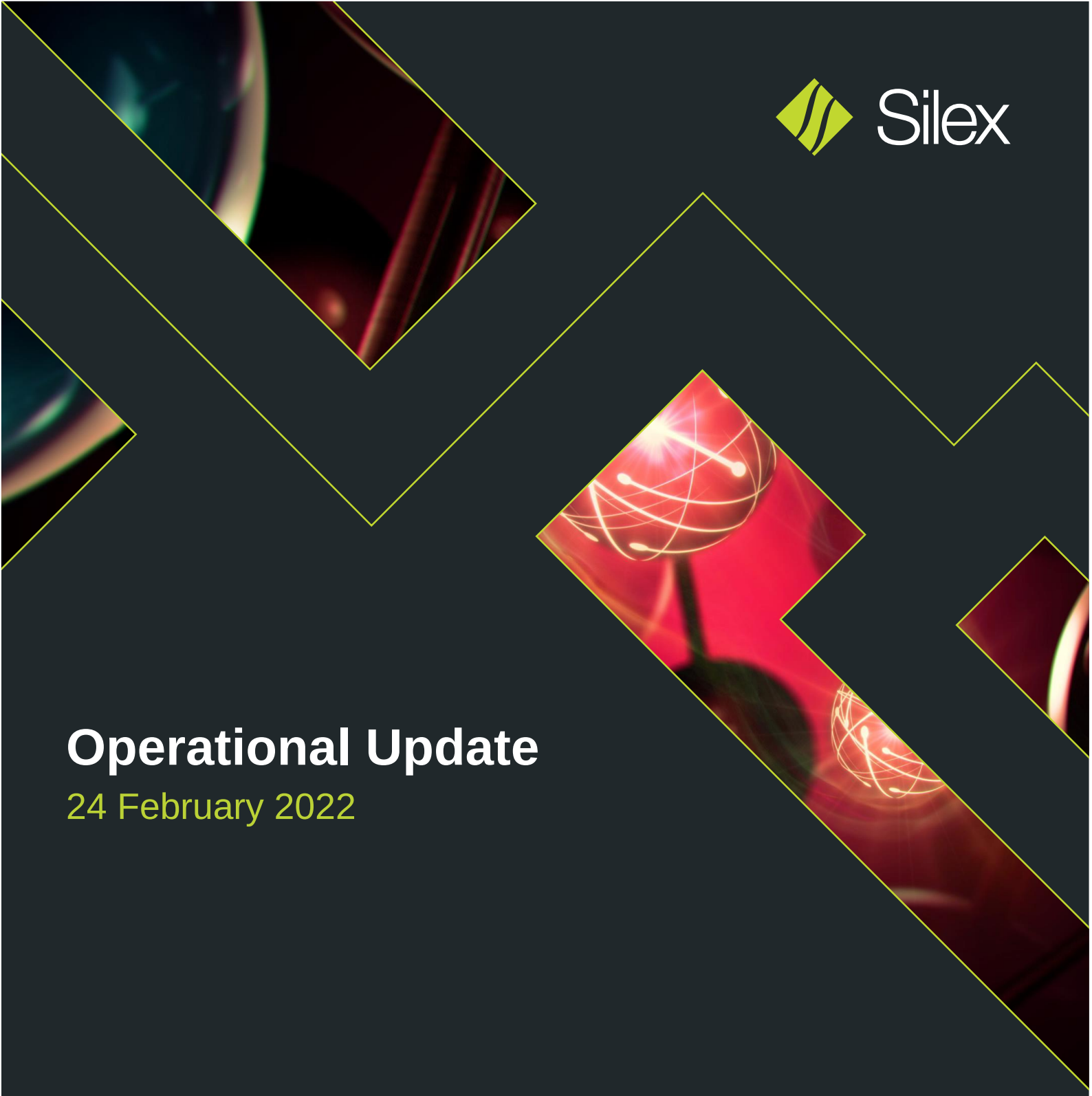

Operational Update

24 February 2022

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Recent Highlights and Progress

