SOLID-STATE BATTERY PROGRAM ADVANCES TO FULL-FORMAT POUCH CELL TESTING

Critical Resources has moved its DSD-built cathode from coin cells into full-format pouch cells — a key step up — with electrochemical testing underway and deposition of its solid-state sulphur-free electrolyte progressing.

- **Full-format pouch cells built:** Following deposition of a complete composite battery layer, the program has advanced from coin-cell testing to full-format pouch cells for demonstration of the DSD-deposited cathode, the next defined stage in the solid-state battery evaluation program.

- **Scale-up step:** The move from coin cells to a full-format pouch is a standard scale-up step: coin cells prove the chemistry, while a full-format pouch demonstrates the cathode can be built into a full working cell.

- **Liquid electrolyte baseline:** The pouch cells use a liquid electrolyte as a reference baseline, providing working full-format cells that isolate and validate the DSD-deposited cathode composite ahead of integrating CRR's proprietary sulphur-free solid-state electrolytes.

- **Electrochemical testing underway:** During conditioning (formation) at 0.05C, the cells behaved as expected. Full performance — capacity, efficiency and cycle life — is still being evaluated, with results to follow.

- **Full-cycle testing ongoing:** Coin-cell (CR2032) electrochemical testing of the DSD composite on a liquid reference continues alongside the full-format pouch cell work.

- **Solvent-free deposition process:** The DSD-deposited composite is produced using a dry, room-temperature deposition, with no solvents, binders, furnace or compression processes.

- **Materials and manufacturing:** The pouch cell is where CRR's two workstreams meet — the ASE electrolyte and the DSD process. With ASE thin-film deposition now underway, integrating it into the cell is the step that brings them together.

- **Next Steps:** Next stages integrate CRR's ASE electrolyte as a thin film to progress towards a full solid-state cell, followed by the trial deposition of solid-state electrolytes via the DSD process.

Critical Resources Limited ('**Critical Resources**' or the '**Company**', ASX:**CRR**) is pleased to advise that, following the single-step composite-layer milestone (ASX:CRR 16 June 2026), its solid-state lithium-ion battery evaluation program has advanced to full-format pouch cells, now built and undergoing initial testing. The cells incorporate the DSD-deposited cathode composite and baseline liquid electrolyte as a reference material.

The cells have been built to test the DSD-deposited cathode chemistry and deposition process in a full-format cell; coin-cell and pouch-cell testing is now underway, with performance results to follow.

The evaluation program is being conducted at the South Dakota School of Mines & Technology (**SDM**) within the US National Science Foundation (**NSF**) supported Centre for Solid-State Electric Power Storage (CEPS). The evaluation program is led at SDM by Dr Alevtina Smirnova, Director of CEPS and Technical Advisor to Critical Resources, whose research developed the solid-state battery IP over which the Company holds its exclusive option (refer ASX:CRR announcements 17 February 2025 and 18 November 2025).

At this stage, Critical Resources' strategy is to license its battery materials and manufacturing IP, not to manufacture cells itself. Each step that de-risks the DSD process — including building it into a working full-format cell — widens the Company's potential licensing and partnership opportunities.

