



Investor Presentation

4 May 2020

Silex Systems Limited (Silex) (ASX: SLX) (OTCQX: SILXY) has updated its Investor Presentation (attached). The presentation is intended for shareholders and other stakeholders on the Company's ongoing activities and covers a number of recent developments, including but not limited to the following:

- The execution of the binding purchase agreement in December 2019 underpinning the restructure of SILEX technology licensee, Global Laser Enrichment (GLE);
- The commencement of the process to obtain US Government approvals for the GLE restructure;
- The steady recent increase in the uranium market price, continuation of which will be a key driver for the future viability of the Paducah Laser Enrichment Project;
- The release of a report last week by the US Department of Energy (DOE) on "*Restoring America's Competitive Nuclear Energy Advantage*" commissioned by the White House; and
- The launch in late 2019 of the Zero-Spin Silicon project utilising a variant of the SILEX technology and the \$3m funding contribution from the Federal CRC-P grant program.

Further information on these recent developments has either been released by the Company to the ASX (and can be found on our website) and/or has been released publicly by the organisation concerned. The Company is heartened by these positive developments and believes that, subject to the many market variables and industry influences, future prospects for our technologies will continue to strengthen.

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 Business Risks:

Silex Systems Limited (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 was licensed exclusively in 2006 to GE-Hitachi Global Laser Enrichment LLC (GLE) in the USA for application to uranium enrichment. GLE has been undergoing a restructure for a number of years after GE-Hitachi disclosed it was seeking to exit the venture. In view of the time the GLE restructure has taken to date and the dependency of the Closing of the restructure on obtaining US Government approvals, combined with the continuing depressed nuclear fuel market conditions, plans for commercial deployment of the SILEX technology have been significantly delayed, and remain at risk.

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 at risk.

The future of the SILEX technology is therefore highly uncertain and any plans for commercial deployment are speculative.

Silex also 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 in various advanced semiconductor products. The outcome of IQE's commercialisation program is also highly uncertain and remains subject to various technology and market risks.

The commercial potential of these technologies is currently unknown. Accordingly, the statements in this announcement regarding the future of the SILEX technology, the cREO™ technology and any associated commercial prospects are forward looking and actual results could be materially different from those expressed or implied by such forward looking statements as a result of various risk factors.

Risk factors that could affect future results and commercial prospects include, but are not limited to: the outcome of the GLE restructure including obtaining US Government approvals; 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; and the outcomes of various strategies and projects undertaken by the Company.



Silex Systems Limited Investor Presentation

(ASX: SLX) (OTCQX: SILXY)

Dr Michael Goldsworthy
CEO/Managing Director

May 2020

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Silex Systems Limited (Silex) has prepared this presentation based on information available to it. The information in this presentation does not purport to be a complete description of Silex and/or its business activities. Except as required by law, no representation or warranty, express or implied, is made by Silex as to the fairness, accuracy, completeness or correctness of the information, opinions and conclusions contained in this presentation, or as to the reasonableness of any assumption contained in this presentation. By receiving or viewing this presentation and to the extent permitted by law, you release Silex and its directors, officers, employees, agents and affiliates from any liability (including, without limitation, in respect of direct, indirect or consequential loss or damage, or loss or damage arising by negligence) arising as a result of the reliance by you or any other person on anything contained in or omitted from this presentation.

This presentation should be read in conjunction with other disclosures that have been lodged by the Company with the Australian Stock Exchange.

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The views and opinions expressed herein are solely those of Silex and do not reflect the view of GE-Hitachi Global Laser Enrichment LLC, or its owners or subsidiaries.



