Full-Scale Commercial Laser System Technology Milestone Completed for SILEX Uranium Project

13 October 2021

Highlights:

- **The first full-scale laser system module developed for deployment in GLE's commercial pilot demonstration project in the US has successfully completed initial testing at the Company's Lucas Heights facility in Sydney**
- **The Laser System Technology Milestone marks an important achievement in the development of commercial-scale equipment required for GLE's quest to become the only third-generation laser enrichment company in the world, through its exclusive license of the SILEX uranium enrichment technology**
- **The laser system represents one of two critical SILEX technology components being developed for the commercial pilot demonstration plant. The other component is the separator systems which are currently being scaled up to commercial pilot-level in GLE's Test Loop facility in the US**

Silex Systems Limited (Silex) (ASX: SLX) (OTCQX: SILXY) is pleased to announce the completion of a key milestone in the SILEX uranium laser enrichment project being conducted in collaboration with exclusive licensee, US-based Global Laser Enrichment (GLE). GLE is 51% owned by Silex, with joint venture partner Cameco Corporation holding 49% ownership.

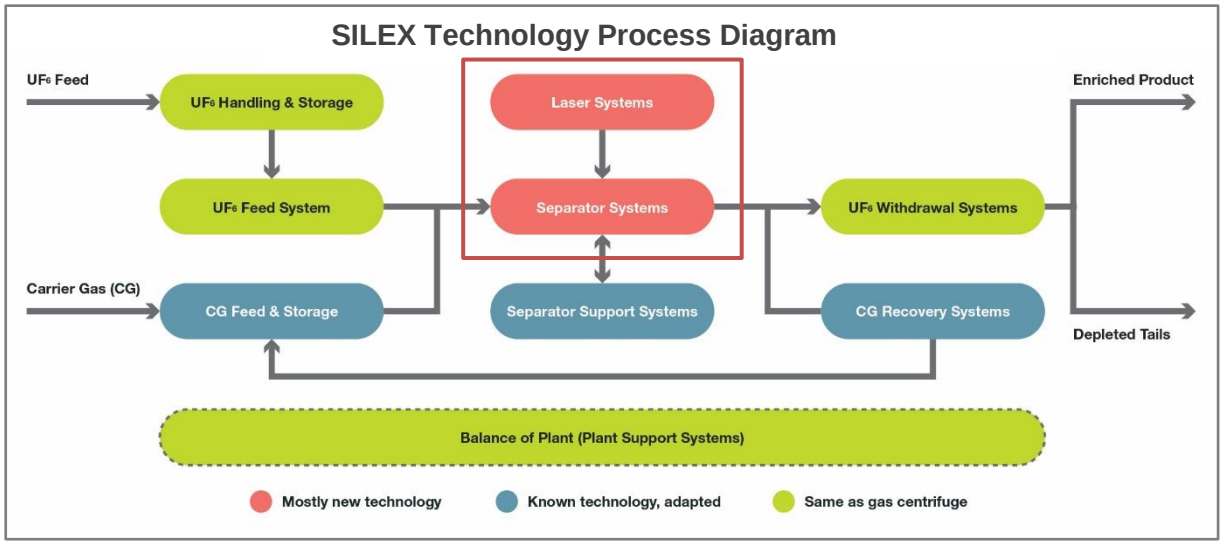
The milestone involves the completion of initial testing of the first module of full-scale laser technology required for GLE's commercial pilot demonstration project being conducted in Wilmington, North Carolina. The full-scale laser system module was designed and built at Silex's Lucas Heights laser technology development centre by the Company's laser engineering team over the last few years.

Michael Goldsworthy, Silex's CEO/Managing Director said:

"This is an important milestone for both Silex and GLE, marking the first time that the SILEX laser technology has achieved commercial-scale performance for uranium enrichment. We congratulate our very talented laser engineering team who have produced this unique, cutting-edge laser technology which will be utilised by GLE under the SILEX uranium technology license agreement."

