



Silex

SYSTEMS LIMITED A.C.N. 003 372 067

HALF YEAR RESULTS AND OPERATIONAL UPDATE

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Lucas Heights
Science & Technology Centre
New Illawarra Road
Lucas Heights NSW 2234 Australia
PO Box 75
Menai Central NSW 2234
Tel: (02) 9532 1331
Fax: (02) 9532 1332
www.silex.com.au

Key Operational Highlights

(Further details are provided in the Operational Update below)

The SILEX Technology

- On 25th September 2012, the US Nuclear Regulatory Commission (“NRC”) issued Global Laser Enrichment (“GLE”) a license to build and operate a commercial uranium enrichment plant in Wilmington, North Carolina, using SILEX laser technology.
- The preliminary evaluation of an opportunity to establish an additional enrichment plant in Paducah, Kentucky using SILEX Technology was announced on 20th November 2012.
- GLE submitted an Expression of Interest to the US Department of Energy on 21st February 2013 which included a non-binding proposal to establish an enrichment plant at Paducah using the SILEX Technology.

Solar Systems

- In October 2012 the Victorian Government confirmed a \$10 million funding package for the first stage of the Large Scale Solar Power Generation Project at Mildura – a 1.5MW Demonstration Facility.
- Construction of the 1.5MW Mildura Demonstration Facility is well advanced and on track to be completed on schedule and within budget in the second quarter of CY 2013 (photo below).
- Construction of a 1MW demonstration facility at the Nofa Resort near Riyadh, Saudi Arabia is also well advanced and scheduled for completion in the third quarter of CY 2013 (photo below).

Translucent

- Interest from the power electronics industry in Translucent’s low cost substrate technology continues, with one of two key material parameters required for commercialization recently demonstrated. Work continues on the second parameter.

- Development of Translucent's proprietary low-cost substrates for application to ultra-high efficiency CPV solar cells has advanced with wafers being processed by an industry partner for single junction solar cell growth and evaluation.
- Translucent is establishing a new pilot manufacturing facility in Mountain View, California, which will provide process engineering capability to prove up future volume manufacturing options for its proprietary substrates. The building is expected to be operational mid-year CY2013.

ChronoLogic

- Development of the core USB-inSync™ technology has advanced significantly with the demonstration of higher levels of performance, generating further interest in several new applications, potentially opening up additional market segments.
- A strategic business review continues in conjunction with J.P. Morgan to secure strategic partners for ChronoLogic's technology. Interest from several companies has resulted in detailed discussions on possible transactions, including joint venture, merger or acquisition. This process is expected to be finalised before the end of the financial year.

Financial Results Summary for the half-year ended 31 December 2012

- Net loss for the half-year was \$8.4 million.
- Net cash outflows from operating activities were \$10.2 million.
- Segment losses from Solar Systems' and Translucent's segments for the half-year were \$4.2 million and \$2.5 million respectively as the divisions continued their product development and commercialization activities.
- Significant progress was made by Solar Systems with the construction of the demonstration facilities at Mildura and at the Nofa Resort, Saudi Arabia.
- Additional information on these results is provided in section 5 below.
- Full details of the Group's accounts can be found in the Company's Appendix 4D filing with the ASX.

Silex remains in a strong financial position with cash reserves of \$71.9 million at 31 December 2012.



Plant construction at the Nofa Resort, near Riyadh, Saudi Arabia – January 2013



Plant construction at Mildura, Victoria - February 2013

OPERATIONAL UPDATE

1. SILEX URANIUM ENRICHMENT TECHNOLOGY

US Nuclear Regulatory Commission (NRC) License Approval

- On 25th September 2012, the US Nuclear Regulatory Commission (“NRC”) issued GE-Hitachi Global Laser Enrichment (“GLE”) a license (the ‘Initial License Decision’) to construct and operate a commercial uranium enrichment plant using the SILEX laser technology, in Wilmington, North Carolina. This is the first license ever granted for a third-generation laser enrichment technology in the world.
- On 23rd January 2013, the NRC confirmed the review period for the Initial License Decision referred to above had expired. Accordingly, the License granting decision became final.

