



Silex Systems Limited

SILEX Laser Isotope Separation Technology

(ASX: SLX) (OTCQX: SILXY)

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6 October 2023 | ANA2023 Conference

Forward Looking Statements and Risk Factors

About Silex Systems Limited (ASX: SLX) (OTCQX: SILXY)

Silex Systems Limited ABN 69 003 372 067 (**Silex** or **Company**) is a technology commercialisation company whose primary asset is the SILEX laser enrichment technology, originally developed at the Company's technology facility in Sydney, Australia. The SILEX technology has been under development for uranium enrichment jointly with US-based exclusive licensee Global Laser Enrichment LLC (GLE) for a number of years. Success of the SILEX uranium enrichment technology development program and the proposed Paducah commercial project remain subject to a number of factors including the satisfactory completion of the engineering scale-up program and nuclear fuel market conditions and therefore remains subject to associated risks.

Silex is also at various stages of development of additional commercial applications of the SILEX technology, including the production of 'Zero-Spin Silicon' for the emerging technology of silicon-based quantum computing. The 'Quantum Silicon' project remains dependent on the outcomes of the project and the viability of silicon quantum computing and is therefore subject to various risks. Silex is also conducting research activities in its Medical Isotope Separation Technology (MIST) Project, which is early-stage and subject to numerous risks. The commercial future of the SILEX technology in application to uranium, silicon, medical and other isotopes is therefore uncertain and any plans for commercial deployment are speculative.

Additionally, Silex has an interest in a unique semiconductor technology known as 'cREO®' through its 100% ownership of subsidiary Translucent Inc. The cREO® technology developed by Translucent has been acquired by IQE Plc based in the UK. IQE has paused the development of the cREO® technology until a commercial opportunity arises. The future of IQE's development program for cREO® is very uncertain and remains subject to various technology and market risks.

Forward Looking Statements

The commercial potential of these technologies is currently unknown. Accordingly, no guarantees as to the future performance of these technologies can be made. The nature of the statements in this Presentation regarding the future of the SILEX technology as applied to uranium enrichment, Zero-Spin Silicon production, medical and other isotope separation projects, the cREO® technology and any associated commercial prospects are forward-looking and are subject to a number of variables, including but not limited to, unknown risks, contingencies and assumptions which may be beyond the control of Silex, its directors and management. You should not place reliance on any forward-looking statements as actual results could be materially different from those expressed or implied by such forward-looking statements as a result of various risk factors. Further, the forward-looking statements contained in this Presentation involve subjective judgement and analysis and are subject to change due to management's analysis of Silex's business, changes in industry trends, government policies and any new or unforeseen circumstances. The Company's management believes that there are reasonable grounds to make such statements as at the date of this Presentation Silex does not intend, and is not obligated, to update the forward-looking statements except to the extent required by law or the ASX Listing Rules.

Except as required by law or regulation (including the ASX Listing Rules and OTCQX Rules for US Companies), Silex does not intend, and is not obligated, to update the forward-looking statements and Silex disclaims any obligation or undertaking to update forward-looking statements in this Presentation to reflect any changes in expectations.

No representation, warranty or assurance (express or implied) is given or made in relation to any forward-looking statement by any person (including the Company or any of its advisers). In particular, no representation, warranty or assurance (express or implied) is given that the occurrence of the events expressed or implied in any forward-looking statements in this Presentation will actually occur.

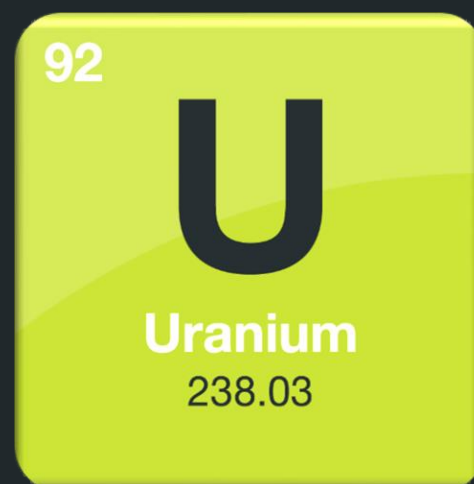
Risk Factors

Risk factors that could affect future results and commercial prospects of Silex include, but are not limited to: ongoing economic and social uncertainty, including in relation to the impacts of the COVID-19 pandemic; geopolitical risks, in particular relating to Russia's invasion of Ukraine and tensions between China and Taiwan which may impact global supply chains, among other risks; uncertainties related to the effects of climate change and mitigation efforts; the results of the GLE/SILEX uranium enrichment pilot demonstration program; the market demand for natural uranium and enriched uranium; the outcome of the project for the production of Zero-Spin Silicon for the emerging technology of silicon-based quantum computing; the outcome of the MIST Project; the potential development of, or competition from alternative 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; whether IQE's commercialisation program for cREO® is resumed, the results from the program and the market opportunities for cREO® products; actions taken by the Company's commercialisation partners and other stakeholders that could adversely affect the technology development programs and commercialisation strategies; and the outcomes of various strategies and projects undertaken by the Company.

