

# Uranium Enrichment Project Update

6 May 2025

Silex Systems Limited (**Silex**) (**ASX:SLX**; **OTCQX:SILXY**) is pleased to provide the following project update for the SILEX laser-based uranium enrichment technology.

## TRL-6 Pilot Demonstration Program Update:

Global Laser Enrichment (**GLE**), the exclusive licensee of the SILEX uranium enrichment technology, has commenced TRL-6<sup>1</sup> demonstration testing at its Test Loop facility in Wilmington, NC. The TRL-6 demonstration is a pivotal validation of large-scale enrichment performance under operationally relevant conditions, and absent unforeseen delays, is expected to be completed by the end of CY2025.

After progressing through an extensive period of preliminary testing, several engineering and operational modifications have been implemented in the pilot demonstration facility. The focus over the next few months will be on iterative testing and optimising of enrichment performance, undertaking any additional modifications that may be needed, and accumulating data from the enrichment tests to satisfy the requirements for TRL-6 validation. All test activities and results of enrichment tests are subject to assessment by an independent engineering contractor, which has been engaged by GLE on behalf of its joint venture owners, Silex and Cameco Corporation.

Meanwhile, Silex and GLE are leveraging the learnings from the TRL-6 test program to significantly progress the scaling and manufacturability of advanced, full-scale plant equipment, which will be used to achieve TRL-7 and MRL-7<sup>2</sup>. TRL-7 will culminate in the operation of full-scale plant equipment in a relevant plant-like environment and finalisation of related designs. For this purpose, GLE continues to develop and expand its in-house manufacturing capabilities at its new manufacturing (and headquarters) facility in Wilmington (refer below).

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

"Following my recent return from GLE, I remain confident in our plans to achieve the pivotal TRL-6 demonstration by the end of CY2025. The excellent efforts of our world-class teams at Silex and GLE, bringing together over two decades of cutting-edge development on the SILEX laser-based enrichment technology – and culminating in the current TRL-6 test program, can't be overstated. We are greatly encouraged by the progress being made and the team's commitment to achieving our demonstration project objectives."

<sup>1</sup> Technology Readiness Level 6 (TRL-6), as defined by DOE Technology Readiness Assessment Guide (G 413.3-4A)

<sup>2</sup> MRL: Manufacturing Readiness Level (DOD Guide at [dodmrl.com/MRL\\_Definitions\\_2010.pdf](https://dodmrl.com/MRL_Definitions_2010.pdf))

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“We look forward to continuing to support GLE through the completion of the enrichment testing program. Importantly, GLE is the only company in the world demonstrating novel third-generation laser enrichment technology at large-scale,” he added.

## US Government Support for GLE:

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GLE continues to pursue US Government support for its commercialisation strategy and deployment of the SILEX uranium enrichment technology.

Following GLE’s submission of its response to the US Department of Energy’s (**DOE**) Low Enriched Uranium (**LEU**) Enrichment Acquisition Request for Proposals (**RFP**), GLE was one of six awardees announced by the DOE for LEU Production in December 2024. The award provides a maximum aggregate value for all awardees totalling US\$3.4bn, with the final award value based on individual task orders to be agreed with the DOE. GLE was awarded its initial US\$0.5m funded task order in mid-April 2025 and work is underway to complete its requirements. This is a significant milestone that represents GLE’s first US Government funding in support of its commercialisation efforts and importantly, potentially lays the foundation for access to larger-scale funding. GLE hopes to continue to work with the US Government to achieve its objectives of providing a reliable supply of commercial nuclear fuel to support US energy security.

In addition to the LEU RFP, in March 2025 GLE submitted its response to the High-Assay Low-Enriched Uranium (**HALEU**) Nuclear Fuel Supply Chain Innovative Technology Notice of Funding Opportunity (**NOFO**), under which ~US\$80m in funding is available to support Demonstration Projects and Research and Development Projects aimed at addressing innovative technology advancement across the front-end nuclear fuel cycle. GLE could potentially attract up to US\$24m of this funding package, which is made available under the DOE’s HALEU Availability Program, authorised under the *Inflation Reduction Act (IRA)* in August 2022. The outcome of GLE’s submission for a share of the available funding is expected in the coming months.

