



# ucore<sup>®</sup>

TSXV: UCU | OTCQX: UURAF

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## Critical-Metals Independence **Starts Here**

*"To fight climate change requires that we decarbonize our most energy intensive industrial sectors, and thus new metallic supply chains are undeniable".*

October 30, 2023

# CAUTIONARY NOTES & DISCLAIMERS

*This presentation includes certain statements that may be deemed “forward-looking statements”. All statements in this presentation (other than statements of historical facts) that address future business development, technological development and/or acquisition activities (including any related required financings), timelines, events, or developments that the Company expects, are forward-looking statements. Although the Company believes the expectations expressed in such forward-looking statements are based on reasonable assumptions, such statements are not guarantees of future performance or results and actual results or developments may differ materially from those in forward-looking statements. The Company has assumed that it will be able to procure or retain additional partners and/or suppliers, in addition to the wholly owned Innovation Metals Corp. (“IMC”), as suppliers for Ucore’s expected future Strategic Metals Complexes (“SMCs”). Ucore has also assumed that sufficient external funding will be found to prepare a new National Instrument 43-101 (“NI 43-101”) technical report that demonstrates that the Bokan Mountain Rare Earth Element project (“Bokan”) is feasible and economically viable for the production of both REE and co-product metals at the then prevailing market prices based upon assumed customer off-take agreements. Ucore has also assumed that sufficient external funding will be secured to develop the specific engineering plans for the SMCs and their construction. Factors that could cause actual results to differ materially from those in forward-looking statements include, without limitation: IMC failing to protect its intellectual property rights associated with the RapidSX™ technology; the RapidSX™ technology failing to demonstrate commercial viability in large commercial-scale applications; Ucore not being able to procure additional key partners or suppliers for the SMCs; Ucore not being able to raise sufficient funds to fund the specific design and construction of the SMCs and/or the continued commercial rollout of RapidSX™ technology; adverse capital-market conditions; unexpected due-diligence findings; the emergence of alternative superior metallurgy and metal-separation technologies; the inability of Ucore and/or IMC to retain its key staff members; a change in the legislation in Alaska and/or in the support expressed by the Alaska Industrial Development and Export Authority (“AIDEA”) regarding the development of Bokan and/or the Alaska SMC; the availability and procurement of any required interim and/or long-term financing that may be required; and general economic, market or business conditions.*

*For more information about Ucore Rare Metals Inc., please see the information that is available on SEDAR ([www.sedar.com](http://www.sedar.com)). Please also see the risk disclosures that are found in Ucore’s most recent Management Discussion & Analysis document (filed on May 30, 2023).*

*For more information about Ucore’s mineral resources and related technical information regarding the Bokan Project, please see Ucore’s NI 43-101 technical report (a preliminary economic assessment) filed on SEDAR on March 14, 2013, and Ucore’s mineral resource update filed on SEDAR on October 15, 2019. Information about the quantity and grades of the indicated and inferred mineral resources are described in these documents and are available therein. Mineral resources that are not mineral reserves do not have demonstrated economic viability.*

*Qualified Person: Michael L. Schrider, P.E., VP & COO of Ucore, has approved the scientific and technical content of this presentation and is the Qualified Person responsible for its accuracy. Mr. Schrider, is a registered professional engineer in the State of Louisiana, holds a BS degree in engineering from the University of New Orleans and a MEng in mining engineering (mineral process emphasis) from The University of Arizona.*

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# RARE EARTH ELEMENTS

## CRUCIAL TO 21ST CENTURY ENERGY TRANSITION

### Ucore's Multi-Pronged Strategic Approach:

- *De-risking not Decoupling from China's Dominance*
- *Separation to Rare Earth Oxides is Key to Vertical Supply Integration*
- *Innovation and Westernized RapidSX™ Technology Levels the Playing Field*
- *First Mover with HREE Separation is a Breakthrough - Permanent Magnets Depend on Tb & Dy*
- *Respond to the Market Founded on Sound Economics and Smart Pricing Mechanisms*
- *The Inflation Reduction Act Provides Significant N.A. Supply Incentive.*



# RARE EARTH ELEMENT PERMANENT MAGNETS



*Rare Earth Permanent Magnets are the most efficient means of converting electrical energy to mechanical energy and deliver undisputedly best-in-class EV performance. They are the most dependable/durable and also dominant market share in offshore wind turbines.*

## **Electric Vehicles (EVs)**

- Essential for EV motor magnets
- Boosts torque, fuel efficiency, and reduces emissions
- Key REEs: neodymium, praseodymium, dysprosium

