December 16, 2024

ASP Isotopes Issues Letter to Shareholders

WASHINGTON, Dec. 16, 2024 (GLOBE NEWSWIRE) -- ASP Isotopes Inc. (NASDAQ: ASPI) ("ASP Isotopes" or the "Company"), an advanced materials company dedicated to the development of technology and processes for the production of isotopes for use in multiple industries, today released the following letter to shareholders from its Chairman and CEO, Paul Mann.

Dear Fellow Shareholder,

As the year comes towards its end, I wanted to personally write to you to summarize some of the more significant milestones the Company has achieved during 2024 and discuss our future goals for 2025. It has been a busy and successful year:

- **The Company completed the construction of two ASP isotope enrichment facilities, with one awaiting the delivery of feedstock (Carbon-14) and the second currently in the commissioning phase (Silicon-28).**

- **The Company completed the construction of the first Quantum Enrichment facility, for Ytterbium-176, approximately 9 months ahead of schedule and under budget. This facility is currently in the commissioning phase and has already successfully produced the first semi-finished material of enriched Ytterbium-176, which is a precursor for the production of Lutetium-177, the active component of Novartis' Pluvicto, a potential blockbuster for the treatment of prostate cancer.**

- **The Company signed two contracts with U.S. based customers for the supply of highly enriched Silicon-28 to enable next generation semiconductors for quantum computing, artificial intelligence and large data centers.**

- **The Company signed a research contract and a term sheet with TerraPower for the construction of a HALEU production facility. The term sheet anticipates TerraPower providing seed capital for the construction of the facility as well as a long-term supply agreement for the production capacity of the facility.**

- **The Company signed an MOU with Nesca (South African Nuclear Engineering Corporation) to develop an advanced nuclear fuel production facility at Pelindaba, South Africa. ASPI scientists have already had "*Shovels in the Ground*" at Pelindaba and the construction of the first of two HALEU enrichment test facilities has been completed.**

- **The Company raised approximately $84 million (before deducting underwriting discounts, commissions and offering expenses) in a combination of debt and equity transactions and finished 3Q 2024 with approximately $51 million of cash**

on balance sheet. The Company's balance sheet has never been stronger.

- **During 2024, the Company hosted over 60 investors and corporate clients to its facilities in South Africa. The company looks forward to hosting another Investor Access Event in January 2025.**

The construction of two ASP Enrichment Facilities is now complete with one awaiting feedstock, and one in commissioning phase.

During the last 36 months, the Company has constructed two Aerodynamic Separation Process (ASP) enrichment facilities in Pretoria, South Africa. The first is scheduled to enrich Carbon-14 and the second, a multi-isotope facility, is scheduled to enrich Silicon-28. Both of these facilities are expected to enter commercial production during 1H 2025 and the Company has entered into commercial contracts with customers for product from both.

Carbon-14: Carbon-14 is used as a tracer during the development of new pharmaceuticals and agrochemicals and the entire world's supply is currently sourced from Russia. In June 2023, the Company entered into a multi-year Carbon-14 take-or-pay contract with a minimum revenue commitment of $2.5 million per annum. In late 2023, RC-14, which is our North American commercial partner, commenced the processing of the feedstock to produce enriched Carbon-14. Whilst our partner, RC-14, has produced the first batches of feedstock, they have experienced a 6-12 month delay in shipping this feedstock to South Africa. RC-14 has recently confirmed that they expect the feedstock to arrive in South Africa during 1Q 2025, which should allow for our first Carbon-14 revenues during 1H 2025.

Silicon-28: Naturally occurring silicon has three isotopes: Si-28, -29 and -30. The presence of Si-29 isotope has a negative impact on the performance of silicon in semiconductor applications. Our enrichment process allows for the removal of Si-29, and production of highly enriched Silicon-28, which can conduct heat 150% more efficiently[(1)] than natural silicon. This will potentially allow for computer chips to become smaller, faster, cooler and more energy efficient. Highly-enriched Silicon-28 (^{28}Si) (i.e. enriched to 99.995% in the 28 isotope) is expected to be used in the next-generation of semiconductors which will enable technologies such as quantum computing and artificial intelligence[(2)].

