

As filed with the U.S. Securities and Exchange Commission on January 14, 2025. Registration No. 333-[] UNITED STATES SECURITIES AND EXCHANGE COMMISSION Washington, D.C. 20549 FORMS-1 REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933 NANONUCLEAR ENERGY INC. (Exact Name of Registrant as Specified in its Charter) Nevada 4911 88-0861977 (State or other jurisdiction of incorporation or organization) (Primary Standard Industrial Classification Code Number) (I.R.S. Employer Identification No.) 10 Times Square, 30th Floor New York, New York 10018 (212) 634-9206 (Address, including Zip Code, and Telephone Number, including Area Code, of Registrant's Principal Executive Offices) James Walker Chief Executive Officer NanoNuclear Energy Inc. 10 Times Square, 30th Floor New York, New York 10018 (212) 634-9206 (Name, Address, including Zip Code, and Telephone Number, including Area Code, of Agent for Service) with a copy to: Richard I. Anslow, Esq., Lawrence A. Rosenbloom, Esq., Ellenoff Grossman & Schole LLP 1345 Avenue of the Americas New York, NY 10105 Phone: (212) 370-1300 Fax: (212) 370-7889 If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act, check the following box. If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration number of the earlier effective registration statement for the same offering. If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration number of the earlier effective registration statement for the same offering. Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act. Large accelerated filer Accelerated filer Non-accelerated filer Smaller reporting company Emerging growth company If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided to Section 7(a)(2)(B) of the Securities Act. The registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, or until the registration statement shall become effective on such date as the U.S. Securities and Exchange Commission, acting pursuant to Section 8(a), may determine. The information contained in this preliminary prospectus is not complete and may be changed. The Selling Stockholders named in this prospectus may not sell these securities until the registration statement filed with the U.S. Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell these securities and the Selling Stockholders are not soliciting an offer to buy these securities in any state where the offer or sale is not permitted. PRELIMINARY PROSPECTUS SUBJECT TO COMPLETION, DATED JANUARY 14, 2025 Upto 2,500,002 Shares of Common Stock Upto 2,500,002 Shares of Common Stock Issuable Upon Exercise of Common Stock Purchase Warrants This prospectus relates to the resale by the selling stockholders named herein, including their respective transferees, assigns, pledgees or donees, or their respective successors, of up to (i) 2,500,002 shares (or the Shares) of our common stock, par value \$0.0001 per share (which we refer to as the common stock), and (ii) 2,500,002 shares of common stock underlying Common Stock Purchase Warrants (or the November 2024 Warrants) (such shares being referred to as the Warrant Shares). The selling stockholders were the investors in a private placement by our company which closed on November 27, 2024. For more information, see "Selling Stockholders." We are not selling any securities under this prospectus and will not receive any of the proceeds from the sale of the Shares and Warrant Shares (which we sometimes refer to herein collectively as the Selling Stockholder Shares) by the selling stockholders, although we may receive funds upon the future exercise of the November 2024 Warrants held by the selling stockholders, if and when exercised for cash. The selling stockholders may sell Selling Stockholder Shares from time to time in the principal markets on which our common stock is quoted at the prevailing market price, at prices related to prevailing market prices or in negotiated transactions. The selling stockholders may sell the Selling Stockholder Shares to or through underwriters, broker-dealers or agents, who may receive compensation in the form of discounts, concessions or commissions from the selling stockholder, the purchasers of the Selling Stockholder Shares, or both. We are registering the Selling Stockholder Shares pursuant to certain registration rights granted to the selling stockholders. The timing and amount of any sale of Selling Stockholder Shares is within the sole discretion of the selling stockholders. We do not know when or in what amount of Selling Stockholder Shares the selling stockholders may offer for sale. We will pay the expenses of registering the Selling Stockholder Shares, including legal and accounting fees. All selling and other expenses incurred by a selling stockholder will be borne by such selling stockholder. See "Plan of Distribution" for additional information. Our common stock is listed on The Nasdaq Capital Market under the symbol "NNE." On January 10, 2025, the last reported sale price of our common stock on The Nasdaq Capital Market was \$25.66 per share. An investment in the common stock offered through this prospectus is speculative and involves a high degree of risk. You should carefully consider the risk factors beginning on page 11 of this prospectus and those risk factors disclosed herein before purchasing any of the securities offered by this prospectus. You should read the entire prospectus and any amendments or supplements carefully before you make your investment decision. 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 [], 2025. TABLE OF CONTENTS Page PROSPECTUS SUMMARY 1 RISK FACTORS 11 CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS 35 USE OF PROCEEDS 36 DIVIDEND POLICY 36 DETERMINATION OF OFFERING PRICE 36 MARKET FOR COMMON EQUITY AND RELATED STOCKHOLDER MATTERS 36 MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS 36 BUSINESS 37 MANAGEMENT AND EXECUTION COMPENSATION 63 CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS 63 PRINCIPAL STOCKHOLDERS 64 DESCRIPTION OF CAPITAL STOCK 65 SELLING STOCKHOLDERS 74 PLAN OF DISTRIBUTION 76 LEGAL MATTERS 77 EXPERTS 77 WHERE YOU CAN FIND MORE INFORMATION 77 MATERIAL CHANGES 77 INCORPORATION OF CERTAIN INFORMATION BY REFERENCE 77 You should only rely on the information contained in this prospectus. We have not authorized anyone to provide you with additional or different information. The information contained in this prospectus is accurate only as of its date,

regardless of its time of delivery or of any sale of the common stock offered hereby. Our business, financial condition, operating results, and prospects may have changed since that date. **For investors outside the United States:** We have not done anything that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than in the United States. Persons outside of the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the offering of the common stock, and the distribution of this prospectus outside of the United States. We incorporate by reference important information into this prospectus. You may obtain the information incorporated by reference without charge by following the instructions under “Where You Can Find More Information.” This prospectus contains 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 forms a part, and you may obtain copies of those documents as described below. You should carefully read this prospectus as well as additional information described under “Incorporation of Certain Information by Reference,” before deciding to invest in our securities. This prospectus contains forward-looking statements that are subject to a number of risks and uncertainties, many of which are beyond our control. See “Risk Factors” and “Cautionary Note Regarding Forward-Looking Statements.”

i. A INDUSTRY AND MARKET DATA Unless otherwise indicated, information in this prospectus concerning economic conditions, our industry, our markets and our competitive position is based on a variety of sources, including information from third-party industry analysts and publications and our own estimates and research. Some of the industry and market data contained in this prospectus are based on third-party industry publications. This information involves a number of assumptions, estimates and limitations. The industry publications, surveys and forecasts and other public information generally indicate or suggest that their information has been obtained from sources believed to be reliable. None of the third-party industry publications used in this prospectus were prepared on our behalf. The industry in which we operate is subject to a high degree of uncertainty and risk due to a variety of factors, including those described in “Risk Factors” in this prospectus. These and other factors could cause results to differ materially from those expressed in these publications.

TRADEMARKS We own or have rights to trademarks or trade names that we use in connection with the operation of our businesses, our corporate names, logos and website names. This prospectus contains references to our trademarks and service marks and to those 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 we will not assert, to the fullest extent possible under applicable law, our rights or the rights of the applicable licensor 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. All other trademarks are the property of their respective owners.

ii. A PROSPECTUS SUMMARY This summary highlights certain information appearing elsewhere in this prospectus. Because it is only a summary, it does not contain all of the information that you should consider before investing in the Selling Stockholder Shares offered hereby and it is qualified in its entirety by, and should be read in conjunction with, the more detailed information appearing elsewhere in this prospectus. This summary contains forward-looking statements that involve risks and uncertainties, such as statements about our plans, objectives, expectations, assumptions, or future events. These statements involve estimates, assumptions, known and unknown risks, uncertainties and other factors that could cause actual results to differ materially from any future results, performances or achievements expressed or implied by the forward-looking statements. See “Cautionary Note Regarding Forward-Looking Statements.”

Before you decide to invest in our common stock, you should also read the entire prospectus carefully, including “Risk Factors” beginning on page 11, “Management’s Discussion and Analysis of Financial Condition and Results of Operations” beginning on page 36, and the financial statements and related notes included in this prospectus. Unless the context indicates otherwise, as used in this prospectus, the terms “we,” “us,” “our,” “our company,” “Nano Nuclear” and “our business” refer to Nano Nuclear Energy Inc. and its consolidated subsidiaries.

Overview We are an emerging, pre-revenue nuclear energy company, developing smaller, cheaper, and safer advanced portable clean energy solutions, utilizing proprietary reactor designs, intellectual property, and research methods, to contribute towards a sustainable future. Led by a world class scientific and management team, our business plan involves a comprehensive engagement across every sector of the nuclear power industry, traversing the path from sourcing raw materials through to developing cutting edge advanced nuclear microreactors. Our dedication extends further, encompassing both commercial nuclear fuel transportation and consulting services.

Currently, we are in the pre-revenue stage and are principally focused on four business lines as part of our development strategy:

- **Micro Nuclear Reactor Business.** We are developing the next generation of advanced nuclear microreactors, in particular ZEUS, a solid core battery reactor, and ODIN, a low-pressure salt coolant reactor. With these products, we are advancing the development of the next generation of portable, on-demand capable, advanced nuclear microreactors. Through the collaboration of our world-renowned nuclear scientists and engineers, the U.S. national nuclear laboratories, and government support, we believe our reactors will have the potential to impact the global energy landscape. Our goal is to commercially launch one of these products by 2030-2031.
- **In addition,** on December 18, 2024, we entered into an asset purchase agreement (as amended, the “USNC Agreement”) with Ultra Safe Nuclear Corporation and certain of its subsidiaries (collectively, “USNC”) to acquire select nuclear energy technology assets (collectively, “USNC Assets”), on an as-is, where-is basis, including USNC’s micro modular nuclear reactor business marketed as a MMR® Energy System, which we plan to market as “KRONOS MMR™” (“MMR Business”), and transportable fission power system technology business marketed as a Pylon Transportable Reactor Platform, which we plan to market as “LOKI MMR™” (“Pylon Business”). The acquired assets included certain contracts, intellectual property rights, demonstration projects, and the equity interests of a Canadian entity, free and clear of any liens other than certain specified liabilities of USNC that were assumed, for a total purchase price of \$8.5 million in cash through an auction process (“Auction”) conducted pursuant to Section 363 of the U.S. Bankruptcy Code in connection with USNC’s pending Chapter 11 bankruptcy proceedings. On December 18, 2024, the United States Bankruptcy Court for the District of Delaware, the Bankruptcy Court overseeing USNC’s bankruptcy held a hearing where it approved the sale of the USNC Assets to us. The acquisition of the USNC Assets closed on January 10, 2025. For further information, see “Business—Overview.”
- **The newly acquired technologies align closely with our intended uses for ZEUS and ODIN,** which are designed for remote, industrial, infrastructural, maritime, and extra-terrestrial applications, including large-scale data and artificial intelligence centers and other energy-intensive operations, positioning us to capitalize on growing financial investment

and societal momentum driving advanced nuclear energy technologies on a global scale. 1 In August 2024, we purchased a 14,000 sq. ft., 2-story building in Oak Ridge, Tennessee for \$1.7 million to house our Nuclear Technology Headquarters. Michael Norato, Ph.D., an Idaho National Labs (INL) and U.S. Department of Energy (DOE) veteran, was appointed as our Director of Nuclear Facilities and Infrastructure in December 2024. Dr. Norato will oversee the construction, development and licensing of our key facilities, including our Nuclear Technology Headquarters, where we will conduct development and testing work on our technologies. Furthermore, in December 2024, we announced our execution of a memorandum of understanding with the Idaho Operations Office of the DOE setting forth a framework for the collaboration between our company and the DOE to evaluate the construction of a demonstration reactor on a land package near INL. Through this memorandum, we will work with the DOE and Battelle Energy Alliance, LLC, the current operator of INL (BEA), to progress the development, siting, and eventual testing of our innovative microreactor designs. — Fuel Processing Business. Through our subsidiary, HALEU Energy Fuel Inc., and in coordination with the DOE, we are seeking to develop a domestic low-enriched uranium (LEU) and high-assay low-enriched uranium (HALEU) fuel supply chain to supply fuel not only for our own reactors but also to the broader advanced nuclear reactor industry. We have tentatively identified the site we intend to construct the facilities and have begun to build the team to design and develop these facilities. We have also made a \$2 million strategic investment in and entered into a collaboration with a laser-based uranium enrichment technology company, LIS Technologies Inc. (LIST) (which is a related party), to support the development of their technology. Through this investment and related collaboration, we aim to assist in advancing LIST's technologies to secure a reliable low enriched uranium fuel supply for our future operations and the broader nuclear energy industry. The parties intend that LIST will provide us with enriched uranium hexafluoride (UF6) at no cost to be fabricated and sold to customers, with LIST to receive compensation as part of a profit-sharing arrangement to be agreed to between the companies in the future. Through collaboration with LIST, we intend to construct the supporting facilities alongside LIST's enrichment facility, including the deconversion and fuel fabrication facilities. We also leased 7,000 square feet of space at our Nuclear Technology Center in Oak Ridge, Tennessee to LIST. Our relationship with LIST is considered a related party transaction since certain of our executive directors and officers, including Jay Jiang Yu, Jaisun Garcha, and Dr. Tsun Yee Law, also serve as directors and officers for LIST, and James Walker serves as a consultant to LIST. Our investment in LIST was unanimously approved by all of our disinterested independent directors. In December 2024, we announced that LIST and our company were selected by the DOE to participate as one of six contract awardees in the DOE's Low-Enriched Uranium (LEU) Enrichment Acquisition Program (LEU Acquisition Program). Under the contract awarded to LIST, LIST was selected as the prime contractor, with our company as the key subcontractor bringing our technical and regulatory expertise in advanced nuclear solutions to the collaboration. LIST will oversee the development of the primary uranium enrichment processes using its novel laser technology, while our company will contribute towards development in the areas of fuel deconversion, fuel fabrication, and fuel transportation. The total overall amount appropriated under the LEU Acquisition Program across all six contract awardees is anticipated to be \$3.4 billion, to be awarded by the DOE via agreed to task orders each having a minimum value of \$2 million. — Fuel Transportation Business. Our transportation business will build on existing work completed at INL, Oak Ridge National Laboratory (ORNL) and Pacific Northwest National Laboratory (PNNL), the world's premier U.S.-backed nuclear research facilities, intended to move both LEU and HALEU. We received an exclusive license from BEA for a high capacity HALEU fuel transportation basket design in April 2024, which will form the basis of a complete transportation system. This license grants us, as the licensee, exclusive rights for the use and development of the technology. In addition, the licensor is not permitted to license the technology to any other parties within the specified scope. We believe this technology is the most advanced concept in the United States for moving HALEU in commercial quantities. We are currently conducting work to modify the design to accommodate a variety of different fuel forms, so we are positioned to move fuel for both of our reactors and to enable us to provide transportation services to any nuclear company looking to move commercial quantities of different fuel forms. In September 2024, we signed an agreement with GNS Gesellschaft für Nuklear-Service mbH (GNS) to undertake a wide-ranging project to produce an optimized HALEU transportation system solution based on our exclusively licensed fuel transportation basket design. The GNS agreement encompasses a study for the transport of multiple HALEU nuclear fuel types, including uranium oxide, TRISO particles, uranium-zirconium hydride, uranium mononitride, and salt fuel for molten salt reactors, thus optimizing the quantity of material that can be transported and developing a conceptual package design that will accommodate the new basket design. We intend to obtain U.S. Nuclear Regulatory Commission (NRC) certification for our high-capacity HALEU transportation system to move commercial quantities of HALEU fuel around North America and internationally. If developed and commercialized, we believe this product will serve as the basis for a domestic HALEU transportation company capable of providing commercial quantities of HALEU fuel. We hope to put our fuel transportation business into operation by 2028. We have also brought on two former United Parcel Service (UPS) executives, one of which works for our fuel transportation subsidiary, with the other sitting on our Executive Advisory Board, to assist in growing the transportation business around our technology. — Nuclear Consultation Services. We also plan on providing nuclear service support and consultation services for the expanding and resurgent nuclear energy industry, both domestically and internationally. This includes, in coordination with the Cambridge Nuclear Energy Centre, the development of education resources. This business opportunity represents our nearest term revenue generating opportunity. Our goal is to start providing nuclear service support and consultation services for the nuclear energy industry in 2025, both domestically and internationally. As part of our efforts domestically, following our collaboration with Digihost Technology Inc. (Digihost) in December 2024, we expect to provide consulting services to Digihost beginning in the first quarter of 2025. These services will support the planning and execution of the Digihost project and will encompass regulatory advice, site assessment, roadmap development, and stakeholder engagement. In addition to these rendered services, we are examining strategic acquisitions to expand our business and consultancy services. We have commenced several material discussions with potential targets for such acquisitions, but as of the date of this prospectus, we have not entered into any definitive agreements for such acquisitions. In combination with our intention to acquire existing revenue generating consultancy businesses, we are focusing on building our own internal nuclear consultation business in coordination with certain outside academic institutions, which we anticipate would require approximately \$2 million over the next twelve months to recruit additional staff and build corresponding infrastructure to be capable of providing these services. Our Mission Our mission is to become a commercially focused, diversified and vertically integrated nuclear energy company that will capture market share in the very large and growing nuclear energy sector. To implement our plans, since our founding in 2022, our management has had constant communications

with key U.S. government agencies, including the DOE, the INL and ORNL, which are a part of the DOE's national nuclear laboratory system. Our company also maintains important collaborations with leading researchers from the Cambridge Nuclear Energy Centre and The University of California, Berkeley. Our Industry and Market We believe that the U.S. domestic nuclear energy sector is undergoing a renaissance that we believe we can capitalize on. We strongly support objectives of the DOE and the International Atomic Energy Agency (IAEA) for the peaceful use of nuclear energy, and we intend for our technology to form part of the U.S. foreign policy to advance the peaceful use of nuclear energy, science and technology, and drive new resources to projects and activities in developing countries with the greatest need. A key part of our business plan will seek to become a nuclear technology organization that can grow the U.S. global energy market engagement and concurrently support global market opportunities.

3 According to the FACT SHEET: President Biden Sets 2030 Greenhouse Gas Pollution Reduction Target Aimed at Creating Good-Paying Union Jobs and Securing U.S. Leadership on Clean Energy Technologies published by the White House in 2021, the United States has taken numerous steps in recent years to reduce its dependence on carbon-emitting energy sources. The U.S. had previously set a goal to reach a 100% carbon pollution-free electricity system by 2035, and President Biden set a target of a 50 to 52% reduction from 2005 levels in economy-wide net greenhouse gas pollution by 2030, underlining the Biden administration's desire for new energy solutions which are at the core of our business plans. Additionally, the "net zero world" initiative signals the U.S.'s proactive stance in working with countries to lead a global transition to net zero emissions by 2050. While it remains unclear how the Trump administration will view the net world zero initiative, it has already voiced support for the advanced reactor industry and declared its intention to support the build back of the nuclear industry in the United States.

Our Vision, Market Opportunity and Key Government Support We believe our achievements to date and our business plans are positioning our company to be a leading participant in the U.S. nuclear industry through simultaneously rebuilding and introducing national capabilities to drive the resurgent nuclear energy industry. We further believe that our timing and approach into the industry have been optimal, with insight into national capability deficiencies and an understanding of the difficulties faced by other commercial nuclear energy, particularly microreactor, companies. Almost all microreactor companies have advanced using funds acquired from government grants or awards. Even with private funding, they have been stifled by lack of investor interest because of the long return timelines and high risks.

Despite the early stage of our company, we believe we are competitively differentiated in many ways.

- Non-Dependent on Government Funding. Most small modular reactor (SMR) and microreactor companies are reliant on government grants and financing to progress their concepts. Consequently, their progress can cease once government funding is not available. Currently, we do not rely on government funding to sustain our business operations, though we have already received government grants.
- Technical Insight. On the technical front, we have benefited from insight into the problems which affected earlier movers within the nuclear technology space. Large SMR companies have raised billions of dollars for development but have been stalled by the lag in developing or acquiring the fuel necessary to advance their reactors. This led to our investigations into de-risking our own fuel supply by pursuing development and investment into our own fuel processing facility, as well as using more conventional fuel with greater operational history. We believe we have identified certain problems affecting the industry and we are taking early action to surmount potential roadblocks.
- Government Contacts. During 2024, individuals with high placed government service and contacts joined our company. These include (i) John G. Vonglis, the former Chief Financial Officer of the DOE, who joined as our Executive Director of Global Government Affairs, (ii) Eric R. Oesterle, a former Branch Chief for Operating Reactor Licensing at the NRC, who joined as our Head of Microreactor Regulatory Licensing and (iii) David Tiktinsky, a forty year veteran of the NRC, who joined as our Head of Nuclear Regulatory Licensing. Our recruitment efforts were complemented by bringing in experts involved in every major part of the nuclear industry, from regulation to laboratories, to technical teams. We believe we will benefit from those government contacts as our company will be afforded access to highly skilled personnel possessing advanced expertise in the energy and nuclear sectors.
- World Class Team. Our technical team is world class, with simple and realizable reactor concepts that do not require exotic fuels and who are aware of all the difficulties faced by almost every other reactor company who has chosen alternative designs. Our team has a deep knowledge of applicable regulatory requirements surrounding safety, transportation, and decommissioning, and our designs have incorporated all these considerations from the outset.
- Government Initiatives. We believe that the U.S. government is increasingly showing strong support for nuclear energy through various initiatives aimed at advancing nuclear technology, all of which further our business plans and opportunities. This support has taken various forms, including legislation, grants, project funding and loan guarantees. Aside from the support for existing nuclear capabilities, all of these initiatives have the potential directly or indirectly to benefit and support our company.

4 Our Competitive Strengths We believe we have the following competitive strengths relating to our various business lines:

- Microreactor Business. Unlike other nuclear reactor companies, we are seeking to become a vertically integrated company with multiple streams of revenue, a diversified business to hedge against market changes, and greater control over industries supporting microreactor development, such as nuclear fuel and transportation. Our diversified business model will make us highly differentiated from other reactor companies. We believe we have an expertise advantage over other companies developing microreactors, as we can recruit the best scientists, engineers and professionals in the world from any country or institution, without being constrained by the available personnel located within certain academic and professional institutions.
- Fuel Processing Business. We believe, based on our market research, that no SMR and microreactor company is currently developing an integrated non-TRISO CAT II fuel supply chain to produce fuel for their reactors. Our strategy to create the fuel for our own reactors will also position us to supply fuel to the wider nuclear industry and other reactor manufacturers, addressing anticipated significant shortfalls in fuel supply.
- Fuel Transportation Business. We identified a transportation concept which investigated a high capacity HALEU fuel transportation basket design, which has been developed by INL, ORNL and PNNL, and funded by the DOE. The technology was developed around a licensed third-party cask technology to create a full HALEU transportation package, which provided the most advanced solution we identified to address the technological challenge of moving commercial quantities of HALEU fuel around North America. The development of this concept had not been continued by the DOE due to lack of funding. On April 3, 2024, we entered into the BEA License with BEA for this nuclear fuel transportation package, and have been working with the groups capable of aiding us in the development of the concept into a NRC certified and transportation package for the transportation of HALEU materials.

Our Challenges We are a young company seeking to develop and launch an integrated nuclear energy business. Our efforts face and will continue to face many significant challenges, as our business involves complex nuclear technology, regulatory hurdles, and rapidly shifting market dynamics. These challenges include, but are not limited to, the following:

- Obtaining the

necessary permits and licenses for nuclear reactors, facilities and transportation capabilities is time-consuming and expensive. Microreactors must meet stringent safety and environmental standards, and gaining regulatory approval can be a lengthy endeavor. Additionally, ensuring the safety of a microreactor throughout its lifecycle is paramount. Developing, implementing, and maintaining robust safety systems and protocols are critical challenges. Implementing robust security measures to protect against theft, sabotage, or unauthorized access is also critical for both regulatory compliance and public safety.

Building and operating a microreactor is very capital-intensive. Securing the necessary significant funding and managing costs, including but not limited to operational and maintenance costs, are ongoing challenges for our business.

The political and regulatory landscape can change, impacting the stability and viability of nuclear projects. International agreements and geopolitical factors can also affect nuclear technology access and export.

CompetitionOur competitors (nearly all of which are significantly larger and have more cash resources than we do) are other power generation systems which provide energy within 1 to 1.5 megawatts electric (MWe) range. This competition includes fossil fuel power generating units, renewables, long duration storage and other nuclear reactors, including other microreactors. However, as described above in “Competitive Strengths”, we believe we are positioned better than our competition to emerge as a leading supplier of carbon-free round the clock energy generation.

5 Intellectual PropertyWe have developed or acquired important intellectual property to protect our technologies, including provisional patent filings for our microreactors, the acquisition of intellectual property (and subsequent filing by us of a provisional patent) related to our acquired annular linear induction pump technology (ALIP)) used in small nuclear reactor cooling, an exclusive license for our fuel transportation technology, and intellectual property acquired from USNC, including 38 issued, pending or published patents, including six issued and four pending or published U.S. utility patents and three issued and four pending Canadian utility patents, 16 registered, pending or published trademarks.

Summary of Significant RisksInvesting in our common stock is speculative and involves a high degree of risk. These risks are discussed more fully in “Risk Factors” and elsewhere in this prospectus. We urge you to read “Risk Factors” beginning on page 11 and this prospectus in full. Our significant risks may be summarized as follows:

Risks Related to Our Industry and Business

- We have incurred losses and have not generated any revenue since our inception. We anticipate that we will continue to incur losses, and expect that we will not generate revenue, for the foreseeable future.
- We are an early-stage company in an emerging market with an unproven business model, new and unproven technologies, and a short operating history, which makes it difficult to evaluate our current business and prospects and may increase the risk of your investment.
- Our business plans will require us to raise substantial additional amounts of capital. Future capital needs will require us to sell additional equity or debt securities that will dilute or subordinate the rights of our common stockholders. In addition, we may be unable to secure government grants as part of our funding strategy.
- We and our officers and directors are presently parties to securities law and fiduciary duty lawsuits relating to our public statements made since our initial public offering. Our reputation may be damaged by these suits, and if we are unable to have them dismissed or should we receive adverse outcomes, our business and results of operations may suffer, including as a result of our indemnification obligations to our directors and officers.
- The failure of production and commercialization of nuclear micro reactors as planned will adversely and materially affect our business, financial condition, and results of operations.
- We are in the process of developing a domestic LEU and HALEU fuel processing facility to supply the next generation of advanced nuclear reactors. The failure of completion and operation of such facility as planned will adversely and materially affect our business, financial condition, and results of operations.
- We plan to establish a transportation business focused on the movement of both LEU and HALEU and are currently developing a regulatorily licensed, high-capacity HALEU transportation system, capable of moving commercial quantities of HALEU fuel around North America and worldwide. The failure to establish and commercialize such products as planned will adversely affect our long-term plans to generate additional revenues from this business and may adversely impact our ability to move fuel products domestically and internationally as planned.
- We plan to provide nuclear service support and consultation services for the expanding and resurgent nuclear energy industry, both domestically and internationally. Failure to do so as planned will adversely and materially affect our business, financial condition, and results of operations.
- We have undertaken and will continue to pursue strategic acquisitions. These acquisitions may be difficult to consummate and integrate and may create losses for us or not provide us with the anticipated benefits. We may not be able to successfully integrate our previous and future acquisitions or generate sufficient revenues or earnings from future acquisitions, which could cause our business to suffer.
- All of our executive officers are presently engaged by us on an independent contractor basis, except for Jay Jiang Yu, our founder, President, Secretary and Treasurer, and Chairman of the Board, with whom we have an employment agreement, and they each have management, advisory or directorship positions with other companies and may allocate their time to other businesses, which may pose certain risks in fulfilling their obligations with us.

6 Risks Related to Our Intellectual Property

- If we fail to develop, gain approval for, protect or enforce our intellectual property or proprietary rights, our business and operating results could be harmed.
- We rely on our unpatented proprietary technology, trade secrets, designs, experiences, work flows, data, processes, software and know-how.
- We may be accused of infringing intellectual property rights of third parties and content restrictions of relevant laws, which may materially and adversely affect our business, financial condition and results of operations.

Risks Related to Regulation and Compliance

- Our business is subject to a wide variety of extensive and evolving government laws and regulations. Changes in and/or failure to comply with such laws and regulations could have a material adverse effect on our business.
- If we fail to comply with the laws and regulations relating to the collection of sales tax and payment of income taxes in the various states in which we do business, we could be exposed to unexpected costs, expenses, penalties and fees as a result of our non-compliance, which could harm our business.

General Risks Associated with Our Company

- We are highly dependent on our senior management team and other highly skilled personnel. If we are unable to attract, retain and maintain highly qualified personnel, including our senior management team, we may not be able to implement our business strategy and our business and results of operations would be harmed.
- Mr. Jay Jiang Yu, our President, Secretary, Treasurer, and Chairman of the Board, has a significant influence over our company due to his ownership of a material percentage of our outstanding common stock. Also, his interests may not always be aligned with the interests of our other stockholders, which may lead to conflicts of interest that harm our company.
- Our ability to effectively manage our anticipated growth and expansion of our operations will also require us to enhance our operational, financial and management controls and infrastructure, human resources policies and reporting system. These enhancements and improvements will require significant capital expenditures and allocation of valuable management and employee resources.
- We are

subject to cybersecurity risks. — We will incur significantly increased costs as a result of, and devote substantial management time to operating as, a public company. — We are an “emerging growth company,” and we cannot be certain if the reduced reporting and disclosure requirements applicable to emerging growth companies will make our common stock less attractive to investors. Risks Related to Ownership of Our Common Stock — The trading market for our common stock is very new, and a consistently robust and liquid trading market may not develop or be sustained over the long term. — The trading price of our common stock has been and may continue to be volatile, and you could lose all or part of your investment. — If securities or industry analysts do not publish research or publish inaccurate or unfavorable research about our business, our stock price and trading volume could decline. — Future sales of our securities or warrants exercisable for our common stock may depress our stock price. — Our failure to meet the continued listing requirements of Nasdaq could result in a delisting of our common stock. — Our directors, executive officers and principal stockholders will continue to have substantial control over our company after this offering, which could limit your ability to influence the outcome of key transactions, including a change of control.

7 THE OFFERING

Common Stock to be offered: 2,500,002 Shares and 2,500,002 Warrant Shares held or acquirable by the selling stockholders.

Terms of the Offering: The selling stockholders will determine when and how to sell the Selling Stockholder Shares offered in this prospectus, as described in the Plan of Distribution.

Use of Proceeds: We will not receive any proceeds from the sale of Selling Stockholder Shares in this offering. However, we may receive proceeds from the exercise of the November 2024 Warrants by the selling stockholders to the extent they are exercised for cash. In the event we receive proceeds from the cash exercise of the Warrant, we intend to use the aggregate net proceeds from such exercise for general working capital and general corporate purposes, which could include potential acquisitions of complementary businesses or assets. See the sections titled “Use of Proceeds” and “Selling Stockholders” for additional information.

Listing and Symbol: Our common stock is listed on The Nasdaq Capital Market under the symbol “NNE”.

Risk Factors: Investing in our securities is speculative and involves substantial risks. You should read the “Risk Factors” section of this prospectus and in the documents incorporated by reference in this prospectus for a discussion of factors to consider before deciding to purchase our securities.

Shares of our common stock that may be offered under this prospectus will be fully paid and non-assessable. Throughout this prospectus, when we refer to the shares of our common stock being registered on behalf of the selling stockholders for offer and resale, we are referring to the Shares that have been issued to the selling stockholders and the Warrant Shares issuable upon exercise of the November 2024 Warrants issued in our November 2024 private placement. When we refer to the selling stockholders in this prospectus, we are referring to the selling stockholders identified in this prospectus and, as applicable, their permitted transferees or other successors-in-interest that may be identified in a supplement to this prospectus or, if required, a post-effective amendment to the registration statement of which this prospectus is a part.

8 SUMMARY OF CONSOLIDATED FINANCIAL INFORMATION

The following table sets forth summary financial and other data for the periods ended and at the dates indicated below. Our summary financial information for the years ended September 30, 2024 and 2023 has been derived from our audited consolidated financial statements incorporated by reference in this prospectus. The financial data set forth below should be read in conjunction with “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and the consolidated financial statements and notes thereto filed with the 2024 Annual Report (as defined below) that was incorporated by reference within this prospectus.

Statements of Operations

	For the Year Ended September 30, 2024	For the Year Ended September 30, 2023
Operating expenses		
General and administrative	\$6,850,993	\$4,749,395
Research and development	3,725,565	1,534,000
Change in Fair Value of contingent consideration	(66,000)	-
Loss from operations	(10,510,558)	(6,283,395)
Other income	359,002	32,994
Net loss	\$(10,151,556)	\$(6,250,401)
Net loss per share of common stock:		
Basic	\$(0.39)	\$(0.28)
Diluted	\$(0.39)	\$(0.28)

Statements of Stockholder’s Equity

	For the Year Ended September 30, 2024	For the Year Ended September 30, 2023
Mezzanine Equity		
Permanent Equity		
Shares		
Amount		
Additional paid-in capital		
Accumulated deficit		
Total		
Balance as of September 30, 2023	2,000,000	\$5,000,000
2024	23,184,869	\$2,319
2023	\$9,288,553	\$(7,282,225)
Mezzanine equity conversion		
2024	2,000,000	5,000,000
2023	2,000,000	2,000,000
Common stock issuances		
2024	4,804,019	4,814
2023	34,953,456	34,953,937
Offering costs		
2024	(3,629,829)	(3,629,829)
R&D acquisition common stock issuances		
2024	50,000	5
2023	786,495	786,500
Exercise of warrants		
2024	63,775	6
2023	1,275,494	1,275,500
Exercise of stock options		
2024	593,000	59
2023	1,043,941	1,044,000
Equity-based compensation		
2024	20,000	2
2023	320,255	320,257
Net loss		
2024	(10,151,556)	(10,151,556)
Balance as of September 30, 2024	\$30,715,663	\$3,072
2023	\$49,038,165	\$(17,433,781)

Statements of Cash Flows

	For the Year Ended September 30, 2024	For the Year Ended September 30, 2023
OPERATING ACTIVITIES		
Net loss	\$(10,151,556)	\$(6,250,401)
Adjustments to reconcile net loss to net cash used in operating activities:		
R&D acquisition paid in equity	786,500	-
Equity-based compensation	320,257	2,384,003
Amortization of right of use asset	96,532	-
Depreciation	10,393	-
Change in assets and liabilities:		
Prepaid expenses	(628,090)	(88,409)
Deposits	(235,235)	-
Accounts payable and accrued liabilities	571,474	87,234
Due to related parties	(10,000)	-
Lease liability	5,079	-
Contingent liability	770,500	-
Net cash used in operating activities	(8,464,146)	(3,867,573)
INVESTING ACTIVITIES		
Increase in long-term investments	(2,000,000)	-
Additions to property, plant and equipment	(1,700,000)	-
Net cash provided by financing activities	(3,700,000)	-
FINANCING ACTIVITIES		
Proceeds from common stock issuances	34,953,937	8,765,369
Offering costs	(3,554,829)	(75,000)
Proceeds from exercise of warrants		

\$1,275,500 \$ - Proceeds from exercise of stock options \$1,044,000 \$ - Net cash provided by financing activities \$33,718,608 \$8,690,369 \$ - Net increase in cash \$21,554,462 \$4,822,796
 Cash and cash equivalents, beginning of year \$6,952,795 \$2,129,999
 Cash and cash equivalents, end of year \$28,507,257 \$6,952,795
 Non-Cash Supplemental Disclosures \$ - Right of use assets acquired in exchange for new operating lease liabilities \$1,926,178 \$ -

RISKFACORS An investment in our securities is speculative and involves a high degree of risk. You should carefully consider the risks described below, which we believe represent certain of the material risks to our business, together with the information contained elsewhere in this prospectus, before you make a decision to invest in our securities. Please note that the risks highlighted here are not the only ones that we may face. For example, additional risks presently unknown to us or that we currently consider immaterial or unlikely to occur could also impair our operations. If any of the following events occur or any additional risks presently unknown to us actually occur, our business, financial condition and operating results may be materially adversely affected. In that event, the trading price of our securities could decline and you could lose all or part of your investment.

