

Team Trident

TSSE: Treatment of Produced Water

- ▶ We propose a non-membrane, non-evaporative desalination system for the treatment of produced water using low-temperature solar energy.
- ▶ TSSE utilizes the thermoresponsive behavior of water solubility of certain low-polarity solvents (diisopropylamine) to achieve desalination of the aqueous brine streams.
- ▶ We have managed exceptionally high solvent recovery for TSSE in laboratory settings with recovery rates greater than 99.99%!
- ▶ TSSE can achieve greater energy cost-effectiveness for desalination, as only moderate temperatures are needed (< 70 °C).
- ▶ The solvent is not consumed in a TSSE system but is regenerated for reuse in a continuous process – further reducing our operational costs!
- ▶ Our Team includes experts from Bechtel, Columbia University, politicians, oil and gas professionals, and is supported by private sector finance.