Creating Value from Waste™

CVW CLEANTECH

cvwcleantech. com | TSX-V:CVW

A New Environmentally Sustainable Technology for Alberta and Canada

CVW CleanTech's Creating Value from Waste™ ("CVW™") is a clean technology that recovers valuable hydrocarbons, 'green' critical minerals and water from froth treatment tailings before their discharge to tailing ponds in oil sands mining operations. This also delivers significant environmental benefits including greenhouse gas ("GHG") emissions reductions and enhanced tailings management.

CVW CleanTech has developed an innovative sustainable solution to realize both economic and environmental benefits from oil sands mining operations, while creating a new Canadian critical minerals industry and contributing to Canada's net zero emissions aspirations. CVW™ is a first-of-kind patented technology that remediates oil sands froth treatment tailings while recovering valuable hydrocarbons and critical minerals. CVW™ utilizes conventional flotation, solvent extraction, distillation and mineral dressing equipment to achieve additional recoveries of bitumen (85%), solvent (91%) and titanium and zircon concentrates (73%). CVW™'s GHG emissions abatement benefit is founded on recovering solvent contained in the tailings before deposition into a tailings pond. By keeping the solvent out of the tailings pond, methanogenic decomposition is avoided. CVW™ represents a point-source solution to a fugitive emissions challenge. This fugitive tailings methane emissions avoidance is complemented through enhanced commodity-driven carbon efficiencies that result in a net reduction in site-wide GHG emissions of up to 10%. CVW™'s 'ready-to-reclaim' tailings can be efficiently processed in proven tailings management operations to recapture fit-for-reuse hot water and complies with Alberta's Directive 85 tailings reclamation mandates.

Annual Economic, Environmental and Operational Benefits for a Typical Project Incorporating CVW™ Technology

~2.2 MMbbl
of hydrocarbons (bitumen and solvent)

243 kt
of critical minerals recovered (titanium and zircon)