Risks Related to Our Industry and Business We have incurred losses and have not generated any revenue since our inception. We anticipate that we will continue to incur losses, and expect that we will not generate revenue, for the foreseeable future. We have incurred significant operating losses since inception and have an accumulated deficit of \$17.4 million as of September 30, 2024 and had negative operating cash flow for the year ended September 30, 2024. We expect that operating losses and negative cash flows will increase in the coming years because of additional costs and expenses related to our research and development (which we refer to herein as R&D), business development activities and our status as a publicly traded company. To date, we have not generated any revenue. We do not expect to generate any revenue unless and until we are able to commercialize our reactors and/or other lines of business. As we have incurred losses and experienced negative operating cash flows since our inception, and accordingly we have undertaken equity financing from investors to satisfy our funding needs, and we will consider applications for government grants; however, we may not raise adequate funding to offset our expenses and losses. Moreover, we may encounter unforeseen expenses, difficulties, complications, delays, and other unknown factors that may adversely affect our business. The magnitude of our future net losses will depend, in part, on the rate of future growth of our expenses and our ability to generate and grow revenue. We cannot predict the outcome of the actions to generate liquidity to fund our operations, whether such actions would generate the expected liquidity to fund our operations as currently planned or whether the costs of such actions will be available on reasonable terms or at all. Our continued solvency is dependent upon our ability to obtain additional working capital to complete our reactor development, to successfully market our reactors and to achieve commerciality for our reactors. Our prior losses and expected future losses have had and may continue to have adverse effects on our stockholders' equity (deficit) and working capital and may lead to the failure of our business. We are an early-stage company in an emerging market with an unproven business model, new and unproven technologies, and a short operating history, which makes it difficult to evaluate our current business and prospects and may increase the risk of your investment. We only have a limited operating history upon which to base an evaluation of our current and future business prospects. We were founded in February 2022 and are currently in the process of developing our nuclear microreactors and other lines of business as more fully described in the "Business" section of this prospectus. We anticipate that it will take several years for us to commence generating meaningful revenues. Moreover, we will be required to make significant expenditures over the near and long term just to achieve any level of revenues. Over the next twelve months, we will continue to progress the development of our advanced microreactors and our vertically integrated fuel processing business, with estimated expenditures to be approximately \$40 million. This allocation comprises approximately \$25 million dedicated to the research, development, and physical test work of our microreactors and other technologies, such as our fuel transportation system. A further allocation of approximately \$10 million will be allocated to the development of our planned HALEU fuel processing facilities alongside LIST, the related-party uranium enrichment company with whom we collaborate and in which we've made a strategic investment. The remaining approximately \$5 million is earmarked for miscellaneous costs essential to propelling the progress of our microreactors, encompassing the support of current personnel engaged in executive, finance, accounting, and other administrative functions. We may also utilize our cash resources raised in 2024 for acquisitions of complementary businesses or assets.

We estimate that our microreactor demonstration work will be conducted between 2025 and 2027, our microreactor licensing application will be processed between 2026 and 2029, and our microreactors will be launched between 2030 and 2031. We also plan on providing nuclear services support and consultation services for the expanding and resurgent nuclear energy industry in 2025, both domestically and internationally. As part of our efforts domestically, following our collaboration with Digihost Technology Inc. ("Digihost") in December 2024, we expect to provide consulting services to Digihost beginning in the first quarter of 2025. These services will support the planning and execution of the Digihost project and will encompass regulatory advice, site assessment, roadmap development, and stakeholder engagement. In addition to these rendered services, we are examining strategic acquisitions to expand our business and consultancy services. We have commenced several material discussions with potential targets for such acquisitions, but as of the date of this prospectus, we have not entered into any definitive agreements for such acquisitions. In combination with our intention to acquire existing revenue generating consultancy businesses, we are focusing on building our own internal nuclear consultation business in coordination with certain outside academic institutions, which we anticipate would require approximately \$2 million over the next twelve months to recruit additional staff and build corresponding infrastructure to be capable of providing these services. Notwithstanding the foregoing, the outlined expenditures and our anticipated timelines are estimations only. These estimates are inherently subject to significant risks and change due to unforeseen circumstances, operational challenges, adjustments in the development plans for our microreactors and other technologies and uncertainties associated with the governmental licensing approval process, and other factors beyond our control. Given that these elements may exceed our initial expectations or lie beyond our control, we cannot guarantee the accuracy of the actual expenditures and timelines. Our limited operating history and early stage of our business makes an evaluation of our business and prospects difficult. You must consider our business and prospects in light of the risks and difficulties we encounter as an early-stage company in the new and rapidly evolving market of the nuclear energy industry. These risks and difficulties include, but are not limited to, the following:

- Obtaining the necessary permits and licenses can be a lengthy and complex process, subject to rigorous safety and environmental regulations. Delays or denials in obtaining these approvals can significantly impact a project's timeline and cost.
- Ensuring the safety of the reactor during operation and in case of accidents is paramount. Microreactors must be designed with robust safety features to prevent accidents, and emergency response plans must be in place to mitigate

any potential incidents. — Security concerns, including the risk of theft or sabotage, need to be addressed through physical security measures and cybersecurity protocols. — Microreactor and fuel fabrication projects are very capital-intensive, and securing adequate financing can be a significant hurdle. Economic risks related to cost overruns, construction delays, or market uncertainties must be managed effectively. — The demand for microreactor-generated power may be uncertain, especially in the early stages of the business. Market fluctuations and changing energy policies can affect the profitability of the venture. — Microreactors rely on specialized components and materials, which may have limited availability or long lead times. Supply chain disruptions can impact project timelines and costs. — Addressing environmental concerns, including radioactive waste management and minimizing environmental impact, is essential for regulatory compliance and public acceptance. Proper disposal and management of radioactive waste and decommissioning plans need to be in place from the outset. Failing to account for these end-of-life considerations can lead to significant liabilities. Additionally, any adverse environmental impact can lead to public opposition and regulatory penalties. — Public perception of nuclear energy and technology can be a challenge. Overcoming public skepticism or opposition and gaining social acceptance for the microreactor project is important.

12 We may not be able to successfully address any of these risks or others. Failure to adequately do so could seriously harm our business and cause our operating results to suffer. Our nuclear microreactors are still at the development stage and have not been put into production yet. Developing, producing, and commercializing nuclear reactors is a complex and challenging endeavor due to various technical, regulatory, financial, and public perception obstacles, which may adversely and materially affect our business, financial condition and results of operation. No assurances can be given that we will be able to develop and commercialize our microreactors and other technologies on the timelines we currently anticipate, or at all, and our failure to do so would likely lead to the loss of your investment in our company. Our business plans will require us to raise substantial additional amounts of capital. Future capital needs will require us to sell additional equity or debt securities that will dilute or subordinate the rights of our common stockholders. In addition, we may be unable to secure government grants as part of our funding strategy. Our business plan is very costly. To develop and implement our businesses as currently planned, we will need to raise substantial amounts of additional capital, potentially hundreds of millions of dollars. We expect that we will need to make substantial investments in research and development of our products and technologies and other substantial investments before we can generate meaningful revenues. Moreover, our costs and expenses may be even greater than currently anticipated, and there may be investments or expenses that are presently unforeseen. In any case, we may be unable to raise sufficient capital to fund these costs and achieve significant revenue generation. In addition, given the relatively early stage of our company, our future capital requirements are also difficult to predict with precision, and our actual capital requirements may differ substantially from those we currently anticipate. As a result, we will need to seek equity or debt financing to finance a large portion of our future capital requirements. Such financing might not be available to us when needed or on terms that are acceptable, or at all. We will likely issue additional equity securities and may issue debt securities or otherwise incur debt in the future to fund our business plan. If we issue equity or convertible debt securities to raise additional funds, our existing stockholders will experience dilution, and the new equity (including preferred equity) or debt securities or other indebtedness may have rights, preferences, and privileges senior to those of our existing stockholders. If we incur additional debt, it may increase our leverage relative to our earnings or to our equity capitalization, requiring us to pay additional interest expenses. Our ability to obtain the necessary capital in the form of equity or debt to carry out our business plan is subject to several risks, including general economic and market conditions, as well as investor sentiment regarding our planned business. These factors may make the timing, amount, terms and conditions of any such financing unattractive or unavailable to us. The prevailing macroeconomic environment may increase our cost of financing or make it more difficult to raise additional capital on favorable terms, if at all. If we are unable to raise sufficient capital, we may have to significantly reduce our spending and/or delay or cancel our planned activities. We may also seek to raise additional funds through collaborations and licensing arrangements. These arrangements, even if we are able to secure them, may require us to relinquish some rights to our technologies, or to grant licenses on terms that are not favorable to us. Finally, we plan to apply for government funding in the form of grants or other funding from agencies such as the DOE. We may not receive such funding for a variety of reasons, including the size of our company and the government's assessment of our prospects. Even if we do receive such funding, the government could condition such funding on contractual provisions such as granting the government rights to our technology or products. Moreover, federal funding is subject to at least annual Congressional appropriations, which may not be forthcoming. The federal budget process is complex — the budget justification and Presidential budget requests are often incomplete; Congress may appropriate different amounts than those requested; and the DOE has varying degrees of discretion to reprogram or transfer appropriated funds. Nonetheless, to the extent Presidential budget requests or DOE budget justifications result in a shift of Congressional appropriations away from SMR funding generally or projects we are developing specifically, those shifts could materially and adversely affect the amount of DOE funding available to us and our business.

13 As a result of the foregoing, we might not be able to obtain any financing, and we might not have sufficient capital to conduct our business as projected, both of which could mean that we would be forced to curtail or discontinue our operations. If we cannot raise additional capital when we need or want to, our operations and prospects could be negatively affected, and our business could fail. We and our officers and directors are presently parties to securities law and fiduciary duty lawsuits relating to our public statements made since our initial public offering. Our reputation may be damaged by these suits, and if we are unable to have them dismissed or should we receive adverse outcomes, our business and results of operations may suffer, including as a result of our indemnification obligations to our directors and officers. On August 9, 2024, a putative securities class action lawsuit was filed against us and certain of our officers in the United States District Court for the Southern District of New York, captioned *Yvette Yang v. Nano Nuclear Energy Inc., et al.*, No. 1:24-cv-06057 (S.D.N.Y.). The complaint asserts claims for alleged violations of federal securities laws related to statements concerning our business and prospects, including our progress toward microreactor development. The plaintiff seeks to represent a class of certain persons who purchased or otherwise acquired our common stock during the period from May 8, 2024 through July 18, 2024 and seeks unspecified damages and other relief. On October 28, 2024, the court entered an order appointing Hongyu Xie as lead plaintiff. On November 4, 2024, the court entered a scheduling order for the filing of lead plaintiff's amended complaint and a briefing schedule for our anticipated motion to dismiss, under which lead plaintiff must file an amended complaint by January 6, 2025, and we must file a motion to dismiss by February 21, 2025. We dispute the allegations in the complaint and intend to defend the case vigorously. The case is at an early stage and we cannot reasonably estimate the amount of any potential financial loss or cost that could

result from the lawsuit. In addition, on August 23, 2024, a putative shareholder derivative lawsuit was filed purportedly on behalf of our company, as nominal defendant, against certain of our directors and officers in the Eighth Judicial District Court of Clark County, Nevada, captioned William Latza, Derivatively on Behalf of Nano Nuclear, Inc. v. James Walker, et al., No. A-24-900423-C. The complaint asserted claims for alleged breach of fiduciary duties and corporate waste, among others, related to statements concerning our business and prospects. On November 15, 2024, we filed a motion to dismiss pursuant to Rule 23.1 of the Nevada Rules of Civil Procedure based on plaintiff's lack of standing, and the director and officer defendants filed a motion to dismiss pursuant to Rule 12(b)(5) of the Nevada Rules of Civil Procedure based on plaintiff's failure to state a claim upon which relief can be granted. On December 20, 2024, plaintiff filed an amended complaint. The amended complaint alleges claims for alleged breach of fiduciary duties, corporate waste, market manipulation, and racketeering, among others, related to our business and prospects, including our progress toward microreactor development, the qualifications of our management, and our investment in LIS Technologies Inc. On behalf of our company, the plaintiff seeks damages from the director and officer defendants and an order directing our company to take actions to reform and improve corporate governance and internal procedures. The director and officer defendants deny all allegations of liability and intend to vigorously defend against all claims. Given the preliminary stage of the lawsuit and the inherent uncertainties of litigation, we cannot determine with certainty the outcome of the case at this time. Ongoing securities law and fiduciary duty lawsuits may divert significant financial and human resources away from our core business operations, increasing legal expenses and reducing available capital for other strategic initiatives. If the lawsuits result in adverse outcomes, such as judgments or settlements, we could face substantial monetary damages, penalties, or fines, which could negatively impact our financial position, cash flow, and overall business operations. These lawsuits may harm our reputation with investors, suppliers, and business partners. Even if we successfully defend against the claims, the mere existence of these lawsuits may erode confidence in our management, corporate governance, and financial reporting. The uncertainty surrounding the outcome of these lawsuits could create volatility in our stock price, leading to a decrease in investor confidence and possible difficulties in raising future capital. Our officers and directors, who are critical to our leadership and decision-making, may be distracted by these lawsuits, which could lead to delays or inefficiencies in executing our business strategy. If these lawsuits persist or lead to unfavorable publicity, it may become more challenging to attract and retain qualified employees, including key executives, due to perceived instability or legal risk associated with our company. 14 The current lawsuits may encourage other parties to file additional claims or lawsuits, increasing our legal risks and further burdening our resources. The case is still at an early stage and we cannot reasonably estimate the amount of any potential financial loss or cost that could result from this lawsuit. If we are unable to have them dismissed or should we receive adverse outcomes, our business and results of operations may suffer. The lawsuits may prompt increased scrutiny from regulatory authorities, leading to additional investigations, fines, or compliance requirements, which could further affect our business. Further, under certain circumstances, we may have contractual or other legal obligations to indemnify and to incur legal expenses on behalf of investors, directors, officers, employees, or other third parties. Our business contractual and legal obligations related to indemnification and the coverage of legal expenses for investors, directors, officers, employees, and other third parties are critical components of our risk management and corporate governance. These obligations are typically outlined in various agreements, contracts, and corporate bylaws. In our company, the key aspects of indemnification will be included in our directors and officers (D&O) insurance, our corporate governing documents, and investor agreements and other relevant arrangements. Nuclear companies often purchase director and officer insurance policies to indemnify their directors and officers against personal liability for actions taken in their roles. These policies provide financial protection for individuals in the event of lawsuits, regulatory actions, or other legal proceedings related to their corporate duties. The corporate governing documents may include provisions that obligate our company to indemnify its directors, officers, and sometimes employees to the extent allowed by law, with some conditions or limitations on indemnification as applicable. In cases where investors, such as venture capitalists or private equity firms, are involved, investment agreements may include indemnification clauses that protect the investors from certain liabilities related to their investment in our company. In our agreements with third parties, such as suppliers, partners, or service providers, indemnification provisions may also be included to specify who is responsible for indemnifying the other party in the event of specified breaches, disputes, or liabilities. We may also be required to cover the legal expenses and other costs on behalf of individuals or third parties incurred during any applicable legal proceedings, which may divert our company's resources and the management's attention, thus materially and adversely affect our business, financial condition and results of operations and result in our inability to establish and grow our business. The failure of production and commercialization of nuclear micro reactors as planned will adversely and materially affect our business, financial condition, and results of operations. We are in the process of developing the next-generation advanced nuclear microreactors: ZEUS, a solid core battery reactor, ODIN, a low-pressure salt coolant reactor, the KRONOS MMR system and the LOKI MMR platform. With these products, we are advancing the development of the next generation of on-demand capable, and in some instances portable advanced nuclear microreactors. Through a collaboration of our world-renowned nuclear scientists and engineers, the national laboratories, and government support, we believe our reactors will have the potential to impact the global energy landscape. Our goal is to commercially launch one of these products by the year 2030 or 2031. If our plan to develop, manufacture or commercialize these products is delayed, suspended, interrupted, or cancelled for whatever reason, our business, financial condition, and results of operations will be adversely and materially disrupted, and the value of our securities may significantly decline or become worthless. We are in the process of developing a domestic LEU and HALEU fuel processing facility to supply the next generation of advanced nuclear reactors. The failure of completion and operation of such facility as planned will adversely and materially affect our business, financial condition, and results of operations. Building a nuclear fuel processing facility to produce commercial nuclear fuel for SMRs and microreactor companies involves a highly specialized and regulated process. There will be specific challenges at each stage of development, including but not limited to the following:

- Obtaining the necessary licenses and permits from regulatory authorities can be a complex and time-consuming process. Compliance with stringent safety, security, and environmental regulations is crucial.
- Ensuring the safety and security of the facility and the nuclear materials within it is of utmost importance. Robust safety measures and security protocols must be implemented to prevent accidents, theft, or unauthorized access.
- Fabricating nuclear fuel assemblies and components requires specialized knowledge and expertise in nuclear materials, metallurgy, and manufacturing processes. Recruiting and retaining a skilled workforce can be a challenge.
- Maintaining strict quality control and assurance processes is essential to ensure the reliability and safety of the nuclear fuel. Any defects or substandard

materials can have serious consequences. — Building and operating a nuclear fuel processing facility can be capital-intensive. Managing costs, including construction, operational, and maintenance expenses, is essential for the facility's financial viability. — Construction delays, regulatory approvals, and unforeseen technical challenges can extend the timeline for facility development, potentially affecting market entry and revenue generation. — The demand for nuclear fuel can fluctuate based on the deployment of SMRs and Microreactors. Competition from other fuel suppliers and alternative energy sources can also affect market share and profitability.

In 2023, we established a subsidiary, HALEU Energy, to concentrate specifically on creating a domestic HALEU fuel processing facility to supply the next generation of advanced nuclear reactors. In February 2023, we were selected as an official founding member of the DOE's new HALEU Consortium to develop the U.S.'s domestic capability for the manufacture of HALEU and its processing. Currently we are still in the process of developing such facility and target to have such facility in operation early next decade. In March 2023, we entered into a memorandum of understanding with Centrus Energy Corp. (or Centrus), an energy fuel company who will provide HALEU to support HALEU Energy's research and development and commercialization on initial test reactor cores and its commercial variant reactors. However, such a memorandum is not binding on both parties with certain exceptions, such as confidentiality. There is no assurance that we will enter into any purchase agreement with Centrus in the future. In November 2024, we announced a \$2 million strategic investment in and entry into a collaboration with a laser-based uranium enrichment technology company, LIST, which is a related party. Through this investment and related collaboration, we aim to assist in advancing LIST's technologies to secure a reliable low enriched uranium fuel supply for our future operations and the broader nuclear energy industry. The parties intend that LIST will provide us with enriched UF₆ at no cost to be fabricated and sold to customers, with LIST to receive compensation as part of a profit-sharing arrangement to be agreed to between the companies in the future. Through collaboration with LIST, we intend to construct the supporting facilities alongside LIST's enrichment facility, including the deconversion and fuel fabrication facilities. The construction of these facilities and related activities are subject to similar risks to those outlined above with respect to our own HALEU fuel processing facility. Further, there is a risk that LIST's technology will itself not advance to commercial viability or secure applicable regulatory approvals. All of the foregoing creates the risk of loss with respect to our investment in and collaboration with LIST. In December 2024, we announced that LIST and our company were selected by the DOE to participate as one of six contract awardees in the DOE's Low-Enriched Uranium (LEU) Enrichment Acquisition Program (the LEU Acquisition Program). Under the contract awarded to LIST, LIST was selected as the prime contractor, with our company as the key subcontractor bringing our technical and regulatory expertise in advanced nuclear solutions to the collaboration. LIST will oversee the development of the primary uranium enrichment processes using its novel laser technology, while our company will contribute towards development in the areas of fuel deconversion, fuel fabrication, and fuel transportation. The total overall amount appropriated under the LEU Acquisition Program across all six contract awardees is anticipated to be \$3.4 billion, to be awarded by the DOE via agreed to task orders each having a minimum value of \$2 million. 16 — If our plan to complete and operate any fuel processing facilities is delayed, suspended, interrupted, or cancelled for whatever reason, our business, financial condition and results of operations will be adversely and materially disrupted, and the value of our securities may significantly decline or become worthless. We plan to establish a transportation business focused on the movement of both LEU and HALEU and are currently developing a regulatorily licensed, high-capacity HALEU transportation system, capable of moving commercial quantities of HALEU fuel around North America and worldwide. The failure to establish and commercialize such products as planned will adversely affect our long-term plans to generate additional revenues from this business and may adversely impact our ability to move fuel products domestically and internationally as planned. We plan to establish a transportation business focused on the movement of both LEU and HALEU. Currently we are developing a regulatorily licensed, high-capacity HALEU transportation system, capable of moving commercial quantities of HALEU fuel around North America and beyond. We received an exclusive license for a high capacity HALEU fuel transportation basket design in April 2024, which will form the basis of a complete transportation package able to move the most commonly utilized fuel types. The license grants us, as the licensee, exclusive rights for the use and development of certain transportation technology. If developed and commercialized, we believe this product would be one of the few of its kind in North America and would serve as the basis for a domestic HALEU transportation company capable of providing commercial quantities of HALEU fuel. In September 2024, we signed an agreement with GNS to undertake a wide-ranging project to produce an optimized HALEU transportation system solution based on our exclusively licensed fuel transportation basket design. The GNS agreement encompasses a study for the transport of multiple HALEU nuclear fuel types, including uranium oxide, TRISO particles, uranium-zirconium hydride, uranium mononitride, and salt fuel for molten salt reactors, thus optimizing the quantity of material that can be transported and developing a conceptual package design that will accommodate the new basket design. In December 2024, we announced that LIST and our company were selected by the DOE to participate as one of six contract awardees in the DOE's Low-Enriched Uranium (LEU) Enrichment Acquisition Program (the LEU Acquisition Program). Under the contract awarded to LIST, LIST was selected as the prime contractor, with our company as the key subcontractor bringing our technical and regulatory expertise in advanced nuclear solutions to the collaboration. LIST will oversee the development of the primary uranium enrichment processes using its novel laser technology, while our company will contribute towards development in the areas of fuel deconversion, fuel fabrication, fuel conversion, and fuel transportation. The total overall amount appropriated under the LEU Acquisition Program across all six contract awardees is anticipated to be \$3.4 billion, to be awarded by the DOE via agreed to task orders each having a minimum value of \$2 million. We target to have our fuel transportation business in operation by 2028. However, there is no assurance that we can successfully operate such business as planned. If our plan to establish and commercialize such fuel transportation business is delayed, suspended, interrupted or cancelled for whatever reason, our business, financial condition and results of operations will be adversely and materially disrupted, and the value of our securities may significantly decline or become worthless. — — We plan to provide nuclear service support and consultation services for the expanding and resurgent nuclear energy industry, both domestically and internationally. Failure to do so as planned will adversely and materially affect our business, financial condition, and results of operations. We plan to provide nuclear service support and consultation services for the expanding and resurgent nuclear energy industry, both domestically and internationally. This business opportunity represents our most near-term revenue generating opportunity and our goal is to begin providing these services in 2025, both domestically and internationally. As part of our efforts domestically, following our collaboration with Digihost in December 2024, we expect to provide consulting services to Digihost beginning in the first quarter of 2025. These services will support the planning and execution of the Digihost project and will encompass regulatory advice, site

assessment, roadmap development, and stakeholder engagement. In addition to these rendered services, we are examining strategic acquisitions to expand our business and consultancy services. We have commenced several material discussions with potential targets for such acquisitions, but as of the date of this prospectus, we have not entered into any definitive agreements for such acquisitions. In combination with our intention to acquire existing revenue generating consultancy businesses, we are focusing on building our own internal nuclear consultation business in coordination with certain outside academic institutions, which we anticipate would require approximately \$2 million over the next twelve months to recruit additional staff and build corresponding infrastructure to be capable of providing these services. No assurances can be given that we will be able to successfully acquire or establish and thereafter grow our own consultation business, and our failure to do so would adversely affect our near-term revenue prospects. Moreover, the outlined expenditures and the timelines are estimations only. These estimates are inherently subject to significant risks and change due to unforeseen circumstances, operational challenges, adjustments in the microreactor development plan and uncertainties associated with the licensing approval process, and other factors beyond our control. Given that these elements may exceed our initial expectations or lie beyond our control, we cannot guarantee the accuracy of the actual expenditures and timelines.

17 The current upsurge in interest in nuclear energy, combined with the increased investment from both private and governmental sources within the nuclear space, as well as the global push for zero carbon technologies, has created a demand for nuclear energy expertise which exceeds supply. The increased demand in personnel and nuclear related business activity will create increased demand for personnel involved in the licensing and regulatory aspects of the industry, which provide us with potential to root in this area. We have already identified several nuclear services and consultancy providers, which have been assessed as potentially suitable for acquisition by our company. However, there is no assurance that we can acquire them successfully or as planned. If our plan to start the consulting services is delayed, suspended, interrupted or cancelled for whatever reason, our business, financial condition and results of operations will be adversely and materially disrupted, and the value of our securities may significantly decline or become worthless.

Providing a nuclear consulting service as a business comes with a unique set of difficulties and challenges due to the complexity and sensitivity of the nuclear industry. These challenges and difficulties include, but are not limited to:

- Providing valuable nuclear consulting services requires a deep understanding of nuclear science, engineering, and technology. Maintaining a team with the necessary expertise can be difficult.
- Consulting on nuclear projects involves addressing safety and security issues. Ensuring that clients are compliant with safety protocols and security measures is a critical responsibility.
- Handling sensitive nuclear information and data requires strict security measures and confidentiality protocols to protect classified or proprietary information.
- As a consultant, we may face liability issues if our advice leads to undesirable outcomes or non-compliance with regulations. Managing and mitigating these risks is essential.
- The nuclear consulting market can be competitive, with established consulting firms and experts in the field. Standing out and securing clients can be challenging, especially for newcomers.
- The nuclear industry is evolving with new technologies, safety standards, and market dynamics. Staying updated and adapting to these changes is vital to remain relevant and competitive.
- Managing multiple projects for different clients with varying timelines and needs can be challenging. Effective project management is essential to meet deadlines and deliver quality results.
- Meeting and managing client expectations can be demanding. Clients may have high expectations for the outcomes of their nuclear projects, and effective communication is essential to align expectations with reality.
- Leveraging data analytics and technological advancements can be challenging, especially when dealing with legacy systems in the nuclear industry.

18 For our nuclear consulting business to be viable and grow, it will be crucial for us to build a strong team with diverse expertise, stay current with industry trends and regulations, prioritize security and confidentiality, and maintain high ethical standards. Effective communication, networking, and relationship-building with our clients and the regulatory authorities are also essential for establishing our credibility and trust in the industry. Notwithstanding the foregoing, there is no assurance we can address these or similar challenges and difficulties, the failure of which may adversely and materially affect our business, financial condition and results of operation.

We have undertaken and will continue to pursue strategic acquisitions. These acquisitions may be difficult to consummate and integrate and may create losses for us or not provide us with the anticipated benefits. We may not be able to successfully integrate our previous and future acquisitions or generate sufficient revenues or earnings from future acquisitions, which could cause our business to suffer.

We have undertaken (as in the case of the ALIP technology and our acquisition of the USNC Assets) and will continue to pursue strategic acquisitions of complementary or additive businesses or assets to both diversify and further vertically integrate our business lines and accelerate our growth. If we buy a company, a division of a company or assets that we feel are complementary to our business, there can be no assurance that we will be able to profitably manage such business or successfully integrate such business or assets without substantial costs, delays or other operational or financial problems. We are also faced with the risk that the businesses or assets we acquire will not achieve anticipated benefits, revenues and earnings. Additionally:

- the key personnel of the acquired business may decide not to work for us;
- changes in management at an acquired business may impair its relationships with employees and customers;
- we may be unable to maintain uniform standards, controls, procedures and policies among acquired businesses;
- we may be unable to successfully implement infrastructure, logistics and system integration;
- we may be held liable for legal claims (including environmental claims) arising out of activities of the acquired businesses prior to our acquisitions, some of which we may not have discovered during our due diligence, and we may not have indemnification claims available to us or we may not be able to realize on any indemnification claims with respect to those legal claims;
- we will assume risks associated with deficiencies in the internal control of acquired businesses;
- we may not be able to realize the cost savings or other financial benefits we anticipated; and
- our ongoing business may be disrupted or receive insufficient management attention.

We face these and similar risks in connection with our June 2024 acquisition of the ALIP technology. We may not be able to successfully integrate the ALIP technology into our microreactor designs, which could lead to a loss of our investment in this technology. Moreover, we anticipate, pending the successful completion of the SBIR III program for the ALIP technology (which we are funding), that we will seek to separately commercialize the ALIP technology as a means of generating revenues. We are thus faced with the risks that the SBIR Phase III may not be completed on a timely basis or at all, and further that we may be unable to commercially sell or license the technology (or products derived from the technology) to third parties.

Similarly, we may face significant risks related to our acquisition of the USNC Assets, notably the KRONOS MMR and LOKI MMR. We may encounter significant challenges in integrating the USNC Assets into our corporate structure or our intended regulatory strategies for our ZEUS and ODIN reactors, which could result in delays, increased costs or the inability to utilize the

USNC Assets, thus leading to a loss of our investment in the USNC Assets and adversely affecting our business operations and financial condition. Also, future acquisitions may require us to obtain additional, perhaps substantial, equity or debt financing, which may not be available on attractive terms. Moreover, to the extent an acquisition transaction financed by non-equity consideration results in additional goodwill, it will reduce our tangible net worth, which might have an adverse effect on our credit and bonding capacity. 19 If we experience significant fluctuations in our operating results and rate of growth and fail to meet revenue and earnings expectations, our stock price may fall rapidly and without advance notice. Due to our limited operating history, our unproven and evolving business model and the unpredictability of our emerging industry, we may not be able to accurately forecast our rate of growth. We base our current and future expense levels and our investment plans on estimates of future revenue and future rate of growth. Our expenses and investments are, to a large extent, not fixed and we expect that these expenses will increase in the future. We may not be able to adjust our spending quickly enough if our revenue falls short of our expectations. Our results of operations depend on both the growth of demand for the products and services we are going to offer in the future and the general economic and business conditions throughout the world. A softening of demand for our products and services for any reason will harm our operating results. Terrorist attacks, armed hostilities and wars in the past created, and may in the future create economic and business uncertainty that may also adversely affect our results of operations. Our revenue and operating results may also fluctuate due to other factors, including: — our ability of the design, developing, manufacturing and sales of smaller, cheaper, and safer advanced and sometimes portable clean energy solutions, including nuclear reactors. — our ability to develop a domestic HALEU fuel processing facility to supply the next generation of advanced nuclear reactors with fuel. — our ability to produce a regulatorily licensed, high-capacity HALEU transportation system, capable of moving commercial quantities of a variety of HALEU fuels. — our ability to provide nuclear service support and consultation services for the expanding and resurgent nuclear energy industry, both domestically and internationally. — assumptions relating to the size of the market for our nuclear reactors. — unanticipated regulations of nuclear energy that add barriers to our business and have a negative effect on our operations. — our estimates of expenses, future revenue, capital requirements and our needs for, or ability to obtain, additional financing. — new product and service introductions by our competitors. — technical difficulties or interruptions in our service. — general economic conditions in our geographic markets. — additional investment in our service or operations. — regulatory compliance costs. As a result of these and other factors, we expect that our operating results may fluctuate significantly on a quarterly basis. We believe that period-to-period comparisons of our operating results may not be meaningful, and you should not rely upon them as an indication of future performance. 20 Federal budget delays, federal debt ceiling limitations, or reductions in government spending could adversely impact government spending for the products and services we provide. Federal government spending reductions could adversely impact U.S. government programs related to our products or services. While we believe many of our programs do not conflict with the U.S. government's strategic priorities, government spending on these programs can be subject to negative publicity, political factors and public scrutiny. The risk of future budget delays or reductions is uncertain, and it is possible that spending cuts may be applied to U.S. government programs across the board, regardless of how programs align with those priorities. There are many variables in how budget reductions could be implemented that will determine its specific impact; however, reductions in federal government spending could adversely impact programs in which we provide products or services. In addition, these cuts could adversely affect the viability of the suppliers and subcontractors under our programs. These and similar risks are associated with our participation with LIST in the DOE's LEU Acquisition Program. Such program could be eliminated or subject to reduction, and no assurances can be given that we will be allocated any material funding from the LEU Acquisition Program. The cost of electricity generated from nuclear sources may not be cost competitive with other electricity generation sources in some markets, which could materially and adversely affect our business. Some electricity markets experience very low power prices due to a combination of subsidized renewables and low-cost fuel sources, and we may not be able to compete in these markets unless the benefits of the carbon-free, reliable and/or resilient energy generation are sufficiently valued in the market. Given the relatively lower electricity prices in the United States when compared to many international markets, the risk may be greater with respect to business in the United States. The market for SMRs generating nuclear power is not yet established and may not achieve the growth potential we expect or may grow more slowly than expected. The market for microreactors and SMRs like those we are developing has not yet been established. Our estimates for the total addressable market are based on a number of internal and third-party estimates, including our potential contracted revenue, the number of potential customers, assumed prices and production costs, our ability to leverage our current logistical and operational processes, and general market conditions. However, our assumptions and the data underlying our estimates may not be correct and the conditions supporting our assumptions or estimates may change at any time, thereby reducing the predictive accuracy of these underlying factors. As a result, our estimates of the annual total addressable market for our services, as well as the expected growth rate for the total addressable market for our services, may prove to be incorrect. All of our executive officers are presently engaged by us on an independent contractor basis, except for Jay Jiang Yu, our founder, President, Secretary and Treasurer, and Chairman of the Board, with whom we have an employment agreement, and they each have management, advisory or directorship positions with other companies and may allocate their time to other businesses, which may pose certain risks in fulfilling their obligations with us. Except for Jay Jiang Yu, our founder, President, Secretary and Treasurer, and Chairman of the Board, with whom we have an employment agreement, all of our other executive officers are presently engaged by us as independent contractors due to the fact that they each have management, advisory or directorship positions with other companies and may allocate their time to other businesses. Notwithstanding the foregoing, Mr. Yu has concurrently served on the board and management team of several companies and currently allocates at least 15 hours per week to his roles at other companies. Mr. Yu also concurrently serves as president and chairman of the board of LIST. Mr. James Walker, our Chief Executive Officer, currently allocates at least ten hours per week to support Ares Strategic Mining Inc. (or Ares), a Canadian-based company listed on the Canadian Stock Exchange under (Ticker: ARS) engaged in junior natural resource mining, where he is responsible for the construction of plants, purchases of land, operations, marketing, financing, safety regulation compliance, and shareholder relations. He is also concurrently serving on the board of directors of several small-cap publicly traded companies and a consultant to LIST. Jaisun Garcha, our Chief Financial Officer, is currently, and will continue to, work full time with us, and is currently also working as the part time chief financial officer and a director of LIST. 21 Our executive officers are not employees of our company (Mr. Yu excepted), instead, they serve as independent contractors and can be terminated by either party at any time. They may

