



Silex
Systems Limited

Acceleration of GLE's CY2023 Pilot Demonstration Program for the SILEX Technology

23 February 2023

- GLE joint venture owners Silex (51%) and Cameco (49%) have agreed to a plan and budget for CY2023 that accelerates activities in the commercial-scale pilot demonstration project for the SILEX uranium enrichment technology
- Continued acceleration of the commercialisation plan beyond CY2023 remains conditional on the availability of government and industry support, along with geopolitical and market factors
- The CY2023 plan and budget involves bringing forward activities with an approximate doubling of project expenditures compared to CY2022 and creates the potential opportunity to complete the commercial-scale pilot demonstration project as early as mid-2024
- The earlier demonstration of the SILEX technology at commercial pilot scale preserves the option of commencing commercial operations at the planned Paducah Laser Enrichment Facility (PLEF) as early as 2027/28, up to three years earlier than originally planned

Silex Systems Limited (Silex) (ASX: SLX; OTCQX: SILXY) is pleased to announce an increase in funding for GLE's CY2023 demonstration program for the SILEX uranium enrichment technology, which creates the potential opportunity to complete the pilot demonstration project as early as mid-2024.

If the technology demonstration project can be successfully completed on an accelerated timeline, this preserves the option to commence commercial operations at the PLEF up to three years earlier than originally planned, subject to the availability of government and industry support, as well as geopolitical and market factors.

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

"In view of current market drivers, and in particular the potential for disruptions to the global nuclear fuel markets, Silex and Cameco have agreed to a significant uplift to the current year GLE operating budget. This provides GLE with the option of commencing commercial operations at the PLEF multi-purpose production plant as early as 2027/28 – up to three years earlier than previously planned."

“The key driver for this decision is the emergence of the ‘Triple Opportunity’ which has been precipitated as a result of Russia’s invasion of Ukraine, and the urgent need for the Western nuclear fuel industry to establish a secure supply chain with new production capacity, and to thereby minimise or eliminate reliance on Russian sourced nuclear fuel,” he added.

The Triple Opportunity for GLE and the PLEF multi-purpose production plant:

The Triple Opportunity includes the following three PLEF commercialisation options at a multi-purpose production plant, which are not necessarily sequential by nature. The order of priority for deployment will depend on government and industry support and market factors:

- 1) PLEF UF₆ Production:** Production of natural grade UF₆ (with U-235 assay of 0.7%) via processing of depleted tails (U-235 assays of 0.25% to 0.5%) with the SILEX technology (the original PLEF Project) which would come in the form of already converted uranium, thereby potentially helping to alleviate UF₆ conversion supply pressure;
- 2) PLEF LEU Production:** Production of low enriched uranium (LEU) (U-235 assays up to 5%) and LEU+ (assays from 5% to 10%) from natural UF₆ with separate SILEX enrichment capacity – to supply fuel for existing reactors;
- 3) PLEF HALEU Production:** Production of high assay LEU (HALEU) (U-235 assays up to ~20%) via enrichment with SILEX technology to supply fuel for next generation advanced SMRs.

The PLEF opportunities are underpinned by the landmark 2016 agreement between GLE and the US Department of Energy (DOE) which provides the feedstock for the production of equivalent natural grade uranium in the form of UF₆ over three decades, with the output sold into the global uranium market at an expected production rate equivalent to a uranium mine producing an annual output of up to 5 million pounds of U₃O₈, which would rank in the top ten of today’s uranium mines by production volume. Preliminary analysis by Silex of the PLEF UF₆ Production 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.

While the PLEF natural UF₆ production project has been in planning for several years, the opportunity for GLE to produce LEU/LEU+ fuel opened up in 2022 as a result of the geopolitical issues triggered by Russia’s invasion of Ukraine and the possibility of disruption to the supply of Russian-sourced nuclear fuel. Similarly, potential production of HALEU at the PLEF has become an emergent opportunity as western nuclear fuel supply chains prepare for the exclusion of Russian-sourced HALEU required to fuel many advanced SMR designs. This contributed to the US Congress passing the Inflation Reduction Act in August 2022 with US\$700 million in funding support for the DOE’s HALEU Availability Program. GLE intends to apply to be a participant in this program.

Subject to the successful completion of the pilot demonstration project, government and industry support and other market 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 fleets.

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:

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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 engineering scale-up program and nuclear fuel market conditions 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 '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 100% ownership of subsidiary Translucent Inc. The cREO® technology developed by Translucent has been acquired by IQE Plc based in the UK. IQE has paused the development of the cREO® technology until a commercial opportunity arises. The future of IQE's development program for cREO® is very 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 Report regarding the future of the SILEX technology as applied to uranium enrichment and Zero-Spin Silicon production, 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 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 Report 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 as at the date of this Report. 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 the impacts of the COVID-19 pandemic; geopolitical risks, in particular relating to Russia's invasion of Ukraine and tensions between China and Taiwan which may impact global supply chains among other risks; uncertainties related to the effects of climate change and mitigation efforts; 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; whether IQE's commercialisation program for cREO® is resumed, the results from the program and the market opportunities for cREO® products; 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.