwriters, agents, brokers or dealers or any selling security holders;
- the purchase price of the Common Stock and the proceeds to be received from the sale;
- any discounts or commissions and other items constituting underwriters’ or agents’ compensation;
- any discounts or concessions allowed or reallocated or paid to dealers; and
- any securities exchanges on which the Common Stock may be listed.

If underwriters are used in the sale, such underwriters will acquire the Common Stock for their own account. The underwriters may resell the Common Stock in one or more transactions, at a fixed price or prices, which may be changed, or at market prices prevailing at the time of sale, at prices relating to prevailing market prices or at negotiated prices.

The Common Stock may be offered to the public through underwriting syndicates represented by managing underwriters or by underwriters without a syndicate. The obligations of the underwriters to purchase the Common Stock will be subject to certain conditions. The underwriters will be obligated to purchase all the Common Stock offered if any of the Common Stock are purchased.

We may sell the Common Stock through agents or dealers designated by us or them. Any agent or dealer involved in the offer or sale of the Common Stock for which this prospectus is delivered will be named, and any commissions payable to that agent or dealer by us or the selling security holders will be set forth, in the prospectus supplement. Unless indicated in the prospectus supplement, the agents will agree to use their reasonable efforts to solicit purchases for the period of their appointment and any dealer will purchase the Common Stock from us as principal and may resell those shares of Common Stock at varying prices to be determined by the dealer.

Underwriters, dealers or agents may facilitate the marketing of an offering online directly or through one of their affiliates. In those cases, prospective investors may view offering terms and a prospectus online and, depending upon the particular underwriter, dealer or agent, place orders online or through their financial advisors.

We also may sell the Common Stock directly. In this case, no underwriters or agents would be involved.

Underwriters, dealers and agents that participate in the distribution of the Common Stock may be deemed to be “underwriters” within the meaning of the Securities Act and any discounts, concessions, commissions or fees

received by them from us and any profit on the resale of the Common Stock sold by them may be deemed to be underwriting discounts or commissions under the Securities Act.

We may have agreements with the underwriters, dealers and agents to indemnify them against certain civil liabilities, including liabilities under the Securities Act, or to contribute with respect to payments which the underwriters, dealers or agents may be required to make, and to reimburse them for certain expenses.

In compliance with the guidelines of the Financial Industry Regulatory Authority (“FINRA”), the aggregate maximum discount, commission, fees or other items constituting underwriting compensation to be received by any FINRA member or independent broker-dealer will not exceed eight percent (8%) of the gross proceeds of any offering pursuant to this prospectus and any applicable prospectus supplement.

If at the time of any offering made under this prospectus a member of FINRA participating in the offering has a “conflict of interest” as defined in FINRA Rule 5121 (“Rule 5121”), that offering will be conducted in accordance with the relevant provisions of Rule 5121.

Underwriters, dealers and agents may engage in transactions with, or perform services for, us or our subsidiaries in the ordinary course of their businesses.

In order to facilitate the offering of the Common Stock, any underwriters or agents, as the case may be, involved in the offering of such Common Stock may engage in transactions that stabilize, maintain or otherwise affect the price of our Common Stock. Specifically, the underwriters or agents, as the case may be, may overallocate in connection with the offering, creating a short position in our Common Stock for their own account. In addition, to cover overallocations or to stabilize the price of our Common Stock, the underwriters or agents, as the case may be, may bid for, and purchase, such Common Stock in the open market. Finally, in any offering of Common Stock through a syndicate of underwriters, the underwriting syndicate may reclaim selling concessions allotted to an underwriter or a dealer for distributing such Common Stock in the offering if the syndicate repurchases previously distributed Common Stock in transactions to cover syndicate short positions, in stabilization transactions or otherwise. Any of these activities may stabilize or maintain the market price of the Common Stock above independent market levels. The underwriters or agents, as the case may be, are not required to engage in these activities, and may end any of these activities at any time.

We may solicit offers to purchase the Common Stock directly from, and we or it may sell such Common Stock directly to, institutional investors or others. The terms of any of those sales, including the terms of any bidding or auction process, if utilized, will be described in the applicable prospectus supplement.

It is possible that one or more underwriters may make a market in our Common Stock, but such underwriters will not be obligated to do so and may discontinue any market making at any time without notice. We cannot give any assurance as to the liquidity of the trading market for our Common Stock which is listed on Nasdaq under the symbol “FEAM.”

We may authorize underwriters, dealers or agents to solicit offers by certain purchasers to purchase our Common Stock at the public offering price set forth in the prospectus supplement pursuant to delayed delivery contracts providing for payment and delivery on a specified date in the future. The contracts will be subject only to those conditions set forth in the prospectus supplement, and the prospectus supplement will set forth any commissions we pay for solicitation of these contracts.

We may enter into derivative transactions with third parties, or sell Common Stock not covered by this prospectus to third parties in privately negotiated transactions. If the applicable prospectus supplement indicates, in connection with those derivatives, the parties may sell Common Stock covered by this prospectus and the applicable prospectus supplement, including short sale transactions. If so, the third party may use Common Stock pledged by us or borrowed from us or others to settle those sales or to close out any related open borrowings of Common Stock, and may use Common Stock received from us in settlement of those derivatives to close out any related open borrowings of Common Stock. The third party in such sale transactions will be an underwriter and will be identified in the applicable prospectus supplement or a post-effective amendment to the registration statement of which this

prospectus forms a part. In addition, we may otherwise loan or pledge Common Stock to a financial institution or other third party that in turn may sell the Common Stock short using this prospectus. Such financial institution or other third party may transfer its economic short position to investors in our Common Stock or in connection with a concurrent offering of Common Stock.