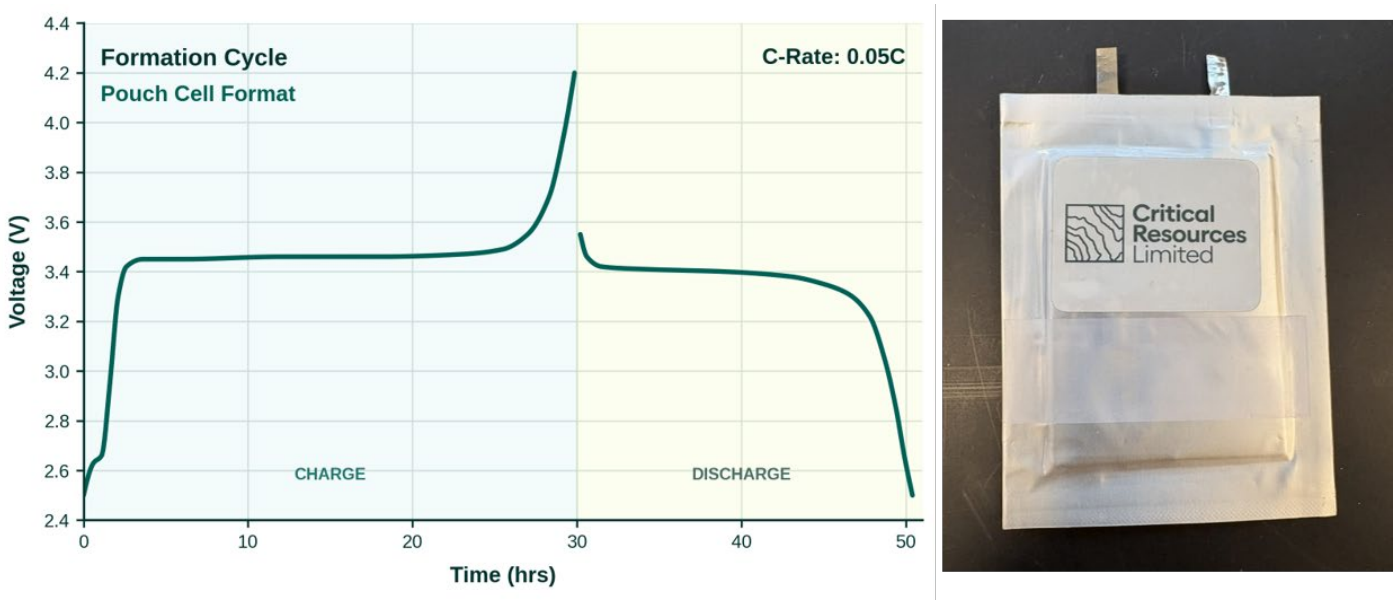

Figure 1 *– Left: initial conditioning (formation) cycle for DSD pouch cell, C-rate 0.05C. Right: full-format pouch cell built with the DSD-deposited cathode composite on a liquid-electrolyte baseline.*

BRINGING MATERIALS AND MANUFACTURING TOGETHER

The move from coin cells to a full-format pouch is a standard scale-up step: coin cells prove the chemistry, while a full-format pouch demonstrates the cathode can be built into a full working cell. The pouch cells confirm that the DSD-deposited cathode can be assembled into a full-format cell and cycled, and that early conditioning is behaving as expected.

The test pouch cells comprise the ~15µm DSD-deposited cathode composite — lithium iron phosphate (LFP) cathode material, lithium lanthanum zirconium oxide (LLZO) reference electrolyte and a carbon-nanotube (CNT) network — paired with a standard liquid electrolyte (LiPF6 in organic carbonates, EC/DMC) and a lithium-metal (20µm) anode. The cells are undergoing conditioning (formation) cycles at 0.05C (~20-hour charge/discharge) — a low rate standard for first-cycle formation, allowing the stable interphase layers to form in a controlled manner before performance testing.

The pouch cell is the platform on which CRR intends to bring its two workstreams together — the ASE electrolyte work and the DSD manufacturing process. That integration has not yet occurred: the current cells validate the DSD-deposited cathode on a liquid baseline, isolating the manufacturing step before a solid

electrolyte is introduced. The defined next step is internal performance testing, followed by work towards integrating the ASE electrolyte as a thin film.

CRR's Amorphous Solid-State Electrolyte (**ASE**) — distinct from the LLZO reference phase used in the DSD composite — has been **benchmarked at 3.2 mS cm^{-1} ionic conductivity and 0.27 eV activation energy**: superionic-class conductivity, competitive with sulphide-class performance, without sulphur, and among the highest reported for the non-sulphide, non-halide amorphous class from a first-pass, unoptimised composition (refer ASX:CRR announcement 28 May 2026). It is this material the program intends to integrate into the pouch-cell platform next, replacing the liquid electrolyte baseline.

CRR's optioned IP portfolio also includes a high-temperature solid-state electrolyte (**HTE**), covered by US Patent 10,991,976 and developed with NASA support (the US Government retains certain rights, as is standard for federally supported inventions). HTE is part of the Company's licensable IP position and does not form part of the current pouch-cell work; its planned role is later integration alongside ASE, as shown in the program table below (refer ASX:CRR announcement 18 November 2025).

> **Critical Resources Managing Director, Tim Wither, commented:** *'Moving from coin cells to a full-format pouch cell is the step that shows our DSD process can build a real, working cell, not just prove the chemistry in a button cell. It is the first time we have built our DSD-deposited cathode into a complete cell, and the early conditioning is behaving as we'd expect. We are now depositing our sulphur-free ASE solid-state electrolyte as a thin film — integrating it into the cell is the next technical challenge, and one we expect to work through step by step, as is normal for development at this stage.'*
>
> *'We are doing this in the right order — prove the manufacturing in a working cell on a liquid baseline first, isolating the deposition step, then integrate our solid electrolyte. That sequencing keeps each result clean and interpretable. This is early-stage laboratory work, not commercial manufacturing, and we expect to solve problems as we go. But the direction is encouraging, and we will keep advancing it through a disciplined, capital-light evaluation approach, with outstanding work from the South Dakota School of Mines research team.'*

