

# Critical Materials Exploration Advisory - Pact Renewables

## Unlocking Critical Materials from Australian Salt Lake Brines and Mining Effluents

**Capability Overview - July 2025**



**LARGE REPLENISHING RESOURCES**  
**IMPACTFUL OUTCOMES**  
**CRITICAL MINERALS EXTRACTION**  
**SUSTAINABLE WASTE MANAGEMENT**

### WHO WE ARE

Pact Renewables Pty Ltd is a boutique Australian environmental technology and exploration advisory company. We specialise in identifying and evaluating the potential for critical materials recovery from Australian salt lake brines and mining/mineral processing effluents. We also provide expert guidance on sustainable effluent management, including containment and backfilling strategies aligned with environmental and regulatory requirements.

### OUR ADVISORY SERVICES

#### Exploration

Expert support in basin-wide hydrogeological assessments and chemical characterisation of water types in targeted salt lakes and effluent impoundments across Australia.

Assistance with exploration program development, team training, field guide preparation, desktop data interpretation, and field campaign mentorship.

Scoping-level resource estimates and preliminary techno-economic evaluations for mineral recovery using our proprietary *Salpro* technology or alternative brine processing routes—supported by comparative lifecycle and risk assessments for decision-making.

Advice on design, fabrication and deployment of field-portable materials extraction modules and concentrate preparation for followup bench-scale and piloting trials, as related to recovery of potassium, magnesium, lithium, uranium, vanadium and selected REEs from salt lake brines and inorganic mining/mineral processing effluents.

**Learn more about our mineral recovery solutions at [www.pactrenewables.com](http://www.pactrenewables.com) or contact us for more information: [info@pactrenewables.com](mailto:info@pactrenewables.com)**



**Recognised at the World  
Economic Forum  
Davos 2023**

### OUR ADVISORY SERVICES (Continued) Sustainable Resource Recovery Options

Scoping-level assessments of mineral process effluent disposal options and associated risks.

Guidance on safe containment and backfilling using our *MBComp* (Mineral-Based Composites) technology, fully compatible with regulatory frameworks.

Preliminary lifecycle and economic assessments to support follow-up investment decisions.

### WHY TARGET SALT LAKE BRINES AND EFFLUENTS

Australia's inland salt lakes form integral part of vast, stable internal drainage basins. Developed since the Tertiary, most have been naturally replenished continuously by metal-bearing brines via leaching, downstream transfer through palaeo-drainage systems, and evaporative concentration. Globally, natural salt lakes contain approximately 75% of the world's lithium endowment, highlighting their long-term significance for critical minerals supply.

Our proprietary and open-file data on mining and mineral processing effluents in Australia reveal substantial untapped potential for critical materials extraction.

Key challenges include (a) developing fit-for-purpose exploration strategies and (b) deploying suitable extraction and waste minimisation technologies to overcome technical complexities and support resource estimation and sustainable project development.

Pact Renewables brings extensive experience and technologies to unlock this potential sustainably: aiming for zero process effluent discharge outcome for aspiring explorers and resource developers.



### WHY CHOOSE PACT RENEWABLES

Proven track record in salt lake exploration, saline effluent treatment, and strategic mineral recovery - built on decades of engagement with industry, regulators, and investors. Access to an extensive proprietary database covering the hydrogeology of nearly all major Australian salt lake systems, enabling rapid screening and exploration targeting. Led by Dr. Aharon Arakel (BSc, PhD Geology) - an internationally recognised expert whose pioneering publications since the early 1980s continue to guide exploration across Australia, China and Southwest Africa. Our capabilities uniquely position Pact Renewables to proactively support your low-carbon, regulatory-compliant mineral recovery efforts, helping define and develop transformative critical materials discoveries through sound early-stage evaluations and roadmap planning.

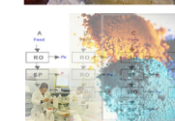
### EXAMPLES OF CLIENTS

BHP Billiton (South Africa), Hallett Group (Australia), Melbourne Water (Australia), MWH Global, Murray Darling Basin Commission (Australia), Occidental Petroleum (USA), Orica, Origin Energy (Australia), Petroleum Development Oman (Middle East), Placer Dome (Australia), Ragn-Sells (Sweden), Rum Junglr Uranium, Santos (Australia), Straits, Takata Corporation (Japan), US EPA, WateReuse Foundation (USA).

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