Additional Enrichment Plant Opportunity in Paducah, Kentucky

- A preliminary evaluation of an opportunity to establish an additional enrichment plant in Paducah, Kentucky using third generation SILEX Technology was announced on 20th November 2012 (refer ASX release 20/11/12). The Paducah Gaseous Diffusion Plant, the last operating first generation gaseous diffusion plant in the world, is expected to cease operations in the near future.
- In response to the US Department of Energy (DOE) formal request for Expressions of Interest (EOI) for re-utilisation of the Paducah Gaseous Diffusion Plant facilities, GLE submitted an EOI to the DOE on 21st February 2013 which included a non-binding proposal to establish an enrichment plant at Paducah using the SILEX Technology. Utilization of existing facilities at Paducah could significantly reduce the time and cost of establishing a commercial laser enrichment facility with SILEX technology.
- The Paducah enrichment plant proposal would potentially involve the processing of approximately 115,000 tons of high assay tails inventories owned by the DOE. This opportunity is potentially worth approximately US\$3 billion after enrichment, based on current prices and process assumptions. Silex’s royalty arrangements would be applicable to such processing.

Test Loop & Engineering Design Activities

- Operations at the Test Loop facility in Wilmington, North Carolina and at the Manufacturing Support Facility, Clinton, Tennessee continued during the period, with new separator equipment recently installed and a laser system upgrade undertaken. Further tests and ongoing activities aim to accumulate performance, operating reliability and life-time data on the technology, to assist the engineering design program for the first planned commercial production plant. There are currently over 150 engineers, scientists, technicians and support staff working on the program.
- Concurrent testing and engineering design activities will continue throughout CY 2013, with the aim of providing additional information supporting the scaling up of equipment for the proposed commercial production plant.

The Path Forward

- GLE is conducting a phased approach to commercialisation of the SILEX laser enrichment technology, with the following three key stages:
 - Completion of the Test Loop and engineering design program
 - Construction of the initial commercial enrichment module
 - Construction of a full-scale commercial production facility
- Subject to these and other activities (including the securing of conditional customer commitments), GLE plans to make a decision on the construction of a full-scale commercial production facility at Wilmington, NC with a capacity of up to 6 million separative work units ('SWU's').

The Nuclear Industry's Positive Growth Outlook

- There are some key short term market factors coming into play in the near future. The US-Russian Highly Enriched Uranium Agreement will cease later in 2013 and the Paducah Gaseous Diffusion Plant, as mentioned earlier, is also expected to cease operations in 2013. These 2 sources of enriched uranium account for up to 12MSWU – over 20% of the current global annual demand for enriched uranium. Some of this demand will be met by new centrifuge capacity being brought online, however there exists a window of opportunity for new enrichment supply sources in the medium term.
- The medium to long term outlook for the enrichment market remains positive with demand expected to increase significantly over the next two decades. Many Governments around the world continue to recognise that nuclear power is an important element in helping to meet the world's converging needs to achieve energy supply security and address climate change.
- A significant expansion in global nuclear capacity is forecast to occur over the next two decades, according to the latest available data on the World Nuclear Association website (updated in January 2013). There are currently 435 operable reactors around the world today. Additionally, there are currently 65 nuclear reactors under construction (including 29 in China and 7 in India), 167 new nuclear reactors planned with approvals, funding and/or major commitments in place (including 51 in China and 18 in India), and 317 more units proposed world-wide.

2. SOLAR SYSTEMS

Product Development and Intellectual Property

- In September 2012 the Final Report for the Product Commercialisation program was accepted by the Victorian Government which had supported the 2.5 year program with a \$5 million funding contribution.
- Significant progress with system integration of the unique CPV 'Dense Array' technology, including performance optimisation, reliability testing and cost reduction continues to be made.
- Significant progress has also been achieved in the development of Intellectual Property associated with the 'Dense Array' technology, with the recent filing of the fourth new provisional patent application since 2011.

