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Alberta Royalty Structure Overview and Challenges for the Future

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Oil Sand Royalties

Total royalties from oil sands were $950 million in 2005 which represented a little under 7% of the total royalties for the year of just over $14 billion. Significant development has occurred in 2006 as evidenced by the significant increase in total revenues to $2.48 billion (which includes a forecast amount for February and March 2006 as fiscal year runs March to March). This represented a significant increase to just under 21% of the total royalty revenue for 2006.

In 1997, the Oil Sands Royalty Regulation came into effect whereby a standardized regulatory framework became legislated for all oil sands projects. Previous to this, royalty terms were negotiated between the government and the individual owner of the project. Initial development of Oil Sands projects is a very capital intensive undertaking for firms looking to enter the oil sands industry. In order to encourage investment in Oil Sands the Alberta government adopted a shared risk “revenue minus cost” model whereby Alberta receives a royalty payment of 1% of gross revenue until all costs plus an acceptable return is recovered. Once initial development costs are recuperated, royalties are paid at the greater of two options, the 1st being 1% of a projects gross revenue, and the second being 25% of net revenue. In almost all cases the second case of 25% of net revenue is the greater amount. The rationale behind this generic royalty regime was to provide a stable framework that encouraged investment. Furthermore, this regime would encourage sustainable development of oil sands in Alberta, create a consistent fiscal and regulatory framework for oil sands companies, and secure significant investment in a competitive global oil and gas market.

The recuperation of costs associated with an oil sands project ”is also referred to as the “project payout”. The definition of an Oil Sands Project taken from the Alberta Oil Sands Royalty Guidelines is an operation for the recovery of crude bitumen or any other oil sands product from oil sands, regardless of any further processing of the crude bitumen or other oil sands product.

Projects can be either new projects or developments or amendments to existing approved oil sands projects

While the current royalty program has had the desired impact of promoting development, it has also created some significant issues. Development of the oil sands has literally exploded in the past few years. Total capital expenditures are anticipated to be in the tens of billions of dollars per year over the next ten years. High oil prices combined with the built in incentive for companies to be in a constant state of expansion to minimize royalties have created significant concerns in northern Alberta. These concerns range from an exploding population creating huge demands on infrastructure to concerns over the environment. High oil prices have also resulted in oil companies involved in the oil sands posting record profit levels. This has lead many Albertans to question whether or not they are receiving fair value from oil companies. Political pressure has resulted in the government beginning to formally review the program.

Conventional Oil Royalties

The conventional oil sector in Alberta has been a huge contributor to the provincial economy for over half a century. It remains a very lucrative resource for Alberta with only natural gas generating more in revenues over the past few years. Total revenue from conventional oil in 2005/06 was $1.463 billion which represented just over 10% of total natural resource royalty revenue.

Conventional oil is recovered by drilling wells into reservoirs and is classified as either light, medium or heavy. Light and medium oil is usually refined to produce gasoline, diesel or jet fuels while heavy oil is converted primarily into heating fuels.

"Alberta has seen massive development in the conventional oil industry which has created an extensive infrastructure that facilitates the continued drive to locate, drill for and transport the oil to market. This infrastructure continues to grow: from 2000 to 2005, industry invested almost $100 billion in the province's conventional oil and gas industry."

Royalty Structure

In Alberta's royalty structure for conventional oil there is a distinction made when a reserve was discovered, referred to as its vintage. The concept hinges on the theory that the earlier the well was discovered the cheaper it was to develop and as such a higher royalty is applied. The classifications are "old oil" (discovered prior to April 1974), "new oil" (discovered after April 1974), and "third tier oil (discovered after Sept 1992). Other factors that affect the amount of royalty that is applied are the well production volume, the oil density, and the R-multiplier or par price. The par price and a select price are set monthly and annually respectively. Well productivity follows a well laid out matrix which can result in lower royalties for lower producing wells. Quality is broken into two groups, heavy oil and non heavy oil. Non heavy oil typically requires a higher royalty rate as the assumption is that it is easier and therefore less costly to extract from the ground.

Ultimately the basic conventional oil royalties are based on the price of oil (R-Multiplier) times the amount of production (S) times the Crown's interest in the well (C) or Royalty payable = Price x Production x Crown Interest. The normal range for royalty amounts is between 10% and 40%

An interesting side bar to this is “the Crown takes its share of crude oil royalties from production in-kind instead of by cash payment. The main objective of taking oil in-kind is to maximize the value of the Crown’s royalties. The Crown Marketing agents are contracted to sell the Crown royalty share along with their own production, thus ensuring a competitive market price is received for the sales of these volumes.

Challenges for the Future

As indicated above, conventional oil has been a main stay in the energy sector of Alberta for many years but many obstacles stand in the way of its continued prosperity. One of the most concerning issues is the inability of today’s technologies to allow us to tap into the remaining reserves. Only 26% of this resource has been captured to date leaving the remaining 74% untouched. This has resulted in an overall trending decrease in both total and per well productions over the past few decades. Proven reserves have also shown a steady decline over the past 8 years. In order to make the harvesting of this resource affordable and in turn economically feasible new technologies must be developed to ensure we can utilize this resource to its fullest.

Natural Gas Royalties

Natural gas royalties are the largest contributor to the total royalty revenue realized by the province of Alberta. Royalty revenue from natural gas in Alberta was $8.4 million in 2006, accounting for ~75% of the total royalty revenue. Alberta produces 4.9 trillion cubic feet (tcf) of natural gas per year, accounting for almost 80% of Canada’s total natural gas production. Alberta’s remaining natural gas potential is estimated to be 268 tcf, including 167 tcf from coal (coal bed methane).