Silex and the SILEX technology

- Silex Systems Limited – inventor and developer of the proprietary laser-based SILEX enrichment technology
- Listed on the Australian Stock Exchange (ASX: SLX) and in the US (OTCQX: SILXY)
- Headquartered in Sydney (based at ANSTO's Lucas Heights campus)
- Core project is for uranium enrichment with US-based exclusive licensee, Global Laser Enrichment LLC (GLE)
- GLE is a jointly-controlled JV with Cameco Corporation, one of the world's leading uranium producers and nuclear fuel suppliers
- Also commercialising isotopically pure enriched silicon production technology for the silicon quantum computing industry

Our Mission: to commercialise the unique SILEX laser enrichment technology for application to:



**Uranium production
and enrichment**
(nuclear power)



Silicon enrichment
(silicon quantum
computing)



**Medical isotope
enrichment**
(new cancer therapies)

Key Drivers of the Nuclear Renaissance

Response to climate change:

- Population growth, industrialisation and digitisation → increasing global energy demand and carbon emissions
- Urgent climate action required (Net-Zero 2050 commitments) → driving a rapid global energy transition (but renewables (solar, wind) still only 5% of total)
- Decarbonisation and electrification → increasing the importance of nuclear power as a grid-stabilising baseload source of electricity

The need for energy security:

- Russian invasion of Ukraine → precipitating global energy supply disruptions (oil, gas and potentially nuclear fuel)
- Renewed focus on vital infrastructure and services, including supply chains → reassertion of national sovereignty
- National security increasingly dependent on energy security → uranium viewed as a strategic resource and nuclear energy as a strategic technology

Geopolitical developments are creating uncertainty and opportunity:

- Global affairs increasingly characterised by geopolitical instabilities → uranium and nuclear offers a path to energy independence
- United States moving to regain global leadership over the civilian nuclear fuel cycle → multiple government initiatives and bipartisan support
- Competition for energy resources spurring development of new generation nuclear technologies → SMRs, GenIV reactors, Accident Tolerant Fuels, Laser Enrichment

Primary Focus on GLE Commercialisation



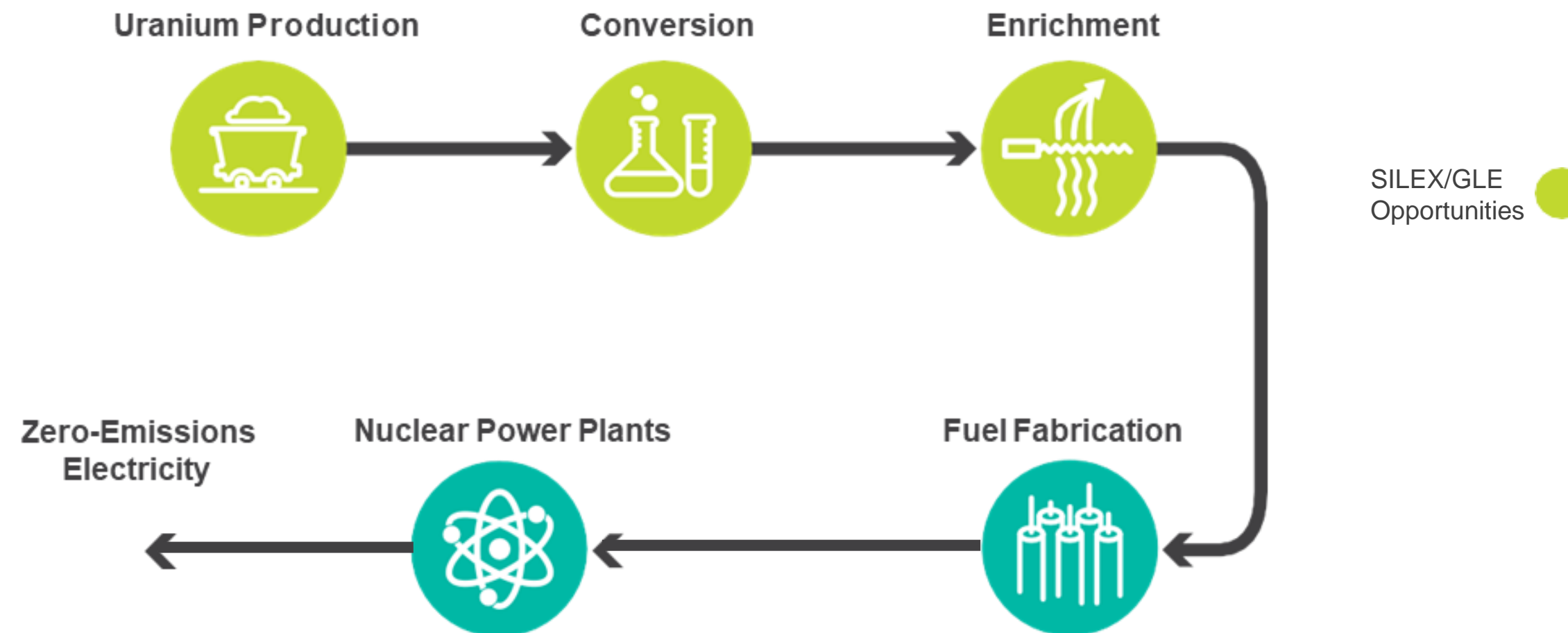
Uranium production and enrichment (nuclear power)