## **Wind Energy**

- Vital for turbine generators and magnets
- Growing demand with the rise of renewable energy

## **National Security**

- US heavily reliant on China for REEs
- US initiatives: research on recycling and domestic mining

# RARE EARTH ELEMENT OUTLOOK TO 2030

## The Challenge

- China:
  - mines **60%+ Global REE Resources**
  - manufactures **90%+ Global REE Components**
  - will eventually consume **100% of its Production**
- Minimal North American REE Infrastructure
- REE security of supply has become a western democracy strategic concern



## The Opportunity



### 2030 REO Projection

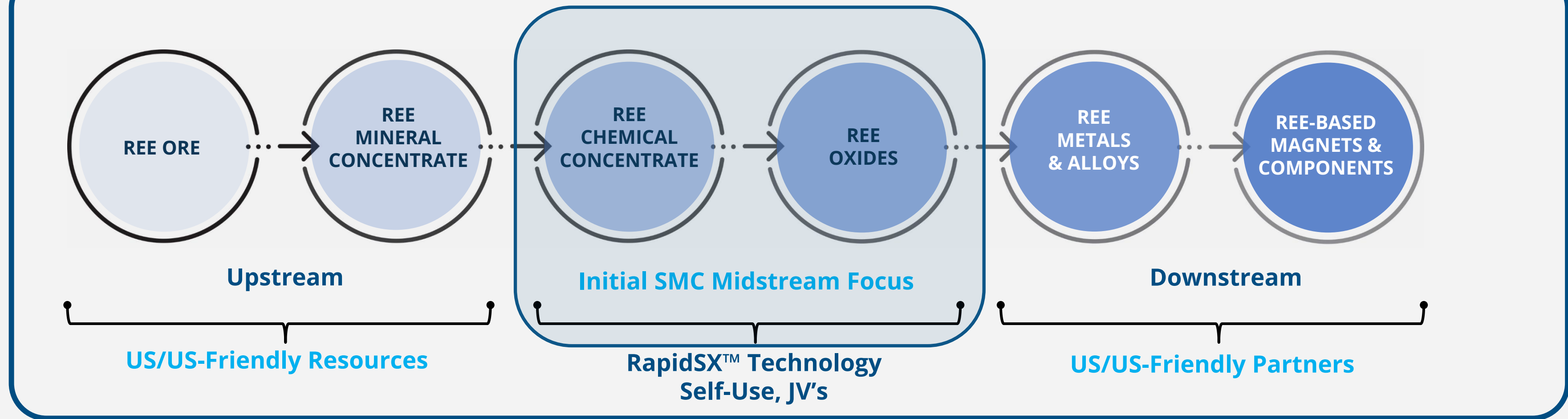
### Outlook 2035:

- *With total magnet rare earth oxide demand forecasted to increase at a CAGR of 8.3%, the value of global rare earth oxide consumption will grow to US \$46.2 Billion by 2035.*  
(Adamas Intelligence)

# RARE EARTH ELEMENT SUPPLY CHAIN

*Ucore is Focused on Individual Rare Earth Oxide Production*

## Ucore's Plan of a North American REE Supply Chain



### **Ucore is strategically positioning itself into the North American midstream of REO production:**

- Multiple HREE and/or LREE sources of US-Friendly feedstock for the production of individual REOs in 2025
- HREE prioritized OEM supply
- **Multiple SMCs in development** based on modern RapidSX™ technology
- Separation to REOs is the most difficult aspect of the REE Supply Chain
- Unique strategy to Ucore, limited to nil competition

