

ibex™ - SAGD Decentralized Steam & Solvent Technology Offsite Prototype Construction and Operation

The ibex™ process is designed for in-situ bitumen producers to materially reduce their water disposal, GHG, land use footprint and capital and operating costs. The process receives emulsion from a Steam or Solvent Assisted Gravity Drainage (SAGD) reservoir, adds heat, removes gas, removes solids, converts the water into steam and recaptures solvent for reservoir re-injection, treats the bitumen for sale, and optionally converts bitumen into a partially upgraded semi-finished product. The project will complete detailed engineering, procurement, construction, and operation of an offsite, commercial operating condition 1000:1 scale prototype (TRL5) in 2022. The operating data will provide confidence to proceed to field level trials with the prototype or proceed to detailed engineering, construction, and operation of a 100:1 scale pilot in 2023-24.



RECIPIENT:
**ARCHER Business
Development Inc**



PARTNERS:
**Oil and Gas
Industry Partner**



TOTAL BUDGET:
\$1,014,160



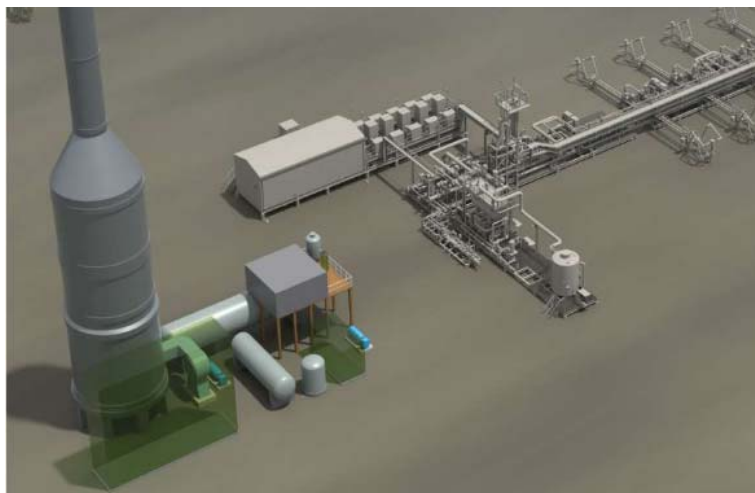
AI FUNDING:
TIER- \$608,496



PROJECT DATES:
**March 2022 –
May 2023**



PROJECT TRL:
**Start: 4
End: 5**



APPLICATION

ibex™ is designed to be located at or near the in-situ bitumen producing well pad to optimize energy use and approach the ideal heat cycle by directing all heat into steam generation or bitumen processing. ibex™ replaces significant sections of traditional water treatment at SAGD facilities resulting in reduced capital and operating costs along with improved GHG and environmental performance.



ALBERTA INNOVATES CLEAN RESOURCES

ENVIRONMENTAL INNOVATION

WATER INNOVATION

PROJECT GOALS

The key goals of the project are:

- Produce detailed engineering for a 1000:1 contractor scale TRL 5 prototype
- Build and operate a 1000:1 scale continuous machine through a variety of parametric tests with fluids supplied from in-situ oil sands sites at commercial conditions for a variety of circumstances
- Validate the ibex™ process can meet required Key Performance Indicators and continue to proceed to next commercialization phase

BENEFITS TO ALBERTA

The successful implementation of this technology or use of the knowledge generated could result in:

- Improvements in water use and GHG production through complete recycling of water and elimination of process - related disposal water, and reduced energy consumption compared to baseline operations
- Improvements in economic performance for SAGD facilities through reduced capital and operational expenses related to up to a 60% reduction of land footprint requirements and much of the above ground infrastructure connecting well pads to central processing facilities
- Potential for increased pipeline capacity through partial upgrading to produce higher-valued bitumen products



1 Student Trained



2 Protected Jobs



120 Future Jobs

CURRENT STATUS

APR 2022

Recently contracted, efforts are underway to initiate final design and drawings work, determine detailed equipment specifications and secure firm quotes for procurement and fabrication of the 1:1000 scale ibex™ pilot. Target fabrication completion is for the New Year to support testing and operation through the first half of 2023.