UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 8-K

CURRENT REPORT

Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): **October 3, 2023**

ASP Isotopes Inc.

(Exact name of registrant as specified in its charter)

Delaware	**001-41555**	**87-2618235**
(State or other jurisdiction of incorporation)	(Commission File Number)	(IRS Employer Identification No.)

1101 Pennsylvania Avenue NW, Suite 300 Washington, DC	**20004**
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code: **(202) 756-2245**

_____
(Former name or former address, if changed since last report.)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	**Ticker symbol(s)**	**Name of each exchange on which registered**
Common Stock, par value $0.01	**ASPI**	**The Nasdaq Stock Market LLC**

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

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 pursuant to Section 13(a) of the Exchange Act. ☐

Item 7.01 Regulation FD Disclosure.

On October 3, 2023, ASP Isotopes Inc. (the "Company") issued a letter to shareholders summarizing, among other things, the Company's year-to-date progress in 2024 and discussing future goals. A copy of the press release is furnished as Exhibit 99.1 hereto.

In addition, on October 3, 2023, the Company released an updated corporate overview presentation that it plans to use in meetings with investors. A copy of this presentation is furnished as Exhibit 99.2 hereto.

The information in this Current Report on Form 8-K (including Exhibits 99.1 and 99.2) is being furnished and shall not be deemed "filed" for the purposes of Section 18 of the Securities Exchange Act of 1934, as amended, or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filing under the Securities Exchange Act of 1934, as amended, or the Securities Act of 1933, as amended, except as shall be expressly set forth by specific reference in such a filing.

Item 9.01 Financial Statements and Exhibits.

Exhibit No.	Description
99.1	Press Release of ASP Isotopes Inc. dated October 3, 2023
99.2	Corporate Overview Presentation of ASP Isotopes Inc. dated October 2023
104	Cover Page Interactive Data File (embedded within the Inline XBRL Document)

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

ASP ISOTOPES INC.

Date: October 3, 2023

By: */s/ Paul Mann*
Name: Paul Mann
Title: Chief Executive Officer

EXHIBIT 99.1

ASP Isotopes Issues Letter to Shareholders.

Washington, D.C., October 3, 2023 (GLOBE NEWSWIRE) -- ASP Isotopes Inc. NASDAQ: ASPI ("ASPI," or the "Company"), an advanced materials company dedicated to the development of technology and processes designed to produce isotopes used in multiple industries, today released the following letter to shareholders from its Chairman and CEO, Paul Mann.

Dear Fellow Shareholder,

At the end of the 3rd quarter, I want to summarize the year-to-date progress and discuss our future goals. We have made significant progress during the first nine months of 2023, completing the construction of our first isotope enrichment plant and signing two supply contracts with North American customers for greater than $11.5 million in expected aggregate revenue for future supply of Carbon-14 and other highly enriched isotopes. In addition, we recently incorporated new subsidiaries in the United States and the United Kingdom to focus on producing HALEU and Lithium-6. These two isotopes are essential to meeting longer-term global climate goals.

ASPI core technology - now proven commercially viable and scalable.

Our accomplishments during the first nine months of 2023, outlined above, have the potential to generate a substantial amount of free cash flow for the company during 2024. The company plans to use that cash flow to start the construction of additional plants in 2024 for other isotopes. These additional plants will likely be in a new location outside South Africa, benefiting from more advantageous energy sources like Iceland. We are also in discussions with commercial partners in the industrial gases sector and quantum computing to build some of these additional manufacturing facilities now that our aerodynamic separation technology has been proven commercially viable and scalable. The business model under discussion is based on a joint venture structure whereby we would provide technology and expertise, and our commercial partner would provide investment capital and receive supply security at advantageous prices.

Creation of Quantum Leap Energy

Last week, we announced our strategy to enter the nuclear fuel market with the formation of new U.S. and U.K subsidiaries called Quantum Leap Energy ("**QLE**") and a Memorandum of Understanding with a leading global Small Modular Reactor ("**SMR**") Company. SMRs are widely viewed as the future of nuclear power, providing many substantial benefits over the nuclear power stations constructed in the past. Specifically, SMRs will be smaller-sized reactors, allowing greater deployment flexibility. They will be designed for production-line manufacturing, requiring limited on-site preparation to substantially reduce lengthy construction times and provide considerably lower construction costs. The simplicity of the SMR design, combined with enhanced safety features, should mean that almost any citizen can have continuous access to environmentally friendly, zero-carbon energy at a cost comparable to or potentially lower than that provided by heavily polluting constant energy sources such as coal and oil.

QLE addresses the worldwide shortage of HALEU.

Most new SMRs require a new form of enriched uranium, called HALEU (High Assay Low Enriched Uranium), which is up to 19.75% in the U-235 isotope. Historically, nuclear reactors have used LEU (Low Enriched Uranium), which is typically enriched by up to 5%. Currently, there is no Western producer of HALEU, and the NEI (Nuclear Energy Institute) estimates that there will be a global demand of 3,000 metric tons by 2035. We are currently in discussions with multiple SMR companies requiring HALEU, and they have indicated a demand summating to approximately $30 billion based on current market prices.

QLE is expected to develop proprietary laser-based technology to achieve enrichment.

We expect to enrich uranium and lithium using our Quantum Enrichment Process, a proprietary technique developed by our scientists to enrich isotopes using lasers. We believe it is likely the most cost-effective method of enriching heavy isotopes, particularly those that do not lend themselves well to being converted into a stable gas. We believe that, with time, we can produce HALEU with a cost of production substantially below other enrichers.

Our technology partnered with customer capital may be a viable solution to the worldwide HALEU shortage.

Importantly for ASPI shareholders, our discussions with SMR companies assume that there will be significant financial support in the construction of HALEU production facilities. We expect that QLE will be the majority shareholder in these facilities but will be funded by a third-party, non-dilutive capital. The financial model is expected to be similar to our strategy that we are employing in non-nuclear isotopes (*i.e.*, a joint venture based on our technology coupled with partner capital). We also plan to work with existing nuclear facilities to navigate the complex regulatory framework and approval requirements.

