



Silex Systems Limited Operational Update

22 August 2016

(ASX: SLX) (OTCQX: SILXY)

Forward Looking Statements



Silex Systems 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 distant and high risk.

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 remains high risk.

The commercial potential of these two technologies is currently unknown. Accordingly, the statements in this presentation 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.

Some risk factors that could affect future results and commercial prospects include, but are not limited to: results from the SILEX uranium enrichment engineering development program being conducted jointly by the Company and GLE; the demand for natural uranium and enriched uranium; the time taken to develop the SILEX technology; results from IQE's commercialisation program and the demand for cREO™ products, the potential development of competing technologies; the potential for third party claims against the Company's ownership of Intellectual Property; the potential impact of government regulations or policies in the USA, Australia or elsewhere; and the outcomes of various commercialisation strategies undertaken by the Company and/or its Licensees GLE and IQE.

The forward looking statements included in this presentation involve subjective judgment and analysis and are subject to significant business, economic and competitive uncertainties, risks and contingencies, many of which are outside the control of, and are unknown to Silex. Given these uncertainties, you are cautioned to not place undue reliance on such forward looking statements.

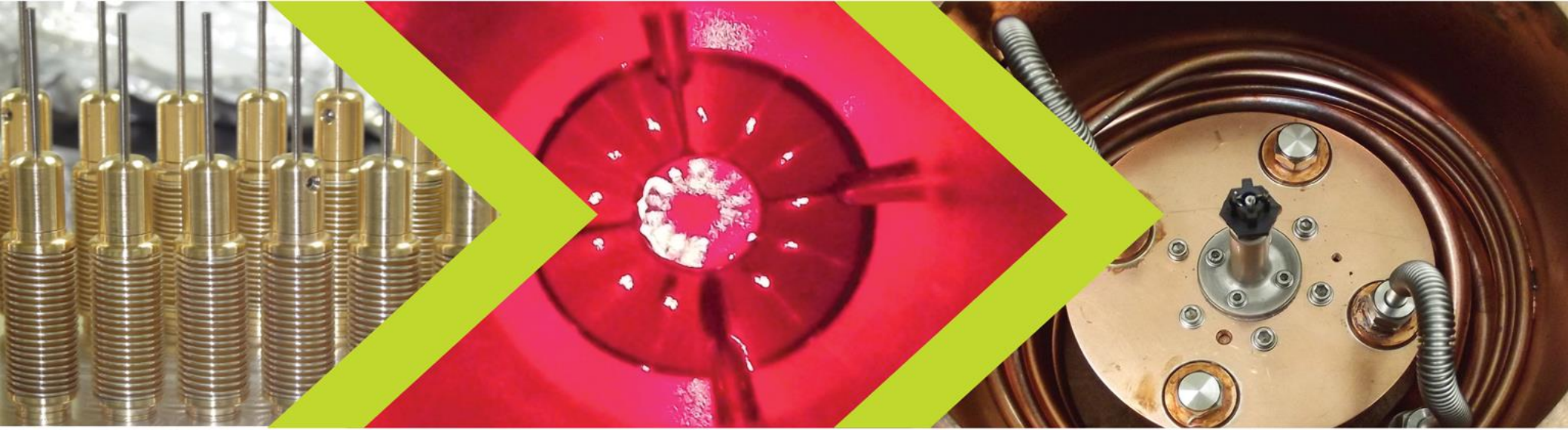
The Company

Silex Systems is an advanced technology company focused on the development and commercialisation of its innovative and potentially disruptive laser-based 'SILEX' uranium enrichment technology

Key FY2016 Activities and Status of Silex



- The Company is primarily focused on commercialisation of the unique SILEX technology as the best path forward to re-build value for shareholders when nuclear fuel markets return to growth
- A Term Sheet was executed with GE-Hitachi on 29 April 2016 providing the framework for a restructure of GLE – the exclusive licensee of the SILEX laser enrichment technology
- Silex is leading the search for new investors for GLE with discussions advancing with several interested parties
- The SILEX technology engineering and economic validation program continues to achieve pleasing results in key program activities at both the Wilmington and Sydney project sites
- Translucent's unique 'cREO™' semiconductor materials technology was exclusively licensed to UK-based IQE Plc in September 2015 under a royalty-based license agreement
- IQE is advancing the cREO™ technology towards commercial deployment in several advanced semiconductor markets, potentially adding to future shareholder value
- **Current cash reserves of \$50.3 million, equivalent to \$0.30 per share**



SILEX Laser Uranium Enrichment Technology



Enrichment Technology Overview

- GLE and Silex developing 3rd generation laser enrichment technology
 - Separation of Isotopes by Laser EXcitation (SILEX)
 - Highly selective excitation of U²³⁵ to separate isotopes

Uranium Enrichment Technology

Gaseous Diffusion



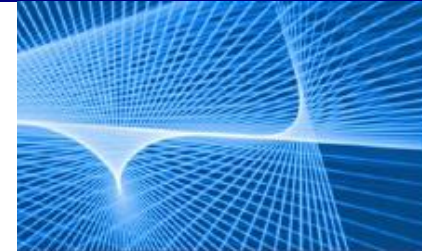
- 1st generation technology
- $\beta = 1.004$
- High cost
- Obsolete

Centrifuge



- 2nd generation technology
- $\beta \sim 1.25$
- Lower cost
- Current technology

Laser Excitation



- 3rd generation technology
- $\beta \sim 2 - 20^1$
- Most cost effective
- Advancement beyond State-of-the-art

