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Silex

Silex Systems Limited

Operational Update – H1 FY2015

(ASX: SLX) (OTCQX: SILXY)

Dr Michael Goldsworthy, CEO / Managing Director

20th February 2015

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Forward Looking Statements

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. 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 presentation 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 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 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. Accordingly, the inclusion of forward looking information in this presentation should not be regarded as a representation or warranty with respect to its accuracy or the accuracy of the underlying estimates or assumptions or that Silex will achieve or is likely to achieve any particular results.

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The Company

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Silex Systems is a clean energy technology company, primarily focused on the development and commercialisation of its innovative and potentially disruptive laser-based

SILEX uranium enrichment technology

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Key Recent Events

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1) Silex Systems Strategic Review and Restructure

- Strategic review of business undertaken by Silex Board in June 2014 resulting in company restructure
- Key decision – to return the primary focus of the company to the development and commercialisation of our foundation technology – the SILEX laser uranium enrichment technology
- Silex strategy also includes accelerating the transition to market for subsidiaries Solar Systems and Translucent, with a focus on securing value-creating transactions with strategic partners or investors
- The restructure will deliver a significant reduction in cash burn beyond FY 2015 and provide the best path forward to return value to shareholders in the medium term

2) GE-Hitachi Global Laser Enrichment (GLE) Restructure

- SILEX technology Licensee GLE announced a major restructure in July 2014, slowing the commercialisation project in response to adverse conditions in nuclear fuel markets (effect of Fukushima)
- Short term impact will likely see a delay in plans for an enrichment plant in Wilmington, NC. Meanwhile, GLE continues to pursue the tails reprocessing plant opportunity in Paducah, KY.
- Medium to long term outlook for the global nuclear industry suggests a return to growth and recovery in the nuclear fuel markets.

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Strategic Review - Summary

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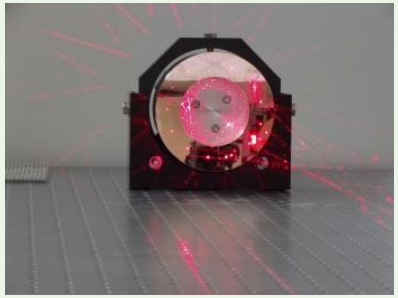
SILEX laser enrichment technology

- Foundation project and core asset of the company – invented and first demonstrated in Sydney – the world's only 3rd generation technology
- Being commercialised by Silex and GLE in Australia and USA respectively
- Project slowed in response to market downturn – potential to ramp up again as and when the market recovers over the next few years



Solar Systems

- Accelerated business development efforts to secure strategic partner or equity investor – activities well advanced with support of advisors
- Aim to minimise need for further parent company investment beyond FY 2015
- Product development focus on reducing levelised cost of energy (LCOE)

Translucent

- Priority is to pursue an accelerated path to commercialisation
- Focus on value creating transaction – strategic partnership or investor
- Aim to minimise parent company investment beyond FY 2015

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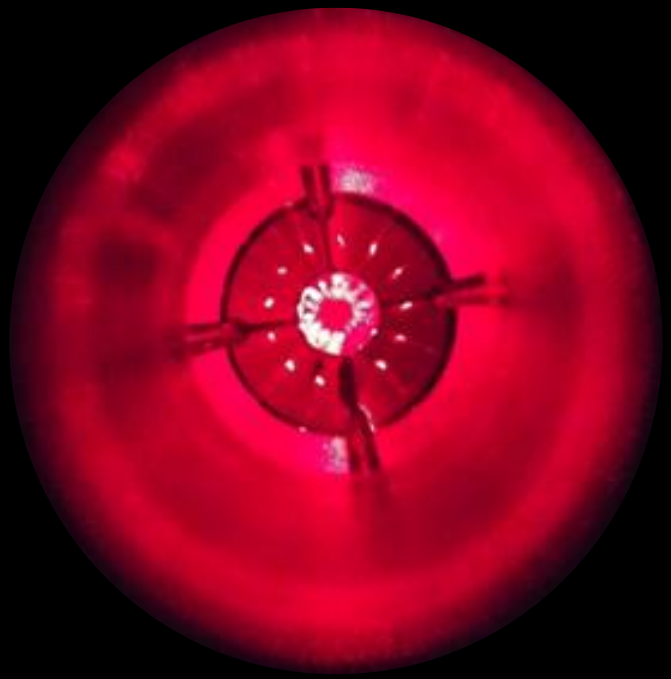