Silex is a platform technology company focused on the commercialisation of our innovative SILEX laser enrichment technology across multiple markets

Two technologies being commercialised:

- 1) SILEX Laser Isotope Separation Technology
- 2) cREO™ Advanced Semiconductor Material Technology

Three commercial applications under development:

- 1) SILEX Uranium Enrichment Project with US-based Global Laser Enrichment (GLE)
- 2) SILEX Zero-Spin Silicon (ZS-Si) Project with UNSW Sydney and Silicon Quantum Computing
- 3) cREO™ 5G Handset component product development by UK-based IQE Plc

Three revenue models being pursued:

- 1) Licence / Royalty based revenues – SILEX Uranium Enrichment and cREO™
- 2) Equity based revenues – moving to 51% equity interest in GLE
- 3) Producer-based revenues – internal production of ZS-Si for silicon quantum computing

Target industry sectors are significant markets



Nuclear Fuel

Uranium market

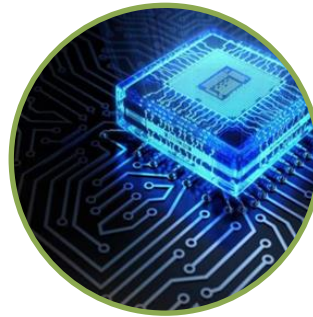
~ US\$7bn (est. 2022)

Enrichment market

~ US\$3bn (est. 2022)

SMR fuel market ~ TBD

(Source: UxC, UMO and EMO Q2, 2020)



Quantum Computing

Potential market

~ US\$1bn (by 2025)

(Source: [marketwatch.com/press-release/quantum-computing-market-size-growth-opportunity-and-forecast-to-2025-2020-04-19](https://www.marketwatch.com/press-release/quantum-computing-market-size-growth-opportunity-and-forecast-to-2025-2020-04-19))



5G Front End

Handset components

~US\$3bn (by 2023)

(Note: cREO™ based components likely to be a small fraction of this market)

(Source: investors.iqep.com/media/1921/iqep-trading-update-24mar2020-presentation.pdf)

- ❑ Secure the commercialisation path for our core asset - the SILEX technology - in the primary application of uranium enrichment
- ❑ Preserve the Paducah commercial opportunity and the underpinning 2016 Agreement between GLE and the US Department of Energy in order to capitalise on the recovery in the uranium market
- ❑ Increase our involvement in the SILEX commercialisation program in the US through the purchase of a majority equity interest in GLE – exclusive licensee of the SILEX uranium enrichment technology
- ❑ Develop the credentials of GLE and the SILEX technology as a potential supplier of High Assay Low Enriched Uranium (HALEU) fuel for next generation small modular reactors in the US
- ❑ Develop alternative uses of the SILEX laser isotope separation technology – commencing with the application to production of Zero-Spin Silicon for use in silicon quantum computing
- ❑ Build on our core expertise and maintain our Sydney facility as a centre of innovation
- ❑ Focus on effective cost management to ensure the most efficient use of cash reserves

Highlights of the Past Year

- ❑ Silex and Cameco signed a binding agreement in December 2019 for the restructure of SILEX technology licensee – GLE, involving the joint purchase of GE-Hitachi's 76% interest in GLE
- ❑ Subject to obtaining US government approvals, completion of the restructure will result in Silex holding 51% interest in GLE and Cameco increasing its interest from 24% to 49%
- ❑ A focused joint effort continues on the SILEX technology commercialisation program at the Silex (Sydney) and GLE (Wilmington, US) project sites
- ❑ Silex launched a project in December 2019 for application of SILEX laser technology for production of 'Zero-Spin Silicon' – a key material used in the emerging silicon quantum computing industry
- ❑ The Zero-Spin Silicon (ZS-Si) project, being conducted in collaboration with UNSW Sydney and Silicon Quantum Computing (SQC) received a \$3 million CRC-P funding grant in January 2020
- ❑ Silex and SQC signed an offtake agreement for the sale of initial ZS-Si product to SQC, who also acquired a small equity interest in Silex via a placement
- ❑ Payment of US\$400k was received from UK-based IQE Plc in March 2020 for the initial minimum royalty pursuant to IQE's purchase of Silex subsidiary Translucent's 'cREO™' technology