1. Classified number

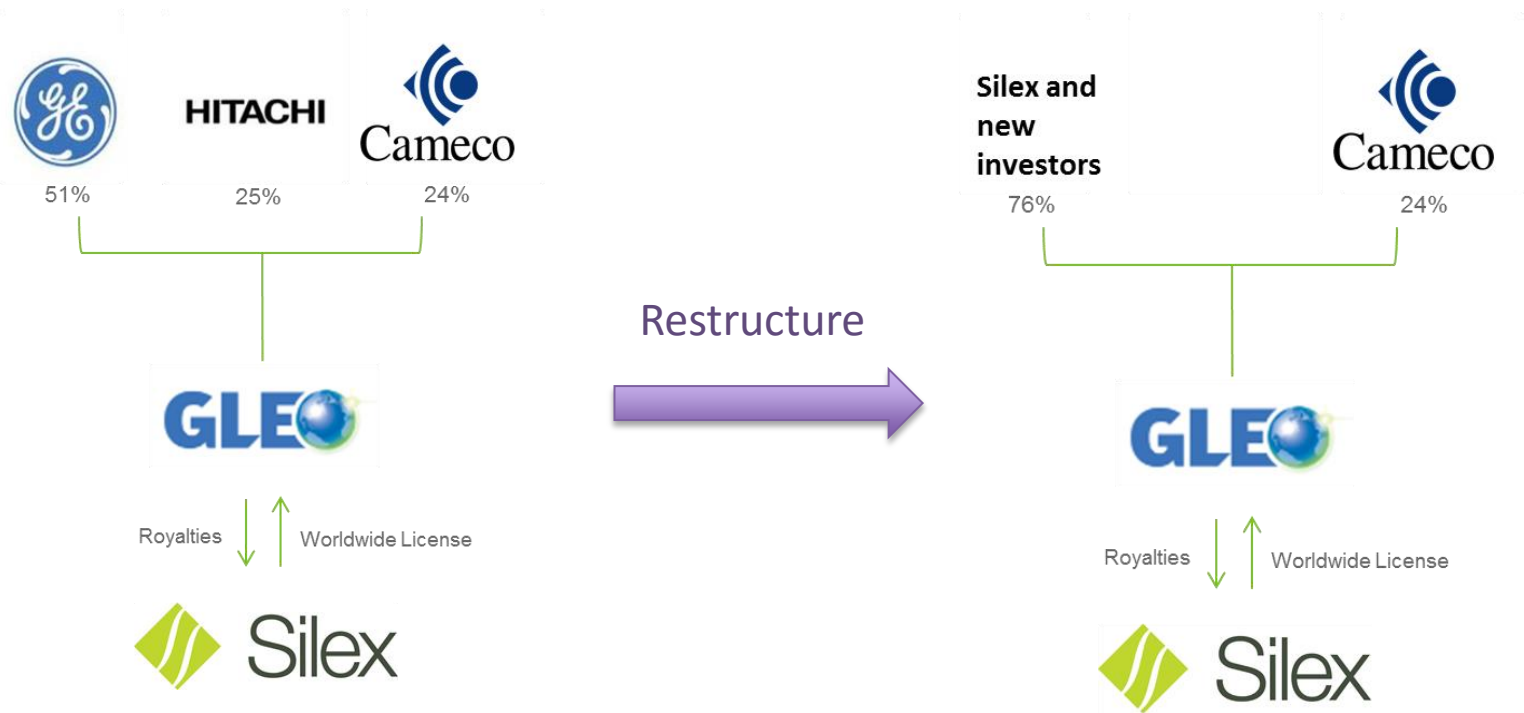
GLE Overview



- GLE is the exclusive Licensee of the SILEX laser uranium enrichment technology
 - Unique third generation laser technology with economic potential to leap-frog centrifuge
 - Significantly higher efficiency than centrifuge, lower costs, smaller environmental footprint
 - Much more flexibility – can decrease/increase capacity ‘at will’, and strip to much lower tails assays
- GLE has been advancing the technology towards commercialisation since 2006
 - Test Loop enrichment demonstration facility operating in Wilmington, NC since 2010
 - Technology is in the final engineering scale-up phase – targeting economic validation around 2020
- GLE undergoing a restructure as GE-Hitachi (GEH - 76% combined ownership) look to exit
 - Silex and GEH signed Term Sheet April 2016 – exclusive and assignable option over GEH’s 76% stake
 - Cameco, owner of 24% interest in GLE continues to support Silex’s efforts to restructure GLE
 - Silex undertaking process to bring new investors into GLE – discussions with several parties building
- Strong commercial outlook for GLE as markets expected to recover from the early 2020’s
 - Paducah DOE tails processing proposal represents a ‘Tier 1 uranium mine’ operating for ~40 years
 - New enrichment capacity could be supported by US utilities concerned by limited supply options
 - DOE Loan Guarantee could underpin financing of the first commercial plant/s

GLE Restructure

- Silex is leading the efforts to restructure licensee GLE with new shareholders
- Several third parties showing interest in opportunity to invest in a game-changing technology
- Strong support from US government and industry for second US producer



