Aclara Announces Update on its Rare Earths Separation Project

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TORONTO, October 15, 2024 - Aclara Resources Inc. ("Aclara" or the "Company") (TSX:ARA) is pleased to announce the completion of a conceptual engineering study for its rare earths ("REE") separation project, currently being developed by its U.S.-based subsidiary, Aclara Technologies. The separation flowsheet concept, based on solvent extraction, was developed in collaboration with the Saskatchewan Research Council. This concept provided the foundation for Hatch to complete a Class 5-AACE CAPEX and OPEX estimate, while also incorporating robust environmental features such as significant waste reduction and zero liquid discharge. The initial results are highly encouraging, and positions Aclara to become the first vertically integrated heavy rare earths company outside of Asia.

Technical Study Highlights

- Separation of Key REE: Considers the separation of its mixed rare earth carbonates ("MREC") to be produced by the Company's Carina Project and the Penco Module to obtain high-purity didymium[1](NdPr), dysprosium (Dy) and terbium (Tb).
- Proven Technology: The flowsheet process employs solvent extraction technology with hydrochloric acid chemistry.
- High Purity: Achieves over 99.5% purity for all separated REE.
- Strong Metallurgical Recoveries: Expected metallurgical recoveries of 94% for NdPr, 92% for Dy and 91% for Tb.
- Environmental Features: Incorporates full water recirculation achieving no liquid discharge.
- Unoptimized CAPEX and OPEX: Initial CAPEX is estimated at US$ 354 million, which includes US$ 244 million for the solvent extraction plant andUS$110 million to significantly reduce waste and achieve zero liquid discharges. OPEX is estimated at US$ 12 per kg of rare earth oxides (REO).
- Synergies with Circular Mineral Harvesting Process: The development of the separation project has uncovered significant synergies with Aclara's proprietary circular mineral harvesting process, leading to several new initiatives aimed at (i) reducing CAPEX and OPEX at both mine and separation stages, (ii) minimizing waste management costs, and (iii) maximizing the quality of MREC output from the Carina Project and Penco Module.

Next Steps

The Company has begun advancing the following activities as part of the next stage of development of its separation project:

- Trade-off Chemistry: Conducting a trade-off study comparing the base case of hydrochloric acid chemistry to a nitrate-based chemistry for the separation flowsheet process.
- Location Study: Conducting a detailed analysis within the U.S. to identify an optimal site for the contemplated industrial separation facility, with the goal of maximizing efficiency and minimizing cost and development timeline.
- Metallurgical Testing and Optimization: Executing bench scale and mini-pilot testing to optimize the contemplated separation flowsheet, CAPEX and OPEX. Based on these results, the Company will assess the implementation of an integrated piloting campaign and the development of a Class 3-AACE CAPEX and OPEX engineering study.

Aclara's COO, Barry Murphy, commented:

"We are encouraged and excited by the initial results from our REE separation project, which highlight our commitment to vertically integrate while maintaining our high ESG standards across the value chain. As we transition to the optimization phase of the project, we have been positively surprised by the numerous synergies between our circular mineral harvesting process and our separation process. These synergies aim to optimize CAPEX and OPEX by reducing steps and simplifying the integrated flowsheet, effectively resulting in more competitive costs and expediting the time to market. At Aclara we remain committed to becoming a reliable and responsible long-term supplier of heavy rare earths, providing the critical minerals that our planet urgently needs in its race against climate change."

Aclara's Vertical Integration Strategy

The decision to integrate vertically responds to the need for creating a geopolitically independent supply chain for permanent magnets, a much-needed performance enhancer for the motors of electric vehicles, wind turbines, robotics and other applications associated with global decarbonization.

MREC Production

Aclara's patented circular mineral harvesting technology for extracting heavy rare earths from ionic clays is unique. Its proprietary process offers several environmentally attractive features, including a low carbon footprint, very high levels of water recirculation (>95%) and adherence to circular economy principles. It does not involve blasting, crushing, or milling, nor does it generate solid or liquid waste, thus eliminating the need for a tailings dam. The ionic clay feedstock is amenable to leaching with a common fertilizer, namely ammonium sulfate, which is fully compatible with the Company's commitment to revegetate its impacted areas.

Individual Oxides Production

Aclara Technologies is expected to source high purity MREC from Aclara's Penco Module in Chile and Carina Project in Brazil. These carbonates would then be separated into pure individual REO in the separation facility.

Rare Earths Alloys Production

In parallel, Aclara has started to develop its metals and alloys capabilities through a joint venture with CAP S.A., the Company's strategic partner in Chile. Aclara's goal is to be able to connect all aspects of the production of clean rare earths up to the point where they meet the specification demanded by permanent magnet manufacturers.

About Aclara

Aclara Resources Inc. (TSX:ARA) is a development-stage company that focuses on heavy rare earth mineral resources hosted in Ion-Adsorption Clay deposits. The Company's rare earth mineral resource development projects include the Penco Module in the Bio-Bio Region of Chile and the Carina Module in the State of Goiás, Brazil.

Aclara's rare earth extraction process offers several environmentally attractive features. Circular mineral harvesting does not involve blasting, crushing, or milling, and therefore does not generate tailings and eliminates the need for a tailing's storage facility. The extraction process developed by Aclara minimizes water consumption through high levels of water recirculation made possible by the inclusion of a water treatment facility within its patented process design. The ionic clay feedstock is amenable to leaching with a common fertilizer main reagent, ammonium sulfate. In addition to the development of the Penco Module and the Carina Module, the Company will continue to identify and evaluate opportunities to increase future production of heavy rare earths through greenfield exploration programs and the development of additional

projects within the Company's current concessions in Brazil, Chile, and Peru.

Aclara has decided to vertically integrate its rare earths concentrate production towards the manufacturing of rare earths alloys. The Company has established a U.S.-based subsidiary, Aclara Technologies Inc., which will focus on developing technologies for rare earth separation, metals, and alloys. Additionally, the Company is advancing its metals and alloys business through a joint venture with CAP S.A., leveraging CAP's extensive expertise in metal refining and special ferro-alloyed steels.

Forward-Looking Statements

This news release contains "forward-looking information" within the meaning of applicable securities legislation, which reflects the Company's current expectations regarding future events, including statements with regard to the Company's corporate strategy; expectations as to activities conducted in connection with its separation project, the Carina Project and Penco Module, timelines for completion and the success, effect or outcomes resulting therefrom; the development of a separation facility and the related studies in relation thereto; the Company's vertical integration strategy; and plans as to expenditures, investments, and use of capital and financial resources in the near and long term. Forward-looking information is based on a number of assumptions and is subject to a number of risks and uncertainties, many of which are beyond the Company's control. Such risks and uncertainties include, but are not limited to, the factors discussed under "Risk Factors" in the Company's annual information form dated as of March 22, 2024 filed on the Company's SEDAR profile. Actual results and timing could differ materially from those projected herein. Unless otherwise noted or the context otherwise indicates, the forward-looking information contained in this news release is provided as of the date of this news release and the Company does not undertake any obligation to update such forward-looking information, whether as a result of new information, future events or otherwise, except as expressly required under applicable securities laws.

[1] Didymium is a mixture of the elements praseodymium and neodymium (NdPr).

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SOURCE: Aclara Resources Inc.

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