The underwriters, dealers and agents may engage in transactions with us, or perform services for us in the ordinary course of business.

LEGAL MATTERS

The validity of the Common Stock offered under this prospectus will be passed upon for us by Winston & Strawn LLP. Certain legal matters with respect to the validity of the Common Stock offered under this prospectus will be passed upon for any underwriters, dealers or agents by counsel named in the applicable prospectus supplement.

EXPERTS

The consolidated financial statements as of June 30, 2022 and for the year then ended incorporated by reference in this Prospectus and in the Registration Statement have been so incorporated in reliance on the report of BDO USA, LLP (n/k/a BDO USA, P.C.), an independent registered public accounting firm, incorporated herein by reference, given on the authority of said firm as experts in auditing and accounting.

The financial statements as of June 30, 2023 and for the year ended June 30, 2023 incorporated in this Prospectus by reference to the Annual Report on Form 10-K for the year ended June 30, 2023 have been so incorporated in reliance on the report (which contains an explanatory paragraph relating to the Company's ability to continue as a going concern as described in Note 1 to the financial statements) of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

This prospectus does not contain all of the information set forth in the registration statement and the exhibits and schedules thereto. For further information with respect to the Company and its Common Stock, reference is made to the registration statement and the exhibits and any schedules filed therewith. Statements contained in this prospectus as to the contents of any contract or other document referred to are not necessarily complete and in each instance, if such contract or document is filed as an exhibit, reference is made to the copy of such contract or other document filed as an exhibit to the registration statement, each statement being qualified in all respects by such reference. The SEC maintains a website at www.sec.gov, from which interested persons can electronically access the registration statement, including the exhibits and any schedules thereto and which contains the periodic reports, proxy and information statements and other information that we file electronically with the SEC.

We also maintain an Internet website at www.5eadvancedmaterials.com. Through our website, we make available, free of charge, the following documents of 5E Advanced Materials, Inc. as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC: Annual Reports on Form 10-K; proxy statements for our annual and special shareholder meetings; Quarterly Reports on Form 10-Q; Current Reports on Form 8-K; Forms 3, 4 and 5; Schedules 13G and Schedules 13D; and amendments to those documents. The information contained on, or that may be accessed through, our website is not part of, and is not incorporated into, this prospectus or the registration statement of which it forms a part.

INCORPORATION BY REFERENCE

The rules of the SEC allow us to incorporate information into this prospectus by reference. This means that we are disclosing important information to you by referring to other documents. The information incorporated by reference is considered to be part of this prospectus, except for any information superseded by information contained directly in this prospectus. We incorporate by reference the documents listed below and all documents that we subsequently file with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act prior to the termination of the offering of Common Stock by means of this prospectus, from their respective filing dates (other than any portions thereof, which under the Exchange Act, and applicable SEC rules, are not deemed “filed” under the Exchange Act):

- the description of our capital stock as set forth in our Current Report on [Form 8-K/A](#) filed with the SEC on February 2, 2024;
- our Annual Report on [Form 10-K](#) for the year ended June 30, 2023 filed with the SEC on August 30, 2023 and as amended by our amended Annual Report on [Form 10-K/A](#) filed with the SEC on October 27, 2023, as further amended by our amended Annual Report on [Form 10-K/A](#) filed with the SEC on February 2, 2024, and as further amended by our amended Annual Report on [Form 10-K/A](#) filed with the SEC on February 20, 2024;
- our Definitive Proxy Statement on [Schedule 14A](#) filed on December 18, 2023;
- our Quarterly Reports on Form 10-Q for the quarterly periods ended September 30, 2023 and December 31, 2023, filed with the SEC on [November 9, 2023](#) and [February 14, 2024](#), respectively; and
- our Current Reports on Form 8-K (or Form 8-K/A, as applicable) filed with the SEC on [September 11, 2023](#), [November 9, 2023](#), [November 22, 2023](#), [December 6, 2023](#), [December 11, 2023](#), [December 14, 2023](#), [December 19, 2023](#), [January 16, 2024](#), [January 19, 2024](#), [January 29, 2024](#), [January 30, 2024](#), and [February 2, 2024](#).

The information incorporated by reference into this prospectus is an important part of this prospectus. Neither we nor any underwriters have authorized anyone to provide you with information other than that contained in or incorporated by reference into this prospectus. You should not assume that the information in this prospectus is accurate as of any date other than the date of this prospectus.

You should not rely on or assume the accuracy of any representation or warranty in any agreement that we have filed as an exhibit to any document that we have publicly filed or that we may otherwise publicly file in the future because such representation or warranty may be subject to exceptions and qualifications contained in separate disclosure schedules, may have been included in such agreement for the purpose of allocating risk between the parties to the particular transaction, and may no longer continue to be true as of any given date.

If we have incorporated by reference any statement or information in this prospectus and we subsequently modify that statement or information with information contained in this prospectus, the statement or information previously incorporated in this prospectus is also modified or superseded in the same manner.



2,374,481 Shares of Common Stock

PROSPECTUS SUPPLEMENT

Konik Capital Partners
a division of T.R. Winston & Co.

August 21, 2025
