

Zero-Spin Silicon Project: SQC Announces World's First Quantum Integrated Circuit

23 June 2022

Silex Systems Limited (Silex) (ASX: SLX) (OTCQX: SILXY) provides the following update with regard to Zero-Spin Silicon (ZS-Si) project partner, Silicon Quantum Computing Pty Ltd (SQC).

SQC announced today in the prestigious journal Nature, that it has manufactured the world's first integrated circuit at the atomic scale, which effectively opens the door towards building a commercial quantum computer. SQC advised that the fabrication of the world's first-ever quantum computer circuit has been achieved two years ahead of schedule. The result is also validation of SQC's atomic manufacturing capabilities, having integrated multiple atomic components to build the processor within a single device at its facility in Sydney, Australia.

The quantum integrated circuit was built in a layer of enriched silicon, a key enabling material available only in limited supply mostly from Russia. In order to establish a reliable supply chain which eliminates current geopolitical risks, Silex is undertaking a project to apply a variant of its SILEX laser isotope separation (LIS) technology to produce highly enriched silicon in the form of ZS-Si, in conjunction with SQC and UNSW Sydney (UNSW). Establishment of a secure, cost-effective supply of ZS-Si is critical for the emerging silicon quantum computing industry.

The third stage of the ZS-Si project at Silex's Lucas Heights facility is progressing rapidly, with the construction of a pilot demonstration facility well advanced. The pilot facility is designed to achieve production of up to 5 kilograms of ZS-Si annually. The first quantities of commercial ZS-Si product are planned to be purchased by SQC under an Offtake Agreement that was executed in December 2019. The Agreement includes SQC making three annual payments of \$300,000 (all of which have been received) as an offset against future purchases of ZS-Si by SQC.

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

"We congratulate Michelle and the world class SQC team on this very significant achievement, to build a quantum computing processor that can be scaled to meet the stringent requirements for quantum computing hardware. We are delighted to continue to partner with the SQC and UNSW teams in support of their quest to build a silicon quantum computer in the coming years. The continued support of the Federal Government's Cooperative Research Centres Projects program for the ZS-Si project is also greatly appreciated."

SQC founder, Michelle Simmons AO, said today:

“This is a major breakthrough. Development of SQC’s atomic-scale circuit technology will allow the company and its customers to construct quantum models for a range of new materials, whether they be pharmaceuticals, materials for batteries, or catalysts.”

The overall objective of the ZS-Si project is to apply the SILEX LIS technology to produce ZS-Si with higher purity than currently available with attractive economics, and to establish the manufacturing technology and capability to scale-up production in line with anticipated increasing demand for ZS-Si as silicon-based quantum computing continues to develop over the next decade.

Further information can be found on Silicon Quantum Computing’s website at: sqc.com.au.

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 uranium 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 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 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 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 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 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; 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.