Ucore's Rare Earth Commercial Demo Plant On-Track for December 2022 Commissioning

written by Raj Shah | November 16, 2022

- **Ucore's rare earth element commercial demonstration plant is designed to process:**
  - **Tens of tonnes of mixed rare earth concentrates on a per annum basis.**
  - **Multiple feedstock sources, including heavy and light rare earth element feedstocks planned for the full-scale Louisiana Strategic Metals Complex.**
  - **All RapidSX™ splits required to produce individual praseodymium, neodymium, terbium, and dysprosium.**

- **Planned start of commissioning during the week of December 19, 2022, followed by feedstock demonstration and product qualification trials for prospective North American metal/alloy makers and original equipment manufacturers seeking diversified and sustainable metallic supply chains.**

November 16, 2022 (Source) – **Ucore Rare Metals Inc. (TSXV: UCU) (OTCQX: UURAF) ("Ucore"** or the **"Company")** is pleased to provide an update on its RapidSX™ rare earth element ("**REE**") separation technology platform and the Company's Louisiana Strategic Metals Complex ("**SMC**") technology deployment process (the "**Program**"). The work is taking place at the Company's RapidSX™ Commercialization and Demonstration Facility ("**CDF**") in Kingston, Ontario, which is operated by its laboratory

partner **Kingston Process Metallurgy Inc.** (“**KPM**“).

The Ucore, IMC, KPM, and **Mech-Chem Associates, Inc.**[i] (“**Mech-Chem**“) commercialization team (the “**Team**“) continues to make significant strides in the procurement and construction process for the RapidSX™ REE demonstration-scale plant (“**Demo Plant**“).

Figure 1 – A Sampling of the On-hand CDF Components and Construction Efforts

The final engineered layout of the Demo Plant takes up nearly all of the 5,000 square foot CDF. And the concept of building a plant within an existing building is the go-forward engineering process that the Team will replicate to create the first full-scale SMC within one of three designated Louisiana brownfield site[ii] facilities once the selection process is finalized.

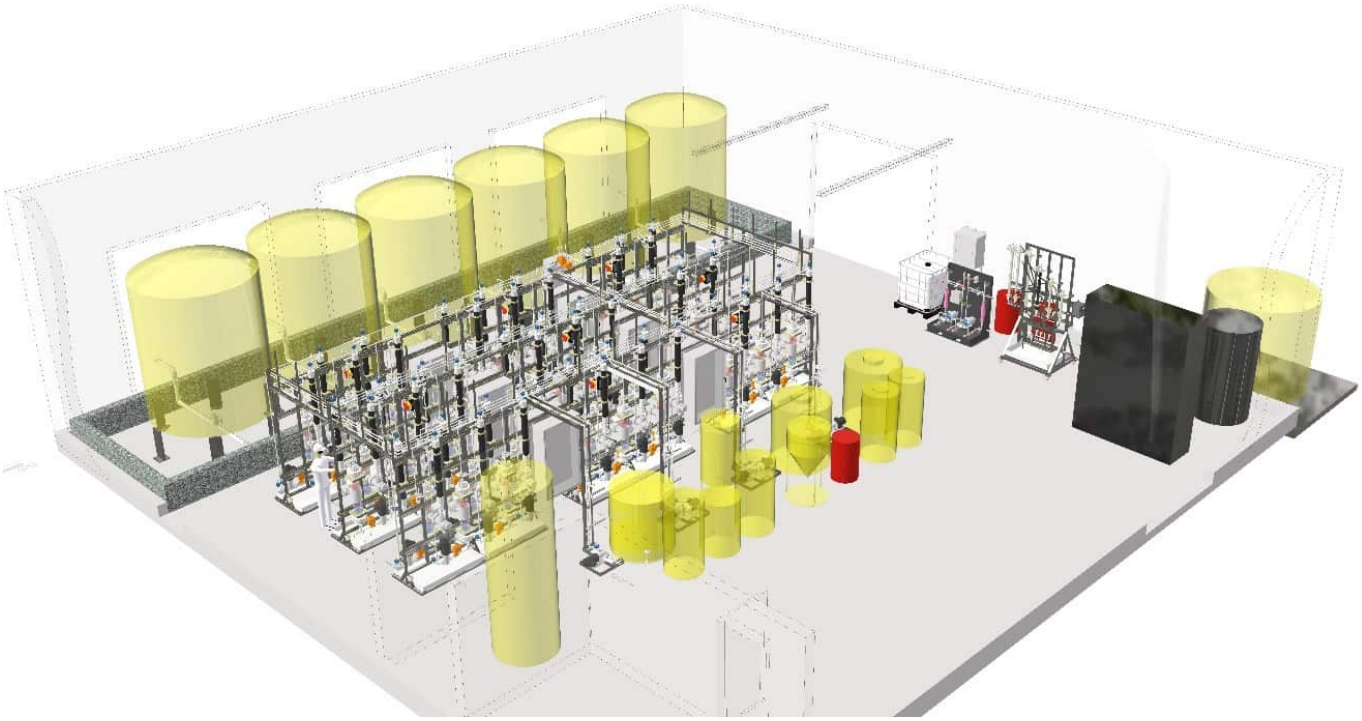

Figure 2 – Engineered Design of the Currently Under Construction 51-Stage RapidSX™ REE Demo Plant

As Ucore announced on October 17, 2022, the Louisiana SMC is scheduled to initially produce 2,000 tonnes of total rare earth oxides ("**TREOs**") by the end of 2024, increasing to 5,000 tonnes by 2026. The Company is engaged in numerous discussions for the required development funding for its first SMC. The project is expected to be funded with C$15+ million from the State of Louisiana, prepurchase and supply offtake agreements, various debt financing programs, government grants, and other means.