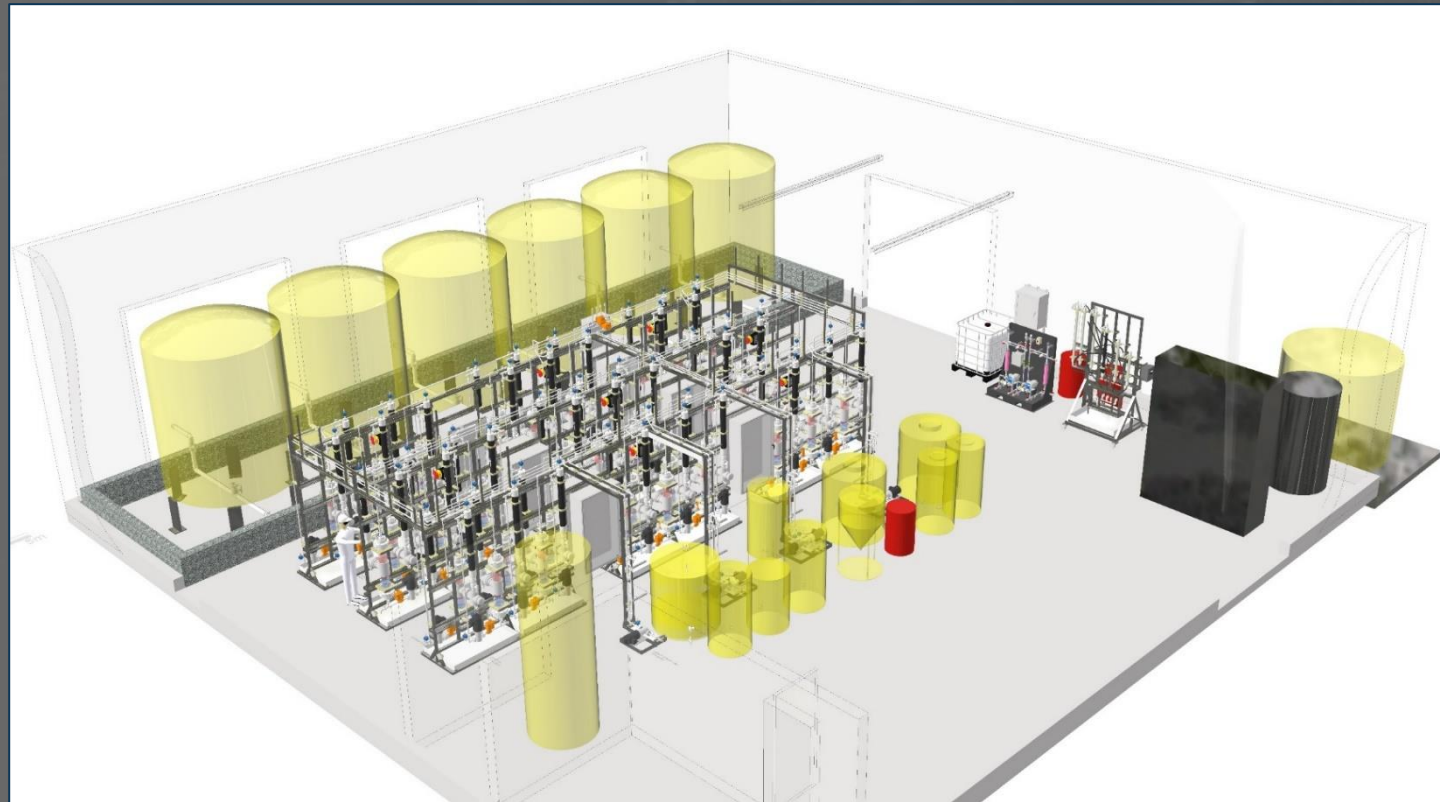
**Separation is Key** for North American Control of its REE Supply Chain

# RAPIDSX™ TECHNOLOGY

*RapidSX™ is a Transformative REE Separation Technology*

## **RapidSX™ Commercialization and Demonstration Facility (CDF) Kingston, Ontario**

- *Acquired Innovation Metals Corp (2020)*
- *Patent Pending Computerized Column Technology*



*Engineered Design of the 80 tpa Demonstration Plant*

### **Key Advantages vs. Conventional SX**

- *Same Proven Chemistry as Solvent Extraction*
- *Requires 70% less Floor Space*
- *Reduced in CAPEX*
- *Reduction in Physical/Environmental Footprint*
- *Up to 7X Faster Throughput*
- *Reduced OPEX*
- *Rapid WIP Inventory Turnover*
- *Virtually Feedstock Agnostic – HREE & LREE*
- *Closed Loop / Start & Stop Plant*

# RAPIDSX™ TECHNOLOGY

*RapidSX™ HREE and LREE Separation and OEM Qualification Facility*

## **Commercial Demonstration Plant - Kingston, Ontario**

- *10's of tpa LREE & HREE Processing Utilizing the Same Equipment (A First for North America)*
- *Capable of Processing HREE & LREE Feedstocks Oxides, Oxalates, Hydroxides, Carbonates, etc., derived from Bastnasite, Eudialyte, Ionic Clay, Monazite, Xenotime, and other Mineralization Sources*
- *Commissioning Commenced in Q1-23, with 1000s of Planned Run-time Hours Over 2023 & 2024 in Support of Technology Scale-up and OEM Qualification Trials*
- **Planned Output Products: Y, NdPr, Pr, Nd, Tb, Dy**