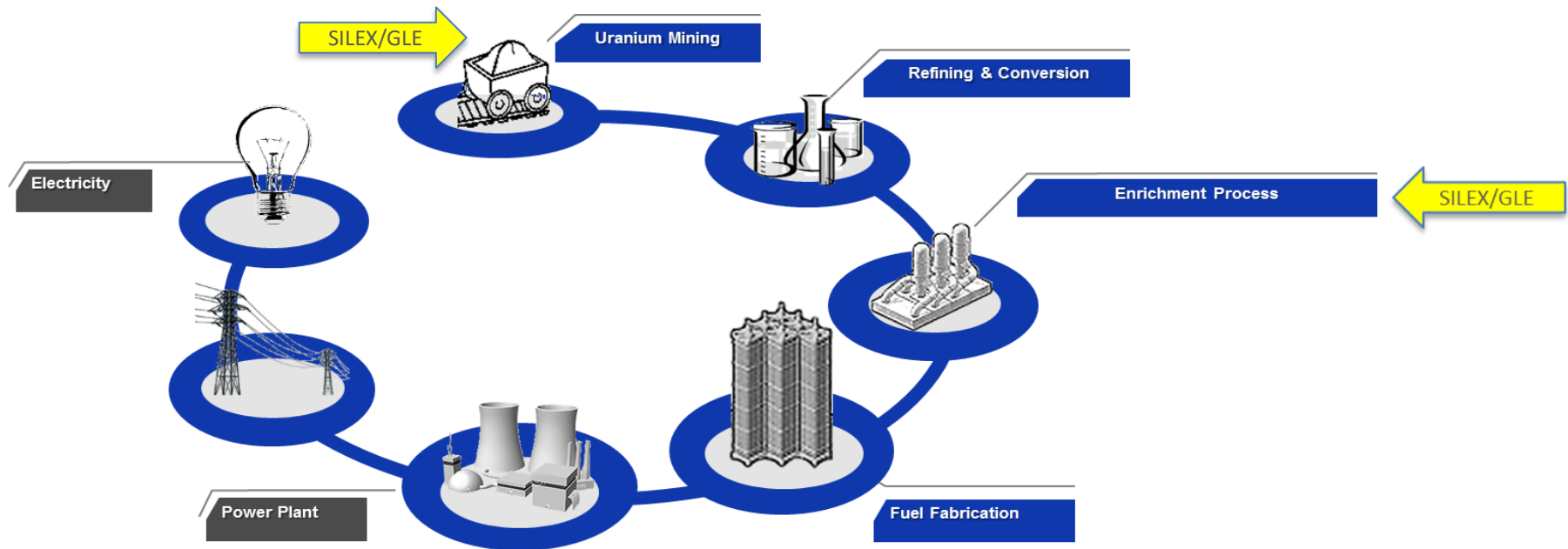
Commercialisation and License Agreement



Perpetual Royalty Agreement with GLE

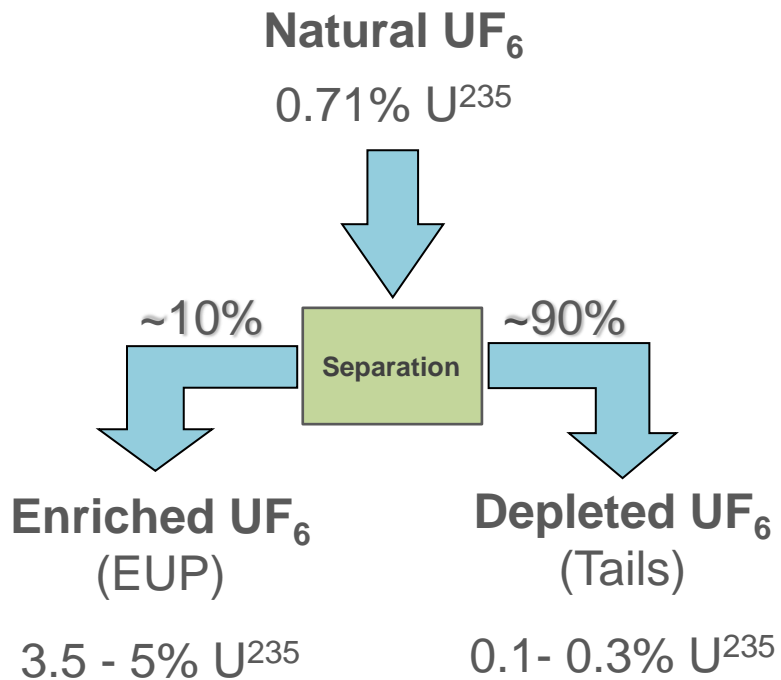
- Exclusive worldwide commercialisation and license agreement for the SILEX Technology – signed in 2006
- Phase I milestone completed in May 2013 – triggered US\$15 million payment to Silex
- Next milestone payment triggered by start of construction of initial commercial plant: US\$5 million
- Final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

Nuclear Fuel Production



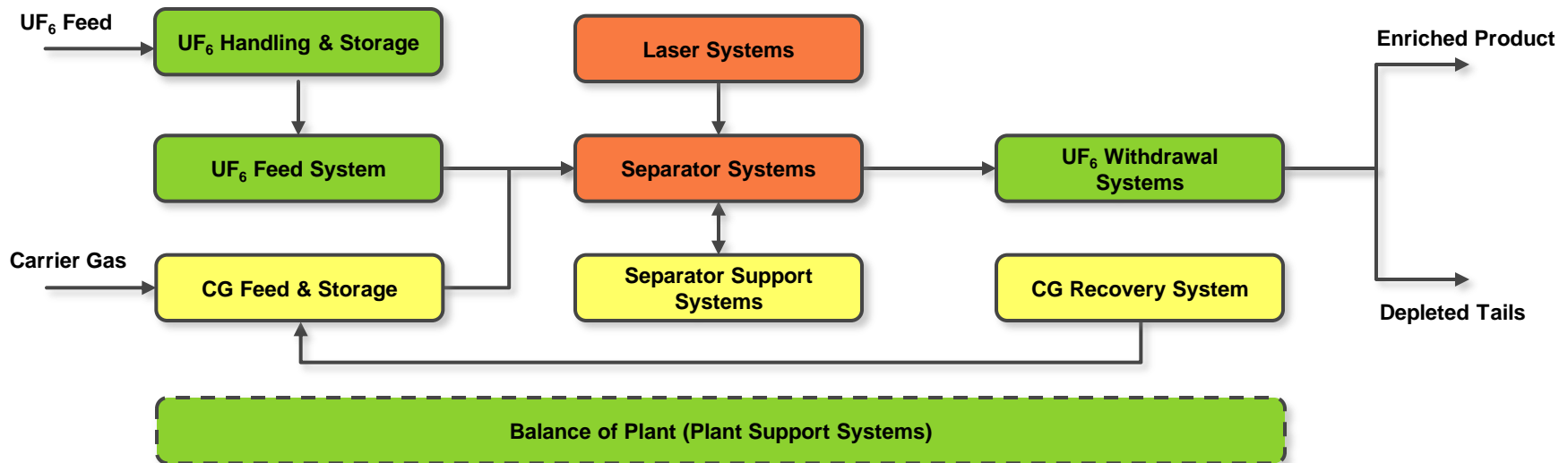
- The SILEX Technology can be utilised to produce
 - i) natural grade uranium via re-processing of tails inventories
 - ii) enriched uranium for use as fuel in nuclear power reactors
- Uranium (~40%) and enrichment (~30%) comprise ~70% of the value in a fuel bundle




