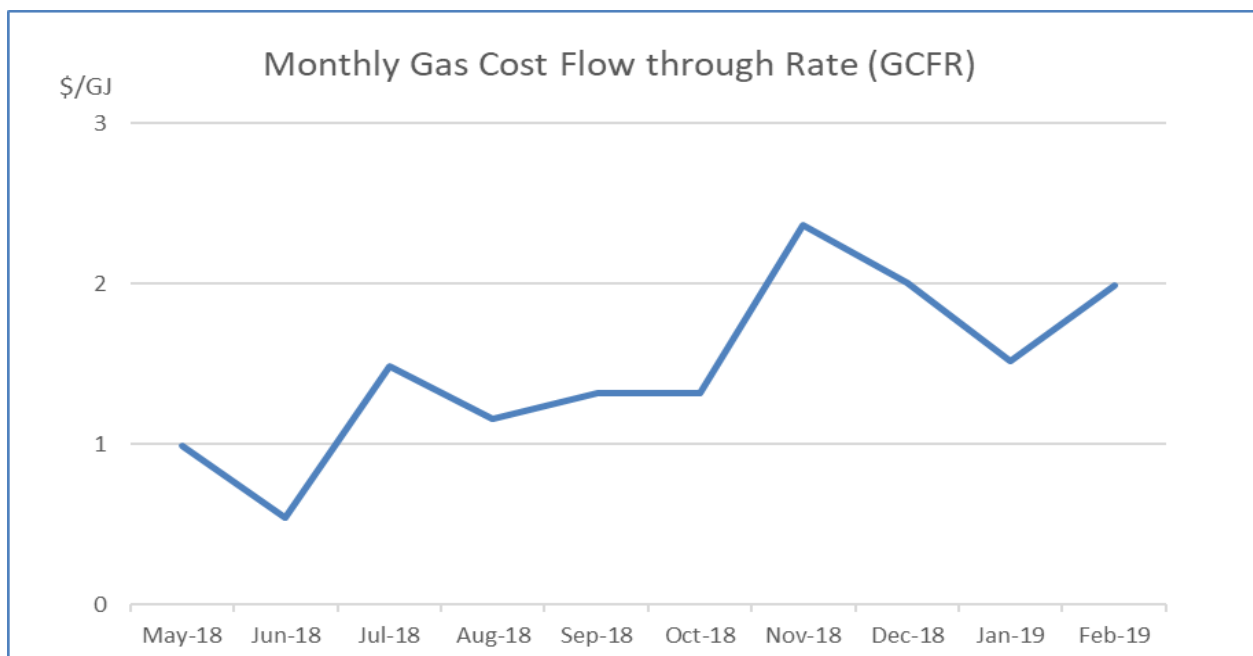
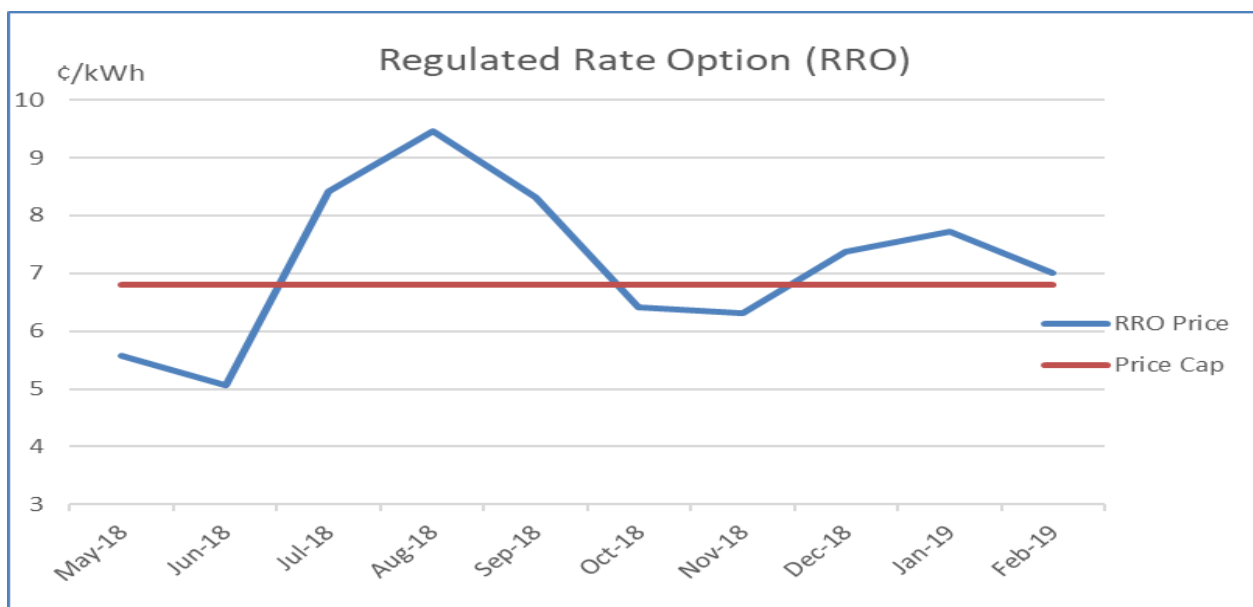