SILEX Laser Uranium Enrichment Technology

SILEX - third generation enrichment technology

- SILEX - **S**eparation of **I**sotopes by **L**aser **EX**citation
- Highly selective laser excitation of $^{235}\text{UF}_6$ drives efficient isotope separation
- High enrichment efficiency expected to make SILEX technology very cost competitive
- Only known 3rd generation enrichment commercialisation project in the world today

Uranium Enrichment Technology

1ST GENERATION TECHNOLOGY

GASEOUS DIFFUSION



$\beta = 1,004$

High cost

Obsolete

2ND GENERATION TECHNOLOGY

CENTRIFUGE



$\beta = 1.25$

Lower cost

Current technology

3RD GENERATION TECHNOLOGY

LASER EXCITATION

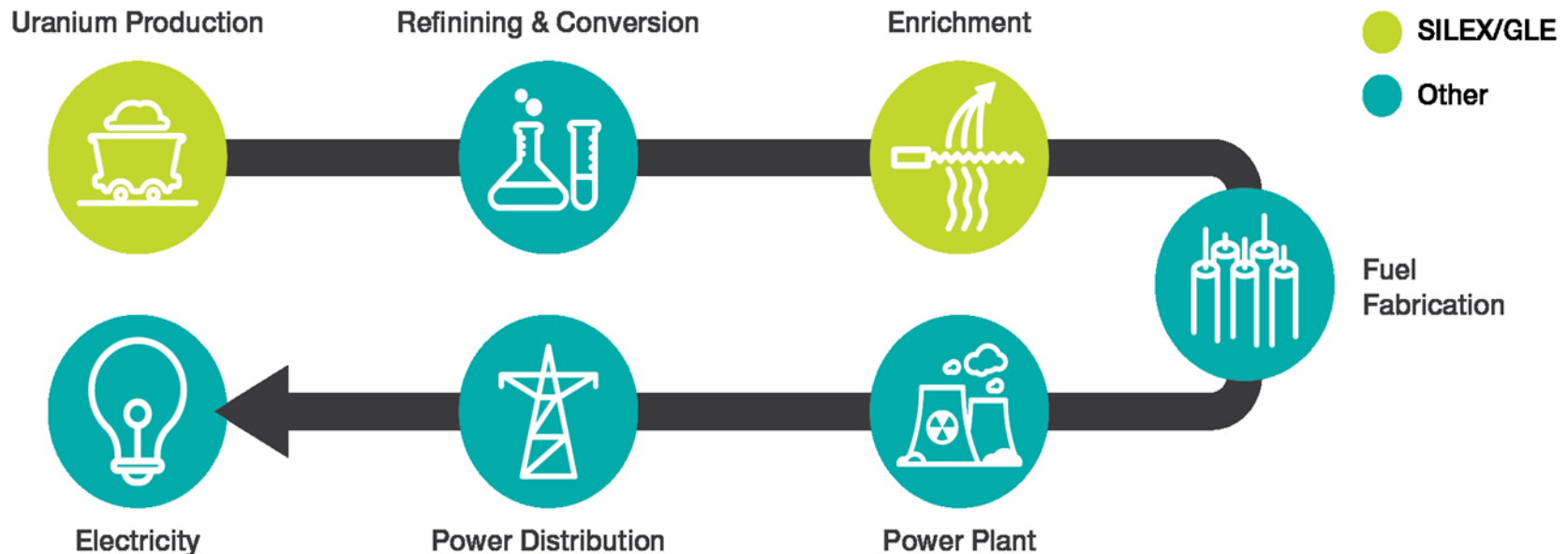


$\beta = 2 - 20^1$

Most cost effective

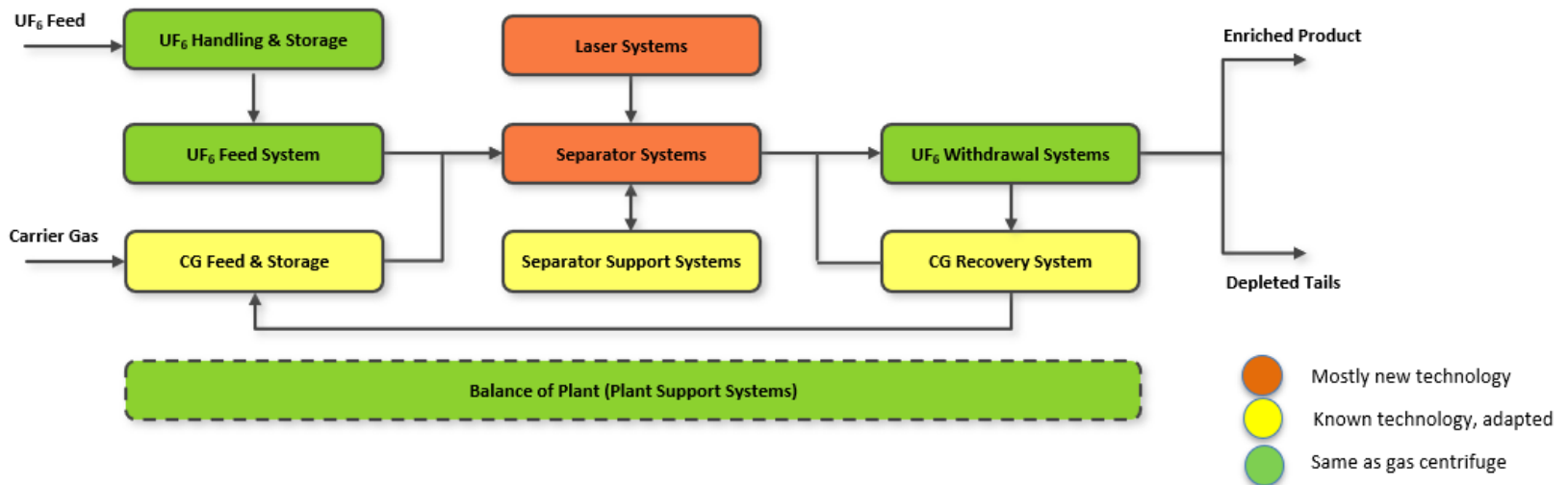
In commercialisation phase

1. β is the process efficiency (Classified number)



- The SILEX technology can be utilized to produce:
 - i) natural grade uranium via re-enrichment of tails inventories (Paducah project)
 - ii) enriched uranium for use as fuel in nuclear power reactors (including HALEU)
- Uranium production (~45%) and enrichment (~25%) comprise ~70% of the value in a fuel bundle (based on recent market pricing)

- Commercialisation program ~ US\$500 million invested to date
- Phase I - Technology Validation: completed in 2013 at GLE's Test Loop Facility in the US
- Phase II - Engineering and Economic Validation: includes demonstration of full-scale commercial production capability and preparation for commencement of the Paducah project
