



Silex Systems Limited

Investor Presentation

(ASX: SLX) (OTCQX: SILXY)

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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 TRL-6 pilot demonstration program, nuclear fuel market conditions, industry and government support, project feasibility and commercial plant licensing, 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 'Quantum Silicon' for the emerging technology of silicon-based quantum computing. The 'Quantum Silicon' project remains dependent on the outcomes of the project as well as the successful development of silicon quantum computing technology by third parties, 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.

Forward Looking Statements

The commercial potential of the abovementioned technologies and activities 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, Quantum Silicon production, medical and other isotope separation projects, and any associated commercial prospects are forward-looking and are subject to a number of variables, including but not limited to, known and 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 (including project outcomes), 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 global economic stresses such as interest rates and inflation; geopolitical risks, in particular relating to Russia's invasion of Ukraine and tensions between China and Taiwan which may impact global supply chains; uncertainties related to the effects of climate change and mitigation efforts; the results of the GLE/SILEX uranium enrichment pilot demonstration (TRL-6) program; the market demand for natural uranium and enriched uranium; the outcome of the project for the production of Quantum Silicon for the emerging technology of silicon-based quantum computing; the outcome of the MIST program; 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; 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.



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)

Our strategy is focused on extracting maximum value from our core SILEX technology and expertise

Recent Highlights and Developments

Global Laser Enrichment (GLE) / SILEX Uranium Enrichment Technology Project:

- Through commercialisation of the SILEX technology, GLE is positioning to leverage the '***Triple Opportunity***' that is emerging today in the global nuclear fuel market
- GLE's owners (Silex and Cameco) continue to support accelerated activities in GLE's CY2024 plan and budget for the SILEX uranium enrichment technology full-scale pilot demonstration project – aiming for completion by the end of CY2024 (previously end of CY2025)
- GLE's new leased facility in Wilmington is now operational – providing significant additional space for continued growth in GLE's engineering, in-house manufacturing, and commercial activities
- In May 2024, the *Prohibiting Russian Uranium Imports Act* was passed into law and is now effective – with limited utility waivers until the end of 2027
- Prohibition Act triggered US\$2.7bn in funding to support new nuclear fuel production capacity, with the DOE releasing the LEU Enrichment Acquisition Request for Proposals (LEU RFP) in July 2024
- GLE intends to participate in the bidding process for the LEU RFP, with bids due for submission by 9 September 2024
- In June 2024, GLE entered into a set of agreements that provides an option to purchase land for the planned Paducah Laser Enrichment Facility (PLEF)

Quantum Silicon Project, Medical Isotope Project, and Other Highlights:

- Design and construction of the first full-scale Quantum Silicon (Q-Si) Production Plant continues at the Company's Lucas Heights facility, with \$5.1m in funding support from the Federal Government's Defence Trailblazer program and a further \$4.35m cash contribution from first offtake partner, Silicon Quantum Computing (SQC)
- The Medical Isotope Separation Technology (MIST) project continues to advance at Lucas Heights – focused on developing a process to produce enriched Ytterbium (Yb-176), the key precursor required for Lutetium (Lu-177) production – a breakthrough therapy for advanced cancers

As at 30 June 2024, the Company has cash and term deposit holdings of ~\$113.1m and no corporate debt

Primary Focus on GLE Commercialisation



Uranium production and enrichment for nuclear fuel

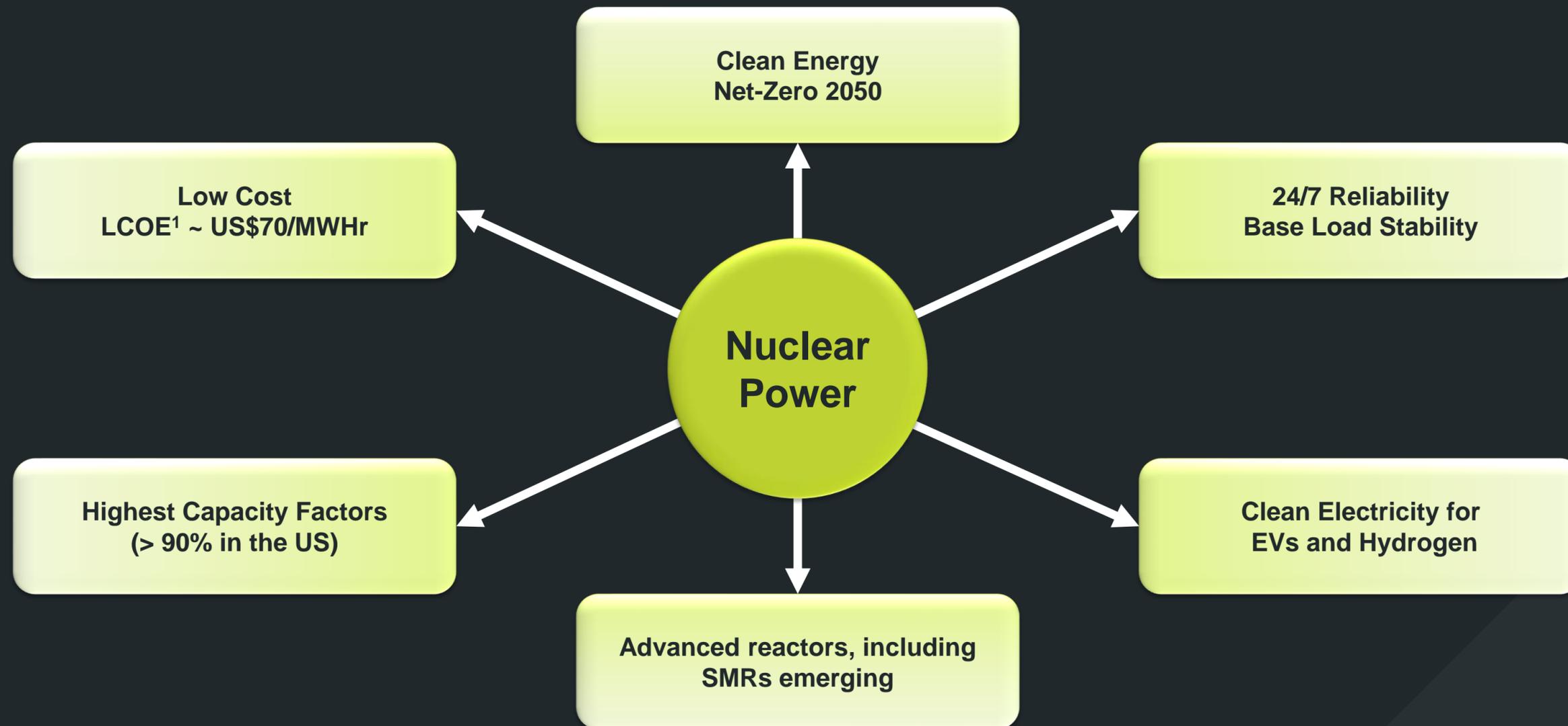
- Global nuclear fuel industry undergoing disruptive bifurcation, intensifying the nuclear renaissance in the Western world
- GLE and Silex commercialising SILEX technology under favourable market conditions with ~US\$500m invested to date
- US-based GLE headquartered in Wilmington, NC: ~70k sq ft office space, manufacturing facility, and Test Loop pilot plant
- Key technology de-risking demonstration (TRL-6) with full-scale pilot plant aiming to be completed by end of CY2024
- GLE's path to market focused on its unique ability to address the '*Triple Opportunity*' that is emerging in the global nuclear fuel supply chain with the potential production of three forms of nuclear fuel:
 1. **Natural UF₆ production** - from DOE* tails inventories (support the rising demand for uranium and conversion)
 2. **LEU production** - enriched fuel for existing reactor fleet (help mitigate supply risks for enriched uranium products)
 3. **HALEU production** - fuel for next generation advanced reactors, including Small Modular Reactors (SMRs)
(help establish HALEU capacity in the US)



