

Lithium from HOME

Massachusetts Institute of Technology (MIT)

To solve the core challenges for Direct Lithium Extraction (DLE) at the Salton Sea, we propose a membrane cascade solution. The cascades leverage commercially-available nanofiltration, forward osmosis, and osmotically-assisted reverse osmosis membranes to select and concentrate lithium from Salton Sea brine. High-purity lithium carbonate is subsequently crystallized using mixed suspension mixed product removal, and the residual slurry is re-injected to facilitate brine extraction. In this proposal, we use a combination of experiments and modelling to validate and prove the feasibility of our concept. The technology is mature and ready for pilot-scale testing.