 - *Phase II activities continue with good progress being made at GLE's Wilmington Test Loop facility in the US and at Silex's Lucas Heights facility, albeit with reduced resources*





The GLE Restructure

- Silex to acquire a 51% interest in GLE – Cameco to increase their interest from 24% to 49%
- No upfront consideration – deferred annual purchase payments (4 x US\$5 million) triggered after 1st year GLE generates US\$50 million in revenues
- A Site Lease will support GLE's activities at the Wilmington Test Loop facility for an initial term of 3 years with options to extend
- A Transition Services Agreement will provide various site support services from GEH until GLE transitions these services to its own account
- Closing remains subject to US government approvals (expected late CY2020) and other factors
- Silex and Cameco also agreed on an option for Cameco to purchase (at fair market value) from Silex an additional 26% interest in GLE, potentially increasing their interest to 75% in the future



The SILEX Technology License Agreement and the Paducah Opportunity

Technology License Agreement with GLE:

- Exclusive worldwide commercialisation and license agreement for the SILEX laser uranium enrichment technology – signed in 2006
- Technology validation milestone May 2013 – triggered US\$15 million payment to Silex
- Agreement provides for a perpetual royalty and a further US\$20 million in milestone payments
- Royalty streams payable upon use of SILEX technology for both normal uranium enrichment and tails re-enrichment operations
- Perpetual royalty in range of 7% to 12% of future GLE revenues from commercial operations (based on calculation of cost per unit production installed)