SILEX Uranium Enrichment Technology: *Triple Opportunity for SILEX and GLE*

Nuclear Power is important to achieving Net-Zero

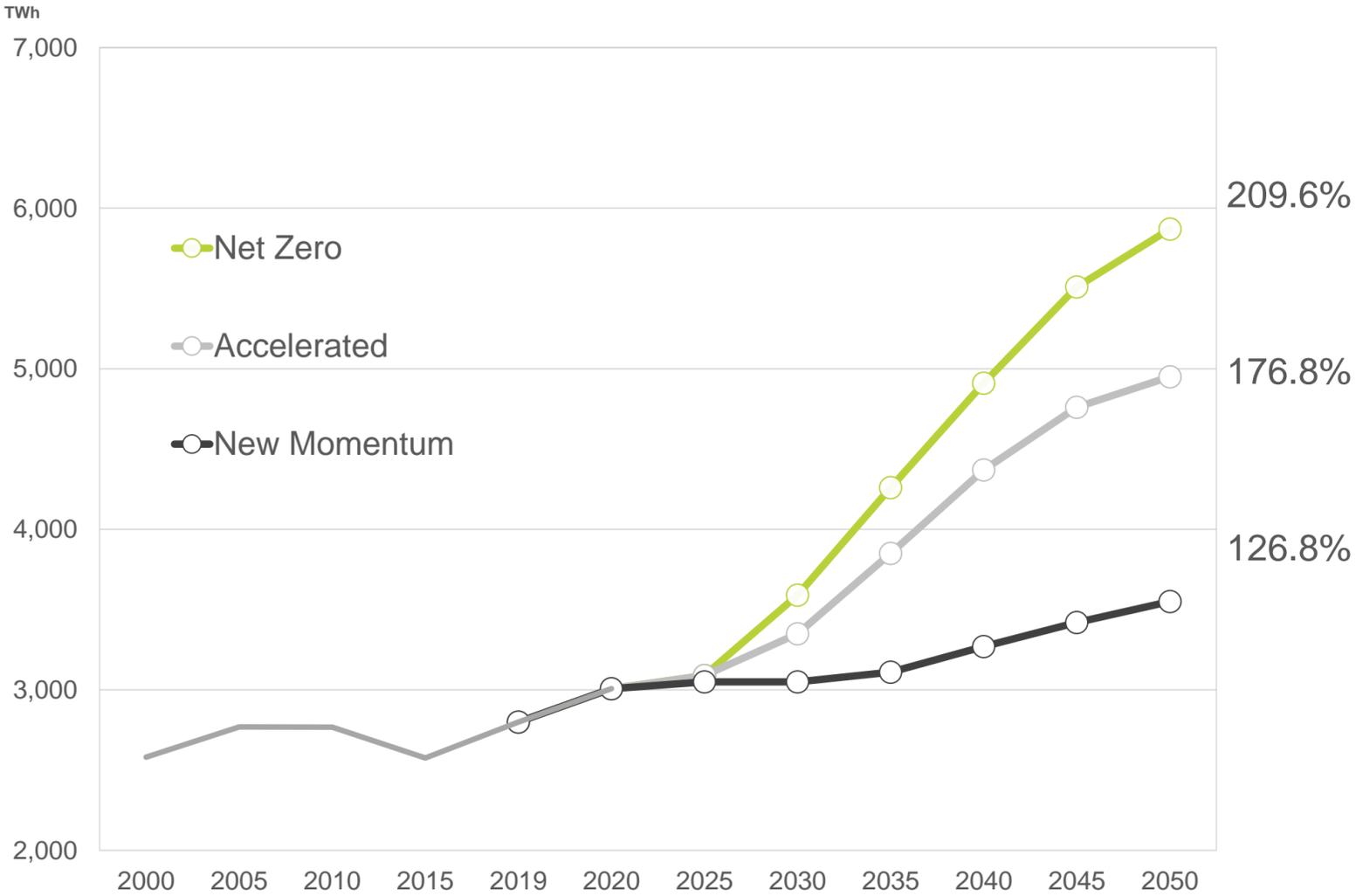
Nuclear power is a leading source of zero-emissions base load electricity



1. LCOE ~US\$70/MWhr, IEA Projected Costs of Generating Electricity 2020 (LCOE = Levelised Cost of Electricity – all-in costs basis)

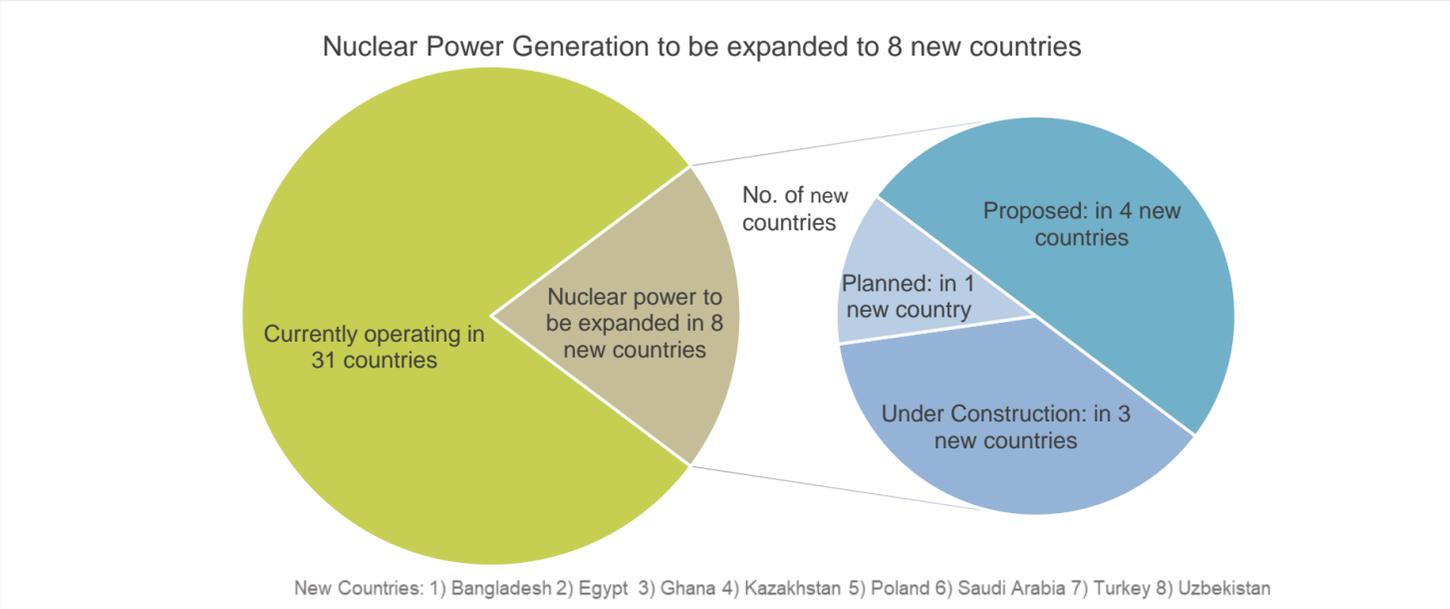
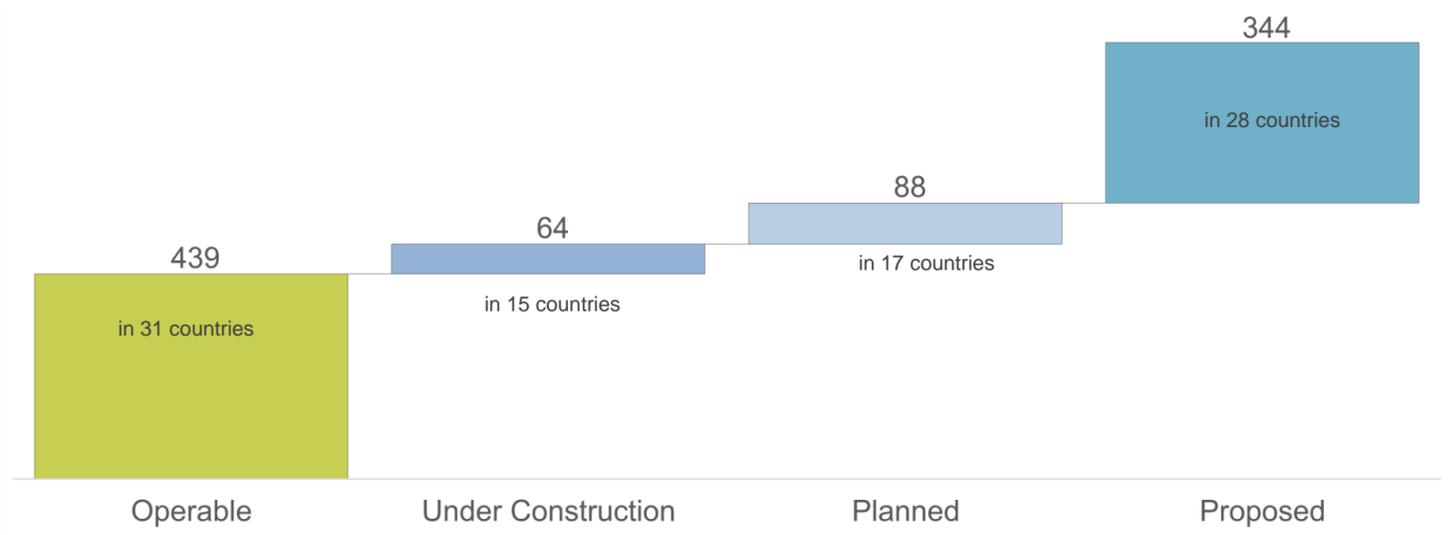
Significant Nuclear Power Growth to achieve Net Zero by 2050

