ARC Energy Charts
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**Chart Watch**

8 The Edmonton Light diff narrowed to under $3/B  
9 Cdn crude by rail exports up to 285 kB/d in May  
17 US oil inventories drew by 10.8 MMB last week  
31 The Canadian rig count is 38% below last year  
34 US gas prod recovering after Hurricane Barry

<table>
<thead>
<tr>
<th>Spot WTI Crude</th>
<th>Edmonton Light</th>
<th>Spot Henry Hub</th>
<th>Spot AECO</th>
<th>Spot AECO Basis</th>
<th>Currency</th>
</tr>
</thead>
<tbody>
<tr>
<td>56.87↑</td>
<td>54.10↑</td>
<td>2.23↓</td>
<td>2.16↑</td>
<td>0.50↓</td>
<td>0.7595↓</td>
</tr>
</tbody>
</table>

**1 Broad Equity Markets Year-to-Date**  
Daily Index Values; Rolling 12-Month History

Indexed to 12 Months Ago  
120

- Shanghai Composite  
- S&P/TSX Composite  
- Dow Jones

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.*  

**2 Performance of Oil and Gas Equities Year-to-Date**  
Daily Index Values; Rolling 12-Month History

Indexed to 12 Months Ago  
120

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

Performance of Canadian and US oil & gas equities are compared against each other.  
*Source: Bloomberg, ARC Financial Corp.*  

**3 Oil & Gas Service Equities Year-to-Date**  
Daily Index Values; Rolling 12-Month History

Indexed to 12 Months Ago  
120

- Philadelphia Service Index  
- PSAC Canadian Index

The performance of Canadian oil and gas service equities are plotted in tandem with the corresponding US index.  
*Source: Bloomberg, Petroleum Services Association of Canada*  

**4 Canadian Currency Exchange**  
Daily Close Values; Rolling 24-Month History

<table>
<thead>
<tr>
<th>$US/$Cdn</th>
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</thead>
<tbody>
<tr>
<td>$0.70</td>
</tr>
<tr>
<td>$0.75</td>
</tr>
<tr>
<td>$0.80</td>
</tr>
<tr>
<td>$0.85</td>
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</table>

$US/$Cdn

Much of Canada’s oil and gas production is sold in US dollars. As such, the exchange rate significantly impacts corporate revenues and profits.  
*Source: Bloomberg*

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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*

Rail is expected to grow as the pipelines have hit the limit for moving additional barrels of crude oil, and supply is still growing. 
*Source: National Energy Board*
Most of Canada’s oil production comes from Alberta; split between oil sands and conventional production. 
Source: Alberta Energy Regulator

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

Negative numbers indicate a global crude shortfall, while positive numbers indicate an oversupply. 
Source: International Energy Agency

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

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

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
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

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 Motor Gasoline Consumption
Historical Tracks and Current Year Levels

Gasoline consumption accounts for almost half of all oil use in the US. Gasoline consumption for the current year is represented by the blue line.

Source: U.S. Energy Information Administration

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.

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

Source: Baker Hughes
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

This graph illustrates when it may be economic to begin coal-gas switching in power generation. Average power plant efficiencies are assumed.  
Source: Bloomberg

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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

All prices in $US/MMBtu

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; Historical Tracks and Current Year Levels

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: Bentek
Weekly natural gas demand is directly tied to the weather. The current year is in dark blue.

Source: National Oceanic and Atmospheric Administration

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

Source: Bentek

Weekly US natural gas storage reports provide a snapshot of supply and demand. Current year changes are represented by the blue line.

Source: U.S. Energy Information Administration

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

Source: U.S. Energy Information Administration
Alberta natural gas demand has grown steadily in recent years, largely driven by new oil sands demand and power generation projects. Source: TransCanada Pipelines

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

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

Relative year-over-year drilling activity is highlighted in this chart. Cumulative well completions for the current year are shown in blue. Source: Daily Oil Bulletin/JWN
Estimated Capital Flow in the Canadian Oil and Gas Economy for 2019

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

Canadian Industry Metrics: Historical Data and Forecast

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