Our Silicon-28 enrichment facility, located at Koedoespoort, Pretoria, is approximately 40 times the size of the Carbon-14 enrichment facility (measured on a SWU basis). This highly advanced facility utilizes a state-of-the art compression system, as well as proprietary analytical and control systems. During 2024, the Company signed two agreements for the supply of Silicon-28. One of these agreements is with a leading semiconductor company and the other with a leading industrial gas company that has a significant presence in the supply of electronic gases and chemicals. The Company is currently in discussions with multiple potential customers and expects to sign additional supply agreements during the next six months.

The construction of our first Quantum Enrichment Facility is now complete and in the commissioning phase having already produced its first enriched Ytterbium-176, semi-finished product.

During September 2024, the Company completed the construction of its first Quantum

Enrichment Facility for Ytterbium-176 in Pretoria, South Africa. Construction of the Ytterbium-176 plant was originally planned to conclude during mid-2025; however, the team accelerated its construction timeline by approximately nine months. During October 2024, the Company produced the first semi-finished material of enriched Ytterbium-176. The Company believes that this proprietary technology is not only more efficient and scalable than other enrichment technologies, but also has considerable advantages with respect to capital efficiency and industrial pollution.

The Company expects to be able to offer Ytterbium-176, enriched to 99.75%, at competitive prices and terms compared to other suppliers, with greater reliability and a significantly improved environmental footprint.

Ytterbium-176 (^{176}Yb) is a key stable isotope used in the production of Lutetium-177 (^{177}Lu). Lutetium-177 is an emerging beta emitting radiopharmaceutical used in oncology drugs such as Novartis' Pluvicto. There are currently two FDA approved drugs and more than 66 ongoing clinical trials for drugs that require Lutetium-177.

Consensus forecasts for Novartis' Pluvicto exceed $4 billion and the beta emitting radiopharmaceutical market is expected to exceed $15 billion per annum in the next decade[(3)]. The supply chain for this radioisotope has been particularly challenged with recent industry reports highlighting over two months' treatment delay due to lack of drug availability[(4)].

Based on the results of the commissioning phase of the Ytterbium-176 plant, the Company is now accelerating plans to construct Nickel-64 and Lithium-6/7 plants in South Africa. There is an urgent need for all three isotopes from Western-based producers.

Nickel-64 is currently used to produce Copper-64, in a cyclotron, and based on discussions with potential customers, has significant supply-side challenges. Copper-64 is a positron and beta emitting isotope of copper, with applications for molecular radiotherapy and positron emission tomography.

Lithium-7 is currently used as an alkalizing agent for the coolant in Pressure Water Reactors (PWRs) and it is predicted that Lithium-7 will be used as part of the molten lithium fluoride in molten-salt reactors which are expected to become used in the nuclear energy industry next decade. Western supplies of Lithium-7 are currently provided by Russia.

It is widely anticipated that Lithium-6 will be required to enable nuclear fusion power plants, which are currently in development. It is widely anticipated that nuclear fusion will be one of the cleanest forms of energy, with potential for low carbon baseload energy with no long-lived radionuclide waste. There is currently no producer of Lithium-6 in commercial quantities, yet most power plant designs need tonnage of Lithium-6 for operations. With 93% of private fusion companies aiming to deliver a fusion prototype device during the 2030s, according to the Fusion Industry Association, this represents a key emerging supply chain for fusion nuclear power.

Research contract and Term Sheet for HALEU Production Facility in South Africa with TerraPower.

