ACLARA AND ARGONNE NATIONAL LABORATORY COMPLETE THE FIRST PHASE OF DEVELOPING A DIGITAL TWIN FOR HEAVY RARE EARTHS SEPARATION

Next step: extending the model into a dynamic, AI-supported digital twin under the U.S. Department of Energy's Genesis Mission

TORONTO, ON, November 2, 2026 – Aclara Resources Inc. ("Aclara" or the "Company") (TSX: ARA) is pleased to announce the successful completion of its first Cooperative Research and Development Agreement ("CRADA") with Argonne National Laboratory ("Argonne"), a U.S. Department of Energy ("DOE") national laboratory. Under the CRADA, signed on January 13, 2026, Aclara and Argonne developed and validated a steady-state model of the rare earth separation process for Project Dynamo, Aclara's planned rare earth separation facility in Vinton, Louisiana. The model was calibrated and validated using operating data from Aclara's rare earth separation demonstration plant at the Virginia Tech Corporate Research Center in Blacksburg, Virginia.

Aclara Technologies Inc., a wholly-owned subsidiary of the Company, together with Argonne and Virginia Tech, were selected for Phase I of the DOE's Genesis Mission, as announced on July 23, 2026. The team intends to extend the model to simulate the plant's dynamic behavior and to build on it an artificial intelligence agent that supports plant operators in their day-to-day decision-making. The objective is a faster, more stable and lower-cost separation operation. Phase I is subject to execution of the award agreement with the DOE, which is currently being finalized.

CRADA Highlights

Separation is arguably the most complex process technology in the rare earth value chain and the most geographically concentrated, with China controlling approximately 90% of global processing capacity. Project Dynamo's separation plant is designed as a network of 478 interconnected mixer-settler stages in which the individual rare earth elements are separated by solvent extraction. The chemical equilibrium of each stage is connected with the others as the aqueous and organic phases are in counter-current flow. A change in operating conditions at any point in the process shifts the equilibrium of the surrounding stages and propagates across the entire circuit. Even a minor adjustment to an acid or base flow rate can have this effect. This makes separation plants challenging to operate. Adjustments in process conditions cannot be made in isolation as they will impact the entire circuit. The industry has historically relied on operator experience accumulated over years to understand the impact of changes. In practice, this leads to conservative operation: operators make small, infrequent adjustments to avoid upsetting the equilibrium of the circuit, which slows ramp-up and extends the time needed to reach target purities.

Under the CRADA, the Aclara and Argonne teams built a steady-state model of the separation circuit capable of predicting the concentration of each rare earth element in every stage. The model was calibrated against the complete set of demonstration plant operating data and chemical assays. This established a validated baseline to launch process optimization and operating scenario analysis. The model allows Aclara to simulate changes in operating conditions before implementing them in the plant. This capability is expected to reduce the technical risk of Project Dynamo by predicting the effect of process changes on recovery and purity, by quantifying the impact of feed variability and by facilitating the optimization of ramp-up conditions.

Genesis Mission: From Validated Model to AI-Supported Digital Twin

The Genesis Mission is a national initiative led by the DOE to apply artificial intelligence and advanced computing to priority challenges in energy, scientific discovery and national security, mobilizing the DOE's 17 national laboratories together with industry and academia.

The model developed under the CRADA describes the separation process at steady state. Phase I of the Genesis Mission is expected to extend it to simulate how the circuit responds in time to operational disturbances, such as a change in feed composition or a deviation in a flow rate. Modelling this behavior across hundreds of coupled stages requires computational resources far beyond those of conventional process engineering tools, and the program is expected to draw on Argonne's high-performance computing infrastructure for this purpose.

The second step of Phase I is an artificial intelligence agent that uses the dynamic model to deliver operating recommendations to plant operators, moving optimization from periodic, conservative adjustments based on experience to more frequent, data-driven decisions. The objectives are to reduce the human error inherent in operating a circuit of this complexity on the basis of experience alone, shorten the time required to achieve target purities, lower operating costs through more efficient use of reagents, and absorb feed variability. These improvements are expected to shorten the ramp-up of Project Dynamo and accelerate the production of separated rare earth oxides.

Following completion of Phase I, the Company plans to apply to Phase II of the Genesis Mission, with the objective of deploying the digital twin in the plant connected to the plant's sensors and actuators such that the operating conditions can be adjusted automatically. This is expected to result in a more stable separation operation with even lower variability and increased overall recovery and purity. Any Phase II award is subject to the DOE's evaluation process, and there can be no assurance that an application will be submitted or that any award will be made.