Nuclear Generation Growth Scenarios



Source: BP Energy Outlook 2023 Edition

World Nuclear Power Reactor Population

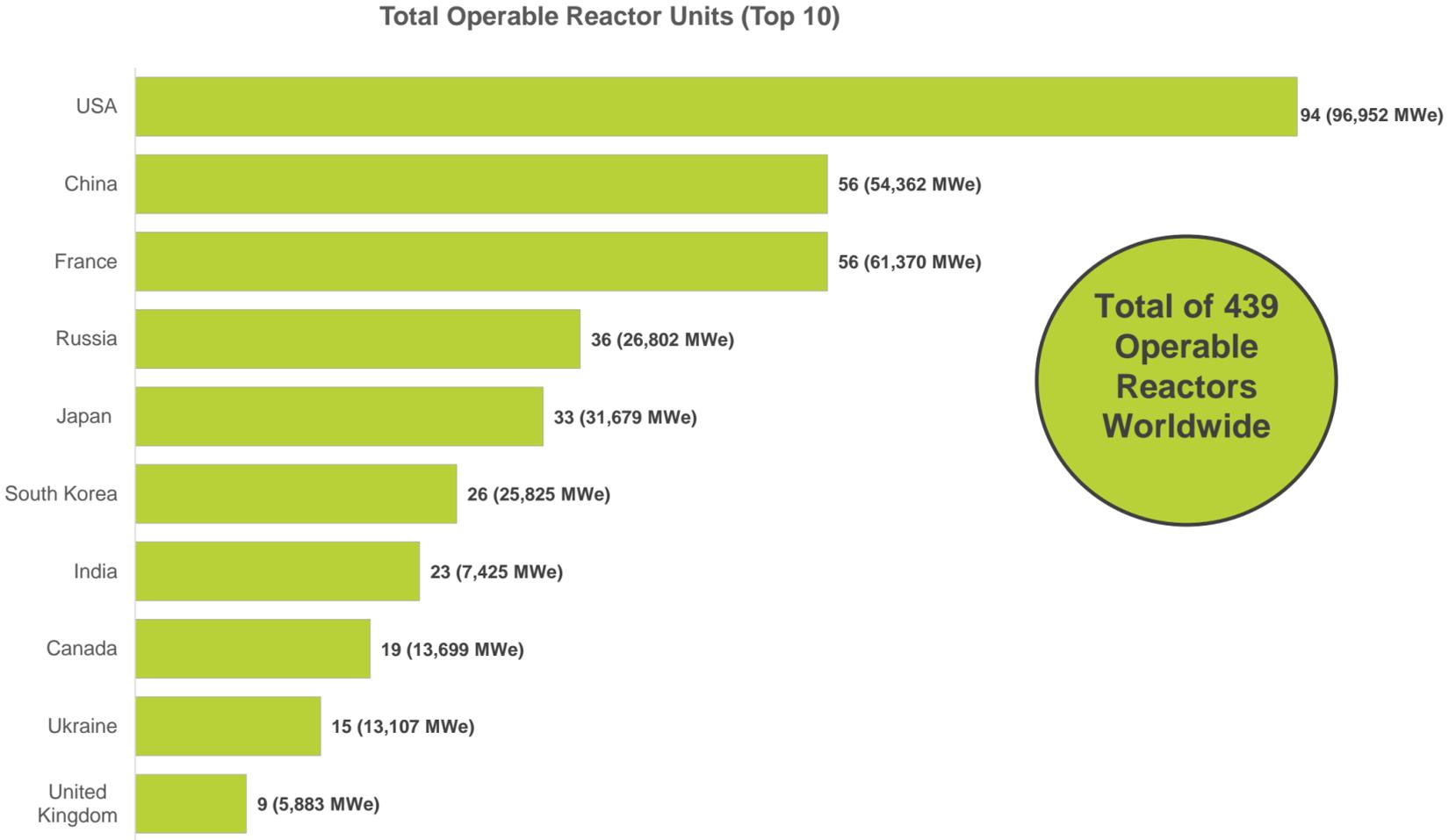


Source: World Nuclear Association July 2024

World's Largest Producers of Nuclear Power



Conventional Large-Scale Reactor Population

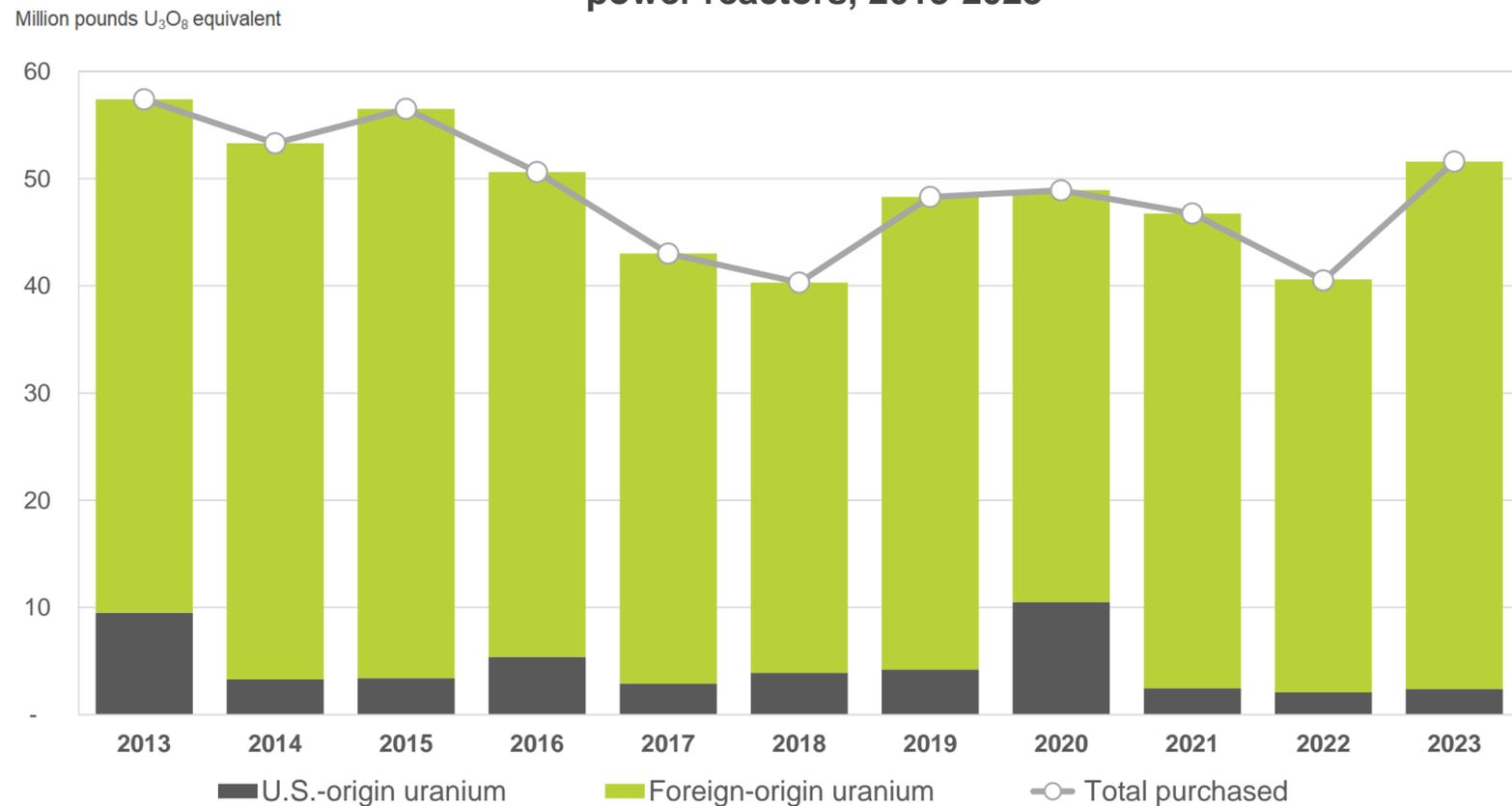


Source: World Nuclear Association July 2024

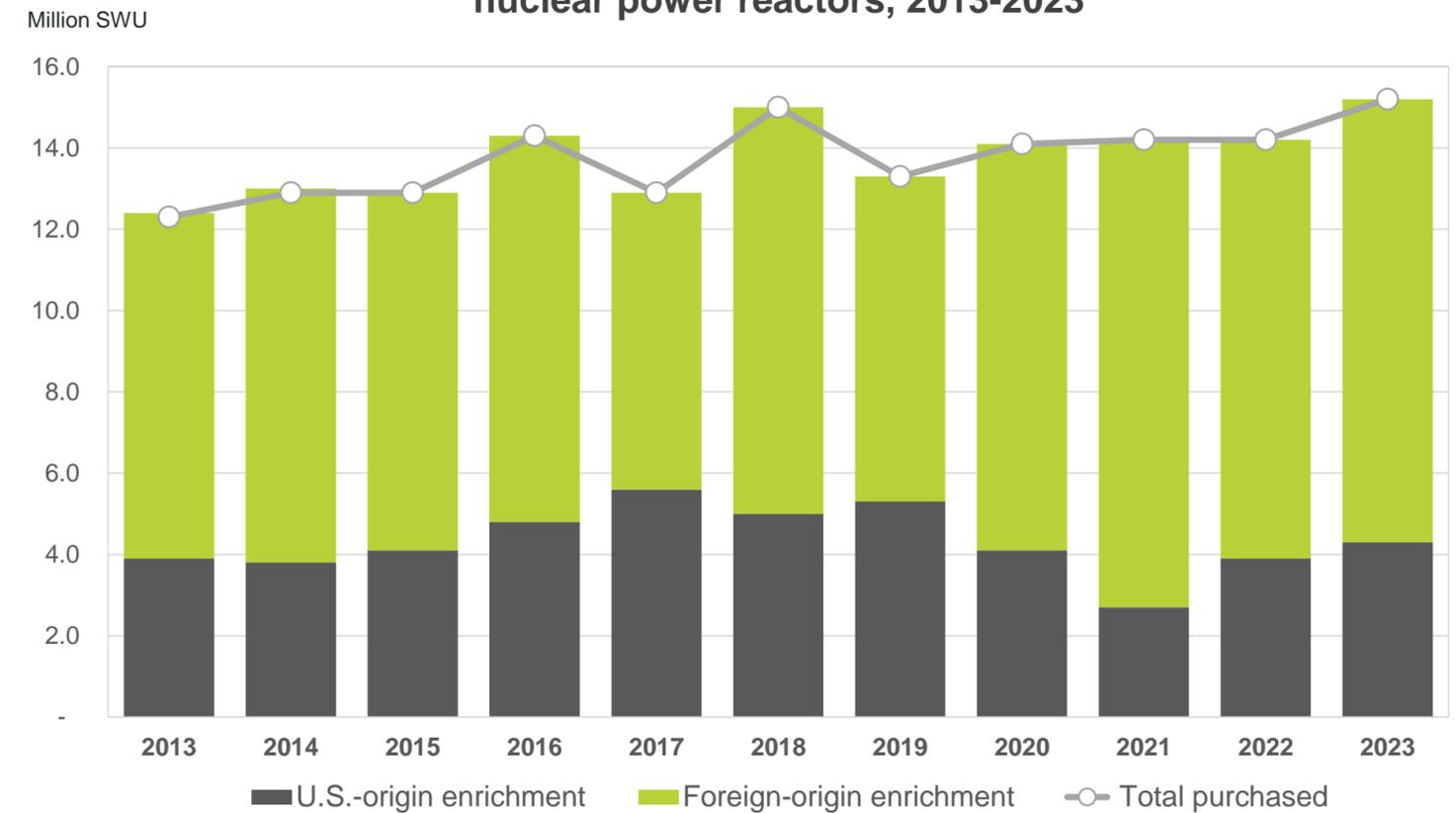
US Uranium and Enrichment Vulnerability

US currently imports ~95% of its uranium requirements and ~70% of its enriched uranium requirements:

Uranium purchased by owners and operators of U.S. civilian nuclear power reactors, 2013-2023