ASPI and QLE are likely two separate companies.

It is currently anticipated that the Company will consider plans for a future spin-off of the QLE business to ASPI shareholders so that our shareholders will then benefit from ownership in two entities: ASP Isotopes Inc. and Quantum Leap Energy Inc – the first being focused on isotopes for medical and technology, quantum computing and non-nuclear energy technology (carbon-14, molybdenum-100, silicon-28, zinc-68) and the second focused on nuclear fuels for the future (HALEU and Lithium-6).

The rationale for this separation goes beyond the fact that each company will employ different enrichment technologies. The regulatory landscape and supply chain for nuclear fuel production differs significantly from that of medical isotopes; hence, ASPI and QLE will have different business models. Ultimately, QLE will be independently managed and financed by ASPI. As outlined above, we expect the majority of QLE's financial needs to be supplied by its customers, either as an investment into the new entity or as prepayments against future shipments. We anticipate that as both entities develop, we will expand the senior management in both companies.

The market for isotopes is at an inflection point from both a demand and a supply perspective. We intend to position ASPI and QLE as a trusted supplier of existing isotope products and those of the future.

Isotopes have one of the most severely compromised supply chains of any material in the world. Currently, supply is almost totally controlled by Rosatom State Nuclear Energy Corporation, the Russian state-owned entity headquartered in Moscow, and a handful of state-owned or controlled enrichers. The United States Department of Energy (DOE) and every other Western government identifies isotopes as a critical material. Isotopes enable everyday activities such as nuclear imaging, are essential in the production of advanced electronics and semiconductors, and are required as fuels and coolants in nuclear power stations, which provide approximately 13% of electricity generated in the United States. Global industrial production, electricity generation, and Western defense capabilities remain susceptible to supply chain disruption from geopolitically adverse counterparties. This is why we are discussing our longer-term supply capabilities with so many companies and governments. We hope to sign more supply agreements for essential isotopes in the coming months.

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

Thank you for your interest and support.

With best wishes,

Paul E. Mann
Chairman and Chief Executive Officer

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.

Contacts

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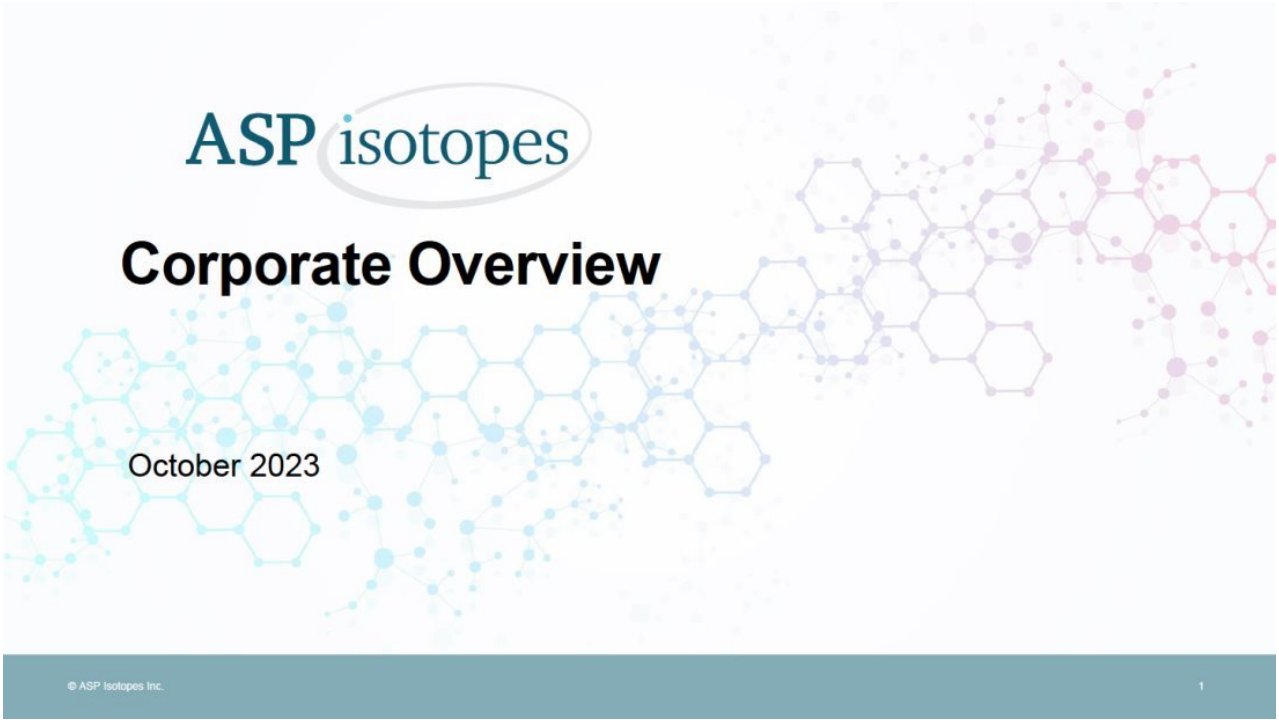
Telephone: 561-709-3043


ASP isotopes
Corporate Overview
October 2023
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Forward Looking Statements

Forward Looking Statements

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Market and Industry Data

This presentation 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 overview. Although we believe the industry and market data and statements as to potential market position to be reliable as of the date of this presentation, 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. All forward-looking statements herein are qualified by reference to the cautionary statements set forth herein and should not be relied upon.

ASP Isotopes: At a Glance

1. Proven & Proprietary Technology

ASPI's advanced technology platform leverages 20 years of R&D history to enrich isotopes in varying levels of atomic mass. Its innovative technology will enable the company to manufacture a diverse range of isotopes, which will meet the growing demand in the Nuclear Medicine and Green Nuclear Energy industry.