- Sales Agreement between GLE and DOE signed in November 2016 – for the sale of DOE tails inventories to GLE - underpins the Paducah Laser Enrichment Project
- Re-enrichment of DOE tails inventories equivalent to a large, low cost uranium mine operating for several decades
- SILEX efficiency enables economic tails stripping capability and provides potentially attractive economics
- Paducah opportunity represents an ideal path to market – smaller plant and lower capital cost
- Economic return will be driven primarily by a recovery in the uranium price
- Project plans and timing of commercial deployment are dependent on market conditions, licensing requirements and ongoing discussions with various stakeholders



Paducah, KY Enrichment Plant Site



Nuclear Power Growth and Market Outlook

- ❑ Proven, robust and reliable base-load generation
- ❑ Largest source of carbon-free power in the US, EU and developing economies - key to climate change mitigation
- ❑ Affordable and reliable electricity to a growing global population - low generation cost per unit (LCOE of around \$100 /MWh or 10c /kWh – IEA World Energy Outlook 2018)
- ❑ Electricity generated is dispatchable on demand and able to be varied up or down with grid loading
- ❑ Power price stability – nuclear fuel is a low proportion of total power cost ~30% (coal fired plant ~80%, gas-fired plant ~90%)
- ❑ 6 nuclear reactors connected globally to the grid in the 12 months ended April 2020
- ❑ 55 nuclear reactors under construction globally today, with another 110 reactors planned



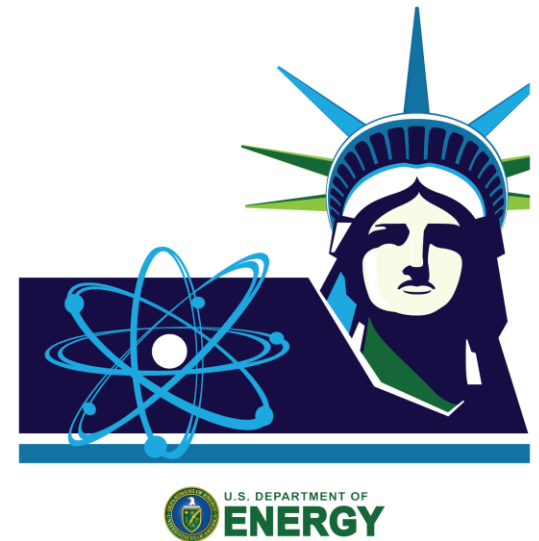
Next generation of nuclear reactors may offer significant advantages over large conventional reactors

- ❑ Modular, smaller size (50 MWe to 300 MWe) allows flexibility in deployment
- ❑ Likely to be competitive with distributed generation such as renewables, and also competitive in deregulated markets
- ❑ Designed for production-line manufacturing rather than custom built capital projects – significant reduction in capital costs and shorter construction times
- ❑ Around 20 different designs being developed – expected to reduce to a few
- ❑ Leading contenders anticipated to be introduced commercially around 2030
- ❑ Several SMR designs use High Assay Low Enriched Uranium (HALEU) - SILEX technology can provide a flexible low cost alternative to produce HALEU for SMRs