During 2Q 2024 we entered into a research contract with TerraPower, a nuclear innovation

company and advanced nuclear energy developer, for the development of nuclear fuels that are expected to be used in next generation nuclear reactors. The contract's $2 million value will be paid to ASP Isotopes in instalments over the course of the research project, subject to the completion of certain deliverables and milestones. The Company invoiced TerraPower for the first instalment during 4Q 2024. We believe that this research collaboration between a U.S. enrichment company and a U.S. nuclear reactor company for the development of enrichment processes for nuclear fuel is the first of its kind. In our view, this validates that ASP Isotopes scientists have developed some of the world's most advanced isotope enrichment technologies.

During 4Q 2024, the Company entered into a non-binding term sheet with TerraPower related to the construction of a uranium enrichment facility capable of producing High Assay Low-Enriched Uranium (HALEU) and the future supply of HALEU to TerraPower, as a customer of Quantum Leap Energy LLC (QLE). The term sheet contemplates the preparation of definitive agreements pursuant to which TerraPower would provide funding for the construction of a HALEU production facility. In addition, the parties anticipate entering into a long-term supply agreement for the HALEU expected to be produced at this facility pursuant to which the customer would purchase all the HALEU produced at the facility over a 10-year period after the expected completion of the facility. It is anticipated that the definitive agreements will be assigned to ASP Isotopes' wholly owned subsidiary, QLE, which the Company hopes to spin out as a separate entity in the future.

During the next 30 years, global energy consumption will likely double[(5)]. To meet 2050 climate goals, set by many governments and organizations, this must occur with a zero increase in carbon emissions. The advanced nuclear fuels required during the next 50 years are expected to differ significantly from those used in the last 50 years. Specifically, many small modular and advanced reactors in the future are expected to require HALEU[(6)].

The Company believes that its enrichment technologies can be deployed in a new HALEU facility for considerably lower capital costs, and in much less time, compared to the construction of an enrichment facility using a traditional centrifuge process of HALEU production.

MOU with Necsa (South African Nuclear Engineering Corporation) to develop an advanced nuclear fuel production facility at Pelindaba, South Africa.

In November, I was honored to attend a signing ceremony at Pelindaba for a Memorandum of Understanding ("MOU") between ASP Isotopes and the South African Nuclear Energy Corporation (Necsa) to collaborate on the research, development and construction of an Advanced Nuclear Fuel production facility.

Necsa is a state-owned company established by the Republic of South Africa Nuclear Energy Act in 1999 with a mandate to undertake and promote research and development in the field of nuclear energy and radiation sciences. Necsa is also responsible for processing source material, and co-operating with other institutions on nuclear and related matters.

The MOU was executed at a signing ceremony that took place at Pelindaba on November 14, 2024. As chairman and CEO of ASP Isotopes, I signed on behalf of ASP Isotopes and Mr Loyiso Tyabashe, Group CEO of Necsa, signed on behalf of Necsa. The signing ceremony was attended by representatives of the South African Government and included the

participation of Minister Kgosientsho Ramokgopa, South Africa's newly appointed Minister of Electricity and Energy.

The proposed structure under discussion for the delivery of the objectives of the MOU contemplates the formation of a new entity in South Africa with a board of directors consisting of at least two representatives from each of ASP Isotopes and Necsa. Discussions between the parties during the last three years have focused on advancing new nuclear fuel for small modular reactors and advanced nuclear reactors and eventually the construction of a nuclear fuel facility for the production of HALEU.

The Company is happy to share with investors that scientists from ASP Isotopes have already been active at Pelindaba and the construction of the first of two HALEU test facilities has been completed. We anticipate that we will complete the construction of the second test facility during 2025 and this will pave the way to start comprehensive testing of our technologies on the production of HALEU.

This partnership with Necsa will enable the Company to accelerate the construction of an advanced nuclear fuel facility. The proposed partnership with Necsa will likely help establish South Africa as a leader in Nuclear Engineering, producing the advanced nuclear fuels that the world requires to help prevent climate change. It will also mobilize hundreds of workers in local regions to build and operate the new manufacturing plant and support thousands of direct and indirect jobs across a nationwide manufacturing supply chain.