**ENERGY PRICES AND MARKETS****Natural Gas**

The 2019 February gas cost flow-through rate (GCFR) was \$1.99/GJ. The increased natural gas demand due to the extreme cold-weather conditions in Alberta during February has resulted in the actual daily prices staying well over \$2.00/GJ. Prices are still expected to drop closer to \$1.00/GJ once the weather warms up.

**Electricity**

The ENMAX regulated rate option (RRO) in 2019 February was \$70.090/MWh (7.01¢ per kWh).



The RRO has surpassed the Government of Alberta rate cap (which took effect 2017 June 1) of 6.8 cents seven times beginning in April of 2018. The provincial government protects RRO customers at 6.8 cents per kWh and pays the difference, to the utilities, using funds collected through its carbon levy. Customers with a retail contract such as ENMAX's Easymax will not benefit from the rate cap. The cost to Alberta taxpayers of the rate cap thus far is estimated at \$45 – \$55 million.

Power prices in February have also been affected by the cold snap. The month-to-date all-hours average price (as of 2019 February 18) was 12.6 cents/kWh. For reference, the prices for all of February 2018 averaged 3.1 cents/kWh. Power prices are forecast to remain strong in 2019 as a tight supply cushion will continue to promote price volatility.

### Oil Price Spread

The Notice of Motion, Standing Up for Canada's Responsible Energy Industry (C2018-1448), discussed at the 2018 December 17 regular meeting of Council, directed Administration to develop a strategy for The City to advocate for improved market access on behalf of Canada's responsible energy industry. The discussion acknowledged the role of the oil price discount and additional background information on the oil price discount is available below.

Western Canada Select (WCS) is the most significant commercial stream of heavy oil in Canada. It includes:

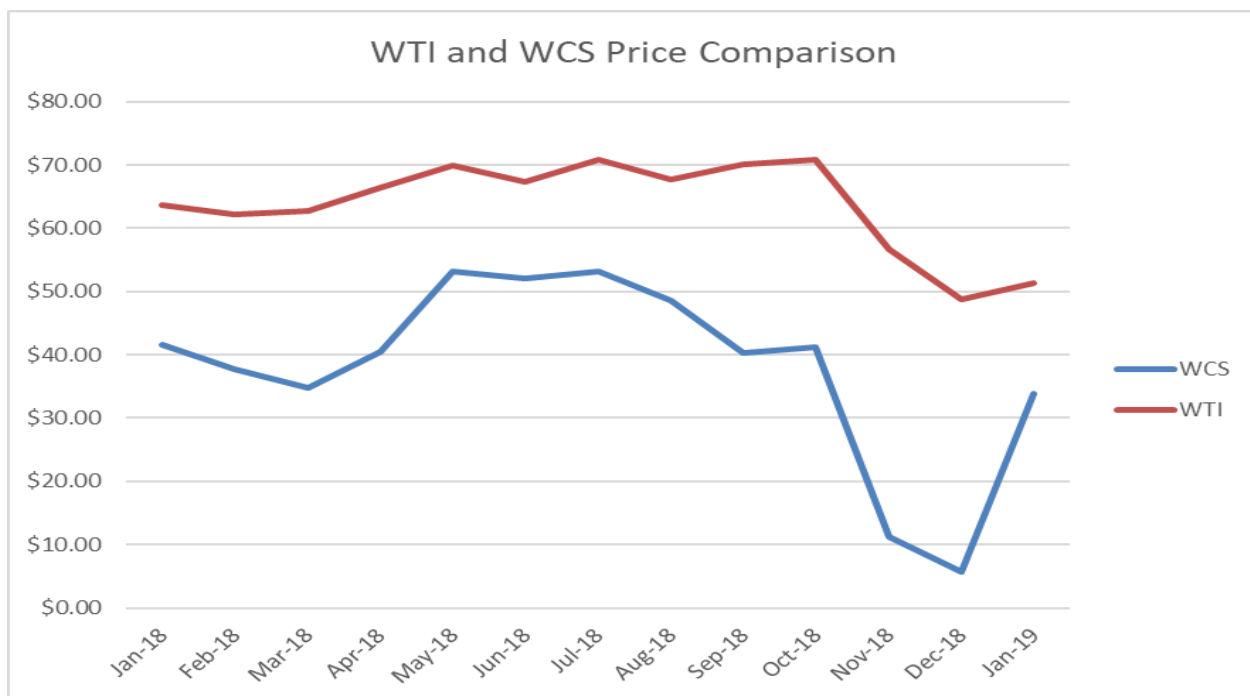
- Non-upgraded bitumen produced from the oil sands in Alberta;
- Twenty (20) heavy conventional oil streams produced in Western Canada;
- Upgraded bitumen, also known as light synthetic crude oil (SCO) usually from mining facilities; and
- Diluent or condensate to meet pipeline viscosity requirements for transportation.