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SILEX Laser Uranium Enrichment Technology

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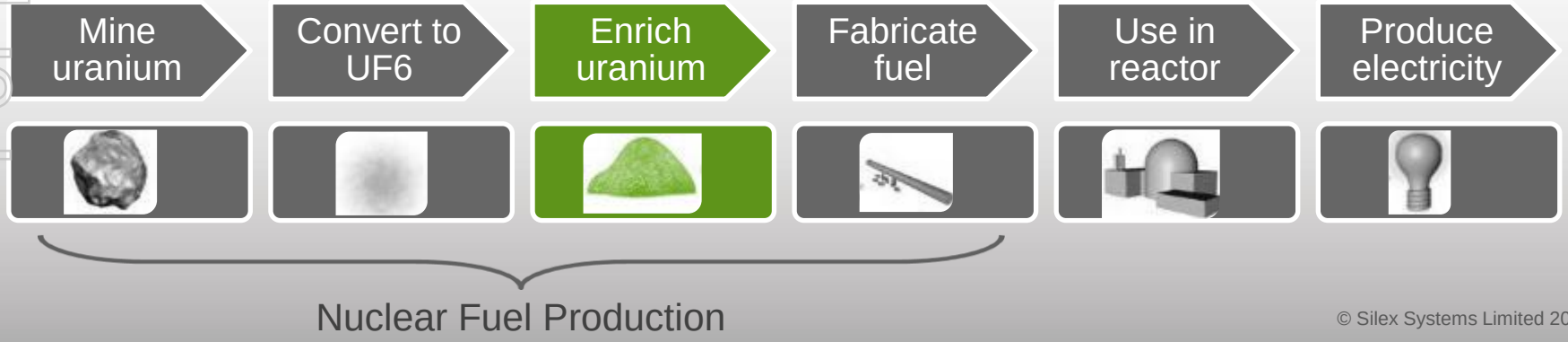
Advantages of the SILEX Technology

- Enrichment is the most difficult and costly step in making nuclear fuel for power reactors (~35% to 40% of total cost based on current market prices)
- All enrichment today performed by gas centrifuge technology developed initially in the 1940's
- Current market ~ 50 million Separative Work Units (SWU's – the unit of enrichment)
- A SWU currently trades at ~US$90 (pre-Fukushima market ~ 60MSWU @ ~US$160/SWU)
- SILEX is a breakthrough in efficiency – most cost effective enrichment method
- Anticipated to have the lowest capital costs of all enrichment technologies
- The only 3rd generation laser-based enrichment technology in the world
- Classified technology - protected by the strictest security measures



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Commercialisation and License Agreement

Perpetual Royalty Agreement with Global Laser Enrichment (GLE)

- Exclusive worldwide commercialisation and license agreement for the SILEX Technology – signed in 2006
- Phase I milestone completed in May 2013 – triggered US$15 million payment to Silex
- Next milestone payment triggered by start of construction of initial commercial plant: US$5 million
- Final milestone payment – US Nuclear Regulatory Commission (NRC) verification of construction compliance of initial commercial plant: US$15 million
- **Perpetual royalty range of 7 - 12% of future GLE revenues from commercial operations**
  (based on calculation of cost per unit production installed)

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SILEX Technology Royalty Business Model

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Our business model for uranium enrichment:

Zero capital cost to Silex	High value perpetual royalty	Gen III technology advantage	Long term growth story
• Plant capex to be funded by GLE	• Contracted range of royalty rates set into perpetuity	• Only laser-based enrichment technology in the world	• Global nuclear power capacity set to significantly increase

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GLE's Phased Approach to Commercialisation

