**Chart Watch**

- 6 US COVID-19 deaths continue to rise
- 22 US oil rigs rose for the first time since March
- 26 OPEC+ production fell sharply in June
- 42 W. Canada gas storage is above the 5-yr avg
- 44 The Canadian gas rig count rose by 6 last week

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**Spot WTI Crude**

| $US/B | 41.60 ↑ |

**Edmonton Light**

| $US/B | 38.42 ↑ |

**Spot Henry Hub**

| $US/MMBtu | 1.63 ↓ |

**Spot AECO**

| $Cdn/GJ | 1.93 ↑ |

**Spot AECO Basis**

| $US/MMBtu | 0.11 ↓ |

**Currency**

| $US/$Cdn | 0.7486 ↑ |

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**1 Broad Equity Markets**

- **Indexed to 12 Months Ago**
  - MSCI Global ESG Index
  - S&P/TSX Composite
  - Dow Jones

**2 Oil and Gas E&P Indices**

- **Indexed to 12 Months Ago**
  - ARC Junior E&P Index
  - S&P 500 E&P
  - S&P/TSX E&P Index

**3 Oil & Gas Service and Midstream Indices**

- **Indexed to 12 Months Ago**
  - Philadelphia Service Index
  - PSAC Canadian Index
  - S&P/TSX Oil & Gas Storage & Transportation Index

**4 Canadian Currency Exchange**

- **$US/$Cdn**
  - 0.68
  - 0.70
  - 0.72
  - 0.74
  - 0.76
  - 0.78
  - 0.80

---

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

*Source: Bloomberg, ARC Financial Corp.*

**Performance of Canadian and US oil & gas equities are compared against each other.**

*Source: Bloomberg, ARC Financial Corp.*

**The performance of Canadian oil and gas service and midstream equities are plotted in tandem with the corresponding US Oilfield index.**

*Source: Bloomberg, Petroleum Services Association of Canada*

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Please see **Advisories and Disclaimers** at the end of the publication for important cautionary advisory and disclaimer language.
5 United States: New and Active COVID-19 Cases
Daily (5-Day Rolling Average); March 9, 2020 to Current

New Cases (Thousands)
Active Cases (Thousands)
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250
13-Mar 03-Apr 24-Apr 15-May 05-Jun 26-Jun 17-Jul

Daily infection rates and active cases of COVID-19 will determine reopening and recovery of the world’s largest economy.
Source: Worldometer

6 United States: Daily New Deaths
Deaths per Day (5-Day Rolling Average); March 9, 2020 to Current

Daily Deaths (Thousands)
0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0
13-Mar 03-Apr 24-Apr 15-May 05-Jun 26-Jun 17-Jul

The growth rate of daily deaths is a useful statistic for tracking the progress of COVID-19 and predicting healthcare needs.
Source: Worldometer

7 TomTom Traffic Index: Chicago, U.S.
Congestion Level of Last 7 Days Compared with Year Prior

Traffic congestion levels show a real-time picture of the number of vehicles on the road; an indication of gasoline demand and economic recovery.
Source: TomTom International BV

8 TomTom Traffic Index: Beijing, China
Congestion Level of Last 7 Days Compared with Year Prior

Traffic congestion levels show a real-time picture of the number of vehicles on the road; an indication of gasoline demand and economic recovery.
Source: TomTom International BV

9 U.S. Weekly Jobless Claims
Initial and Continuing Claims

Initial Claims (Millions)
Continuing Claims (Millions)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
03-Apr 17-Apr 01-May 15-May 29-May 12-Jun 05-Jul 19-Jul

Jobless claims are an important leading indicator on the state of the employment situation and the health of the economy.
Source: US Labor Department

10 TSA Checkpoint Screening Numbers
Number of Travelers in 2020 as % of Same Period in 2019

TSA Traveler Throughput Relative to 2019 (%)
0% 5% 10% 15% 20% 25% 30% 35% 40% 45% 50%
15-Mar 05-Apr 17-Apr 01-May 15-May 28-Jun 07-Jul 19-Jul

Monitoring the daily number of passengers screened at TSA checkpoints in the United States is a leading indicator of recovery in air travel.
Source: Transportation Security Administration
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.

Long contracts take the position that WTI oil price will increase, while short contracts expect a decline. 
Source: Bloomberg, U.S. Commodity Futures Trading Commission
US Crude Oil Stocks
Historical Range and Current Year Levels

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

US Refined Product Stocks
Historical Range and Current Year Levels

Total stocks of gasoline, diesel and jet fuel are shown. Stock levels for the current year are represented by the blue line.
Source: U.S. Energy Information Administration

US Weekly Refinery Utilization Rates (%)
Historical Range and Current Year Levels

Refinery utilization rates change the supply of refined products, impacting price. Utilization for the current year is blue.
Source: U.S. Energy Information Administration

US Weekly Crude Oil Production
US Field Production of Crude Oil; 2019 to Present

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

US Petroleum Product Consumption
Top Three Product Categories; Year to Date

Gasoline, diesel and jet fuel consumption represent the majority of oil use in the US.
Source: U.S. Energy Information Administration