West Texas Intermediate (WTI) is one of the three primary benchmarks (WTI, Brent, Dubai) frequently used as a reference price for buyers and sellers of crude oil around the world. Similar to WCS, WTI is a blend of several U.S. domestic streams of sweet light crude oils.

Production of most of the WTI streams is in landlocked regions of the United States, and collection is at facilities in Cushing, Oklahoma. Subsequently, there is oil shipment via pipeline to the Midwest and Gulf Coast for refining, sale and transport to global markets.

The differential between WCS and WTI is due to several factors including:

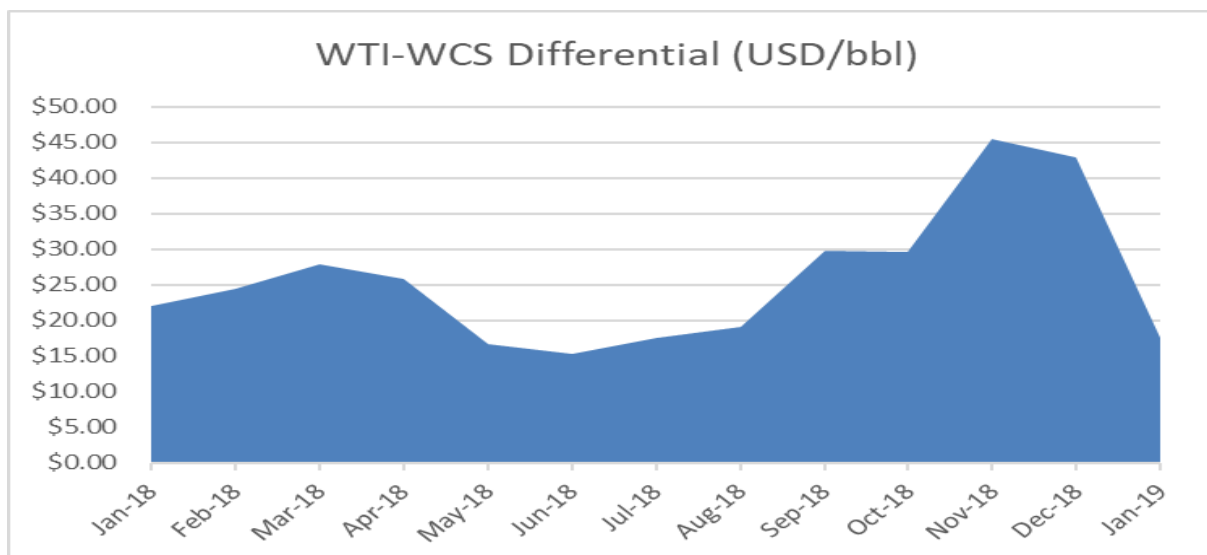
- increased production by Canadian energy companies;
- limited pipeline capacity to ship WCS to the United States market; and
- a lack of access to international markets other than the United States.



\*Chart data from [www.gljpc.com/price-charts](http://www.gljpc.com/price-charts)

The United States buys around 98 per cent of the crude oil Canada sells. In late 2018 Canadian producers had to sell their product at a vastly discounted price primarily due to a lack of export capacity. There has been a massive financial loss for both governments and many oil companies. Interestingly, oil companies such as Imperial Oil, which can refine WCS oil and sell the refined product, have natural protection or hedge against the large differential.