The SILEX Enrichment Process



- Technically difficult to separate U²³⁵ - high barriers-to-entry
- An essential step in producing nuclear fuel for most of today's power reactors
- Nearly all enrichment is currently performed with gas centrifuge technology
- Centrifuge has very high capital costs and high operating costs
- SILEX laser technology inherently much higher efficiency → lower costs
- SILEX capital costs potentially half (or less) of centrifuge capital costs

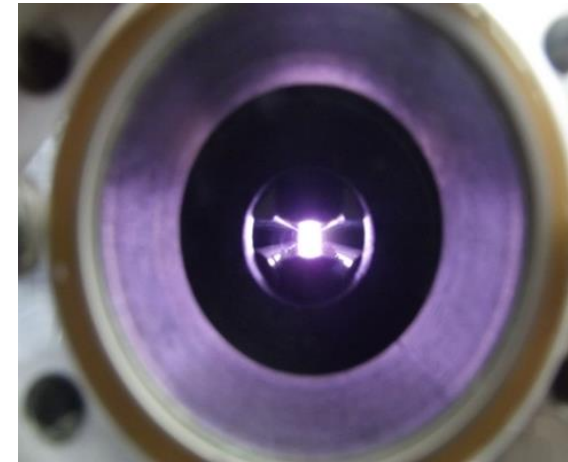
SILEX Technology - Process Flow Diagram



-  Mostly new technology
-  Known technology adapted
-  Same as gas centrifuge

GLE's Phased Approach to Commercialisation

- Phase I: 'Technology Validation' successfully completed in 2013
- Phase II: 'Economic Validation' is the focus for the next few years, including demonstration of full scale commercial production capability
- Plans include an opportunity for first commercial plant in Paducah, KY - currently being finalised with US Department of Energy (refer slide 14)
- Additional plans for commercial enrichment plant of up to 6MSWU in Wilmington, NC (US NRC Construction & Operating License received 2012)



Phase	Objectives	Status
Phase I	Test Loop technology demonstration and NRC commercial plant license approval	Completed 2013
Phase II	Economic and engineering validation for the initial commercial production module	Commenced in 2013
Phase III	Construction of the first full-scale commercial production facility	To be confirmed

Paducah Tails Enrichment Plant Opportunity

A key bridging project to commercial deployment

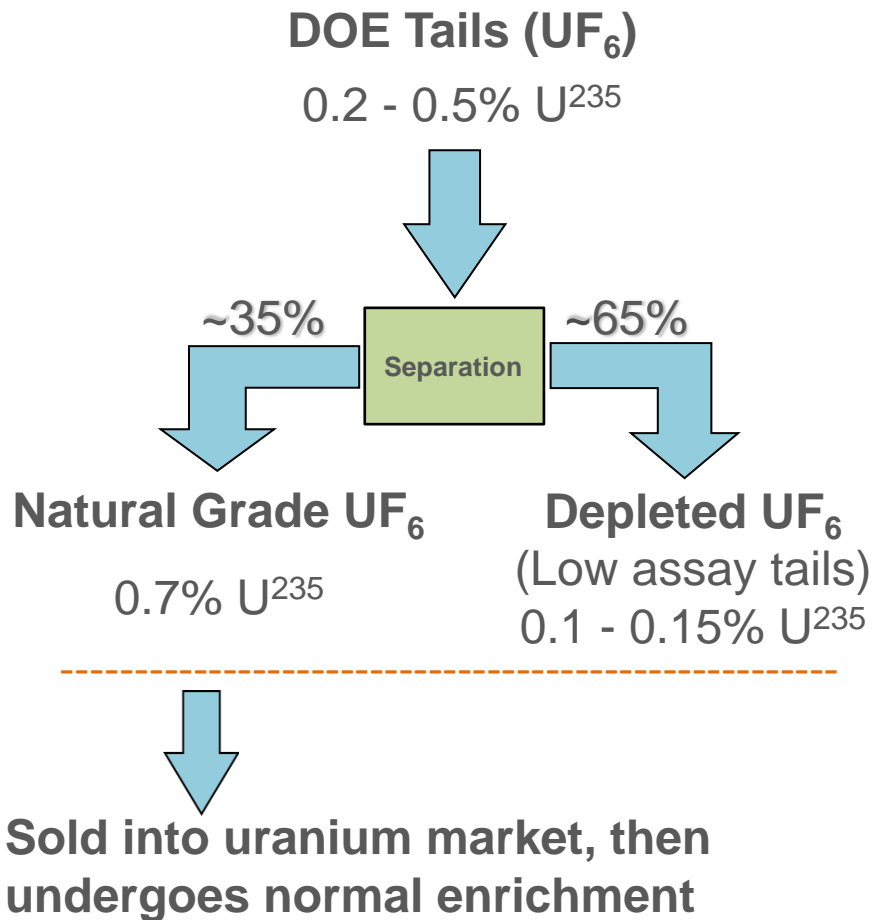
- DOE selected GLE's proposal for a commercial laser enrichment plant at Paducah in November 2013
- Enrichment of DOE tails stockpiles equivalent to a large, low cost uranium mine operating for at least 40 years
- SILEX efficiency enables very effective tails stripping capability – providing attractive economics
- The Paducah opportunity represents an ideal path to market – smaller plant and lower cost
- Possible funding of plant through the DOE's Loan Guarantee Program could help de-risk the enterprise
- Attractive IRR potential – mid-teens, and likely higher depending on uranium price recovery and Loan Guarantee
- Will allow full scale commercial deployment and provide foundation for future larger SWU plants
- Finalisation of negotiations between the GLE and DOE expected shortly