2. Multiple Geopolitical Tailwinds Favor Rapid Expansion

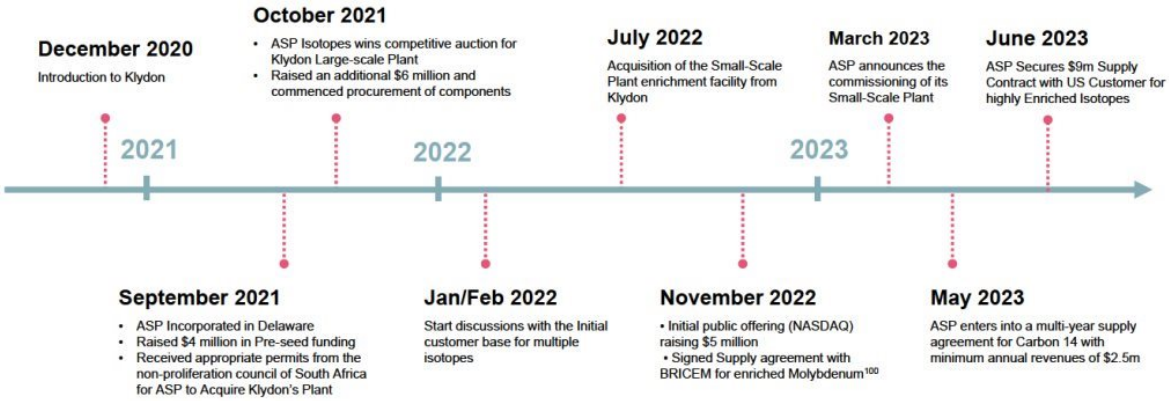
Favorable long-term market trends are expected to drive long-term secular industry growth. Recent geopolitical events have created high urgency for companies and countries to search for reliable sources of isotopes.

3. Consistent Operational Performance

Since incorporation (< 2 years ago) we have completed the construction of our first manufacturing facility, and we continue to expand our operating footprint in South Africa. Our South African facilities are expected to enter commercial production in late 2023/24 and should drive considerable free cash flow..

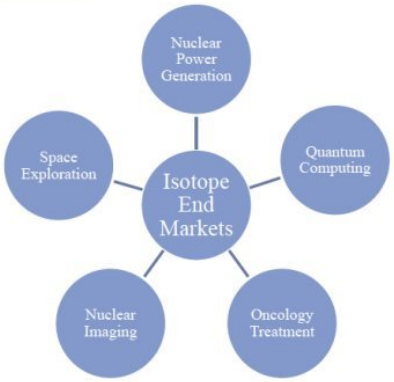
ASP Isotopes (NASDAQ: ASPI)	
Stock Price (*as of 9/28/23*)	$1.02
Shares Outstanding (*as of 8/11/23*)	37.39M
Market Capitalization	$44.8M
FD Shares Outstanding	~43.6M
Cash & Equivalents (*pro-forma at 06/30/23*)	$3.6M
Long Term Debt	$0
Insider Ownership	37.5%

Company History

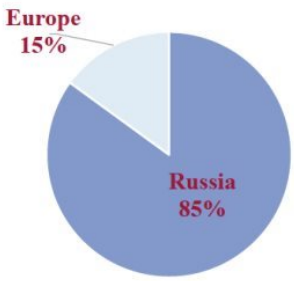


Isotope Production is Essential for National and Global Security

Isotopes have one of the most severely compromised supply chains of any material in the world and are Critical to the following end markets.



Historical Isotope Market Producers[1]



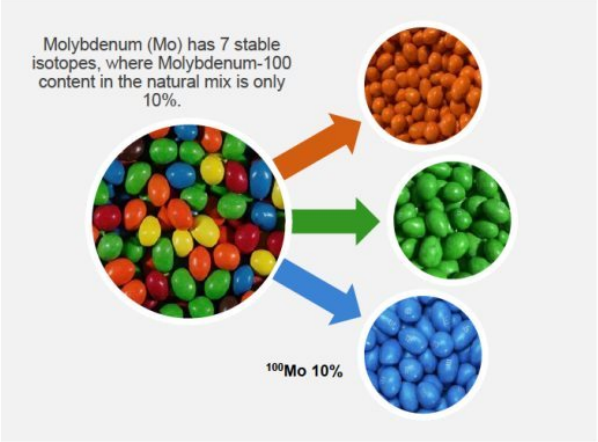
The World remains susceptible to Global disruption of industrial production, electricity generation, national defense, and the entire economy at large. The existence of many industries and defense capabilities faces existential risk without a secure isotope supply.

1. https://science.osti.gov/-/media/np/nsac/pdf/docs/2015/2015_NSACI_Report_to_NSAC_Final.pdf

What Is An Isotope?

Isotopes are like identical twins or triplets: very similar in most aspects, except for a few subtle differences.

- Isotopes are two or more atoms of the same chemical element with the same number of protons and electrons but slightly different numbers of neutrons.
- Isotopes are found in nature mixed together, just like M&M chocolate candies: same composition, taste, and size – just different colors. The isotope separation process should sort them into fractions of precisely the same types.
- This separation process is very challenging and expensive precisely because isotopes are so similar to each other, with only minor weight differences.



We aim to increase (enrich) ^{100}Mo content from its natural 10% content to the required >95% purity product

ASP Isotopes: Technology Highlights

1. Cost-Effective

Isotope enrichment facilities using ASP technology can be constructed at a fraction of capital cost and time vs. traditional isotope separation facilities. This technology has been refined for over 20 years through the South African Nuclear Enrichment Program.

2. Modular, Scalable Design

The plants can be small in footprint and modular in design, allowing for capacity expansion and growing demand.