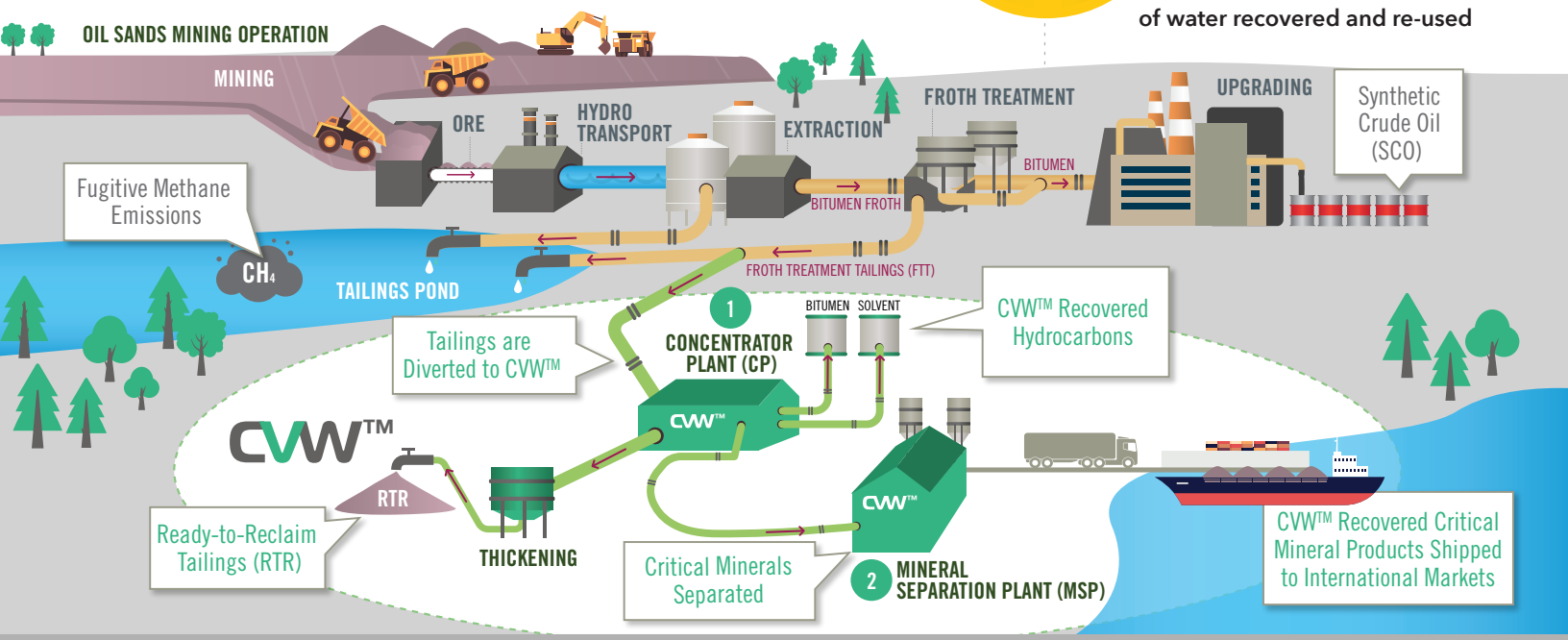
380+ kt
of CO_2e emissions abatement

1.9 million GJ
of indirect heat captured

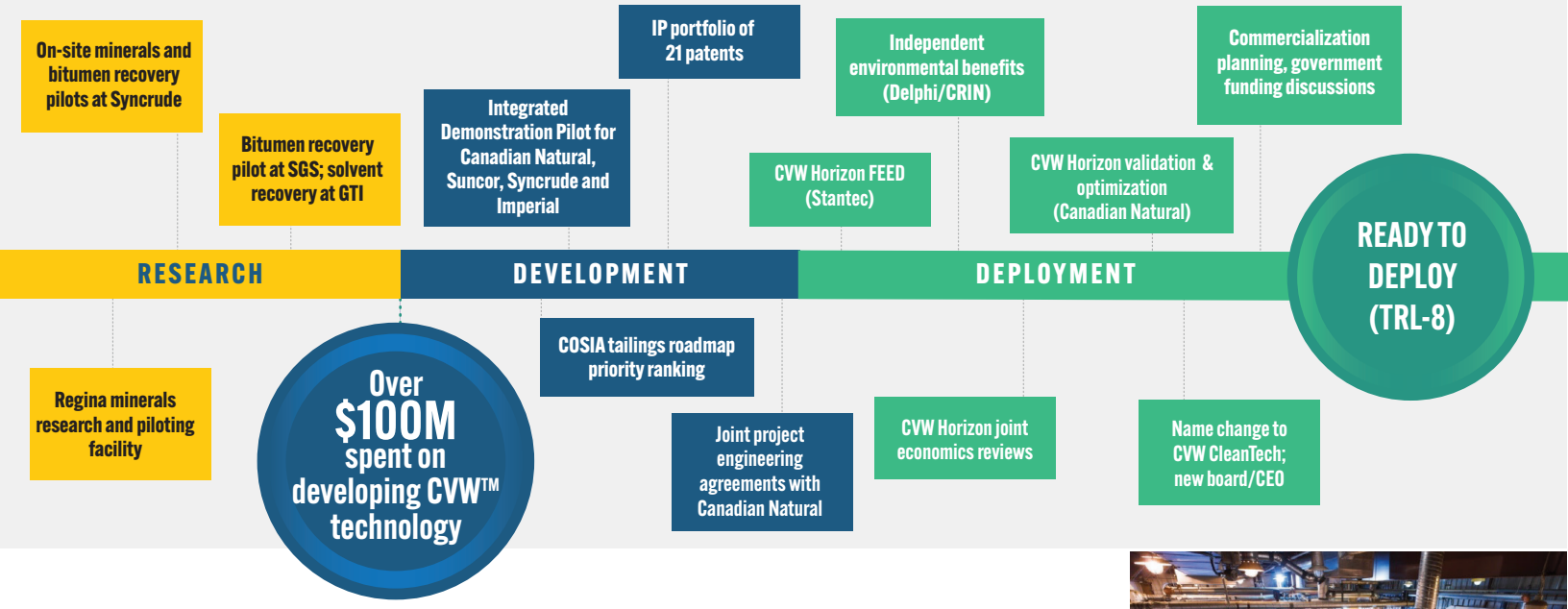
19 Ha
reduction of land use impacts

2.8 million m³
of water recovered and re-used

Potential to reduce Canada's emissions by 0.5%



Over 15 Years of Progressive Research, Development and Engineering



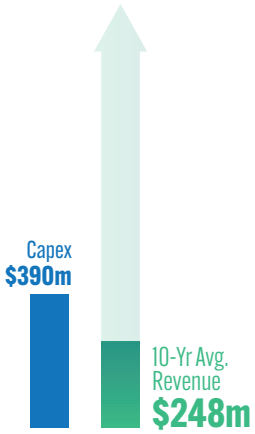
Three Development Options

CVW CleanTech has analyzed a variety of scenarios that allow for the commercialization of the CVW™ technology. These options balance a partner's operational considerations with upfront capital costs and long term value generation

CVW CleanTech Integrated Demonstration Pilot

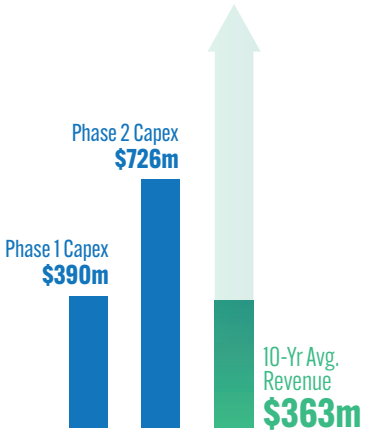
EcoBase

Focused exclusively on hydrocarbon recoveries while maintaining future optionality for minerals recovery



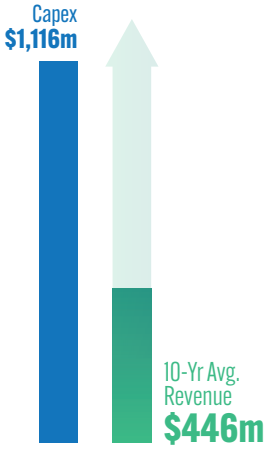
EcoFlex

A phased approach to development that deploys the entire suite of technology in a staged manner



EcoMax

An approach which deploys the entire technology suite at once to maximize commodity recoveries



Bitumen and solvent revenue based on flat US$60/bbl West Texas Intermediate pricing subject to various adjustments, and an exchange rate of CAD1.30/USD. Zircon concentrate value is based on flat US$1710/t premium grade zircon pricing subject to various adjustments. Chloride ilmenite value is based on a blend of flat US$1320/t rutile pricing and flat US$314/t ilmenite pricing, subject to various adjustments. GHG benefits are valued at the federal carbon levy amounts that increase to C$170/t by 2030. Tailings management savings are estimated at ~C$21/t based on the volume of fine material processed and heat integration is valued at C$3.59/GJ.

Track Record of Government Support

- Alberta Energy
- Sustainable Development Technology Canada / Technologies du développement durable Canada
- National Research Council Canada
- Natural Resources Canada
- Environment and Climate Change Canada
- Emissions Reduction Alberta
- CRIN Clean Resource Innovation Network

Over $80M in grants to date

CVW CLEANTECH

Akshay Dubey, CEO
Akshay.Dubey@CVWcleantech.com

Kevin Moran, Executive Vice President and CTO
Kevin.Moran@CVWcleantech.com