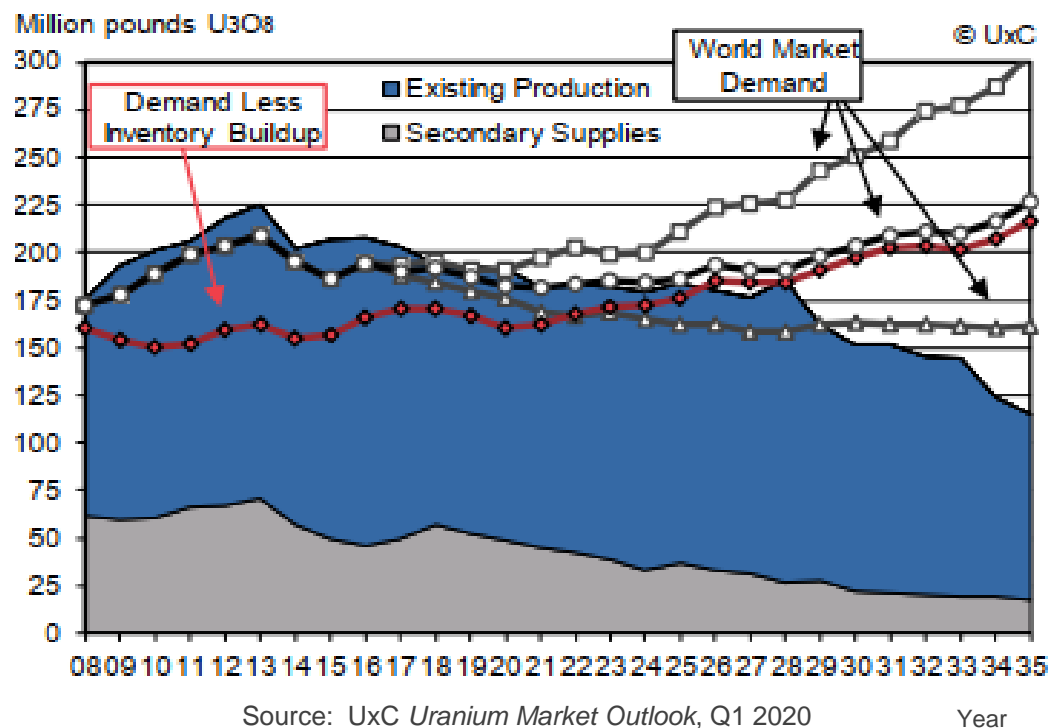
US Nuclear Industry Review

- ❑ Growing concerns the US has fallen behind China, Russia and other state-owned enterprises in nuclear technology
- ❑ US nuclear fuel supply is currently dominated by foreign imports for uranium, and foreign enrichment providers
- ❑ Nuclear Fuel Working Group appointed by the White House in July 2019 to undertake review of US nuclear industry
- ❑ Report released by the DOE on 23 April 2020 recommends several measures to bolster the US nuclear fuel industry
- ❑ Overall positive for GLE as an aspiring domestic supplier of uranium (Paducah project) and enrichment for current and advanced small modular reactors
- ❑ Little detail available on how measures will be implemented or funded, but GLE continues to promote its credentials as a future US fuel supplier with the SILEX laser technology

