

ASP Isotopes Inc. Completes Construction and Starts the Commissioning of Silicon-28 Enrichment Facility

- Construction of the Company's Silicon-28 enrichment facility has been completed in line with previously communicated timelines.

- Silicon-28 is an isotope that is believed to enable quantum computing and will likely improve the performance of next generation semiconductors for artificial intelligence.

- The Company has signed two purchase agreements with US-based customers for kilogram quantities of Silicon-28 and is in discussions with multiple other global customers for kilogram quantities. The first deliveries of commercial quantities are anticipated in 1H 2025.

- The Silicon-28 facility is managed under a Comprehensive Safeguard Agreement with the International Atomic Energy Agency, whose representatives have visited and inspected the facility.

- Based on pre-commissioning data the Company now expects the plant to have an annual capacity of greater than 50 kilograms per year of ^{28}Si enriched to 99.995% in the 28-isotope, versus previous guidance of greater than 10 kilograms per year

WASHINGTON, Nov. 26, 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 announced that it has completed the construction of a Silicon-28 enrichment facility in Pretoria, South Africa. The completion of the facility is broadly in line with previously communicated timelines. Today the Company started the commissioning phase of the facility's construction and start-up, in preparation for supplying commercial quantities of Silicon-28 during 1H 2025.

ASP Isotopes expects highly enriched Silicon-28 to be required by manufacturers of next-generation semiconductors. Naturally occurring Silicon has three isotopes – 28, 29 and 30. The 29 isotope has a $\frac{1}{2}$ positive spin, which is an intrinsic form of angular momentum carried by elementary particles. In contrast, highly enriched Silicon-28 is spin-free where qubits are protected from sources of decoherence that causes loss of quantum information⁽¹⁾. In addition to its potential to process superior information such as qubits, it is believed that highly enriched Silicon-28 can conduct heat 150% more efficiently⁽²⁾ than natural Silicon, which will potentially allow for chips to become smaller, faster and cooler.

ASP Isotopes' proprietary technology can enrich isotopes of low atomic mass (such as

silane (SiH_4), molecular mass of 32), as well as isotopes of heavier masses. Other companies developing methods to enrich silicon generally either enrich silicon tetrafluoride (SiF_4) or a halo silane. Neither of these chemicals can be used directly by a semiconductor company and require chemical converting processes that potentially harm the purity of the final product. By processing silane directly, the Company believes that its finished product will be a higher quality and may be used by semiconductor companies without the need for additional chemical conversion processes.

“To create faster, smaller next-generation semiconductors, the world is likely going to require materials that are currently not available in commercial quantities”, said Paul Mann, ASP Isotopes’ Chairman and Chief Executive Officer. “ASP Isotopes is currently working on many isotopically pure elements that we believe will help semiconductor companies create the chips that the world will require in the future to enable technologies such as quantum computing and artificial intelligence”.

The Company has already signed two supply agreements with U.S.-based customers for highly enriched Silicon-28. The first is with a U.S.-based semiconductor company. The second is with a U.S.-based industrial gas company. The Company is currently in discussions with multiple other potential customers for the supply of highly enriched Silicon-28 and expects to sign more agreements during the next six months. The Company had previously communicated that the Silicon-28 enrichment facility would be capable of enriching over 10 Kg of Silicon-28, per annum, enriched to 99.995%. During the construction of the facility, the Company decided to expand the name plate capacity and based on pre-commissioning data the Company now believes that the plant will be capable of enriching over 50kg of Silicon-28, per annum, enriched to 99.995%.

Because of the size and scope of the enrichment facility, and in compliance with South Africa’s obligations under the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), the facility is managed under a comprehensive safeguard agreement (CSA) with the International Atomic Energy Agency (IAEA), whose representatives have visited and inspected the facility. Assuming the demand for Silicon-28 grows, the Company now expects to build multiple Silicon-28 enrichment facilities of larger nameplate capacity in multiple countries including Iceland and the United States.

This state-of-the-art facility contains several proprietary components, designed and engineered by ASP Isotopes. These include hermetically sealed, oil-free, helium-tight centrifugal compressors, pressure actuated relief (PAR) valves, molar mass meters and laminar flow meters. While the Company is unlikely to ever apply for a patent on the entire enrichment process, the Company expects to submit patent applications on several of the components contained within the facility, that have been designed and fabricated by ASP Isotopes.

(1) [Isotopically Enriched Layers for Quantum Computers Formed by \$^{28}\text{Si}\$ Implantation and Layer Exchange](#), Schneider, E and England, J; ACS Appl. Mater. Interfaces 2023, 15, 17, 21609–21617

(2) 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

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 for enabling quantum computing; Molybdenum-100, Molybdenum-98, Zinc-68, Ytterbium-176, and Nickel-64 for new, emerging healthcare applications, as well as Chlorine-37, Lithium-6, Lithium-7 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, including, without limitation, statements relating to the future of the Company's enrichment technologies, the market demand for Silicon-28, and the commencement of supply of enriched isotopes to customers. 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 the outcomes of various strategies and projects undertaken by the Company; the potential impact of laws or government regulations or policies in South Africa, the United Kingdom or elsewhere; 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; 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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