Funding Grant milestones

- In October 2012 the Victorian Government confirmed a \$10 million funding grant for the first stage of the Large Scale Solar Power Generation Project at Mildura, involving the construction of a grid connected 1.5MW pilot demonstration facility.
- Three milestones under the Victorian Government funding grant for the Mildura demonstration facility, being the Utility System Development Review, Material Orders and First Array Construction (10 dish units out of a total of 40) were successfully completed by the end of December 2012.
- The Mildura project is also supported under the Commonwealth Low Emissions Technology Demonstration Fund (LETDF), for which the first milestone was completed in October 2012. The novated deed for the LETDF grant automatically transitioned to the Australian Renewable Energy Agency (ARENA) under Commonwealth legislation on 1st July 2012.

Mildura CPV Power Station Project

1.5MW Demonstration Facility

- Construction of the 1.5MW Mildura Demonstration Facility is well advanced and is on track to be completed on time and within budget by the end of the second quarter CY2013.
- A commercial power purchase agreement (PPA) for power off-take onto the local Mildura grid was signed with Diamond Energy on 17th December 2012. Following the agreement for the Bridgewater facility, this is the Company's second PPA.
- Physical connection of the Demonstration Facility to the grid was completed by Powercor on 30th January 2013.

100MW Mildura Solar Power Station Project

- The 100MW Power Station Project has received funding commitments of \$75 million from the Commonwealth Government and approximately \$35 million from the Victorian Government (net of around \$15 million to be drawn down in prior activities).
- The planning phase continues, with construction commencement expected late in CY 2014, subject to successful completion of the Pilot Demonstration facility and finalization of funding arrangements.

Additional Power Station Projects and Pilot Plants

- During 2013 Solar Systems' business development activities will primarily focus on additional project opportunities in Australia and the Middle East. The prospects for CPV project development in Australia are currently amongst the most favourable in the world. With the possibility of obtaining further support for project finance, implementation is potentially lower risk in the short term relative to offshore alternatives, which will be addressed in the medium term once product certification has been completed.
- Construction of the 1MW demonstration plant at the Nofa Equestrian Resort near Riyadh, Saudi Arabia continues, and is expected to be completed in the third quarter CY 2013. This will be the first offshore demonstration facility using Solar Systems' 'Dense Array' CPV Dish technology. Significant opportunities exist for the development of solar projects in Saudi Arabia with a number of major initiatives announced by the Saudi government.

- Solar Systems has also secured an option over a site for the construction of a demonstration facility of up to 1MW at Beaumont, California USA. Solar Systems will maintain this option and will review this opportunity later in CY 2013.

3. TRANSLUCENT

Translucent continued to advance product development and industry validation activities in the Power Electronics and CPV solar cell markets. If successfully commercialised, Translucent's proprietary substrates which utilize its novel rare earth oxide (REO) materials may provide significant cost advantages and potential performance improvements compared to sapphire, germanium and other expensive substrates that these industries are currently forced to use.

Product Development Activities

- Translucent is establishing a new pilot manufacturing facility in Mountain View, California (a few kilometers from its existing Palo Alto premises). The facility will allow Translucent to develop process engineering capability to prove up future volume manufacturing options for its proprietary large format silicon wafer-based substrates. The building is expected to be operational mid-year CY2013. Decommissioning and closure of the existing Palo Alto facility is expected to be completed in the third quarter of CY 2013.

(i) Substrates for Power Electronics:

- Translucent has continued to improve the quality of Gallium Nitride (GaN) material incorporated in its vGaN™ on-silicon substrates which could significantly reduce costs of production for the Power Electronics industry. In particular, Translucent has achieved one of two key material parameters required to satisfy operational performance of the device material, and is currently addressing the second. Commercial grade vGaN™ substrates are expected to be ready for customer evaluation in Q3 CY 2013.
- Translucent's prototype pilot production reactor is currently being assembled and is expected to start operating in Q3 2013 in the new Mountain View facility. The reactor will significantly increase the volume of vGaN™ substrates for testing and validation by the power electronics industry. The reactor will have the capacity to produce up to 100 x 150mm vGaN™ FET substrates per month (on a developmental basis), and is intended to be a prototype for future volume manufacturing equipment.