pursue any other activities and engagements during their terms of agreements with us. The existing external commitments and any future commitments of our officers to other companies may potentially divert their significant time and attention away from the strategic and operational needs of our company. Their divided focus could lead to delays in decision-making, hinder effective communication within our organization, give rise to potential conflicts of interest, and introduce a divergence in priorities, consequently impacting the overall efficacy of leadership. Additionally, the potential for conflicting interests arising from commitments to multiple entities may pose challenges in aligning those officers' priorities with the long-term goals and interests of our company, thereby introducing an element of uncertainty and potential disruption to our operations. It is essential to acknowledge and address these complexities to ensure that our officers can effectively balance their responsibilities and fulfill their commitments to our company while maintaining transparency and integrity in their various roles. Failure to do so may adversely affect our business, financial conditions, and results of operations. We may be unable to manage our future growth effectively, which could make it difficult to execute our business strategy. If our operations grow as planned, we may need to expand our sales and marketing, research and development, supply and manufacturing functions, and there is no guarantee that we will be able to scale our business as planned. If we are not able to achieve and maintain cost-competitiveness in the United States or elsewhere, our business could be materially and adversely affected. We and our target customers operate in a politically sensitive environment, and the public perception of nuclear energy can affect our target customers and us. Nuclear energy is closely tied to government policies and regulations due to its potential risks and benefits. Governments often play a central role in the approval, regulation, and funding of nuclear projects. Changes in political leadership or shifts in public sentiment can lead to shifts in nuclear energy policies, which can affect the viability and profitability of nuclear businesses. The regulatory framework for nuclear energy is stringent and subject to public scrutiny. Regulatory decisions can influence the cost, timeline, and feasibility of nuclear projects. Public concerns and political pressure can lead to tighter regulations or stricter enforcement of existing ones. Government policies and incentives, often influenced by public opinion and political considerations, can directly impact the growth and competitiveness of nuclear energy. Favorable policies such as subsidies, tax credits, or incentives for clean energy can attract more customers to the nuclear energy sector. In addition, public perception of nuclear energy can range from positive to highly skeptical or negative, often influenced by historical events, accidents, and media coverage. Negative public sentiment can lead to protests, legal challenges, and public resistance to new nuclear projects, potentially delaying or preventing their development. Nuclear facilities often need to engage with local communities where they operate. Building and maintaining trust with these communities is crucial for obtaining social acceptance. Public opposition, fueled by concerns about safety or environmental impact, can hinder a company's ability to establish a presence in a particular location. Public perception of nuclear safety and viability can also influence the willingness of investors and financial institutions to fund nuclear projects. Negative public sentiment can increase financing costs and make it more difficult to secure the necessary capital. However, public preferences for energy sources can influence the demand for nuclear energy. A positive perception of nuclear power as a clean and reliable energy source can boost its market appeal. Conversely, public concerns about nuclear safety and waste disposal can lead to decreased demand, impacting a nuclear company's customer base. Additionally, public perception of a country's nuclear industry can affect its ability to export nuclear technology, reactors, and fuel assemblies to international customers. International perceptions of safety and reliability play a role in export decisions. As a result, the risks associated with nuclear energy materials and the public perception of those risks can affect our business. Opposition by third parties can delay or prevent the construction of new nuclear power plants and can limit the operation of nuclear reactors. Adverse public reaction to developments in the use of nuclear power could directly affect our customers and indirectly affect our business. In the past, adverse public reaction, increased regulatory scrutiny and litigation have contributed to extended construction periods for new nuclear reactors, sometimes delaying construction schedules by decades or more or even shutting down operations. In addition, anti-nuclear groups in Germany successfully lobbied for the adoption of the Nuclear Exit Law in 2002, which led to the shutdown of all German nuclear power plants as of April 15, 2023. Adverse public reaction could also lead to increased regulation or limitations on the activities of our customers, more onerous operating requirements or other conditions that could have a material adverse impact on our target customers and our business. 22 Accidents involving nuclear power facilities, including but not limited to events like the Three Mile Island, Chernobyl and Fukushima Daiichi nuclear accidents, or terrorist acts or other high-profile events involving radioactive materials could materially and adversely affect our target customers and the markets in which we operate and increase regulatory requirements and costs that could materially and adversely affect our business. Our future prospects are dependent upon a certain level of public support for nuclear power. Nuclear power faces strong opposition from certain competitive energy sources, individuals and organizations. The accident that occurred at the Fukushima nuclear power plant in Japan in 2011 increased public opposition to nuclear power in some countries, resulting in a slowdown in, or, in some cases, a complete halt to new construction of nuclear power plants, an early shut down of existing power plants or a dampening of the favorable regulatory climate needed to introduce new nuclear technologies, all of which could negatively impact our business and prospects. As a result of the Fukushima accident, some countries that were considering launching new domestic nuclear power programs delayed or cancelled the preparatory activities they were planning to undertake as part of such programs. If accidents similar to the Fukushima disaster or other events, such as terrorist attacks involving nuclear facilities, occur, public opposition to nuclear power may increase, regulatory requirements and costs could become more onerous, which could materially and adversely affect our business and operations. Risks Related to Our Intellectual Property If we fail to develop, gain approval for, protect or enforce our intellectual property or proprietary rights, our business and operating results could be harmed. We currently own the rights to the significant majority of our intellectual property. We acquired a significant amount of intellectual property from USNC as well as the ALIP technology. We also received an exclusive license for a high capacity HALEU fuel transportation basket design in April 2024, which will form the basis of a complete transportation system to move a range of fuel types. The license grants us, as the licensee, exclusive rights for use and development of the technology. In addition, the licensor is not permitted to license the technology to any other parties within the specified scope. We may enter into other license agreements in the future for our business development. There is no assurance that we, as the licensee, will be able to obtain or renew, if at all or in a timely manner, any of the license agreements upon its expiration. Failure to obtain or renew, or early termination of, any such agreement may materially and adversely affect our business, financial conditions and results of operations. We regard the protection of our trade secrets, trademarks, licenses, trade dress, patents and copyrights (if any, in future), domain names and other intellectual property or proprietary rights as critical to our success. We strive to protect our intellectual property rights by relying on federal, state and common law rights, as well as contractual

restrictions. We seek to protect our confidential proprietary information, in part, by entering into consulting agreements, and/or services or employment agreements that contain non-disclosure and non-use provisions with our employees, consultants, advisors and any third parties who have access to our proprietary know-how, information or technology. However, we cannot be certain that we have executed such agreements with all parties who may have helped to develop our intellectual property or who had access to our proprietary information, nor can we be certain that our agreements will not be breached. Any party with whom we have executed such an agreement could potentially breach that agreement and disclose our proprietary information, including our trade secrets, and we may not be able to obtain adequate remedies for such breaches. We cannot guarantee that our trade secrets and other confidential proprietary information will not be disclosed or that competitors will not otherwise gain access to our trade secrets or independently develop substantially equivalent information and techniques. Detecting the disclosure or misappropriation of a trade secret and enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, time-consuming and could result in substantial costs and the outcome of such a claim is unpredictable. Further, the laws of certain foreign countries do not protect proprietary rights to the same extent or in the same manner as the laws of the United States. As a result, we may encounter significant problems in protecting and defending our intellectual property or proprietary rights both in the United States and abroad. If we are unable to prevent the disclosure of our trade secrets to third parties, or if our competitors independently develop any of our trade secrets, we may not be able to establish or maintain a competitive advantage in our market, which could harm our business. 23

We currently have no registered patents related to our ZEUS and ODIN technology, but we have two patent applications with The United States Patent and Trademark Office (USPTO) which are under review. In January 2025, we acquired certain patents and other intellectual property as part of the USNC Assets, including 38 issued, pending or published patents, including six issued and four pending or published U.S. utility patents and three issued and four pending Canadian utility patents, 16 registered, pending or published trademarks, and any other technology and intellectual property related to the acquired businesses, rights related to a demonstration project related to the MMR Business in the United States and the business records of the acquired businesses and related confidentiality rights. We also believe that developing technology more comprehensively before patenting it provides our company with certain potential strategic advantages. We are balancing the advantages of comprehensive development with the risk of potential delays in securing patent protection and continue to consult qualified intellectual property counsel so we can make informed decisions regarding the timing of other patent filings and the overall protection strategy. Patent laws, and scope of coverage afforded by them, have recently been subject to significant changes, such as the change to “first-to-file” from “first-to-invent” resulting from the Leahy-Smith America Invents Act. This change in the determination of inventorship may result in inventors and companies having to file patent applications more frequently to preserve rights in their inventions, which may favor larger competitors that have the resources to file more patent applications. Another change to the patent laws may incentivize third parties to challenge any issued patent in the USPTO, as opposed to having to bring such an action in U.S. federal court. Any invalidation of a patent claim could have a significant impact on our ability to protect the innovations contained within our products and could harm our business. The USPTO and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other provisions to maintain patent applications and issued patents. We may fail to take the necessary actions and to pay the applicable fees to obtain or maintain our patents in the future. Non-compliance with these requirements can result in abandonment or lapse of a patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. In such an event, competitors might be able to use our technologies and enter the market earlier than would otherwise have been the case. We pursue the registration of our domain names, trademarks and service marks in the United States. We may seek to protect our trademarks, patents and domain names in an increasing number of jurisdictions in future, a process that is expensive and time-consuming and may not be successful or which we may not pursue in every location. Litigation may be necessary to enforce our intellectual property or proprietary rights, protect our trade secrets or determine the validity and scope of proprietary rights claimed by others. Any litigation of this nature, regardless of outcome or merit, could result in substantial costs, adverse publicity or diversion of management and technical resources, any of which could adversely affect our business and operating results. If we fail to maintain, protect and enhance our intellectual property or proprietary rights, our business may be harmed. We rely on our unpatented proprietary technology, trade secrets, designs, experiences, workflows, data, processes, software and know-how. We rely on proprietary information (such as trade secrets, know-how and confidential information) to protect intellectual property that may not be patentable or subject to copyright, trademark, trade dress or service mark protection, or that we believe is best protected by means that do not require public disclosure. We generally seek to protect this proprietary information by entering into consulting agreements, and/or services or employment agreements that contain non-disclosure and non-use provisions with our employees, consultants, contractors and third parties. However, we may fail to enter into the necessary agreements, and even if entered into, these agreements may be breached or may otherwise fail to prevent disclosure, third-party infringement or misappropriation of our proprietary information, may be limited as to their term and may not provide an adequate remedy in the event of unauthorized disclosure or use of proprietary information. We have limited control over the protection of trade secrets used by our current or future partners and suppliers and could lose future trade secret protection if any unauthorized disclosure of such information occurs. In addition, our proprietary information may otherwise become known or be independently developed by our competitors or other third parties. To the extent that our employees, consultants, contractors, advisors and other third parties use intellectual property owned by others in their work for us, disputes may arise as to the rights in related or resulting know-how and inventions. Costly and time-consuming litigation could be necessary to enforce and determine the scope of our proprietary rights, and failure to obtain or maintain protection for our proprietary information could adversely affect our competitive business position. Furthermore, laws regarding trade secret rights in certain markets where we operate may afford little or no protection to its trade secrets. We also rely on physical and electronic security measures to protect our proprietary information, but we cannot provide assurance that these security measures will not be breached or provide adequate protection for our property. There is a risk that third parties may obtain and improperly utilize our proprietary information to our competitive disadvantage. We may not be able to detect or prevent the unauthorized use of such information or take appropriate and timely steps to enforce our intellectual property rights. We may be accused of infringing intellectual property rights of third parties and content restrictions of relevant laws, which may materially and adversely affect our business, financial condition, and results of operations. Third parties may claim that the technology used in the operation of our business infringes upon their intellectual property rights. Although we have not in the past faced any litigation involving direct claims of infringement by us, the possibility of intellectual property claims against us increases

as we continue to grow. Such claims, whether having merit, may result in our expenditure of significant financial and management resources, injunctions against us or payment of damages. We may need to obtain licenses from third parties who allege that we have infringed their rights, but such licenses may not be available on terms acceptable to us or at all. These risks have been amplified by the increase in third parties whose sole or primary business is to assert such claims. The outcome of any claims, investigations and proceedings is inherently uncertain, and in any event defending against these claims could be both costly and time-consuming and could significantly divert the efforts and resources of our management and other personnel. An adverse determination in any such litigation or proceedings could cause us to pay damages, as well as legal and other costs, limit our ability to conduct business or require us to change the manner in which we operate.

24 Risks Related to Regulation and Compliance Our business is subject to a wide variety of extensive and evolving government laws and regulations. Changes in and/or failure to comply with such laws and regulations could have a material adverse effect on our business. We are subject to new or changing international, federal, state, and local regulations, including laws relating to the design, development, manufacturing, marketing, servicing, or sales of our nuclear-fuel related products. Such laws and regulations may require us to pause sales and modify our products, which could result in a material adverse effect on our ability to generate revenues (or any future revenues) and our financial condition generally. Such laws and regulations can also give rise to liability such as fines and penalties, property damage, bodily injury, and cleanup costs. Failure to comply with such regulations could lead to the withdrawal or recall of our products from the market, delay our projected revenues, increase cost, or make our business unviable if we are unable to modify our products to comply. Capital and operating expenses needed to comply with laws and regulations can be significant, and violations may result in substantial fines and penalties, third-party damages, suspension of production or a cessation of our operations. Any failure to comply with such laws or regulations could lead to withdrawal or recall of our products from the market.

Regulatory risk factors associated with our business also include our ability to obtain additional applicable approvals, licenses or certifications from regulatory agencies, if required, and to maintain current approvals, licenses or certifications. Any regulatory delays, delays imposed as a result of regulatory inspections and changing regulatory requirements, may impede our planned actions from being implemented or completed, many of which may be out of our control. Any natural disasters, changes in governmental regulations or in the status of our regulatory approvals or applications or other events that force us to cancel or reschedule our product development and production, could have an adverse impact on our business and financial condition. We are subject to U.S. and foreign anti-corruption and anti-money laundering laws and regulations. We can face criminal liability and other serious consequences for violations, which can harm our business. We are subject to the U.S. Foreign Corrupt Practices Act, the U.S. domestic bribery statute contained in 18 U.S.C. § 201, the U.S. Travel Act, the Money Laundering Control Act 18 U.S.C. §§ 1956 and 1957, and other anti-bribery and anti-money laundering laws in countries in which we conduct activities. Anti-corruption laws are interpreted broadly and prohibit companies and their employees, agents, contractors and other collaborators from authorizing, promising, offering or providing, directly or indirectly, improper payments or anything else of value to recipients in the public or private sector, and require that we keep accurate books and records and maintain internal accounting controls designed to prevent any such actions. We can be held liable for the corrupt or other illegal activities of our employees, agents, contractors and other collaborators, even if we do not explicitly authorize or have actual knowledge of such activities. As we intend to conduct international cross-border business and expand our operations abroad, we may engage business partners and third-party intermediaries to market our products and to obtain necessary permits, licenses and other regulatory approvals overseas. In addition, we or our third-party intermediaries may have direct or indirect interactions with officials and employees of government agencies or state-owned or affiliated entities. We can be held liable for the corrupt or other illegal activities of these third-party intermediaries, our employees, representatives, contractors, partners and agents, even if we do not explicitly authorize such activities. We cannot assure you that all of our employees and agents will not take actions in violation of our policies and applicable law, for which we may be ultimately held responsible. As we intend to expand our international business, our risks under these laws may increase. Detecting, investigating and resolving actual or alleged violations of anti-corruption laws can require a significant diversion of time, resources and attention from our management. In addition, non-compliance with anti-corruption or anti-bribery laws could subject us to whistleblower complaints, investigations, sanctions, settlements, prosecution, enforcement actions, fines, damages, other civil or criminal penalties, injunctions, suspension or debarment from contracting with certain persons, reputational harm, adverse media coverage and other collateral consequences. If any subpoenas are received or investigations are launched, or governmental or other sanctions are imposed, or if we do not prevail in any possible civil or criminal proceeding, our business, operating results and financial condition could be materially harmed.

25 If we fail to comply with the laws and regulations relating to the collection of sales tax and payment of income taxes in the various states in which we do business, we could be exposed to unexpected costs, expenses, penalties and fees as a result of our non-compliance, which could harm our business. By engaging in business activities in the United States, we become subject to various state laws and regulations, including requirements to collect sales tax from our sales within those states, and the payment of income taxes on revenue generated from activities in those states. A successful assertion by one or more states that we were required to collect sales or other taxes or to pay income taxes where we did not could result in substantial tax liabilities, fees and expenses, including substantial interest and penalty charges, which could harm our business.

General Risks Associated with Our Company We are highly dependent on our senior management team and other highly skilled personnel. If we are unable to attract, retain and maintain highly qualified personnel, including our senior management team, we may not be able to implement our business strategy and our business and results of operations would be harmed. Our business and prospects are highly dependent on the continued services of our senior management team, particularly our Chief Executive Officer James Walker, our President, Secretary, Treasurer, our Chairman of the Board Jay Jiang Yu, and our Chief Financial Officer Jaisun Garcha. Our senior management team has extensive experience in the energy and finance industries, and we believe that their depth of experience is instrumental to our continued success. See “[Directors, Executive Officers and Corporate Governance](#)” for further details. The loss of any one or more members of our senior management team, for any reason, including resignation or retirement, could impair our ability to execute our business strategy and have a material adverse effect on our business and financial condition if we are unable to successfully attract and retain qualified and highly skilled replacement personnel. In addition, our ability to execute our plans and grow our company will depend in large part on our ability to attract, motivate, develop, retain and maintain a sufficient number of other highly skilled personnel, including engineers, nuclear energy professionals, finance, marketing and sales personnel. Maintaining a diverse team of skilled personnel who can collectively address the technical, regulatory, financial, and operational aspects of our business, including but not limited to, nuclear engineers and

scientists, regulatory and licensing experts, safety and security experts, quality control and assurance managers, environmental and waste management experts, and financial and legal professionals, is also essential to our business. Our goal is to build a well-rounded and experienced team with expertise in these areas to ensure the development, operation, and commercialization of our business, while ensuring safety, regulatory compliance, and long-term viability. However, if we are unable to attract, retain, and maintain our senior management team and other highly skilled personnel, we may not be able to implement our business strategy, and our business, financial condition and results of operations may be adversely and materially affected. If any of our senior management team members were to terminate his or her employment with us, there can be no assurance that we would be able to find suitable replacements in a timely manner, at acceptable cost or at all. The loss of services of senior management team members or the inability to identify, hire, train and retain other qualified and managerial personnel in the future may materially and adversely affect our business, financial condition, results of operations and prospects. Mr. Jay Jiang Yu, our President, Secretary, Treasurer, and Chairman of the Board, has a significant influence over our company due to his ownership of a material percentage of our outstanding common stock. Also, his interests may not always be aligned with the interests of our other stockholders, which may lead to conflicts of interest that harm our company. As of January 10, 2025, Mr. Jay Jiang Yu, our President and Chairman, beneficially owns an aggregate of approximately 28.65% shares of our common stock. Due to his ownership of a material percentage of our outstanding common stock, Mr. Yu could have significant influence in determining the outcome of any corporate transaction or other matter submitted to the stockholders for approval, including mergers, consolidations, the appointment of directors and other significant corporate actions. Without the consent of Mr. Yu, we may be prevented from entering into transactions that could be beneficial to us or our other stockholders. Moreover, our interests and the interests of Mr. Yu may not always be aligned, which could create conflicts of interest of Mr. Yu and may not be resolved in favor of all of our stockholders or may otherwise harm our company. For more information regarding Mr. Yu's ownership of our company, see "Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters." 26

A failure to establish and maintain effective internal control in accordance with Section 404 of the Sarbanes-Oxley Act could have a material adverse effect on our business and stock price. Prior to the completion of our initial public offering in May 2024, we were a private company with limited accounting personnel to adequately execute our accounting processes and limited supervisory resources with which to address our internal control over financial reporting. As a private company, we did not design or maintain an effective control environment as required of public companies under the rules of the SEC implementing Section 404 of the Sarbanes-Oxley Act and therefore are not required to make a formal assessment of the effectiveness of our internal control over financial reporting for that purpose. Specifically, we lack a sufficient number of professionals with an appropriate level of accounting knowledge, training and experience to appropriately analyze, record and disclose accounting matters timely and accurately while maintaining appropriate segregation of duties. Upon becoming a publicly traded company, we became required to comply with the SEC's rules implementing Sections 302 and 404 of the Sarbanes-Oxley Act, which require management to certify financial and other information in our quarterly and annual reports and provide an annual management report on the effectiveness of controls over financial reporting. Though we are required to disclose changes made in our internal controls and procedures on a quarterly basis, we are not required to make our first annual assessment of our internal control over financial reporting pursuant to Section 404 until the year following our first annual report required to be filed with the SEC. A proper system of internal control over financial accounting and disclosure controls and procedures are critical to the operation of a public company. We may be unable to effectively establish such system, especially in light of the fact that we expect to operate as a publicly reporting company. This would leave us without the ability to reliably assimilate and compile financial information about our company and significantly impair our ability to prevent error and detect fraud, all of which would have a negative impact on our company from many perspectives. Moreover, we do not expect that disclosure control or internal control over financial reporting, even if established, will prevent all error and all fraud. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control system's objectives will be met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in the control system, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, have been detected. Failure of our control system to prevent error or fraud could materially adversely impact us. Our ability to effectively manage our anticipated growth and expansion of our operations will also require us to enhance our operational, financial and management controls and infrastructure, human resources policies and reporting system. These enhancements and improvements will require significant capital expenditures and allocation of valuable management and employee resources. We expect to experience significant growth in the scope and nature of our operations. Our ability to manage our operations and future growth will require us to continue to improve our operational, financial and management controls, compliance programs and reporting system. We may not be able to implement improvements in an efficient or timely manner and may discover deficiencies in existing controls, programs, systems and procedures, which could have an adverse effect on our business, reputation and financial results. Additionally, rapid growth in our business may place a strain on our human and capital resources. Furthermore, we expect to continue to conduct our business internationally and anticipate increased business operations in the United States, Asia, and Europe. Asia and Europe are obvious destinations to launch manufacturing operations given the high demand for clean technologies, developed technical workforce, and strong manufacturing bases with nuclear experience. We will also be targeting developing countries that could benefit from the introduction of mobile, remote, power sources able to unlock a lot of economic resources. These diversified, global operations place increased demands on our limited resources and require us to substantially expand the capabilities of our administrative and operational resources and to attract, train, manage and retain qualified management, technical, experts, engineering, sales and other personnel, the failure of which may adversely affect our business, financial condition and results of operations.

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A We are subject to cybersecurity risks. Like other businesses, we face cybersecurity risks. Threat sources continue to seek to exploit potential vulnerabilities. These cyberattacks are becoming increasingly sophisticated and dynamic. We expect these cyberattacks to continue to occur in the future and we are constantly managing efforts to infiltrate and compromise our information technology systems and data. Given the highly regulated and sensitive industry in which we operate, cybersecurity threats pose a particular risk for our company. While we develop and maintain systems seeking to prevent security breaches from occurring, the development and maintenance of these systems is costly and requires ongoing monitoring and updating as techniques used in such attacks become more sophisticated and change frequently. We, and the third parties on which we rely, may be unable to anticipate these

techniques or implement adequate preventive measures. A cybersecurity breach, including physical or electronic break-ins, computer viruses, malware, attacks by hackers, ransomware attacks, phishing attacks, supply chain attacks, breaches due to employee error or misconduct and other similar breaches, of our physical assets or information systems, or those of our vendors, business partners and interconnected entities or regulators could impact our operations or result in the theft or inappropriate release of certain types of information, including critical infrastructure information, sensitive customer, vendor and employee data, trading or other confidential data. The risk of these system-related events and cybersecurity breaches occurring continues to intensify, and while we have not directly experienced a material breach or disruption to our network or information systems or our operations to-date, such cyberattacks continue to increase in sophistication and frequency, and we may be unable to prevent all such cyberattacks in the future. If a significant breach were to occur, our reputation could be negatively affected, customer confidence in us or others in the industry could be diminished, or we could be subject to legal claims, loss of revenues, increased costs or operations shutdown. In addition, our network and information systems are vulnerable to damage or interruption from power outages, telecommunications failures, accidents, natural disasters (including extreme weather arising from short-term or any long-term changes in weather patterns), terrorist attacks and similar events. Our system redundancy may be ineffective or inadequate, and our disaster recovery planning may not be sufficient for all eventualities. Moreover, the amount and scope of insurance maintained against losses resulting from any such events or security breaches may not be sufficient to cover losses or otherwise adequately compensate for any disruptions to business that could result. Furthermore, in the future, such insurance may not be available on commercially reasonable terms, or at all. In addition, new or updated security regulations or unforeseen threat sources could require changes in current measures taken by us or our business operations and could adversely affect our consolidated financial statements. We will incur significantly increased costs as a result of, and devote substantial management time to operating as, a public company. We only became a public company in May 2024. As such, we have incurred and will continue to incur significant legal, accounting, and other expenses that we did not incur as a private company. For example, we are subject to the reporting requirements of the Securities Exchange Act of 1934, as amended (or the Exchange Act) and will be required to comply with the applicable requirements of the Sarbanes-Oxley Act and the Dodd-Frank Wall Street Reform and Consumer Protection Act, as well as rules and regulations subsequently implemented by the SEC, including the establishment and maintenance of effective disclosure and financial controls, changes in corporate governance practices and required filing of annual, quarterly and current reports with respect to our business and operating results. These requirements have and will continue to increase our legal and financial compliance costs and will make some activities more time-consuming and costly. In addition, our management and other personnel need to divert attention from operational and other business matters to devote substantial time to these public company requirements. We will also need to hire additional accounting and financial staff with appropriate public company experience and technical accounting knowledge and will need to establish an internal audit function. Operating as a public company makes it more expensive for us to obtain director and officer liability insurance, and we may be required to accept reduced coverage or incur substantially higher costs to obtain coverage. This could also make it more difficult for us to attract and retain qualified people to serve on our board of directors, our board committees or as executive officers. In addition, after we no longer qualify as an “emerging growth company,” as defined under the JOBS Act we expect to incur additional management time and cost to comply with the more stringent reporting requirements applicable to companies that are deemed accelerated filers or large accelerated filers, including complying with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act. We are just beginning the process of compiling the system and processing documentation needed to comply with such requirements. We may not be able to complete our evaluation, testing and any required remediation in a timely fashion. In that regard, we currently do not have an internal audit function, and we will need to hire or contract additional accounting and financial staff with appropriate public company experience and technical accounting knowledge. 28 We cannot predict or estimate the amount of additional costs we may continue to incur as a result of operating as a public company or the timing of such costs. We are an “emerging growth company,” and we cannot be certain if the reduced reporting and disclosure requirements applicable to emerging growth companies will make our common stock less attractive to investors. We are an “emerging growth company,” as defined in the JOBS Act, and we may take advantage of certain exemptions from reporting requirements that are applicable to other public companies that are not “emerging growth companies,” including the auditor attestation requirements of Section 404, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements, and exemptions from the requirements of holding a non-binding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved. Pursuant to Section 107 of the JOBS Act, as an emerging growth company, we have elected to use the extended transition period for complying with new or revised accounting standards until those standards would otherwise apply to private companies. As a result, our financial statements may not be comparable to the financial statements of issuers who are required to comply with the effective dates for new or revised accounting standards that are applicable to public companies, which may make our common stock less attractive to investors. In addition, if we cease to be an emerging growth company, we will no longer be able to use the extended transition period for complying with new or revised accounting standards. We will remain an emerging growth company until the earliest of: (1) the last day of the fiscal year following the fifth anniversary of our listing; (2) the last day of the first fiscal year in which our annual gross revenues exceed \$1.235 billion; (3) the date on which we have, during the previous rolling three-year period, issued more than \$1 billion in non-convertible debt securities; and (4) the date on which we are deemed to be a “large accelerated filer” under the rules of the SEC. We cannot predict if investors will find our common stock less attractive if we choose to rely on these exemptions. For example, if we do not adopt a new or revised accounting standard, our future results of operations may not be comparable to the results of operations of certain other companies in our industry that adopted such standards. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock, and our stock price may be more volatile. If our estimates or judgments relating to our critical accounting policies prove to be incorrect, our results of operations could be adversely affected. The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the amounts reported in our financial statements and accompanying notes appearing elsewhere in this prospectus. We base our estimates on short duration historical experience and on various other assumptions that we believe to be reasonable under the circumstances, as provided in the section titled “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Critical Accounting Policies and Estimates.” The results of these estimates form the basis for making judgments about the carrying values of assets, liabilities, and equity, and the amount of revenue and expenses.

Significant estimates and judgments involve: legal contingencies; valuation of our common stock and equity awards; and income taxes. Our results of operations may be adversely affected if our assumptions change or if actual circumstances differ from those in our assumptions, which could cause our results of operations to fall below the expectations of securities analysts and investors, resulting in a decline in the market price of our common stock. 29 Our current insurance coverage may not be adequate, and we may not be able to obtain insurance at acceptable rates, or at all. We currently have director and officer liability insurance for our officers and certain directors. We do not carry any key-man life insurance, business liability and other professional liability insurance. Neither have we purchased any property insurance or business interruption insurance. Even if we purchase these kinds of insurance, the insurance may not fully protect us from the financial impact of defending against product liability or professional liability claims that may occur in future. As we are still at the development stage and we have not produced any products yet, we have determined that our current insurance coverage is sufficient for our business operations in the U.S. However, the local government may take an opposite position against us and we may need to purchase additional insurance to operate our business. If we fail to obtain the insurance as required by the local government, or if we were to incur substantial losses or liabilities due to fire, explosions, floods, other natural disasters or accidents or business interruption, our business and results of operations could be materially and adversely affected. Our business is subject to the risks of earthquakes, fire, floods and other natural catastrophic events, global pandemics, and interruptions by man-made problems, such as network security breaches, computer viruses or terrorism. Material disruptions of our business or information system resulting from these events could adversely affect our operating results. We are vulnerable to damage from catastrophic events, such as natural disasters, power loss, and similar unforeseen events beyond our control. The global pandemics or fear of spread of contagious diseases, such as COVID-19, Ebola virus disease (EVD), Middle East respiratory syndrome (MERS), severe acute respiratory syndrome (SARS), H1N1 flu, H7N9 flu, and avian flu, as well the catastrophic events could disrupt our business operations, reduce or restrict our supply of products and services, incur significant costs to protect our employees and facilities, or result in regional or global economic distress, which may materially and adversely affect our business, financial condition, and results of operations. Actual or threatened war, terrorist activities, political unrest, civil strife, and other geopolitical uncertainty could have a similar adverse effect on our business, financial condition, and results of operations. Any one or more of these events may adversely affect our operation results, or even for a prolonged period of time, which could materially and adversely affect our business, financial condition, and results of operations. We cannot assure you that we are adequately protected from the effects of earthquakes, fire, floods, typhoons, earthquakes, global pandemics, power loss, telecommunications failures, break-ins, war, riots, network security breaches, computer viruses, terrorist attacks, or similar events. Any of the foregoing events may give rise to interruptions, damage to our property, delays in production, breakdowns, system failures, technology platform failures, or internet failures, which could cause the loss or corruption of data or malfunctions of our internet system as well as adversely affect our business, financial condition, and results of operations. If a natural disaster, power outage or other event occurred that prevented us from using all or a significant portion of our headquarters, damaged critical infrastructure, or otherwise disrupted operations, it may be difficult or, in certain cases, impossible for us to continue our business for a substantial period of time. The disaster recovery and business continuity plans we have in place are unlikely to provide adequate protection in the event of a serious disaster or similar event. We may incur substantial expenses as a result of the limited nature of our disaster recovery and business continuity plans, which could have a material adverse effect on our business. Risks Related to Ownership of Our Common Stock The trading market for our common stock is very new, and a consistently robust and liquid trading market may not develop or be sustained over the long term. We only recently conducted our initial public offering in May 2024, and so the trading market for our common stock is very new and unestablished. If a consistently robust and liquid trading market for our common stock does not develop, you may not be able to sell your shares quickly or at the market price. Our ability to raise capital to continue to fund operations by selling our securities and our ability to acquire other companies or technologies by using our securities as consideration may also be impaired. 30 The trading price of our common stock has been and may continue to be very volatile, and you could lose all or part of your investment. Since our initial public offering, the market for our common stock has been very volatile, including significant increases and decreases in the price of our stock. The trading price of our common stock is likely to continue to be volatile and could continue to be subject to fluctuations in response to various factors, some of which are beyond our control. These fluctuations could cause you to lose all or part of your investment in our common stock as you might be unable to sell your shares at or above the price you paid in this offering. Factors that could cause fluctuations in the trading price of our common stock include the following:

- price and volume fluctuations in the overall stock market from time to time;
- volatility in the trading prices and trading volumes of nuclear energy stocks;
- changes in operating performance and stock market valuations of other nuclear energy companies generally, or those in our industry in particular;
- sales of shares of our common stock by us or our stockholders;
- failure of securities analysts to maintain coverage of us, changes in financial estimates by securities analysts who follow our company, or our failure to meet these estimates or the expectations of investors;
- the financial projections we may provide to the public, any changes in those projections, or our failure to meet those projections;
- announcements by us or our competitors of new products, features, or services;
- the public's reaction to our press releases, other public announcements and filings with the SEC;
- rumors and market speculation involving us or other companies in our industry;
- actual or anticipated changes in our results of operations or fluctuations in our results of operations;
- actual or anticipated developments in our business, our competitors' businesses or the competitive landscape generally;
- litigation involving us, our industry, or both, or investigations by regulators into our operations or those of our competitors;
- developments or disputes concerning our intellectual property or other proprietary rights;
- announced or completed acquisitions of businesses, products, services or technologies by us or our competitors;
- new laws or regulations or new interpretations of existing laws or regulations applicable to our business;
- changes in accounting standards, policies, guidelines, interpretations or principles;
- any significant change in our management; and
- general economic conditions and slow or negative growth of our markets.