3. Environmentally Friendly

Our isotope enrichment plants are designed to harvest and enrich a natural mix of isotopes – not by-products from nuclear energy reactors. Accelerator-produced isotopes produce less than 10% of the amount of radioactive waste produced by a reactor[1], and **our technology produces no waste at all (not radioactive or any other waste in any form).**

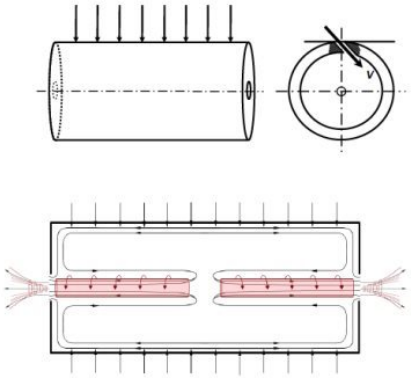
ASP Technology: Stationary Wall Centrifuge

Benefits of a Stationary Wall Centrifuge

1. No moving parts vs. a conventional centrifuge
2. No unique materials are required
3. Cost-efficient at small scale
4. High Separation Efficiency

Small Production Modules ⇢ **Flexible Capacity Deployment**

High Separation Efficiency ⇢ **Low Energy Cost**



Anticipated Milestones

MARKET MILESTONES

1. Secure at least 2 additional supply agreements for isotopes critical for new technologies and healthcare.
2. Generate sufficient revenues for the company to have annual positive operating cash flow.
3. Enter additional supply contracts for new isotopes in the 2025-2028 timeframe

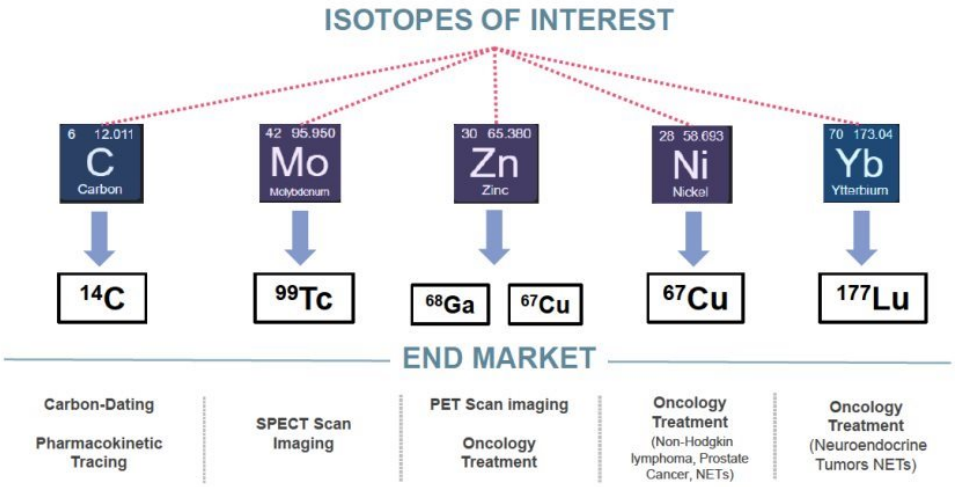
OPERATIONAL MILESTONES

1. Start commercial production of isotopes at our enrichment facilities in South Africa. – **Late 2023-Early 2024**
2. Start constructing a first isotope enrichment facility outside South Africa – which will be in a location with advantaged energy costs. – **2H24**

Isotopes of Interest

Isotopes	End-Market	R&D Stage	R&D Evaluation	Under Construction	Commercially Available
Carbon-14	Pharma & Agrochem				
Silicon-28	Quantum Computing				
Germanium-70/72/74	Quantum Computing				
Molybdenum-100	Nuclear Medicine				Available in 2H23
Molybdenum-98					Available in 2H23
Zinc- 67/68	Nuclear Medicine				
Ytterbium-176					
Nickel-64					
Xenon-129/136					
Chlorine-37	Green Nuclear Energy				
Lithium-6					
Uranium-235					

Isotope End Markets: Nuclear Medicine



Isotope End Markets: Carbon-14 (^{14}C)

Radiolabeling

A scientific technique used to track the passage of a molecule. The technique incorporates a radioisotope through a reaction, cell, organism, biological system, or metabolic pathway.

Carbon-14

Used as a radiolabeling compound due to its' relatively harmless emission of alpha particles, and long-lasting half-life, which allows researchers to track drug molecules throughout the body.

ASPI has entered into **multi-year** supply agreement with **minimum annual revenues of $2.5M** per year MOU to produce Carbon-14 for quantities that will be sufficient to meet the entire global demand.

ASPI expects to commence commercial production of Carbon-14 by Late 2023

ASPI's Carbon-14 enrichment facility

Isotope End Markets: Molybdenum-100 and Zinc-68

Single-photon emission computed tomography (SPECT)

Global Market Size[6]

$4.61B

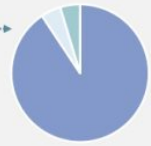
^{99}Tc

Technetium-99

^{99}Tc Global Market Size[7]

$4.17B

Imaging Agent Distribution



It is estimated that **80-85%** of all SPECT procedures utilize Technetium-99[8]

Positron emission tomography (PET)

Global Market Size[4]

$1.15B

^{68}Ga

Gallium-68

^{68}Ga Global Market Size[5]

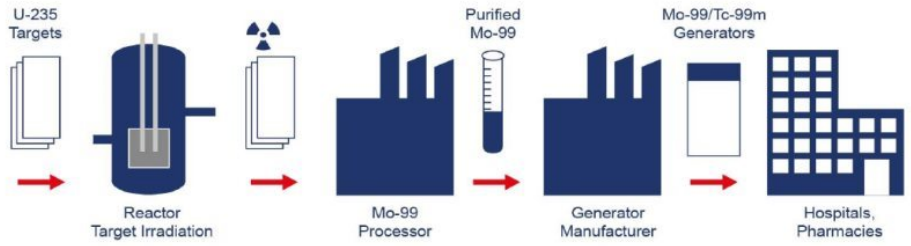
$127M

Imaging Agent Distribution

Over 90% of prostate Cancers Over-Express PSMA, and Ga68 hybrid therapy has a 76/97% Sensitivity/Specificity identification rate when compared to 58/82% in MRI alone.[3]