Paducah Enrichment Plant Site

The Tails Re-Processing Opportunity

A Tier 1 Uranium Asset



- The DOE holds over 500,000 MTU of tails material left over from decades of defence and commercial operations
- GLE's proposal to use efficient SILEX technology could recover around a third of these stockpiles as natural grade uranium
- Current estimates of U production cost make Paducah a Tier 1 uranium asset
- The uranium will be sold into the uranium market and then enriched to reactor grade fuel
- Potential exists to source other stockpiles of high assay tails around the world

Wilmington Enrichment Plant Opportunity

NRC License obtained in 2012

- US enrichment demand currently ~15MSWU total
- Current enrichment capacity in the US is only one third of US requirements (4.7MSWU - URENCO USA)
- Strong support from US utilities for a new low-cost US-based SWU supplier
- GLE submitted application for a proposed 6MSWU enrichment plant in Wilmington, NC to the NRC in 2009
- NRC approved a combined construction and operating license (COL) for the Wilmington plant proposal in 2012
- The Wilmington plant COL approval is the first license in the world for a laser enrichment facility
- Potential Wilmington enrichment plant site conveniently located next to GNF's fuel fabrication plant



GE Hitachi HQ, Wilmington, NC

The GLE Business Case

Uranium and SWU Production



Global Factors:

- Global growth in nuclear capacity is accelerating with surging world energy demand
- Geo-political factors driving increasing vulnerability with rising influence of Russia and China
- Energy security, grid stability, pollution and climate change will all support future nuclear growth

Uranium Production:

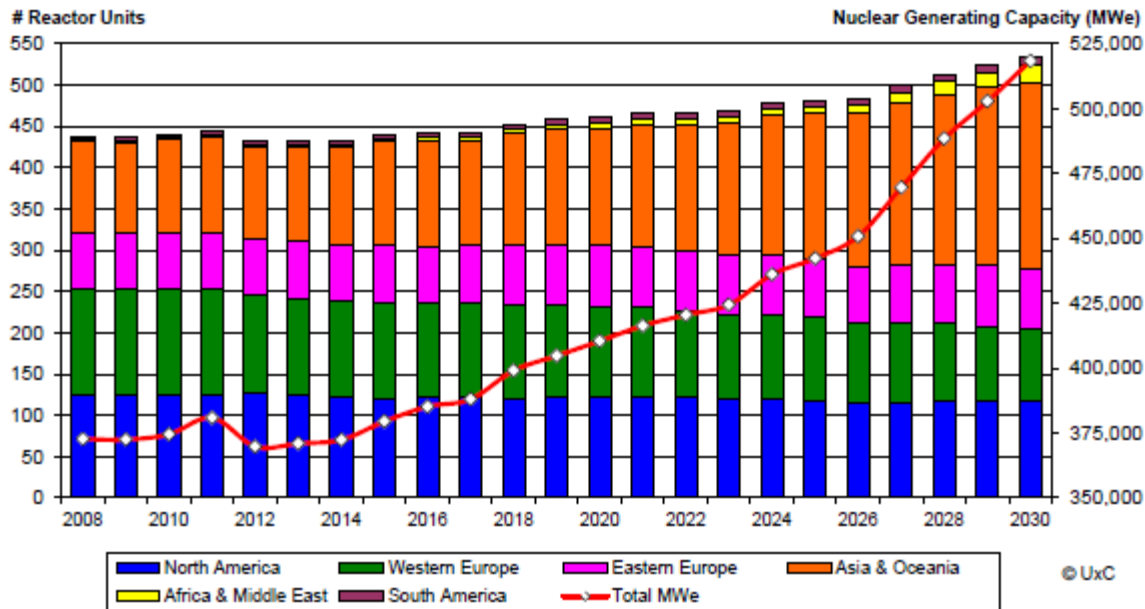
- Curtailment of uranium production and mothballing of resources will create a delay in bringing new (higher cost) supply on-line when market tightens in early to mid 2020's
- Nuclear power countries (including China, India, US etc) will all need stable supplies of uranium
- Reprocessing DOE tails by GLE in Paducah could potentially provide at least 5 million pounds of natural grade uranium per year for ~40 years (not including other sources of tails)

SWU Production:

- Enrichers turning capacity over to tails reprocessing and shutting older capacity (Urenco, Tenex)
- Urenco / Areva mothballed centrifuge factory - limiting ability to increase capacity in the short term
- GLE is positioning to build new SWU capacity in the US to serve US utilities (and others)
- With low cost production, GLE could support new capacity with conditional off-take contracts

Nuclear Power Forecasted to Grow Through 2030

Nuclear Generating Capacity Forecast



Source: UxC Power Market Outlook, Q2 2016

Key Statistics

- ✓ 11 percent of global electricity
- ✓ 445 operable reactors currently
- ✓ 61 new plants under construction
- ✓ 170 plants planned
- ✓ 339 plants proposed

