

## Briefing for Government Ministers on their August 2015 Presentation from Canadian Natural Resources Ltd.

The presentation by Canadian Natural Resources (CNRL) to Alberta Government Ministers (August 2015) may be misleading, particularly if viewed as a general representation of the entire oil and gas industry in Alberta. In addition to being inconsistent with other company analysis and reports, the entire presentation is underpinned by repetitively stating that “investment is driven by return on capital employed” (ROCE). This statement is simply not factual. ROCE is determined only after the investment has been made.

Investment is driven by project viability, typically measured by a similar sounding concept – internal rate of return (IRR), in conjunction with other economic decision-making criteria such as net cash flow (NCF), net present value (NPV), expected monetary value (EMV), and the value to risk index (VRI).

NCF	= Revenue less Costs.
NPV	= NCF discounted to account for alternative investment opportunities and time-related risk.
EMV	= NPV adjusted for the perceived likelihood that the project will be profitable.
VRI	= EMV divided by the standard deviation of the various probable EMV outcomes.
IRR	= the rate of return (ROR) that is specifically related to a project’s NCF and NPV.

- IRR relates to a project, whereas ROCE is more typically related to a particular company.
- IRR takes into account that project investments and revenues occur over time. ROCE does not do this; instead ROCE measures a return at a specific point in time.
- While IRR includes all costs and revenue over time, ROCE can be modified to suit a given situation. For this reason the ROCE can be easily manipulated.
- ROCE can only be determined after the investment is made; therefore it does not drive investment decisions.
- Companies that use ROCE for investment decision-making, if there are any, can easily over estimate a project’s attractiveness and thereby end up realizing a lower overall return, or even a loss.

There are many descriptions of the uses and differences of IRR vs. ROCE, also sometimes defined as ROI – return on investment. The following YouTube video is useful: [YouTube Video: IRR vs. ROI](#)

Although it is not useful as an investment decision-making criteria, a low ROCE may in fact indicate a very profitable company. For example, if a company were developing a new oil and gas project (either upstream, midstream, or downstream) with attractive economics, until this new project begins to produce revenue the company's ROCE would be lower due to the inclusion of costs with no corresponding revenue.

This is not the only aspect of the presentation that may be misleading to Ministers and Albertans. The standard approach is to portray Alberta as a high cost jurisdiction; the implication being that therefore there is no opportunity for resource owners to realize a better share. There are two aspects to this portrayal: (1) it is likely not factual and (2) it is indeed likely that lower than competitive royalty rates in Alberta; in Western Canada, are in fact contributing to costs being higher than they would be otherwise.

Consider the following illustrations from a report on conventional oil and gas well cost competitiveness from the Government of Alberta's website.<sup>1</sup>

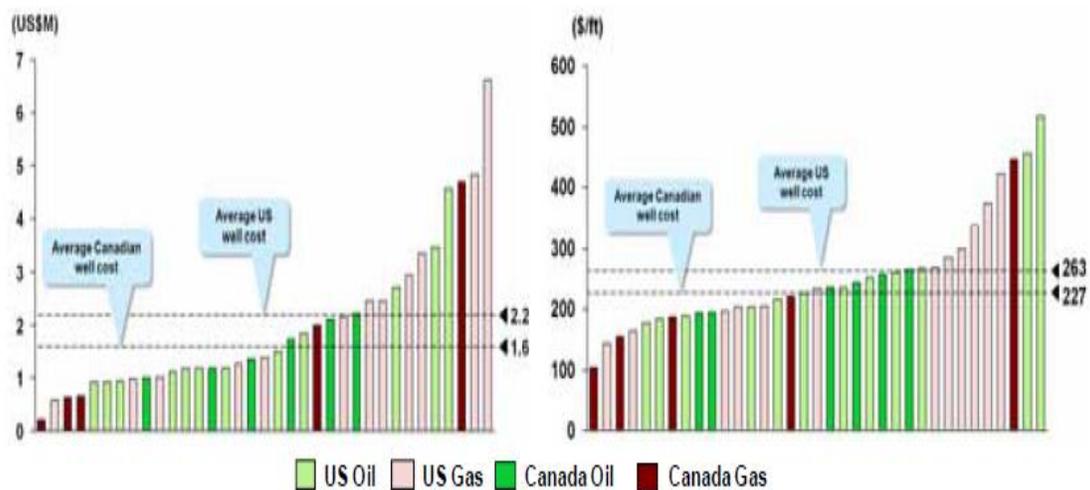


Figure 1: Total Well costs 2009 (left) and drilling cost per ft (right)