Nuclear Medicine Supply Chain

Current Mo99 Supply Chain



Current Isotope Conversion Process

^{99}Mo → ^{99}Tc

Half-Life: **66** Hours Half-Life: **6** Hours

ASP Isotope Conversion Process

^{100}Mo → ^{99}Tc

STABLE Half-Life: **6** Hours

Geopolitical Tailwinds for ASPI Nuclear Medicine

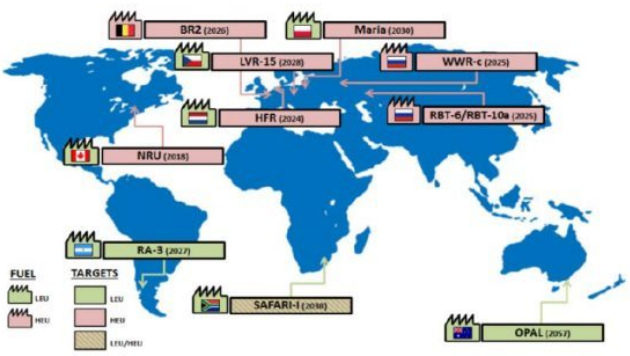
1. Government Support for Alternative Supply

"Between 95 and 98 percent of ^{99}Mo is currently being produced using highly enriched uranium (HEU) targets, which was the major concern of Congress."[8]

2. Imminent Supply Constriction

8 of the world's 9 major reactors producing medical isotopes are anticipated to shutter in the next 15 years, due to planned retirement after several decades of service.[1]

World's Largest Nuclear Facilities Manufacturing Isotopes

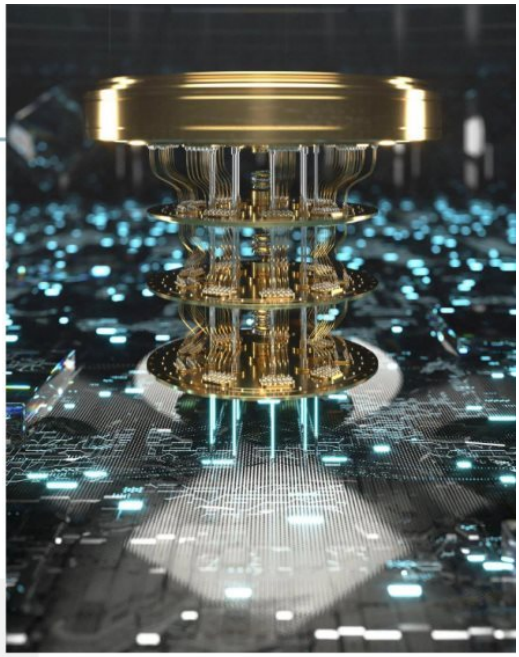


Silicon-28:
Enabling Quantum Computing

Quantum Computers are expected to be 1000x more powerful than today's conventional computers and are widely anticipated to create new opportunities in medicine, artificial intelligence, cybersecurity, finance, logistics, and other industries.

The semiconductor has to be extremely fast for the processing of Qubits. Silicon-29 is a problem in quantum computing because it dominates the breakdown of quantum information, or "decoherence," of the qubits.

- Instead of information being processed in nanometer-scale transistors with binary 'bits' which can have only two states (0 or 1), silicon-based quantum computer processors will utilize atomic-scale quantum spin effects with 'qubits' which can be in multiple superimposed states at the same time, thereby dramatically increasing the processing power in a minuscule fraction of the volume.
- An isotopically pure form of silicon has a thermal conductivity about 60% higher than naturally occurring mono-crystalline silicon. It is believed that isotopically enriched silicon may provide benefits to fiber optics and



ASPI could purify natural Si mix of isotopes which may allow for higher performance of Si-based chips

Market Opportunities of Other Isotopes

For Use in Quantum Computing

1. Quantum computing requires ultra-pure Silicon-28 Which is not available at any price at commercial scale
2. ASP Intends to conduct further testing to enhance the current capability of enrichment of Si28 up to commercial requirements of > 99.99%

For Use in Oncology

1. Ytterbium-176 is emerging as a better method of producing Lutetium-177, which is an emerging therapeutic used in Oncology
2. In March of 2022, Novartis's' Pluvicto (^{177}Lu vipivotide Tetraxetan) was approved for use in men with PSMA-positive metastatic castration-resistant prostate cancer (mCRPC).[14]

For Use in Molten Salt Reactors

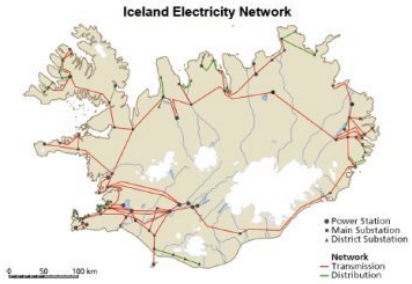
1. Molten Salt Reactors (MSRs) are nuclear reactors that use a fluid fuel in the form of very hot fluoride or chloride salt.
2. Chlorine-37 has been proposed as a potential neutron absorber in specific MSR designs.

For Use in Nuclear Fusion

1. There is an emerging need for lower enriched levels of lithium-6 for nuclear fusion, which is a promising energy source being developed in both the United states and Europe.

