



## EXPANDER ACHIEVES “NEAR-ZERO CO<sub>2</sub> EMISSION” THROUGH ITS REVOLUTIONARY FTCRUDE® AND FTCRUDE® CO-PRODUCT TECHNOLOGIES

**CALGARY, AB. (November 23, 2015)** - Expander Energy is pleased to announce that its proprietary FTCrude® Co-Product technology has been granted US Patent No. 9,156,691. ([Link to patent abstract](#))

This follows the issuance of 3 Canadian patents and 1 US patent related to the FTCrude® Technology Suite.

FTCrude® technology is a bitumen and heavy oil upgrading process and **system** developed for the production of synthetic hydrocarbons, an example of which is synthetic crude oil (SCO), Partial Upgraded Bitumen (PUB) and High Quality Refined Fuels (ULS Diesel). The process avoids the production of waste carbon attributed to residuum and/or petcoke formation and achieves carbon conversion of near 90%, resulting in significant reduction of GHG (CO<sub>2</sub>) emissions of greater than 80%.

FTCrude® Co-Product technology compliments the FTCrude® process by economically converting all the remaining CO<sub>2</sub> streams, including CO<sub>2</sub> by-product and combustion flue gas CO<sub>2</sub> streams, to high value Co-Products such as Methanol, Ammonia and Urea.

Alberta bitumen and heavy oil processed through FTCrude® / FTCrude® Co-Product equipped Upgraders and Refineries will reduce the “Well to Wheels” (“WTW”) CO<sub>2</sub> emissions by 25% to less than 90 grams CO<sub>2</sub> per Mega Joule of gasoline equivalent, beating the World Conventional Crude average WTW of 100 grams CO<sub>2</sub>e/MJ of gasoline equivalent.

“The Expander FTCrude® Co-Product patented technology is a major enhancement to the FTCrude® process for bitumen and heavy oil refining and upgrading. The FTCrude® Co-Product

process targets conversion of all the residual CO<sub>2</sub> streams to create a “Near-Zero CO<sub>2</sub> Emissions”, refinery solution addressing issues constraining the effective movement of Alberta bitumen and heavy oil to world markets,” said Expander’s CEO James Ross.

Expander has a team of energy industry professionals dedicated to developing and commercializing **Carbon Management and Utilization** solutions for Canada’s energy industry.

***About Expander Energy***

**Expander Energy is a leading developer and licensor of processes to convert carbon sources into valuable synthetic fuels. Our engineered fuels are ultra-clean burning and complement existing transportation fuel infrastructure and current engine technologies. Our fuels reduce GHG emissions and are produced from carbon rich materials such as natural gas, biomass, bitumen residuals, petcoke and municipal solid waste. We strive to deliver an alternative, drop in fuel through patented technology to provide economic growth for Alberta and Canada while being environmentally conscious. Expander Energy Inc. is a privately held energy company located in Calgary, Alberta, Canada.**

**James Ross, CEO,**

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