- SILEX uranium technology licensee Global Laser Enrichment (GLE) is actively progressing towards commercialisation
- US-based licensee GLE under JV ownership since 2021: 51% by Silex and 49% by Cameco Corporation (Cameco)
- Cameco is one of the world's leading uranium producers and nuclear fuel suppliers
- GLE has unique potential to address the '*Triple Opportunity*' that has emerged in the global nuclear fuel supply chain with the potential production of nuclear fuels in the form of:
 1. **Natural UF₆ production** - from DOE¹ tails inventories (support rising demand for uranium and conversion)
 2. **LEU production** - fuel for existing reactor fleet (help mitigate supply risks for enriched uranium fuel)
 3. **HALEU production** - fuel for next generation reactors, including Small Modular Reactors (SMRs) (help establish HALEU capability in the US)

1. DOE: US Department of Energy

Nuclear Fuel Supply and Current Threats

The Nuclear Fuel Supply Chain



Current Threats to the Global Nuclear Fuel Supply Chain:

- Supply chain risks exposed by over-dependence on Russian-sourced nuclear fuel
- Western supply – curtailments and under-investment in resources and production capability
- Conversion services – only 3 Western suppliers (Cameco, Orano, Converdyn) excluding Russia
- Enrichment services – only 2 Western suppliers (Urenco, Orano) excluding Russia
- HALEU fuel for advanced reactors, including SMRs – no Western-based suppliers; developers were relying on Russian HALEU