Source: World Nuclear Association – August 2016

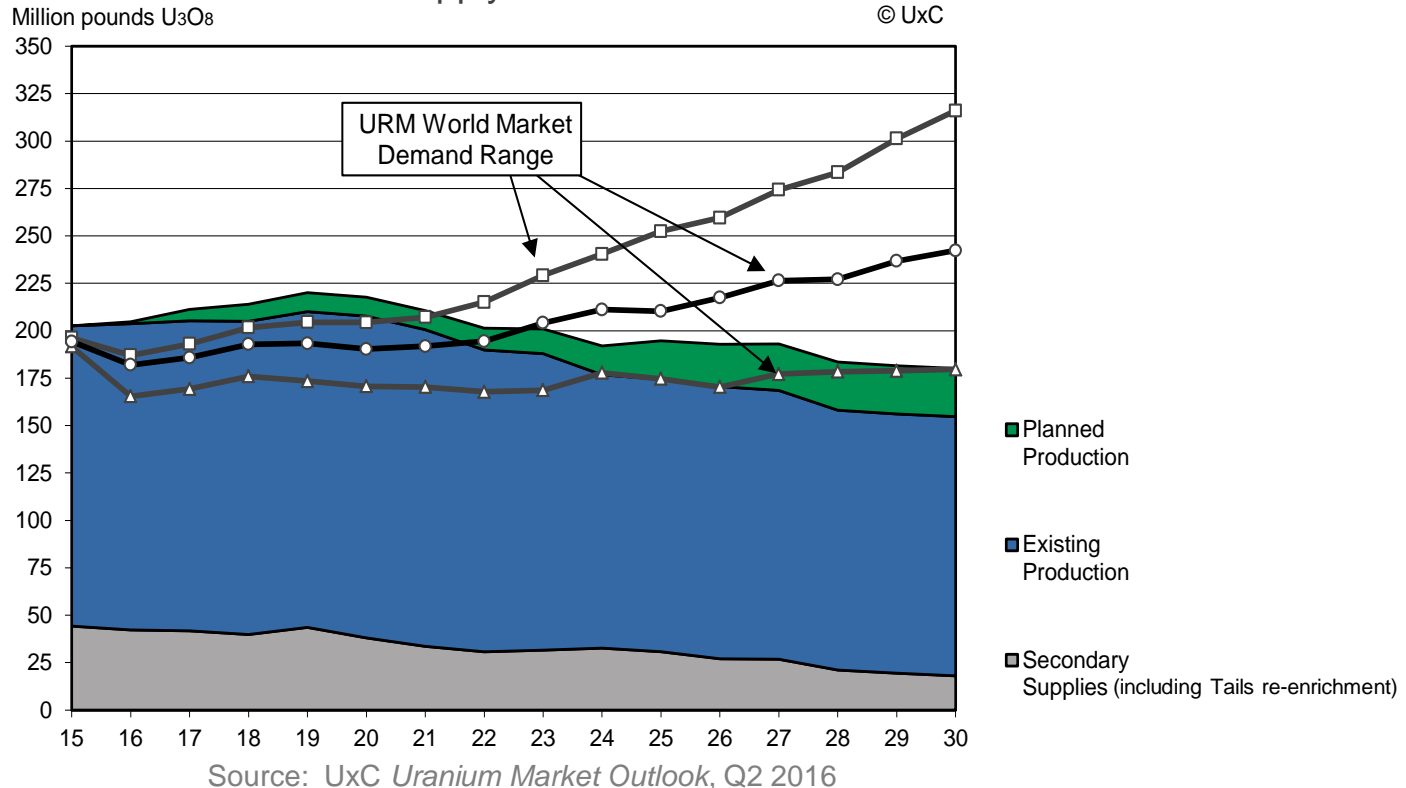
Reactor new build dependent on country policies

- Strong support: China, UK, Middle East, Poland, Hungary
- Nuclear power expected to play key role in global CO₂ emissions reduction
- COP21 in Dec 2015, more than 180 countries pledged to meet global warming targets

UxC Market Views

Uranium Market Outlook

Uranium Supply and Demand Forecast

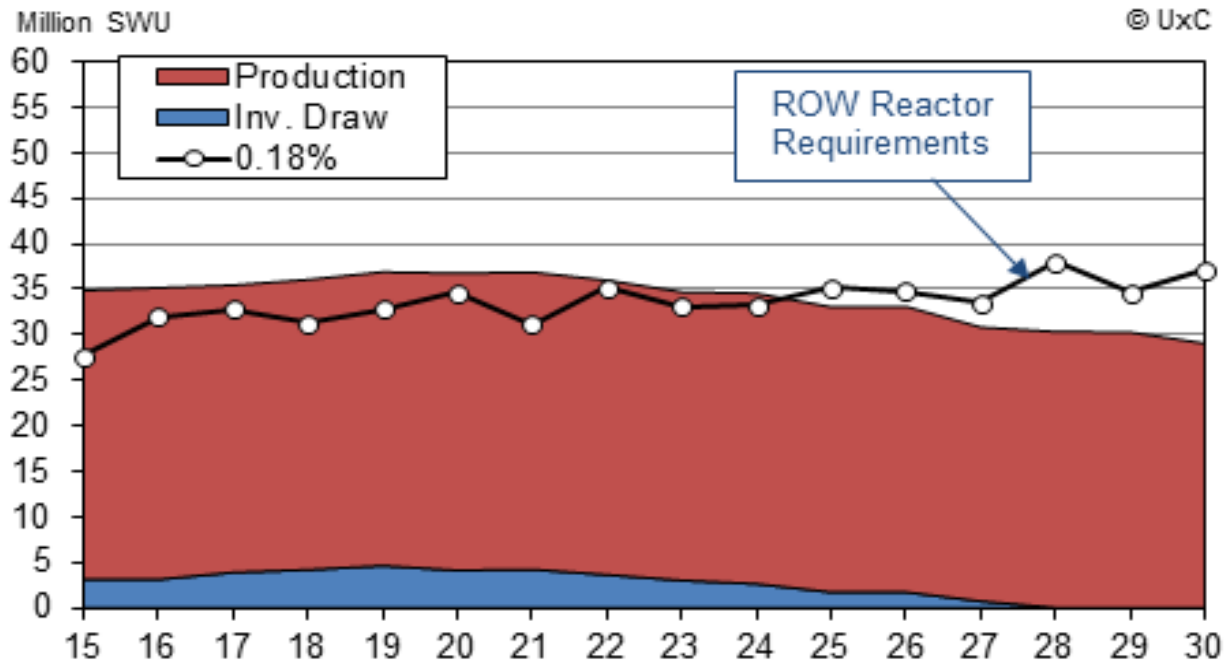


- Uranium supplies remain excess to market demand, under the mid case scenario, until ~2022
- Secondary uranium supplies include production from underfeeding and tails re-enrichment

UxC Market Views

Enrichment Market Outlook

Rest of World (ROW) Enrichment Supply and Demand Forecast



Source: UxC *Enrichment Market Outlook*, Q2 2016

Note: ROW assumes Russia covers all domestic and EU Russian reactor requirements and supplies 20% of U.S. requirements, and China covers only its domestic requirements

- ROW forecast shows market back in balance ~2022 and then going into supply shortage ~2024
- SWU/Enriched Uranium inventories also begin to deplete ~2020 and are consumed by 2028
- By mid-2020s, additional SWU supply will be needed to meet forecast market demand in ROW

Uranium and SWU Market Recovery

Why is recovery inevitable?

