

DRC-Chemtec

Technology & Pilot Framework

Public technical overview · October 2026

DRC-Chemtec is a water-technology startup founded in 2023 by Eng. Husam Aljarba, who brings more than 21 years of water-treatment experience.

Customized to the water

There is no standard treatment train for every source. DRC-Chemtec starts with representative water data, the required output quality, site constraints and a maintainable operating model. Electrochemical and ZLD technologies are selected and combined only where testing supports the choice. Any efficiency, recovery or economic benefit is application-specific until measured.

Four priority pathways

Pathway	Typical role	Essential qualification question
Electro-oxidation	Targeted treatment of selected persistent organics, color or difficult contaminants	Which pollutants respond, and what energy and by-products result?
Electrocoagulation	In-situ coagulation for selected metals, suspended matter or emulsions	What electrode, solids separation and sludge route are feasible?
Electrocapacitive treatment	Selective ionic removal or water-quality adjustment	Does the target ionic profile support effective cycling and regeneration?
Zero liquid discharge (ZLD)	Concentrate management through an engineered water, salt and solids pathway	Are energy, scaling, residual handling and economics viable at this site?

A customized treatment train may use one or several of these pathways with fit-for-purpose pretreatment, separation, controls and monitoring. The choice follows the water; no single module is claimed to treat every feed on its own.

A decision-ready pilot

1. **Qualify the problem.** Agree the site, water source, target specification, permissions and comparator.
2. **Sample and screen.** Analyze representative feed and define viable process and residual pathways.
3. **Set the charter.** Agree measurement methods, operating envelope, safety, responsibilities and go/no-go criteria.
4. **Run and report.** Record feed and product quality, water balance, energy per cubic metre, electrode and other consumables, uptime, maintenance and residuals.
5. **Review the decision.** Compare results with the baseline and carry uncertainties into a scale-up design.

From pilot to operation

The investment case must account for utilities, integration, permitting, solids and concentrate handling, commissioning, operator training, spares and ongoing support. A verified result under representative conditions matters more than a percentage separated from its feed and baseline.

Important: This report is an informational framework, not a product specification, performance guarantee, completed client case study, securities disclosure or announcement of a contracted project.

Context and enquiries

Technology pathways and pilot logic are informed by DRC-Chemtec's supplied water partnership discussion material. Proposals and illustrative metrics in that material are not presented as validated site results here.

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