Future Growth Plans to Scale ASPI Business into new Isotopes

Iceland identified as the likely optimal location for expansion:

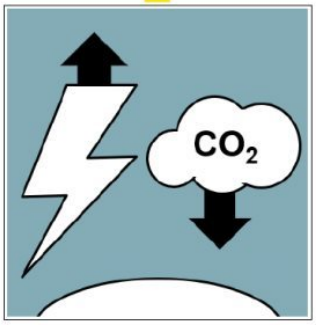


- Iceland's policy is to attract high-tech green industry into the country to support its own long-held ESG-based ethos.
- Likely government support from relevant government ministries and Non-Proliferation Regulators. Advisors currently engaged to support regulatory applications which are in progress.
- Plant Location will be conveniently located nearby international airport, shipping port and source of skilled workforce.
- Long-term Energy Solution:
  - Iceland has an extremely sophisticated private green energy supply system, where a customer can select the provider, and ultimate source of the energy they consume. **A local green energy provider has provided quote for 10+ year energy supply at <5 ₵/Kw/h.**
- Expect to produce multiple Isotopes supported by long term contracts with significant partners. Planned isotopes include Silicon-28, Gemanium-72 & 74, Xenon -129, Deuterium, Zinc-68, Molybdenum-100 & 98 and chlorine-37.
- **We expect customers to contribute considerable amounts of capital to the construction of additional manufacturing capacity for new isotopes.**

The Equation is a Well-Known Fact... Solving it is not Straightforward

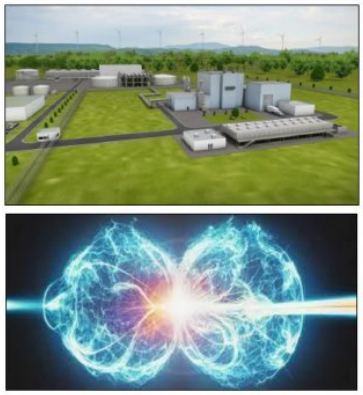
Global Electricity Production needs to double by 2050.

At the same time, the world needs to achieve carbon neutrality.



Protesting is not going to Solve the Equation…

… The Solution Requires Innovation and Investment



The Global Necessity for Increased Green Nuclear Energy

Increasing Demand for Energy

- To reach Net Zero emissions by 2050, the world must increase Global Electricity generation by 250% and double Nuclear energy output.[13]
- Climate scientists recommend increasing the share of low-carbon energies for power generation from 30% to over 80% by 2050.[10]

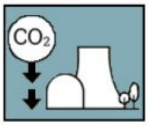
Energy Security

- Russia is responsible for 35% of enriched uranium globally[15]
- The United States imports 95% of its uranium, and 81% of its enrichment comes from overseas.[16]
- Four companies (all state-owned) operating in six countries are responsible for the entire world's production of enriched uranium for nuclear reactors.

Increasing Focus on Nuclear Power By Country

- UK plans to build 8 new nuclear power plants to increase nuclear power from 15% to 25% of the mix by 2050.[10]
- France plans to build up to 6 new large reactors. [10]
- India plans to build 10 new large reactors. [10]
- Japan is targeting 20-22% of electricity generation from nuclear by 2030. [11]
- China has 38 operable reactors; 19 are under construction, and the country plans to produce 70 GW of power by 2025.[12]

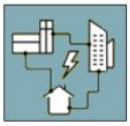
Nuclear Power Uptake Benefits



Low Carbon Energy

Nuclear power is one of the world's energy sources that emits the least greenhouse gas

70x less CO2 than gas
40x less CO2 than coal
4x less CO2 than solar



Constant and Controllable Energy

Nuclear power provides continuous electricity thanks to its robust production system, which can adapt to variations in electricity demand.

Cost Competitive Energy

Nuclear power provides continuous electricity thanks to its robust production system, which can adapt to variations in electricity demand.

Essential Energy Diversity

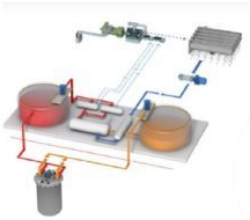
Renewable energies (solar, wind) are by nature intermittent and cannot meet the existing and future energy needs of 8 billion people on their own.

SMR (Small Modular Reactors) = Next Wave in Nuclear Energy

The world is moving to a new type of nuclear reactor: SMR

- Modular, smaller size (50 MWe to 300 MWe) reactors allowing greater flexibility in deployment
- Designed for production-line manufacturing rather than conventional custom-built capital projects
- Limited on-site preparation to substantially reduce lengthy construction times
- Simplicity of design, enhanced safety features, economics and quality afforded by factory production, and more flexibility (financing, siting, sizing, and end-use applications)
- Can provide power for applications where large plants are not needed or sites lack infrastructure to support a large unit (e.g., smaller electrical markets, isolated areas, smaller grids, sites with limited water and acreage, or unique industrial applications)
- US DOE has already committed billions of dollars to Advanced Reactor Design Program (ARDP) to facilitate and accelerate development of advanced reactors

TerraPower's Natrium

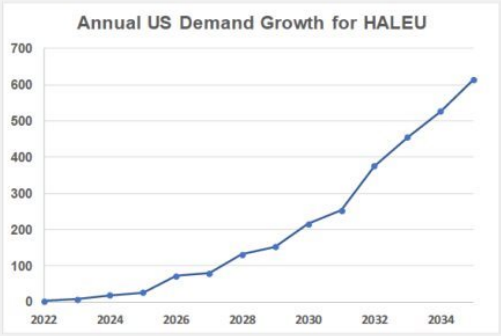


X-Energy's Xe-100

Rolls-Royce's SMR

HALEU Supply Issue Looming for SMR Reality

- Current commercial LWRs use low-enriched uranium (LEU) which has less than 5% ^{235}U content.
- Many SMRs and advanced reactors will require High Assay Low Enriched Uranium (HALEU) with ^{235}U enrichment up to 19.75%.
- Currently, there is no commercial source of the supply of HALEU in the Western World. Without fuel, these SMR's are unlikely to become a reality.
- Recently TerraPower delayed the start-up of its SMR from 2028 by at least 2 years due to the lack of availability of HALEU.
- Many other SMR Companies are in a similar position.