# THE SMC BUSINESS MODEL

*Multiple Planned Strategic Metals Complex Facilities in North America*

## Ucore has a Series of SMCs Planned for North America

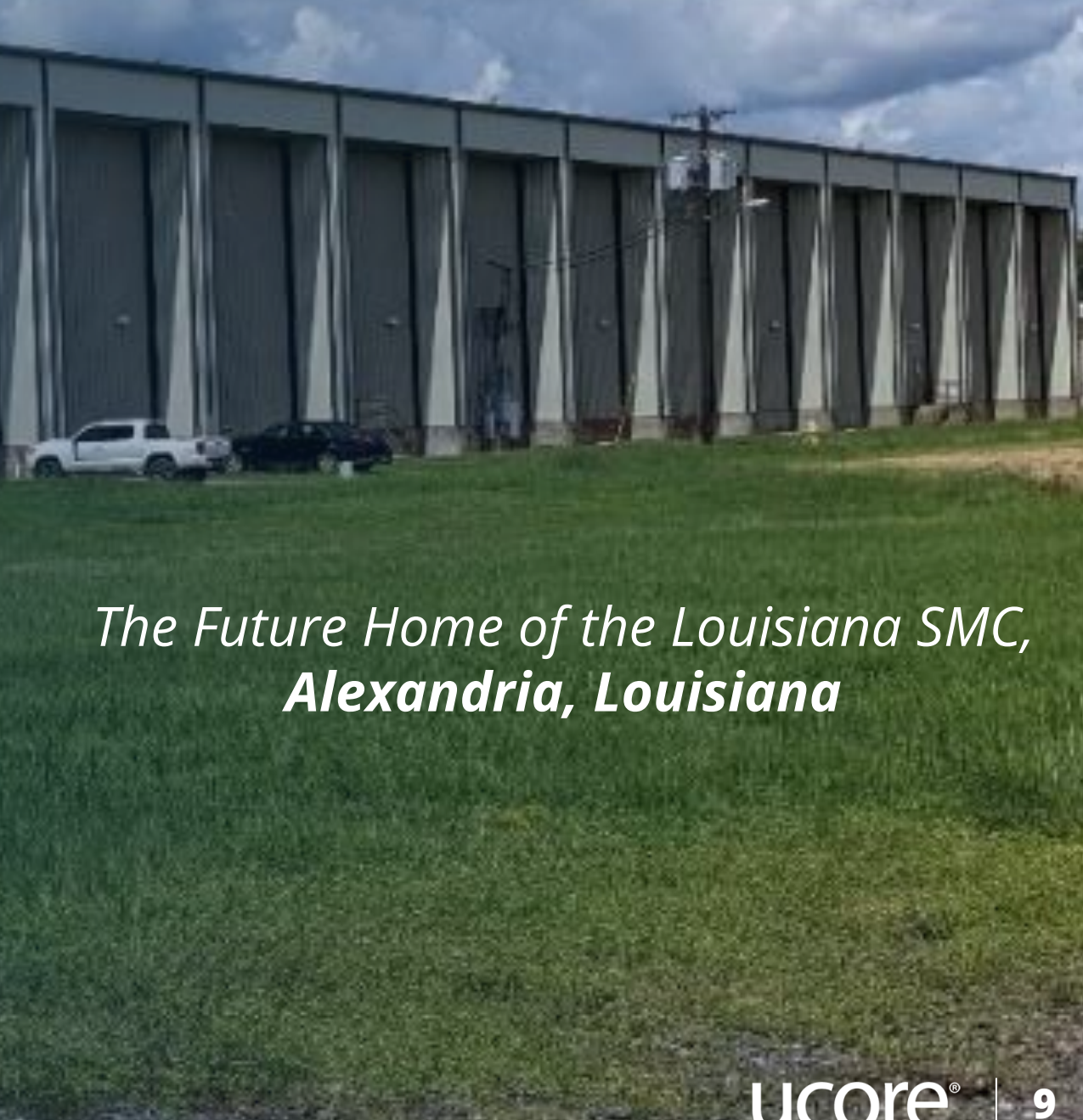
*2,000 tpa/5,000 tpa/7,500 tpa TREO HREE & LREE Separation & Purification Facilities to Produce REOs*