(ii) Substrates for Ultra-High Efficiency Solar Cells:

- Translucent is developing advanced substrates for application to the production of concentrating photovoltaic (CPV) cells (such as the cells utilised by Solar Systems) that will potentially reduce cost and increase solar conversion efficiency. Translucent's novel germanium-tin (GeSn) substrate technology took a significant step forward with the initial demonstration of the growth of single junction cell material in a collaborative project with an industry partner. Further growths are planned with the expectation of a multi-junction cell material demonstrated in Q3 CY 2013.
- Translucent is now optimizing the GeSn process for 100mm and 150mm wafers to expedite customer verification. A new '150S multi-wafer reactor' will have the capacity to produce up to 230 x 150mm solar cell vGe™ substrates per month (on a developmental basis). The reactor will be erected in the new facility in Mountain View, and is intended to be a prototype for future volume manufacturing equipment.

- The CPV solar cell project has received a funding grant from the Australian Solar Institute (ASI) of \$2 million over 3 years. The first two milestones have been achieved on-time, with initial 150mm substrates being sent to industry partners.

(iii) Substrates for LED lighting:

- Feedback from potential LED substrate customers continues to focus positively on Translucent's 'mirrored silicon' substrate. However, following an assessment of the time to market, potential margins and relative commercial pay back of this product, the 'mirrored silicon' substrate development program has been placed at a lower priority to the vGaN™ and vGe™ substrate projects.

Commercial Activities

- Translucent continues to see interest from the power electronics industry for lower cost, high performance substrates. In particular, commercial grade vGaN™ substrates are anticipated to generate significant commercial interest when available, expected in the third quarter of CY 2013.
- Translucent continues to collaborate with CPV solar cell manufacturers on its silicon wafer-based substrate project with the intention to supply product-quality substrates in Q3 CY2013. Initial 150mm substrates have been grown for evaluation with one customer demonstrating growth of single junction cell material on a Translucent substrate.

4. CHRONOLOGIC

- Development of the core USB-inSync™ technology has advanced significantly with the demonstration of higher levels of performance, generating further interest in several new applications, potentially opening up additional market segments.
- As previously disclosed, ChronoLogic is conducting a strategic review in conjunction with J.P. Morgan to secure appropriate strategic partners for its technology and products. This has resulted in keen interest from several companies involving detailed discussions on possible business transactions, including joint venturing, merger or acquisition. This process is expected to be finalized by the end of the financial year.

5. FINANCIAL SUMMARY

Revenue from continuing operations was \$4.7 million for the half-year ended 31 December 2012 which was in line with expectations. Other income of \$5 million was received during the period comprising primarily of R&D tax incentive receipts of \$3.3 million and Solar Systems' government grant income of \$1.7 million.

The net loss for the period was \$8.4 million, a reduction of 49.3% compared to the corresponding prior period. The reduction in net loss was largely due to the cessation of the Silex Solar operation as detailed in previous releases.

The result for Solar Systems was a loss of \$4.2 million compared to a loss of \$5.5 million for the prior period. The reduction in the loss was achieved despite increasing expenditure in the capital works programs underway for the construction of the abovementioned solar demonstration facilities. This increase in expenditure was offset by \$2.8 million in R&D tax incentives and \$1.7 million in Government grant funding.

Translucent's result was a loss of \$2.5 million which is comparable to the prior period loss. Significant progress has been achieved by Translucent to improve the material quality and performance of its power electronics and CPV solar cell substrate product lines.

Net cash outflows from operating activities were \$10.2 million, an increase of 4.7% compared to the corresponding prior period. The marginal increase in operating cash outflows is largely due to the increase in expenditure for product development and commercialisation activities at Solar Systems countered by the consequence of the positive effect of discontinuation of Silex Solar's operations.

The management of Silex remains focused at all times on operational efficiency and strong cost control. Prudent utilization of cash remains a key focus as the company strives towards the commercialisation of its various technologies. We expect further efficiencies in our operations to be realised through the remainder of FY 2013.

Further Information

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

Contacts: Michael Goldsworthy or Julie Ducie on (02) 9532 1331

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 business, Translucent technology and ChronoLogic technology. Several of 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 development program and the stable isotopes program; the demand for enriched materials including uranium, silicon, oxygen, carbon and others; the risks associated with the development of Solar Systems technology and related marketing activities; the outcomes of the Company's interests in the development of various semiconductor, photonics, instrumentation and alternative energy technologies; 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 numerous technologies; the potential impact of government regulations or policies; and the outcomes of various commercialisation strategies undertaken by the Company.