Notwithstanding the foregoing potential causes of volatility, you are cautioned that specific causes of volatility are never perfectly clear. Moreover, our relatively small public float may amplify the impact the actions taken by a few stockholders have on the price of our common stock, which may cause the price of our common stock to deviate, potentially significantly, from a price that better reflects the underlying performance of our business. 31 Also, in recent years, the stock markets generally have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of listed companies. Broad market and

industry factors may significantly affect the market price of our common stock, regardless of our actual operating performance. These fluctuations may be even more pronounced in the trading market for our common stock shortly after your investment. Volatility in our common stock could lead to the loss of some or all of your investment. In addition, in the past, following periods of volatility in the overall market and in the market price of a particular company's securities, securities class action litigation has often been instituted against these companies. This litigation, if instituted against us, could result in substantial costs and a diversion of our management's attention and resources. If securities or industry analysts do not publish research or publish inaccurate or unfavorable research about our business, our stock price and trading volume could decline. The trading market for our common stock will depend in part on the research and reports that securities or industry analysts publish about us or our business. If only a limited number of securities or industry analysts commence coverage of our company, the trading price for our stock could be negatively impacted. If one or more of the analysts who covers us downgrades our stock or publishes inaccurate or unfavorable research about our business, our stock price would likely decline. If one or more of these analysts ceases coverage of us or fails to publish reports on us regularly, demand for our stock could decrease, which could cause our stock price and trading volume to decline. Futures sales of our securities or warrants exercisable for our common stock may depress our stock price. Sales of a substantial number of shares of our common stock or securities convertible into our common stock in the public market, or the perception that these sales could occur, could adversely affect the market price of our common stock and could materially impair our ability to raise capital through equity offerings in the future. We have issued underwriter's warrants to purchase shares in connection with our May 2024 initial public offering, and two underwritten follow-on offerings in July and October 2024 (the "July and October Offerings"), respectively, to purchase up to an aggregate of 364,139 shares of common stock. In connection with the July and October Offerings and our November 2024 private placement offering, we issued warrants to investors to purchase up to an aggregate of 4,235,148 shares of common stock with a weighted-average exercise price of \$22.68 per share. If a large number of shares of our common stock are issued upon exercise of the outstanding warrants in the public market, this could reduce the trading price of our common stock, perhaps significantly, and impede our ability to raise future capital. Our failure to meet the continued listing requirements of Nasdaq could result in a delisting of our common stock. If we fail to satisfy the continued listing requirements of Nasdaq, such as the corporate governance requirements or the minimum closing bid price requirement, Nasdaq may take steps to delist our common stock. Such a delisting would likely have a negative effect on the price of our common stock and would impair our ability to sell or purchase our common stock when you wish to do so. In the event of a delisting, we can provide no assurance that any action taken by us to restore compliance with listing requirements would allow our common stock to become listed again, stabilize the market price or improve the liquidity of our common stock, prevent our common stock from dropping below the Nasdaq minimum bid price requirement or prevent future non-compliance with Nasdaq's listing requirements. Our directors, executive officers and principal stockholders have substantial control over us and could delay or prevent a change of corporate control. Our directors, executive officers and holders of more than 5% of our common stock, together with their affiliates, beneficially own, in the aggregate, approximately 33.13% of our outstanding common stock as of January 10, 2025. As a result, these stockholders, acting together, have the ability to control the outcome of matters submitted to our stockholders for approval, including the election of directors and any merger, consolidation or sale of all or substantially all of our assets. In addition, these stockholders, acting together, have the ability to control the management and affairs of our company. Accordingly, this concentration of ownership could harm the market price of our common stock by: (i) delaying, deferring or preventing a change of control of us; (ii) impeding a merger, consolidation, takeover or other business combination involving us; or (iii) discouraging a potential acquirer from making a tender offer or otherwise attempting to obtain control of us. See "Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters" below for more information regarding the ownership of our outstanding stock by our executive officers, directors and holders of more than 5% of our common stock, together with their affiliates. Unanticipated changes in effective tax rates or adverse outcomes resulting from examination of our income or other tax returns could adversely affect our financial condition and results of operations. We will be subject to income taxes in the United States, and our domestic tax liabilities will be subject to the allocation of expenses in differing jurisdictions. Our future effective tax rates could be subject to volatility or adversely affected by a number of factors, including: (i) changes in the valuation of our deferred tax assets and liabilities; (ii) expected timing and amount of the release of any tax valuation allowances; (iii) tax effects of stock-based compensation; (iv) costs related to intercompany restructurings; or (v) changes in tax laws, regulations or interpretations thereof. In addition, we may be subject to audits of our income, sales and other transaction taxes by federal, state and local authorities. Outcomes from these audits could have an adverse effect on our financial condition and results of operations. Anti-takeover provisions in Nevada law could discourage, delay or prevent a change in control of our company and may affect the trading price of our common stock. Some of the provisions of Nevada law may have the effect of delaying, deferring or discouraging another person from acquiring control of our company or removing our incumbent officers and directors. These provisions are expected to discourage certain types of coercive takeover practices and inadequate takeover bids. These provisions are also designed to encourage persons seeking to acquire control of us to first negotiate with our board of directors. We believe that the benefits of increased protection against an unfriendly or unsolicited proposal to acquire or restructure us outweigh the disadvantages of discouraging such proposals. We have never paid dividends on our capital stock, and we do not anticipate paying dividends for the foreseeable future. We have never declared or paid any cash dividends on our capital stock, and we do not anticipate paying any cash dividends in the foreseeable future. The payment of dividends, if any, in the future is within the discretion of our board of directors and will depend on our earnings, capital requirements and financial condition and other relevant facts. We currently intend to retain all future earnings, if any, to finance the development and growth of our business. Accordingly, you must rely on the sale of your common stock after price appreciation, which may never occur, as the only way to realize any future gain on your investment. 33 Our bylaws designate certain courts as the sole and exclusive forum for certain types of actions and proceedings that may be initiated by our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers, or employees. Our bylaws provide that, unless we consent in writing to the selection of an alternative forum, a state or federal court located in the State of Nevada shall be the sole and exclusive forum for (i) any derivative action or proceeding brought on behalf of our company, (ii) any action asserting a claim for breach of a fiduciary duty owed by any director, officer or other employee of our company to us or our stockholders, (iii) any actions asserting a claim arising pursuant to any provision of the NRS, our Articles of Incorporation or our amended and restated bylaws, in each case as amended, or (iv) any action asserting a

claim governed by the internal affairs doctrine, in each such case subject to such court having personal jurisdiction over the indispensable parties named as defendants therein (the “Nevada Forum Provision”). This, however, shall not apply to claims or causes of action brought to enforce a duty or liability created by the Securities Act of 1933, as amended (or the Securities Act), or the Exchange Act, or any other claim for which the federal courts have exclusive jurisdiction. Our bylaws further provide that, unless we consent in writing to the selection of an alternative forum, the federal district courts of the United States of America shall be the sole and exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act (the “Federal Forum Provision”). In addition, our bylaws provide that any person or entity purchasing or otherwise acquiring any interest in shares of our common stock is deemed to have notice of and consented to the Nevada Forum Provision and the Federal Forum Provision. A Section 27 of the Exchange Act creates exclusive federal jurisdiction over all suits brought to enforce any duty or liability created by the Exchange Act or the rules and regulations thereunder. As a result, the Nevada Forum Provision will not apply to suits brought to enforce any duty or liability created by the Exchange Act or any other claim for which the federal courts have exclusive jurisdiction. We note, however, that there is uncertainty as to whether a court would enforce this provision and that investors cannot waive compliance with the federal securities laws and the rules and regulations thereunder. We recognize that the Nevada Forum Provision and the Federal Forum Provision in our bylaws may impose additional litigation costs on stockholders in pursuing any such claims, particularly if the stockholders do not reside in or near the State of Nevada. Additionally, the Nevada Forum Provision and the Federal Forum Provision may limit our stockholders’ ability to bring a claim in a forum that they find favorable for disputes with us or our directors, officers or employees, which may discourage such lawsuits against us and our directors, officers and employees even though an action, if successful, might benefit our stockholders. If the Federal Forum Provision is found to be unenforceable, we may incur additional costs associated with resolving such matters. The Federal Forum Provision may also impose additional litigation costs on stockholders who assert that the provision is not enforceable or invalid. The competent courts of the State of Nevada and the United States District Court may also reach different judgments or results than would other courts, including courts where a stockholder considering an action may be located or would otherwise choose to bring the action, and such judgments may be more or less favorable to us than our stockholders. 34 CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS The information in this prospectus contains “forward-looking statements” within the meaning of Section 27A of the Securities Act, and Section 21E of the Exchange Act. All statements contained in this prospectus other than statements of historical fact, including statements regarding our future operating results and financial position, our business strategy and plans, market growth, and our objectives for future operations, are forward-looking statements. These forward-looking statements involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. You can identify some of these forward-looking statements by words or phrases such as “may,” “will,” “could,” “would,” “expect,” “anticipate,” “aim,” “estimate,” “intend,” “plan,” “believe,” “is/are likely to,” “potential,” “project,” “target,” “continue” or the negative of these terms or other similar expressions, although not all forward-looking statements contain these words. The forward-looking statements in this prospectus are only predictions and are based largely on our current expectations and projections about future events and financial trends that we reasonably believe may affect our business, financial condition, and results of operations. Although we believe the expectations reflected in any of our forward-looking statements are reasonable, actual results could differ materially from those projected or assumed in any of our forward-looking statements. Our future financial condition and results of operations, as well as any forward-looking statements, are subject to change given the inherent risks and uncertainties of market and industry conditions. These forward-looking statements present our estimates and assumptions only as of the date of this prospectus and are subject to many significant known and unknown risks, uncertainties, and assumptions. Accordingly, you are cautioned not to place undue reliance on forward-looking statements, which speak only as of the dates on which they are made. Important factors that could cause actual results to differ materially from those in the forward-looking statements include, but are not limited to, those summarized below:

- Our ability to design, develop, manufacture and sell our proposed micro and small nuclear reactors.
- Our ability to develop a domestic Low Enriched Uranium (LEU) and High-Assay Low-Enriched Uranium (HALEU) fuel supply chain to supply the next generation of advanced nuclear reactors and our own systems.
- Our ability to produce a regulatorily licensed, high-capacity HALEU transportation package, capable of moving commercial quantities of HALEU fuel.
- Our ability to provide nuclear service support and consultation services for the expanding and resurgent nuclear energy industry, both domestically and internationally.
- Our ability to source, retain, and expand our technical and business staff to meet the demands of our expanding and diversifying business.
- Our ability to raise the substantial amount of additional funds that will be necessary for our business to succeed, which funds may not be available on acceptable terms or available at all.
- Assumptions relating to the size of the market for our micro nuclear reactors.
- Unanticipated regulations of nuclear energy that add barriers to our business and have a negative effect on our operations.
- Our estimates of expenses, future revenue, capital requirements and our needs for, or ability to obtain, additional financing.
- Our status as an early-stage pre-revenue company in a rapidly evolving industry with a business model that is still being developed and is largely untested.
- Our ability to avoid a significant disruption in our information technology system, including security breaches, or our ability to implement new system and software successfully.
- Our ability to obtain and maintain intellectual property protection for our products.
- The other risks identified in this prospectus including, without limitation, those under “Risk Factors,” “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” and “Business” as such factors may be updated from time to time in our other filings with the SEC.

The foregoing does not represent an exhaustive list of matters that may be covered by the forward-looking statements contained herein or risk factors that we are faced with. Forward-looking statements necessarily involve risks and uncertainties, and our actual results could differ materially from those anticipated in the forward-looking statements due to a number of factors, including those set forth above under “Risk Factors” and elsewhere in this prospectus. All subsequent written and oral forward-looking statements attributable to us or persons acting on our behalf are expressly qualified in their entirety by the cautionary statements contained above and throughout this prospectus. Prior to investing in our common stock, you should read this prospectus and the documents we have filed as exhibits to the registration statement, of which this prospectus is a part, completely and with the understanding that our actual future results may be materially different from what we currently expect. Except as required by applicable law, we do not plan to publicly update or revise any forward-looking statements contained

herein, whether because of any new information, future events, changed circumstances or otherwise. 35 USE OF PROCEEDS We will not receive any proceeds from the sale of the Selling Stockholder Shares by the selling stockholder. However, we may receive proceeds from the exercise of the November 2024 Warrants by the selling stockholders to the extent they are exercised for cash. We estimate that the maximum proceeds that we may receive from the exercise of the November 2024 Warrants, assuming the November 2024 Warrants are exercised for cash at an exercise price of \$26.00, will be approximately \$65 million. We do not know, however, whether the November 2024 Warrants will be exercised or, if the November 2024 Warrants are exercised, when they will be exercised. It is possible that the November 2024 Warrants will expire and never be exercised. There are also circumstances under which the November 2024 Warrants may be exercised on a cashless basis. In these circumstances, even if the November 2024 Warrants are exercised, we may not receive any proceeds, or the proceeds that we do receive may be significantly less than what we might expect. We will retain broad discretion over the use of the net proceeds to us from the exercise of the November 2024 Warrants. Unless otherwise provided in the applicable prospectus supplement, we currently expect to use the aggregate net proceeds from the exercise of the November 2024 Warrants for general working capital and general corporate purposes, which could include potential acquisitions of complementary businesses or assets. The expected use of net proceeds from the exercise of the November 2024 Warrants represents our current intentions based on our present plans and business conditions. We cannot specify with certainty all of the particular uses for the net proceeds to be received from the exercise of the November 2024 Warrants. Pending these uses, we plan to invest the net proceeds of any November 2024 Warrant exercise in short- and intermediate-term, interest-bearing obligations, investment-grade instruments, certificates of depositor direct or guaranteed obligations of the U.S. government. The actual allocation of proceeds realized from the exercises of the November 2024 Warrants will depend upon the amount and timing of such exercises, our operating revenues and cash position at such time and our working capital requirements. The selling stockholders will pay any expenses incurred by the selling stockholder for brokerage, accounting, tax or legal services or any other expenses incurred by the selling stockholder in disposing of their Selling Stockholder Shares. We will bear all other costs, fees and expenses incurred in effecting the registration of the Selling Stockholder Shares covered by this prospectus, including, without limitation, all registration fees and fees and expenses of our counsel and our accountants. DIVIDEND POLICY We have never declared or paid any cash dividends on our capital stock, and we do not anticipate paying any cash dividends in the foreseeable future. The payment of dividends, if any, in the future is within the discretion of our board of directors and will depend on our earnings, capital requirements and financial condition and other relevant facts. We currently intend to retain all future earnings, if any, to finance the development and growth of our business. DETERMINATION OF OFFERING PRICE The selling stockholders will each, in their respective discretions, offer Selling Stockholder Shares at the prevailing market prices for our common stock or privately negotiated prices. The offering price of the Selling Stockholder Shares does not necessarily bear any relationship to our book value, assets, past operating results, financial condition or any other established criteria of value. MARKET FOR COMMON EQUITY AND RELATED STOCKHOLDER

MATTERS Market Information Our common stock began trading on Nasdaq under the symbol “NNE” on May 8, 2024. Holders of Record As of January 10, 2025, the closing price per share of our common stock was \$25.66 as reported on The Nasdaq Capital Market, and we had approximately 35 stockholders of record. In addition, we believe that a significant number of beneficial owners of our common stock hold their shares in street name. MANAGEMENT’S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS For our management’s discussion and analysis of financial condition and results of operations for the years ended September 30, 2024 and 2023, please read “Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations” in our 2024 Annual Report (as defined below), which is incorporated by reference into this prospectus. 36 BUSINESS Overview We are an emerging, pre-revenue nuclear energy company, developing smaller, cheaper, and safer advanced portable clean energy solutions, utilizing proprietary reactor designs, intellectual property, and research methods, to contribute towards a sustainable future. Led by a world class scientific and management team, our business plan involves a comprehensive engagement across every sector of the nuclear power industry, traversing the path from sourcing raw materials through to developing cutting edge advanced nuclear microreactors. Our dedication extends further, encompassing both commercial nuclear fuel transportation and consulting services. Currently, we are in the pre-revenue stage and are principally focused on four business lines as part of our development strategy: — Micro Nuclear Reactor Business. We are developing the next generation of advanced nuclear microreactors, in particular ZEUS, a solid core battery reactor, and ODIN, a low-pressure salt coolant reactor. With these products, we are advancing the development of the next generation of portable, on-demand capable, advanced nuclear microreactors. Through the collaboration of our world-renowned nuclear scientists and engineers, the U.S. national nuclear laboratories, and government support, we believe our reactors will have the potential to impact the global energy landscape. Our goal is to commercially launch one of these products by 2030-2031. — Both our ZEUS and ODIN microreactors have moved from the design stages to physical test work stages, with initial rig construction currently underway, to ensure model accuracy and material and dimension optimization. We have conducted and completed external design audits on both the ZEUS and ODIN reactor designs to provide external validation and assistance to our designs. The design audits for the reactors were conducted and completed by the Idaho National Laboratory (INL). We are currently identifying sites for our prototype reactor for the purpose of conducting physical test work using nuclear material for both microreactors. We have communicated with the U.S. Nuclear Regulatory Commission (NRC) and Department of Energy (DOE), informing them of the status of our microreactor designs and the estimated internal timelines for our microreactor developments, with an understanding that definite timelines will be provided once available, to allow the NRC to arrange the necessary personnel to oversee the microreactor licensing process. We increased the size of the technical teams during 2024 to expedite the development of the reactor systems, as well as recruiting former NRC personnel to oversee our regulatory licensing processes, and to engage directly with the NRC to facilitate the commercialization planning. — In addition, in August 2024, we purchased a 14,000 sq. ft., 2-story building in Oak Ridge, Tennessee for \$1.7 million to house our Nuclear Technology Headquarters. Michael Norato, Ph.D., an INL and DOE veteran, was appointed as our Director of Nuclear Facilities and Infrastructure in December 2024. Dr. Norato will oversee the construction, development and licensing of our key facilities, including our recently acquired 14,000 sq. ft. Oak Ridge, Tennessee Nuclear Technology Headquarters and future test bed reactor sites for experiments related to our ZEUS and ODIN microreactors currently in development. He will also lead the establishment of deconversion and fuel processing facilities, helping to further our goal of being a vertically integrated leader in the U.S. nuclear fuel cycle. We expect to increase the number of personnel working at the facility over the next year and expect to ultimately employ up to 30 personnel at the facility.

We are also currently undertaking approximately \$800 thousand dollars of renovation work to the facility as well. **Furthermore, in December 2024, we announced our execution of a memorandum of understanding with the Idaho Operations Office of the DOE setting forth a framework for the collaboration between our company and the DOE to evaluate the construction of a demonstration reactor on a land package near INL. Through this memorandum, we will work with the DOE and Battelle Energy Alliance, LLC, the current operator of INL (the "BEA"), to progress the development, siting, and eventual testing of our innovative microreactor designs.** **37** **Also, on December 18, 2024 and January 10, 2025, we entered into the USNC Agreement and a first amendment to USNC Agreement (the "First Amendment to USNC Agreement") with the USNC to acquire the USNC Assets on an as-is, where-is basis, including the MMR Business and the Pylon Business. The USNC Assets include certain contracts, intellectual property rights, demonstration projects, and as amended, the equity interests of a Canadian entity, free and clear of any liens other than certain specified liabilities of USNC that are being assumed, for a total purchase price of \$8.5 million in cash through an Auction conducted pursuant to Section 363 of the U.S. Bankruptcy Code in connection with USNC's pending Chapter 11 bankruptcy proceedings. On December 18, 2024, the United States Bankruptcy Court for the District of Delaware, the Bankruptcy Court overseeing USNC's bankruptcy held a hearing where it approved the sale of the USNC Assets to us. The closing of the USNC Asset purchase (the "USNC Closing") occurred on January 10, 2025.** **The USNC Assets acquired by us at the USNC Closing consist of five contracts with third-party collaborators, 38 issued, pending or published patents, including six issued and four pending or published U.S. utility patents and three issued and four pending Canadian utility patents, 16 registered, pending or published trademarks, and any other technology and intellectual property related to the acquired businesses, rights related to a demonstration project related to the MMR Business in the United States and the business records of the acquired businesses and related confidentiality rights. The USNC Assets related to the MMR Business and Pylon Business were assigned to our two new wholly owned subsidiaries incorporated in Nevada.** **The USNC Assets also included certain Canadian assets (the "Canadian Assets"), including three contracts with Canadian authorities, the equity interests of a Canadian partnership and rights related to a demonstration project related to the MMR Business in Canada, the transfer of which need the consent of certain Canadian governmental entities (the "Canadian Consents"), with an escrow of \$250,000 deposited at the USNC Closing securing the Canadian Consents. If the Canadian Consents are not received within 90 days after the USNC Closing, we shall have the right to terminate the acquisition of the Canadian Assets and receive the return of \$250,000 held in escrow.** **To better facilitate the Canadian Consents and to continue diligence of the Canadian partnership and other Canadian Assets, we assigned our rights to the Canadian Assets to Jay Jiang Yu, our founder, President, Secretary and Treasurer, and Chairman of the Board, and certain Canadian entities owned or controlled by Mr. Yu (the "Yu Entities"). In exchange, on January 10, 2025, we entered into an option agreement (the "Yu Option Agreement") with Mr. Yu and Yu Entities, pursuant to which we received an option back from Mr. Yu and Yu Entities to acquire for nominal consideration, for a period of five years after the receipt by the Yu Entities of the Canadian Assets upon receiving the Canadian Consents, any or all of the equity interests of the Yu Entities or the Canadian partnership, the other Canadian Assets or the material assets and business of the Canadian partnership.** **Thenewly acquired technologies align closely with our intended uses for ZEUS and ODIN, which are designed forremote, industrial, infrastructural, maritime, and extra-terrestrial applications, including large-scale data and artificial intelligencecenters and other energy-intensive operations, positioning us to capitalize on growing financial investment and societal momentum drivingadvanced nuclear energy technologies on a global scale. We will leverage our world-class technical team to analyze and optimize thesetechnologies, key components, and intellectual property, before integrating them into its operational frameworks and ongoing innovationefforts. We also intend to build upon and strengthen the extensive industry relationships that USNC established during its operations.** **— Fuel Processing Business. Through our subsidiary, HALEU Energy Fuel Inc., and in coordination with the DOE, we are seeking to develop a domestic LEU and HALEU fuel supply chain to supply fuel not only for our own reactors but also to the broader advanced nuclear reactor industry. We have tentatively identified the site we intend to construct the facilities and have begun to build the team to design and develop these facilities.** **We have also made a \$2 million strategic investment in and entered into a collaboration with a laser-based uranium enrichment technology company, LIS Technologies Inc. (the "LIST") (which is a related party), to support the development of their technology. Through this investment and related collaboration, we aim to assist in advancing LIST's technologies to secure a reliable low enriched uranium fuel supply for our future operations and the broader nuclear energy industry. The parties intend that LIST will provide us with enriched uranium hexafluoride (UF6) at no cost to be fabricated and sold to customers, with LIST to receive compensation as part of a profit-sharing arrangement to be agreed to between the companies in the future. Through collaboration with LIST, we intend to construct the supporting facilities alongside LIST's enrichment facility, including the deconversion and fuel fabrication facilities. We also leased 7,000 square feet of space at our Nuclear Technology Center in Oak Ridge, Tennessee to LIST. Our relationship with LIST is considered a related party transaction since certain of our executive directors and officers, including Jay Jiang Yu, Jaisun Garcha, and Dr. Tsun Yee Law, also serve as directors and officers for LIST, and James Walker serves as a consultant to LIST. Our investment in LIST was unanimously approved by all of our disinterested independent directors.** **In December 2024, we announced that LIST and our company were selected by the DOE to participate as one of six contract awardees in the DOE's Low-Enriched Uranium (LEU) Enrichment Acquisition Program (the "LEU Acquisition Program"). Under the contract awarded to LIST, LIST was selected as the prime contractor, with our company as the key subcontractor bringing our technical and regulatory expertise in advanced nuclear solutions to the collaboration. LIST will oversee the development of the primary uranium enrichment processes using its novel laser technology, while our company will contribute towards development in the areas of fuel deconversion, fuel fabrication, and fuel transportation. The total overall amount appropriated under the LEU Acquisition Program across all six contract awardees is anticipated to be \$3.4 billion, to be awarded by the DOE via agreed to task orders each having a minimum value of \$2 million.** **— Fuel Transportation Business. Our transportation business will build on existing work completed at INL, Oak Ridge National Laboratory (ORNL) and Pacific Northwest National Laboratory (PNNL), the world's premier U.S.-backed nuclear research facilities. We received an exclusive license for a high capacity HALEU fuel transportation basket design in April 2024, which will form the basis of a complete transportation system. This license grants us, as the licensee, exclusive rights for the use and development of the technology. In addition, the licensor is not permitted to license the technology to any other parties within the specified scope. We believe this technology is the most advanced concept in the United States for moving HALEU in commercial quantities. We are currently conducting work to modify the design to accommodate a variety of different fuel forms, so we are positioned to move fuel for both of our reactors and to enable us to provide transportation services to any nuclear**

company looking to move commercial quantities of fuel. In September 2024, we signed an agreement with GNS Gesellschaft für Nuklear-Service mbH (GNS) to undertake a wide-ranging project to produce an optimized HALEU transportation system solution based on our exclusively licensed fuel transportation basket design. The GNS agreement encompasses a study for the transport of multiple HALEU nuclear fuel types, including uranium oxide, TRISO particles, uranium-zirconium hydride, uranium mononitride, and salt fuel for molten salt reactors, thus optimizing the quantity of material that can be transported and developing a conceptual package design that will accommodate the new basket design. We intend to obtain NRC certification for our high-capacity HALEU transportation system to move commercial quantities of HALEU fuel around North America and internationally. If developed and commercialized, we believe this product will serve as the basis for a domestic HALEU transportation company capable of providing commercial quantities of HALEU fuel. We hope to put our fuel transportation business into operation by 2028. We have also brought on two former United Parcel Service (UPS) executives, one of which works for our fuel transportation subsidiary, with the other sitting on our Executive Advisory Board, to assist in growing the transportation business around our technology.

— Nuclear Consultation Services. We also plan on providing nuclear service support and consultation services for the expanding and resurgent nuclear energy industry, both domestically and internationally. This includes, in coordination with the Cambridge Nuclear Energy Centre, the development of education resources. This business opportunity represents our nearest term revenue generating opportunity. Our goal is to start providing nuclear service support and consultation services for the nuclear energy industry in 2025, both domestically and internationally. As part of our efforts domestically, following our collaboration with Digihost in December 2024, we expect to provide consulting services to Digihost beginning in the first quarter of 2025. These services will support the planning and execution of the Digihost project and will encompass regulatory advice, site assessment, roadmap development, and stakeholder engagement. In addition to these rendered services, we are examining strategic acquisitions to expand our business and consultancy services. We have commenced several material discussions with potential targets for such acquisitions, but as of the date of this prospectus, we have not entered into any definitive agreements for such acquisitions. In combination with our intention to acquire existing revenue generating consultancy businesses, we are focusing on building our own internal nuclear consultation business in coordination with certain outside academic institutions, which we anticipate would require approximately \$2 million over the next twelve months to recruit additional staff and build corresponding infrastructure to be capable of providing these services.

Our mission is to become a commercially focused, diversified and vertically integrated nuclear energy company that will capture market share in the very large and growing nuclear energy sector. To implement our plans, since our founding in 2022, our management has had constant communications with key U.S. government agencies, including the DOE, the INL and ORNL, which are a part of the DOE's national nuclear laboratory system. Our company also maintains important collaborations with leading researchers from the Cambridge Nuclear Energy Centre and The University of California, Berkeley.

Our Industry We believe that the U.S. domestic nuclear energy sector is undergoing a renaissance that we believe we can capitalize on. We strongly support objectives of the DOE and the International Atomic Energy Agency (IAEA) for the peaceful use of nuclear energy, and we intend for our technology to form part of the U.S. foreign policy to advance the peaceful use of nuclear energy, science and technology, and drive new resources to projects and activities in developing countries with the greatest need. A key part of our business plan will seek to become a nuclear technology organization that can grow the U.S. global energy market engagement and concurrently support global market opportunities. We further believe that our microreactors can address various environmental and energy challenges through their innovative design and capacities, including their versatile and easily deployable nature in remote locations. We plan to target business development activities for our microreactors in several sectors, including data centers, artificial intelligence computer and quantum computing; crypto mining; military applications; disaster relief; transportation (including shipping); mining projects; water desalination and green hydrogen plants; and space exploration. As a result, we intend to support a broad set of clean energy applications.

Our Micro Nuclear Reactor Business A key pillar of our business plan is to provide readily replaceable mobile reactors which we can provide to customers, along with operative personnel, to power projects, residential and commercial enterprises, and major development projects. Our vision is to be a commercial and domestic energy supply leader within the U.S. nuclear industry, and to advance U.S. domestic and foreign policy and national security priorities. The mobile, lower-cost and ultra-safe solid core model of our micro-reactor vision will provide a clean energy option that supports initiatives for sustained international engagement and promotes enhanced and more efficient cooperation and assistance in the application of peaceful uses of nuclear energy, science, and technology. We will also drive resources to projects and activities in developing countries of greatest need by supplying energy to areas removed from the grid.

We are developing two advanced portable nuclear micro reactors in technical design and development. The first, ZEUS, is a Solid Core Battery Reactor, designed by world-class engineers trained at the University of California Berkeley, has a fully solid core and utilizes already licensed fuel types, enriched up to 19.75%, where heat is removed solely by thermal conduction. This requires the deployment of high conductivity, high melting materials, and careful materials design. The reactor will use already licensed fuel types, so no new fuel developments are necessary. Reactivity will be controlled with control rods outside of the central core. The generated heat will be conducted from the fuel to the outside of the core via thermal conduction through a thermally conductive material, allowing for the elimination of coolant, creating a far safer reactor than historically developed. Heat will be removed from the outside of the core by recirculated air, which delivers the heat to the gas turbine to produce electricity. The gas turbine will be affixed to the reactor to reduce piping and minimize the size of the plant. The benefit of not incorporating a primary liquid loop reduces the manufacturing costs, and enhances simplicity for modelling, testing, optimizing, and constructing. The secondary loop outside the monolith will be inert gas allowing it to reach high temperatures and direct heating of a gas turbine which will be compact and small. Without coolant, typical reactor pumps and piping can be removed from the design, allowing for further compactness, with the aim being to construct a full core and electricity generating gas turbine within a container meeting International Organization for Standardization specifications. The smaller power core will also mean less neutrons are absorbed by the non-fissionable materials, allowing for longer operational life despite the small core. On March 27, 2024, we filed an application for a U.S. provisional patent for "ZEUS".

ZEUS Prototype Our second reactor in development, ODIN, will be a Low-Pressure Coolant Reactor, which uses uranium and zirconium HALEU hydride. The zirconium hydride densely packs hydrogen and so provides substantial moderation. Low pressure cesar salt (sodium-potassium nitrate eutectic) coolant will be used to minimize the stress on structural components and improve the reliability and service life. The design takes advantage of the natural convection of the coolant for heat transfer to the power conversion cycle at full power, as well as for decay heat removal during reactor shutdown, operating transients, and off-normal

conditions. A nitrogen or open-air Brayton cycle will be used for power conversion due to its simplicity, flexibility, and its wide use within the conventional power industry. Reactivity control system design will have high reliability and robustness through minimizing the number of moving parts. In 2025, we plan to formally engage with the NRC and develop and submit our Regulatory Engagement Plan (REP) to the NRC for ODIN as well as complete salt irradiation testing to select the coolant for ODIN. 41 ODIN Prototype Success licensing and certification of one of our reactors will enable and accelerate certification and licensing processes for innovative and lower-cost designs in the future. A small portable power source (nuclear power bank) will enable deployment to areas after natural disasters to support first responders, water purification efforts, hydrogen production, or initial construction to regain control of these situations. The possibility of multiple nuclear reactors as part of future emergency response resources is also contemplated. Both microreactors went through design audits by external institutions in 2023 and 2024, which provided external input and assistance to advance the concepts and provide validation of the design direction and technology utilized so far. The ODIN microreactor completed its design audit at INL, where the design was interrogated by 10 engineers and scientists. The design and concept were extremely well received and further guidance was provided to assist our technical team to steer the reactor from its current state through to a licensed product ready for deployment. The external design audit for the ZEUS reactor was completed in February 2024, with the more advanced design receiving commendations for its innovative design and simplicity. In 2025, we plan to file for new patents relating to ZEUS and work to advance this novel technology in collaboration with the INL utilizing the Gateway for Accelerated Innovation in Nuclear (GAIN) Nuclear Energy voucher award received by us for ZEUS in 2024. 42 Both reactors are expected to begin demonstration and physical test work in early 2025, initially with ODIN followed by ZEUS, with demonstration work expected to be completed between 2026 and 2027 providing us with working prototypes. The regulatory licensing process for the prototypes is expected to be completed by 2030 or 2031, with manufacturing facilities being constructed during the licensing phase so we are ready to deploy microreactors across the country upon licensing approval. In December 2024, we announced our execution of a memorandum of understanding with the Idaho Operations Office of the DOE setting forth a framework for the collaboration between our company and the DOE to evaluate the siting, construction, commissioning, operation and decommissioning of our ZEUS and ODIN microreactors near INL on DOE land. Through this memorandum, we will work with the DOE and BEA, to progress the development, siting, and eventual testing of our innovative microreactor designs. Furthermore, Michael Norato, Ph.D., an INL and DOE veteran, was appointed as our Director of Nuclear Facilities and Infrastructure in December 2024. Dr. Norato will oversee the construction, development and licensing of our key facilities, including our recently acquired 14,000 sq. ft. Oak Ridge, Tennessee Nuclear Technology Headquarters and future test bed reactor sites for experiments related to our ZEUS and ODIN microreactors currently in development. He will also lead the establishment of deconversion and fuel processing facilities, helping to further our goal of being a vertically integrated leader in the U.S. nuclear fuel cycle. 43 Our 14,000 sq. ft., 2-story facility to house our Technology Headquarters on a 1.64-acre land package in the historic Heritage Center Industrial Park in Oak Ridge, Tennessee. Our HALEU Fuel Processing Business. In 2023, we established a subsidiary, HALEU Energy Fuel Inc., to concentrate specifically on creating a domestic fuel processing facility of LEU and HALEU to supply the next generation of advanced nuclear reactors. In February 2023, we were selected as an official founding member of the DOE's new HALEU Consortium to develop the U.S.'s domestic capability for the manufacture of HALEU and its processing. Our commercial and strategic aim for HALEU Energy Fuel is to design, construct and commission a commercial nuclear fuel processing facility to supply fabricated fuel to the next generation of advanced nuclear reactor companies, our own reactors currently under development, other small module reactors (known as SMR companies), the U.S. nuclear industry, the U.S. national laboratories, and the DOE's nuclear fuel needs as necessary. The facility's intended capability is to produce a variety of different fuel forms as required by U.S. industry and its intended customer base, using received fuel from market recognized fuel enrichment sources. Our proposed fuel facilities are intended to form part of an integrated system with LIST, a related-party laser uranium enrichment company with which we have an investment and related collaboration agreement. Our proposed processing activity aligns exactly with the DOE's HALEU fuel mission to return nuclear fuel manufacturing capabilities to the United States. 43 Our company has identified the potential site and plans to work with the NRC through the NEPA process, which will begin when a federal agency develops a proposal to take major federal action. The proposed project would benefit both our company and the United States. We believe a fuel processing facility could be beneficially complemented by the collaboration with an enrichment company, which we have identified and entered into a partnership agreement with. In December 2024, we announced that LIST and our company were selected by the DOE to participate as one of six contract awardees in the DOE's LEU Acquisition Program. Under the contract awarded to LIST, LIST was selected as the prime contractor, with our company as the key subcontractor bringing our technical and regulatory expertise in advanced nuclear solutions to the collaboration. LIST will oversee the development of the primary uranium enrichment processes using its novel laser technology, while our company will contribute towards development in the areas of fuel deconversion, fuel fabrication, and fuel transportation. The total overall amount appropriated under the LEU Acquisition Program to all six contract awardees is anticipated to be \$3.4 billion, to be awarded via agreed upon task orders with a minimum value of \$2 million. During the first quarter of 2025, we plan to acquire or lease land for the first CAT II non-TRISO HALEU integrated fuel processing facility in the U.S., and to commence the design work on our fuel processing facility in the first half of 2025, coinciding with engaging the relevant licensing and regulatory bodies to facilitate the facility commissioning. Initial site preparation is scheduled to begin in 2025, with completion of construction and operation occurring early next decade. Our HALEU Fuel Transportation Business. As we have developed our business, capability deficiencies in the U.S. nuclear industry that would affect the future operation of all SMR and microreactor companies became apparent, such as there exists no method of transporting commercial quantities of HALEU across North America. Our proactive approach to mitigate future impediments to our operations culminated in locating research and technology developed by INL, PNNL and ORNL, that had not been advanced because of budget constraints. On April 3, 2024, we entered into an exclusive patent license agreement ("BEA License") with BEA, and have been working with the groups capable of aiding us in the development of the concept into a complete, governmentally certificated and licensed system proficient in the transportation of enriched fuels. The BEA License grants us, as the licensee, exclusive rights for use and development of the technology. In addition, the licensor is not permitted to license the technology to any other parties within the specified scope. Pursuant to the BEA License, we received an exclusive, royalty-bearing license for a U.S. patent that can be used worldwide related to devices and systems used for HALEU transportation. As part of the BEA License, we agreed to pay BEA royalties on net worldwide sales and any sublicense worldwide sales related to the use of this patent as well as certain licensing payments. We also

agreed to meet specific performance milestones related to HALEU fuel transportation within the first 48 months of the agreement's effective date. Under the BEA License, we are obligated to reimburse BEA for all costs incurred in the preparation, filing, prosecuting, and maintenance of the licensed patent. The BEA License has an indefinite term and will automatically terminate upon the expiration, abandonment, or other termination of the licensed patent covered by the BEA License. The BEA License may also be terminated immediately by BEA in the event of our default of any material obligations, and we may terminate the agreement at any time if we provide at least three months' written notice to BEA. The BEA License contains customary representations, warranties, and indemnifications of the parties. For further information on the BEA License, see "Intellectual Property" below.