Since acquiring IMC in May of 2020, Ucore's 2-1/2 year RapidSX™ development program has allowed the Company to position itself as a first-mover toward the commercial production of heavy and light REOs in North America. The assembled commercialization team is fully integrated into all CDF activities and is aligned to develop the full-scale SMC techno-economic assessment and engineering data transfer.

The efficiencies and environmental advantages resulting from the CDF demonstration processes are, and will continue to be,

directly incorporated into the full-scale SMC engineering design packages. This integrated process rapidly positions Ucore to meet the demanding schedule requirements for developing the first SMC and corresponding REO production for the Company's emerging list of prospective downstream partners.

Ucore's REE separation Demo Plant is designed to:

- Have the ability to process tens of tonnes of mixed rare earth concentrates on a per annum basis:
  - from multiple feedstock sources, including the heavy REE ("**HREE**") and light REE ("**LREE**") feedstocks planned for the full-scale SMCs.

- Be capable of processing all RapidSX™ splits required to produce individual praseodymium, neodymium, terbium, and dysprosium.
- Have a parallel 51-stage conventional solvent extraction ("**CSX**") mixer/settler circuit that will match the RapidSX™ process' configuration and enable direct head-to-head comparison of the performance of RapidSX™ vs. CSX.

"The CDF team is diligently working towards the commencement of the commissioning process, scheduled for the week of December 19, 2022," stated **Mike Schrider**, P.E., Ucore's VP and COO. *"We remain very fortunate that most of our procurement and installation activities have stayed on course and that we have been able to come up with workarounds for the few items requiring an alternative approach.*

"As discussed in our September 2022 update, a North American rare earth separation plant capable of processing tonnes of different feedstock sources, including heavy and light rare earth elements, has never been accomplished in North America.

Ucore intends to incorporate the characteristics and findings from the Demo Plant into a techno-economic assessment to feed directly into the full-scale design, engineering and cost estimate for the Louisiana SMC."

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About Ucore Rare Metals Inc.

Ucore is focused on rare- and critical-metal resources, extraction, beneficiation, and separation technologies with the potential for production, growth, and scalability. Ucore has an effective 100% ownership stake in the Bokan-Dotson Ridge Rare Earth Element Project in Southeast Alaska, USA. Ucore's vision and plan is to become a leading advanced technology company, providing best-in-class metal separation products and services to the mining and mineral extraction industry.

Through strategic partnerships, this plan includes disrupting the People's Republic of China's control of the North American REE supply chain through the near-term development of a heavy and light rare-earth processing facility in the US State of Louisiana, subsequent SMCs in Alaska and Canada and the longer-term development of Ucore's heavy-rare-earth-element mineral-resource property at Bokan Mountain on Prince of Wales Island, Alaska. Ucore is listed on the TSXV under the trading symbol "UCU" and in the United States on the OTC Markets' OTCQX® Best Market under the ticker symbol "UURAF."

For further information, please visit www.ucore.com.

About RapidSX™ Technology

IMC developed the RapidSX™ separation technology platform with early-stage assistance from the United States Department of Defense ("**US DoD**"), later resulting in the production of

commercial-grade, separated rare-earth elements at the pilot scale. RapidSX™ combines the time-proven chemistry of conventional solvent extraction ("**SX**") with a new column-based platform, which significantly reduces time to completion and plant footprint, as well as potentially lowering capital and operating costs. SX is the international rare-earth element ("**REE**") industry's standard commercial separation technology and is currently used by 100% of all REE producers worldwide for bulk commercial separation of both heavy and light REEs. Utilizing similar chemistry to conventional SX, RapidSX™ is not a "new" technology but represents a significant improvement on the well-established, well-understood, proven conventional SX separation technology preferred by REE producers.

Forward-Looking Statements

This press release includes certain statements that may be deemed "forward-looking statements." All statements in this release (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 is pursuing, 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.

Regarding the disclosure in the press release above, including in the "About Ucore Rare Metals Inc." section, the Company has assumed that it will be able to procure or retain additional partners and/or suppliers, in addition to 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 complete the Demo Plant commissioning and demonstration schedule and also later 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 and the then prevailing market prices based upon assumed customer offtake agreements. Ucore has also assumed that sufficient external funding will be secured to continue the development of 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 in RapidSX™; RapidSX™ 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 development of RapidSX™; 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.

Neither the TSXV nor its Regulation Services Provider (as that term is defined by the TSXV) accept responsibility for the adequacy or accuracy of this release.

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[i] Mech-Chem Associates, Inc. is the SMCs' full-service engineering firm specializing in the design, engineering and construction of manufacturing facilities, operating processes, and environmental control systems.

[ii] In this context, a brownfield site is a suitable existing commercial building/site that has been previously permitted for industrial use.