Silex Systems Limited | ABN 69 003 372 067
LHSTC, New Illawarra Road, Lucas Heights NSW 2234
Telephone: +61 2 9704 8888 | Facsimile: +61 2 9704 8851 | Website: www.silex.com.au

The Laser System Technology Milestone is the culmination of many years of world-leading laser technology development activities at Silex and represents one of two critical SILEX technology components that form the heart of the SILEX enrichment technology. As shown in red in the figure below, the other component consists of the SILEX Separator Systems, which are currently being scaled up at GLE's Test Loop facility in the US.



The commercial-scale laser system module will undergo rigorous testing over the coming months with the focus on optimising system efficiency and demonstrating reliable 24/7-based operations, before shipment to GLE's Test Loop facility in Wilmington, NC in mid-2022. Construction of additional identical laser system modules required for the commercial pilot demonstration project is advancing, with all modules scheduled to be shipped to Wilmington by the end of 2023.

GLE is planning to complete the commercial pilot demonstration project by the mid-2020's, after which a feasibility assessment will be conducted for the proposed Paducah Laser Enrichment Facility (PLEF), which GLE hopes to deploy for the production of natural grade uranium in the late 2020's.

About the SILEX Uranium Enrichment Technology

The SILEX technology is the only third-generation laser-based uranium enrichment technology under commercial development today. Subject to the successful completion of the commercialisation project, market conditions and other factors, the SILEX technology could enable GLE to become a major contributor to nuclear fuel production for the world's current and future nuclear reactor fleet, through the production of uranium in three different forms:

- ***natural grade uranium (U_{nat}):*** via enrichment of DOE inventories of depleted tails through the PLEF project - producing uranium at natural U^{235} assay of ~ 0.7%;

- ***low enriched uranium (LEU):*** for use as fuel in today's conventional nuclear power reactors – which require fuel with U^{235} assays of between 3% and 5%; and

- ***high assay LEU (HALEU):*** a customised fuel for next generation Small Modular Reactors (SMR's) currently under development – several of which require fuel with U^{235} assays of between 5% and 20%.

Uranium production and enrichment are the two largest value drivers of the current nuclear fuel cycle, accounting for up to 70% of the value of a fuel bundle. Importantly, commercialisation of the SILEX uranium enrichment technology through GLE could enable the SILEX technology to become a unique, multi-purpose nuclear fuel production platform for existing and emerging nuclear power generation systems, including as a potential producer of HALEU fuel for SMR's.

GLE's Proposed Paducah 'Tier 1' Uranium Production Project:

The Paducah commercial project opportunity is an ideal path to market for the SILEX technology and GLE. Underpinning this opportunity is the Sales Agreement between GLE and the US Department of Energy (DOE) which provides GLE access to large stockpiles of depleted uranium tails inventories owned by the DOE.

The Paducah commercial project opportunity will involve GLE constructing the proposed PLEF utilising the SILEX technology to enrich the DOE tails inventories which have been stored in the form of depleted uranium hexafluoride (UF_6 - containing U^{235} assays of between 0.25% to 0.4%) to produce natural grade uranium (assay of ~0.71%). Subject to completion of the technology commercialisation project, regulatory approvals, financing and prevailing market conditions, it is anticipated the PLEF will commence commercial operations from the late 2020's.

Production of natural grade uranium at the PLEF would continue over three decades, with the output sold into the global uranium market at a production rate equivalent to a uranium mine producing an annual output of around 5 million pounds of uranium oxide, which would rank in the top ten of today's uranium mines by production volume. Preliminary analysis by Silex of the PLEF project indicates it could rank equal to a 'Tier 1' uranium project based on current estimates of the long-life and low cost of production.

Authorised for release by the Silex Board of Directors.