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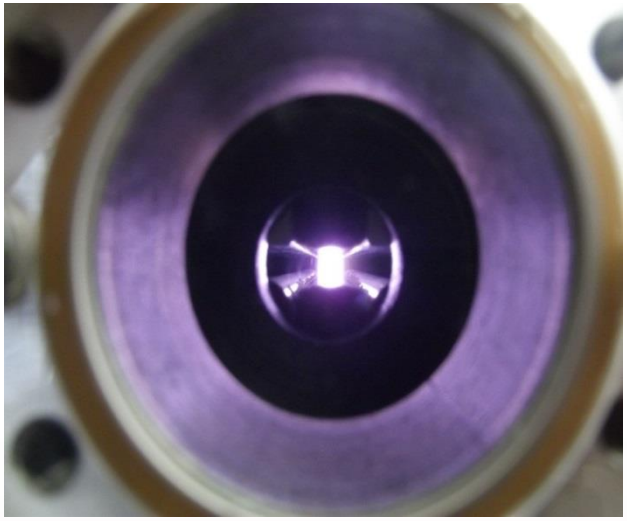
Commercial Plant Options

- GLE plans include possible enrichment plant up to 6MSWU in Wilmington, NC (US NRC construction & operating License received in 2012)
- Additional opportunity for a commercial plant in Paducah, Kentucky – subject to negotiations with US DOE (refer slide 12)
- Commercial plant decisions by GLE dependent on market conditions
- Focus for the next few years on advancing the Phase II project



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	To be confirmed

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Paducah Enrichment Plant Opportunity Update

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Negotiations between GLE and the DOE continue

- Closure of existing 1st generation gaseous diffusion plant in May 2013 – led to Department of Energy (DOE) bid process for future operations.
- GLE submitted a proposal to the DOE in August 2013 involving construction of a SILEX-based laser enrichment plant at the Paducah site.
- DOE selected the GLE proposal exclusively in November 2013 for possible future commercial operations at Paducah.
- Enrichment of DOE tails stockpiles potentially equivalent to one of the largest uranium mines in the world operating for around 40 years.
- Plans will ultimately depend on a recovery in uranium market pricing from currently depressed levels
- Negotiations between the GLE and DOE continue

Paducah Enrichment Plant Site

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Nuclear Energy Market Outlook

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- Potential for significant increase in nuclear capacity over the next two decades
- Energy security and climate change are two key drivers for nuclear power deployment

Nuclear plant forecasts to 2030*

Country	2015	2030
TOTAL – all Countries	**437**	**620**
US	99	109
China	22	113
India	21	49
Japan**	48	50

** Excludes 'proposed' plants, and includes ~ 70 older units shutdown*

*** Currently 48 operable reactors offline, 2030 assumes 10 units shutdown*

Key Statistics

- ✓ **11 percent of global electricity**
- ✓ **437 operable reactors currently**
- ✓ **70 new plants under construction**
- ✓ **183 plants planned**
- ✓ **311 plants proposed**

Source: World Nuclear Association (WNA) – January 2015

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Uranium Enrichment Market Outlook

Short Term Market Outlook – 'Negative'

- Short term market likely to remain depressed due to impact of Japanese industry shutdown
- Japanese reactors - likely to see first restarts in 2015 – slower than anticipated
- Uranium and Enrichment prices down, but turning – Uranium is up ~35% since June 2014

Medium Term Market Outlook – 'Recovery'

- Medium term highly dependent on several macro factors
  - Pace of Japanese reactors restarts – first 4 likely in the next 9 months
  - Russian trade sanctions and possible effect on Tenex - world's largest enrichment player
  - Pace of global nuclear build and influence of environmental drivers (climate change)
- Potential supply pressures in medium term timeframe – possible opportunity for introduction of SILEX capacity

Long Term Market Outlook – 'Bullish'

- Plans for nuclear capacity to increase significantly from 370 GWe currently, to ~630 GWe by 2035 (UxC data, 2015)
- Accordingly, potential for significant increase in demand for natural and enriched uranium within 'accessible' market

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Recent Industry Developments

…suggesting the beginning of a recovery in the uranium and enrichment markets

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Japanese Reactor Restarts

- Japan's Nuclear Regulatory Authority (NRA) recently issued its first approvals for the restart of 4 Japanese reactors
- Applications have now been submitted to the NRA for the restart of 21 of 48 operable reactors
- First two reactors at 'Sendai' expected to restart by June 2015, with two reactors at 'Takahama' to restart later in 2015

Russian Sanctions

- Threat of sanctions being imposed against Russian nuclear fuel with both Europe and the US announcing their willingness to impose new sanctions should the Ukrainian situation remain unresolved
- Western utilities looking at Russian supply with greater uncertainty