We are seeking to form the first transportation company able to supply all emerging SMR and microreactor companies with the fuel they require at their manufacturing facilities to construct their reactors. We also expect to service the national nuclear laboratories and DOE programs which require HALEU by providing the fuel for their programs. Mobile reactors requiring HALEU for remote military bases are also anticipated, with potential military contacts. During 2025, we plan to acquire land, or an existing transportation business, for our HALEU transportation base of operations.

44 Our fuel transportation business will build on the work already completed by INL and ORNL to create a high-capacity HALEU transportation package, with 18 inner canisters, combined with a basket design and a borated aluminum flux trap. In September 2024, we signed an agreement with GNS to undertake a wide-ranging project to produce an optimized HALEU transportation system solution based on our exclusively licensed fuel transportation basket design. The GNS agreement encompasses a study for the transport of multiple HALEU nuclear fuel types, including uranium oxide, TRISO particles, uranium-zirconium hydride, uranium mononitride, and salt fuel for molten salt reactors, thus optimizing the quantity of material that can be transported and developing a conceptual package design that will accommodate the new basket design. We are receiving support from two former executives of the largest shipping company in the world who are assisting us in developing a North American transportation company using our licensed or developed technology to deliver (subject to applicable government licensing and certification) nuclear fuel for a wide customer base, including SMR and microreactor companies, national laboratories, military, and DOE programs.

Our Business Services and Consulting Business The current upsurge in interest in nuclear energy, combined with the increased investment from both private and governmental sources within the nuclear space, as well as the global push for zero carbon technologies, has created a demand for nuclear energy expertise which exceeds supply. The shortage of suitably nuclear-qualified persons has resulted in institutions purchasing nuclear support services and consultancy practices, profiting from the surge in demand and the commensurate increase in costs created by this demand. Nuclear personnel are being headhunted and salaries are increasing as demand outpaces supply. The increased demand in personnel and nuclear related business activity will create increased demand for personnel involved in the licensing and regulator aspects of the industry, exacerbating the difficulty of acquiring the necessary personnel to develop nuclear related businesses. This trend will likely increase, as the next generation of nuclear reactors are progressing towards more mature development stages, requiring greater numbers of experienced personnel, and because nuclear personnel take a long time to educate, qualify, and acquire practical experience.

We have identified this trend as an opportunity for more immediate revenue for our company, and to acquire more expertise to advance our business. We have concentrated on identifying small teams with expert personnel, with good portfolios of work and existing contracts, and good expansion potential, which would provide us with immediate revenue post-acquisition. We expect to start providing nuclear services support and consultation services for the nuclear energy industry in 2025, both domestically and internationally.

As part of our efforts domestically, on December 12, 2024, we entered into a non-binding memorandum of understanding with Digihost to advance the transition to carbon-free energy at Digihost's 60-megawatt power plant in upstate New York. As part of our collaboration, we expect to provide consulting services to Digihost beginning in the first quarter of 2025 to support the planning and execution of the project, which will include regulatory advice, site assessment, roadmap development and stakeholder engagement.

Immediately after our collaboration, on December 16, 2024, we and Digihost made a joint response submission to the New York State Energy Research and Development Authority (NYSERDA)'s Request for Information (RFI) concerning the development of advanced nuclear energy technologies in New York State. The RFI was initially announced by New York state on November 15, 2024, aiming to gather information and gauge market interest for increased deployment of renewables and promoting the development of advanced nuclear technology such as our ZEUS and ODIN microreactors in development.

In addition to these rendered services, our company is examining strategic acquisitions to expand our business and consultancy services. We have commenced several material discussions with potential targets for such acquisitions, but as of the date of this prospectus, we have not entered into any definitive agreements with any such targets.

In combination with our intention to acquire existing revenue generating consultancy businesses, we are focusing on building our own internal nuclear consultation business in coordination with certain outside academic institutions, which we anticipate would require approximately \$2 million over the next twelve months to recruit additional staff and build corresponding infrastructure to be capable of providing these services. No assurances can be given that we will be able to successfully establish and grow our own consultation business, and our failure to do so would adversely affect our nearer term revenue prospects. Moreover, the outlined expenditures and the timelines are estimations only. These estimates are inherently subject to significant risks and change due to unforeseen circumstances, operational challenges, adjustments in the microreactor development plan and uncertainties associated with the licensing approval process, and other factors beyond our control. Given that these elements may exceed our initial expectations or lie beyond our control, we cannot guarantee the accuracy of the actual expenditures and timelines.

45 The U.S. Nuclear Energy Market According to the FACT SHEET: President Biden Sets 2030 Greenhouse Gas Pollution Reduction Target Aimed at Creating Good-Paying Union Jobs and Securing U.S. Leadership on Clean Energy Technologies published by the White House in 2021, the United States has taken numerous steps in recent years to reduce its dependence on carbon-emitting energy sources. The U.S. had previously set a goal to reach a 100% carbon pollution-free electricity system by 2035, and President Biden set a target of a 50 to 52% reduction from 2005 levels in economy-wide net greenhouse gas pollution by 2030, underlining the Biden administration's desire for new energy solutions which are at the core of our business plans. Additionally, the "net zero world" initiative signals the U.S.'s proactive stance in working with countries to lead a global transition to net zero emissions by 2050. While it remains unclear how the Trump administration will view the net world zero initiative, it has already voiced support for the advanced reactor industry and declared its intention to support the build back of the nuclear industry in the United States.

According to an article titled "NEI Survey Shows Even More Interest in Nuclear After Major Policy Actions" released on NEI.org in 2023, in the face of these evolving energy needs, the utility companies that are members of the Nuclear Energy Institute (NEI) are targeting a role for more than 90 gigawatts of nuclear power in support of their decarbonization goals.

According to an article titled “U.S. nuclear electricity generation continues to decline as more reactors retire” released on the website of U.S. Energy Information Administration (EIA) in 2022, while the share of U.S. electricity generated by nuclear energy across all sectors in 2021 was similar to its average share of 19% in the previous decade, its average annual capacity factor remained fixed at 92.7% that same year. By comparison, solar photovoltaics’ annual capacity factor was 24.6% in the same year, while coal’s capacity reached just 49.3%. Further, fuel costs for nuclear versus fossil steam in 2022 were recorded to be just \$0.61 per kilowatt hour versus \$2.46 per kilowatt hour respectively. According to an article titled “A New Reckoning for Nuclear Energy” released on theatlantic.com in December 2024, the nuclear energy sector is experiencing a revival marked by increased capacity, supportive legislation, and substantial investments from tech giants like Amazon, Google, and Microsoft. These developments underscore nuclear energy’s role in potentially delivering abundant, reliable, emissions-free electricity, crucial for combating climate change. According to an article titled “Biden administration sets plan to triple US nuclear energy capacity by 2050” released on utilitydive.com in November 2024, the Biden administration has laid out an ambitious roadmap to at least triple U.S. nuclear power capacity by 2050, targeting the addition of 200 gigawatts (GW) of new capacity to address rising energy demands and achieve net-zero emissions. This initiative is supported by legislative measures, including the Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy (ADVANCE) Act, signed into law in July 2024, which streamlines regulatory processes and promotes advanced nuclear technologies. Additionally, the Infrastructure Investment and Jobs Act of 2021 allocates \$6 billion to preserve America’s clean nuclear energy infrastructure and \$2.4 billion for advanced nuclear reactors, enhancing the sector’s financial stability. According to a 2023 published McKinsey Report titled “What will it take for nuclear power to meet the climate challenge?”, up to 800 gigawatts of new nuclear power could be necessary to meet net-zero targets. In estimating the nuclear power needed to support the energy transition, we used techno-economic grid modelling to project the overall power mix by 2050. Our scenario—based on “Further Acceleration” estimates from a report titled “Global Energy Perspective 2022” released by McKinsey in 2022 for global energy mix, as well as anticipated supply and demand for power—accounts for potential constraints on scale-up in renewables, such as scarcity of land, raw materials, and transmission limitations. Although our scenario does not rely on a full analysis of grid models and energy-transition scenarios, it does estimate roughly how much additional dispatchable, low-carbon generation will be needed to meet net-zero targets. Modelling reveals that the energy transition could require an additional 400 to 800 gigawatts of new nuclear energy—which could represent up to 10 to 20 percent of future global electricity demand—to meet the need for dispatchable power (that is, not wind and solar) by 2050. 800 gigawatts of net additional nuclear capacity would triple the current nuclear capacity of 413 gigawatts and would require approximately 1,000 gigawatts to be generated by new nuclear facilities, as between 100 gigawatts to 250 gigawatts of current capacity will need to also be replaced. This represents a very large market for our proposed microreactors to participate in, with even a small amount of market share capture leading to significant revenue generating opportunities for our company.

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Our Vision, Market Opportunity and Key Government Support

We believe our achievements to date and our business plans are positioning our company to be a leading participant in the U.S. nuclear industry through simultaneously rebuilding and introducing national capabilities to drive the resurgent nuclear energy industry. We further believe that our timing and approach into the industry have been optimal, with insight into national capability deficiencies and an understanding of the difficulties faced by other commercial nuclear energy, particularly microreactor, companies. Almost all microreactor companies have advanced using funds acquired from government grants or awards. Even with private funding, they have been stifled by lack of investor interest because of the long return timelines and high risks. Despite the early stage of our company, we believe we are competitively differentiated in many ways.

— Non-Dependent on Government Funding. Most SMR and microreactor companies are reliant on government grants and financing to progress their concepts. Consequently, their progress can cease once government funding is not available. Currently, we do not rely on government funding to sustain our business operations, though we have already received government grants. While we will seek available government funding opportunities in the future, the absence of government support does not impede our progress in advancing our research, business, or technological developments. Our leadership team possesses extensive experience in successfully securing funding from both private and public sources. Additionally, our investor base includes capital from industry professionals who recognize the immense potential of our company. Notwithstanding the foregoing, our limited operating history and early stage of business makes an evaluation of our business and prospects very difficult, we have a new and unproven technologies and will need to raise additional capital to implement our business plans.

— Technical Insight. On the technical front, we have benefited from insight into the problems which affected earlier movers within the nuclear technology space. Large SMR companies have raised billions of dollars for development but have been stalled by the lag in developing or acquiring the fuel necessary to advance their reactors. This led to our investigations into de-risking our own fuel supply by pursuing development and investment into our own fuel processing facility, as well as using more conventional fuel with greater operational history. We believe we have identified certain problems affecting the industry and we are taking early action to surmount potential roadblocks. Our new and unproven technologies will necessitate a significant infusion of additional capital for successful deployment in future. This imperative business requirement has influenced our strategic decision to diversify our operations, with the aim of establishing nearer term revenue streams which we are seeking to initiate prior to the anticipated commercial launch of microreactor technology.

— Government Contacts. During 2024, individuals with high placed government service and contacts joined our company. These include (i) John G. Vonglis, the former Chief Financial Officer of the DOE, who joined as our Executive Director of Global Government Affairs, (ii) Eric R. Oesterle, a former Branch Chief for Operating Reactor Licensing at the NRC, who joined as our Head of Microreactor Regulatory Licensing and (iii) David Tiktinsky, a forty year veteran of the NRC, who joined as our Head of Nuclear Regulatory Licensing. In addition, a number of former high-ranking military and government officials with significant experience in nuclear energy sit on our Executive Advisory Board. Our recruitment efforts were complemented by bringing in experts involved in every major part of the nuclear industry, from regulation to laboratories, to technical teams. We believe we will benefit from those government contacts as our company will be afforded access to highly skilled personnel possessing advanced expertise in the energy and nuclear sectors. We expect these individuals to provide support and services to us, thereby facilitating the progression of our ambitions and projects. Furthermore, given the nuclear industry has been comprehensively intertwined with government agencies, the value of access to government and regulatory personnel cannot be overstated. These contacts provide guidance and insights to us, informing us of both conventional and unconventional challenges that warrant our consideration. Such guidance is an invaluable resource, fortifying our endeavors to systematically mitigate risks associated with our business operations.

— World Class Team. Our technical

team is world class, with simple and realizable reactor concepts that do not require exotic fuels and who are aware of all the difficulties faced by almost every other reactor company who has chosen alternative designs. Our team has a deep knowledge of applicable regulatory requirements surrounding safety, transportation, and decommissioning, and our designs have incorporated all these considerations from the outset. We believe that the U.S. government is increasingly showing strong support for nuclear energy through various initiatives aimed at advancing nuclear technology, all of which further our business plans and opportunities. This support has taken various forms, as detailed below. Aside from the support for existing nuclear capabilities, all of these initiatives have the potential directly or indirectly to benefit and support our company.

— ADVANCE Act. In July 2024, President Biden signed the Advanced Nuclear for Clean Energy (ADVANCE) Act, which passed Congress with overwhelming bipartisan support. Among a host of other transformative actions, the ADVANCE Act includes numerous benefits to the nuclear microreactor segment where we operate. For instance, it requires the NRC to report to Congress within 9 months on the particular licensing requirements for advanced reactor operations, non-electric uses, and co-location with industrial facilities. Within 18 months, the NRC is mandated to implement specific licensing strategies for microreactors, considering their special characteristics and regulatory aspects such as staffing, security, and transportation. These mandates are expected to help provide clarity and more certainty to the nuclear licensing process for companies like ours. The ADVANCE Act also aims to streamline the DOE's process for approving the export of American technology while maintaining strong nuclear non-proliferation standards. It also seeks to update outdated rules that restrict international investment in the U.S. nuclear energy sector, empowering this market to grow and foster innovation. These initiatives could transform the regulatory pathway for our company, potentially reducing costs and resistance, and accelerating the commercialization of its advanced nuclear technology solutions. On a broader scale, the ADVANCE Act lays the foundation for next-generation advanced nuclear energy solutions by dedicating significant investments to expand domestic uranium enrichment capacity and ensuring a steady supply of the HALEU which is essential for advanced reactors.

— Advanced Reactor Development. The DOE has been actively supporting the development of advanced nuclear reactor technologies. Through programs like the Advanced Reactor Demonstration Program (ARDP) and the Advanced Reactor Concepts (ARC) program, the U.S. government is providing funding to accelerate the commercialization of next-generation nuclear reactors like our proposed microreactors that are safer, more efficient, and produce less waste.

— Nuclear Energy Innovation and Modernization Act (NEIMA). Signed into law in January 2019, this federal legislation aims to streamline the regulatory process for advanced nuclear reactors, making it easier for companies to develop and deploy new nuclear technologies in the United States.

— Loan Guarantees. The U.S. government has provided loan guarantees to support the construction of new nuclear power plants. These guarantees help reduce the financial risk associated with building nuclear facilities and encourage private investment in nuclear energy projects.

— Nuclear Energy Research and Development Funding. The DOE's Office of Nuclear Energy (ONE) provides funding for research and development projects related to nuclear energy. This includes research on advanced reactor technologies, nuclear fuel cycle options, and innovations in nuclear waste management. While we have not yet taken advantage of government funding, we plan to seek such funding in the future should an appropriate opportunity arise.

— Public-Private Partnerships. The U.S. government has encouraged collaboration between the public and private sectors to advance nuclear technology. Initiatives like the GAIN voucher help connect industry partners with national laboratories and expertise to accelerate the development and deployment of advanced nuclear technologies. Our collaboration with INL is an example of this trend. In September 2024, we announced that the DOE granted us a voucher award for the independent assessment of our novel heat exchanger concept for an open-air Brayton cycle in collaboration with INL. The heat exchanger concept provides a turnkey solution for our ZEUS microreactor in development.

— Support for Existing Nuclear Fleet. The U.S. government recognizes the importance of maintaining the existing fleet of nuclear power plants, which provide a significant portion of the nation's carbon-free electricity. Various measures have been proposed and implemented to ensure the economic viability of these plants and prevent premature closures.

— Nuclear Energy Export Initiatives. The U.S. government has been working to promote the export of American nuclear technology and expertise to other countries. This supports global efforts to decarbonize energy systems and strengthen international partnerships in the nuclear energy sector.

— Department of Energy Non-Defense Programs for Nuclear Energy and Fossil Energy and Carbon Management. In the federal government's fiscal 2023 budget, \$1.7 billion was allocated for the Office of Nuclear Energy, and \$62 billion was allocated to the DOE over a five-year period to deliver a more equitable clean energy future. A further \$892 million was allocated to support research and carbon development for carbon management technologies.

Our Competitive Strengths We believe we have the following competitive strengths relating to our various business lines:

Microreactor Business Unlike other nuclear reactor companies, we are seeking to become a vertically integrated company with multiple streams of revenue, a diversified business to hedge against market changes, and greater control over industries supporting microreactor development, such as nuclear fuel and transportation. Our diversified business model will make us highly differentiated from other reactor companies. Though our reactor designs were selected for specific markets, the type of reactor we are developing brings great advantages to our business. We are focusing on the 1-1.5 MWe power outputs, currently no advanced reactor design has reached prototype stage within this commercial space. The more developed concepts and reactor companies are almost all catering to different markets, namely civil nuclear power for large cities and towns. The microreactor space by comparison is relatively undeveloped, with no organizations demonstrably ahead in development. We believe we have an expertise advantage over other companies developing microreactors, as we can recruit the best scientists, engineers and professionals in the world from any country or institution, without being constrained by the available personnel located within certain academic and professional institutions. We had the fortune to connect with professors and scientists from around the world, with the opportunity to work freely on entirely funded projects, with few constraints, drawing from their specializations and expert areas. The technical personnel involved in the current design of our reactors have been involved with the design and development of dozens of different reactors. In addition, as described below under "Intellectual Property", we recently acquired a nuclear reactor cooling technology that we believe will give our microreactor designs a competitive advantage.

Fuel Processing Business We believe, based on our market research, that no SMR and microreactor company is currently developing an integrated non-TRISO CAT II fuel supply chain to produce fuel for their reactors. Our strategy to create the fuel for our own reactors will also position us to supply fuel to the wider nuclear industry and other reactor manufacturers, addressing anticipated significant shortfalls in fuel supply. A CAT III facility allows for the processing and handling of U235 up to 10% U235 enrichment, there are currently three groups in the U.S. authorized to operate a CAT III facility. A CAT II facility allows for the processing and handling of U235 up to 20% U235 enrichment. We believe, based on our

market research, that we are progressing towards being the only non-TRISO CAT II facility operator in the country, giving our business an enormous competitive advantage for both reactor development and establishing multiple sources of future revenue to de-risk our company. Currently, we believe, based on our market research, that no SMR or microreactor has any sales revenue, inhibiting the ability for any reactor company to progress, we are building a different and more robust business model.

49 Fuel Transportation Business We identified a transportation concept which investigated a high capacity HALEU fuel transportation basket design, which has been developed by INL, ORNL and PNNL, and funded by the DOE. The technology was developed around a licensed third-party cask technology to create a full HALEU transportation package, which provided the most advanced solution we identified to address the technological challenge of moving commercial quantities of HALEU fuel around North America. The development of this concept had not been continued by the DOE due to lack of funding. On April 3, 2024, we entered into the BEA License with BEA for this nuclear fuel transportation package, and have been working with the groups capable of aiding us in the development of the concept into a NRC certified and transportation package for the transportation of HALEU materials.

To provide our company further advantage in the fuel transportation space, we recruited two former executives from UPS, the world's largest shipping company, as our consultants who are assisting us in developing a North American transportation company using our licensed or developed technology to deliver (subject to applicable government licensing and certification) fuel for a wide customer base, including SMR and microreactor companies, national laboratories, military, and DOE programs.

Our Challenges We are a young company seeking to develop and launch an integrated nuclear energy business. Our efforts face and will continue to face many significant challenges, as our business involves complex nuclear technology, regulatory hurdles, and rapidly shifting market dynamics. These challenges include, but are not limited to, the following:

- Obtaining the necessary permits and licenses for nuclear reactors, facilities and transportation capabilities is time-consuming and expensive. Microreactors must meet stringent safety and environmental standards, and gaining regulatory approval can be a lengthy endeavor. Additionally, ensuring the safety of a microreactor throughout its lifecycle is paramount. Developing, implementing, and maintaining robust safety systems and protocols are critical challenges. Implementing robust security measures to protect against theft, sabotage, or unauthorized access is also critical for both regulatory compliance and public safety.
- Building and operating a microreactor is very capital-intensive. Securing the necessary significant funding and managing costs, including but not limited to operational and maintenance costs, are ongoing challenges for our business.
- The political and regulatory landscape can change, impacting the stability and viability of nuclear projects. International agreements and geopolitical factors can also affect nuclear technology access and export.
- **Competition** Our competitors (nearly all of which are significantly larger and have more cash resources than we do) are other power generation systems which provide energy within the 1MWe-1.5MWe range. This competition includes fossil fuel power generating units, renewables, long duration storage and other nuclear reactors, including other microreactors. However, as described above in "Competitive Strengths", we believe we are positioned better than our competition to emerge as a leading supplier of carbon-free round the clock energy generation.

Traditional Energy Sources According to the Statistical Review of World Energy 2024, fossil fuels, comprising oil, coal, and natural gas, accounted for approximately 80% of global energy consumption in 2023. Those traditional energy resources are carbon-intensive, and we expect them to largely be replaced with carbon-free energy over time. Traditional large-scale nuclear power plants, while carbon-free, require significant upfront capital expenditures, have a history of extensive construction times, complex safety systems and do not have business cases apart from utility-scale generation. We believe our carbon-free microreactor technology possesses all the positive attributes of traditional baseload energy and addresses many of the flaws of traditional nuclear power plants, such as large upfront capital costs.

50 Renewables According to an article titled "More Than 40% of World's Electricity Came From Zero-Carbon Sources in 2023" released on Wall Street Journal in August 2024, renewable energy sources like wind and solar made up approximately 17% of total electricity generation, and hydroelectric and nuclear power contributed 24%. Although these sources generate carbon-free power, except for nuclear power, wind and solar are highly intermittent and non-dispatchable, and hydroelectric is seasonal and subject to curtailment. Additionally, since renewables are weather-dependent, they are too unreliable to support certain end-use cases, including mission-critical applications or industrial applications that require extensive on-site, always-available power. Due to their innovative design SMRs and microreactors, such as the VOYGR plant design by NuScale Energy Corporation (NYSE:SMR) (NuScale), can operate as baseload generation, load-follow renewables and/or support key industrial applications.

Other Advanced Nuclear Reactors There are several reactor technologies that are in various stages of development, such as high temperature gas-cooled reactors, fast reactors, molten salt reactors, fusion technologies, and others, and commercial SMRs are currently operating in China and Russia. These technologies, like ours, are designed to be clean, safe, and highly reliable. However, these technologies have not received regulatory approval in the United States, and many of the technologies do not have the fuel supply infrastructure necessary to succeed. Currently, we believe, based on our market research, that there are no microreactor prototypes, and no other SMR companies other than NuScale which caters to a different market than our planned market, has a licensed advance reactor.

Cambridge Nuclear Energy Centre Collaboration In accordance with observed market trends and the surging global demand for nuclear personnel, combined with a shortage of suitably nuclear-qualified individuals, we have partnered with Cambridge Nuclear Energy Centre, part of the University of Cambridge, to develop a series of nuclear teaching programs to educate the next generation of qualified nuclear individuals capable of facilitating the growing demand and interest in nuclear energy.

Together with the Chair of Cambridge Nuclear Energy Centre, we will design and provide Master's and Doctorate programs in Nuclear Energy science, physics and engineering related disciplines, to graduate competent engineers and physicists ready for practical deployment to industry, academia, and research and development destinations. The courses will be designed to provide the candidates with practical learning which can be usefully applied to the current nuclear environment and state of industry.

Our strategy includes the employment of graduating personnel upon completion of their programs, to provide further value to our reactor programs, our fuel processing business, and our business services practice. The programs will serve to provide our company with a stream of individuals competent in nuclear science and engineering, at a time when personnel are increasingly difficult to source; mitigating against potential insufficient staffing caused by the labor demand. Concurrently, we expect to be able to provide our graduates with global and dynamic work opportunities which rival and exceed any other company involved within the nuclear energy space, assisting to retain and attract the best personnel.

Intellectual Property BEA License On April 3, 2024, we entered into a BEA License with Battelle Energy Alliance, LLC, the manager of the INL (BEA), and have been working with the groups capable of aiding us in the development of the concept into a governmentally certificated and licensed product proficient in the transportation of

enriched fuels. 51 Pursuant to the BEA License, we received an exclusive, royalty-bearing license from BEA for a U.S. patent that can be used worldwide related to devices and systems used for HALEU transportation. The BEA License grants us, as the licensee, exclusive rights for the use of this patent and the licensor is not permitted to license the patent to any other parties within the specified scope. As part of the BEA License, we agreed to pay BEA royalties on net worldwide sales and any sublicense worldwide sales related to the use of this patent as well as ascertain licensing payments. We also agreed to meet specific performance milestones related to HALEU fuel transportation within the first 48 months of the agreement's effective date. Under the BEA License, we are obligated to reimburse BEA for all costs incurred in the preparation, filing, prosecuting, and maintenance of the licensed patent. The BEA License has an indefinite term and will automatically terminate upon the expiration, abandonment, or other termination of the licensed patent covered by the BEA License. The BEA License may also be terminated immediately by BEA in the event of our default on any material obligations, and we may terminate the BEA License at any time if we provide at least three months' written notice to BEA. The BEA License contains customary representations, warranties, and indemnifications of the parties.

Acquisition of ALIP Technology On June 21, 2024, we closed an acquisition of a novel annular linear induction pump (ALIP) intellectual property used in small nuclear reactor cooling from noted physicist, research engineer and project manager Carlos O. Maidana, PhD. of Maidana Research. In connection with the transaction, Dr. Maidana has agreed to collaborate with us as a consultant on further development of the ALIP technology with a view towards achieving SBIR Phase III Award status. These efforts will build on previous DOE grants for the technology aggregating over \$1.37 million in prior phases. Pursuant to a consulting agreement between us and Dr. Maidana, we will provide funding (estimated to be approximately \$350,000) and other resources necessary for the Phase III project, and Dr. Maidana will be the Principal Investigator on this project. The SBIR program is a federal initiative designed to support small businesses in conducting research and development with strong potential for commercialization. By funding these projects, the SBIR program aims to stimulate technological innovation and facilitate the transition of research into viable products and services. SBIR Phase I focuses on feasibility and technical merit, Phase II involves further development and prototype creation, and Phase III centers on commercialization, requiring external funding to bring the innovation to market. The ALIP technology, which is based on electromagnetic (rather than moving) pumps, is a key-enabling technology to our ODIN microreactor in development. Following the previously announced completion of INL's review of the ODIN microreactor design in February 2024, our engineers have diligently worked to identify relevant technologies to further optimize and simplify ODIN's design. The acquired ALIP technology, to be refined during the SBIR Phase III program, is an example of this strategy in action. Moreover, we believe there is significant potential for this technology to be separately commercialized within a year as a component for all salt-based coolant reactors. There are numerous advanced reactor designs which utilize salt-based coolants in fission and fusion energy industries, as well as in the advanced materials, space exploration, marine propulsion, and high-temperature and industrial process sectors. The SBIR Phase III project acquired by us integrates several previous SBIR efforts, specifically:

- Grant Number DE-SC0019835: Development of a Small Electromagnetic Pump for Molten Salt.
- Grant Number DE-SC0022805: Software for Multiphysics Analysis and Design of Annular Linear Induction Pumps.
- Grant Number DE-SC0013992: Computational Tools for the Design of Liquid Metal Thermomagnetic Systems.

As part of this transaction, Dr. Maidana assigned to us all intellectual property rights associated with the ALIP product, his work on the foregoing grants and the proposal for the SBIR Phase III program.

52 In consideration for the ALIP acquisition, we (i) issued 50,000 shares of common stock to Dr. Maidana and (ii) paid Dr. Maidana cash consideration of \$50,000. Additionally, we agreed to deliver to Dr. Maidana an additional (x) 50,000 shares of common stock and (y) cash consideration of \$50,000, contingent upon the successful completion of SBIR Phase III project prior to June 21, 2025, without additional expense to, or funding requirement by, us.

ZEUS Provisional Patent On March 27, 2024, we filed an application for a U.S. provisional patent "ZEUS" to protect certain key design considerations. In July 2024, we filed another application for a U.S. provisional patent to secure our newly acquired annular linear induction pump technology (ALIP). As of January 10, 2025, these two patent applications remain under review by the USPTO. Other than that, for competitive reasons, to date we have not filed for any other U.S. or international patents related to our technology and have opted to maintain such technology as a trade secret. This includes our ODIN microreactor and other technologies. However, we have been in consultation with legal counsel to discuss patenting aspects of our developed technology. In addition, we are implementing a strategy to further the research and progress of our microreactor technology to a more finalized form. We believe that developing technology more comprehensively before patenting offers several advantages that can enhance the overall value and protection of the patent. Such advantages include stronger patent claims, reduced risk of invalidity, potential increased market value, minimized prior art, strategic timing, cost savings, better understanding of applications, and trade secrets protection. We plan to file utility or design patents for ZEUS and ODIN microreactors before March 27, 2025. Overall, we believe developing technology more comprehensively before patenting it provides our company with certain potential strategic advantages. However, we will balance the advantages of comprehensive development with the risk of potential delays in securing patent protection. We will continue to consult qualified intellectual property counsel so we can make informed decisions regarding the timing of patent filings and the overall protection strategy.

As of the date of this prospectus, we have one trademark application "Smaller, Cheaper and Safer" on class 11, pending approval from the United States Patent and Trademark office, and one domain name. **Acquisition of USNC Assets** "Patented MMR® Energy System and Pylon Transportable Reactor Platform" On December 18, 2024 and January 10, 2025, we entered into the USNC Agreement and the First Amendment to USNC Agreement with the USNC to acquire the USNC Assets on an as-is, where-is basis, including the MMR Business related to the KRONOS MMR Energy System and the Pylon Business related to the LOKI MMRTM platform, which contain certain contracts, intellectual property rights, demonstration projects, and as amended, the equity interests of a Canadian entity, free and clear of any liens other than certain specified liabilities of USNC that are being assumed, for a total purchase price of \$8.5 million in cash through an Auction conducted pursuant to Section 363 of the U.S. Bankruptcy Code in connection with USNC's pending Chapter 11 bankruptcy proceedings. On December 18, 2024, the United States Bankruptcy Court for the District of Delaware, the Bankruptcy Court overseeing USNC's bankruptcy held a hearing where it approved the sale of the USNC Assets to us. The USNC Closing occurred on January 10, 2025. The USNC Assets acquired by us at the USNC Closing consist of five contracts with third-party collaborators, 38 issued, pending or published patents, including six issued and four pending or published U.S. utility patents and three issued and four pending Canadian utility patents, 16 registered, pending or published trademarks, and any other technology and intellectual property related to the acquired businesses, rights related to a demonstration project related to the MMR Business in the United States and the business records of the acquired businesses and

related confidentiality rights. The USNC Assets related to the MMR Business and Pylon Business were assigned to two new wholly owned subsidiaries incorporated in Nevada. The USNC Assets also included certain Canadian Assets, including three contracts with Canadian authorities, the equity interests of a Canadian partnership and rights related to a demonstration project related to the MMR Business in Canada, the transfer of which need the consent of the Canadian Consents, with the USNC Escrow of \$250,000 deposited at the USNC Closing securing the Canadian Consents. If the Canadian Consents are not received within 90 days after the closing, we shall have the right to terminate the acquisition of the Canadian Assets and receive the return of the \$250,000 USNC Escrow. To better facilitate the Canadian Consents and to continue diligence of the Canadian partnership and other Canadian Assets, we assigned our rights to the Canadian Assets to Jay Jiang Yu, our founder, President, Secretary and Treasurer, and Chairman of the Board, and Yu Entities. In exchange, on January 10, 2025, we entered into the Yu Option Agreement with Mr. Yu and Yu Entities, pursuant to which we received an option back from Mr. Yu and Yu Entities to acquire for nominal consideration, for a period of five years after the receipt by the Yu Entities of the Canadian Assets upon receiving the Canadian Consents, any or all of the equity interests of the Yu Entities or the Canadian partnership, the other Canadian Assets or the material assets and business of the Canadian partnership. The KRONOS MMR Energy System is a zero-carbon nuclear power plant, integrating one or several standardized micro reactors with a heat storage unit and the adjacent plant for power conversion and utilization. The system, which is under development, could be used to provide carbon-free, high-quality process heat for co-located industrial applications, and for high-efficiency hydrogen production. The MMR® Energy System complements our own “ZEUS” and “ODIN” microreactors in development. However, whereas “ZEUS” and “ODIN” are being designed to be portable and produce 1 to 1.5 MWe of power, the MMR® Energy System is stationary and designed to produce power up to 45 MWth, opening additional potential markets to us. The MMR® Energy System is being demonstrated at the Canadian Nuclear Laboratories and at the University of Illinois at Urbana-Champaign. It was also the first small modular reactor to enter the formal licensing review phase with the Canadian Nuclear Safety Commission. A Rendition of our newly acquired technologies: Pylon for terrestrial (bottom) and space (top) applications and the Modular Micro Reactor (MMR®) Energy System (right), to be marketed as KRONOS MMRTM. The LOKIMMR reactor is a portable nuclear reactor designed for versatility in application and deployment. Designed to provide between 1 MWe and 5 MWe of power, it is tailored to specific applications ranging from remote terrestrial, marine, and space deployments. We will continue efforts to demonstrate the reactor at the Idaho National Laboratory’s DOME facility by 2027, following USNC’s selection for the National Reactor Innovation Center (NRIC) Front-End Engineering program. A 53 A A The newly acquired technologies align closely with our intended uses for ZEUS and ODIN, which are designed for remote, industrial, infrastructural, maritime, and extra-terrestrial applications, including large-scale data and artificial intelligence centers and other energy-intensive operations, positioning us to capitalize on growing financial investment and societal momentum driving advanced nuclear energy technologies on a global scale. We will leverage our world-class technical team to analyze and optimize these technologies, key components, and intellectual property, before integrating them into its operational frameworks and ongoing innovation efforts. We also intend to build upon and strengthen the extensive industry relationships that USNC established during its operations. A Insurance A We currently have director & officer liability insurance for our officers and certain directors. We do not carry any key-man life insurance, business liability and other professional liability insurance. Neither have we purchased any property insurance or business interruption insurance. Even if we purchase these kinds of insurance, the insurance may not fully protect us from the financial impact of defending against product liability or professional liability claims that may occur in future. As we are still at the development stage and we have not produced any products yet, we have determined that our current insurance coverage is sufficient for our business operations in the U.S. A Research and Development A Our team has spent almost 3 years on research and development and invested over an aggregate of approximately \$5.4 million on research and development related to ZEUS and ODIN to develop this technology. Prior to forming our company in 2022, our technical teams were involved in microreactor research and development which has helped accelerate the development of our microreactors. Our current research and development efforts are centered on optimizing reactor dimensions, material compositions, simplifying mechanical systems, and lowering the lifecycle cost of our microreactors and supporting future licensing by the NRC. Our team is also involved in developing new innovative technologies that will represent future business endeavors, such as fuel processing and fuel transportation. A Our research and development team has nearly 150 years of collective experience related to nuclear energy and reactor design, involving scientists and engineers from the University of Berkeley, California, and the University of Cambridge. A On February 14, 2023, we entered into a Strategic Partnership Project (SPP) agreement with INL for an Expert Review Panel of our ZEUS microreactor design. The SPP agreement is managed by BEA for the DOE. Over a 6-month period, INL reviewed our ZEUS-related technical information related to reactor design, siting, fuel, and decommissioning strategy and organized a Panel Review Workshop to discuss numerous areas of the design. This review panel not only provided recommendations on the current design but also outlined a path forward for further design and collaboration between us and INL. A In addition, we have been awarded 200 hours of subject matter expert (SME) support at INL as part of the National Reactor Innovation Center (NRIC) Resource Team program. NRIC accelerates the demonstration and deployment of advanced nuclear energy through its mission to inspire stakeholders and the public, empower innovators, and deliver successful outcomes. They are charged with and committed to demonstrating advanced reactors by the end of 2025. The work carried out focused on delivering a thermal-hydraulics model to study the temperature in our ZEUS reactor core as well as the thermal efficiency of the system, a Monte-Carlo model to study criticality and reactivity coefficients in the reactor core during depletion, and an optimized version of the reactor core including thermal-hydraulics and neutronics. A In the future, we expect our research and development expenses to increase significantly as we continue to accelerate the development of our products, services, and technologies. A 54 A A Material Agreements and Current Memoranda of Understanding A Services Agreement by and between Nano Nuclear Energy Inc. and Cambridge AtomWorks (2024) Limited (“Cambridge AtomWorks”) A On August 2, 2023, we entered into a services agreement with Cambridge AtomWorks LLP, which was replaced on July 29, 2024 with an updated services agreement with Cambridge AtomWorks (2024) Limited (or Cambridge AtomWorks). Through Cambridge AtomWorks, our ODIN development team, led by Ian Farnan and Eugene Schwageraus, provide services to us related to our ODIN microreactor in development. Pursuant to the 2023 agreement, Cambridge AtomWorks conducted a conceptual design feasibility study that analyzed the main design parameters of the ODIN microreactor and the proposed materials used to construct a power plant. These activities have been substantially completed, which led to the execution of the 2024 agreement with AtomWorks. A The responsibilities of Cambridge AtomWorks under the 2024 agreement include progressing the development of the ODIN reactor beyond the

conceptual stage to achieve the various intermediate stages of development including, but not limited to, those related to optimizing key system components and functions, with the goal of advancing the ODIN design to be in the position to begin the formal regulatory application process. The 2024 agreement with Cambridge AtomWorks, like its predecessor agreement, contains customary data security and privacy, confidentiality, indemnification, and intellectual property covenants. In consideration of the services provided, we will pay Cambridge AtomWorks up to \$4,864,567 in fees and expense reimbursements. These fees are to be paid over a two-year term and are based on specific activities that Cambridge AtomWorks must perform. The 2024 agreement expires two years from the effective date, or until July 25, 2026, whichever is later. During the year ended September 30, 2024, we paid approximately \$586,000 to Cambridge AtomWorks.