The Government of Alberta has estimated that with the recent record-setting price differential (U.S. \$55 on 2018 October 12), the lost revenue was between \$80 and \$100 million a day at the peak. The price differential has narrowed recently, due primarily to the Alberta government's oil curtailment by 8.7 per cent (325,000 barrels/day) which began on 2019 January 1.



**UTILITY REGULATION****Policy Uncertainty**

There is uncertainty about the future course of provincial electricity policy. Alberta's political parties have different views about future electricity related actions. Examples of vital elements of electricity policy that are under the spotlight are listed below:

- **Electricity Market Design**
  - Two policy options have received mention. The first is the retention of the current energy-only market. The second is a switch to the planned Capacity market.
  - The final policy choice will determine the extent to which ratepayers bear the cost of generation development.
  - The Alberta market currently has an excess of supply, and projections suggest that new additions can wait until the mid-2020s. The excess supply situation provides sufficient time to evaluate the options.
- **Renewable Sources of Electricity**
  - Electricity policy choices will determine the extent to which future growth in the reliance on renewable sources depends on market forces vis-a-vis public policy.
- **Carbon Levy or Carbon Tax**
  - There are different views on the need for a provincial carbon levy or a carbon tax.
  - Notwithstanding the differences, the federal government intends to impose a carbon tax (\$50/tonne by 2022) on those provinces which do not have one (currently Saskatchewan, Manitoba, Ontario and New Brunswick).
- **Changes in the phase-out of coal-fired generation**
  - The chart below details the current plan for coal-fired retirements in Alberta, which could change.
  - The current plan fast tracks retirement of over 4,000 MW of coal capacity retired in the two years between 2029 and 2030.

<b>Coal-Fired Retirement Assumptions</b>			
<b>Unit</b>	<b>ISD Year</b>	<b>Retirement</b>	<b>Reason</b>
Sundance #1	1970	2018	Retirement Due to Economics (Originally 2019)
Sundance #2	1973	2018	Retirement Due to Economics (Originally 2019, then 2021)
Battle River #3	1969	2019	50 <sup>th</sup> Year
HR Milner	1972	2019	2019 is before 50 <sup>th</sup> Year
Battle River #4	1975	2025	50 <sup>th</sup> Year
Sundance #3	1976	2026	50 <sup>th</sup> Year
Sundance #4	1977	2027	50 <sup>th</sup> Year
Sundance #5	1978	2028	50 <sup>th</sup> Year
Sundance #6	1980	2029	2029 Original Federal Deadline (Before 50 <sup>th</sup> Year)
Battle River #5	1981	2029	2029 Original Federal Deadline (Before 50 <sup>th</sup> Year)
Keephills #1	1983	2029	2029 Original Federal Deadline (Before 50 <sup>th</sup> Year)
Keephills #2	1984	2029	2029 Original Federal Deadline (Before 50 <sup>th</sup> Year)
Sheerness #1	1986	2029	2029 Amended Federal Deadline (Originally 2036)
Genesee #2	1989	2029	2029 Amended Federal Deadline (Originally 2039)
Sheerness #2	1990	2029	2029 Amended Federal Deadline (Originally 2040)
Genesee #1	1994	2029	2029 Amended Federal Deadline (Originally 2044)
Genesee #3	2004	2029	2029 Amended Federal Deadline (Originally 2054)
Keephills #3	2011	2029	2029 Amended Federal Deadline (Originally 2061)

## TELECOMMUNICATION INDUSTRY ACTIVITY

### TELUS Fibre to the Home

In 2017/2018 TELUS began again to place fibre in communities with aerial infrastructure, by wrapping the fibre lines over their existing copper infrastructure and installing small cabinets as needed. This development is proceeding at a steady pace, and TELUS is now ready to build out the remaining portions of the city where their current infrastructure is buried.

TELUS has approached Administration to enter an Memorandum of Understanding (MOU) which will set out process and obligations of The City and TELUS over the next 5 to 7 years as this work is completed.

TELUS is also inquiring about 5G/Small Cell agreements.

- Administration is currently mapping out the process for these placements on City assets to make Calgary 5G ready (meaning the necessary hardware and software upgrades to the radio access network) for 2020. This work includes the Wireless Service Providers in order to set out the best process possible. The timeline for this work should be finalized by the end of Q2 2019.
- Administration is also including ENMAX in this work to ensure their point of view is considered.