The global isotopes market is at an inflection point, both in terms of demand and supply. ASP Isotopes and QLE are well positioned as trusted suppliers of both existing and future isotope products.

Isotopes have one of the most severely compromised supply chains of any material in the world. Currently, supply is almost entirely controlled by Rosatom State Nuclear Energy Corporation, the Russian state-owned entity, and a few state-owned or controlled enrichers. The US Department of Energy (DOE) and every other major government in the Western World considers isotopes to be critical materials. Isotopes enable everyday activities such as nuclear imaging; they are also essential in the production of advanced electronics and semiconductors. Importantly, they serve as fuels and coolants in nuclear power stations which provide approximately 18% of the total US electricity supply. Global industrial production, electricity generation and Western defense capabilities remain vulnerable to supply chain disruption by geopolitically hostile counterparties. This explains the active interest we receive from a number of companies and governments regarding our longer-term supply capabilities, and we hope to sign additional supply agreements for essential isotopes in the coming months.

ASP Isotopes Investor Access Event in South Africa in January 2025 – already fully booked

ASP Isotopes values transparency and open communication with all stakeholders and counterparties. During 2024, the Company welcomed over 60 investors and corporate clients to its facilities in South Africa. The Company recently announced that it will host an Investor Access Event in South Africa from January 14-16, 2025.

I would like to take this opportunity to extend my gratitude to all our shareholders and

employees at ASP Isotopes. When we started the Company approximately three years ago we had a headcount of just two individuals. We now have a team of over 130 highly skilled and motivated employees across 3 continents, all of whom are highly motivated to innovate new technologies that can help solve some of today's most pressing challenges such as advanced computing, global warming, and cutting-edge healthcare solutions. It has clearly been a busy year for the Company, and in hitting such an impressive list of milestones, our scientists and engineers have done an amazing job. I'm proud of our entire team, for the work done to date and for the work I expect we will together continue to do going forward. Thank you for your dedication and hard work.

The ASP Isotopes Team in December, 2024

If you would like to learn more about our Company, please visit our corporate website and make sure to follow us on our social media channels.

Thank you for your interest and support.

Wishing you all the best for the holiday season and a prosperous 2025.

Paul E. Mann
Chairman and Chief Executive Officer

(1) Penghong Ci, Muhua Sun, Meenakshi Upadhyaya, Houfu Song, Lei Jin, Bo Sun, Matthew R. Jones, Joel W. Ager, Zlatan Aksamija, and Junqiao Wu Phys. Rev. Lett.

128, 085901 – Published 23 February 2022

(2) Isotopically Enriched Layers for Quantum Computers Formed by 28Si Implantation and Layer Exchange, Schneider, E and England, J; ACS Appl. Mater. Interfaces 2023, 15, 17, 21609–21617

(3) Lutetium-177 (Lu-177) Market Size, Scope And Forecast Report (marketresearchintellect.com)

(4) Ravi et al, Clinical Implementation of 177Lu-PSMA-617 in the United States: Lessons Learned and Ongoing Challenges; J Nuc Med March 2023, 64 (3) 349-350

(5) UK releases roadmap to quadruple nuclear energy capacity : Nuclear Policies - World Nuclear News (world-nuclear-news.org)

(6) NEI-Letter-for-Secretary-Granholm_HALEU-2021.pdf

About ASP Isotopes Inc.

ASP is an advanced materials company dedicated to developing technology and processes to produce isotopes in multiple industries. The Company employs proprietary technology, the Aerodynamic Separation Process ("ASP technology"), for the production, distribution, marketing, and sale of all isotopes. The Company's initial focus is on producing and commercializing highly enriched isotopes for the healthcare and technology industries. With time, it also plans to enrich isotopes for the green energy sector. The Company has two isotope enrichment facilities in Pretoria, South Africa. The first is a facility dedicated to the enrichment of isotopes of elements with a low atomic mass (light isotopes) and will initially produce Carbon-14. The ASP plans to use the second, larger facility for the production of multiple different isotopes.

