Silex Systems - Operational Update

21 February 2018

Highlights

- Securing a path to commercialisation for our primary asset, the SILEX laser-based uranium enrichment technology, continues to be the main focus for the Company. While the Paducah tails re-enrichment opportunity is considered the best path forward, market risks and economic factors remain to be resolved;

- On 1 September 2017, Silex announced that it had reached agreement with GE-Hitachi Nuclear Energy (GEH) to amend and extend the Term Sheet originally announced on 2 May 2016, to allow the parties additional time to work towards a mutually acceptable restructure of GE-Hitachi Global Laser Enrichment LLC (GLE), the exclusive Licensee of the SILEX technology;

- Under transaction documents still being negotiated, Silex may acquire all of GEH’s 76% interest in GLE, subject to obtaining the necessary US Government approvals. Silex and GEH continue to work diligently on these matters and although challenges remain, execution of an agreement is being targeted in Q1, 2018;

- A recovery in the markets for uranium and enriched uranium continue to be forecasted by industry analysts however, the timing of such recovery remains uncertain due to delays in the restart of Japanese reactors, premature retirements of reactors in western Europe and the US and political uncertainty in other countries such as South Korea and Taiwan;

- The commercialisation program for the Company’s cREO™ technology continues to be advanced by exclusive Licensee, UK-based IQE Plc, with good progress in meeting target product development and commercialisation milestones. The 30-month option period for IQE to elect to purchase the technology concludes in March 2018;

- The Company’s current cash reserves are approximately $36 million. In addition, IQE shares held by the Company, resulting from the ~US$1.4 million initial license fee received in March 2016, are currently worth over $10 million.
**Our Strategy:** To commercialise our core asset, the SILEX technology, in collaboration with exclusive Licensee GLE

We will continue to protect and advance our core asset and position ourselves to be able to participate in the forecasted recovery of the global market for nuclear fuel.

Central to the execution of our strategy are the following:

- Potentially increasing Silex’s involvement with GLE as a majority shareholder;
- Increasing our profile in the US, the target market for deployment of the SILEX technology;
- Continuing to support planning for the tails re-enrichment project in Paducah, KY including engagement with key stakeholders and third parties with an interest in the opportunity;
- Retaining our core expertise in the SILEX laser technology in the US and Australia; and
- Focusing on effective cost management to ensure the most efficient use of cash reserves.

**SILEX Uranium Enrichment Project Update**

**GLE Restructure - Potential acquisition by Silex of a majority interest in GLE:**

As announced on 1 September 2017, Silex and GEH reached agreement to amend and extend the Term Sheet for the sale of GEH’s 76% interest in GLE, the exclusive Licensee of the SILEX technology. Subject to finalisation of negotiations with GEH in relation to binding transaction documentation and obtaining the necessary US Government approvals, Silex may proceed with the acquisition of all of GEH’s equity in GLE.

Silex, GLE and GEH continue to work diligently on the Membership Interest Purchase Agreement (MIPA), ancillary transaction documentation and related US Government filings. We continue to target execution of a binding agreement in Q1, 2018. Closing of the agreement would then be subject to obtaining US Government approvals, including assessments of security related matters and foreign ownership regulations. These assessment activities are expected to take between 6 to 9 months from the date of execution.

Potential opportunities for additional third-party funding of, and investment in GLE continue to be assessed with a number of avenues being explored. In the meantime, Silex continues to contribute funding for GLE through reimbursement of GEH’s 76% share of the costs associated with operations in Wilmington, North Carolina (NC), as well as all of the funding for the Lucas Heights laser development facility in Sydney. Silex maintains the view that GLE is the best vehicle to take the SILEX technology to market in the US, based on the potential of the Paducah commercial opportunity and the preservation of the highly skilled engineering team and assets located at the Test Loop facility in Wilmington.
The SILEX Technology Commercialisation Program:
The opportunity for Silex to acquire a majority interest in GLE would provide greater visibility into, and participation in the technology commercialisation program over the next few years.

The unique third-generation laser-based SILEX technology could provide solutions for production of two key components of nuclear power reactor fuel:

- natural grade uranium via re-enrichment of tails inventories (i.e. the Paducah commercial plant project); and
- enriched uranium for use as fuel in today’s conventional nuclear power reactors - in the form of low enriched uranium (LEU), as well as customised fuel for the next generation fleet of advanced small modular reactors (SMR’s) - in the form of high assay LEU.