**Strategic Metals Complex (SMC)**

- *Founded on state-of-the-art RapidSX™ separation technology with a common engineering platform*
- *Rapidly expandable to 5,000 tpa then 7,500 tpa of TREO throughput*
- *Three US-friendly feedstock agreements in-place*
- *Multiple developing offtake arrangements*
- *The Alexandria SMC location is within a R/T truck shift of the Port of New Orleans*
- *In a Foreign Trade Zone*

*The Future Home of the Louisiana SMC,  
**Alexandria, Louisiana***



# THE SMC BUSINESS MODEL

*Multiple Planned Strategic Metals Complex Facilities with SMC No. 1 Developed in Louisiana*



## Production Summary:

- *Once Production Starts it does not Stop for Subsequent Production Phases 2 & 3*
- *Build a Pair of RapidSX™ trains during each Production Phase:*
  - *A 900 tpa HREO SX-1, 2 & 3 paired with a 1600 tpa LREO SX-1, 2 & 3*
  - *Focused on NdPr, Pr, Nd, Tb and Dy*
- *Ultimately Projected to ≈7500 tpa REO throughput (ex-Ce & ex-Y)*
  - *Requires almost 16,000 tpa of REO*
  - *Potential Future Products- LaCe, Gd, Ho, Ho-Lu and Y*

# GOVERNMENT SUPPORT

*Federal, State and Local Support*

*"Clean vehicle EV tax credits can provide up to \$7500 for final assembly in North America"*

*"REE Magnet Manufacturing 2023 tax credit proposes \$30/kg credit if 90% from US producers".*

## US Department of Defense - US \$4M

- Processing tonnes of HREO Feedstock at Commercial Demonstration Facility – Kingston, Ontario, Canada*
- Other Transaction Agreement – Potential Follow-on Award - \$10M*
- Demonstrate capability to deploy Rare Earth Separation Technology in the United States*

## State of Louisiana

- Ongoing financial incentives, including tax incentives, payroll rebates, and other programs.*
- Incentive Package includes US\$ 900k for Infrastructure Improvements.*
- Administered by Louisiana Economic Development*

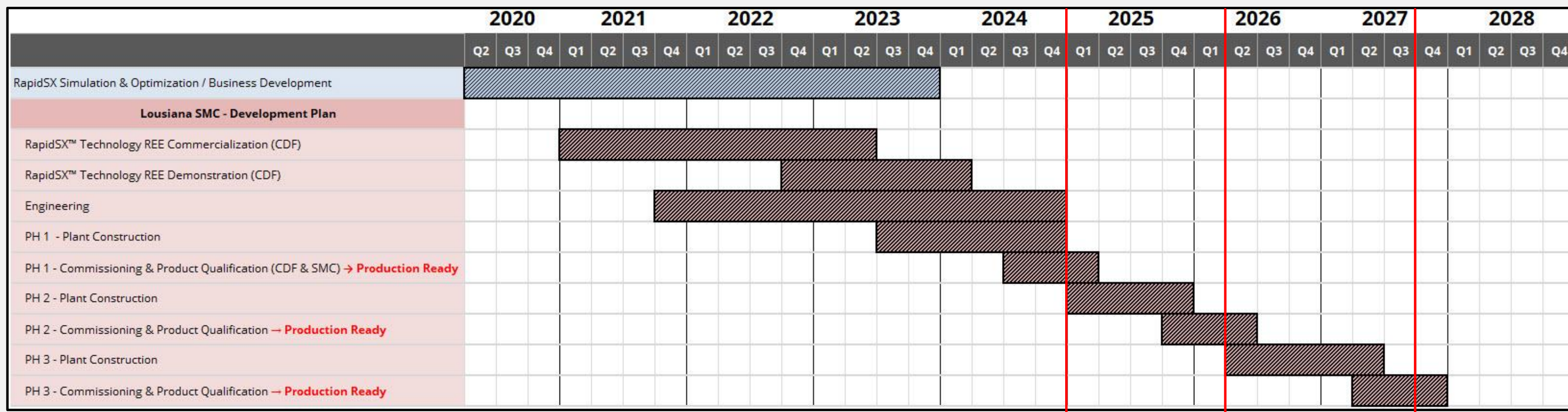


# THE SMC BUSINESS MODEL

The Louisiana SMC – Planned Development Schedule

## Development Schedule for a State-of-the-Art Technology Rare Earth Oxide Production Plant

Ucore will apply the final Demonstration Plant product qualification trials data and techno-economic assessment to the development of the first modern full-scale REE refinery in North America – **the Louisiana SMC**



**Through a joint qualification and verification program the Kingston and Louisiana plants will work together to shorten the final OEM qualification timeline**