- Global growth in nuclear capacity is accelerating per current industry forecasts
- Japanese reactor restarts will also accelerate over the next few years
- Increasing unfilled demand (per UxC forecasts) will increase pressure
- Curtailment of uranium production and mothballing of resources since Fukushima will create a delay in bringing new higher cost supply on-line
- Enrichers turning capacity over to tails reprocessing and shutting down older capacity
- Climate change will likely drive low-emissions generation, with nuclear the only economic option for carbon-free base-load electricity generation
- Geo-political factors becoming more influential – US utilities are becoming vulnerable to external market factors including rising Russian and Chinese influence
- US utilities are very keen to see a second US based SWU producer

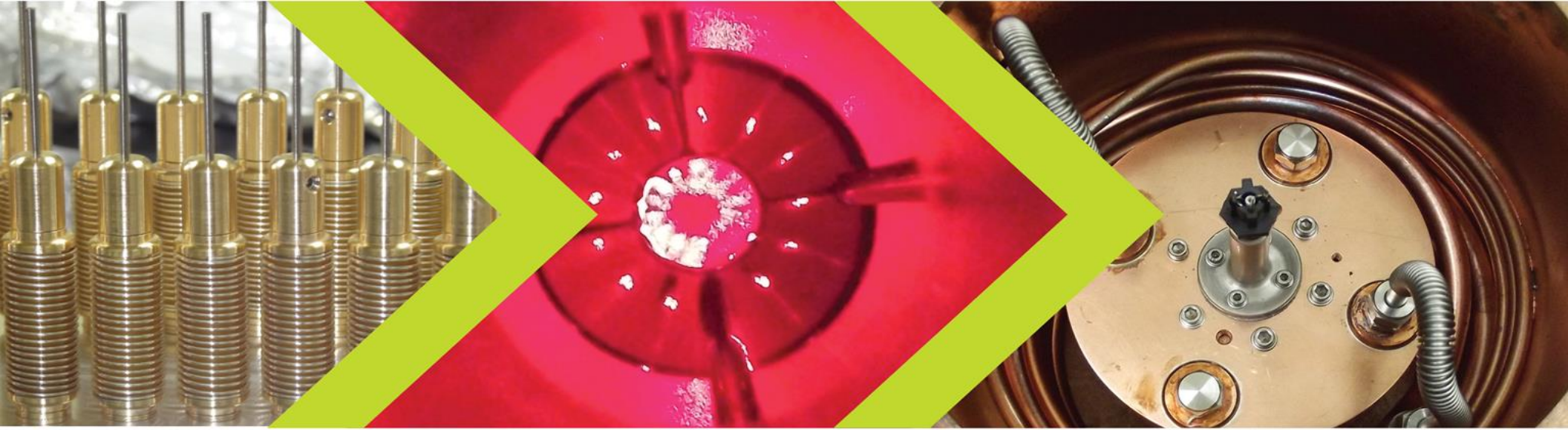
Enrichment Market Considerations

Window of Opportunity for GLE

- **High barriers to entry**
 - Highly restricted access to sensitive nuclear technology
 - Only four active producers: Urenco, Areva, Tenex, China
 - High technology hurdle - transition from GDP to centrifuge only recently completed
- **Important geopolitical dimension – Russia and China’s rising influence**
 - Russia is largest enricher; China the fastest growing
 - Potential for trade restrictions, supply disruptions
 - Increasing concern to US utilities and others - would support another US supplier
- **Market conditions support GLE market entry in 2020’s**
 - U/SWU price recovery and uncovered demand expected to improve
 - Align with future GLE commercial production of enriched uranium
- **Demand will increase and ‘accessible’ supply could decrease**



All point to a unique ‘Window of Opportunity’ for GLE



Translucent Inc – cREO™ Technology



Silex

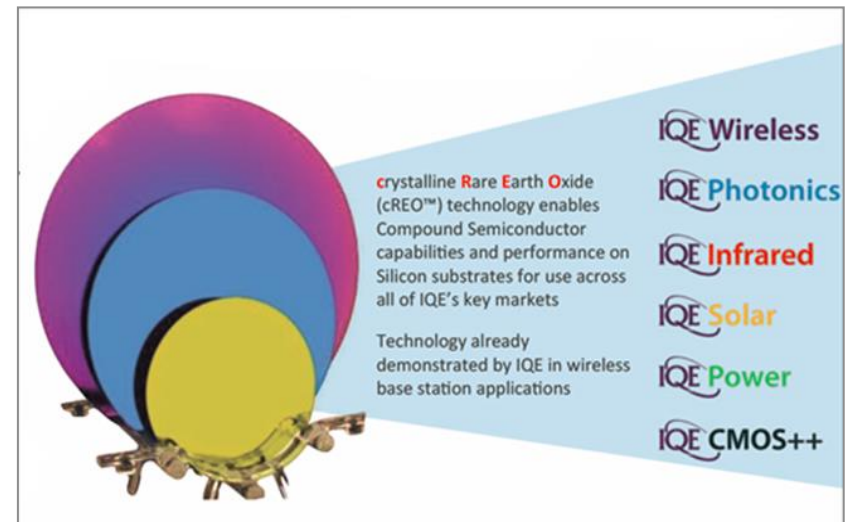
The Translucent – IQE Agreement

- Translucent's innovative 'Rare Earth Oxide' (cREO™) technology has potential application to high volume semiconductor sectors such as power electronics and wireless communications chips
- Translucent signed an exclusive license agreement in September 2015 with IQE - the world's leading semiconductor epiwafer supplier. Initial license fee of US\$1.4 million received March 2016
- The agreement provides a 30-month license for IQE to develop and commercialise initial products incorporating the cREO™ materials
- IQE can elect to purchase the cREO™ technology (with payment of a further US\$5 million) within the 30-month license period
- ***A royalty of up to 6% of IQE's revenues derived from use of the technology is payable to Translucent – potentially significant in target high volume semiconductor sectors***