WHERE WE ARE: PROGRAM PROGRESS AT A GLANCE

Program Stage	Workstream	Status
Electrolyte material benchmarked (ionic conductivity, stability).	ASE (electrolyte)	✓ Complete
Single-step composite layer deposited (cathode + electrolyte + conductor, solvent-free).	DSD (manufacturing)	✓ Complete
Coin-cell electrochemical baseline (charge/discharge vs. known reference).	DSD (manufacturing)	In progress
Full-format pouch cell prototype.	DSD + Liquid electrolyte (benchmark)	In progress
Independent testing of DSD pouch cell.	DSD + benchmark electrolyte	Planned
Full Solid-State Cell: Solid-state ASE and HTE electrolytes integrated with DSD process.	ASE + DSD	Planned

NEXT STEPS

- **Complete electrochemical testing**: Complete internal electrochemical testing of the pouch and coin-cell formats, including C-rate and cycling characterisation.

- **Optimise and independently validate**: Refine the cell and deposition process on internal results, then submit the optimised baseline cell for independent third-party electrochemical testing to establish a validated performance baseline.

- **Integrate the solid electrolyte**: Replace the liquid baseline with CRR's ASE thin-film electrolyte — deposition is now underway — building towards a full solid-state cell.

- **ASE and HTE via DSD**: Advance trials depositing the ASE and HTE electrolytes using the dry DSD process — the manufacturing endpoint that unifies the sulphur-free solid-state electrolyte with the DSD manufacturing workstream.

These activities represent defined technical gates within CRR's broader solid-state battery evaluation strategy, designed to systematically de-risk solvent-free manufacturing pathways while maintaining a disciplined, capital-light, laboratory-stage evaluation approach. Outcomes will inform prototype development strategy and downstream partnership, validation or licensing opportunities aligned with defence, industrial, and high-reliability infrastructure markets.

This announcement has been approved for release by the Board of Directors of Critical Resources.

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ABOUT CRITICAL RESOURCES LIMITED

Critical Resources Limited (ASX:CRR) is an Australian mining and technology company focused on the discovery and development of critical metals and next-generation technologies essential to a sustainable future. The Company holds a diversified portfolio including the Mavis Lake Lithium Project in Ontario, Canada, the Halls Peak Base Metals Project in New South Wales, and a growing gold portfolio in New Zealand.

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The scientific and technical information in this announcement relating to the solid-state battery program is based on, and fairly represents, information reviewed and approved by Dr Alevtina Smirnova, Director of the US National Science Foundation–supported Centre for Solid-State Electric Power Storage at the South Dakota School of Mines & Technology and Technical Advisor to Critical Resources. The underlying experimental work was conducted by the CEPS research team at the South Dakota School of Mines & Technology. Dr Smirnova has consented to the inclusion of this information in the form and context in which it appears.

FORWARD LOOKING STATEMENTS

This announcement may contain certain forward-looking statements and projections, including statements regarding the Company's solid-state battery technology and intellectual property programs, the expected performance, optimisation and development of its electrolyte and manufacturing workstreams, the potential applications and markets for that technology, and the Company's plans with respect to its mineral properties and programs. Forward-looking statements can generally be identified by words such as 'may', 'expect', 'intend', 'plan', 'target', 'potential', 'anticipate' and similar expressions. Such forward-looking statements/projections are estimates for discussion purposes only and should not be relied upon. They are subject to known and unknown risks, uncertainties and assumptions and may therefore differ materially from results ultimately achieved. The benchmark assessment and laboratory results referred to in this announcement are early-stage and are not indicative of commercial performance. There can be no assurance that ongoing optimisation will achieve improved or commercially viable results, that the Company's battery technology will be successfully developed, scaled or commercialised, or that any intellectual property option held by the Company will be exercised or prove valuable. There can also be no assurance that CRR's plans for development of its mineral properties will proceed as currently expected, that the Company will be able to confirm the presence of additional mineral resources, that any mineralisation will prove to be economic, or that a mine will successfully be developed on any of CRR's mineral properties. Critical Resources Limited does not make any representations and provides no warranties concerning the accuracy of the projections and disclaims any obligation to update or revise any forward-looking statements/projections based on new information, future events or otherwise, except to the extent required by applicable laws. While the information contained in this announcement has been prepared in good faith, neither Critical Resources Limited nor any of its directors, officers, agents, employees or advisors give any representation or warranty, express or implied, as to the fairness, accuracy, completeness or correctness of the information, opinions and conclusions contained in this announcement.