PH 1 Production Ready      PH 2 Production Ready      PH 3 Production Ready

Note 1: 2025 production driven by North American automotive OEMs REO requirements  
 Note 2: PH 1 = 2,000 tpa TREO; PH 2 = 5,000 tpa TREO; PH 3 = 7,500 tpa TREO throughput

# CAPITAL STRUCTURE

## Capital Structure (As at August 15, 2023)

*Common Shares Issued & Outstanding* **61,819,425**

*Options* **5,189,000**

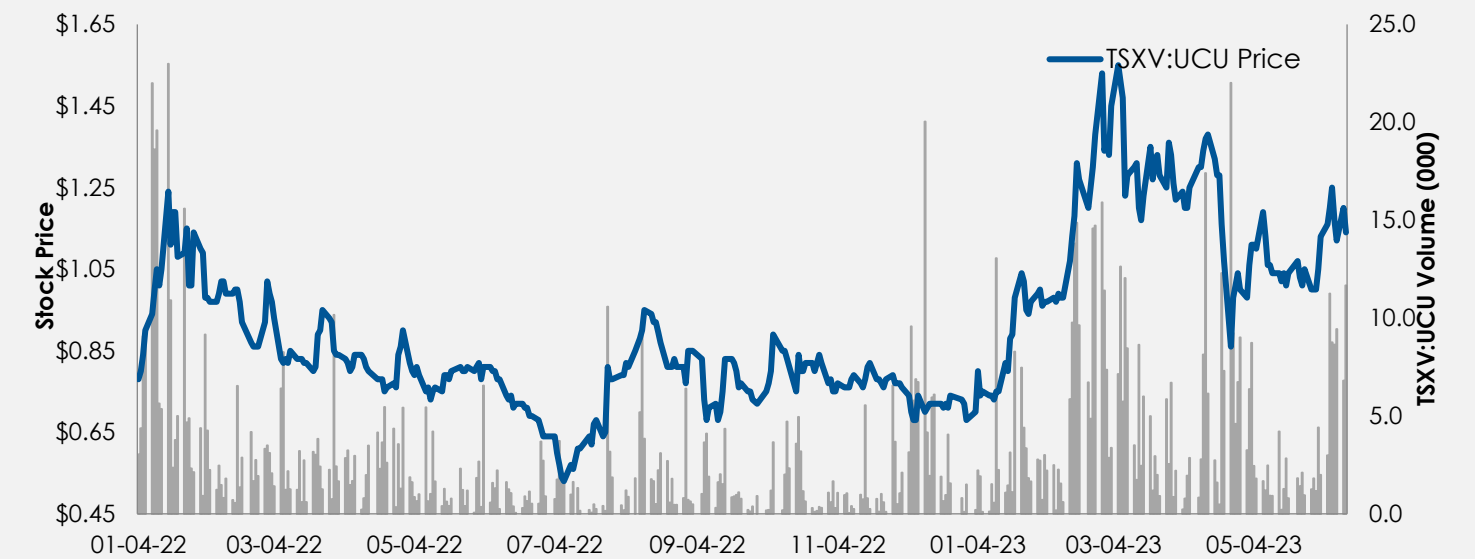
*Restricted Share Units* **55,710**

*Warrants* **16,856,800**

**Fully Diluted** **83,920,935**

*Insider Ownership* **22%**

## TSXV: UCU



Year High: **\$1.57** | Year Low: **\$0.66**

# EXPECTED **NEAR TERM MILESTONES**

## ***Global Energy Transition***

*Represents a Once in a Generation Opportunity*

- *Kingston Demonstration Plant – OEM Qualified Products*
- *Additional Canadian & US Government Support*
- *Secure Supply Agreements*
- *Finalized Offtake Agreements*
- *Louisiana EPC Contractor & Production Engineering Updates*

## Ucore - A North American "First Mover" with a Multi-Pronged Strategy to De-Risk Rare Earth Supply

- *Operating a Commercial Demonstration LREE & HREE Separation and OEM Product Qualification Plant (The Only HREE Processing Plant in North America)*
- *Deploying Next-Generation RapidSX™ Critical Metals Separation Technology*
- *Aligning Numerous and Geographically Diverse US-Friendly Feedstock Sources*
- *Establishing North America's First Modern LREE & HREE Commercial Separation Facility in Louisiana (Only a 6X Technology Scale-Up)*
- *Engaging other Jurisdictions for Multiple LREE & HREE Commercial Separation Facilities Over the Next 2-5 years*