Ramón Barúa, Chief Executive Officer of Aclara, commented:

"This is a major milestone for Aclara. Rare earth separation is the most technically complex and strategically important step in the value chain. Together with Argonne, we have developed a validated modelling tool, laying the foundation for dynamic, AI-driven optimization under the DOE's Genesis Mission. This technology has the potential to accelerate Project Dynamo's ramp-up, improve efficiency and substantially reduce operating risk. It demonstrates our commitment to making technology a key enabler as we build a reliable, sustainable and geopolitically diversified supply of critical materials."

Claus Daniel, Associate Laboratory Director, Argonne National Laboratory, commented:

"Building a secure domestic supply of rare earths requires closing the gap between promising technologies and reliable industrial operations. Our collaboration with Aclara brings Argonne's expertise in process modelling and scale-up to one of the most complex steps in that supply chain. This work provides a foundation for applying advanced computing and super intelligence to help industry reduce the time, cost and risk of bringing new U.S. critical materials capacity into production."

About Argonne National Laboratory

Argonne National Laboratory is a multidisciplinary DOE national laboratory near Chicago that conducts leading-edge basic and applied research across a broad range of scientific disciplines to address pressing national challenges in science and technology. Argonne is managed by UChicago Argonne, LLC for the DOE's Office of Science.

About Project Dynamo

Project Dynamo is Aclara's planned rare earth separation facility in Vinton, Louisiana, and a key component of the Company's vertically integrated rare earth strategy. The facility is being designed to process rare earth feedstock from Aclara's mineral resources and produce separated rare earth oxides in the United States.

About Aclara

Aclara Resources Inc. (TSX: ARA), a Toronto Stock Exchange-listed company, is focused on building a vertically integrated supply chain for rare earth alloys used in permanent magnets, as well as high-purity rare earth oxides, including yttrium and gadolinium, for power generation, aerospace and other high-performance applications. This strategy is supported by Aclara's development of rare earth mineral resources hosted in ionic clay deposits, which contain high concentrations of the scarce heavy rare earths, providing the Company with

a long-term, reliable source of these critical materials. The Company's rare earth mineral resource development projects include the Carina Project in the State of Goiás, Brazil as its flagship project and the Penco Module in the Biobío Region of Chile. Both projects feature Aclara's patented technology named Circular Mineral Harvesting, which offers a sustainable and energy-efficient extraction process for rare earths from ionic clay deposits. The Circular Mineral Harvesting process has been designed to minimize the water consumption and overall environmental impact through recycling and circular economy principles. Through its wholly-owned subsidiary, Aclara Technologies Inc., the Company is further enhancing its product value by developing a rare earth separation plant in the United States. This facility will process super pure rare earth carbonate sourced from Aclara's mineral resource projects, separating it into individual rare earth oxides. Additionally, Aclara, through a joint venture with CAP S.A., is advancing its alloy-making capabilities to convert these refined oxides into the alloys needed for fabricating permanent magnets. This joint venture leverages CAP S.A.'s extensive expertise in metal refining and special ferro-alloyed steels. Beyond the Carina Project and the Penco Module, Aclara is committed to expanding its mineral resource portfolio by exploring greenfield opportunities and further developing projects within its existing concessions in Brazil, Chile and Peru, aiming to increase future production of heavy rare earths.

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 finalization and execution of the Phase I award agreement with the DOE and the timing and performance of Phase I of the Genesis Mission; the computing resources to be applied under Phase I; the submission and potential award of the Company's Phase II application under the Genesis Mission; the development, implementation and performance of the digital twin and the artificial intelligence agent; the expected benefits of these tools for the operation, ramp-up and production of Project Dynamo, including reductions in human error, operating time, costs and process volatility; the financing, development, construction, commissioning and operation of Project Dynamo and the timing thereof; and the Company's strategy to develop an independent, vertically integrated rare earth supply chain. Forward-looking information is based on a number of assumptions, including that the Phase I award agreement will be executed on the terms currently contemplated and that DOE funding will be available; that the dynamic model and artificial intelligence agent will perform as expected when applied to operating data from the demonstration plant; and that Project Dynamo will be financed, constructed and operated as currently planned. Forward-looking information is subject to a number of risks and uncertainties, many of which are beyond the Company's control, including the risks that the Phase I award agreement may not be executed on the terms contemplated or at all; that the DOE may terminate the agreement, including without cause or following a go/no-go review; that milestone payments are subject to the DOE's acceptance of deliverables and the availability of appropriated funds; and that the Phase II application may not be submitted or may not result in an award. Please refer to the risk factors discussed under "Risk Factors" in the Company's annual information form dated March 18, 2026, 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 hereof and the Company does not undertake any obligation to update such forward-looking information, except as required under applicable securities laws.

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