Memorandum of Understanding by and between Centrus and HALEU Energy

On March 30, 2023, our subsidiary HALEU Energy entered into a memorandum of understanding with Centrus. Pursuant to this agreement, both parties will explore the possibility of Centrus providing High-Assay Low-Enriched Uranium (HALEU) to HALEU Energy, as needed, to support HALEU Energy's research, development, and commercialization efforts, for fuel qualification, for our initial test reactor cores and our commercial variant micro reactors. The parties will also (i) explore the compatibility of HALEU Energy's engineering and technical needs, and Centrus's technical and manufacturing capabilities to satisfy those engineering and technical needs; (ii) explore Centrus providing engineering and/or advanced manufacturing services to HALEU Energy; and (iii) explore Centrus providing consulting services to HALEU Energy in the areas of fabrication, deconversion, regulatory and licensing, and transportation. This is a nonbinding and nonexclusive relationship and has customary covenants regarding confidentiality. The term of this agreement ends on December 31, 2025, and may be extended prior to its expiration by mutual agreement of the parties.

Strategic Partnership Project Agreement No. 23SP817 between Nano Nuclear Energy Inc. and BEA

On February 14, 2023, we entered into a Strategic Partnership Project (SPP) agreement with BEA. Pursuant to the SPP agreement, BEA is the management and operating contractor of the INL and is operating as a contractor for the DOE. The purpose of the SPP agreement is to establish an expert design panel for our ZEUS microreactor design. This review panel will provide recommendations for the current reactor design and outline a path forward for further design and collaboration between BEA and us. The estimated period of performance for completion of the statement of work (SOW) outlined in the SPP agreement was six months from the effective date of this SPP agreement (the later of the date signed by the last signatory or the date on which BEA received advance funding from Nano). On December 6, 2023, we entered into an amendment to the SPP agreement with BEA, pursuant to which the estimated timeline for completion of the SOW was extended from July 6, 2023 through January 3, 2025 and the term of the SPP agreement may be extended by mutual written agreement of both us and BEA. We expect to seek to extend the term of the SPP in light of the Memorandum of Understanding we signed in December 2024 with DOE as described further below.

Services Agreement between Nano Nuclear Energy Inc. and Nuclear Education and Engineering Consulting LLC (NEEC)

On January 19, 2024, we entered into a services agreement with NEEC, effective on January 15, 2024. Pursuant to the NEEC agreement, NEEC will support the design and development of a solid core 1 MWe nuclear reactor according to certain high-level objectives established by us, and in return, NEEC is entitled to a monthly fee of \$80,000 or less depending on the workload. The NEEC agreement contains customary provisions regarding confidentiality, indemnification, data security, and privacy. The NEEC agreement will expire two years from January 15, 2024 and may be terminated sooner by either party in the event that the other party is in breach, and it may be terminated with or without cause by NEEC upon thirty days' written notice to us.

Memorandum of Understanding with Everstar

In July 2024, we signed a memorandum of understanding with Everstar Inc. to explore the potential of leveraging Everstar's developing suite of artificial intelligence driven advisory and technology solutions to modernize the regulatory licensing process for our fabrication, deconversion, transportation and microreactor development projects.

Memorandum of Understanding with Rwanda Atomic Energy Board

In August 2024, we announced that we had signed a memorandum of understanding with the Rwanda Atomic Energy Board (RAEB). This memorandum establishes a framework under which we will work alongside the RAEB to facilitate the introduction and eventual integration of small modular reactors (SMRs) and microreactors, like our ZEUS and ODIN, throughout the Republic of Rwanda. We will also be responsible for enabling the development of the country's entire ecosystem of nuclear energy systems. This includes providing technical assistance, training and educational programs to develop Rwanda's technical expertise in the nuclear energy industry.

Memorandum of Understanding with Vert2Grow Energy Solutions

In November 2024, we announced that we had signed a memorandum of understanding with Vancouver-based start-up Vert2Grow Energy Solutions Inc. (Vert2Grow). Vert2Grow utilizes vertical farming technology provided by Food Security Structures Canada (FSSC). Under this memorandum, we and Vert2Grow aim to explore the integration of our portable microreactor technology with the innovative vertical farming solutions of Vert2Grow and its technology partner FSSC to deliver sustainable power and food production capabilities to remote communities worldwide. The memorandum establishes an initial, two-year exploration period and seeks to address the pressing challenges faced by remote and underserved areas, where access to reliable energy and food supply is limited. By leveraging our advanced reactor systems in development and FSSC's proprietary controlled-environment agriculture technology, the collaboration will develop a comprehensive framework to deliver innovative solutions that can transform isolated communities, disaster-prone regions, and industrial sites and may eventuate in the execution of one or more definitive agreements between the parties. The collaboration's initial scope of work over the next several years includes feasibility studies, site selection, pilot project implementation, and community engagement and training.

Founded in 2019, FSSC specializes in pioneering vertical farming systems that are designed for scalability, operational efficiency, and resilience. With advanced automation, energy-efficient lighting, and climate control technologies, FSSC's growing system enables year-round, high-yield food production in challenging environments.

Memorandum of Understanding with the DOE Regarding ZEUS and ODIN

On December 4, 2024, we announced our execution of a memorandum of understanding with the Idaho Operations Office of the DOE setting forth a framework for the collaboration between our company and the DOE to evaluate the feasibility of siting, construction, commissioning, operation and decommissioning of our ZEUS and ODIN microreactors at INL. Through this memorandum, we will work with the DOE and BEA to progress the development, siting, and eventual testing of our innovative microreactor designs. The memorandum outlines several core activities, such as site evaluations, support of our NRC licensing activities, and the development of operational and security plans, including hazardous material management. We will collaborate with the DOE to assess the suitability of INL's infrastructure and secure appropriate land-use agreements for supporting the experimental reactors, focusing on site selection, feasibility studies, and thorough security and emergency planning. Each party will be responsible for its own costs, as specified in the memorandum. The memorandum also includes provisions for regulatory coordination, communication strategies, and

efforts to ensure environmental compliance under the National Environmental Policy Act (NEPA), with both parties committed to adhering to all applicable local, state, and federal laws. A Memorandum of Understanding with the Government of the Togolese Republic On December 5, 2024, we announced that we had signed a memorandum of understanding (MOU) with the Government of the Togolese Republic. The memorandum establishes a framework under which we will collaborate with the Togolese government to advance the development and deployment of nuclear reactors, fuel facilities and nuclear material transportation within the territory of Togo. The collaboration aims to supplement Togo's national energy initiatives with advanced nuclear technologies, including microreactors like our ZEUS and ODIN microreactors, and build a more robust energy ecosystem. Under this memorandum, we will be responsible for evaluating the specific regional needs for energy systems that can support remote mines, industries, data centers, towns, hospitals, and desalination plants throughout the country, without the need to connect to the national grid. In turn, the Togolese government will support our licensing and implementation efforts in Togo, ensuring that the projects meet all international safety, non-proliferation and best practices. A Memorandum of Understanding with Digihost On December 12, 2024, we entered into a memorandum of understanding with Digihost to advance the transition to carbon-free energy at Digihost's 60-megawatt power plant in upstate New York. This strategic collaboration leverages our cutting-edge advanced nuclear reactor technologies in development to provide clean, reliable, and scalable energy for Digihost's high-tech operations, including AI-driven data centers and digital asset colocation programs. The collaboration signifies a pivotal step toward zero-emission energy solutions for Digihost by transitioning its existing power infrastructure to leverage advanced nuclear energy, enabling us to offer practical strategies and innovative solutions to address energy challenges faced by industries within the state of New York. In the interim, we will assist in optimizing Digihost's existing gas power infrastructure to ensure energy stability while nuclear deployment is developed. As part of the collaboration, we will also provide consulting services to Digihost to support the planning and execution of the project, which will include regulatory advice, site assessment, roadmap development and stakeholder engagement. The project's timeline aligns with our overall expectations for licensing and deployment, with reactor integration within Digihost's operations targeted for 2031. Before deployment, we and Digihost will conduct a comprehensive site assessment of Digihost's location, initiate site preparations and develop a comprehensive, phased implementation strategy, collaborate on the design, construction, testing, and commissioning of an advanced microreactor power system, and work together on regulatory and licensing activities. This memorandum is non-binding, and we will look to further memorialize our collaboration with Digihost through definitive agreements in the future. A Government Regulation: Microreactor Business: Nuclear Safety Regulation. The commercial use of nuclear technology is regulated in all countries, and approval from national regulatory bodies is required for the design, construction, and operation of nuclear plants, including our proposed microreactors. Nuclear safety regulators primarily consider the safety and robustness of designs of nuclear plants against applicable internal hazards (e.g., component failures and fires) and external hazards (e.g., earthquakes and weather loads such as snow, rain and wind), and also consider the environmental impacts of construction and operations (e.g., water use and preservation of historical sites and animal and plant species) of nuclear plants. Nuclear safety regulation must be addressed on a country-by-country basis, although regulators may collaborate when a design is deployed in multiple countries. 57 A Our microreactor licensing strategy includes two primary goals: (1) obtain regulatory approval using the most efficient licensing pathway by engaging the regulator early and developing a complete and high-quality application; and (2) maintain a standard design for our microreactor in as many markets as possible by pursuing NRC Standard Design Certification that can be completely referenced in customer license applications. A Nuclear Safety Regulatory Approval in the United States. For a nuclear plant to be constructed and operated in the United States, an applicant must develop and submit either a construction permit application followed by an operating license application in accordance with 10 CFR Part 50 or submit a combined license application in accordance with 10 CFR Part 52. An applicant utilizing either licensing pathway can incorporate by reference a design certification thus limiting the scope of its license application to site-specific information and operational programs. A customer desiring to construct and operate one of our ZEUS or ODIN microreactors can increase the efficiency of NRC regulatory approval by incorporating by reference the NRC standard design certification for one of our microreactors into its application. In accordance with our licensing strategy, we expect to obtain NRC approval and certification of our standard microreactor design for incorporation by reference into prospective customer license applications. The design certification process ensures that NRC review of the design is final and that prospective customers that use our NRC standard design certification without modification will only need to support NRC review of site-specific design features (e.g., physical security systems, water intake structures, on-site emergency plan), operational programs (e.g., maintenance, emergency preparedness), and environmental impacts. Through design finality, the NRC will not re-review our microreactor design. A Nuclear Safety Regulatory Approval Internationally. We are evaluating plans for pursuing international markets and engaging with international regulators with respect to our proposed microreactors. If we pursue markets outside of the U.S., we will assess all international regulatory requirements which may be applicable to our business. A Other Regulations. In addition to nuclear safety regulations, we are also subject to such other nuclear regulatory controls as nuclear material safeguards and non-proliferation restrictions, and liability insurance regimes (e.g., Price-Andersen Act, the 1960 Paris Convention, the 1963 Vienna Convention, and the 1997 Convention on Supplementary Compensation). We only plan to sell our microreactors in jurisdictions where nuclear liability is exclusively channeled to the plant operator. A Customers purchasing our microreactors must also obtain the permits, licenses, and insurance required for the jurisdiction where the facility will be located. In the U.S., a nuclear plant developer must obtain an NRC construction permit and operating license issued pursuant to 10 CFR Part 50 or a combined construction and operating license issued pursuant to 10 CFR Part 52. Other U.S. federal permits or licenses required for a nuclear plant may include those issued by the Army Corps of Engineers; the Federal Aviation Administration; the U.S. Department of Transportation; and the U.S. Environmental Protection Agency. State or local regulators may also require permits or licenses for a nuclear plant, including a National Pollutant Discharge Elimination System (NPDES) Permit for Storm Water Discharges from Construction Activities and to Construct a Sanitary Wastewater, Wastewater Treatment facility; Section 401 Water Quality Certification; Well Permits; Solid Waste Handling Permit; and appropriate building permits. A Export Controls. Our microreactor business is subject to, and complies with, stringent U.S. import and export control laws, including the Export Administration Regulations (EAR) regulations from the Bureau of Industry and Security which is part of the U.S. Department of Commerce, and regulations issued by the DOE. The regulations exist to advance the national security and foreign policy interests of the U.S. and to further its nonproliferation policies. Nuclear technology, also known as technical data, is controlled by 10 CFR Part 810, under the regulations of the DOE. Nuclear hardware and codes specifically designed or modified for use in a nuclear reactor are controlled by the NRC under 10 CFR Part 110.

We will work to ensure that strict internal control and measures are implemented to comply with export control regulations. Appendix A to 10 CFR Part 810 provides a list of countries that are considered Generally Authorized meaning they are considered to be non-sensitive. Countries not on this list are required to be specifically authorized prior to sharing any nuclear technology. Under Part 110, the NRC regulates the export or import of nuclear hardware, material and code, following the same sensitive countries versus non sensitive countries regulatory structure embedded in 10 CFR Part 810.58. Fuel Processing and Transportation Businesses Nuclear Safety Regulation.

The commercial nuclear fuel industry is heavily regulated in the United States and regulatory approval is required for the design, safety systems and operation of a nuclear fuel facility such as our proposed HALEU fuel processing facility. Nuclear safety regulators from the NRC consider safety related impacts to the facility from external events (e.g., wildfires, impacts from nearby facilities), natural phenomena hazards (e.g., seismic events, wind, snow, floods), fire protection, environmental conditions and dynamic effects associated with operations, chemical protection, emergency response, criticality control, and instrumentation and control. The facility license application must identify items relied on for safety in order to limit potential radiation and chemical related impacts to workers, the public, and the environment. A nuclear fuel facility must also consider the impacts of the facility on the environment. An environmental report will be prepared which describes the impact of constructing the facility on the environment; adverse environmental impacts that cannot be avoided; alternatives to the proposed facility construction; the relationship between short-term uses and enhancement of long-term productivity; and irreversible commitments of resources. The NRC will consider environmental impacts in its licensing decision making process. The NRC will need to make an environmental related finding of no significant impact (FONSI) prior to issuance of a license for the fuel facility. Our regulatory licensing strategy is to design a HALEU nuclear fuel processing facility using proven technology, processes and safety systems and engage the NRC early in the license application development process. Our intent is to produce a high-quality application that can be reviewed and approved by the NRC in the minimum amount of time. On the fuel transportation side, we are evaluating the availability and use of comprehensive nuclear material packaging. The use of NRC certified transportation packages under applicable federal rules and meeting the appropriate Department of Transportation regulatory requirements for radioactive materials are necessary for nuclear fuel shipments within the United States. Additionally, international shipping requirements which follow IAEA regulations (and those of the recipient country), are needed for any international transport of nuclear fuel. Nuclear Safety Regulatory Approval in the United States. In order for a nuclear fuel facility to be constructed and operated, a license application and supporting documentation needs to be prepared and submitted for review and approval by NRC. The safety basis for the facility is documented in an integrated safety analysis (ISA). An ISA is a systematic examination of the facility's processes, equipment, structures, and personnel activities to ensure that all relevant hazards that could result in unacceptable consequences have been adequately evaluated and appropriate protective measures have been identified. NRC fuel cycle facilities are similar to chemical processing plants and ISA techniques that have been applied in the chemical industry are generally applicable to a nuclear fuel facility. A document that contains a summary of the ISA will be submitted to the NRC with the license application. The license application submitted to the NRC will also include (a) an overview of the site and processes; (b) the licensee's organization; (c) the ISA methodology to be used; (d) a radiation protection program; (e) a nuclear criticality safety program; (f) a chemical process safety program; (g) a fire safety program; (h) an emergency management plan; (i) an environmental protection description; (j) a decommissioning plan; (k) a management measures program; (l) a fundamental nuclear material control and accounting plan; and (m) a physical protection plan. An environmental report detailing the potential impacts of the facility (and alternatives) will also be prepared and submitted to the NRC for review. We expect that the NRC will complete its review of our license application and environmental report within 24 months. We believe that the NRC review time can be compressed by submitting a high-quality application for a facility using proven technology and following guidance documents prepared by the NRC. Communication with the NRC both during the pre-application period and during the review will help facilitate a successful licensing review. After obtaining a license from the NRC, we will construct the facility in an expeditious manner. After construction is completed, it is expected that the NRC will perform an operational readiness review of the facility and grant NANO an authorization to operate. 59. To transport the fuel within the United States, NRC certified transportation packages will be used. If necessary, the package certificate of compliance will be amended by the package certificate holder in order to add our fabricated fuel as an authorized content for the transportation package. The certificate of compliance amendment request, if needed, will follow the appropriate regulatory requirements in the United States that are contained in 10 CFR Part 71. Nuclear Safety Regulatory Approval Internationally. Since the fuel facility is being licensed to produce our fuel in the United States by the NRC, no international regulatory approvals will be needed. Shipping of the fuel will occur in the United States using NRC certified transportation packages and following the appropriate regulatory requirements that are necessary for fuel shipments. For international shipments, additional shipping approvals will be needed depending on the country that the fuel will be shipped to. International shipping requirements will be addressed by following IAEA transportation requirements for transport of nuclear fuel and the recipient's country's requirements. Other Regulation. In addition to nuclear safety regulations, our fuel processing and transportation businesses are subject to other nuclear regulatory controls such as special nuclear material safeguards and non-proliferation restrictions. Other U.S. federal and state permits such as air quality, liquid effluent controls, and building permits will be required depending on the fuel facility design (types and quantity of waste materials produced) and the state in which the facility will be located which has not yet been determined. Export controls. Exports related to our fuel processing facility and products are controlled by the NRC under applicable federal regulations. Nuclear fuel processing plant equipment and components are under NRC's export licensing authority as per Appendix O to 10 CFR Part 110. This includes items that are considered especially designed for the fabrication of nuclear fuel including equipment that: (a) directly processes or controls the production flow of nuclear material; (b) seal the nuclear material with cladding; (c) check the integrity of cladding; (d) check the finished treatment of the sealed fuel; or (e) is used for assembling reactor fuel elements. This section of the regulations also includes equipment or systems of equipment specifically designed or prepared for use in a fuel processing plant. Additionally, 10 CFR 110.9a states that the export control of special nuclear material is also controlled by the NRC. Many types of controls are required to ensure compliance with NRC export control regulations. For example, 10 CFR 110.28 lists embargoed destinations for exporting nuclear materials and technology. An application to the NRC for a specific license to export special nuclear material will be required. The specific license is issued on a case-by-case basis to a single specified person or entity which submits and is legally responsible for the proposed export transactions as described on NRC Form 7 application submitted to the NRC. Legal Proceedings. On August 9, 2024, a putative securities class action lawsuit was filed

against us and certain of our officers in the United States District Court for the Southern District of New York, captioned Yvette Yang v. Nano Nuclear Energy Inc., et al., No. 1:24-cv-06057 (S.D.N.Y.). The complaint asserts claims for alleged violations of federal securities laws related to statements concerning our business and prospects, including our progress toward microreactor development. The plaintiff seeks to represent a class of certain persons who purchased or otherwise acquired our common stock during the period from May 8, 2024 through July 18, 2024 and seeks unspecified damages and other relief. On October 28, 2024, the court entered an order appointing Hongyu Xie as lead plaintiff. On November 4, 2024, the court entered a scheduling order for the filing of lead plaintiff's amended complaint and a briefing schedule for our anticipated motion to dismiss, under which lead plaintiff must file an amended complaint by January 6, 2025, and we must file a motion to dismiss by February 21, 2025. We dispute the allegations in the complaint and intend to defend the case vigorously. The case is at an early stage and we cannot reasonably estimate the amount of any potential financial loss or cost that could result from the lawsuit. In addition, on August 23, 2024, a putative shareholder derivative lawsuit was filed purportedly on behalf of our company, as nominal defendant, against certain of our directors and officers in the Eighth Judicial District Court of Clark County, Nevada, captioned William Latza, Derivatively on Behalf of Nano Nuclear, Inc. v. James Walker, et al., No. A-24-900423-C. The complaint asserted claims for alleged breach of fiduciary duties and corporate waste, among others, related to statements concerning our business and prospects. On November 15, 2024, we filed a motion to dismiss pursuant to Rule 23.1 of the Nevada Rules of Civil Procedure based on plaintiff's lack of standing, and the director and officer defendants filed a motion to dismiss pursuant to Rule 12(b)(5) of the Nevada Rules of Civil Procedure based on plaintiff's failure to state a claim upon which relief can be granted. On December 20, 2024, plaintiff filed an amended complaint. The amended complaint alleges claims for alleged breach of fiduciary duties, corporate waste, market manipulation, and racketeering, among others, related to our business and prospects, including our progress toward microreactor development, the qualifications of our management, and our investment in LIS Technologies Inc. On behalf of our company, the plaintiff seeks damages from the director and officer defendants and an order directing our company to take actions to reform and improve corporate governance and internal procedures. The director and officer defendants deny all allegations of liability and intend to vigorously defend against all claims. Given the preliminary stage of the lawsuit and the inherent uncertainties of litigation, we cannot determine with certainty the outcome of the case at this time. In addition, from time to time, we may be subject to various additional claims, lawsuits, and other legal and administrative proceedings that may arise in the ordinary course of business. Some of these claims, lawsuits, and other proceedings may range in complexity and result in substantial uncertainty; it is possible that they may result in damages, fines, penalties, non-monetary sanctions, or relief. As we continue to grow and develop our products, we anticipate that we will expend significant financial and managerial resources in the defense of our products in the future. We also anticipate that we will expend significant financial and managerial resources to defend against claims that our products and services infringe upon the intellectual property rights of third parties. Human Capital Resources As of the date of this prospectus, we had five full time employees and had 39 independent contractors with an aggregate of 62 advanced degrees, including 31 master's degrees in engineering and science, 17 PhDs and two JDs (Juris Doctors - Doctors of Law). We have utilized independent contractor relationships with our senior executive officers, except for Jay Jiang Yu, with whom we have an employment agreement, that became effective on October 1, 2024, but we intend to enter into formal employment agreements with our other senior executive officers in the future. The following table provides a breakdown of our staff by function as of the date of this prospectus.

Function	Number of Staff	% of Total
Management	5	11.36%
Research and Development	16	36.36%
Business Operation	21	47.73%
Administration	2	4.55%
Total	44	100%

(1) There was an increase of headcounts for a total of nine staff, or approximately 129% of the total research and development personnel in the research and development department in 2024 compared to the same period in 2023. The above-mentioned increases were due to the recruitment of new staff for our research and development. (2) There was an increase of headcounts for a total of eight staff, or approximately 62% of the business operation personnel in the business operation department in 2024 compared to the same period in 2023. The above-mentioned increases were due to the recruitment of new staff for our business operations. Our workforce operates under a hybrid model that integrates both in-office and remote work arrangements. We have a seasoned leadership team with nearly 150 years of cumulative experience in the nuclear industry. Our management team places significant focus and attention on matters concerning our human capital assets, particularly on the specific industry and technical knowledge that are required to implement our nuclear energy-focused business plan. Accordingly, we regularly review staff development and succession plans for each of our functions to identify and develop our pipeline of talent. We believe we offer our staff competitive compensation packages and an environment that encourages self-development and, as a result, have generally been able to attract and retain qualified personnel and maintain a stable core management team. Our staff are not represented by a labor organization or covered by a collective bargaining agreement. We believe that we maintain a good working relationship with our staff and to date, we have not experienced any labor disputes.

Description of Properties Our corporate headquarters is located at 10 Times Square, 30th Floor, New York, New York 10018, covering approximately 7,800 square feet. We lease this space for \$33,605 per month whereby the monthly lease rent will increase by 2.5% on an annual basis. The lease is effective on April 1, 2024 and has a term ending on July 31, 2031. In August 2024, we purchased a 1.64-acre land package in the historic Heritage Center Industrial Park in Oak Ridge, Tennessee for \$1.7 million. The purchase includes a 14,000 sq. ft., 2-story building to house our Nuclear Technology Headquarters. Situated in a world-class location for innovative nuclear technology research and development, this facility will serve as the central hub for our advanced nuclear technology design and engineering capabilities. The Nuclear Technology Headquarters is near the Oak Ridge National Laboratory, the Spallation Neutron Source, the National Transportation Research Center, and The University of Tennessee's Center of Excellence in Engineering. We expect to grow the number of personnel working at the facility over the next year and expect to ultimately employ up to 30 personnel at the facility. We believe the above-mentioned facilities and offices are adequate and suitable for our current needs and that, should it be needed, suitable additional or alternative space will be available to accommodate any such expansion of our operations.

Corporate History and Corporate Structure We were incorporated under the laws of the State of Nevada on February 8, 2022. We are primarily engaged in the design and development of mobile, easily deployable microreactors, the development of a commercial CAT II facility for fuel processing, and the creation of a commercial transportation technology and business, with the capacity to move fuel enriched up to 19.75% U235 across North America. HALEU Energy Fuel Inc. (which we refer to herein as HALEU Energy), incorporated on August 30, 2022 under the laws of Nevada, is our wholly-owned subsidiary. Through HALEU Energy, we are seeking to develop a domestic HALEU fuel processing facility to supply the next generation

of advanced nuclear reactors. American Uranium Inc. (which we refer to herein as American Uranium), incorporated on February 9, 2022 under the laws of Nevada, is our wholly-owned subsidiary. Through American Uranium, we are engaged in the acquisition, exploration and development of uranium mineral resource properties in the U.S. and internationally. American Uranium has not commenced operation as of the date of this prospectus. Advanced Fuel Transportation Inc. (which we refer to herein as Advanced Fuel Transportation), incorporated on June 21, 2023 under the laws of Nevada, is our wholly owned subsidiary. Through Advanced Fuel Transportation, we plan to manufacture a licensed high-capacity HALEU transportation system and produce a governmentally licensed and permitted high-capacity HALEU transportation system, capable of moving commercial quantities of HALEU fuel around North America. Advanced Fuel Transportation has not commenced operation as of the date of this prospectus. Nano Nuclear Space Inc. (which we refer to herein as Nano Nuclear Space), incorporated on July 24, 2024 under the laws of Nevada, is our wholly-owned subsidiary. Through Nano Nuclear Space, we are seeking to explore the potential commercial applications of our developing micronuclear reactor technology in space, including the ALIP technology. In September 2024, Dr. Carlos Maidana was appointed to lead our Nano Nuclear Space activities. Kronos MMR Inc. (which we refer to herein as Kronos MMR), incorporated on December 20, 2024 under the laws of Nevada, is our wholly-owned subsidiary. Through Kronos MMR, we are seeking to operate the newly acquired MMR Business for the MMR® Energy System to complement our own “ZEUS”™ and “ODIN”™ microreactors in development. LOKIMMR Inc. (which we refer to herein as LOKI MMR), incorporated on December 31, 2024 under the laws of Nevada, is our wholly-owned subsidiary. Through LOKI MMR, we are seeking to operate our newly acquired Pylon Business related to the Pylon reactor development.

62 MANAGEMENT AND EXECUTION COMPENSATION For a description of our management, please read Item 10. Directors, Executive Officers and Corporate Governance and Item 11. Executive Compensation in our 2024 Annual Report, which is incorporated by reference into this prospectus. There have been no material changes or developments to our management since the filing of our 2024 Annual Report, except as otherwise set forth in this prospectus.

CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS For a description of related party transactions, please read Item 13. Certain Relationships and Related Transactions, and Director Independence in our 2024 Annual Report, which is incorporated by reference into this prospectus. Except as set forth below, there have been no material changes or developments to our related party transactions since the filing of our 2024 Annual Report, except as otherwise set forth in this prospectus.

In connection with our acquisition of the USNC Assets in January 2025, to better facilitate the Canadian Consents and to continue diligence of the Canadian partnership and other Canadian Assets, we assigned our rights to the Canadian Assets to Jay Jiang Yu, our founder, President, Secretary and Treasurer, and Chairman of the Board, and Yu Entities. In exchange, on January 10, 2025, we entered into the Yu Option Agreement with Mr. Yu and Yu Entities, pursuant to which we received an option back from Mr. Yu and Yu Entities to acquire for nominal consideration, for a period of five years after the receipt by the Yu Entities of the Canadian Assets upon receiving the Canadian Consents, any or all of the equity interests of the Yu Entities or the Canadian partnership, the other Canadian Assets or the material assets and business of the Canadian partnership.

63 PRINCIPAL STOCKHOLDERS The following table sets forth certain information concerning the ownership of our common stock as of January 10, 2025, with respect to: (i) each person, or group of affiliated persons, known to us to be the beneficial owner of more than 5% of our common stock; (ii) each of our directors; (iii) each of our named executive officers; and (iv) all of our current directors and executive officers as a group. Applicable percentage ownership is based on 36,651,699 shares of common stock outstanding as of January 10, 2025. We have determined beneficial ownership in accordance with the rules of the SEC. These rules generally attribute beneficial ownership of securities to persons who possess sole or shared voting or investment power with respect to such securities. In addition, pursuant to such rules, we deemed outstanding shares of common stock subject to options or warrants held by that person that are currently exercisable or exercisable within 60 days of the date of this prospectus. We did not deem such shares outstanding, however, for the purpose of computing the percentage ownership of any other person. Except as indicated by the footnotes below, we believe, based on the information furnished to us, that the beneficial owners named in the table below have sole voting and investment power with respect to all shares of our common stock that they beneficially own, subject to applicable community property laws.

Number	Percentage	Name and Address of Beneficial Owner
1	5% or Greater	Stockholders
2	28.65 %	I Financial Ventures Group LLC.
3	28.65 %	Jay Jiang Yu
4	2.68 %	James Walker
5	1.19 %	Dr. Tsun Yee Law
6	*	Diane Hare
7	*	Dr. Kenny Yu
8	33.13 %	All directors and executive officers as a group (six individuals)
9	Less than 1%	

(1) Except as otherwise indicated, the business address of our directors and executive officers is 10 Times Square, 30th Floor, New York, NY 10018.

(2) Based on 36,651,699 shares of common stock outstanding as of January 10, 2025.

(3) Represents 10,000,000 shares of common stock held by I Financial Ventures Group LLC. (or the I Financial), a Limited Liability company incorporated under the laws of Delaware and includes 700,000 shares of common stock issuable upon the exercise of the vested options within 60 days of the date of this prospectus. Jay Jiang Yu, our President, Secretary, Treasurer, and Chairman of the Board of Directors, is the sole shareholder and director of I Financial, and exercises voting and dispositive power of the securities held by I Financial. The address of I Financial is c/o 10 Times Square, 30th Floor, New York, NY 10018.

(4) Represents 300,000 shares of common stock held by James Walker, our Chief Executive Officer and director, and includes 700,000 shares of common stock issuable upon the exercise of the vested options within 60 days of the date of this prospectus.

(5) Represents 250,000 shares of common stock held by Jaisun Garcha, our Chief Financial Officer and director, and includes 190,000 shares of common stock issuable upon the exercise of the vested options within 60 days of the date of this prospectus.

(6) Represents 100,000 shares of common stock held by Dr. Tsun Yee Law, our independent director, and includes 30,000 shares of common stock issuable upon the exercise of the vested options within 60 days of the date of this prospectus.

(7) Includes 40,000 shares of common stock issuable upon the exercise of the vested options by Diane Hare, our independent director, within 60 days of the date of this prospectus.

(8) Represents 15,000 shares of common stock held by Dr. Kenny Yu, our independent director, and includes 40,000 shares of common stock issuable upon the exercise of the vested options within 60 days of the date of this prospectus.

64 DESCRIPTION OF CAPITAL STOCK The aggregate number of shares that we are authorized to issue is 300,000,000, consisting of 275,000,000 shares of common stock, par value \$0.0001 per share, and 25,000,000 shares of preferred stock, par value \$0.0001 per share. As of January 10, 2025, there were 36,651,699 shares of common stock outstanding and there was no preferred stock outstanding. The following summary of the capital stock and our articles of incorporation and amended and restated bylaws does not purport to be complete and is qualified in its entirety by

reference to the provisions of applicable law and our articles of incorporation and bylaws, as amended, which are filed as exhibits to the registration statement of which this prospectus is a part.

Common Stock
Voting Rights. Holders of shares of common stock are entitled to one vote per share held of record on all matters to be voted upon by the stockholders. Holders of shares of common stock have no cumulative voting rights.
Quorum. Our bylaws provide that the holders of not less than one third (33 1/3 percent) of the outstanding shares of common stock entitled to vote constitutes a quorum. In the absence of a quorum, any meeting of stockholders may be adjourned, from time to time, either by the chairman of the meeting or by vote of the holders of a majority of the shares represented thereat, but no other business shall be transacted at such meeting. Where a separate vote by a class or classes or series is required, except where otherwise provided by the statute or by the articles of incorporation or the bylaws, as amended, one-third (33 1/3 percent) of the outstanding shares of such class or classes or series, present in person or represented by proxy, shall constitute a quorum entitled to take action with respect to that vote on that matter and, except where otherwise provided by the statute or by the articles of incorporation or the bylaws, as amended, the affirmative vote of the majority (plurality, in the case of the election of directors) of the votes cast, including abstentions, by the holders of shares of such class or classes or series shall be the act of such class or classes or series.