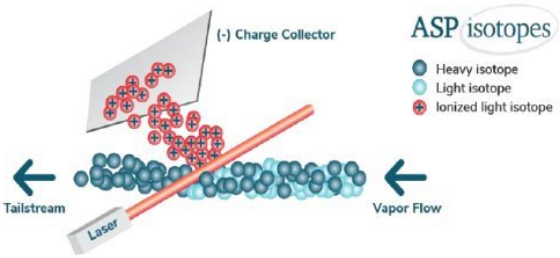
- The U.S. government has made a multi-billion-dollar commitment to help commercialize HALEU-fueled advanced reactors. Inflation Reduction Act passed August 2022 - supporting nuclear power generation and domestic nuclear fuel supply including $700 Million funding for the DOE's HALEU Availability Program.
- The NEI estimates (above) that by 2035 US domestic demand for HALEU could reach >600 Metric Tons.
- Many European and Asian countries are also in need of HALEU for SMRs

Comparing and Contrasting Enrichment Methods

	Gaseous Diffusion	Centrifugation	Molecular Laser Isotope Separation (MLIS)	Atomic Vapor Laser Isotope Separation (AVLIS)	Silex Systems	Quantum Enrichment (used by QLE)
Cost	High capital cost	Capital 1/10 of Diffusion	Low Capital, small size	Low Capital, small size	Low Capital, small size	Low Capital, small size
Speed	High pressure	High speed	UF6 Flow Cooling (80K)	U metal 3000K	Adiabatic expansion nozzles (10 – 20K)	U metal 3000K
Technology Notes	High technology	Rotor design & material	Multiphoton Dissociation	Selective Photoionization	Laser excitation transmission by skimmer	Enhanced resonant multiphoton ionization
Selectivity	Selectivity $\alpha \geq 1.003$	Selectivity $\alpha \geq 1.15$	Selectivity $\alpha \geq 1.05$	Selectivity $\alpha \geq 10\text{-}50$	Selectivity $\alpha \geq 2 - 20$	Selectivity $\alpha \geq 50$
SWU	2500 kWh/SWU	50 kWh/SWU	30 kWh/SWU	40 kWh/SWU	Estimate < 50 kWh/SWU	40 kWh/SWU
Stages Required	500 Stages to reactor grade	50 Stages	120 Stages	1-2 Stages	1-2 Stages	Single stage

What is Quantum Enrichment?

- Quantum Enrichment was derived from AVLIS (Atomic Vapor Laser Isotope Separation). Isotopes of every element also have unique spectroscopic "signatures" defined by the electromagnetic radiation or "light" absorbed by their atoms from electron transitions.
- Quantum enrichment depends on the quantum mechanical connection between energy and frequency in an atom's electrons. QE separates two isotopes by taking advantage of the slight differences in the transition energy between two isotopes. This method is described as a "quantum mechanics" method.
- A laser is a device that can produce large numbers of photons, all having almost precisely the same frequency or energy. Photons are defined as energy packets that compose electromagnetic radiation. By precisely tuning lasers to a specific isotope's spectrum (color) signature, those atoms can be selectively photoionized and then electrically separated based on their electric charge.
- The isotopic selectivity of enrichment is very high and can produce the desired enrichment in a single step. In principle, Quantum Enrichment can separate isotopes of most elements.



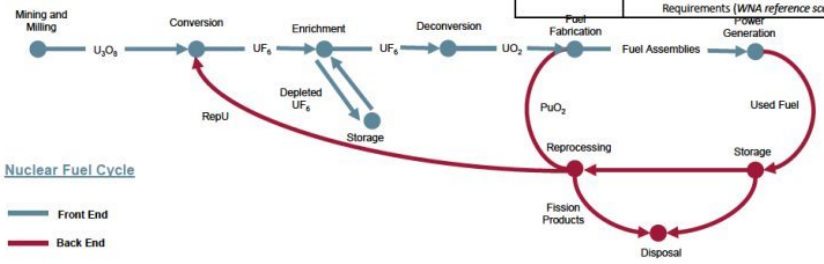
Nuclear Fuel Cycle

Estimated World Primary Conversion Capacity 2020

Company	Country	Location	Nameplate Capacity (tU)	Capacity Utilization (%)	Capacity Utilization (tU)
Orano	France	Pierrelatte & Malvesi	15,000	17%	2,600
CNNC	China	Lanzhou & Hengyang	15,000	53%	8,000
Cameco	Canada	Port Hope	12,500	72%	9,000
Rosatom	Russia	seversk	12,500	96%	12,000
ConverDyn	USA	Metropolis	7,000	0%	0
Total			**62,000**	**51%**	**31,600**

Estimated World Primary Enrichment Capacity 2020

Country	Company and Plant	2020 Capacity (Thousand SWU/yr)
France	Areva, Georges Besse I & II	7,500
Germany-Netherlands-UK	Urenco: Gronau, Germany; Almelo, Netherlands; Capenhurst, UK.	13,700
USA	Urenco, New Mexico	4,900
Russia	Tenex: Angarsk, Novouralsk, Zelenogorsk, Seversk	27,700
China	CNNC, Hanzhun & Lanzhou	6,300
Other	Various: Argentina, Brazil, India, Pakistan, Iran	**66**
	Total SWU/yr approx	**60,166**
	Requirements (*WNA reference scenario*)	50,205



Nuclear Fuel Prices are at 10-Year Highs

- Multiple Macroeconomic factors caused by geopolitics, pandemics, blocked canals, and weather, have caused long-term Uranium price indicators to continue to rise to 10-year highs.
- Front-end nuclear fuel markets highlight numerous and increasing risks facing the production and delivery of nuclear fuel in all its forms.
- Under-investment during the past thirty years leaves little spare capacity in any component of the nuclear fuel cycle.