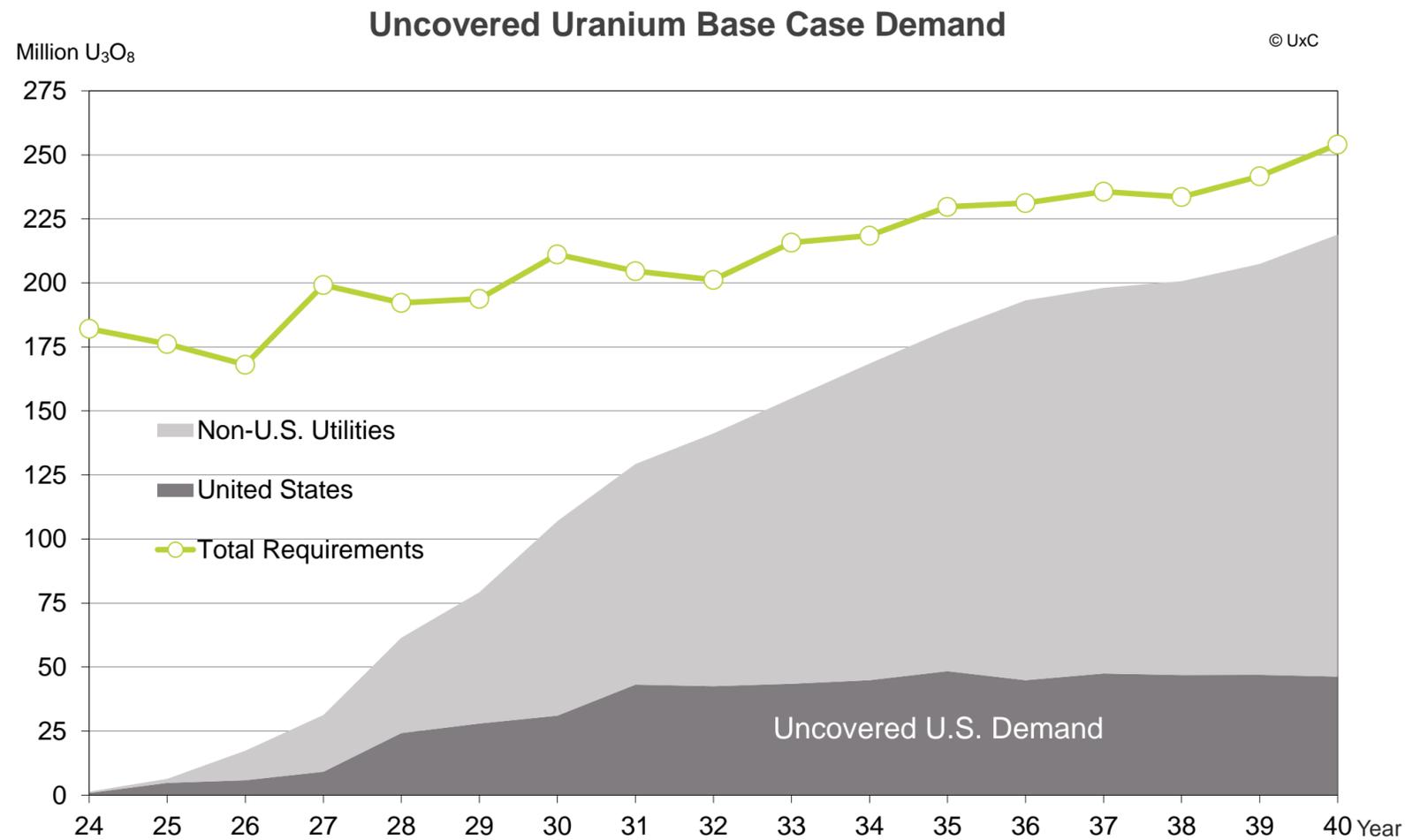


Enrichment purchased by owners and operators of U.S. civilian nuclear power reactors, 2013-2023