**RESTORING AMERICA'S COMPETITIVE
NUCLEAR ENERGY ADVANTAGE**
A strategy to assure U.S. national security

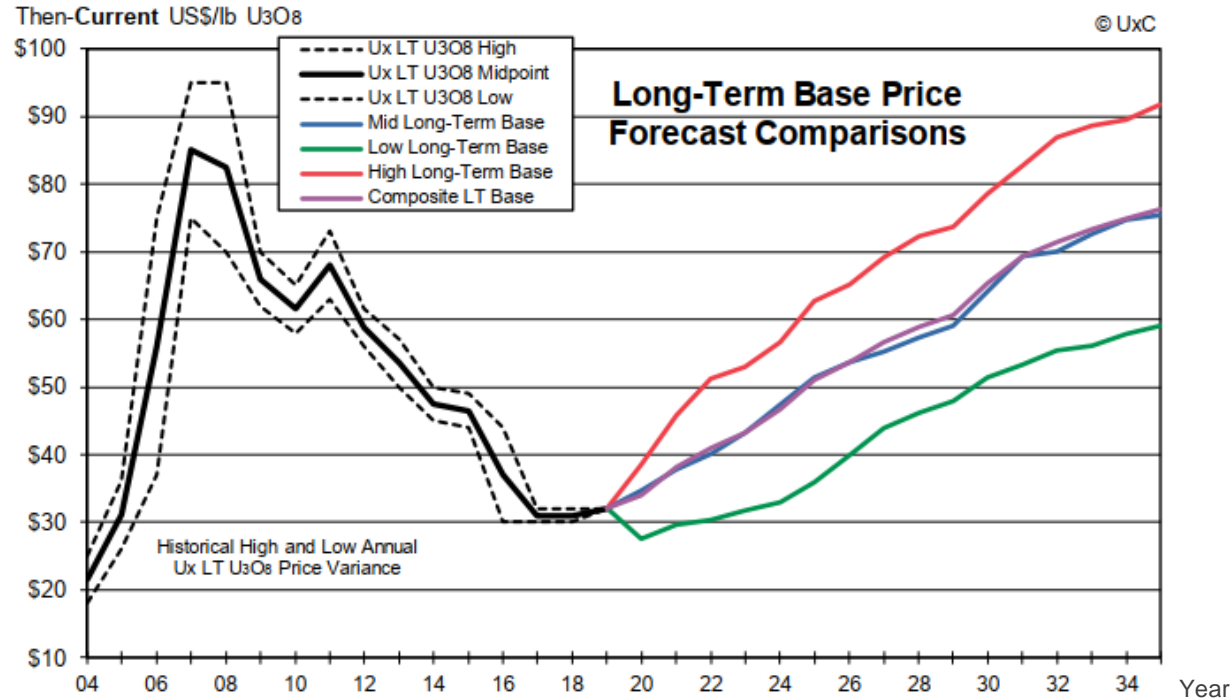


Uranium Supply and Demand Forecast



- Uranium supplies will remain excess to demand, under the mid-case scenario, until around 2027
- Secondary uranium supplies include production from underfeeding and tails re-enrichment

Uranium Mid Long-Term Base Price Forecast



Source: UxC Uranium Market Outlook, Q1 2020

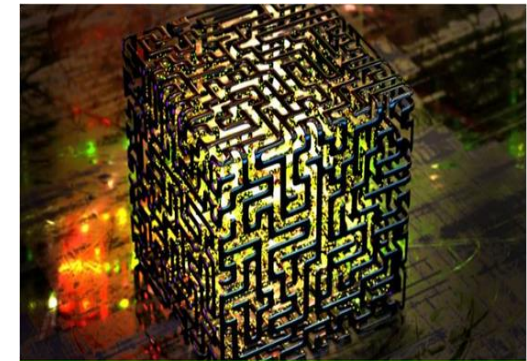
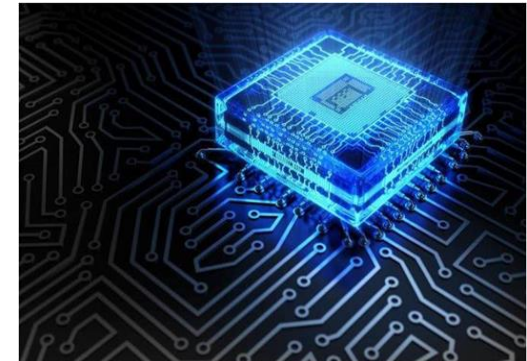
- UxC forecast the mid-case uranium price recovering to over US\$50/lb from around 2025
- Recovery of the uranium market price is key to the viability of the Paducah project



