

## **Silex Systems - Operational Update**

**21<sup>st</sup> August 2015**

The past year has been one of the most challenging periods in the history of Silex, beginning with the implementation of a major restructure which resulted from a strategic review of our entire business, as disclosed to the ASX in June 2014. Shortly after this, the licensee for our core SILEX laser enrichment technology, GE-Hitachi Global Laser Enrichment LLC (GLE) announced its own restructure in response to adverse nuclear fuel market conditions, involving a slowing down of the commercialisation project for the SILEX technology.

Our Board and Management continue to work towards the completion of our restructure, which will result in a significant reduction in cash burn and a singular focus of the company on the SILEX technology. Substantial operational changes have been completed and a summary of the activities is provided below.

With the Company's focus returning solely to our core SILEX technology, we were pleased to see a number of recent developments which suggest the beginning of a recovery in the global markets for natural and enriched uranium may be near (refer below). We continue to believe the medium to long term outlook for these markets will return to strong growth as the global nuclear industry expands. Most importantly, we remain confident of the potential for our enrichment technology, the only third generation laser enrichment technology being commercialised in the world, to participate in these markets.

We remain in a sound financial position, with current cash reserves of \$53 million.

### ***1) SILEX Uranium Enrichment Project Update***

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#### **i) Project Activities Update - Phase II: Full-Scale Engineering and Economic Validation**

The GLE project team remains focussed on Phase II of the Commercialisation Program, which includes economic and engineering validation of the technology. Following the GLE restructure announced in July 2014, Phase II activities previously conducted at Oak Ridge, Tennessee have been consolidated into the Test Loop facility in Wilmington, North Carolina. The ongoing test and optimisation activities in Wilmington continue to produce positive results, including the successful demonstration of key technology improvements which have the potential to lower operating and capital costs of a commercial production facility. This continuing work will provide a solid base for the design of the full-scale production equipment.

A small team based at our Lucas Heights facility in Sydney, comprising the core of Silex's laser technology expertise, continues to make good progress with the development of commercial-scale plant laser systems. The team recently completed a major milestone with the demonstration of the first integrated plant-scale laser system over extended operating periods. This work, which is funded by Silex, will also ensure our core competency in laser technology is maintained, and will assist GLE in the completion of the Phase II program.

GLE and Silex continue to conduct a stage-gated approach to commercialisation of the SILEX laser enrichment technology, albeit at a reduced pace, with the following three phases:

Phase	Objectives	Status
Phase I:	Test Loop technology demonstration and NRC commercial plant license approval	Completed
Phase II:	Economic and engineering validation for the initial commercial production module	Commenced in 2012
Phase III:	Construction of the first full-scale commercial production facility	Yet to commence

## ii) Paducah Commercial Laser Enrichment Opportunity Update

In November 2013, the US Department of Energy (DOE) selected SILEX technology licensee GLE to enter into exclusive negotiations for future operations at the DOE's nuclear fuel site in Paducah, Kentucky. These negotiations, concerning the establishment of GLE's proposed Paducah Laser Enrichment Facility (PLEF), are nearing completion with an outcome likely in the next few months.

The Paducah opportunity would potentially involve using the PLEF to reprocess hundreds of thousands of tons of high assay tails inventories left over from previous enrichment activities in the US which are owned by the DOE. Reprocessing would occur over a 40 year period to produce natural grade uranium (about a third of the feed quantity) and low assay tails. The natural grade uranium produced at the PLEF would be sold into the expanding global uranium market, and depending on the production rate, would be equivalent to one of the world's largest uranium mines. The production rate is likely to be regulated, under legislation currently being considered by the US Congress, at around 2000 metric tons of uranium (in the form of UF<sub>6</sub>) per year.

Subject to a recovery in uranium market pricing and receipt of required regulatory approvals, the PLEF opportunity could represent an ideal path to market for our disruptive laser enrichment technology and provide a foundation for further possible expansion by GLE into the enrichment market if and when new capacity is needed to supply future demand (refer below). As previously disclosed, in 2012 GLE obtained a combined construction and operating license from the US Nuclear Regulatory Commission (NRC) for an enrichment plant of up to 6 million separative work units (SWU – the unit for enrichment) planned for Wilmington, North Carolina. The current enrichment market is around 50 million SWU per annum.