US and EU Nuclear Fuel Requirements Supplied by Russia

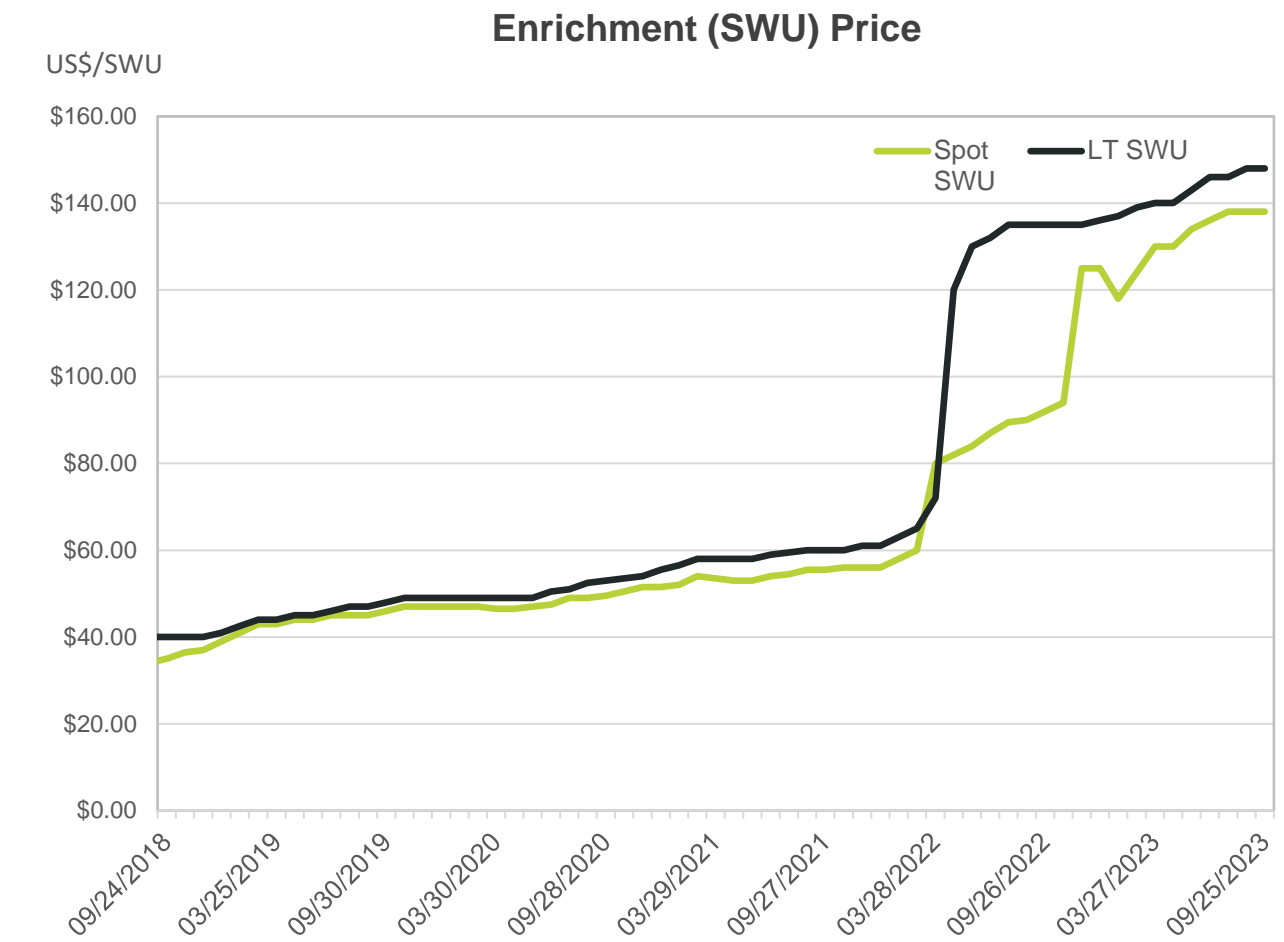
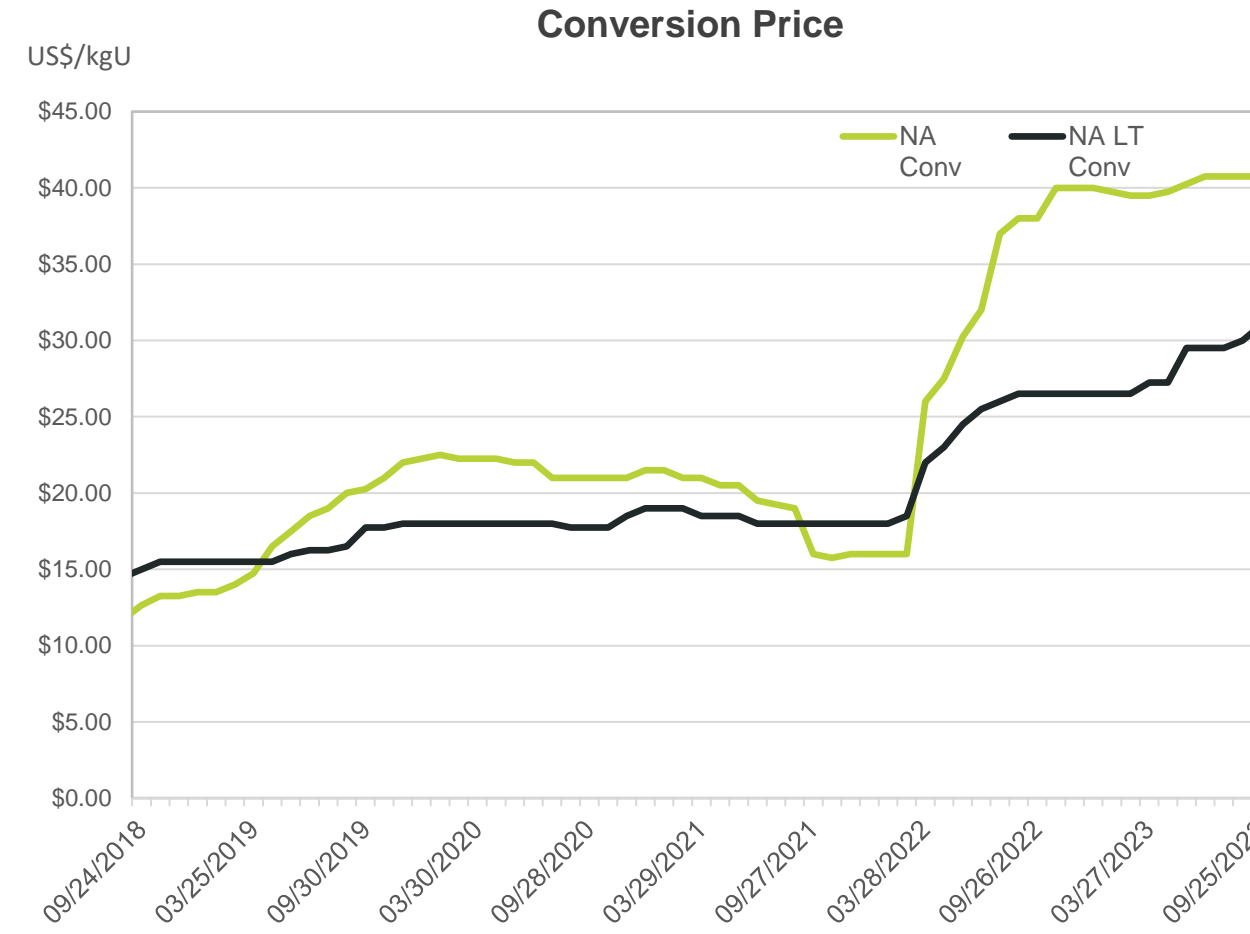
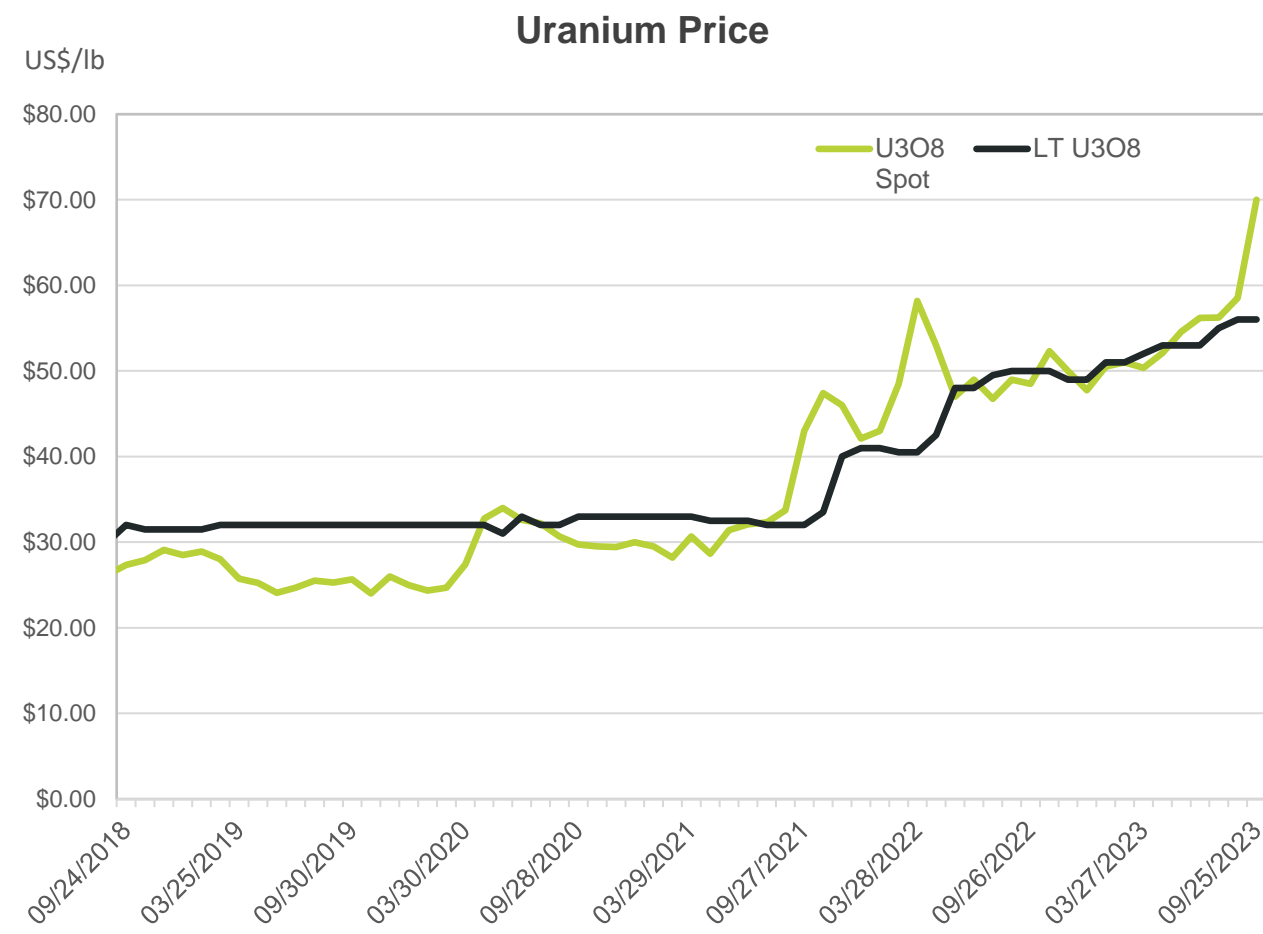
	Russian Share of Global Production Capacity ¹	EU Nuclear Fuel Supplied by Russia ²	US Nuclear Fuel Supplied by Russia ^{1,3}
Uranium (U ₃ O ₈)	~14%	~20%	~14%
Conversion	~27%	~25%	~18%
Enrichment (SWU)	~45%	~31%	~24%