- GLE, the jointly controlled joint venture between Silex and Cameco Corporation, with 51% and 49% ownership interest respectively, continues to make good progress in the execution of GLE's technology demonstration project and commercialisation strategy;
- Silex and GLE are currently focused on construction of full-scale laser and separator equipment which will be deployed in GLE's Test Loop facility in Wilmington, North Carolina, with the aim of completing a commercial pilot (TRL-6[1]) demonstration of the SILEX uranium enrichment technology by the mid-2020's;
- Engineering scale-up activities are advancing well (in line with budget and schedule) with the first SILEX laser system module reaching an important milestone after completion of initial testing (announced in October 2021);
- GLE appointed a new Chief Executive Officer (Mr Stephen Long) and a new Chief Commercial Officer (Mr James Dobchuk) - announced on 16 August 2021 and 15 June 2021 respectively, with both executives now executing the GLE business plan;
- New engineering hires were made for both the GLE technology team in Wilmington, NC and for the Silex technology team in Lucas Heights, Sydney, with several additional new hires expected over the coming months;
- GLE's path to market is underpinned by the Paducah commercial opportunity which is potentially akin to a 'Tier 1' uranium resource, capable of producing up to 2,000 tonnes of natural UF_6 (approximately 5 million pounds U_3O_8 equivalent) per year for approximately 30 years, which would rank in the top ten of current uranium mines by production volume;
- In February 2022, GLE submitted a response to a Request for Information (RFI) issued by the US Department of Energy (DOE) in relation to the establishment of a DOE HALEU Availability Program. This follows an internal assessment of the opportunity to produce High Assay Low Enriched Uranium (HALEU), a key fuel for next generation advanced Small Modular Reactors (SMRs) which are being developed by several organisations around the world for commercial deployment starting from around 2030; and
- The Company achieved a key milestone for the Zero-Spin Silicon (ZS-Si) project in January 2022, with the completion of Stage 2 of the project, involving successful demonstration of the SILEX laser isotope separation technology for the production of ZS-Si with a prototype-scale facility.

[1] Technology Readiness Level 6 (TRL-6) as defined in DOE Technology Readiness Assessment Guide 'DOE G 413.3-4A'

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 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:

- ***natural grade uranium (U_{nat}):*** via enrichment of DOE inventories of depleted tails through the Paducah Laser Enrichment Facility (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%;
- **low enriched uranium plus (LEU+):** a new grade of fuel with U^{235} assays between 5% and 10% being considered by several utilities for use in conventional large-scale nuclear reactors to improve economic performance, and additionally by some developers of Small Modular Reactors (SMRs); and
- **high assay LEU (HALEU):** a customised fuel for next generation advanced SMRs currently under development – several of which require fuel with U^{235} assays up to 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 licensee 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.

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

The Paducah commercial project opportunity is an ideal path to market for the SILEX uranium enrichment 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 involves GLE constructing the proposed 'Paducah Laser Enrichment Facility' (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 approximately 0.25% to 0.4%) to produce natural grade uranium (assay of ~0.7%). 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 UF_6 at the PLEF would continue for approximately 30 years, with the output sold into the global uranium market. The PLEF will potentially produce at a rate equivalent to a uranium mine with an annual output of up to 5 million pounds of uranium oxide, ranking in the top ten of today's uranium mines by production volume. Preliminary analysis by Silex of the PLEF project indicates that if current project metrics hold firm, it could rank as a 'Tier 1' uranium resource based on estimates of the longevity and low cost of production.

Nuclear Power Outlook and Market Update:

Nuclear power today plays a key role in the supply of carbon-free base load electricity and is anticipated to play an increasing role in the energy mix as countries around the world adopt energy policies to meet increasingly more urgent net zero-targets. As evidenced at the 26th Conference of the Parties to the UN Framework Convention on Climate Change (COP26) held in Glasgow in November 2021, there are many countries which have prioritised government policy initiatives relating to tackling climate change and ensuring energy security, stating that nuclear power should form a meaningful part of their energy mix in the future.

According to the World Nuclear Association, there are currently 437 operable nuclear reactors globally with 57 reactors under construction and hundreds more planned. Today's operating reactor fleet currently generate ~10% of the world's electricity supply. These numbers could rise significantly over the next decade as governments strive to address climate change.

The US is the world's largest producer of nuclear power with 93 operable reactors, currently accounting for more than 30% of worldwide nuclear generation of electricity. Despite bold nuclear construction programs in China, India and the Middle East, the US is expected to remain the largest nuclear power generator for many years to come. Growth in demand for nuclear power is also being evidenced with life extensions for existing reactors. In the US, nearly all of the operable reactors have been granted operating licence extensions from 40 to 60 years, with some potentially operating for 80 years or more.

There is also growing interest and significant investment being made into the development of next generation Small Modular Reactor (SMR) technologies. Several advanced SMRs are being designed to operate with HALEU fuel, whilst other SMRs will use conventional LEU fuel or in some cases, LEU+ fuel.

The outlook in the markets for nuclear fuel continue to improve with increasing concerns regarding security of supply over the longer term. The uranium spot price is currently ~US$43/lb, having increased in recent years from a low of US$18/lb. The term price of enrichment has also improved significantly in recent years and increased more than 10% to ~US$63/SWU in the last 12 months. The improvements in the uranium price along with the price of enrichment reflect growing concerns that a structural supply deficit is set to occur unless additional uranium resources are brought to market over the coming years.

With significant growth forecasted in nuclear power generation around the world and the ever-increasing awareness of the adverse effects of climate change, we remain encouraged by the opportunities emerging for the SILEX technology and GLE in the global nuclear industry. We believe the SILEX technology - the only third-generation laser enrichment technology being commercialised in the world today, can help make nuclear power a more efficient and cost-effective solution for carbon-free base load electricity generation.