The above figure shows Alberta costs in 2009 to be 26% lower than those in the USA, on a well basis; and 14% lower on a cost/foot drilled basis. A plethora of factors can influence these types of comparisons. As a result the report next considers the hypothetical case of identical conditions in both

<sup>1</sup> Well Cost Competitiveness; Alberta Competitiveness, prepared by IHS-CERA, for the Alberta Ministry of Energy, December 2009. <http://www.energy.alberta.ca/Org/pdfs/CRSierraTechReportApp.pdf>

jurisdictions. The results for this case are presented in Figure 5 of the report as illustrated below, which shows the cost for a standardized hypothetical well in Alberta to be 15% higher than that in the United States.

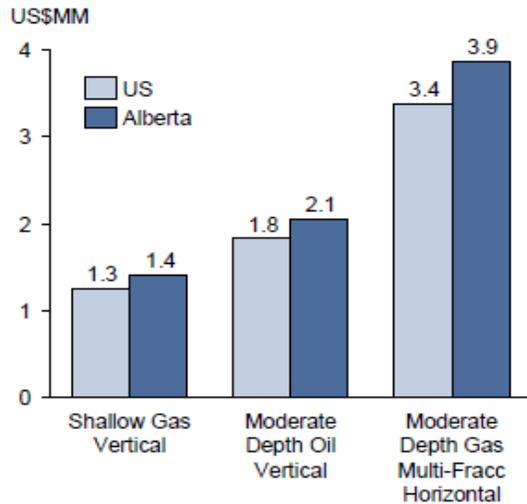


Figure 5: Comparative 2009 well costs of “hypothetical wells”

Even if this case were more representative than the survey results presented above it does not account for the typical exchange rate advantage. U.S. investors purchasing goods and services in Canada realize a cost advantage. The cost disadvantage for Canadian producers from a lower Canadian dollar is offset by a price advantage when selling into U.S. markets.

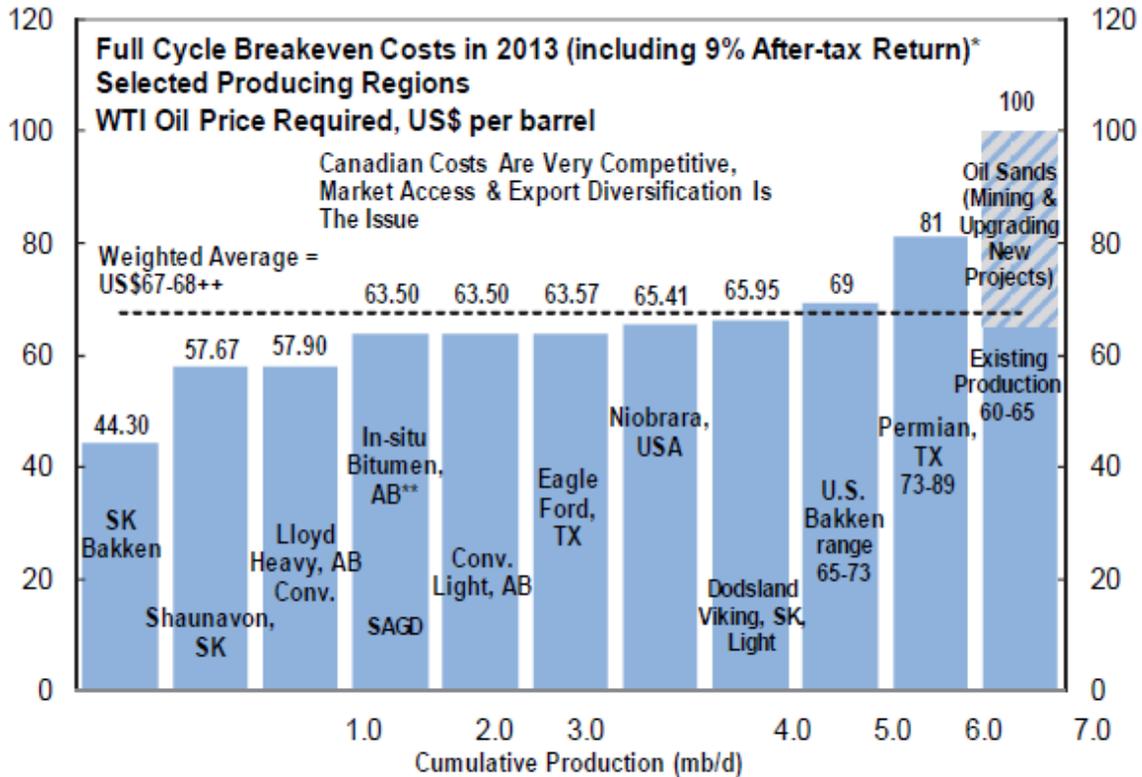
Looking at just costs or just prices is of little value. Investors are concerned with profits. The following illustration shows the supply cost or supply price<sup>2</sup> for various Canadian and United States plays.<sup>3</sup>