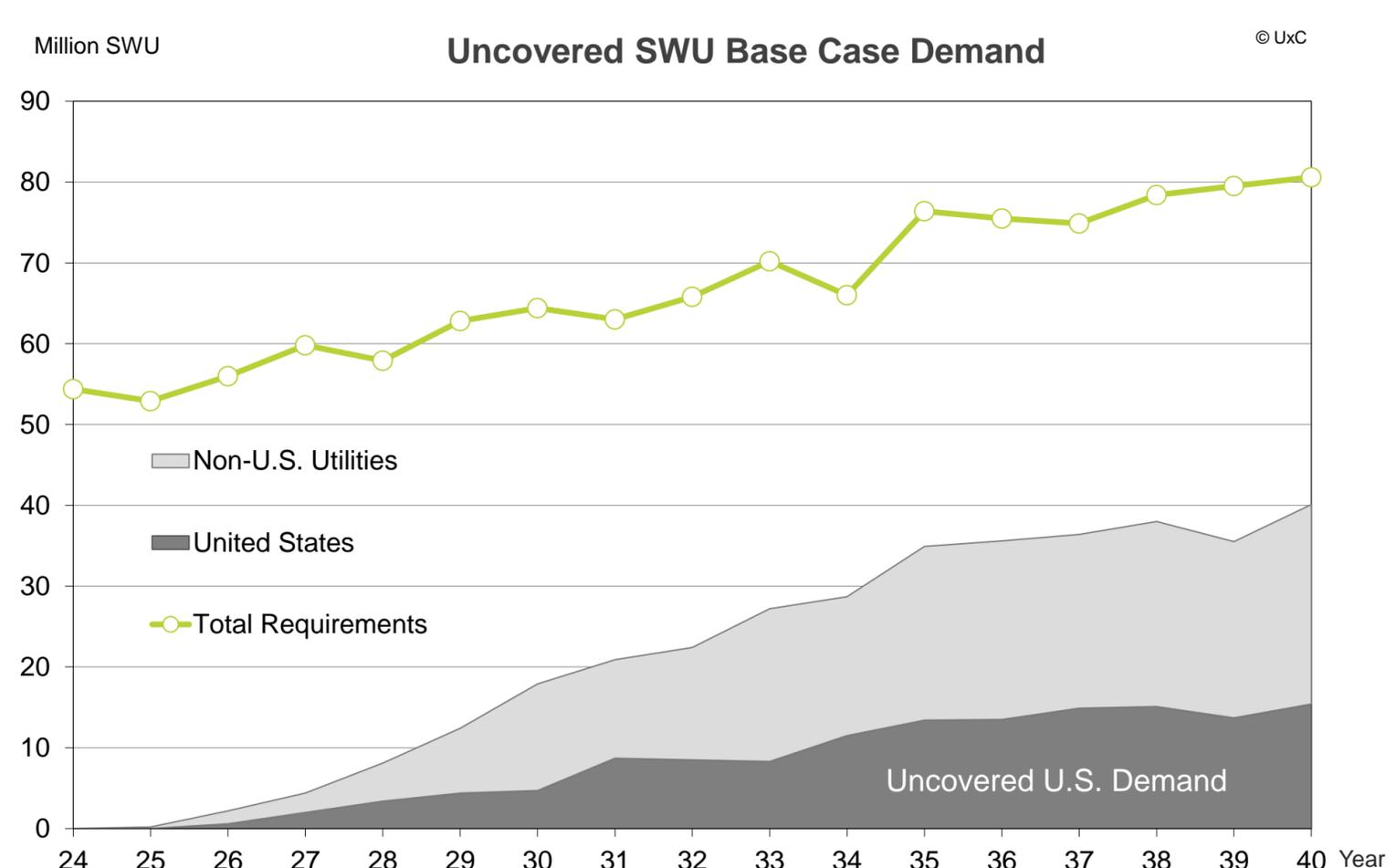


Source: US EIA Report – 2023 Uranium Marketing Annual Report, June 2024

Emerging Nuclear Fuel Supply Opportunities for GLE



Source: UxC Uranium Market Outlook, Q2, 2024



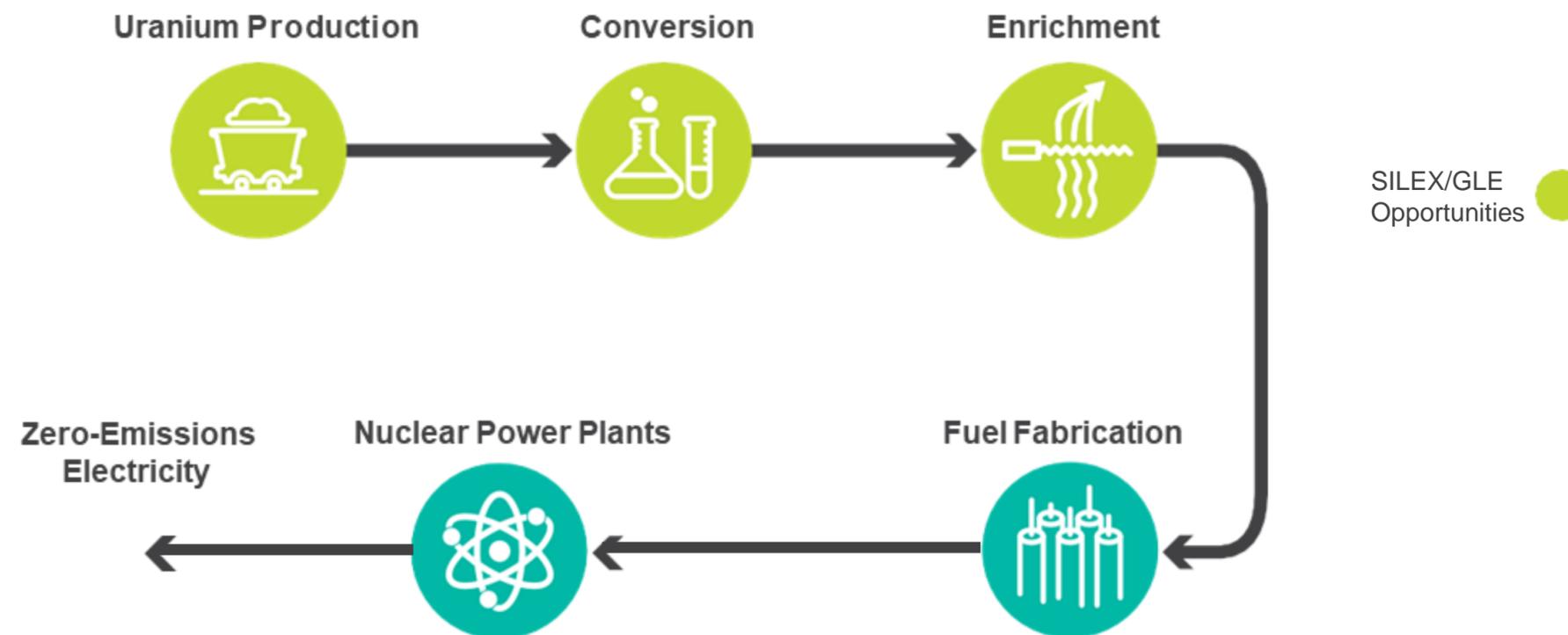
Source: UxC Enrichment Market Outlook, Q2, 2024

- Forecast uncovered **US Uranium demand** from 2028 is in excess of ~25 million lbs
- Forecast uncovered **US SWU demand** in 2028 is ~3 million SWU rising to ~13 million SWU by 2035

Significant nuclear fuel opportunities for GLE extend from the late 2020s

Nuclear Fuel Supply Chain and Evolving Issues

The Nuclear Fuel Supply Chain



Issues facing the Global Nuclear Fuel Supply Chain:

- Western supply chain recent history – curtailments and under-investment in resources and production capability
- Supply chain risks have been exposed by over-dependence on Russian-sourced nuclear fuel
- 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

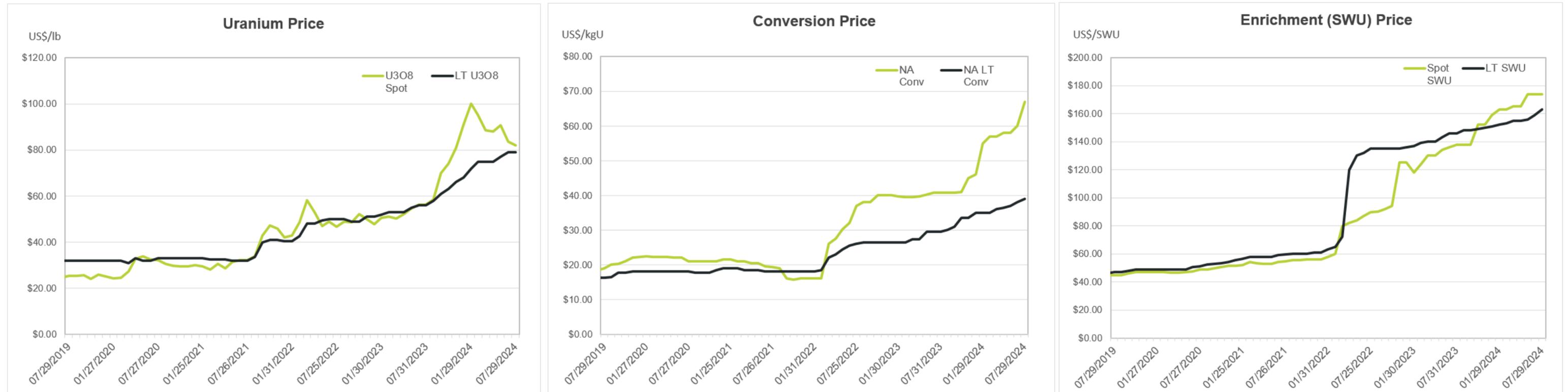
	Russian Share of Global Production Capacity ¹	EU Nuclear Fuel Supplied by Russia ²	US Nuclear Fuel Supplied by Russia ^{1,3}
Uranium (U ₃ O ₈)	~14%	~17%	~12%
Conversion	~22%	~22%	~18%
Enrichment (SWU)	~44%	~30%	~27%

- Major concerns regarding Western reliance on Russia for the supply of nuclear fuel
- Open market[^] currently accounts for ~65% of global enriched uranium fuel demand
- US is the largest market for nuclear fuel, with ~25% of worldwide generation of nuclear power
- US currently imports ~95% of its uranium requirements and ~70% of its enriched uranium requirements³

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