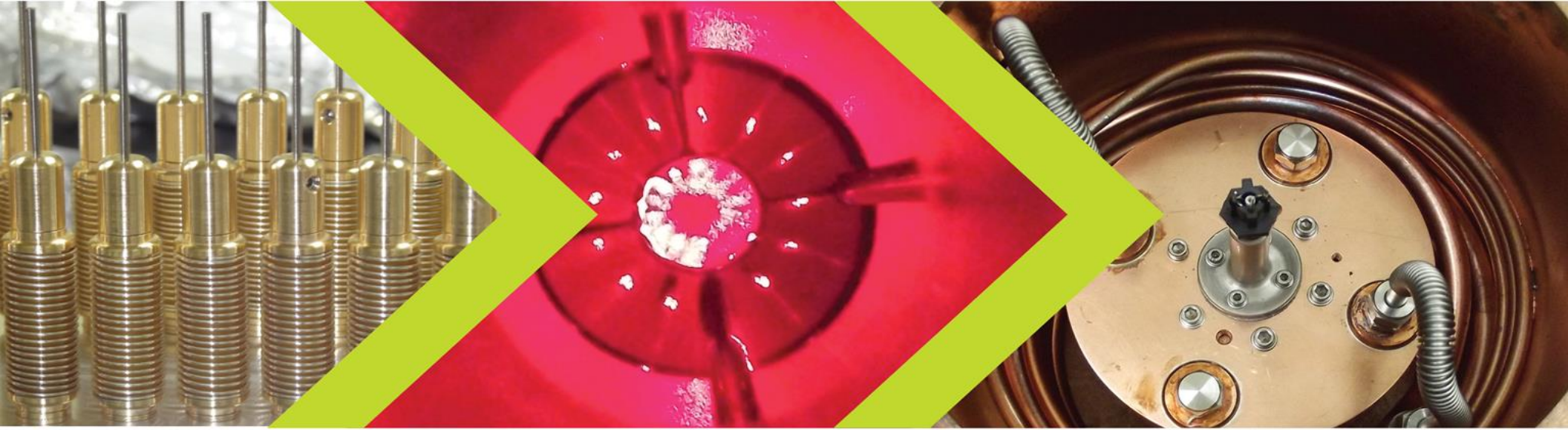


cREO™ - IQE Program

- cREO™ technology was transferred during FY2016 to IQE's Greensboro, North Carolina manufacturing facility for the completion of product development and commercialisation activities
- Product development focus is on high volume semiconductor sectors such as power electronics and wireless (RF) communications chips
- IQE have been producing cREO™ templates on silicon wafers using Translucent's production reactor for a number of months
- The semiconductor characteristics of the templates produced to date are an excellent match to previously achieved results by Translucent
- Templates are being produced for testing qualification within the IQE Group and with selected commercial partners



Source: iqep.com/markets/cmos/creo/

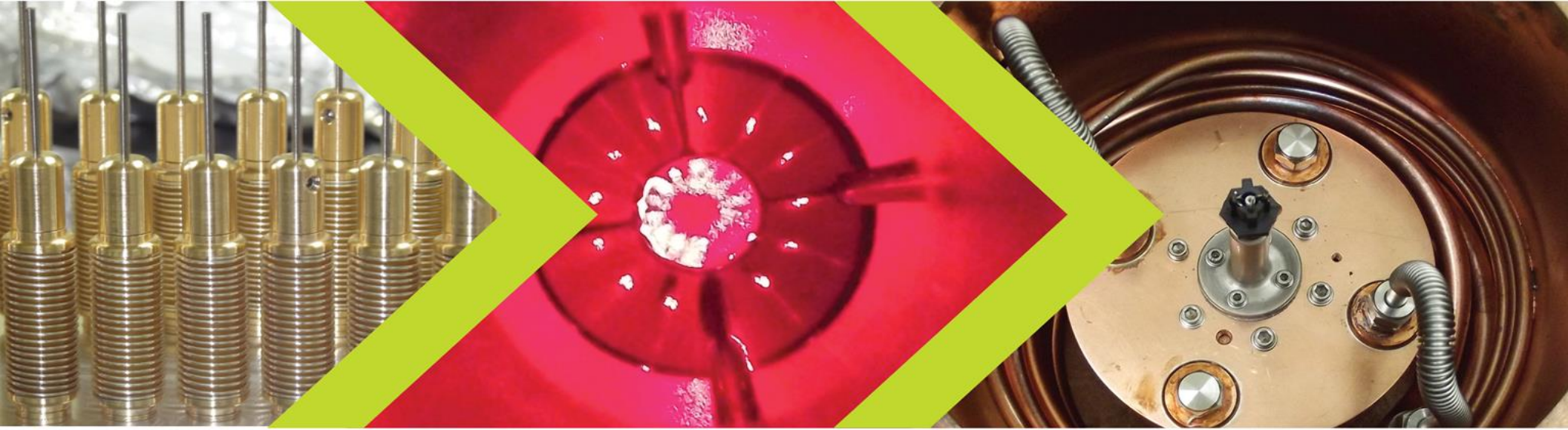


Summary and Outlook

Summary and Outlook



- **Two unique technologies licensed to leading commercial organisations**
 - Translucent's cREO™ technology licensed to IQE – being commercially deployed
 - The SILEX laser technology licensed to GLE – in engineering scale-up phase
 - Significant royalty streams to Silex possible from both opportunities if successful
- **Silex leading the restructure of SILEX technology licensee GLE**
 - Investor outreach underway with positive interest from several third parties
 - Term Sheet signed with GEH giving Silex assignable option over 76% equity
 - Window of opportunity for GLE in early 2020's as markets begin recovery
- **Silex is solidly focused on moving forward with GLE**
 - Value of key assets: specialist team, test loop and license for Wilmington plant
 - Continued pursuit of Paducah commercial plant opportunity
- **Successful commercialisation of licensed technologies is key to delivering shareholder value**



Thank you



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