Current Implications of Depleted UF6 tails

Depleted tails from other Uranium enrichers produce nuclear waste. The **management of this waste is becoming a problem.**

Our Process has the ability to process this waste into HALEU
Potentially providing a solution to this growing environmental problem

Depleted UF6 Tails stored in Ohio, USA

Depleted UF6 Tails by Country[1]

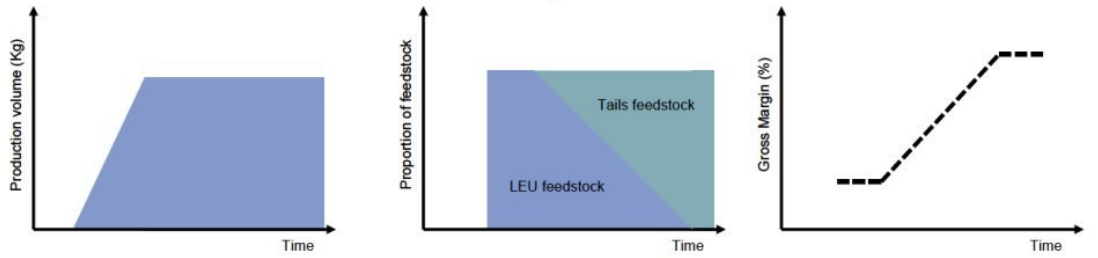
Location	Accumulated Depleted UF6 (in tons)	Annual Increase in Reserves (in tons)
USA	700,000	30,000
Russia	640,000	15,000
France	200,000	18,000
BNFL (Great Britain)	44,000	-
Urenco (Germany/ UK/ netherlands)	43,000	6,000
Japan	38,000	700
China	30,000	1,500
South Africa	3,000	-
Others	1,500	-
Total	**1,699,500**	**71,200**

(1) The amount of accumulated DUHF by countries of the world-Great Encyclopedia of Oil and Gas

Production Profile – Next 10+ years

- The company initially expects to process low-enriched uranium (LEU) as a feedstock. This allows us to rapidly increase the production volumes to meet the near-term demand of our customers. **A laser system produces substantially more HALEU when using LEU as a feedstock.**
- Over time, as the company's production capacity expands, we expect to start processing other enrichers' depleted tails that are currently being stored as waste. **When using depleted tails as a feedstock, we estimate cash costs of production drop significantly allowing us to capture a greater gross margin.**

Near term – focus on production volumes → **Longer term – Focus on maximizing gross profit**



Investment Thesis

1. Proven & Proprietary Technology

ASPI's advanced technology platform leverages 20 years of R&D history to enrich isotopes in varying levels of atomic mass. Its innovative technology will enable the company to manufacture a diverse range of isotopes, which will meet the growing demand in the Nuclear Medicine and Green Nuclear Energy industry.

2. Multiple Geopolitical Tailwinds Favor Rapid Expansion

Favorable long-term market trends are expected to drive long-term secular industry growth. Recent geopolitical events have created high urgency for companies and countries to search for reliable sources of isotopes.

3. Consistent Operational Performance

Since incorporation (< 2 years ago) we have completed the construction of our first manufacturing facility, and we continue to expand our operating footprint in South Africa. Our South African facilities are expected to enter commercial production in late 2023/24 and should drive considerable free cash flow.

Management Team

ASP Isotopes: Leadership Team

PAUL MANN
Chairman, and CEO

- Co-founded ASP Isotopes in September 2021
- 20+ years of experience on Wall Street investing in healthcare and chemicals companies at Soros Fund Management, Highbridge Capital and Morgan Stanley.
- MA and MEng (Chemical Engineering) from Cambridge University, Research Scientist at Procter and Gamble. CFA charter holder.

SERGEY VASNETSOV
Vice-Chairman of the Board

- Founder and Managing Director of ChemBridges, strategy consulting firm, since 2016.
- SVP of Strategy and M&A at LyondellBasell (NYSE: LYB) (2010-2016).
- Managing Director, Equity Research at Barclays Capital and Lehman Brothers (1996-2010).

HENDRIK STRYDOM, PhD
Director, Chief Technology Officer

- Co-developer of "Aerodynamic Separation Process" (ASP) and CEO of Klydon, the predecessor company since 1993.
- Extensive research on the laser separation of heavy isotopes (AVLIS, MLIS, SILEX).
- Dr. Strydom has PhD (Physics) (2000) from the University of Natal (Durban).

ASP Isotopes: Scientific Advisors

EINAR RONANDER
Chief Scientific Advisor

- Globally recognized as a leading scientist in the field of isotope separation for medical and industrial applications
- Pioneered the Molecular Laser Isotope Separation (MLIS) and the Atomic Vapour Laser Isotope Separation (AVLIS) for heavy volatile isotopes
- Has extensive knowledge base and experience in gas centrifuge separation, distillation separation, electromagnetic separation, infra-red lasers for MLIS, and visible lasers for AVLIS. Einar obtained a PhD (Physics) at the University of Stellenbosch, a PhD (Chemistry) at the University of Pretoria, he serves on the Advisory Board for Science (Univ. Stellenbosch), and the Steering Committee of the Laser Institute at University of Stellenbosch.
- Einar serves as reviewer of global scientific papers for leading journals and his own published papers rate in the top 10% globally by citations standards, and he performs as invited speaker at global conferences and is an Extra Ordinary Prof (Physics).

ASP Isotopes: Non-Executive Directors

DUNCAN MOORE, PhD
Director

- Partner at East West Capital Partners, specializing in investment opportunities within the Healthcare Industry across the APAC region.
- Global Head of Healthcare Equity Research at Morgan Stanley from 1991 to 2008,
- M.Phil & PhD in Biochemistry from Cambridge University

TODD WIDER, MD
Director

- Executive Chairman and Chief Medical Officer, Emendo Biotherapeutics
- Active Staff (*~20 Years)* in reconstructive surgery at Mount Sinai Hospital in New York
- MD Columbia College, Residency in General Surgery and Plastic and Recon at Columbia Presbyterian, Postdoctoral fellowships at Memorial Sloan Kettering as Chief Microsurgery Fellow

JOSHUA DONFELD
Director

- 20+ years Investing experience on Wallstreet
- Co-founder and co-managing partner of Castle Hook Partners, Specializing in Healthcare & Natural Resources
- Portfolio Manager, Soros Fund management sector agnostic Focus
- Magna Cum Laude, Princeton University, Economics

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