### ARC Energy Charts

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#### Chart Watch

1. The Loonie broke through $US 0.81
2. WTI hit a new three-year high
3. 10 straight US crude draws set a new record
4. US oil drillers added 12 rigs last week
5. US gas inventories are well below typical

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<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>
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<tr>
<td>66.14 ↑</td>
<td>59.22 ↑</td>
<td>3.58 ↑</td>
<td>2.27 ↓</td>
<td>1.64 ↓</td>
<td>0.8114 ↑</td>
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</tbody>
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1. **Broad Equity Markets Year-to-Date**
   - Daily Index Values; Rolling 12-Month History
   - Indexed to 12 Months Ago
   - The DJIA is already up 7.7% in 2018, while the TSX Composite is up by just 0.2%.

   - 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
   - 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
   - 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
   - $US/$Cdn
   - $0.90
   - $0.85
   - $0.75
   - $0.70
   - $0.65
   - $0.60
   - The BOC’s rate hike two weeks ago has contributed to the... ran-up in the Canadian Dollar... on Fri the Loonie broke... through $0.81 for the first time since September.

   - Source: Bloomberg

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5 WTI Crude Oil Price and Differential to Brent
Near-Month WTI and Brent Differential; Rolling 12-Month History

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

Source: Bloomberg

7 Canadian Heavy Oil Price Differential to WTI
Western Canadian Select (WCS) Differential; Rolling 12-Month History

Canadian heavy crude oil differentials are becoming less volatile with growing access to new markets via pipeline and rail.

Source: Bloomberg

9 Ratio of Long to Short Contracts - WTI
Managed Money - Futures and Options

This represents the relative bullishness of money managers on the price of oil in the United States.

Source: Bloomberg, U.S. Commodity Futures Trading Commission

10 Total US Oil Production
Monthly; 2010 to Present

The advancement of drilling and completion methods boosted US crude oil production, prior to the downturn in prices.

Source: Bloomberg, U.S. Energy Information Administration
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

Prior to the downturn, growing domestic supply was displacing crude oil imports. Crude oil imports for the current year are in blue. 
Source: U.S. Energy Information Administration

The US exports more refined products than crude oil. If/when tight oil growth resumes, most export growth should come from crude oil exports.
Source: U.S. Energy Information Administration

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

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

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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

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

Source: Baker Hughes

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.
23 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

25 Ratio of Long to Short Contracts – Henry Hub
Managed Money – Futures and Options
This represents the relative bullishness of money managers on the price of natural gas in the United States. Source: U.S. Commodity Futures Trading Commission

27 Global Natural Gas Prices
Japanese LNG, UK NBP, Henry Hub; Average Monthly Prices
International natural gas prices strongly impact the economics of proposed LNG projects. Source: Bloomberg, Japanese Ministry of Economy, Trade and Industry

24 US Natural Gas Futures
Nymex (Henry Hub) 2018 to 2020
Forward contract prices are plotted against months in the calendar year. Years are distinguished by color and symbol coding. Source: Bloomberg

26 Canadian Natural Gas Futures
AECO Hub (Bloomberg Estimate) 2018 to 2020
AECO forward prices mimic Henry Hub futures plus a differential. Source: Bloomberg

28 US Coal and Natural Gas Power Generation Cost
Converted to a $/MWh Equivalent
This graph illustrates when it may be economic to begin coal-gas switching in power generation. Average power plant efficiencies are assumed. Source: Bloomberg
Closing Spot Prices at North American Natural Gas Hubs
Superimposed on Relative Physical Volumes Traded

All prices in $US/MMBtu

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: Bentek
Weekly natural gas demand is directly tied to the weather. The current year is in dark blue.
Source: National Oceanic and Atmospheric Administration

US production started ramping up in late 2007 and continues to grow year over year.
Source: Bentek

Weekly 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**

TransCanada Intra-AB Deliveries; Current Year and Historical Tracks

- Cold weather has boosted gas demand in Alberta.
- Demand YTD is 0.34 Bcf/d over last year.

Source: TransCanada Pipelines

**Western Canadian Natural Gas Storage Levels**

Weekly; Current Year and Historic Tracks

- Storage is now 77.0% versus 76.1% at this time last year.
- Storage is less full in Ontario at only 52.6%.

Source: Bloomberg

**Weekly Canadian Oil and Gas Drilling Activity**

Baker Hughes Average Rig Counts; Rolling 24-Month History

- According to Baker Hughes there are 338 oil and gas rigs operating in Canada, with 65% of them targeting oil.

Source: Baker Hughes

**US Gas Drilling Activity**

Baker Hughes Horizontal Gas Rig Counts; 2014 to Present

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

Source: Baker Hughes

**Alberta Crown Land Sales – Excluding Oil Sands**

Year-over-Year; Cumulative

- The Duvernay was the focus of the spending.

Source: Alberta Department of Energy

**Canadian Cumulative Well Completions**

Current Year vs Years Prior

- 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 2018

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

Canadian Industry Metrics: Historical Data and Forecast

Canadian Industry Metrics

<table>
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<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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<td>Conv. Liquids</td>
<td>Natural Gas</td>
<td>Total</td>
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<tr>
<td></td>
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<td>MBOE/d (@6:1)</td>
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