Dividend Rights. Holders of shares of common stock are entitled to ratably receive dividends when and if declared by the board of directors out of funds legally available for that purpose, subject to the provisions of our articles of incorporation and bylaws, any statutory or contractual restrictions on the payment of dividends, and any prior rights and preferences that may be applicable to any outstanding preferred stock.

Liquidation Rights. Upon liquidation, dissolution, distribution of assets or other winding up, the holders of common stock are entitled to receive ratably the assets available for distribution to the stockholders after payment of liabilities and the liquidation preference of any of our outstanding shares of preferred stock.

Other Matters. The shares of common stock have no preemptive or preferential right to acquire any of our shares or securities, including shares or securities held in our treasury. All outstanding shares of our common stock are fully paid and non-assessable.

Preferred Stock
Our articles of incorporation give the board of directors the power to issue shares of preferred stock in one or more series without stockholder approval. The board of directors has the discretion to determine the designations, rights, qualifications, preferences, privileges, and restrictions, including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences, of each series of preferred stock. The purpose of authorizing the board of directors to issue preferred stock and determine its rights and preferences is to eliminate delays associated with a stockholder vote on specific issuances. The issuance of preferred stock, while providing desirable flexibility in connection with possible acquisitions and other corporate purposes, could have the effect of making it more difficult for a third party to acquire, or could discourage a third party from acquiring, a majority of our outstanding voting stock.

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Stock Options
As of the date of this prospectus, we had reserved the following shares of common stock for issuance pursuant to stock options under the 2023 Stock Option Plan #1 and 2023 Stock Option Plan #2:
— up to 3,247,030 shares of our common stock reserved for issuance with an exercise price of \$1.50 per share under stock option agreements pursuant to the 2023 Equity Incentive Plan #1, subject to an increase on the first day of each fiscal quarter equal to 15% increase in the total outstanding shares of our common stock in the preceding quarter; and
— up to 2,249,285 shares of our common stock reserved for issuance with an exercise price of \$3.00 per share under stock option agreements pursuant to the 2023 Equity Incentive Plan #2, subject to an increase at each quarter, with the first quarterly increase on June 30, 2023, and every three months thereafter (the “Adjustment Date”), by an amount equal to the lesser of (i) 15% of the total outstanding shares of our common stock on the applicable Adjustment Date less (a) the number of shares of common stock that may be optioned and sold under such plan prior to the applicable Adjustment Date and (b) the number of shares of common stock that may be optioned and sold under any other stock option plans of our company in effect as of the applicable Adjustment Date; or (ii) such lesser number of shares of common stock as may be determined by the board.

In August 2024, we issued an aggregate of 250,000 shares of common stock to our consultants who exercised their options pursuant to 2023 Stock Option Plan #1 and 2023 Stock Option Plan #2. In September 2024, we issued an aggregate of 343,000 shares of common stock to our consultants who exercised their options pursuant to 2023 Stock Option Plan #1 and 2023 Stock Option Plan #2. In October 2024, we issued an aggregate of 230,000 shares of common stock to consultants who exercised their outstanding stock options. In November 2024, we issued an aggregate of 15,000 shares of common stock to consultants who exercised their outstanding stock options. In December 2024, we issued an aggregate of 145,000 shares of common stock to consultants who exercised their outstanding stock options.

Warrants Issued in November 2024 Private Placement
The following summary of certain terms and provisions of the November 2024 Warrants offered in our November 2024 private placement is not complete and is subject to, and qualified in its entirety by, the provisions of the November 2024 Warrants, the form of which is incorporated as an exhibit to the registration statement of which this prospectus is a part. Prospective investors should carefully review the terms and provisions of the November 2024 Warrants for a complete description of the terms and conditions thereof.

Exercisability. The November 2024 Warrants are exercisable on the original issuance date and will expire on the date that is five years after their original issuance. The November 2024 Warrants will be exercisable, at the option of each holder, in whole or in part by delivering to us a duly executed exercise notice. In no event may the November 2024 Warrants be net cash settled.

Exercise Limitation. A holder will not have the right to exercise any portion of the November 2024 Warrants if the holder (together with its affiliates) would beneficially own in excess of 4.99% or 9.99%, as applicable, of the number of shares of our common stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the November 2024 Warrants. However, any holder may increase or decrease such percentage, provided that any increase will not be effective until the 61st day after such election.

Exercise Price. The November 2024 Warrants have an exercise price of \$26.00 per whole share and will be exercisable from the initial issuance date until they expire on the five-year anniversary of the original issuance date. The exercise price is subject to appropriate adjustment in the event of certain stock dividends and distributions, stock splits, stock combinations, reclassifications or similar events affecting our common stock and also upon any distributions of assets, including cash, stock or other property to our stockholders.

Cashless Exercise. If, at the time a holder exercises its November 2024 Warrant, there is no effective registration statement registering, or the prospectus contained therein is not available for an issuance of the shares underlying the November 2024 Warrant to the holder, then in lieu of making the cash payment otherwise contemplated to be made to us upon such exercise in payment of the aggregate exercise price, the holder may elect instead to receive upon such exercise (either in whole or in part) the net number of shares of common stock determined according to a formula set forth in the November 2024 Warrant.

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Transferability. Subject to applicable laws, the November 2024 Warrants may be offered for sale, sold, transferred or assigned without our consent.

Exchange Listing. There is no established trading market for the November 2024

Warrants and we do not expect a market to develop. In addition, we do not intend to apply for the listing of the November 2024 Warrants on any national securities exchange or other trading market. Without an active trading market, the liquidity of the November 2024 Warrants will be limited and should be considered illiquid.

Fundamental Transactions. If a fundamental transaction occurs, then the successor entity will succeed to, and be substituted for us, and may exercise every right and power that we may exercise and will assume all of our obligations under the November 2024 Warrants with the same effect as if such successor entity had been named in the warrant itself. If holders of our common stock are given a choice as to the securities, cash or property to be received in a fundamental transaction, then the holder shall be given the same choice as to the consideration it receives upon any exercise of the warrant following such fundamental transaction. Notwithstanding the foregoing, in the event of a fundamental transaction involving our company, we, at the option of the warrant holders, can purchase the November 2024 Warrants from such holder by paying to the holder an amount of cash equal to the Black Scholes Value (as defined in the November 2024 Warrant) of the remaining unexercised portion of the November 2024 Warrants on the date of the consummation of such fundamental transaction under certain conditions.

Rights as a Stockholder. Except as otherwise provided in the November 2024 Warrants or by virtue of such holder's ownership of shares of our common stock, the holder of a November 2024 Warrant does not have the rights or privileges of a holder of our common stock, including any voting rights, until the holder exercises the November 2024 Warrant.

2024 B Warrants Issued in October 2024 Follow-on Offering

The following summary of certain terms and provisions of the 2024 B Warrants offered in our October 2024 underwritten follow-on offering (which we refer to herein as the October 2024 Warrants) is not complete and is subject to, and qualified in its entirety by, the provisions of the Warrant Agent Agreement, dated October 23, 2024, between us and VStock Transfer, LLC, as warrant agent, the form of which is incorporated as an exhibit to the registration statement of which this prospectus is a part. Prospective investors should carefully review the terms and provisions of the Warrant Agent Agreement (which includes the form of October 2024 Warrants) for a complete description of the terms and conditions of the October 2024 Warrants.

Exercisability. The October 2024 Warrants are exercisable on the original issuance date and will expire on the date that is five years after their original issuance. The October 2024 Warrants will be exercisable, at the option of each holder, in whole or in part by delivering to us a duly executed exercise notice. In no event may the October 2024 Warrants be net cash settled.

Exercise Limitation. A holder will not have the right to exercise any portion of the October 2024 Warrants if the holder (together with its affiliates) would beneficially own in excess of 4.99% of the number of shares of our common stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the October 2024 Warrants. However, any holder may increase or decrease such percentage, provided that any increase will not be effective until the 61st day after such election.

Exercise Price. The October 2024 Warrants have an exercise price of \$17.00 per whole share and will be exercisable from the initial issuance date until they expire on the five-year anniversary of the original issuance date. The exercise price is subject to appropriate adjustment in the event of certain stock dividends and distributions, stock splits, stock combinations, reclassifications or similar events affecting our common stock and also upon any distributions of assets, including cash, stock or other property to our stockholders.

Cashless Exercise. If, at the time a holder exercises its October 2024 Warrant, there is no effective registration statement registering, or the prospectus contained therein is not available for an issuance of the shares underlying the October 2024 Warrant to the holder, then in lieu of making the cash payment otherwise contemplated to be made to us upon such exercise in payment of the aggregate exercise price, the holder may elect instead to receive upon such exercise (either in whole or in part) the net number of shares of common stock determined according to a formula set forth in the October 2024 Warrant.

Transferability. Subject to applicable laws, the October 2024 Warrants may be offered for sale, sold, transferred or assigned without our consent.

Exchange Listing. There is no established trading market for the October 2024 Warrants being offered and we do not expect a market to develop. In addition, we do not intend to apply for the listing of the October 2024 Warrants on any national securities exchange or other trading market. Without an active trading market, the liquidity of the October 2024 Warrants will be limited and should be considered illiquid.

Fundamental Transactions. If a fundamental transaction occurs, then the successor entity will succeed to, and be substituted for us, and may exercise every right and power that we may exercise and will assume all of our obligations under the October 2024 Warrants with the same effect as if such successor entity had been named in the warrant itself. If holders of our common stock are given a choice as to the securities, cash or property to be received in a fundamental transaction, then the holder shall be given the same choice as to the consideration it receives upon any exercise of the warrant following such fundamental transaction.

Rights as a Stockholder. Except as otherwise provided in the October 2024 Warrants or by virtue of such holder's ownership of shares of our common stock, the holder of an October 2024 Warrant does not have the rights or privileges of a holder of our common stock, including any voting rights, until the holder exercises the October 2024 Warrant.

Warrants Issued in Our July 2024 Follow-on Offering

The following summary of certain terms and provisions of the warrants issued in our July 2024 underwritten follow-on offering (which we refer to herein as the July 2024 Warrants) is not complete and is subject to, and qualified in its entirety by, the provisions of the Warrant Agent Agreement, dated July 11, 2024, between us and VStock Transfer, LLC, as warrant agent, the form of which is incorporated as an exhibit to the registration statement of which this prospectus is a part. Prospective investors should carefully review the terms and provisions of the Warrant Agent Agreement (which includes the form of July 2024 Warrants) for a complete description of the terms and conditions of the July 2024 Warrants.

Exercisability. The July 2024 Warrants are exercisable on the original issuance date and will expire on the date that is five years after their original issuance. The July 2024 Warrants will be exercisable, at the option of each holder, in whole or in part by delivering to us a duly executed exercise notice. In no event may the July 2024 Warrants be net cash settled.

Exercise Limitation. A holder will not have the right to exercise any portion of the July 2024 Warrants if the holder (together with its affiliates) would beneficially own in excess of 4.99% of the number of shares of our common stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the July 2024 Warrants. However, any holder may increase or decrease such percentage, provided that any increase will not be effective until the 61st day after such election.

Exercise Price. The July 2024 Warrants have an exercise price of \$20.00 per whole share and will be exercisable from the initial issuance date until they expire on the five-year anniversary of the original issuance date. The exercise price is subject to appropriate adjustment in the event of certain stock dividends and distributions, stock splits, stock combinations, reclassifications or similar events affecting our common stock and also upon any distributions of assets, including cash, stock or other property to our stockholders.

Cashless Exercise. If, at the time a holder exercises its July 2024 Warrant, there is no effective registration statement registering, or the prospectus contained therein is not available for an issuance of the shares underlying the July 2024 Warrant to the holder, then in lieu of making the cash

payment otherwise contemplated to be made to us upon such exercise in payment of the aggregate exercise price, the holder may elect instead to receive upon such exercise (either in whole or in part) the net number of shares of common stock determined according to a formula set forth in the July 2024 Warrant. 68 Transferability. Subject to applicable laws, the July 2024 Warrants may be offered for sale, sold, transferred or assigned without our consent. Exchange Listing. There is no established trading market for the July 2024 Warrants being offered and we do not expect a market to develop. In addition, we do not intend to apply for the listing of the July 2024 Warrants on any national securities exchange or other trading market. Without an active trading market, the liquidity of the July 2024 Warrants will be limited and should be considered illiquid. Fundamental Transactions. If a fundamental transaction occurs, then the successor entity will succeed to, and be substituted for us, and may exercise every right and power that we may exercise and will assume all of our obligations under the July 2024 Warrants with the same effect as if such successor entity had been named in the warrant itself. If holders of our common stock are given a choice as to these securities, cash or property to be received in a fundamental transaction, then the holder shall be given the same choice as to the consideration it receives upon any exercise of the warrant following such fundamental transaction. Rights as a Stockholder. Except as otherwise provided in the July 2024 Warrants or by virtue of such holder's ownership of shares of our common stock, the holder of a July 2024 Warrant does not have the rights or privileges of a holder of our common stock, including any voting rights, until the holder exercises the July 2024 Warrant. Underwriter's Warrant "October 2024 Public Offering" In connection with our public offering in October 2024, we issued a warrant to the representative of the underwriters (The Benchmark Company) as a portion of the underwriting compensation payable in connection with such offering. Such warrant is exercisable for 121,764 shares of our common stock. Such warrant contains customary "cashless exercise" provisions and shall be exercisable at anytime, and from time to time, in whole or in part, for a term of four-and-a-half-year period commencing six months after the closing of the October 2024 offering at an exercise price of \$21.25 per share. Underwriter's Warrant "July 2024 Public Offering" In connection with our public offering in July 2024, we issued a warrant to the representative of the underwriters (The Benchmark Company, who is the same representative of the underwriters for this offering) as a portion of the underwriting compensation payable in connection with such offering. Such warrant is exercisable for 63,000 shares of our common stock. Such warrant contains customary "cashless exercise" provisions and shall be exercisable at any time, and from time to time, in whole or in part, during the four-and-a-half-year period commencing six months after the closing of the July 2024 offering at an exercise price of \$25.00 per share. IPO Underwriter's Warrant In connection with our initial public offering in May 2024, we issued a warrant to the representative of the underwriters (The Benchmark Company) as a portion of the underwriting compensation payable in connection with such offering. Such warrant is exercisable for 179,375 shares of our common stock. Such warrant contains customary "cashless exercise" provisions and shall be exercisable at anytime, and from time to time, in whole or in part, for a term of five years from the first day of the seventh month after the closing of our initial public offering at an exercise price of \$5.00 per share. Nevada Anti-Takeover Provisions Nevada law, NRS Sections 78.411 through 78.444, regulate business combinations with interested stockholders. Nevada law defines an interested stockholder as a beneficial owner (directly or indirectly) of 10% or more of the voting power of the outstanding shares of the corporation. Pursuant to Sections NRS 78.411 through 78.444, combinations with an interested stockholder remain prohibited for three years after the person became an interested stockholder unless (i) the transaction is approved by the board of directors or the holders of a majority of the outstanding shares not beneficially owned by the interested party, or (ii) the interested stockholder satisfies certain fair value requirements. NRS 78.434 permits a Nevada corporation to opt-out of the statute with appropriate provisions in its articles of incorporation. 69 NRS Sections 78.378 through 78.3793 regulates the acquisition of a controlling interest in an issuing corporation. An issuing corporation is defined as a Nevada corporation with 200 or more stockholders of record, of which at least 100 stockholders have addresses of record in Nevada and does business in Nevada directly or through an affiliated corporation. NRS Section 78.379 provides that an acquiring person and those acting in association with an acquiring person obtain only such voting rights in the control shares as are conferred by a resolution of the stockholders of the corporation, approved at a special or annual meeting of the stockholders. Stockholders who vote against the voting rights have dissenters' rights in the event that the stockholders approve voting rights. NRS Section 378 provides that a Nevada corporation's articles of incorporation or bylaws may provide that these sections do not apply to the corporation. We have not opted out of these sections in our articles of incorporation and bylaws. Removal of Directors; Vacancies Under NRS 78.335, one or more of the incumbent directors may be removed from office by the vote of stockholders representing two-thirds or more of the voting power of the issued and outstanding stock entitled to vote. Our bylaws provide that any newly created position on the board of directors that results from an increase in the total number of directors and any vacancies on the board of directors will be filled only by the affirmative vote of a majority of the remaining directors, even if less than a quorum. No Cumulative Voting The NRS does not permit stockholders to cumulate their votes other than in the election of directors, and then only if expressly authorized by the corporation's articles of incorporation. Our articles of Incorporation does not expressly authorize cumulative voting. The combination of these provisions will make it more difficult for our existing stockholders to replace our board of directors as well as for another party to obtain control of us by replacing our board of directors. Because our board of directors has the power to retain and discharge our officers, these provisions could also make it more difficult for existing stockholders or another party to effect a change in management. In addition, the authorization of undesignated preferred stock makes it possible for our board of directors to issue preferred stock with voting or other rights or preferences that could impede the success of any attempt to change our control. These provisions are intended to enhance the likelihood of continued stability in the composition of our board of directors and its policies and to discourage coercive takeover practices and inadequate takeover bids. These provisions are also designed to reduce our vulnerability to hostile takeovers and to discourage certain tactics that may be used in proxy fights. However, such provisions could have the effect of discouraging others from making tender offers for our shares and may have the effect of delaying changes in our control or management. As a consequence, these provisions may also inhibit fluctuations in the market price of our stock that could result from actual or rumored takeover attempts. We believe that the benefits of these provisions, including increased protection of our potential ability to negotiate with the proponent of an unfriendly or unsolicited proposal to acquire or restructure our company, outweigh the disadvantages of discouraging takeover proposals, because negotiation of takeover proposals could result in an improvement of their terms. Articles of Incorporation and Bylaw Provisions, As Amended Our purpose is to engage in any lawful act or activity for which corporations may now or hereafter be organized under NRS Section 78 other than the business of a trust company, savings and loan association, thrift company or corporation organized for the purpose of conducting a banking business. Board of Directors Our bylaws

provides that the number of directors will be fixed by the board of directors within a range of between one and fifteen directors. The directors need not be stockholders unless so required by our articles of incorporation. The minimum or maximum number may be increased or decreased from time to time only by an amendment to the bylaws, which power belongs exclusively to our board of directors.

70 Requirements for Advance Notification of Director Nominations and Stockholder Proposals Our bylaws establish advance notice procedures with respect to stockholder proposals and the nomination of candidates for election as directors. In order for any matter to be properly brought before a meeting of our stockholders, the stockholder submitting the proposal or nomination will have to comply with advance notice requirements and provide us with certain information.

For business to be properly brought before an annual meeting, the proposing stockholder must have given written notice of the nomination or proposal, either by personal delivery or by United States mail to the Secretary of our company not later than the close of business on the sixtieth (60th) day nor earlier than the close of business on the ninetieth (90th) day prior to the first anniversary of the preceding year's annual meeting; provided, however, that in the event that no annual meeting was held in the previous year or the date of the annual meeting has been changed by more than thirty (30) days from the date contemplated at the time of the previous year's proxy statement, notice by the stockholder to be timely must be so received not earlier than the close of business on the ninetieth (90th) day prior to such annual meeting and not later than the close of business on the later of the sixtieth (60th) day prior to such annual meeting or, in the event public announcement of the date of such annual meeting is first made by our company fewer than seventy (70) days prior to the date of such annual meeting, the close of business on the tenth (10th) day following the day on which public announcement of the date of such meeting is first made by the Corporation. No business shall be conducted at any annual meeting except in accordance with the procedures set forth in our bylaws.

For business to be properly brought before a special meeting of stockholders, the notice of the meeting must set forth the general nature of the business to be considered. No business may be transacted at such special meeting otherwise than specified in such notice. The special meeting may be called for by (i) the Chairman of the board of directors, or (ii) the board of directors pursuant to a resolution adopted by a majority of the total number of authorized directors (whether or not there exist any vacancies in previously authorized directorships at the time any such resolution is presented to the board of directors for adoption), and shall be held at such place, on such date, and at such time as the Board of Directors, shall determine. The board of directors shall determine the time and place of such special meeting, which shall be held not less than thirty-three (33) nor more than one hundred twenty (120) days after the date of the receipt of the request.

Authorized but Unissued Capital Stock Neither Nevada law nor our governing documents require stockholder approval for any issuance of authorized shares, except as provided in NRS 78.2055 with respect to a decrease in the number of issued and outstanding shares of a class or series without a corresponding decrease in the authorized shares. Our authorized but unissued common stock are therefore available for future issuances without stockholder approval and could be utilized for a variety of corporate purposes, including future offerings to raise additional capital, acquisitions and employee benefit plans. The existence of authorized but unissued and unreserved common stock could render more difficult or discourage an attempt to obtain control of us by means of a proxy contest, tender offer, merger or otherwise.

Stockholder Action by Written Consent Any action required or permitted by the NRS to be taken at a meeting of stockholders may be taken without a meeting if, before or after the action, a written consent to the action is signed by stockholders holding a majority of the voting power of our company or, if different, the proportion of voting power required to take the action at a meeting of stockholders.

71 History of Securities Issuances During the past three years, we issued securities that were not registered under the Securities Act as set forth below. The following is a summary of transactions from our inception until the date of this prospectus involving issuance of our securities that were not registered under the Securities Act. The offers, sales and issuances of the securities described below were exempt from registration either (i) under Section 4(a)(2) of the Securities Act and the rules and regulations promulgated thereunder in that the transactions were between an issuer and sophisticated investors or members of its senior executive management and did not involve any offering within the meaning of Section 4(a)(2), or (ii) under Regulation S promulgated under the Securities Act in that offers, sales and issuances were not made to persons in the United States and no directed selling efforts were made in the United States, or (iii) under Rule 144A under the Securities Act in that the shares were offered and sold by the initial purchasers to qualified institutional buyers, or (iv) under Rule 701 promulgated under the Securities Act in that the transactions were under compensatory benefit plans and contracts relating to compensation.

In February 2022, we issued 10,000,000 shares of common stock to I Financial Ventures Group LLC, of which our President, Secretary, Treasurer, and Chairman of the Board of Directors, Jay Jiang Yu, is the sole shareholder and director, and received proceeds of \$50,000.

Between March 2022 and April 2022, we issued an aggregate of 7,500,000 shares of common stock to certain members of our management team and certain investors, and received an aggregate proceeds of \$375,000.

Between February 2022 and September 2022, we issued an aggregate of 675,000 shares of common stock to certain consultants for services received.

Between April 2022 and February 2023, we issued an aggregate of 4,146,869 shares of common stock to certain investors, and received an aggregate proceeds of \$4,146,869.

Between April 2023 and September 2023, we issued an aggregate of 2,778,000 shares of common stock to certain investors, and received an aggregate proceeds of \$6,945,000.

In January 2024, we issued an aggregate of 822,144 shares of common stock to certain investors, and received an aggregate gross proceeds of \$2,466,437, of which \$2,106,437 was received in advance as of December 31, 2023, and \$360,000 was received in January 2024.

In June 2024, we issued an aggregate of 50,000 shares of common stock to Dr. Maidana as consideration for the ALIP Acquisition.

In August 2024, we issued an aggregate of 20,000 shares of common stock to certain consultants for services received.

In August 2024, we issued an aggregate of 250,000 shares of common stock to consultants who exercised their outstanding stock options.

In September 2024, we issued an aggregate of 343,000 shares of common stock to consultants who exercised their outstanding stock options.

In October 2024, we issued an aggregate of 230,000 shares of common stock to consultants who exercised their outstanding stock options.

In November 2024, we issued an aggregate of 15,000 shares of common stock to consultants who exercised their outstanding stock options.

In December 2024, we issued an aggregate of 145,000 shares of common stock to consultants who exercised their outstanding stock options.

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On November 24, 2024, we entered into a Securities Purchase Agreement (the "November 2024 SPA") with three accredited institutional investors pursuant to which we agreed to offer and sell an aggregate of \$60,000,048 of our securities in a private placement (the "November 2024 Private Placement"), consisting of (i) 2,500,002 Shares of our common stock and (ii) the November 2024 Warrants to purchase up to 2,500,002 shares of common stock. The November 2024 Private Placement closed on November 27, 2024. After deducting the placement agent fees and estimated offering expenses payable by us, we received net proceeds of approximately \$55,122,000. We intend to use these net proceeds for general working capital and general corporate purposes, which could include potential

acquisitions of complementary businesses or assets. Pursuant to the November 2024 SPA, we issued and sold 2,500,002 Shares and associated November 2024 Warrants to purchase up to an aggregate of 2,500,002 shares of common stock at a combined purchase price of \$24.00 per share. The associated November 2024 Warrants have a term of five (5) year with an exercise price of \$26.00 per share and will be exercisable immediately upon issuance of the Warrants. The November 2024 SPA includes standard representations, warranties and covenants of the Company and Investors, including certain restrictions on future issuances of our capital stock for 30 days following effectiveness of the registration statement discussed below. On November 24, 2024, in connection with the November 2024 Private Placement, we entered into a registration rights agreement (the "Registration Rights Agreement") with the investors pursuant to which we agreed to file a registration statement with the Securities and Exchange Commission (the "SEC") covering the resale of the Shares and the shares of Common Stock issuable upon exercise of the November 2024 Warrants by no later than January 15, 2025 (the date of filing, the "Filing Date"), with such registration statement to be effective within 30 days of the Filing Date (if such registration statement is not subject to review by the SEC), or within 60 days after the Filing Date (if such registration statement is subject to limited or full review by the SEC). The investors are also entitled (subject to certain exceptions) to customary piggyback registration rights during the period in which the registration statement is effective. We are subject to customary requirements to pay liquidated damages to the investors in the November 2024 Private Placement in the event it does not meet certain filing and effectiveness deadlines set forth in the Registration Rights Agreement in an amount equal to 1% of such investor's subscription amount, plus interest, as applicable, on a monthly basis until such event giving rise to the liquidated damages is cured. The Benchmark Company, LLC acted as placement agent for the November 2024 Private Placement and received a cash fee equal to 6.0% of the gross proceeds received by us in the November 2024 Private Placement, a non-accountable expense allowance equal to 1% of the gross proceeds received by us from the November 2024 Private Placement, and reimbursement of up to \$175,000 in legal expenses. A Transfer Agent and Registrar. The transfer agent and registrar of our common stock is VStock Transfer, LLC. The transfer agent and registrar's address is 18 Lafayette Place, Woodmere, New York 11598. VStock Transfer, LLC is also the warrant agent for the warrants issued in our July and October Offerings. A Listing. Our common stock is listed on Nasdaq under the symbol "NNE." 73 A A SELLING STOCKHOLDERS A Description of the November 2024 Private Placement. On November 24, 2024, we entered into a November 2024 SPA with three accredited institutional investors, pursuant to which we agreed to offer and sell an aggregate of \$60,000,048 of our securities in our November 2024 Private Placement, consisting of (i) 2,500,002 Shares and (ii) the November 2024 Warrants to purchase up to 2,500,002 Warrant Shares. The November 2024 Private Placement closed on November 27, 2024. After deducting the placement agent fees and estimated offering expenses payable by us, we received net proceeds of approximately \$55,122,000. We intend to use these net proceeds for general working capital and general corporate purposes, which could include potential acquisitions of complementary businesses or assets. In the November 2024 Private Placement, we issued and sold the Shares and the November 2024 Warrants at a combined purchase price of \$24.00 per share. The November 2024 Warrants have a term of five (5) year with an exercise price of \$26.00 per share and were exercisable immediately upon issuance of the November 2024 Warrants. The November 2024 SPA includes standard representations, warranties and covenants of us and Investors, including certain restrictions on future issuances of our capital stock. On November 24, 2024, in connection with the November 2024 Private Placement, we entered into a Registration Rights Agreement with the investors pursuant to which we agreed to file a registration statement with the SEC covering the resale of the Shares and the Warrant Shares by no later than January 15, 2025 (the date of filing, the "Filing Date"), with such registration statement to be effective within 30 days of the Filing Date (if such registration statement is not subject to review by the SEC), or within 60 days after the Filing Date (if such registration statement is subject to limited or full review by the SEC). We have filed the registration statement of which this prospectus forms a part in order to satisfy our obligations under such Registration Rights Agreement. The investors are also entitled (subject to certain exceptions) to customary piggyback registration rights during the period in which the registration statement is effective. We are subject to customary requirements to pay liquidated damages to the investors in the event we do not meet certain filing and effectiveness deadlines set forth in the Registration Rights Agreement in an amount equal to 1% of such investor's subscription amount, plus interest, as applicable, on a monthly basis until such event giving rise to the liquidated damages is cured. The Benchmark Company, LLC acted as placement agent for the November 2024 Private Placement and received a cash fee equal to 6.0% of the gross proceeds received by us in the November 2024 Private Placement, a non-accountable expense allowance equal to 1% of the gross proceeds received by us in the November 2024 Private Placement, and reimbursement of up to \$175,000 in legal expenses. A Selling Stockholder Table. The Selling Stockholder Shares being offered by the selling stockholders are those previously issued to the selling stockholders in the November 2024 Private Placement, and those issuable to the selling stockholders, upon exercise of the November 2024 Warrants issued in the November 2024 Private Placement. We are registering the Selling Stockholder Shares in order to permit the selling stockholders to offer the Selling Stockholder Shares for resale from time to time. Except for the ownership of the Shares and the November 2024 Warrants, the selling stockholders have not had any material relationship with us within the past three years. The table below lists the selling stockholders and other information regarding the beneficial ownership of the shares of our common stock by each of the selling stockholders. The second column lists the number of shares of our common stock beneficially owned by each selling stockholder, based on its ownership of the shares of common stock and November 2024 Warrants, as of the date of this prospectus, assuming full exercise of the November 2024 Warrants held by the selling stockholders on that date, without regard to any limitations on exercises. The third column lists the Selling Stockholder Shares being offered by this prospectus by the selling stockholders. 74 A In accordance with the terms of a registration rights agreement with the selling stockholders, this prospectus generally covers the resale of the sum of (i) the number of shares of common stock issued to the selling stockholders in the November 2024 Private Placement as described above and (ii) the maximum number of shares of common stock issuable upon exercise of the November 2024 Warrants issued in the November 2024 Private Placement, determined as if the outstanding November 2024 Warrants were exercised in full as of the trading day immediately preceding the date this registration statement was initially filed with the SEC, each as of the trading day immediately preceding the applicable date of determination and all subject to adjustment as provided in the registration rights agreement, without regard to any limitations on the exercise of the November 2024 warrants. The fourth column assumes the sale of all Selling Stockholder Shares offered by the selling stockholders pursuant to this prospectus. Under the terms of the November 2024 Warrants, a selling stockholder may not exercise the November 2024 Warrants to the extent such exercise would cause such selling stockholder, together with its affiliates and attribution parties, to beneficially own a number of shares of our common stock which would exceed 4.99%

or 9.99%, as applicable, of our then outstanding common stock following such exercise, excluding for purposes of such determination shares of common stock issuable upon exercise of the November 2024 Warrants that have not been exercised. The number of common stock in the second column does not reflect this limitation.

Â The selling stockholders may sell all, some or none of their Selling Stockholder Shares. See "Plan of Distribution."

Â Name of Selling Stockholder

Number of Shares of Common Stock Beneficially Owned Prior to Offering

Maximum Number of Shares of Common Stock to be Sold Pursuant to this Prospectus

(1) **Â Anson Investments Master Fund LP** (3) **Â 1,127,300** **Â 1,100,000** **Â 27,300**

Anson East Master Fund LP (4) **Â 324,368** **Â 316,668** **Â 7,700**

Anson Opportunities Master Fund LP (5) **Â 250,000** **Â 250,000** **Â 70,000**

CVI Investments, Inc. (6) **Â 1,736,668** **Â 1,666,668** **Â 55,000**

Total **Â 5,160,004** **Â 5,000,004** **Â 160,000**

Â (1) 50% of the amounts of shares of common stock listed in this column consist of Shares and the remaining 50% consists of Warrant Shares.

Â (2) Assumes the selling stockholders sell all of the Selling Stockholder Shares being offered by this prospectus.

Â (3) Includes 550,000 shares of common stock issued in the November 2024 Private Placement and 550,000 shares of common stock issuable upon the exercise of the November 2024 Warrants, and 27,300 shares of common stock issuable upon the exercise of the warrants issued in the July and October Offerings, all of which are currently held by Anson Investments Master Fund LP ("AIMF"). Based on information provided by AIMF, Anson Advisors Inc and Anson Funds Management LP, the Co-Investment Advisers of AIMF, hold voting and dispositive power over the common stock held by AIMF. Tony Moore is the managing member of Anson Management GP LLC, which is the general partner of Anson Funds Management LP. Moez Kassam and Amin Nathoo are directors of Anson Advisors Inc. Mr. Moore, Mr. Kassam and Mr. Nathoo each disclaim beneficial ownership of these shares of common stock except to the extent of their pecuniary interest therein. The principal business address of AIMF is Maples Corporate Services Limited, PO Box 309, Ugland House, Grand Cayman, KY1-1104, Cayman Islands.

Â (4) Includes 158,334 shares of common stock issued in the November 2024 Private Placement and 158,334 shares of common stock issuable upon the exercise of the November 2024 Warrants, and 7,700 shares of common stock issuable upon the exercise of the warrants issued in the July and October Offerings, all of which are currently held by Anson East Master Fund LP ("AEMF"). Based on information provided by AEMF, Anson Advisors Inc and Anson Funds Management LP, the Co-Investment Advisers of AEMF, hold voting and dispositive power over the common stock held by AEMF. Tony Moore is the managing member of Anson Management GP LLC, which is the general partner of Anson Funds Management LP. Moez Kassam and Amin Nathoo are directors of Anson Advisors Inc. Mr. Moore, Mr. Kassam and Mr. Nathoo each disclaim beneficial ownership of these shares of common stock except to the extent of their pecuniary interest therein. The principal business address of AEMF is Maples Corporate Services Limited, PO Box 309, Ugland House, Grand Cayman, KY1-1104, Cayman Islands.

Â (5) Includes 125,000 shares of common stock issued in the November 2024 Private Placement and 125,000 shares of common stock issuable upon the exercise of the November 2024 Warrants, which are currently held by Anson Opportunities Master Fund LP ("AOMF"). Based on information provided by AOMF, Anson Advisors Inc and Anson Funds Management LP, the Co-Investment Advisers of AOMF, hold voting and dispositive power over the common stock held by AOMF. Tony Moore is the managing member of Anson Management GP LLC, which is the general partner of Anson Funds Management LP. Moez Kassam and Amin Nathoo are directors of Anson Advisors Inc. Mr. Moore, Mr. Kassam and Mr. Nathoo each disclaim beneficial ownership of these shares of common stock except to the extent of their pecuniary interest therein. The principal business address of AOMF is Maples Corporate Services Limited, PO Box 309, Ugland House, Grand Cayman, KY1-1104, Cayman Islands.