1. UxC, various sources 2024
 2. Euratom Supply Agency Annual Report 2022, published January 2024
 3. EIA, 2023 Uranium Marketing Annual Report, June 2024

Favourable Nuclear Fuel Market Price Trends



Source: UxC

- Global nuclear fuel markets reflect a bifurcating industry in response to Russia's invasion of Ukraine and nuclear fuel sanctions/prohibitions
- Uranium term prices reflect the significant increase in term contracting as a result of supply-demand concerns
- Conversion term prices have steadily increased since the Russian invasion of Ukraine in February 2022
- Enrichment (SWU) term prices have increased ~150% since February 2022, reflecting a potential global enrichment shortfall without Russian supply

GLE's Commercialisation Activities for the SILEX technology

Current favourable market conditions support GLE's commercialisation plans:

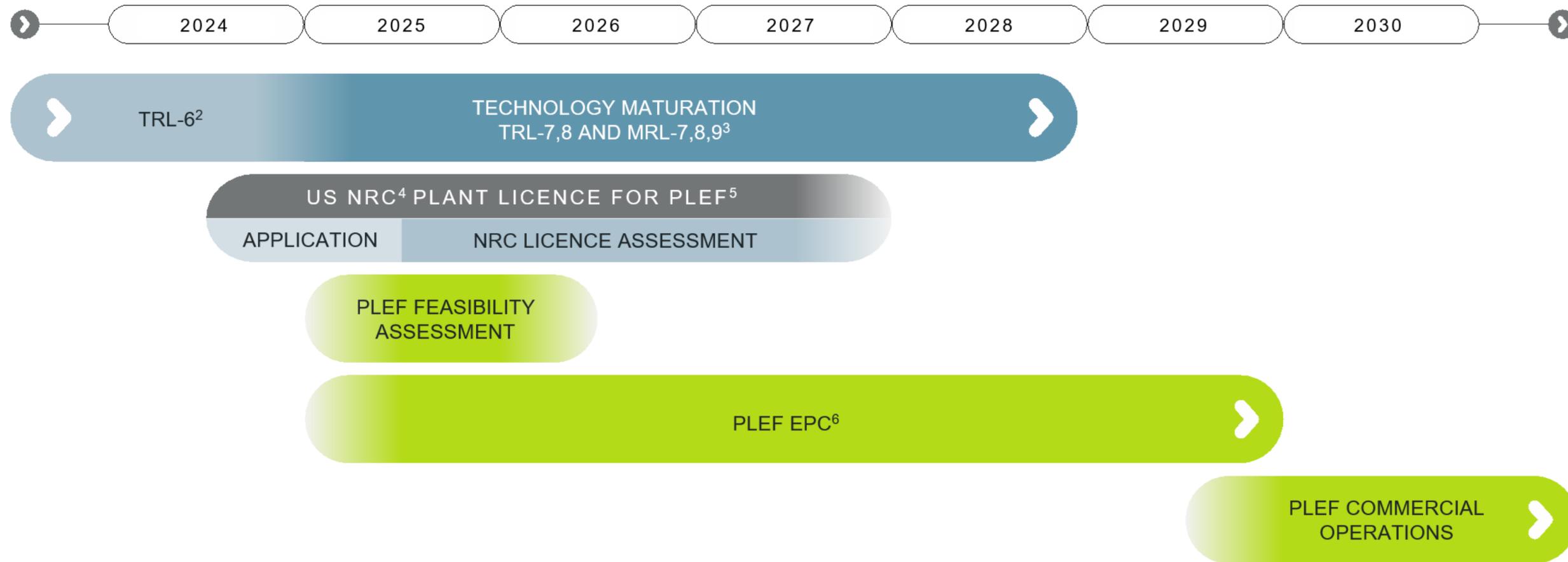
- GLE's joint venture owners, Silex and Cameco, approved a plan and budget for GLE in CY2024 that continues the support of activities in the full-scale pilot technology demonstration project for the SILEX uranium enrichment technology¹
- GLE's CY2024 plan also progresses other key commercialisation activities, including Paducah, KY site acquisition, NRC licence application for the PLEF, and completion of the new GLE corporate and manufacturing facility in Wilmington, NC
- Successful demonstration of the SILEX technology with the pilot plant during CY2024 and progress in the above commercialisation activities may support the potential commencement of initial PLEF commercial operations ahead of the original plan of 2030²