Zero-Spin Silicon Project for Quantum Computing

ZS-Si : Silicon Enrichment Project for Quantum Computing

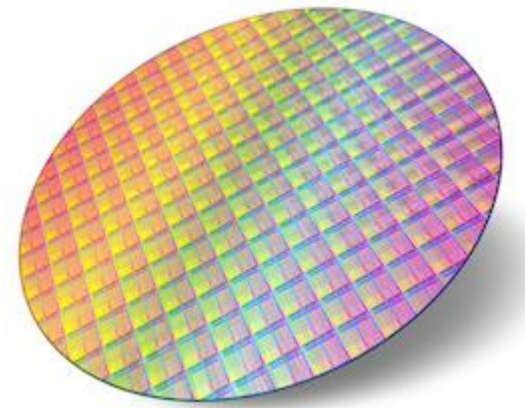
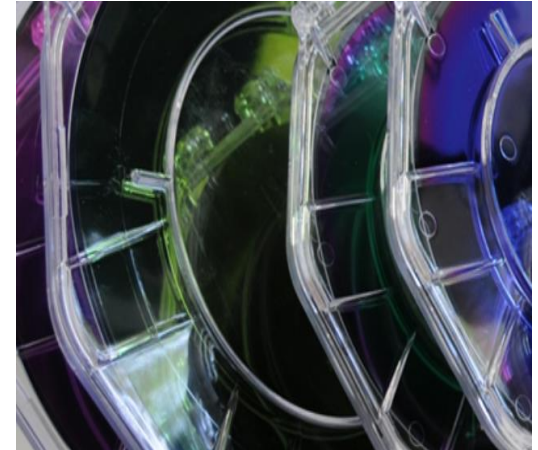
- ❑ Stable isotope program underway to utilise our significant Laser Isotope Separation (LIS) expertise for semiconductor and medical applications
- ❑ Zero-Spin Silicon (ZS-Si) is a unique form of isotopically enriched silicon required for the fabrication of next-generation processor chips which will power silicon-based quantum computers (QC)
- ❑ Silex's LIS technology being developed to produce ZS-Si and provide a secure supply for Silicon Quantum Computing Pty Ltd (SQC) in support of its efforts to commercialise silicon quantum computing in conjunction with UNSW Sydney
- ❑ ZS-Si is the key enabling material for silicon-based quantum processors and is required to support the development and anticipated global growth of silicon-based QC technology
- ❑ Collaboration project over 3 years being conducted with UNSW and SQC supported by a \$3m CRC-P Federal funding grant and an Offtake Agreement with SQC as the first customer





Translucent Inc cREO™ Technology

- ❑ Silex subsidiary Translucent's 'Rare Earth Oxide' (cREO™) technology purchased by UK-based IQE in 2018 with payment of US\$5 million in IQE shares
- ❑ IQE is the global leader in the design and manufacture of advanced semiconductor wafer products used in many of today's semiconductor devices
- ❑ A royalty of up to 6% of IQE's revenues derived from use of the technology payable to Translucent, with commencement of revenue royalty payments expected within the next few years
- ❑ Significant semiconductor sectors being targeted by IQE, including wireless communications
- ❑ First minimum royalty payment (US\$400k) received March 2020



ENABLING NOVEL COMPOUND MATERIALS ON SILICON

- ❑ cREO™ technology commercialisation program being conducted at IQE's Greensboro, US manufacturing facility
- ❑ Significant investment by IQE to progress development of cREO™ advanced semiconductor material technologies
- ❑ Good progress has been made in the development of IQE's unique 5G RF Filter Materials Portfolio based on cREO™ technology
- ❑ IQE remains actively engaged with several chip customers to bring the first cREO™ products (5G RF filters and switches) to market
- ❑ IQE continue to expand the IP patent portfolio acquired from Translucent with several new patent filings



IQE's RF chips inside a smartphone

Source: IQE.com



Summary

- Current focus is on finalisation of the GLE restructure and continuation of the SILEX technology commercialisation project at GLE's facility in the US and Silex's facility in Sydney
- Successful completion of the GLE restructure, subject to US government approvals, will result in Silex acquiring a 51% interest in GLE and Cameco increasing its interest from 24% to 49%
- Long-term fundamentals for global growth in nuclear power remain positive despite the short-term difficulties in nuclear fuel markets
- Silex's LIS technology being developed to produce Zero-Spin Silicon for SQC in support of its efforts to commercialise silicon quantum computing in collaboration with UNSW Sydney
- Translucent cREO™ technology being advanced by IQE and customers towards commercial deployment in emerging 5G wireless market – first products 5G RF filters and switches
- Company's balance sheet remains solid with net assets of ~\$25.1m, including ~\$20.3m in cash and approximately ~\$5.1m in IQE shares; receivables and other assets of ~\$1.6m; liabilities of ~\$1.9m (as at 31/03/20)



Thank you