Â (6) Includes 833,334 shares of common stock issued in the November 2024 Private Placement and 833,334 shares of common stock issuable upon the exercise of the November 2024 Warrants, and an aggregate of 70,000 shares of common stock issuable upon the exercise of the warrants issued in the July and October Offerings, all of which are currently held by CVI Investments, Inc. ("CVI"). Based on information provided by CVI, Heights Capital Management, Inc., the authorized agent of CVI, has discretionary authority to vote and dispose of the shares held by CVI and may be deemed to be the beneficial owner of these shares. Martin Kobinger, in his capacity as Investment Manager of Heights Capital Management, Inc., may also be deemed to have investment discretion and voting power over the shares held by CVI. Mr. Kobinger disclaims any such beneficial ownership of the shares. CVI is affiliated with one or more FINRA members, none of whom are currently expected to participate in the sale pursuant to the Registration Statement on Form S-1 of which this prospectus forms a part. The principal business address of CVI is c/o Heights Capital Management, Inc., 101 California Street, Suite 3250, San Francisco, CA 94111.

Â (7) Includes 833,334 shares of common stock issued in the November 2024 Private Placement and 833,334 shares of common stock issuable upon the exercise of the November 2024 Warrants, and an aggregate of 55,000 shares of common stock issuable upon the exercise of the warrants issued in the July and October Offerings, all of which are currently held by Hudson Bay Capital Management LP ("HBCM"). Based on information provided by HBCM, Hudson Bay Capital Management LP, the investment manager of Hudson Bay Master Fund Ltd., has voting and investment power over these securities. Sander Gerber is the managing member of Hudson Bay Capital GP LLC, which is the general partner of Hudson Bay Capital Management LP. Each of Hudson Bay Master Fund Ltd. and Sander Gerber disclaims beneficial ownership over these securities. The principal business address of HBCM is 290 Harbor Drive, 3rd Floor, Stamford, CT 06902.

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Â PLAN OF DISTRIBUTION

Each selling stockholder listed below and any of their pledgees, assignees and successors-in-interest may, from time to time, sell any or all of their securities covered hereby on the principal Trading Market or any other stock exchange, market or trading facility on which the securities are traded or in private transactions. These sales may be at fixed or negotiated prices. A selling stockholder may use any one or more of the following methods when selling securities:

- Â — ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- Â — block trades in which the broker-dealer will attempt to sell the securities as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- Â — purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- Â — an exchange distribution in accordance with the rules of the applicable exchange;
- Â — privately negotiated transactions;
- Â — settlement of short sales;
- Â — in transactions through broker-dealers that agree with the Selling Stockholders to sell a specified number of such securities at a stipulated price per security;
- Â — through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;
- Â — a combination of any such methods of sale; or
- Â — any other method permitted pursuant to applicable law.

The selling stockholders may also sell securities under Rule 144 or any other exemption from registration under the Securities Act, if available, rather than under this prospectus.

Broker-dealers engaged by the selling stockholders may arrange for other brokers-dealers to participate in sales. Broker-dealers may receive commissions or discounts from the

selling stockholders (or, if any broker-dealer acts as agent for the purchaser of securities, from the purchaser) in amounts to be negotiated, but, except as set forth in a supplement to this prospectus, in the case of an agency transaction not in excess of a customary brokerage commission in compliance with FINRA Rule 2121; and in the case of a principal transaction a markup or markdown in compliance with FINRA Rule 2121. In connection with the sale of the securities or interests therein, the selling stockholders may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the securities in the course of hedging the positions they assume. The selling stockholders may also sell securities short and deliver these securities to close out their short positions, or loan or pledge the securities to broker-dealers that in turn may sell these securities. The selling stockholders may also enter into option or other transactions with broker-dealers or other financial institutions or create one or more derivative securities which require the delivery to such broker-dealer or other financial institution of securities offered by this prospectus, which securities such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction). The selling stockholders and any broker-dealers or agents that are involved in selling the securities may be deemed to be “underwriters” within the meaning of the Securities Act in connection with such sales. In such event, any commissions received by such broker-dealers or agents and any profit on the resale of the securities purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act. Each selling stockholder has informed us that it does not have any written or oral agreement or understanding, directly or indirectly, with any person to distribute the securities. We are required to pay certain fees and expenses incurred by us incident to the registration of the Selling Stockholder Shares. We have agreed to indemnify the selling stockholders against certain losses, claims, damages and liabilities, including liabilities under the Securities Act. We have agreed to keep this prospectus effective until the earlier of (i) the date on which the securities may be resold by the selling stockholders without registration and without regard to any volume or manner-of-sale limitations by reason of Rule 144, without the requirement for us to be in compliance with the current public information under Rule 144 under the Securities Act or any other rule of similar effect or (ii) all of the securities have been sold pursuant to this prospectus or Rule 144 under the Securities Act or any other rule of similar effect. The Selling Stockholder Shares will be sold only through registered or licensed brokers or dealers if required under applicable state securities laws. In addition, in certain states, the resale securities covered hereby may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and is complied with. Under applicable rules and regulations under the Exchange Act, any person engaged in the distribution of the resale securities may not simultaneously engage in market making activities with respect to our common stock for the applicable restricted period, as defined in Regulation M, prior to the commencement of the distribution. In addition, the selling stockholders will be subject to applicable provisions of the Exchange Act and the rules and regulations thereunder, including Regulation M, which may limit the timing of purchases and sales of our common stock by the selling stockholders or any other person. We will make copies of this prospectus available to the selling stockholders and have informed them of the need to deliver a copy of this prospectus to each purchaser at or prior to the time of the sale (including by compliance with Rule 172 under the Securities Act).

76 LEGAL MATTERS The validity of the issuance of the securities offered by us in this offering will be passed upon for us by Parsons Behle & Latimer, Reno, Nevada. EXPERTS Withum Smith+Brown, PC (or Withum), our independent registered public accounting firm, has audited our consolidated balance sheets as of September 30, 2024 and 2023, and the related consolidated statements of operations, changes in stockholders’ equity and cash flows for the years ended September 30, 2024 and 2023, as set forth in their report dated December 30, 2024 included in our 2024 Annual Report, which was incorporated by reference into this prospectus of which this registration statement forms a part. We have included our consolidated financial statements in this prospectus and in the registration statement in reliance on Withum’s report given on their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION We have filed with the SEC a registration statement on Form S-1 under the Securities Act with respect to the Selling Stockholder Shares offered hereby. This prospectus, which constitutes a part of the registration statement, does not contain all of the information set forth in the registration statement or the exhibits filed therewith. For further information about us and the Selling Stockholder Shares offered hereby, reference is made to the registration statement and the exhibits filed therewith. Statements contained in this prospectus concerning the contents of any contract or any other document are not necessarily complete, please see the copy of the contract or document that has been filed for the complete contents of that contract or document. Each statement in this prospectus relating to a contractor document filed as an exhibit is qualified in all respects by the filed exhibit. The exhibits to the registration statement should be reviewed for the complete contents of these contracts and documents. We are subject to file periodic reports, proxy statements and other information with the SEC pursuant to the Exchange Act. The SEC maintains a website that contains reports, proxy and information statements and other information regarding registrants that file electronically with the SEC. The address of the website is www.sec.gov. We also maintain a website at www.nanonuclearenergy.com. You may access these materials at our website free of charge as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC. Information contained in, or that can be accessed through, our website is not a part of, and is not incorporated into, this prospectus.

MATERIAL CHANGES Except as otherwise described in the 2024 Annual Report, in our current reports on Form 8-K filed under the Exchange Act and incorporated by reference herein, and as disclosed in this prospectus or any applicable prospectus supplement, no reportable material changes have occurred since September 30, 2024.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE The SEC allows us to “incorporate by reference” the information we file with them. This means that we can disclose important information to you by referring you to those documents instead of having to repeat the information in this document. The information incorporated by reference is considered to be part of this prospectus, and later information that we file with the SEC will automatically update and supersede this information. We incorporate by reference the documents listed below and any future filings made with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act (1) after the date of the initial registration statement, as amended, and prior to effectiveness of the registration statement, and (2) after the date of this prospectus and prior to the termination of this offering. Such information will automatically update and supersede the information contained in this prospectus and the documents listed below: —our Annual Report on Form 10-K for the year ended September 30, 2024 filed with the SEC on December 30, 2024 (the “2024 Annual Report”); and —all other reports filed pursuant to Section 13(a) or 15(d) of the Exchange Act, since the end of the fiscal year covered by the 2024 Annual Report (other than the portions of these documents not deemed to be filed). All documents subsequently filed by the registrant pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, prior to the termination of the offering shall be deemed to be

incorporated by reference into the prospectus. Any statement contained herein or in a document incorporated or deemed to be incorporated herein by reference shall be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained herein or in any other subsequently filed document which also is or is deemed to be incorporated herein by reference modifies or supersedes such statement. The information relating to us contained in this prospectus does not purport to be comprehensive and should be read together with the information contained in the documents incorporated or deemed to be incorporated by reference in this prospectus. As you read the above documents, you may find inconsistencies in information from one document to another. If you find inconsistencies between the documents and this prospectus, you should rely on the statements made in the most recent document. All information appearing in this prospectus is qualified in its entirety by the information and financial statements, including the notes thereto, contained in the documents incorporated by reference herein. We will provide to each person, including any beneficial owner, to whom this prospectus is delivered, a copy of these filings, at no cost, upon written or oral request to us at the following address: NanoNuclear Energy Inc. 10 Times Square, 30th Floor New York, New York 10018 Tel: (212) 634-9206 Email: info@nanonuclearenergy.com You also may access the incorporated reports and other documents referenced above on our website at www.nanonuclearenergy.com. The information contained on, or that can be accessed through, our website is not part of this prospectus. You may access our annual reports on Form 10-K, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act with the SEC free of charge at our website as soon as reasonably practicable after such material is electronically filed with, or furnished to, the SEC. You should rely only on the information contained or incorporated by reference in this prospectus. We have not authorized any other person to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. The Selling Stockholders are not soliciting offers to buy these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus is accurate only as of the date on the front cover of this prospectus, or such earlier date, that is indicated in this prospectus. Our business, financial condition, results of operations, and prospects may have changed since that date.

78 Upto 2,500,002 Shares of Common Stock Upto 2,500,002 Shares of Common Stock Issuable Upon Exercise of Common Stock Purchase Warrants

NANONUCLEAR ENERGY INC. PROSPECTUS

PART II INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution

The following table sets forth an itemized statement of the amounts of all expenses payable by us in connection with the registration of the common stock offered hereby. With the exception of the SEC registration fee and the FINRA filing fee, the amounts set forth below are estimates.

SEC registration fee	Transfer agent fees	Accounting fees and expenses	Legal fees and expenses	Total
\$ 19,728	\$ 2,000	\$ 20,000	\$ 500,000	\$ 541,728

Item 14. Indemnification of Directors and Officers

Nevada Revised Statutes (NRS) 78.138(7) provides that, subject to limited statutory exceptions and unless the articles of incorporation or an amendment thereto (in each case filed on or after October 1, 2003) provide for greater individual liability, a director or officer is not individually liable to a corporation or its stockholders or creditors for any damages as a result of any act or failure to act in his or her capacity as a director or officer unless it is proven that: (i) the act or failure to act constituted a breach of his or her fiduciary duties as a director or officer and (ii) the breach of those duties involved intentional misconduct, fraud or a knowing violation of law. NRS 78.7502(1) provides that a corporation may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the corporation), by reason of the fact that the person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses, including attorneys' fees, judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with the action, suit or proceeding if the person (i) is not liable pursuant to NRS 78.138 or (ii) acted in good faith and in a manner which he or she reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe the conduct was unlawful. NRS 78.7502(2) provides that a corporation may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure a judgment in its favor by reason of the fact that the person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against expenses, including amounts paid in settlement and attorneys' fees actually and reasonably incurred by the person in connection with the defense or settlement of the action or suit if the person (i) is not liable pursuant to NRS 78.138 or (ii) acted in good faith and in a manner which he or she reasonably believed to be in or not opposed to the best interests of the corporation. To the extent that a director, officer, employee or agent of a corporation has been successful on the merits or otherwise in defense of any such action, suit or proceeding, or in defense of any claim, issue or matter therein, the corporation shall indemnify him or her against expenses, including attorneys' fees, actually and reasonably incurred by him or her in connection with the defense. The termination of any action, suit or proceeding by judgment, order, settlement, conviction or upon a plea of nolo contendere or its equivalent, does not, of itself, create a presumption that the person is liable pursuant to NRS 78.138 or did not act in good faith and in a manner which he or she reasonably believed to be in or not opposed to the best interests of the corporation, or that, with respect to any criminal action or proceeding, he or she had reasonable cause to believe that the conduct was unlawful. Indemnification may not be made for any claim, issue or matter as to which such a person has been adjudged by a court of competent jurisdiction, after exhaustion of all appeals therefrom, to be liable to the corporation or for amounts paid in settlement to the corporation, unless and only to the extent that the court in which the action or suit was brought or other court of competent jurisdiction determines upon application that in view of all the circumstances of the case, the person is fairly and reasonably entitled to indemnity for such expenses as the court deems proper.

II-1 NRS 78.7502(3) provides that any discretionary indemnification pursuant to NRS 78.7502 (unless ordered by a court or advanced pursuant to NRS 78.751(2)), may be made by the corporation only as authorized in the specific case upon a determination that indemnification of the director, officer, employee, or agent is proper in the circumstances. The determination must be made (i) by the stockholders; (ii) by the board of directors by majority vote of a quorum consisting of directors who were not parties to the action, suit or proceeding; (iii) if a majority vote of a quorum consisting of directors who were not parties to the action, suit or proceeding so orders, by independent legal counsel in a written opinion; or (iv) if a quorum consisting of directors who were not parties to the action, suit or proceeding cannot be obtained, by independent legal counsel in a written opinion. NRS 78.751(2) provides that the

corporation's articles of incorporation or bylaws, or an agreement made by the corporation, may provide that the expenses of officers and directors incurred in defending a civil or criminal action, suit or proceeding must be paid by the corporation as they are incurred and in advance of the final disposition of the action, suit or proceeding, upon receipt of an undertaking by or on behalf of the director or officer to repay the amount if it is ultimately determined by a court of competent jurisdiction that the director or officer is not entitled to be indemnified by the corporation. Under the NRS, the indemnification pursuant to NRS 78.7502 and advancement of expenses authorized in or ordered by a court pursuant to NRS 78.751: — Does not exclude any other rights to which a person seeking indemnification or advancement of expenses may be entitled under the articles of incorporation or any bylaw, agreement, vote of stockholders or disinterested directors or otherwise, for either an action in the person's official capacity or an action in another capacity while holding office, except that indemnification, unless ordered by a court pursuant to NRS 78.7502 or for the advancement of expenses made pursuant to NRS 78.751(2), may not be made to or on behalf of any director or officer if a final adjudication establishes that the director's or officer's acts or omissions involved intentional misconduct, fraud or a knowing violation of the law and was material to the cause of action; and — Continues for a person who has ceased to be a director, officer, employee, or agent and inures to the benefit of the heirs, executors and administrators of such a person. A right to indemnification or to advancement of expenses arising under a provision of the articles of incorporation or any bylaw is not eliminated or impaired by an amendment to such provision after the occurrence of the act or omission that is the subject of the civil, criminal, administrative or investigative action, suit or proceeding for which indemnification or advancement of expenses is sought, unless the provision in effect at the time of such act or omission explicitly authorizes such elimination or impairment after such action or omission has occurred. Our governing documents provide that to the fullest extent permitted under the NRS (including, without limitation, to the fullest extent permitted under NRS 78.7502 and 78.751(3)) and other applicable law, that we shall indemnify our directors and officers in their respective capacities as such and in any and all other capacities in which any of them serves at our request.

Item 15. Recent Sales of Unregistered Securities During the past three years, we issued securities that were not registered under the Securities Act as set forth below. The offers, sales and issuances of the securities described below were exempt from registration either (i) under Section 4(a)(2) of the Securities Act and the rules and regulations promulgated thereunder in that the transactions were between an issuer and sophisticated investors or members of its senior executive management and did not involve any offering within the meaning of Section 4(a)(2), or (ii) under Regulation S promulgated under the Securities Act in that offers, sales and issuances were not made to persons in the United States and no directed selling efforts were made in the United States, or (iii) under Rule 144A under the Securities Act in that the shares were offered and sold by the initial purchasers to qualified institutional buyers, or (iv) under Rule 701 promulgated under the Securities Act in that the transactions were under compensatory benefit plans and contracts relating to compensation.

In February 2022, we issued 10,000,000 shares of common stock to I Financial Ventures Group LLC, of which our President, Secretary, Treasurer, and Chairman of the Board of Directors, Jay Jiang Yu, is the sole shareholder and director, and received proceeds of \$50,000.

II-2 Between March 2022 and April 2022, we issued an aggregate of 7,500,000 shares of common stock to certain members of our management team and certain investors, and received an aggregate proceeds of \$375,000.

Between February 2022 and September 2022, we issued an aggregate of 675,000 shares of common stock to certain consultants for services received.

Between April 2022 and February 2023, we issued an aggregate of 4,146,869 shares of common stock to certain investors, and received an aggregate proceeds of \$4,146,869.

Between April 2023 and September 2023, we issued an aggregate of 2,778,000 shares of common stock to certain investors, and received an aggregate proceeds of \$6,945,000.

In January 2024, we issued an aggregate of 822,144 shares of common stock to certain investors, and received an aggregate gross proceeds of \$2,466,437, of which \$2,106,437 was received in advance as of December 31, 2023, and \$360,000 was received in January 2024.

In June 2024, we issued an aggregate of 50,000 shares of common stock to Dr. Maidana as consideration for the ALIP Acquisition.

In August 2024, we issued an aggregate of 20,000 shares of common stock to certain consultants for services received.

In August 2024, we issued an aggregate of 250,000 shares of common stock to consultants who exercised their outstanding stock options.

In September 2024, we issued an aggregate of 343,000 shares of common stock to consultants who exercised their outstanding stock options.

In October 2024, we issued an aggregate of 230,000 shares of common stock to consultants who exercised their outstanding stock options.

In November 2024, we issued an aggregate of 15,000 shares of common stock to consultants who exercised their outstanding stock options.

In December 2024, we issued an aggregate of 145,000 shares of common stock to consultants who exercised their outstanding stock options.

On November 24, 2024, we entered into a November 2024 SPA with three accredited institutional investors, pursuant to which we agreed to offer and sell an aggregate of \$60,000,048 of our securities in the November 2024 Private Placement, consisting of (i) 2,500,002 Shares of our common stock and (ii) the November 2024 Warrants to purchase up to 2,500,002 shares of common stock. The Private Placement closed on November 27, 2024. After deducting the placement agent fees and estimated offering expenses payable by us, we received net proceeds of approximately \$55,122,000. We intend to use these net proceeds for general working capital and general corporate purposes, which could include potential acquisitions of complementary businesses or assets. Pursuant to the November 2024 SPA, we issued and sold 2,500,002 Shares and associated November 2024 Warrants to purchase up to an aggregate of 2,500,002 shares of common stock at a combined purchase price of \$24.00 per share. The associated November 2024 Warrants have a term of five (5) year with an exercise price of \$26.00 per share and will be exercisable immediately upon issuance of the November 2024 Warrants. The November 2024 SPA includes standard representations, warranties and covenants of the Company and Investors, including certain restrictions on future issuances of our capital stock for 30 days following effectiveness of the registration statement discussed below. On November 24, 2024, in connection with the Private Placement, we entered into a Registration Rights Agreement with the investors, pursuant to which we agreed to file a registration statement with the SEC covering the resale of the Shares and the shares of common stock issuable upon exercise of the November 2024 Warrants by no later than January 15, 2025, the Filing Date, with such registration statement to be effective within 30 days of the Filing Date (if such registration statement is not subject to review by the SEC), or within 60 days after the Filing Date (if such registration statement is subject to limited or full review by the SEC). The investors are also entitled (subject to certain exceptions) to customary piggyback registration rights during the period in which the registration statement is effective. We are subject to customary requirements to pay liquidated damages to the investors in the Private Placement in the event it does not meet certain filing and effectiveness deadlines set forth in the Registration Rights Agreement in an amount equal to 1% of such investor's subscription amount, plus interest, as applicable, on a monthly basis until such event giving rise to the liquidated damages is cured. The Benchmark Company, LLC acted as placement agent for the Private

Placement and received a cash fee equal to 6.0% of the gross proceeds received by us in the Private Placement, a non-accountable expense allowance equal to 1% of the gross proceeds received by us from the Private Placement, and reimbursement of up to \$175,000 in legal expenses.

II-3 Exhibit 16. Exhibits The following is a list of exhibits filed as a part of this registration statement:

Exhibit Number	Description of Document
3.1	Articles of Incorporation of the Registrant
3.2	Certificate of Amendment to Articles of Incorporation, dated March 4, 2024
3.3	Amended and Restated Bylaws of the Registrant
4.1	Specimen Common Stock Certificate
4.2	Underwriter's Warrant, dated May 10, 2024
4.3	Underwriter's Warrant, dated July 15, 2024
4.4	Underwriter's Warrant, dated October 25, 2024
4.5	Warrant Agent Agreement, dated July 11, 2024, by and between the Company and VStock Transfer, LLC
4.6	2024 B Warrant Agent Agreement, dated October 23, 2024, by and between the Company and VStock Transfer, LLC
4.7	Form of Common Stock Purchase Warrant, dated November 27, 2024, between the Company and the Investors
5.1	Opinion of Parsons Behle & Latimer as to the legality of the securities being registered
10.1	Consulting Agreement dated February 8, 2022, by and between Registrant and Chief Executive Officer
10.2	Consulting Agreement dated February 8, 2022, by and between Registrant and Chief Financial Officer
10.3	Employment Agreement, dated October 17, 2024 by and between the Registrant and Jay Jiang Yu
10.4	Independent Director Agreement between Registrant and Dr. Tsun Yee Law
10.5	Independent Director Agreement between Registrant and Diane Hare
10.6	Independent Director Agreement between Registrant and Dr. Kenny Yu
10.7	2023 Stock Option Plan #1
10.8	Form of 2023 Stock Option Agreement under 2023 Stock Option Plan #1
10.9	2023 Stock Option Plan #2
10.10	Form of 2023 Stock Option Agreement under 2023 Stock Option Plan #2
10.11	Services Agreement, dated July 29, 2024, by and between the Registrant and Cambridge AtomWorks (2024) Limited
10.12	Memorandum of Understanding dated March 30, 2023 by and between HALEU Energy Fuel Inc. and Centrus Energy Corp.
10.13	Form of Consulting Agreement by and between Registrant and each Executive Advisory Board Member
10.14	Strategic Partnership Project Agreement No. 23SP817 and its amendment dated February 14, 2023 and December 6, 2023, respectively, by and between the Registrant and Battelle Energy Alliance, LLC
10.15	Services Agreement dated January 19, 2024, by and between the Registrant and Nuclear Education and Engineering Consulting LLC
10.16	Lease Agreement dated March 7, 2024, by and between the Registrant and Charney Management LLC
10.17	Exclusive Patent License Agreement, dated April 3, 2024, by and between the Registrant and Battelle Energy Alliance, LLC
10.18	Partnership Agreement, dated November 4, 2024, between the Registrant and LIS Technologies Inc.
10.19	Amendment No.1 to Partnership Agreement, dated November 5, 2024, between the Registrant and LIS Technologies Inc.
10.20	Form of Securities Purchase Agreement, dated November 24, 2024, between the Company and the Investors
10.21	Form of Registration Rights Agreement, dated November 24, 2024, between the Company and the Investors
10.22	Asset Purchase Agreement dated December 18, 2024 by and among the Registrant and Ultra Safe Nuclear Corporation and certain of its subsidiaries
10.23	First Amendment to Asset Purchase Agreement dated January 10, 2025, by and among the Registrant and Ultra Safe Nuclear Corporation and certain of its subsidiaries
10.24	Option Agreement dated January 10, 2025, by and among the Registrant and Jay Jiang Yu and the Yu Entities
14.1	Amended and Restated Code of Business Conduct and Ethics (adopted December 27, 2024)
19.1	Amended and Restated Insider Trading Policy (adopted December 27, 2024)
21.1	List of Subsidiaries
23.1	Consent of WithumSmith+Brown, PC
23.2	Consent of Parsons Behle & Latimer (included in Exhibit 5.1)
99.1	Executive Compensation Clawback Policy
99.2	Audit Committee Charter
99.3	Compensation Committee Charter
99.4	Nominating and Corporate Governance Committee Charter
101	INS Inline XBRL Instance Document
101.SCH	Inline XBRL Taxonomy Extension Schema Document
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104	Cover Page Interactive Data File (Embedded as Inline XBRL document and contained in Exhibit 101)
107	Filing Fee Table

* Filed herewith.

(1) Filed as an exhibit to the registrant's Registration on Form S-1 (File No. 333-278076), filed with the SEC on May 1, 2024.

(2) Filed as an exhibit to the registrant's Current Report on Form 8-K, filed with the SEC on May 13, 2024.

(3) Filed as an exhibit to the registrant's Current Report on Form 8-K, filed with the SEC on July 15, 2024.

(4) Filed as an exhibit to the registrant's Current Report on Form 8-K, filed with the SEC on October 18, 2024.

(5) Filed as an exhibit to the registrant's Current Report on Form 8-K, filed with the SEC on October 25, 2024.

(6) Filed as an exhibit to the registrant's Registration on Form S-1 (File No. 333-282750), filed with the SEC on October 21, 2024.

(7) Filed as an exhibit to the registrant's Current Report on Form 8-K, filed with the SEC on November 27, 2024.

(8) Filed as an exhibit to the registrant's Annual Report on Form 10-K for the fiscal year ended September 30, 2024, filed with the SEC on December 30, 2024.

(9) Filed as an exhibit to the registrant's Current Report on Form 8-K, filed with the SEC on December 26, 2024.

(10) Filed as an exhibit to the registrant's Current Report on Form 8-K, filed with the SEC on January 14, 2024.

+ Certain portions of this exhibit are omitted pursuant to Item 601(b)(10)(iv) of Regulations S-K because they are not material and are the type that the registrant treats as private or confidential. The Registrant hereby agrees to furnish a copy of any omitted portion to the SEC upon request.

^ Certain portions of the exhibit have been omitted pursuant to Item 601(a)(6) of Regulations S-K. The Company hereby agrees to furnish a copy of any omitted portion to the SEC upon request.

^^ In accordance with Item 601(a)(5) of Regulation S-K, certain schedules or similar attachments to this exhibit have been omitted from this filing.

Item 17. Undertakings

1. The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by section 10(a)(3) of the Securities Act;

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(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement.

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

(2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the

offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. (3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering. (4) That, for the purpose of determining liability of the registrant under the Securities Act to any purchaser in the initial distribution of the securities: The undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser: (i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424; (ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant; (iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and (iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

2. Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

3. The undersigned hereby undertakes that: (1) For purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective. (2) For the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

II-6 SIGNATURES Pursuant to the requirements of the Securities Act of 1933, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of New York, State of New York on January 14, 2025.

Nano Nuclear Energy Inc.

By: /s/ James Walker Name: James Walker Title: Chief Executive Officer

POWER OF ATTORNEY I KNOW ALL BY THESE PRESENT, that each person whose signature appears below constitutes and appoints each of James Walker and Jay Jiang Yu, severally, as his true and lawful attorney-in-fact and agent, with the full power of substitution, for him or her and in his or her name, place or stead, in any and all capacities, to sign any and all amendments to this registration statement (including post-effective amendments), and to sign any registration statement for the same offering covered by this registration statement that is to be effective upon filing pursuant to Rule 462(b) promulgated under the Securities Act of 1933, and all post-effective amendments thereto, and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or their substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed below by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Jay Jiang Yu	Chairman of the Board and President	January 14, 2025
Jay Jiang Yu		
/s/ James Walker	Chief Executive Officer and Director	January 14, 2025
James Walker	(Principal Executive Officer)	
/s/ Jaisun Garcha	Chief Financial Officer	January 14, 2025
Jaisun Garcha	(Principal Accounting Officer)	
/s/ Tsun Yee Law	Independent Director	January 14, 2025
Tsun Yee Law		
/s/ Diane Hare	Independent Director	January 14, 2025
Diane Hare		
/s/ Kenny Yu	Independent Director	January 14, 2025
Kenny Yu		

II-7 Exhibit 5.1

January 14, 2025

Board of Directors Nano Nuclear Energy Inc. 10 Times Square, 30th Floor New York, New York 10018

Re: Nano Nuclear Energy Inc. "Registration Statement on Form S-1"

Ladies and Gentlemen: We have acted as Nevada counsel to Nano Nuclear Energy Inc., a Nevada corporation (the "Company") in connection with the Registration Statement on Form S-1 (the "Registration Statement") filed on even date herewith by the Company with the Securities and Exchange Commission (the "SEC") under the Securities Act of 1933, as amended (the "Securities Act"). The Registration Statement relates to the registration for resale by certain selling stockholders of the Company ("Selling Stockholders") of up to (i) 2,500,002 shares (the "Shares") of common stock, \$0.0001 par value per share, of the Company (the "Common Stock"), and (ii) 2,500,002 shares of common stock underlying Common Stock Purchase Warrants (the "November 2024 Warrants") (such shares being referred to as the "Warrant Shares" and together, with the Shares, the "Securities") issued in a private placement pursuant to that certain Securities Purchase Agreement, dated as of November 24, 2024, between the Company and the Purchasers (the "Purchase Agreement," together with the November 2024 Warrants, and the Registration Rights Agreement (as defined below), the "Transaction Documents"). Capitalized terms that are used and not defined in this letter or in the Schedules hereto have the meanings given to them in the Transaction Documents.

This letter and the opinions contained herein shall be interpreted in accordance with the Core Opinion Principles as published in 74 The Business Lawyer 801, 815 (2019). We have examined such matters of fact and questions of law as we have considered appropriate for purposes of this letter. With your consent, we have relied upon certificates and other assurances of officers of the Company and others as to factual matters without having independently verified such factual matters. We are opining herein only as to the Nevada Revised Statutes (the "NRS") and the reported judicial decisions interpreting such law, as currently in effect. In that regard, we express no opinion with respect to the applicability thereto, or the effect thereon, of the laws of any other jurisdiction or, in the case of Nevada, any other laws, or as to any matters of municipal law or the laws of any local agencies within any state.

In arriving at the opinions expressed below we have reviewed and relied upon the following:

1. Articles of Incorporation of the Company filed with the Nevada Secretary of State on February 8, 2022,

as amended on March 4, 2024 (the "Articles of Incorporation").

2. Amended and Restated By-Laws of the Company adopted and effective on March 4, 2024 (collectively with the Articles of Incorporation, the "Charter Documents").

3. The Certificate of Good Standing of the Company issued by the Nevada Secretary of State on January 8, 2025.

4. Officer's Certificate from the President of the Company dated November 27, 2024 ("Officer's Certificate").

5. Unanimous Written Consent to Action of the Board of Directors of the Company, dated November 24, 2024.

6. Unanimous Written Consent to Action of the Pricing Committee of the Board of Directors of the Company, dated November 24, 2024.

7. The Transaction Documents.

Documents 1-7 are sometimes referred to as the "Reliance Documents." In connection with this opinion letter, we have examined and relied upon the representations and warranties as to factual matters contained in and made pursuant to the Reliance Documents, and upon such other documents as in our judgment are necessary or appropriate to enable us to render the opinions expressed herein. Our knowledge of the Company and its legal and other affairs is limited by the scope of our engagement, which scope includes the delivery of this opinion letter. We do not represent the Company with respect to all legal matters or issues. The Company may employ other independent counsel and, to our knowledge, handles certain matters and issues without the assistance of independent counsel. In our examination of the foregoing, we have assumed, without independent investigation or verification: (i) the genuineness of all signatures on all agreements, instruments and other documents submitted to us; (ii) the legal capacity and authority of all persons or entities executing all agreements, instruments and other documents submitted to us; (iii) the authenticity and completeness of all agreements, instruments, corporate records, certificates and other documents submitted to us as originals; (iv) that all agreements, instruments, corporate records, certificates and other documents submitted to us as certified, electronic, facsimile, conformed, photostatic or other copies conform to authentic originals thereof, and that such originals are authentic and complete; (v) the due authorization, execution and delivery of all instruments, agreements, and other documents by the parties thereto other than the Company; (vi) that the statements contained in the certificates and comparable documents of public officials, officers and representatives of the Company and other persons on which we have relied for the purposes of this letter are true and correct; and (vii) that the officers and directors of the Company have properly exercised their fiduciary duties. We have assumed that the issuance and sale of the Securities by the Company will not violate or constitute a default or breach under (a) any agreement or instrument to which the Company is subject, (b) any law, rule or regulation to which the Company is subject other than the NRS, (c) any judicial or regulatory order or decree of any governmental authority, or (d) any consent, approval, license, authorization or validation of, or filing, recording or registration with any governmental authority.

Opinions: A Subject to the foregoing and the other matters set forth herein, it is our opinion that, as of the date hereof:

1. The Shares have been duly authorized and are validly issued, fully paid and non-assessable shares of Common Stock.

2. The Warrant Shares, when paid for and issued upon valid exercise of the November 2024 Warrants, have been duly authorized and will be validly issued, fully paid and non-assessable shares of Common Stock.

This opinion letter is given as of the date hereof and we assume no obligation to advise you of changes that may hereafter be brought to our attention.

We hereby consent to the filing of this opinion letter as Exhibit 5.1 to the Registration Statement and to the reference to our firm under the caption "Legal Matters" in the Registration Statement. In giving our consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission thereunder.

Sincerely,

/s/ PARSONS BEHLE & LATIMER

PARSONS BEHLE & LATIMER

Exhibit 21.1

List of Subsidiaries of Nano Nuclear Energy Inc.

Name of Subsidiary State/Jurisdiction of Incorporation

HALEU Energy Fuel Inc. Nevada

American Uranium Inc. Nevada

Advanced Fuel Transportation Inc. Nevada

Nano Nuclear Space Inc. Nevada

Kronos MMR Inc. Nevada

LOKI MMR Inc. Nevada

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in this Registration Statement on Form S-1 of our report dated December 30, 2024, relating to the consolidated financial statements of Nano Nuclear Energy, Inc. as of and for the years ended September 30, 2024 and 2023. We also consent to the reference to us under the caption "Experts" in the Prospectus.

/s/ WithumSmith+Brown, PC

New York, New York

January 14, 2025

Exhibit 107

Calculation of Filing Fee Table

Form S-1 (Form Type)

NANO NUCLEAR ENERGY INC. (Exact Name of Registrant as Specified in its Charter)

Table 1: Newly Registered Securities

Security Type

Security Class

Title

Fee Calculation Rule

Amount Registered (1)

Proposed Maximum Offering Price Per Share (2)

Maximum Aggregate Offering Price

Fee Rate

Amount of Registration Fee

Fees to Be Paid

Equity

Common Stock issued in November 2024 private placement

457(c)

2,500,002

25.77

64,425,052

0.0001531

9,864

Equity

Warrants issued in November 2024 private placement

457(g)

Fees to Be Paid

Equity

Common Stock issuable upon exercise of warrants issued in November 2024 private placement

457(c)

2,500,002

25.77

64,425,052

0.0001531

9,864

Total Offering Amounts

128,850,104

Total Fees Previously Paid

Total Fee Offsets

Net Fee Due

19,728

(1) Pursuant to Rule 416(a) of the Securities Act of 1933, as amended (the "Securities Act"), there is also being registered hereby such indeterminate number of additional shares of the Registrant's common stock, par value \$0.0001 per share ("Common Stock"), in connection with any stock dividend, stock split, stock distribution, recapitalization or other similar transaction effected without receipt of consideration that increases the number of outstanding shares of Common Stock.

(2) Estimated solely for the purpose of calculating the amount of the registration fee pursuant to Rule 457(c) of the Securities Act. The proposed maximum offering price per share and proposed maximum aggregate offering price are based upon the average of the high \$26.80 and low \$24.73 sale prices of our Common Stock on January 10, 2025, as reported on the Nasdaq.