April 1, 2025

ASP Isotopes Inc. Completes Commissioning of First Quantum Enrichment Laser System and Starts Production of Commercial Samples of Ytterbium-176

- Ytterbium-176 is a critical material used in the production of radioisotopes for oncology treatments, including Novartis' Pluvicto.

- The Company expects to be able to achieve a 99.75% enrichment for Ytterbium-176 and offer highly enriched Ytterbium-176 for commercial sale during 2025.

- The Company anticipates now being able to proceed with the plans to construct Nickel-64, Gadolinium-160 and Lithium-6/7 Quantum Enrichment facilities.

- The Company intends to continue its discussions with nuclear regulatory authorities for the authorization to construct HALEU uranium enrichment facilities using Quantum Enrichment in South Africa and other countries.

WASHINGTON, April 01, 2025 (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 announced that it has started the production of commercial samples of highly enriched Ytterbium-176, following the successful commissioning of the laser system at its first Quantum Enrichment facility in Pretoria, South Africa.

This is the Company's third enrichment facility in South Africa and its first isotope enrichment facility to utilize Quantum Enrichment, a novel laser-based method of enrichment. 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.

After a construction phase which lasted just 8 months, versus an anticipated timeline of 18 months, the commissioning phase took 6 months, versus an anticipated timeline of 3-6 months. The Company's scientists overcame a number of unexpected challenges, including faults with OEM supplied time-of-flight mass spectrometers and vacuum pumps. The Company's scientists continue to optimize various steps of the process but have overcome the major problems inherent in any new process and are successfully enriching Ytterbium-176 that will be suitable for commercial supply. The Company expects to be able to achieve a 99.75% enrichment for Ytterbium-176 and offer highly enriched Ytterbium-176 for commercial sale during 2025.

"*The success of this project is testament to the strong working relationship between our in-house scientists and technicians and the world class scientists in the fields of nuclear physics and laser technology that we are working with from our universities of Stellenbosch and Witwatersrand in South Africa,*" said Hendrik Strydom, ASP Isotopes Inc.'s Chief Technology Officer.

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 numerous 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.(1) 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.(2) The Company believes that it will be one of the only suppliers of commercial quantities of Ytterbium-176 and other similar isotopes in the Western world.

"*Currently, there exist significant supply-side challenges for many essential radioisotopes used in various oncology treatments. We have received a considerable amount of interest from customers in North America, Europe and Asia for Ytterbium-176 and we look forward to easing supply chains and improving the quality of life for thousands of patients every year,*" said Paul Mann, ASP Isotopes Inc.'s Executive Chairman and CEO.

Additional Planned Quantum Enrichment Plants – Nickel-64, Gadolinium-160 and Lithium-6/7

Based on the results of the commissioning phase of the Ytterbium-176 enrichment facility, the Company is now accelerating plans to construct Nickel-64 and Lithium-6/7 enrichment facilities in South Africa. The Company believes that 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.

Quantum Enrichment – A Novel Enrichment Technique Potentially Capable of Efficiently Producing Advanced Nuclear Fuels

The Company believes its Quantum Enrichment process will potentially also be able to produce HALEU (High Assay Low Enriched Uranium) at an attractive price, allowing new nuclear energy to become available at a "green discount" to carbon-intensive electricity production processes. This "green energy cost advantage" is expected to help accelerate the global adoption of new nuclear energy, with a corresponding benefit to climate goals.

HALEU will be required for use in the next generation of advanced nuclear reactors, such as SMRs (small modular reactors), that are now under development for commercial and government uses. Currently, there are no Western producers of HALEU in commercial quantities, and many SMR companies worldwide face substantial delays until this fuel supply issue is resolved. The Nuclear Energy Institute estimates that there may be a HALEU supply shortage of approximately 3,000 metric tons by 2035[(3)]. However, based on discussions with and the interest received from potential customers, the Company believes this figure may be significantly larger.

The Company is in discussions with potential customers that anticipate requiring High Assay Low Enriched Uranium (HALEU), valued at over $37 billion[(4)] at recent market prices. The Company previously announced that it has entered into MOUs (Memorandum of Understanding) and term-sheets with two US-based SMR companies including TerraPower LLC, for HALEU supply that contemplate the SMR companies making capital investments into the development of HALEU facilities. The Company intends to continue its discussions with nuclear regulatory authorities in multiple countries, including South Africa, the United Kingdom and the United States, regarding the potential construction of a Quantum Enrichment facility for uranium enrichment.

(1) Lutetium-177 (Lu-177) Market Size, Scope And Forecast Report (marketresearchintellect.com)
(2) 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
(3) UK releases roadmap to quadruple nuclear energy capacity: Nuclear Policies - World Nuclear News (world-nuclear-news.org)
(4) NEI-Letter-for-Secretary-Granholm_HALEU-2021.pdf

About ASP Isotopes Inc.

ASP Isotopes Inc. is a development stage advanced materials company dedicated to the development of technology and processes to produce isotopes for use in multiple industries. The Company employs proprietary technology, the Aerodynamic Separation Process ("ASP technology"). The Company's initial focus is on producing and commercializing highly enriched isotopes for the healthcare and technology industries. The Company also plans to enrich isotopes for the nuclear energy sector using Quantum Enrichment technology that the Company is developing. The Company has isotope enrichment facilities in Pretoria, South Africa, dedicated to the enrichment of isotopes of elements with a low atomic mass (light

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 relating to the commencement of supply of isotopes to customers and the application of new technology for the enrichment of isotopes, the planned construction of additional isotope enrichment facilities, the future of the company's enrichment technologies as applied to uranium enrichment, the outcome of the company's initiative to commence enrichment of uranium in South Africa and the company's discussions with nuclear regulators, and 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 construction and commissioning of our enrichment plants 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 and contracts; dependence on our Intellectual Property (IP) rights, certain IP rights of third parties; the competitive nature of our industry; and the factors disclosed in Part I, Item 1A. "Risk Factors" of the company's Annual Report on Form 10-K for the fiscal year ended December 31, 2024 and any amendments thereto and in the company's subsequent reports and filings with the U.S. Securities and Exchange Commission. 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. 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.

Contacts

Jason Assad – Investor relations
Email: Jassad@aspisotopes.com
Telephone: 561-709-3043

Source: ASP Isotopes Inc.