US Oil Drilling Activity
Baker Hughes Oil Rig Counts; 2019 to Present

Tracking US oil drilling by major play provides insight into the composition of US oil supply and growth trends.
Source: Baker Hughes
23 US Crude Oil Imports
Weekly Data; 2016 to Present

Crude oil imports from Canada are taking market share from overseas imports.
Source: U.S. Energy Information Administration

24 US Exports of Crude Oil and Refined Products
Weekly Data; 2016 to Present

The US exports more refined products than crude oil. With the rapid growth of tight oil, most export growth should come from crude oil exports.
Source: U.S. Energy Information Administration

25 Total US Oil Production
Monthly; 2010 to Present

The advancement of drilling and completion methods is increasing US crude oil production.
Source: Bloomberg, U.S. Energy Information Administration

26 OPEC and Russian Oil Production
Monthly; Rolling 60-Month History

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

27 Alberta Oil Production
Monthly; Conventional and Oil Sands

Most of Canada’s oil production comes from Alberta; split between oil sands and conventional production.
Source: Alberta Energy Regulator

28 OECD Total Industry Oil Stocks
Monthly; 2012 to Present

OECD stock levels can affect crude oil prices.
Source: International Energy Agency
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*

Long contracts take the position that Henry Hub gas price will increase, while short contracts expect a decline.  
*Source: U.S. Commodity Futures Trading Commission*

International natural gas prices strongly impact the economics of proposed LNG projects.  
*Source: Bloomberg, Japanese Ministry of Economy, Trade and Industry*
Closing Spot Prices at North American Natural Gas Hubs
Superimposed on Relative Physical Volumes Traded

North America has an integrated natural gas market. Prices are determined by regional supply and demand, and pipeline flows.

Source: Bloomberg

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

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: S&P Global Platts
Alberta natural gas demand has grown steadily in recent years, largely driven by new oil sands demand and power generation projects. 
*Source: TransCanada Pipelines*

Total US demand fluctuates in the summer and during the winter as weather is an important driver of consumption. 
*Source: S&P Global Platts*

US production started ramping up in late 2007 and continues to grow year over year. 
*Source: S&P Global Platts*

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*
Canada: Weekly Gas Drilling Activity
Baker Hughes Drilling Rig Count; Current Year and Historical Range

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

Canada: Weekly Oil Drilling Activity
Baker Hughes Drilling Rig Count; Current Year and Historical Range

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

Canada: Monthly Wells Drilled
Current Year vs Years Prior

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

United States: Weekly Gas Drilling Activity
Baker Hughes Gas Rig Counts; 2019 to Present

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

Source: Baker Hughes

United States: Weekly Oil & Gas Drilling Activity
Baker Hughes Drilling Rig Count; Current Year and Historical Range

Tracking total US rigs provides insight into oil field services demand and total industry activity.

Source: Baker Hughes

United States: Monthly Wells Drilled
Current Year vs Years Prior

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

Source: EIA
## Estimated Capital Flow in the Canadian Oil and Gas Economy for 2020

Industry Revenue, Cash Flow, Reinvestment, Drilling Activity and Production

### Canadian Industry Metrics

#### Price

<table>
<thead>
<tr>
<th>Year</th>
<th>Average Price</th>
<th>Edmonton Par</th>
<th>AECO</th>
</tr>
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<tbody>
<tr>
<td>2010</td>
<td>48.41</td>
<td>77.55</td>
<td>3.79</td>
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<td>2011</td>
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<tr>
<td>2013</td>
<td>55.95</td>
<td>93.47</td>
<td>3.02</td>
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<tr>
<td>2014</td>
<td>60.09</td>
<td>95.07</td>
<td>4.23</td>
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<tr>
<td>2015</td>
<td>37.34</td>
<td>57.63</td>
<td>2.56</td>
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<td>2016</td>
<td>32.61</td>
<td>53.09</td>
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</tr>
<tr>
<td>2017</td>
<td>39.18</td>
<td>62.42</td>
<td>2.10</td>
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<tr>
<td>2018</td>
<td>39.57</td>
<td>69.24</td>
<td>1.46</td>
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<tr>
<td>2019</td>
<td>41.29</td>
<td>69.02</td>
<td>1.71</td>
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<tr>
<td>2020</td>
<td>25.36</td>
<td>42.23</td>
<td>2.08</td>
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#### Production Volume