With the exception of new oil sands mining and upgrading, almost all of the Canadian plays, including SAGD oil sands, are shown to enjoy a supply price advantage. This may indicate that Alberta’s royalty rates are lower than they need to be. It is however fair to point out that part of this advantage results from the lower royalty and tax obligations in Canada. Equally fair to recall is the view that Alberta industry could enjoy an improved cost environment if project developments were not unduly accelerated by lower royalty shares.

<sup>2</sup> Supply price is the minimum price required for an investment to break even. It considers all revenues and all costs, including a rate of return for investors.

<sup>3</sup> Scotia Bank, Global Economics, Commodity Price Index, February 2014.

**Crude Oil Cost Curve, Canada & United States**



\* U.S. & Canadian 'light, tight' oil mid-cycle costs plus assumed \$5/bbl for initial land acquisition and infrastructure. \*\* In-situ bitumen Alberta: low cost \$50. Persian Gulf US\$10-25.  
++ Weighted avg. including existing Integrated Oil Sands at C\$65.  
Source: Scotiabank Equity Research and Scotiabank Economics.

Other publically available information shows that the Alberta's royalty advantage for producers may be extreme. The following table shows rates of return and other important well economics comparator statistics for selected plays in Canada and the United States.

The rates of return for the U.S. plays are shown to range from 20% - 50%. The RORs for the Canadian (Alberta and British Columbia) plays range from 40% to over 100%. Associated U.S. royalty rates range from 18% to 25%. The range for the Canadian plays is 5% - 15%.

CANADA - UNITED STATES WELL ECONOMICS COMPARISON						
Play	Jurisdiction	EUR/Well (K boe)	ROR	Royalty Rate <sup>1</sup>	Well cost (USD MM)	Supply Price (boe)
Montney	AB/BC	800 - 1,000	40% - >100%	11% - 15%	7.4 - 6.4	30 - 50
Duvernay	AB	1,000 - 1,200	> 90%	5% - 15%	17.3 - 12.0 <sup>2</sup>	30 - 60
Eagle Ford	TX	250 - 700	30% - 40%	20% - 25%	7.4 - 6.7	30 - 50
Permian	TX	650 - 800	20% - 40%	20% - 25%	7.8 - 7.1	45 - 55
DJ Basin	CO/KS/NB/WY	325 - 550	40% - 50%	18% - 20%	4.5 - 5.5	35 - 45
San Juan	CA	400 - 600	20% - 50%	20%	4.0 - 5.0	35 - 65
TMS	LA/MS	600 - 700	20% - 40%	20%	11.0 - 13.0	45 - 55
<p>1. Does not include property tax or severance tax. These can be significant; For example: property tax in Texas can represent a royalty-equivalent 2%; similarly, a typical U.S. severance tax rate is a royalty-equivalent 5%.</p> <p>2. The well cost for resource plays depends very much on the stage of development/understanding. Typically new plays are developed first in the U.S. with technology later finding application in Canada. Thus it is important to compare cross-border costs at the same stage of development. To illustrate: Eagle Ford well costs have declined from \$14 MM in 2010.</p>						
Rodgers Oil & Gas Consulting, after Encana, Corporate Presentation, June 2015						

These results reported by Encana are also reported by other companies. For example, ARC Resources describes the Montney as a “World Class Resource”, “A Cash Flow Machine” with RORs in the range of 35% - 95%.<sup>4</sup> Similarly, Trilogy Energy reports their Montney IRR at 58%; comparably strong economics are reported for the company’s Duvernay assets.<sup>5</sup>

CNRL’s presentation also states that royalty rates in Alberta are higher than they are in British Columbia and Saskatchewan. This is generally not correct. The problem with the fiscal regimes in Western Canada, particularly Alberta’s, is that they are tailored to respond to a plethora of resource and economic conditions. As a result, and contrary to the more transparent system in the United States, these regimes in Western Canada are among the most complex and non-transparent in the World. This makes it extremely difficult to benchmark, and extremely easy to draw comparisons that are not contextual or representative. The results for one company’s prospects may be vastly different from those for another company or generally for the industry.