### ***iii) Japanese Reactor Restarts and Global Nuclear Expansion***

Shareholders would appreciate that the market for nuclear fuel remains depressed, with both uranium and enrichment pricing at or near decade lows. A key contributing factor to the expected recovery of the nuclear fuel markets is the restart of nuclear reactors in Japan, which have been largely shutdown since 2011. The first reactor restart occurred on 11<sup>th</sup> August 2015 at the Sendai nuclear power plant, with the second Sendai unit expected to restart in the coming weeks. Another 24 reactors are currently in the restart approval process, according to the World Nuclear Association (WNA) ([world-nuclear.org](http://world-nuclear.org)). Japan has also recently confirmed its commitment to nuclear power generation detailing a program setting out its target to produce a fifth of its power from nuclear energy by 2030.

Meanwhile, the construction of new nuclear power plants around the world is accelerating again as Governments continue to focus on energy security and low emissions electricity generation. For example, the US Environmental Protection Agency's recently released Clean Power Plan allows new nuclear reactors to be counted towards meeting federal emissions limits. This initiative confirms the commitment of the US to nuclear power. This is in addition to China and India moving ahead with their respective nuclear reactor build programs.

According to the WNA, there are currently 437 operable reactors around the world with ~380 GWe generating capacity. Another 66 reactors are under construction in 13 countries, including 24 in China, 6 in India, and 5 in the USA. A further 168 reactors are on order or planned and 322 reactors are proposed to be built. Under the New Policies Scenario in the International Energy Agency's World Energy Outlook 2014, global nuclear capacity is predicted to grow to 624 GWe by 2040. Under the low-carbon '450 Scenario', capacity could more than double to 862 GWe by 2040.

Whichever scenario prevails, significant expansion of global nuclear capacity is likely over the next two decades and beyond. This will ensure growing demand for both natural and enriched uranium, and potentially a positive outlook for Silex, subject to successful commercialisation of the SILEX laser enrichment technology over the coming years.

## 2) *Silex Systems Restructure*

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On the 30<sup>th</sup> June 2014, Silex announced the completion of a strategic review of the entire business, resulting in a major restructure of the Company in order to refocus efforts on our primary economic asset, the SILEX laser enrichment technology. This restructure is now largely complete, with the following major outcomes:

- i) **ChronoLogic:** The first major outcome of the restructure was the closure of the ChronoLogic business which was completed in September 2014.
- ii) **Solar Systems:** On 30<sup>th</sup> July 2015, the Silex Board announced the cessation of Solar Systems' business operations, following a rigorous but unsuccessful global process to attract new investment. In light of the interest shown in Solar Systems' technology during the divestment process, the company has retained the IP and associated expertise in the short term to pursue residual opportunities.
- iii) **Translucent:** The pursuit of business development options for Translucent continues with several interested parties advancing technical due diligence.
- iv) **Corporate:** There has also been a 50% reduction in headcount in our group corporate office.

## 3) *Corporate Governance*

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### i) **Board Renewal**

A process of Board restructuring and renewal has occurred as part of the Company's major strategic review. An evaluation of the number and composition of Directors has been completed with the Board resolving to reduce from five (5) to three (3) non-executive directors in addition to our Chief Executive Officer / Managing Director. As our major strategic review draws to a conclusion, we have also recently renewed our Board with the appointment of Robert Lee on the 1<sup>st</sup> July 2015 to replace Andrew Stock who retires from the Board on the 31<sup>st</sup> August 2015. The Board thanks Mr Stock for his experience and contribution to the Company during his tenure.

### ii) **Silex Systems Limited – 2015 Annual General Meeting**

The date and venue for the 2015 Annual General Meeting is:

**Date:** 9.30am, Tuesday, 17th November 2015  
**Venue:** The Menzies Sydney - Launceston Room  
**Address:** 14 Carrington Street, Sydney NSW 2000

This year's AGM will be made available by webcast for shareholders post the event, via our website. An invitation to attend the meeting will be sent to shareholders during October along with the Notice of Meeting.

Further information on the Company's activities can be found on the Silex website: [www.silex.com.au](http://www.silex.com.au) or by contacting the persons listed below.

**Forward Looking Statements and Business Risks:**

*Silex Systems is a research and development Company whose assets are its proprietary rights in various technologies, including, but not limited to, the SILEX technology, Solar Systems technology, and Translucent technology. The Company's technologies are in the development stage and have not been commercially deployed, and therefore are high-risk. Accordingly, the statements in this announcement regarding the future of the Company's technologies and 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.*

*Some risk factors that could affect future results and commercial prospects include, but are not limited to: results from the SILEX uranium enrichment commercialisation program; the demand for enriched uranium; the time taken to develop various technologies; the development of competing technologies; the potential for third party claims against the Company's ownership of Intellectual Property associated with its technologies; the potential impact of government regulations or policies; and the outcomes of various commercialisation strategies undertaken by the Company.*