Further information on the Company's activities can be found on the Silex website: www.silex.com.au or by contacting:

Michael Goldsworthy
CEO/Managing Director
T +61 2 9704 8888
E investor.relations@silex.com.au

Julie Ducie
CFO/Company Secretary
T +61 2 9704 8888
E investor.relations@silex.com.au

Forward Looking Statements and Risk Factors:

About Silex Systems Limited (ASX: SLX) (OTCQX: SILXY)

Silex Systems Limited ABN 69 003 372 067 (**Silex** or **Company**) is a research and development company whose primary asset is the SILEX laser enrichment technology, originally developed at the Company's technology facility in Sydney, Australia. The SILEX technology has been under development for uranium enrichment jointly with US-based exclusive licensee Global Laser Enrichment LLC (**GLE**) for a number of years. Success of the SILEX uranium enrichment technology development program and the proposed Paducah commercial project remain subject to a number of factors including the satisfactory completion of the engineering scale-up program and uranium market conditions and therefore remains subject to associated risks.

Silex is also in the early stages of pursuing additional commercial applications of the SILEX technology, including the production of 'Zero-Spin Silicon' for the emerging technology of silicon-based quantum computing. The 'Zero-Spin Silicon' project remains dependent on the outcomes of the project and the viability of silicon quantum computing and is therefore subject to various risks. The commercial future of the SILEX technology is therefore uncertain and any plans for commercial deployment are speculative.

Additionally, Silex has an interest in a unique semiconductor technology known as 'cREO®' through its ownership of subsidiary Translucent Inc. The cREO® technology developed by Translucent has been acquired by IQE Plc based in the UK. IQE is progressing the cREO® technology towards commercial deployment for 5G mobile handset filter applications. The outcome of IQE's commercialisation program is also uncertain and remains subject to various technology and market risks.

Forward Looking Statements

The commercial potential of these technologies is currently unknown. Accordingly, no guarantees as to the future performance of these technologies can be made. The nature of the statements in this Announcement regarding the future of the SILEX technology, the cREO® technology and any associated commercial prospects are forward-looking and are subject to a number of variables, including but not limited to, unknown risks, contingencies and assumptions which may be beyond the control of Silex, its directors and management.

You are strongly cautioned not to place reliance on any forward-looking statements, particularly in light of the current economic climate and the significant volatility, uncertainty and disruption caused by COVID-19 and other economic risk factors, as actual results could be materially different from those expressed or implied by such forward looking statements as a result of various risk factors. Further, the forward-looking statements contained in this Announcement involve subjective judgement and analysis and are subject to change due to management's analysis of Silex's business, changes in industry trends, government policies and any new or unforeseen circumstances. The Company's management believes that there are reasonable grounds to make such statements. Actual operations, results, performance, targets or achievement may vary materially from any projections and forward-looking statements and the assumptions on which those statements are based.

Except as required by law or regulation (including the ASX Listing Rules and OTCQX Rules for U.S. Companies), Silex does not intend, and is not obligated, to update the forward-looking statements and Silex disclaims any obligation or undertaking to update forward-looking statements in this Announcement to reflect any changes in expectations.

No representation, warranty or assurance (express or implied) is given or made in relation to any forward-looking statement by any person (including the Company or any of its advisers). In particular, no representation, warranty or assurance (express or implied) is given that the occurrence of the events expressed or implied in any forward-looking statements in this Announcement will actually occur.

Risk Factors

Risk factors that could affect future results and commercial prospects of Silex include, but are not limited to: ongoing economic and social uncertainty, including in relation to the impacts of the COVID-19 pandemic; the results of the SILEX uranium enrichment engineering development program; the market demand for natural uranium and enriched uranium; the outcome of the project for the production of 'Zero-Spin Silicon' for the emerging technology of silicon-based quantum computing; the potential development of, or competition from alternative technologies; the potential for third party claims against the Company's ownership of Intellectual Property; the potential impact of prevailing laws or government regulations or policies in the USA, Australia or elsewhere; results from IQE's commercialisation program and the market demand for cREO® products; decisions made or actions taken by the Company's commercialisation partners that could adversely affect the technology development programs; and the outcomes of various strategies and projects undertaken by the Company.