Potential support emerging from the US Government and Industry:

- US Government passed the *Inflation Reduction Act* in August 2022 – US\$700m in support for the DOE's HALEU Availability Program, including US\$100m funding support for novel nuclear fuel technologies – a key focus for GLE
- *Nuclear Fuel Security Act (NFSA)* passed by Congress in December 2023 – additional US\$2.7bn for new nuclear fuel capacity – DOE released the LEU RFP in July 2024 – GLE intends to participate in the bidding process
- *Prohibiting Russian Uranium Imports Act* passed in May 2024 – took effect mid-August (with waivers available to eligible entities to 2027)
- GLE signed Letters of Intent (LOIs) with 4 US utilities: Constellation Energy Generation, Duke Energy, Dominion Energy and 4th (name withheld) to support GLE's commercialisation

1. GLE's commercialisation plans remain conditional on the availability of industry and government support, and geopolitical and market factors
2. Timelines subject to technology demonstration, market conditions, PLEF feasibility assessment, licensing, commercial support and other factors

GLE's Potential Timeline for Commercialisation of SILEX technology¹



1. Timeline subject to technology demonstration outcomes, market conditions, licensing, industry and government support, PLEF feasibility assessment and other factors and may vary according to differing scenarios
2. Includes achievement of Technology Readiness Level 6 (TRL-6) as defined by *DOE Technology Readiness Assessment Guide (G413.3-4A)*
3. MRL: Manufacturing Readiness Level
4. NRC: Nuclear Regulatory Commission
5. PLEF: Paducah Laser Enrichment Facility
6. EPC: Engineering, Procurement and Construction of commercial plant

Status of Technology Pilot Demonstration Project¹

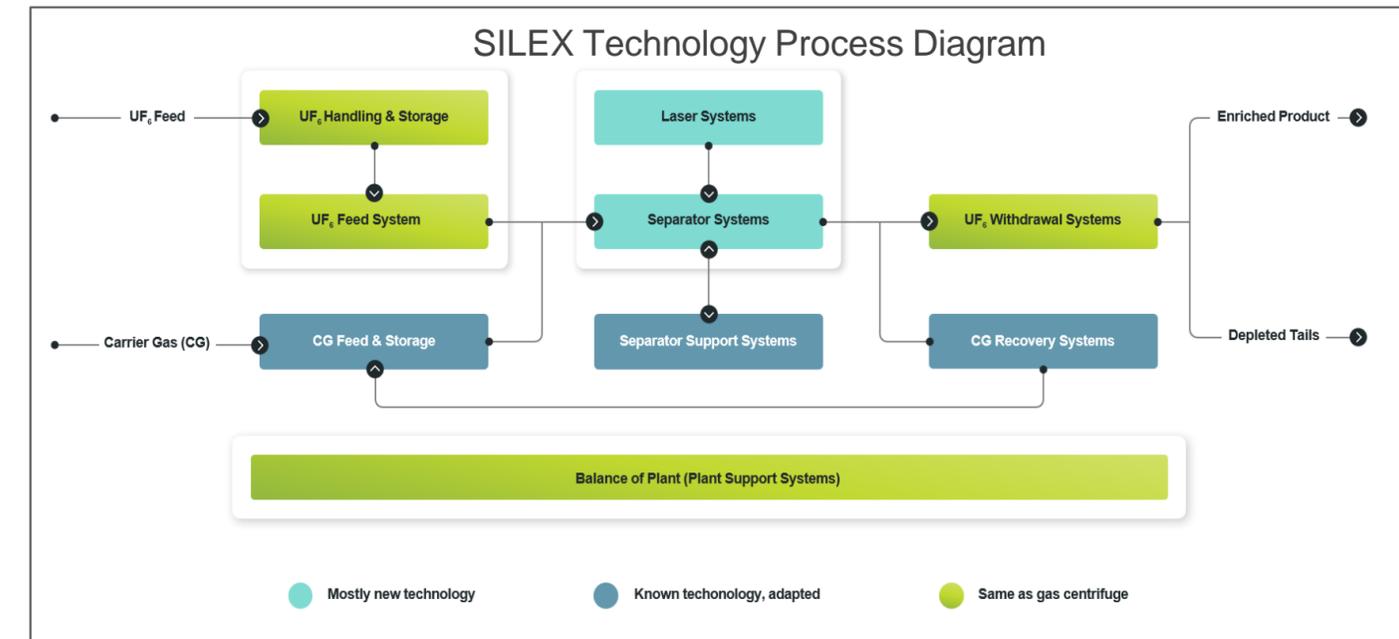
Significant progress towards pivotal TRL-6 technology demonstration continues:

Integrated TRL-6 Pilot Demonstration Facility:

- Integrated Pilot Demonstration Facility now complete and includes two full-scale pilot laser system modules designed and built by Silex in Sydney
- Nuclear Regulatory Commission (NRC) completed inspection of GLE's Test Loop facility and operations in March 2024
- UF₆ feed material recently loaded into the Test Loop Pilot Demonstration Facility in preparation for the commencement of enrichment testing

TRL-6 Pilot Demonstration Project:

- Significant progress continues to be made in the pilot demonstration project with preparations advancing for the commencement of enrichment testing
- GLE aiming to complete the TRL-6 demonstration by the end of CY2024
- TRL-6 technology demonstration includes completion of an independent assessment and submission of a report² to GLE's owners, Silex and Cameco



1. All scheduling is tentative and depends on progress and delays – subject to change at any time
2. Length of testing period and timing of report submission is at the discretion of the independent assessor

GLE's PLEF Production Plant Opportunity

The PLEF Triple Opportunity

Paducah Laser Enrichment Facility – an opportunity 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 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)