While Alberta produces large quantities of both crude oil and natural gas, Saskatchewan produces mostly oil while British Columbia is predominantly a gas producer. The following charts show the government share for the top North American producer jurisdictions. These

<sup>4</sup> ARC Resources, Credit Suisse 20th Annual Energy Summit, February 2015.

<sup>5</sup> Trilogy Energy Corp, Corporate Presentation, June 2015.

shares are for a range of tight oil and shale gas type wells under a common set of price, production, and cost conditions.

Saskatchewan is clearly the jurisdiction with the lowest oil government share. While Alberta is the region's 3<sup>rd</sup> largest producer it has the 2<sup>nd</sup> lowest government share. For natural gas, the share for British Columbia at 55% is significantly higher than Alberta's 39%.

There are differing views on the wisdom of Alberta's low-royalty policy. Those supporting this policy say it is necessary because Alberta has high costs and/or it will lead to even higher levels of investment. They say that increasing rates will lead to reduced investment and jobs.

Because there seems to be no independent expert group providing analysis from the resource owner's perspective, the following attempts to describe this perspective.

Supporters of royalty change also point to the extreme complexity of the royalty regimes in Western Canada, particularly Alberta. This complexity suggests a policy response that has been designed to respond to the operating circumstances of particular companies, or to a common view of all companies as represented by industry lobby groups. Supporters point out that a policy response that may be good for a particular company may not be at all good for an entire industry. For example, shareholder expectations often lead to decision-making that favors shorter term economic outcomes. This is seen as potentially inconsistent with government's responsibilities to see natural resources as not only for the benefit of the current generation but also as a trust that is also for the benefit of future generations.

Those taking the position that rates are too low and ought to be increased, base their recommendation on the rates applied in most other jurisdictions, particularly the United States. This view is also supported under the understanding that the high costs in Alberta relative to other jurisdictions are in fact caused by an overheated economy, itself caused, at least in no small part, by royalty rates that are too low.

Royalty change supporters also point out that the low-royalty policy is not sustainable. Ignoring competitive market signals and subjectively lowering royalty and tax rates based on the position of individual companies, creates a situation with an artificial economic limit. Industry naturally adjusts to this new low royalty and tax reality; that is, until the next price collapse at which time companies portray that there is no choice but to reduce rates even lower. This would seem to be Alberta's history since the mid 1970's. This results from shorter term and company-based economic policies vs. policies that are economy-wide and industry-based and that give increased consideration to the longer term.

Those recommending a higher royalty share for resource owners point out that charging competitive royalty rates in line with those in other oil exporting jurisdictions has the advantage of contributing to lower costs and higher levels of innovation.<sup>6</sup> This position would also be more consistent with competitive market principals. While a lower than competitive royalty price may be good for an individual company, it is most likely not good for an entire industry, and therefore the overall economy. In the longer term it is not good for Alberta.

Supporters of royalty change realize the difficult position that such change may cause for individual companies, and thereby for working Albertans. They realize that royalty change causes uncertainty and that it is to such uncertainty that companies, including CNRL, are responding. At the same time, under-charging resource owners is seen as a short term response that is weakening the entire industry in the longer term.

Royalty change supporters recognize and appreciate the value of the petroleum industry to Alberta. Their concern is rooted in the view that there is nobody speaking for either industry or the resource owner; and that, as a result, the longer term sustainability of the industry is threatened.

Without denying the concerns of industry or of resource owners, the challenge that, ultimately, only government can meet, is to articulate a vision and an implementing strategy that can deliver a fair share for resource owners while still protecting the long term viability of the industry and the livelihoods of Albertans. These goals are not mutually exclusive, and with better fiscal design they can all be achieved at the same time.

Concluding observation: this article has been largely about technical matters. It is a response to issues raised by oil and gas companies that serve more to deflect than to inform. Matters of incremental differences among jurisdictions are largely irrelevant in achieving a fair share for resource owners. The more relevant issue is a failure of government policy. For example, the current setup where Government's royalty policy responsibility is combined with its industrial development and industry promotion initiatives creates a conflict of interest for those advising Government on royalties. This situation is a failure of public policy to build strong institutions, and it goes a long way to explaining Alberta's perennial difficulties in realizing the fair share for Albertans as the resource owners. More on this in future articles.

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<sup>6</sup> The recent shale revolution originated in the U.S., not despite the higher tax and royalty rates, but because of them. Guided by the influence of private land owners and less by industry lobbyists, the U.S. approach appears to result in both more innovation and a higher share for resource owners.