<table>
<thead>
<tr>
<th>Year</th>
<th>Conv. Liquids</th>
<th>Bitumen - Synthetic</th>
<th>Natural Gas</th>
<th>Total Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>1,830</td>
<td>1,403</td>
<td>2,434</td>
<td>5,668</td>
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<tr>
<td>2011</td>
<td>1,873</td>
<td>1,482</td>
<td>2,386</td>
<td>5,740</td>
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<tr>
<td>2012</td>
<td>1,905</td>
<td>1,743</td>
<td>2,327</td>
<td>5,975</td>
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<tr>
<td>2013</td>
<td>2,023</td>
<td>1,940</td>
<td>2,343</td>
<td>6,306</td>
</tr>
<tr>
<td>2014</td>
<td>2,085</td>
<td>1,964</td>
<td>2,480</td>
<td>6,530</td>
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<tr>
<td>2015</td>
<td>1,995</td>
<td>2,381</td>
<td>2,531</td>
<td>6,907</td>
</tr>
<tr>
<td>2016</td>
<td>2,013</td>
<td>2,421</td>
<td>2,564</td>
<td>6,998</td>
</tr>
<tr>
<td>2017</td>
<td>2,119</td>
<td>2,674</td>
<td>2,605</td>
<td>7,398</td>
</tr>
<tr>
<td>2018</td>
<td>2,292</td>
<td>2,931</td>
<td>2,737</td>
<td>7,942</td>
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<tr>
<td>2019</td>
<td>2,237</td>
<td>3,018</td>
<td>2,758</td>
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<tr>
<td>2020</td>
<td>1,786</td>
<td>2,895</td>
<td>2,703</td>
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#### Capital Inflow

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Revenue</th>
<th>After-tax Cash Flow</th>
<th>Conv. Oil and Gas</th>
<th>Oilsands</th>
<th>Reinvest Ratio</th>
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<tbody>
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<td>2010</td>
<td>101,056</td>
<td>43,569</td>
<td>115,890</td>
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<tr>
<td>2012</td>
<td>114,600</td>
<td>66,977</td>
<td>138,889</td>
<td>66,788</td>
<td>1.0</td>
</tr>
<tr>
<td>2013</td>
<td>94,127</td>
<td>29,985</td>
<td>110,000</td>
<td>36,000</td>
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<tr>
<td>2014</td>
<td>83,298</td>
<td>23,701</td>
<td>104,510</td>
<td>32,000</td>
<td>1.0</td>
</tr>
<tr>
<td>2015</td>
<td>72,309</td>
<td>21,024</td>
<td>92,500</td>
<td>30,000</td>
<td>1.0</td>
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<tr>
<td>2016</td>
<td>59,029</td>
<td>17,740</td>
<td>76,000</td>
<td>27,000</td>
<td>1.0</td>
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<tr>
<td>2017</td>
<td>52,309</td>
<td>15,500</td>
<td>67,000</td>
<td>25,000</td>
<td>1.0</td>
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<tr>
<td>2018</td>
<td>48,866</td>
<td>14,600</td>
<td>63,000</td>
<td>23,000</td>
<td>1.0</td>
</tr>
<tr>
<td>2019</td>
<td>25,309</td>
<td>12,024</td>
<td>37,000</td>
<td>20,000</td>
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<tr>
<td>2020</td>
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<td>12,522</td>
<td>80,800</td>
<td>32,000</td>
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#### Reinvestment

<table>
<thead>
<tr>
<th>Year</th>
<th>Conv. Oil</th>
<th>Oilsands</th>
<th>Total</th>
<th>Reinvest</th>
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<tbody>
<tr>
<td>2010</td>
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<td>115,890</td>
<td>216,946</td>
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</tr>
<tr>
<td>2011</td>
<td>111,389</td>
<td>128,787</td>
<td>240,176</td>
<td>1.0</td>
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<tr>
<td>2012</td>
<td>114,600</td>
<td>138,889</td>
<td>253,489</td>
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<tr>
<td>2013</td>
<td>94,127</td>
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<tr>
<td>2014</td>
<td>83,298</td>
<td>104,510</td>
<td>187,808</td>
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<td>2015</td>
<td>72,309</td>
<td>92,500</td>
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<td>2016</td>
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<td>2018</td>
<td>48,866</td>
<td>63,000</td>
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<td>1.0</td>
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<tr>
<td>2019</td>
<td>25,309</td>
<td>37,000</td>
<td>62,309</td>
<td>1.0</td>
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<tr>
<td>2020</td>
<td>68,363</td>
<td>80,800</td>
<td>149,163</td>
<td>1.0</td>
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#### Drilling & Well Split

<table>
<thead>
<tr>
<th>Year</th>
<th>Wells Compl.</th>
<th>Avg Rig Util.</th>
<th>Oil Wells</th>
<th>Gas Wells</th>
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<tbody>
<tr>
<td>2010</td>
<td>12,119</td>
<td>4%</td>
<td>56%</td>
<td>40%</td>
</tr>
<tr>
<td>2011</td>
<td>12,827</td>
<td>52%</td>
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<tr>
<td>2012</td>
<td>11,067</td>
<td>44%</td>
<td>83%</td>
<td>17%</td>
</tr>
<tr>
<td>2013</td>
<td>11,591</td>
<td>42%</td>
<td>84%</td>
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<tr>
<td>2014</td>
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<td>22%</td>
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<tr>
<td>2015</td>
<td>5,382</td>
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<td>2020</td>
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<td>70%</td>
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</table>

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