There is a growing demand for isotopes such as Silicon-28, which will enable quantum computing, and Molybdenum-100, Molybdenum-98, Zinc-68, Ytterbium-176, and Nickel-64 for new, emerging healthcare applications, as well as Chlorine-37, Lithium-6, and Uranium-235 for green energy applications. The ASP Technology (Aerodynamic Separation Process) is ideal for enriching low and heavy atomic mass molecules. For more information, please visit www.aspisotopes.com.

Forward-Looking Statements

This press release contains "forward-looking statements" within the meaning of the safe harbor provisions of the U.S. Private Securities Litigation Reform Act of 1995. Forward-looking statements are neither historical facts nor assurances of future performance. Instead, they are based only on our current beliefs, expectations and assumptions regarding the future of our business, future plans and strategies, projections, anticipated events and trends, the economy and other future conditions. Forward-looking statements can be identified by words such as "believes," "plans," "anticipates," "expects," "estimates," "projects," "will," "may," "might" and words of a similar nature. Examples of forward-looking statements include, among others but are not limited to, statements we make regarding expected operating results, such as future revenues and prospects from the potential commercialization of isotopes, future performance under contracts, and our strategies for

product development, engaging with potential customers, market position, and financial results. Because forward-looking statements relate to the future, they are subject to inherent uncertainties, risks and changes in circumstances that are difficult to predict, many of which are outside our control. Our actual results, financial condition and events may differ materially from those indicated in the forward-looking statements based upon a number of factors. Forward-looking statements are not a guarantee of future performance or developments. You are strongly cautioned that reliance on any forward-looking statements involves known and unknown risks and uncertainties. Therefore, you should not rely on any of these forward-looking statements. There are many important factors that could cause our actual results and financial condition to differ materially from those indicated in the forward-looking statements, including: our reliance on the efforts of third parties; our ability to complete the proposed the construction and commissioning of our enrichment plant(s) or to commercialize isotopes using the ASP technology or the Quantum Enrichment Process; our ability to obtain regulatory approvals for the production and distribution of isotopes; the financial terms of any current and future commercial arrangements; our ability to complete certain transactions and realize anticipated benefits from acquisitions; contracts, dependence on our Intellectual Property (IP) rights, certain IP rights of third parties; and the competitive nature of our industry. Any forward-looking statement made by us in this press release is based only on information currently available to us and speaks only as of the date on which it is made. We undertake no obligation to publicly update any forward-looking statement, whether as a result of new information, future developments or otherwise. This press release includes market and industry data and forecasts that we obtained from internal research, publicly available information and industry publications and surveys. Industry publications and surveys generally state that the information contained therein has been obtained from sources believed to be reliable. Unless otherwise noted, statements as to our potential market position relative to other companies are approximated and based on third-party data and internal analysis and estimates as of the date of this press release. We have not independently verified this information, and it could prove inaccurate. Industry and market data could be wrong because of the method by which sources obtained their data and because information cannot always be verified with certainty due to the limits on the availability and reliability of raw data, the voluntary nature of the data-gathering process and other limitations and uncertainties. In addition, we do not know all of the assumptions regarding general economic conditions or growth that were used in preparing the information and forecasts from sources cited herein. No information in this press release should be interpreted as an indication of future success, revenues, results of operation, or stock price. All forward-looking statements herein are qualified by reference to the cautionary statements set forth herein and should not be relied upon.

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A photo accompanying this announcement is available at https://www.globenewswire.com/NewsRoom/AttachmentNg/e502b0d0-a298-4ff0-8f75-2ce34be9e661

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ASP Isotopes Team

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