Non-renewable Resource Revenue Forecasting

Facts and Stats

Forecasting non-renewable resource revenue from sources like oil and natural gas is determined primarily by three factors: price, production and the applicable royalties.

Alberta Energy is responsible for forecasting non-renewable resource revenue including oil, natural gas, oil sands, as well as coal royalties, mineral taxes and mineral rights sales and rentals.

These forecasts are intended to be a realistic prediction of what government year-end revenues will be.

Understanding Prices

The most important oil prices to Alberta:

- **Western Canadian Select** (WCS, produced in Alberta) - a heavy blended crude oil composed largely of bitumen blended with *diluents.
- **West Texas Intermediate** (WTI) - a grade of crude oil used as a benchmark in oil pricing. This grade is described as intermediate oil because of its relatively low density.
- **Brent oil price** (the world light oil price) - a major trading classification of sweet light crude oil that serves as a major benchmark price for purchases of oil worldwide.

Important natural gas prices:

- **Henry Hub gas price** (the U.S. gas price)
- **Alberta Reference Price** (monthly average price of all Alberta gas sales)

How do we forecast energy prices?

Energy prices, like prices for other goods and services, are determined by supply and demand. For oil, there is a worldwide market to consider.

Alberta Energy compiles the best information and advice from energy analysts and compares our forecasts with banks, investment houses, and private forecasters. Many other government agencies use similar methods.

Some energy analysts have offices in international locations to track local data and marketing trends.

The department tracks forecasts from these various analysts, which are updated on a monthly basis.

The same general procedure is followed for forecasting natural gas prices **except** natural gas prices that affect Alberta's royalty revenue are determined by North American supply and demand, not world markets like oil.

Understanding Conventional Oil and Natural Gas Production

The department uses production forecasts prepared by the Alberta Energy Regulator (AER) for conventional oil and natural gas. The forecasts are compared to other entities' forecasts including those of the National Energy Board when possible.

*Because bitumen is too viscous or thick to be pumped through a pipeline, oil sands producers must add a diluting or thinning agent. By diluting the bitumen it can more easily flow through pipelines to be refined and sold.

The typical diluent for the oil sands is natural gas condensate, though shippers also used refined naptha or synthetic crude oil.

Oil Sands Royalty Overview

The oil sands royalty revenue forecast requires outlooks on bitumen production, oil sands project costs, bitumen prices and the price of WTI. Royalties are calculated based on a project's revenue minus project costs. Royalty rates (the percentage of revenue or net income collected from a project's production) is determined by the WTI oil price in Canadian dollars.

Actual revenue for a project is the volume of the oil **times** the value of the bitumen **less** diluent and handling costs.

Bitumen Production and Oil Sands Costs

The department's bitumen production and costs forecast is based on project forecasts submitted annually by oil sands operators. Forecasted production is compared with production estimates in the project's AER and Oil Sands Royalty applications, and companies' financial reports.

Forecasts of bitumen production are derived by totaling individual projects' forecasted production for the year.

The results are compared to the forecasts of other sources such as the AER, Canadian Association of Petroleum Producers and the National Energy Board.

Total Estimated Revenues

Non-renewable resource revenue for 2015/2016 is estimated to be $2.9 billion.