The SILEX technology maturation program continues to advance at a steady pace at both the GLE, Wilmington and Silex, Sydney project sites. The program schedule for 2018 involves further engineering scale-up milestones and technology demonstration deliverables, which build on the solid progress made in 2017. Opportunities to optimise the remaining scale-up and economic validation activities over the next few years are currently being reviewed.

The Paducah Project Opportunity:
In parallel to the technology maturation program, activities to support planning and implementation of GLE’s Paducah project continue to progress at a pace commensurate with current market conditions.

Pursuant to the signing of the agreement between GLE and the DOE in November 2016, the Paducah commercial project opportunity is viewed as an ideal path to market for the SILEX technology. The opportunity allows for the construction and deployment of the first SILEX laser enrichment facility to re-enrich around 300,000 metric tons of depleted uranium (tails) stockpiles owned by the DOE. The tails re-enrichment would occur over a period of 40 years or more, resulting in the production of natural grade uranium which could then be sold into the global uranium market. At a nominal production rate of around 2,000 metric tons of natural grade uranium hexafluoride (UF₆) per year (subject to prevailing laws and regulations), this project could rank as a large ‘Tier 1’ uranium mine by today’s standards.

Nuclear Power Outlook and Market for Nuclear Fuel:
The outlook for nuclear power and the markets for nuclear fuel continue to be adversely affected by the Fukushima event in 2011 and the global slowdown in the nuclear power industry. The suspension of operations of the majority of the Japanese nuclear power plant fleet continues and various policy decisions in other nuclear generating countries may lead to a reduction in nuclear generation capacity in some countries over the coming years, particularly in western Europe.
Despite the current slowdown in the nuclear power industry, the fundamentals for nuclear remain encouraging. With global electricity demand predicted to double by 2050, the importance of economic low-carbon electricity generation and the need to maintain grid stability are key supporting factors for the future uptake of nuclear power around the world.

Several actions have recently been taken by producers of nuclear fuel to address the current market challenges. Most notably in Q4, 2017, the two largest uranium producers announced temporary reductions in uranium production to better align output with lower demand. The effect of these reductions is expected to assist in the acceleration of consumption of uranium stockpiles currently overhanging the market, and to help balance supply and demand in the uranium market over the next few years.

**Translucent – cREO™ Technology**

An exclusive License and Assignment Agreement was signed with UK-based IQE Plc (LON:IQE) on 15 September 2015 for Translucent’s novel set of semiconductor materials known as ‘crystalline Rare Earth Oxides’ (cREO™). IQE is the global leader in the design and manufacture of advanced semiconductor wafer products and is developing cREO™ for potential application in several next generation devices in the semiconductor, digital communications and power electronics industries.

The cREO™ technology was successfully transferred in late 2015 to IQE’s Greensboro, North Carolina manufacturing facility for the completion of product development and commercialisation activities during a 30-month option period that concludes in March 2018. With good progress in meeting target product development and commercialisation milestones to date, IQE may elect to purchase the technology at the end of the option period.

Should IQE elect to exercise the right to purchase the technology in March 2018, an additional US$5 million (in cash or IQE shares) will be payable and follows the initial license payment of ~US$1.4 million received in IQE shares in March 2016. The potential commercial applications for cREO™ that IQE are targeting may result in an attractive perpetual royalty stream of between 3% and 6% of revenues generated by IQE from use of the cREO™ technology.

IQE continue to invest in the cREO™ program with the production of prototype templates on silicon wafers using two of Translucent’s production reactors, for trialling and qualification within the IQE Group and select commercial partners. IQE also continue to support Translucent’s extensive patent portfolio and have filed several new patent applications over the past two years.
Further information on the Company’s activities can be found on the Silex website: www.silex.com.au or by calling +61 2 9704 8888.

Forward Looking Statements and Business Risks:

Silex Systems Limited (Silex) is a research and development company whose primary asset is the SILEX laser uranium enrichment technology, originally developed at the Company’s technology facility in Sydney, Australia. The SILEX technology, licensed exclusively to GE-Hitachi Global Laser Enrichment LLC (GLE) in the USA, is currently in the engineering development stage and plans for commercial deployment remain speculative and uncertain.

Silex also has an interest in a unique semiconductor technology known as ‘cREO™’ through its ownership of subsidiary Translucent Inc. The cREO™ technology is exclusively licensed to 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 also remains subject to technology and market risks.

The commercial potential of these two 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; results from the SILEX uranium enrichment engineering development program being conducted jointly by Silex and GLE; the demand for natural uranium and enriched uranium; the time taken to develop the SILEX technology; the potential development of competing 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 demand for cREO™ products; and the outcomes of various commercialisation strategies undertaken by the Company and/or its Licensees GLE and IQE.