## GLE’s PLEF Commercialisation Activities:

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GLE has continued to progress other key commercialisation activities in parallel to the TRL-6 technology demonstration program, including significant activities related to the planned Paducah Laser Enrichment Facility (**PLEF**). GLE’s key PLEF commercialisation activities, which are ongoing, include:

- Advancing technology maturation and manufacturing activities, including the establishment and operation of significant in-house manufacturing capability at GLE’s new headquarters facility, to support the commercialisation program;

- Installation of a third full-scale laser system module, designed and built at Silex's Lucas Heights facility, which will be commissioned shortly at GLE's new headquarters. This new and improved laser system represents a design iteration and will be used for TRL-7+ and MRL-7+ activities, which focus on full-scale operational reliability and manufacturability;
- Progressing the Nuclear Regulatory Commission (**NRC**) commercial plant licence for the PLEF. Following the submission of an Environmental Report to the US NRC in support of licensing for the planned PLEF in December 2024, GLE remains on track to submit the NRC's Safety Analysis Report in mid-CY2025, which will complete the licence application to the NRC; and
- Paducah, KY site activities, with GLE acquiring a 665-acre parcel of land for the planned PLEF situated adjacent to the DOE's former first-generation Paducah Gaseous Diffusion Plant, at which the legacy depleted uranium inventories (PLEF feedstock) are located. GLE has exclusive access to over 200,000 metric tonnes of these inventories, which will be used to produce natural grade uranium hexafluoride (UF<sub>6</sub>) with the SILEX technology at an equivalent annual output rate of up to 5 million pounds of uranium for three decades.

Subject to various factors, including the successful completion of TRL-6 pilot demonstration project, industry and government support, a feasibility study for the PLEF, and supportive market conditions, the SILEX uranium enrichment technology could become a major contributor to nuclear fuel production for the world's current and future nuclear reactor fleet, through the production of uranium in several different forms, including natural grade uranium as UF<sub>6</sub>, LEU and LEU+, and HALEU for next-generation advanced reactors, including small modular reactors.

### **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](http://www.silex.com.au) or by contacting:

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## **Forward Looking Statements and Risk Factors:**

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

Silex Systems Limited ABN 69 003 372 067 (Silex) is a technology commercialisation 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 TRL-6 pilot demonstration program, nuclear fuel market conditions, industry and government support, project feasibility and commercial plant licensing, and therefore remains subject to associated risks.

Silex is also at various stages of development of additional commercial applications of the SILEX technology, including the production of 'Quantum Silicon' for the emerging technology of silicon-based quantum computing. The 'Quantum Silicon' project remains dependent on the outcomes of the project as well as the successful development of silicon quantum computing technology by third parties, and is therefore subject to various risks. Silex is also conducting early-stage research activities in its Medical Isotope Separation Technology (MIST) Project, which is also subject to various risks and unknowns. The commercial future of the SILEX technology in application to uranium, silicon, medical and other isotopes is therefore uncertain and any plans for commercial deployment are speculative.

### **Forward Looking Statements**

The commercial potential of the abovementioned technologies and activities 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 as applied to uranium enrichment, Quantum Silicon production, medical and other isotope separation projects, and any associated commercial prospects, including TRL-6 achievement and other commercialisation milestones at GLE, are forward-looking and are subject to a number of variables, including but not limited to, known and unknown risks, contingencies and assumptions which may be beyond the control of Silex, its directors and management. You should not place reliance on any forward-looking statements 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 at any time due to variations in the outlook for, and management of, Silex's business activities (including project outcomes); changes in industry trends and government policies; and new or unforeseen circumstances. The Company's management believes that there are reasonable grounds to make such statements as at the date of this Announcement. Silex does not intend, and is not obligated, to update the forward-looking statements except to the extent required by law or the ASX Listing Rules.

### **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 global economic stresses such as interest rates and inflation; geopolitical risks, in particular relating to Russia's invasion of Ukraine and tensions between China and Taiwan which may impact global supply chains; uncertainties related to the effects of climate change and mitigation efforts; the results of the GLE/SILEX uranium enrichment pilot demonstration (TRL-6) program; the market demand for natural uranium and enriched uranium; the outcome of the project for the production of Quantum Silicon for the emerging technology of silicon-based quantum computing; the outcome of the MIST program; 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; actions taken by the Company's commercialisation partners and other stakeholders that could adversely affect the technology development programs and commercialisation strategies; and the outcomes of various strategies and projects undertaken by the Company.