1. WNA and UxC, various sources 2023
2. Euratom Supply Agency Annual Report 2021
3. EIA, 2022 Uranium Marketing Annual Report, June 2023

- Major concerns regarding Western reliance on Russia for the supply of nuclear fuel
- US is the largest market for nuclear fuel, with ~25% of world's nuclear reactor fleet
- Open market[^] currently accounts for ~65% of global enriched uranium demand

[^]Open market consists of North America, Europe, Northeast Asia, and various other parts of the world

Recent Nuclear Fuel Market Price Trends



Source: UxC

- Global nuclear fuel markets are pricing in the impact of a bifurcating market precipitated by looming Russian fuel sanctions/exclusions
- According to UxC, the uranium spot price has increased by ~190% from ~US\$24/lb (2019) to ~US\$70/lb (September 2023)
- Conversion term prices have increased ~100% over the same period to ~US\$31/kg
- Enrichment term prices have increased ~250% over the same period to ~US\$148/SWU

Acceleration of GLE's CY2023 Activities for SILEX technology

GLE has unique potential to address the 'Triple Opportunity' that has emerged in the global nuclear fuel supply chain:

- GLE joint venture owners Silex and Cameco have agreed to a plan and budget for CY2023 that accelerates activities in the commercial-scale pilot demonstration project for the SILEX uranium enrichment technology
- The CY2023 plan and budget involves bringing forward activities, approximately doubling project expenditures compared to CY2022 – creating the potential opportunity to complete the commercial-scale pilot demonstration project as early as mid-2024 (previously c.2025)¹
- Accelerated demonstration of the SILEX technology at commercial pilot scale preserves the option of commencing commercial operations at the planned Paducah Laser Enrichment Facility (PLEF) as early as 2028 (up to three years earlier than originally planned)²

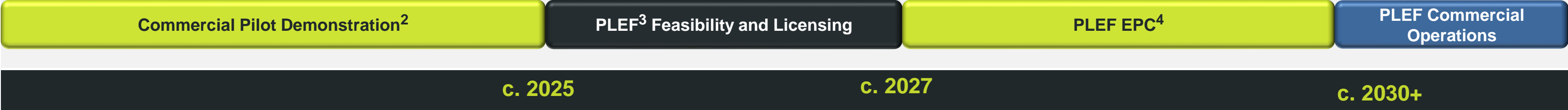
Significant Support Emerging from the US Government and Industry:

- US Government passed the 'Inflation Reduction Act' in August 2022 – includes US\$700 million support for the HALEU³ Availability Program – draft Request for Proposal (RFP) response to request for comments submitted 6 July 2023
- Nuclear Fuel Security Act and other Bills before Congress could provide additional funding for LEU / HALEU production
- Other draft Bills that may result in the ban of Russian imports of nuclear fuel to the US are progressing through Congress
- GLE signed LOIs⁴ with US utilities Constellation Energy Generation, Duke Energy and Dominion Energy to support GLE's commercialisation

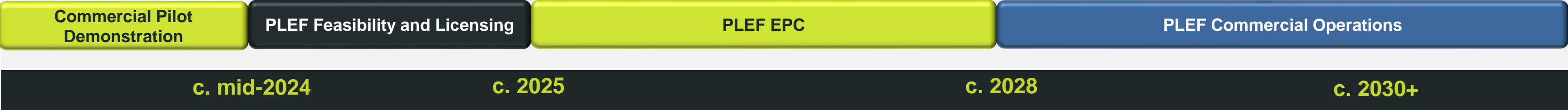
1. Acceleration of the plan beyond CY2023 remains conditional on availability of government and industry support, and geopolitical and market factors
2. Timelines subject to technology demonstration outcomes, market conditions, licensing, commercial support and other factors
3. High Assay Low Enriched Uranium
4. Letter of Intent

GLE's Potential Timelines for Commercialisation of SILEX technology¹

Baseline - GLE Commercialisation Timeline:



Accelerated - GLE Commercialisation Timeline⁵:



←
*Up to 3 years earlier
than originally planned*

1. Timelines subject to technology demonstration outcomes, market conditions, licensing, commercial support and other factors
2. Includes achievement of Technology Readiness Level 6 (TRL-6) as defined by DOE Technology Readiness Assessment Guide (G 413.3-4A)
3. PLEF: Paducah Laser Enrichment Facility
4. Engineering, Procurement and Construction (EPC) of commercial plant
5. Continued acceleration remains subject to due diligence assessment and may vary according to differing scenarios

GLE's PLEF Production Plant Opportunity

The PLEF Triple Opportunity

Paducah Laser Enrichment Facility (PLEF) commercial project to deploy the SILEX technology in the US:

- **PLEF UF₆ Production:** Production of up to 5 million pounds (equivalent) natural grade uranium (as UF₆) annually for up to 30 years – underpinned by GLE's 2016 agreement with US DOE to acquire over 200,000 tonnes of legacy tails inventories
- **PLEF LEU Production:** Add-on opportunity to enrich PLEF output to produce Low Enriched Uranium (LEU/LEU+) for nuclear reactor fuel
- **PLEF HALEU Production:** Additional opportunity to enrich HALEU for next generation advanced reactors, including SMRs

PLEF UF₆

Natural Grade Uranium (as UF₆)

via enrichment of DOE inventories of depleted tails to produce natural UF₆ with U²³⁵ assay ~0.7%

PLEF LEU

Low Enriched Uranium (LEU)