In 2002, Alberta implemented changes to the natural gas and natural gas liquids (NGL) royalty framework with the intent to more appropriately align Alberta’s natural gas and NGL royalty regime with the current marketplace. The crown gas formula now explicitly recognizes the quantities and netback values of all products in the gas stream. These are the in-stream components (ISC): methane, ethane, propane, butanes and pentanes plus.

Determination of Natural Gas Royalty Rates

The royalty shares from natural gas are determined according to the energy content, expressed in gigajoules (GJ), and are sensitive to the current level of the market prices and the vintage classification of the reserves (age of the reserves), with adjustments for low production wells. Over the full 2006/2007 fiscal year, each 10-cent CDN rise or fall of the price of natural gas will result in a $104M difference in revenue.

A distinct royalty rate is set monthly for each of the following ISC products: methane, ethane, propane and butanes. Each ISC royalty rate is price sensitive, based on a distinct par price that equals the previous months reference price. A separate formula is used for the pentanes-plus royalty rate. A reference price is set each month for each ISC product. The ISC reference prices reflect the actual amounts paid for the ISC's as reported for the natural gas sales. Each reference price is reduced by the average cost to transport the ISC to the market. A single select price is selected by Alberta department of energy for each of the ISC's each year and if the par price is less than the select price, the royalty rate is equivalent to the base rate. If the par price is greater than the select price, then the royalty rate for the ISC is a function of the difference between the two prices.

The base royalty rate for methane, propane, butanes and ethane is 15% and the maximum royalty rate is between 30 and 35%, depending on the vintage of the ISC. The base royalty rate for pentanes plus is 22% and the maximum royalty rate is between 35 and 50%, again, depending on the vintage of the reserve.

The overall natural gas royalty rate is the weighted average of the royalty rates for the ISC quantities in the gas from each plant.

Vintage of the Reserves

The vintage of natural gas reserves that is considered in the royalty rate is very similar to that of conventional oil. If the ISC gas pool was discovered prior to 1974, it is considered old gas and if it was discovered later than 1974, it is considered new gas. Approximately 90% of Alberta's current gas production was discovered later than 1974. The rates for old gas are significantly less than the royalty for new gas. For example, in 2003, the select price for old methane was $0.38 and the select price for new methane was $1.29.

Low Production Wells

A royalty allowance is provided for ISC wells that produce less than 16,900 cubic metres of gas per day. This allowance can reduce ISC royalty rates to as low as 5%. The

Low Production Well Allowance (LPWA) is calculated as a function of the weighted average royalty rates for all ISC's and the average daily gas production per well over a month.

Cost Allowances

There are cost allowances that are a deduction from the gross royalties payable on the natural gas and by-products to reflect the costs of gathering, compressing and processing the crowns royalty share. For any royalty client, the total cost allowances for a year cannot exceed the total value of the royalty payable for that year. Excess cost allowances are not recoverable in other years.

Gas Programs

There are several programs in place in Alberta that provide either a royalty holiday or royalty credit based natural resource development and environmental improvement efforts. These include the following:

Deep Gas Royalty Holiday – A royalty holiday applies to all new wells or deepened wells drilled into previously undefined gas pools or extensions of existing pools located below 2500-m.

Energy Efficiency Credit Program – The energy efficiency credit program encourages gas plant cogeneration by sharing the up-front costs of cogeneration through a royalty credit.

Sulphur Emission Control Assistance Program (SECAP) – Gas producers may apply for a SECAP royalty credit equal to 50% of the costs for eligible sulphur removal facilities.

CO2 Projects Royalty Credit Program – The department of energy has introduced this royalty reduction program to promote the development of CO_2 enhanced oil/gas recovery industry in Alberta.

Challenges for the Future

Several challenges exist in terms of continued growth of annual revenue from natural gas royalties in Alberta in the future. These include the following:

Capacity – Pipeline capacity for natural gas is a growing concern in Alberta, especially with the demanding growth of the oil sands industry, which is very natural gas intensive. The Mackenzie Valley Pipeline, a major pipeline project with a capacity of 1.2 bcf/d that extends from the North West Territories through North West Alberta is currently on hold until regulatory and aboriginal lags are addressed.

Higher Costs – The costs of finding and developing natural gas reserves has grown exponentially since 1970, from $0.10 per Mcf to $2.50 per Mcf and although exploration and drilling activity has increased, natural gas reserves continue to decline.

New Supplies and Technology - A large portion of the total gas reserves in Alberta is within the coal beds and the recovery of gas (methane) from these coal beds is a relatively new technology that requires further development.

Competing Objectives – A relatively recent issue that has impacted natural gas production in north-east Alberta is the shutting in of hundreds of gas wells in order to conserve underlying bitumen deposits. This is known as the ‘gas-over-bitumen’ issue and could potentially restrict natural gas production further.

Conclusion

In summary, the past five years have been a time of great prosperity in the province of Alberta. High natural resource prices have spurred development in all of the four major royalty producing sectors. The increased growth has obviously had many positive impacts for the citizens of Alberta but has also created many challenges. The challenges include concerns related to the environmental impact of overdevelopment, over heating of the economy creating infrastructure issues and political pressures to review the feasibility of the current royalty structure.

Concerns for the future in terms of the sustainability of the resources do exist. Both of the traditional sources of royalty revenue, conventional oil and natural gas have shown decreasing production and reserve levels over the past eight years. However, the oil sands industry is well positioned to make up for any shortfall in royalty revenues. Many major expansions and developments are now complete and are paying a royalty rate of 25% with many new developments late in the construction phase.

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