South Australian Royal Commission – announced 8th February 2015

- South Australia is home to approximately 30% of the world's known Uranium deposits – currently exported as oxide ('Yellowcake') with no additional value added
- South Australian premier announced a formal inquiry into the future role of the state in the nuclear fuel cycle
- Silex welcomes the Royal Commission and looks forward to taking part in the inquiry process

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SolarSystems

Solar Systems

CPV Dish Technology and Utility Scale Projects

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Solar Systems CPV Dish Technology

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Two Concentrating Photovoltaic (CPV) Dish Solar Power Stations built and operated:

1. **Mildura, Australia (~1.5MW$_p$, 40 dishes)**
   - Opened July 2013 – demonstration now completed
   - Plans for large 100MW facility suspended after funding deeds for possible contributions by ARENA and Victorian Government terminated in August 2014

2. **Nofa Resort, Saudi Arabia (~0.8MW$_n$, 28 dishes)**
   - Completed April 2014 – performance optimized with plant re-rated to ~0.8MW nominal output
   - Saudi Arabia is a key emerging market with plans to invest heavily in solar energy - US$109 billion program to help replace domestic oil consumption

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Solar Systems – Update

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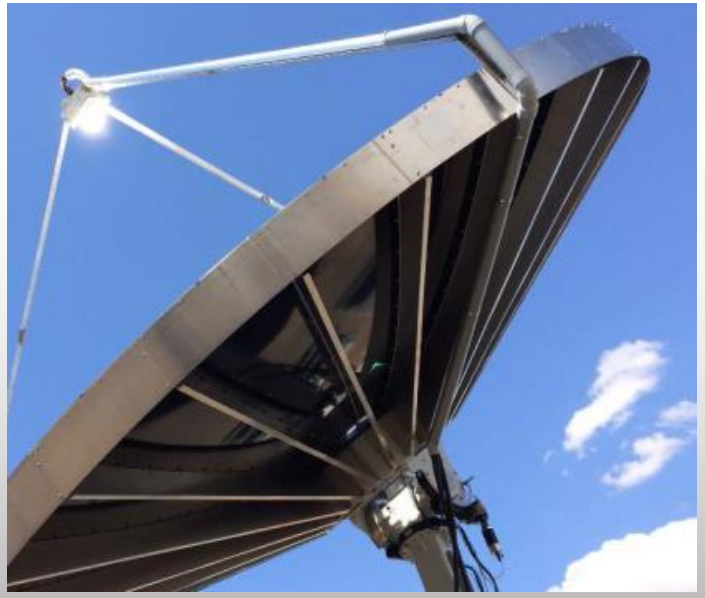
- Strategy execution well advanced with several parties having expressed interest
- Corporate Advisor appointed to assist with securing a strategic partner and/or investor
- In parallel, Solar Systems continues to prepare its unique 'Dense Array' CPV dish product for market
- A new medium sized lower-cost dish product has recently been demonstrated, with two units operating under test conditions at Bridgewater