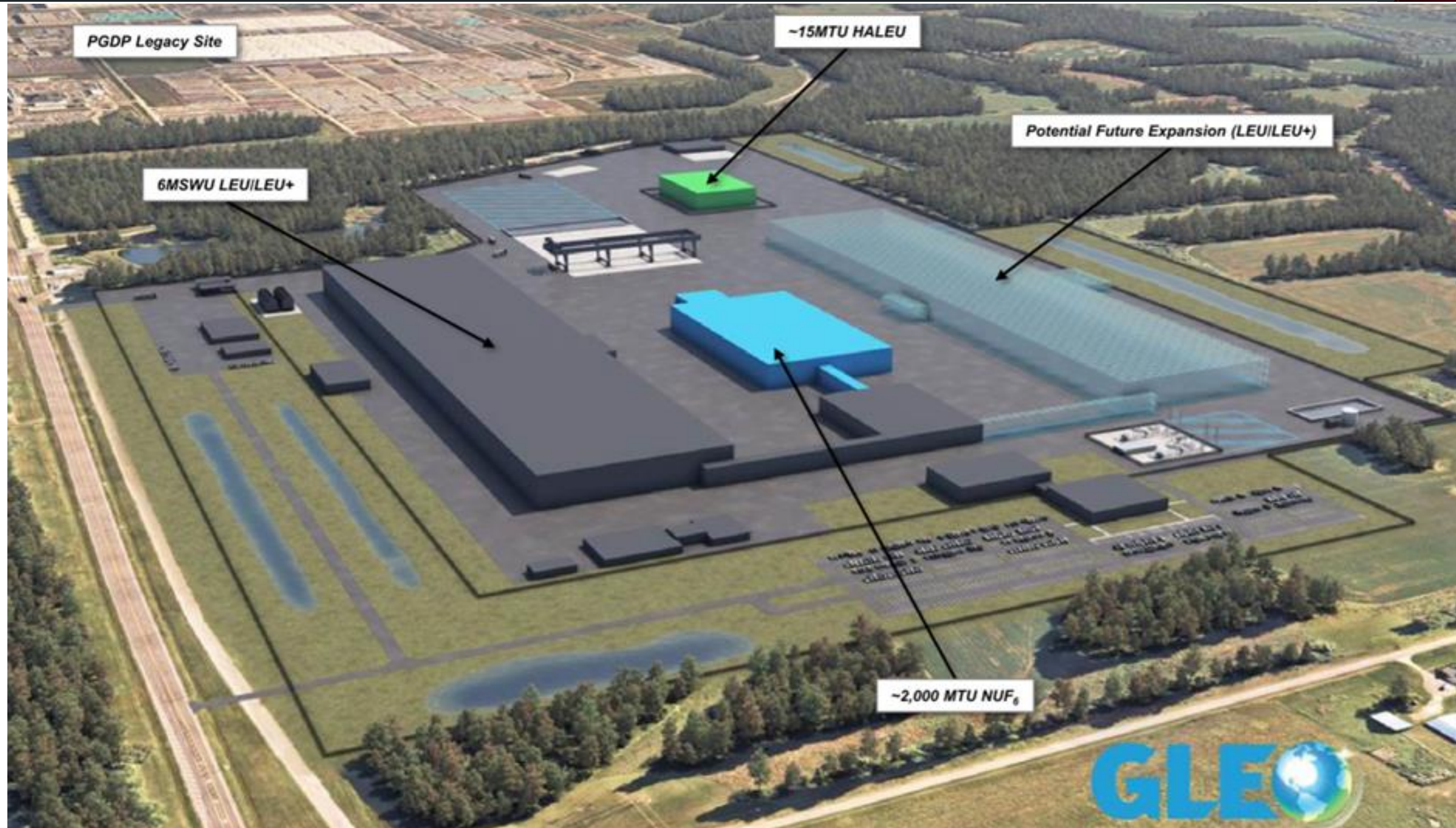
for conventional nuclear power reactors
LEU includes U²³⁵ assays of 3% to 5%
LEU+ includes U²³⁵ assays of 5% to 10%

PLEF HALEU

High Assay LEU (HALEU)

fuel for next generation advanced reactors, including SMRs
includes U²³⁵ assays up to 20%

GLE's PLEF Multi-purpose Production Plant Opportunity



PLEF UF₆ Production Opportunity

(Natural UF₆ production from tails)

**Accelerated
Commercial
Operation Date[^]**
2028

**Akin to a 'Tier 1'
Uranium Resource***

Based on low cost and
longevity of production
(Silex estimate of all-in cost
currently < US\$30/lb)

