**Broad Equity Markets**

Daily Index Values; January 2020 to Present

Indexed to Jan 2020

- MSCI Global ESG Index
- S&P/TSX Composite
- Dow Jones

Broad market indices are one the many vital signs measuring the health of the economy. Energy demand is a function of economic health.

*Source: Bloomberg, ARC Financial Corp.*

**Clean Energy Indices**

Daily Index Values; January 2020 to Present

Indexed to Jan 2020

- Wilderhill Clean Energy Index
- S&P/TSX Renewable Energy & Clean Technology Index

The performance of global and Canadian clean energy indices are compared against each other.

*Source: Bloomberg, ARC Financial Corp.*

**Oil & Gas Service and Midstream Indices**

Daily Index Values; January 2020 to Present

Indexed to Jan 2020

- Philadelphia Service Index
- PSAC Canadian Index
- S&P/TSX Oil & Gas Storage & Transportation Index

The performance of Canadian And US oilfield equities and Canadian midstream equities are compared against each other.

*Source: Bloomberg, Petroleum Services Association of Canada*

**Oil and Gas E&P Indices**

Daily Index Values; January 2020 to Present

Indexed to Jan 2020

- S&P 500 E&P
- S&P/TSX E&P Index

The performance of Canadian and US oil & gas equities are compared against each other.

*Source: Bloomberg, ARC Financial Corp.*

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Please see **Advisories and Disclaimers** at the end of the publication for important cautionary advisory and disclaimer language.
Bloomberg Commodity Index

Daily Index Values; January 2020 to Present

Index Value

40 50 60 70 80 90 100

Bloomberg commodity index rose over 14% on the week. Metals and Ag products are rising along with energy.

Energy Transition

Bloomberg Commodity Index

Daily Index Values; January 2020 to Present

This series is a measure of expected inflation (on average) over the five-year period that begins five years from today.

Source: Federal Reserve Bank of St. Louis, (FRED) Economic Data

CO2 Emissions: ICE EUA Futures Contract

Daily; January 2020 to Present

EUR/Tonne

0 20 40 60 80 100

EU Allowances (EUA) are carbon credits equivalent to one tonne of CO2 used in the European Union Emissions Trading Scheme (EU ETS).

Source: Bloomberg

Texas Electricity: ERCOT North Hub Price

Daily and 30-Day Average; January 2020 to Present

$US/MWh

0 20 40 60 80 100

ERCOT is the grid operator for 90% of the electricity sold in Texas. The price shown is for the North Hub and is the wholesale price.

Source: Bloomberg

5-Yr, 5-Yr Forward Inflation Expectation Rate

Daily; January 2020 to Present

Percent

0.5 1.0 1.5 2.0 2.5 3.0

This series is a measure of expected inflation (on average) over the five-year period that begins five years from today.

Source: Federal Reserve Bank of St. Louis, (FRED) Economic Data

Trends in Atmospheric CO2

Mauna Loa Weekly Average: January 2020 to Present

Parts per Million (ppm)

406 408 410 412 414 416 418 420 422

The carbon dioxide data on Mauna Loa constitutes the longest record of direct measurements of CO2 in the atmosphere.

Source: NOAA

Alberta Electricity: AESO Average Pool Price

Daily and 30-Day Average; January 2020 to Present

$C/MWh

0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300

The Alberta Electric System Operator (AESO) manages and operates the provincial power grid.

Source: Bloomberg
North American crude oil prices can sometimes disconnect from global prices depending on regional supply and demand dynamics. Source: Bloomberg

The differential should reflect quality differences and transportation costs. Greater discounts can result from infrastructure or refinery outages. Source: Bloomberg

Natural gas liquids have become critical contributors to producer’s cash flow. Prices are influenced by the price of oil as well as local supply and demand. Source: Bloomberg, ARC Financial Corp.
US crude oil stock levels can affect crude oil prices. Stock levels for the current year are represented by the blue line.

Source: U.S. Energy Information Administration

Gasoline, diesel and jet fuel consumption represent the majority of oil use in the US.

Source: U.S. Energy Information Administration

Weekly production is modelled by the EIA. It is less accurate than monthly reported numbers, but is instructive of up to date changes.

Source: U.S. Energy Information Administration

Crude oil imports from Canada are taking market share from overseas imports.

Source: U.S. Energy Information Administration

OECD stock levels can affect crude oil prices.

Source: International Energy Agency

OPEC’s production levels relative to its sustainable and spare capacity influences global crude prices. Note: scale has been expanded.

Source: Bloomberg, Russia Ministry of Energy
Near-Month North American Natural Gas Prices
Daily Prices; Rolling 12-Month History

Near-month prices at AECO track Henry Hub prices, the exchange rate and the cost of transportation. Local factors can also affect price.
Source: Bloomberg

Global Natural Gas Prices
Japan/Korea, UK NBP, Henry Hub; 10-Day Moving Average Price

International natural gas prices strongly impact the economics of proposed LNG projects.
Source: Bloomberg

Pipeline Flows Out of Western Canada
Daily; Historical Tracks and Current Year Levels

The ability of gas producers to move gas out of the WCSB to eastern markets and the US is a major factor in local natural gas prices.
Source: Various Pipeline Companies

US Natural Gas Exports – Excluding Canada
Daily; Jan 2018 to Present

Between exports to Mexico and LNG shipments, the US is growing as a natural gas exporter. Robust US supply growth has driven this trend.
Source: Bloomberg

European gas prices rise amid Russia conflict and sanctions. UK NBP hit a record high on Monday at over $68/MMBtu.
A 10 day rolling average is shown on this chart.

AECO forward prices mimic Henry Hub futures minus a differential.
Source: Bloomberg
Alberta natural gas demand has grown steadily in recent years, largely driven by new oil sands demand and power generation projects. 

*Source: TransCanada Pipelines*

Domestic US demand fluctuates in the summer and during the winter as weather is an important driver of consumption. 

*Source: Bloomberg*

Canada’s natural gas storage level provides a good metric if the country is well stocked. Abnormally high or low storage can affect the basis. 

*Source: Bloomberg*

The EIA reports changes in US natural gas inventories held in underground storage facilities on a weekly basis. 

*Source: U.S. Energy Information Administration*
Unlike US drilling activity, Canadian rigs are dispatched seasonally. Capital allocation by operators is driven by views of future oil and gas prices.

Source: Baker Hughes

Tracking US gas drilling by major play provides insight into the composition of US gas supply and growth trends.

Source: Baker Hughes

Tracking US oil drilling by major play provides insight into the composition of US oil supply and growth trends.

Source: Baker Hughes

Total rig-releases for exploratory and development wells are highlighted in this chart. Rig releases for the current year are shown in red.

Source: Daily Oil Bulletin/JWN

Total wells drilled in US Drilling Productivity Report regions are shown. These are the most active onshore US plays.

Source: EIA
### Canadian Industry Metrics

#### Historical Data and Forecast

<table>
<thead>
<tr>
<th>Price</th>
<th>Production Volume</th>
<th>Capital Inflow</th>
<th>Reinvestment</th>
<th>Drilling</th>
<th>Well Split</th>
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<tbody>
<tr>
<td></td>
<td>Average Price</td>
<td>Edmonton Par</td>
<td>AECO</td>
<td>Conv. Liquids</td>
<td>Bitumen + Synthetic</td>
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<td>$/BOE</td>
<td>$/C/B</td>
<td>$/C/GJ</td>
<td>MB/BOE</td>
<td>MBOE/d</td>
<td>MBOE/d (@ 6:1)</td>
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