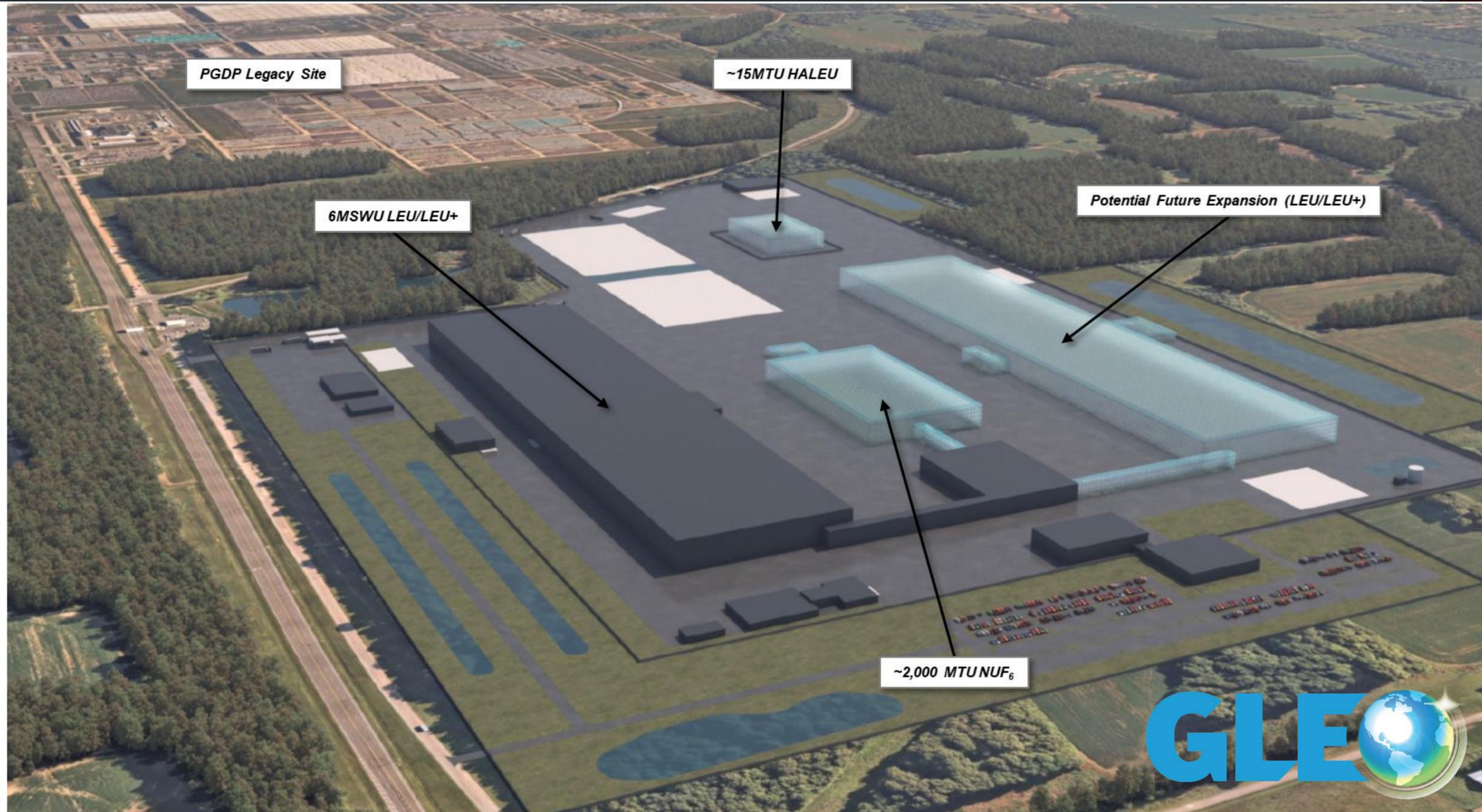
for conventional nuclear power reactors
LEU includes U²³⁵ assays of 3% to 5%
LEU+ includes U²³⁵ assays of 5% to 10%

PLEF HALEU

High Assay LEU (HALEU)

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

GLE's PLEF Commercial Plant Opportunities



PLEF UF₆ Production Opportunity

(Natural UF₆ production from tails)

Advancing activities with aim to commence initial commercial operations ahead of original 2030 target

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 up to 30 years
(~150m lb contained resource)

UF₆ production allows GLE to capture Conversion Value in revenue

Feed and Product is UF₆
(current term conversion value ~US\$39/kg)

Potential to Enrich Further

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

GLE Value Proposition for Silex*

1) GLE Equity – Minimum 25%:

- Silex currently holds 51% – Cameco has a call Option to acquire an additional 26% at fair market value
- Option window opened 1 February 2023 – closes 30 months after successful TRL-6 demonstration
- Either way, Silex has a significant equity stake in GLE as a potential nuclear fuel supplier
- Attractive business case with ‘*Triple Opportunity*’ and high entry barriers

2) SILEX Technology License and Perpetual Royalty:

- Technology classified by Australian and US Governments with no patent disclosures permitted
- Technology kept as Trade Secret under strictest security mandates → no sunset on IP
- Perpetual SILEX royalty of 7% to 12% on GLE’s enrichment SWU revenues could potentially reach, for example, ~US\$80m p.a. for 8 MSWU PLEF operations (at 7% royalty rate and current SWU price)



* GLE’s progress to commercialisation is dependent on several factors, including, but not limited to: successful completion of the technology demonstration program; availability of industry and government support; timely licensing activities; acquisition of PLEF site; PLEF feasibility assessment; supportive market conditions and other factors

Significant Additional Opportunities



Silicon enrichment (silicon quantum computing)

- SILEX technology proven capable of producing highly enriched silicon in the form of Zero-Spin Silicon (ZS-Si)
- Initial ZS-Si project (completed FY2023) achieved target milestones, including ~99.998% enriched Si-28 with the pilot demonstration facility

Quantum Silicon (Q-Si) Production Project:

- Q-Si Production Project focuses on transition from engineering demonstration to initial commercial production
- 3.5-year project announced in August 2023 being undertaken with SQC (first off-take partner) and UNSW
- Project supported by \$5.1m of Federal Government funding with SQC expanding its commercial arrangements with Silex in January 2024
- Project aim is to build and operate the first commercial production module and develop product conversion capability for Q-Si in solid and gaseous forms required by various potential customers



Medical isotope enrichment (new targeted beta cancer therapies)

- Medical isotope project aiming to develop a process to enrich Ytterbium-176 (Yb-176) for production of Lutetium-177 (Lu-177)
- Lu-177 radioisotope represents a breakthrough development for the diagnosis and treatment of aggressive metastatic cancers

Medical Isotope Separation Technology (MIST) Project:

- 3-year MIST project commenced in February 2023 – aims to develop SILEX technology to enrich Yb-176 to high purity (~99%)
- In December 2023, Stage 1 of the Project – proof-of-concept – was successfully completed
- Stage 2 is underway and aims to validate the process at prototype scale, including the first level of scale-up
- The MIST project provides further diversification and leverages the business case for the SILEX technology across multiple markets

Summary

- GLE's path to market is underpinned by the PLEF UF₆ project for cost effective production of natural uranium (in the form of UF₆) and significant value of conversion contained in GLE's feed inventories
- 'Triple Opportunity' includes potential to add SILEX production capacity to produce LEU, LEU+, and HALEU nuclear fuels with the PLEF Production Plant, helping to alleviate dependence on Russian-sourced fuel
- Acceleration of the technology pilot demonstration project continuing – aiming for completion by end of CY2024
- GLE's CY2024 plan and budget provides for progress in other key commercialisation efforts, including licensing and early stage activities related to the planned PLEF
- Silex represents unique leverage into the nuclear fuel supply chain, with significant potential value through equity ownership in GLE (currently 51%) in addition to potential perpetual royalty flows under the SILEX uranium technology license
- Q-Si Project launched in August 2023 to construct the first Q-Si commercial production module and establish a sovereign capability and secure supply chain in support of the emerging global silicon quantum computing industry
- Silex is assessing other applications of the SILEX technology in the field of medical radioisotopes, initially for enrichment of Yb-176 – used for production of Lu-177 – a breakthrough in nuclear medicine cancer treatment

As at 30 June 2024, the Company has cash and term deposit holdings of ~\$113.1m and no corporate debt



Thank you