**Equivalent U₃O₈
Production**

Up to 5 million lbs p.a. for
approximately 30 years

**Potential capture of
Conversion Value**

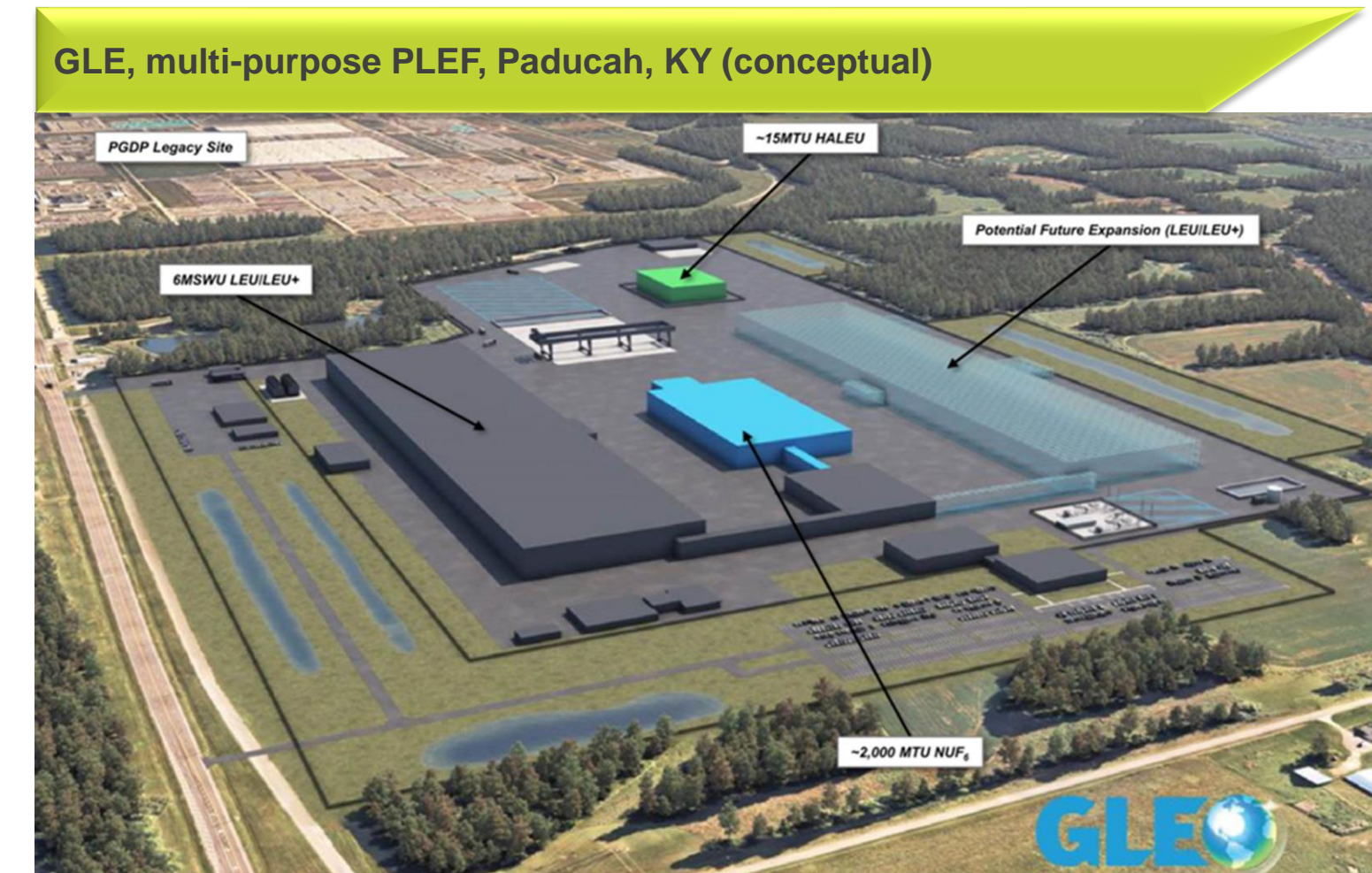
Feed and Product is UF₆
(current conversion value
~US\$30/kg)

**Potential to
Enrich Further**

From natural grade (0.7%):
to LEU (up to 5%)
to LEU+ (up to 10%)
& HALEU (up to 20%)

Summary

- Long-term fundamentals for global growth in nuclear power strengthening – with climate change concerns and global energy supply disruptions energising Western nuclear fuel markets
- A unique opportunity has emerged for GLE and the SILEX technology to support a restructure of the Western nuclear fuel supply chain in a rapidly bifurcating industry
- Acceleration of the pilot demonstration project - targeting completion in mid-2024 and, if successful, preserves the option to commence PLEF commercial operations as early as 2028 (3 years earlier than originally planned)
- GLE's path to market with the SILEX technology is underpinned by the PLEF multi-purpose production plant opportunity, which includes the potential production of natural uranium (as UF_6) – potentially doubling uranium production in the US
- *'Triple Opportunity'* includes potential to add SILEX production capacity to produce LEU, LEU+ and HALEU nuclear fuels with the PLEF multi-purpose production facility, helping to alleviate dependence on Russian sourced fuel
- Australia could generate significant economic, environmental, and social benefit with a change in policy towards greater exploitation of uranium, including downstream processing (conversion and enrichment)



Questions



Thank you