The new low cost 7m Quasi-Parabolic Dish product

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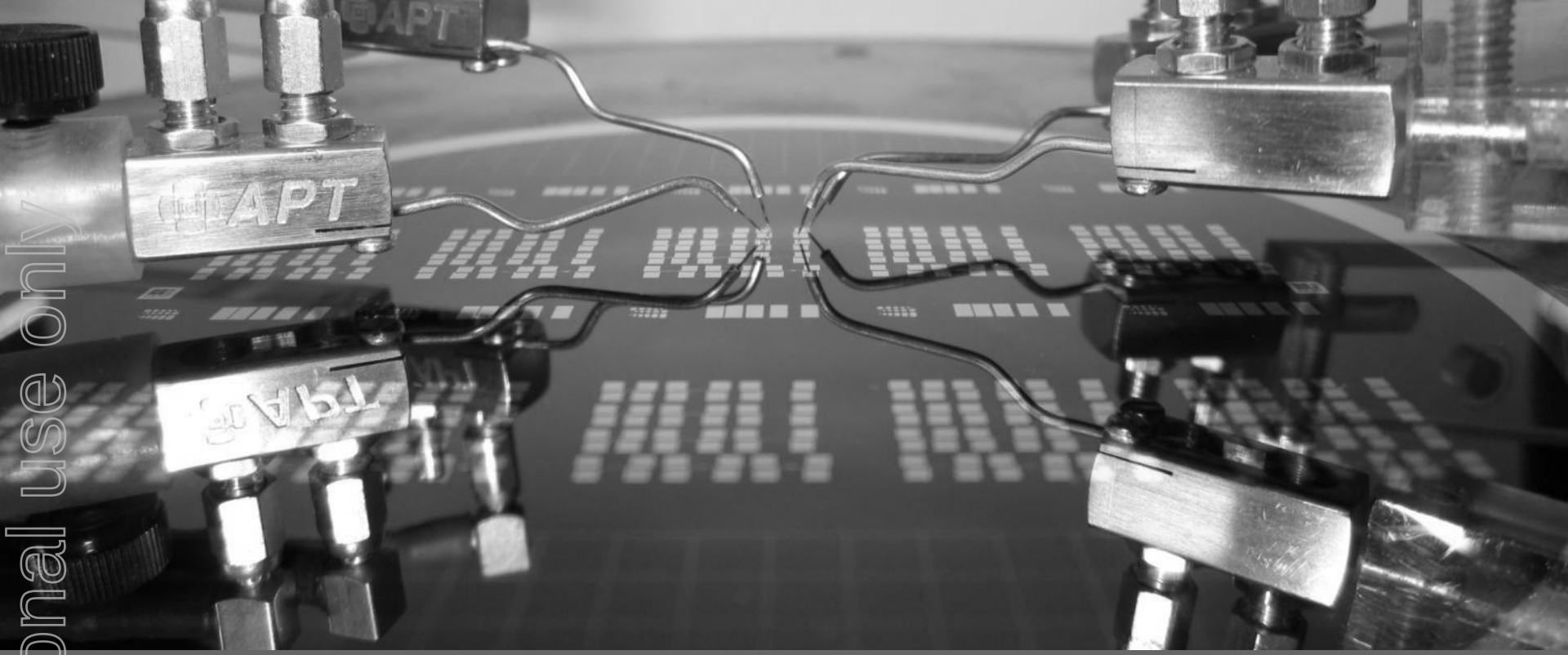

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Translucent

Advanced Semiconductor Materials Technology

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Translucent – Advanced Semiconductor Substrates

...potentially delivering lower costs and performance improvements

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First Product: REO Substrates

- GaN/ REO/ Si for power conversion and RF
- Next-gen high efficiency power electronics

Power electronics applications

Electric vehicle power converters

Lighting power converters (eg: street lights)

Motor controllers for electrical appliances

DC/AC conversion (e.g. solar inverters)

Other Materials and products

- GeSn/Si materials
- Multi-junction solar cell materials
- Photonics, IR detectors & lasers

CPV

Ultra-high efficiency multi-junction Solar Cells

REO = rare earth oxide buffer layer
GaN = gallium nitride
GeSn = germanium tin

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Translucent - Update

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- Translucent is currently engaging with several potential customers and/or strategic partners to help accelerate the path to market
- Management working towards securing a value-creating transaction with a strategic partner and/or investor in FY 2015
- A Silicon Valley based Consultant is fully engaged to assist with Business Development activities
- In parallel, product development activities continue with key device performance and validation tests by third parties generating commercial interest
- Equity investment, divestment and licensing options are all being considered with the aim of minimising parent funding beyond FY 2015

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Summary

- ✓ The Company is well advanced in executing a major strategic review including a significant reduction in cash burn beyond FY 2015 (current cash reserves ~$62.5m)
- ✓ Strategy includes accelerating the transition to market for subsidiaries Solar Systems and Translucent via value creating transactions – securing partners and/or investors
- ✓ Primary focus going forward - the 'SILEX' uranium enrichment technology - the only third generation laser-based enrichment technology in the world
- ✓ SILEX technology is under licence to Global Laser Enrichment (GLE) - a business venture of GE (51%), Hitachi (25%) and Cameco (24%)
- ✓ GLE continues to support the uranium enrichment commercialisation program – albeit at a reduced pace in line with adverse short term market conditions
- ✓ Expect program to ramp up as the global nuclear fuel markets recover and grow again
- ✓ Silex will be entitled to a perpetual royalty of 7 to 12% (depending on plant capex) - on any of GLE's future uranium enrichment revenues

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Thank you

Solar Systems
Pioneering Concentrated Solar

Translucent
Earth Abundant Materials Technology

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