Zero-Spin Silicon for Quantum Computing Processor Chips

In December 2019, Silex launched a new R&D project in conjunction with project partners Silicon Quantum Computing Pty Ltd (SQC) and UNSW Sydney (UNSW), to develop a process for the commercial production of high-purity 'Zero-Spin Silicon' (ZS-Si) using a variant of the SILEX laser isotope separation (LIS) technology. ZS-Si is a unique form of isotopically enriched silicon required for the fabrication of next generation processor chips which will power silicon-based quantum computers.

We remain confident the SILEX LIS technology has the potential to efficiently produce ZS-Si and provide a secure supply for project partner and initial customer SQC, in support of its world-leading silicon-based quantum computing technology being developed in conjunction with UNSW. The three-year project is due for completion at the end of CY2022 and will cost around $8m in total. The project was awarded a $3m Federal Government funding grant from the CRC-P in February 2020, with SQC contributing another $1.8m including $900k in equity and $900k in advanced ZS-Si purchases.

Stage 2: Validation of the SILEX technology for ZS-Si production – completed:

On 1 February 2022, Silex announced the successful completion of Stage 2 of the ZS-Si Project – Validation of the SILEX technology using the Prototype Demonstration Facility. Testing with this facility, which includes scaled-up gas-handling, process reactor and laser systems, successfully demonstrated the scalability and efficiency of the SILEX LIS technology for production of high-purity ZS-Si. The Stage 2 prototype facility is currently undergoing expansion and upgrades required for the completion of Stage 3 of the project.

Stage 3: Demonstration of ZS-Si production at commercial pilot scale - ongoing:

The third stage, scheduled to be completed at the end of CY2022, will culminate with the planned production of initial commercial quantities of ZS-Si from a SILEX pilot production facility and a detailed techno-economic assessment of the ZS-Si business case. The first commercial quantities of ZS-Si produced from the pilot facility will be purchased by SQC under an Offtake Agreement executed in December 2019. Silex will retain ownership of the ZS-Si production technology and related Intellectual Property developed through the project.

Quantum Computing and ZS-Si Outlook:

Quantum computers are expected to be thousands of times more powerful than the most advanced of today's conventional computers, opening new frontiers and opportunities in many industries, including medicine, artificial intelligence, cybersecurity and global financial systems. Many countries around the world are investing heavily in the development of quantum computing technology, with governments and key corporates (such as Intel, IBM, Google, Microsoft and others) vying for leadership in this emerging strategic industry.

Current methods for production of enriched silicon are limited and costly with only a few kilograms produced annually, mostly using gas centrifuge technology. Should the ZS-Si project be successful, it could potentially enable Australia to establish itself as a world-leader in ZS-Si production. If the market for ZS-Si evolves, this could create a new value-added export market. As the ZS-Si project progresses, Silex will engage with other potential customers, possibly including some global computer chip manufacturers who are also developing silicon quantum computing technology.

cREO® Semiconductor Technology

Silex's cREO® technology was purchased by UK-based IQE in 2018. IQE is the global leader in the design and manufacture of advanced semiconductor wafer products used in many of today's advanced semiconductor devices and is a key player in the emerging 5G wireless technologies market.

In November 2020, IQE announced the successful development of a new high frequency (RF) filter product (called IQepiMo™) which is built on the cREO® template technology. IQE reported in February 2021 the achievement of a key demonstration milestone for IQepiMo™ with significant improvement in the performance of its 5G filter device measured at the high-end frequency range, compared to incumbent technology.

Minimum annual royalties have been payable by IQE since CY2019 with the CY2021 minimum royalty of US$500k due in February 2022. In addition, a perpetual royalty of at least 3% will be payable to Silex on the sale of any IQE products that utilise the cREO® technology.

Workplace Health and Safety and COVID-19

Over the past year we have continued to focus on the health, safety and well-being of our team members across all sites and we reported no lost time injuries or reportable incidents. There continues to be uncertainty associated with the ongoing COVID-19 pandemic. Although full-time operations were maintained at the Company's Lucas Heights facility for most of FY2021 and into 2022, there have been minor but manageable delays as a result of the impacts of the pandemic, including as a result of public health orders and more recently supply chain impacts. Efforts to safely minimise disruptions to the Company's activities are ongoing. Above all else, the health, safety and well-being of our people is paramount.

Financial Overview

During the half-year ended 31 December 2021, the Company completed an equity raise by way of a placement which was followed by a Share Purchase Plan (SPP). The net proceeds from the placement and SPP were $38.4m. As of 31 December 2021, the Company had net assets of ~$55m, including ~$49.2m in cash and term deposits and approximately ~$4.2m in IQE shares.

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 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 100% ownership of subsidiary Translucent Inc. The cREO® technology developed by Translucent has been acquired by IQE Plc based in the UK. IQE is developing the cREO® technology towards potential 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 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.