PALOS

Weekly Commentary

Issue No. 33 | AUGUST 16, 2021

By Charles Marleau CIM[®] and William Mitchell CIM[®]

Climate Change: Capturing Carbon

There are two ways to capture carbon:

1. Stationary Capture: At a stationary point such as industrial emitters. This entails a process which stops CO2 emissions from entering the atmosphere in the first place. For example, capturing emissions directly from a smokestack.

2. Direct Air Capture (DAC). This involves technologies that utilize either a liquid adsorption or solid adsorption process. In simplified terms, DAC technologies use massive fans to collect CO2 from the atmosphere and subsequently uses a filtering technology to remove and contain CO2. Once collected, the CO2 can either be permanently stored underground or better yet, marketed for industrial purposes.

Uses for CO2 are widespread and range from consumer applications (think soda pop, plastics, fuels, chemicals) to improving the process of recovering oil from underground wells, referred to as **Enhanced Oil recovery (EOR)**. EOR has obvious benefits for oil exploration and producing companies that are facing increasing scrutiny on the environmental impact of their operations.

By using CO2 to improve oil recovery results, energy producers can not only improve production efficiencies, but also incorporate the practice of permanently sequestering CO2 underground. This offers the opportunity to generate carbon credits that will serve to offset the net impact of their carbon heavy operations. Suncor, the largest Canadian energy company by market cap, has pledged to become a "net zero" emitter of greenhouse gas by 2050.

Alberta based **Enhance Energy** (private) is using CO2 capturing technologies to help energy companies offset their carbon footprint. Captured CO2 is compressed and injected into geological formations that formerly held oil resources. The CO2 serves to increase the amount of oil that can be removed from the ground by injecting CO2 underground forcing more oil to the surface. Further, the process leaves the CO2 permanently stored: a win-win scenario for both producers and the environment. Enhance Energy generates revenues from both energy production and selling carbon credits.

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Whitecap Resources (TSX: WCP) is another Canadian company at the forefront. WCP purchases CO2 from two sources: a coal fired power station located in Estevan, Saskatchewan, and a coal gasification project in North Dakota. The liquified CO2 is then transported and pumped deep into producing wells where the CO2 acts as a solvent, pushing otherwise unrecoverable oil from porous rock. The result is enhanced recovery and the removal of CO2 from the atmosphere and storage of the CO2 underground. Whitecap's initiative has reduced the company's carbon footprint by increasing production efficiency. In addition to this, WCP has sequestered over 31 million tonnes of CO2 since 2000, the equivalent of removing 6 million cars from the road for an entire year and created 300 jobs in Saskatchewan (*source: WCP website*).

Canada is at the center of the burgeoning carbon capture industry. According to the Pembina Institute, the governments of Canada and Alberta have committed billions to the development of carbon capture initiatives. While carbon capture appears to have significant benefits, there are critics. Some propose that utilizing CCUS to offset the carbon footprint of coal-fired power generation or the oil sands industry will only serve to prolong our dependency on oil. On the other hand, it's generally accepted that while renewables are the ultimate solution, it will likely take decades to reach ambitious renewable goals. The debate includes the challenging question of who will pay for it all. To achieve any degree of viability, CCUS requires significant government sponsored investment, tax credits, standardized measurement and development to a robust carbon credit marketplace.

The entire process of CCUS is based on a sequence of activities. Next week, our series on CCUS will take a deeper dive into the transportation of captured CO2.

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Chart 1: Palos Domestic Funds versus Benchmarks (Total Returns) ¹	FundServ	NAVPS	YTD Returns
Palos Income Fund L.P.	PAL100	\$10.01	19.29%
Palos Equity Income Fund - RRSP	PAL101	\$7.60	19.84%
Palos Merchant Fund L.P. (Dec 31, 2020) ²	PAL500	\$1.35	-21.15%
Palos WP Growth Fund - RRSP	PAL210	\$22.97	43.93%
Palos-Mitchell Alpha Fund ³	PAL300	\$11.23	20.45%
S&P TSX Composite (Total Return with dividends reinvested)			19.66%
S&P 500 (Total Return with dividends reinvested)			20.01%
S&P TSX Venture (Total Return with dividends reinvested)			5.51%
Chart 2: Market Data ¹			Value
US Government 10-Year			1.30%
Canadian Government 10-Year			1.24%
Crude Oil Spot			US \$68.28
Gold Spot			US \$1760.00
US Gov't10-Year/Moody BAA Corp. Spread			196 bps
USD/CAD Exchange Rate Spot			US \$0.7967

¹ Period ending August 13, 2021. Data extracted from Bloomberg

² Fund is priced annually

³ Fund is priced weekly on Tuesdays

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