

Method For Valuing Bitumen in Applicable Non-Arm's Length Transactions Draft for Implementation Consultation

An appropriate method is required to determine a value for bitumen produced in oil sands Projects where a substantial portion of the production is either upgraded on site or sold or transferred to affiliates. These are all considered non-arm's length (NAL) bitumen sales. The Department of Energy has developed a Bitumen Valuation Methodology (BVM) for these situations.

The following BVM has been developed by the Department of Energy, and is proposed to be implemented effective January 1, 2009 as part of the New Royalty Framework. The BVM will be established by regulations in the Fall of 2008, and thus should be regarded as subject to change pending approval and enactment of the regulations. **ANY PERSON RELYING ON THE BVM AS DESCRIBED HEREIN FOR PURPOSES OF PROJECT FINANCIAL ANALYSIS OR ANY OTHER PURPOSE DOES SO ENTIRELY AT THEIR OWN RISK.**

This method will be applied whenever arm's length (AL) transactions are less than 40% of the total production from a Project. This percentage may change over time as markets and other factors change.

The following methodology, developed following advice from three international consulting firms following previous consultations with industry, will be used where the minimum requirement is not met:

1. The starting point for the BVM will be the price of Western Canadian Select (WCS) heavy crude at Hardisty, Alberta.

WCS, a blend of Alberta bitumens, diluents, and conventional heavy oils, developed by Alberta producers to be a new benchmark heavy crude, is the best candidate to provide this reference crude price. It will be monitored and evaluated in the future to determine if it continues to remain acceptable as a reference crude price.

To calculate the value of the royalty bitumen at each oil sands project requiring a BVM will require four procedures:

- i. creating a virtual blend of diluent and the project bitumen or assessing an actual blend;
- ii. pricing this blend by comparing it to the reference crude (WCS) and adjusting for quality differences (two-phased approach for quality adjustment is proposed);
- iii. allowing for the cost of transporting the blend from the Project to the Hardisty reference location; and
- iv. subtracting out the value of diluent in the blend to arrive at the value of the unblended (or "dry") royalty bitumen.

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2. Quality Differences - Interim approach: Effective January 1, 2009, quality differences between bitumens will be based on their densities (weights).

Bitumens will be valued at Hardisty by deducting the value (volume multiplied by price) of diluent (condensate) necessary for them to meet the WCS dilbit (diluent-bitumen blend) density. Heavier bitumens will be assigned lower values by this approach, as a greater volume (and so value) of diluent is required to bring them to this density.

These values, less transportation costs to Hardisty, will provide the royalty bitumen values for the oil sands Projects.

This density-based approach is somewhat similar to the one now used by participants in the WCS pool to calculate their individual bitumen netbacks.

3. Quality Differences - Final approach: The Department of Energy will complete a gross product worth (GPW) methodology to calculate bitumen quality differentials for BVM at each project. This approach will be put into place, replacing the density-based approach, by January 1, 2010.

A "gross product worth" or "GPW" method provides a more detailed approach to calculating bitumen quality differentials for each project. In a GPW approach, the relative values of different bitumens are compared by analyzing their compositions: i.e, their distillation yields for a specified number of components, or "cuts". Each cut can be associated with a particular refined product: the relative values of the bitumens are then assigned on the basis of their individual distillation results and the values of the products associated with their yields of the individual cuts.

This calculation recognizes that bitumens with similar overall densities can have different compositions and so different values. There are a wide variety of bitumens in Alberta, with different recovery techniques that affect their quality.

The GPW approach is a more complex calculation. It requires the specification of the distillation cuts, assays of each bitumen stream based on those specifications, and the choice of the refined products whose values will be associated with each distillation cut. Phasing this approach in will allow for its careful development and testing, and enable its evaluation versus the density-based model.

4. Transportation – Actual transportation facilities in place

Transportation costs for bitumen will be based on actual pipelines where pipelines exist, including those not used for bitumen currently. Hypothetical new pipelines will only be used if no structure exists.

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- 5. BVM will be subject to a floor price, specified in relation to an internationally traded heavy crude comparable to WCS (i.e. Mexican Maya), to ensure unusual market fluctuations affecting western Canadian heavy crudes do not result in unduly low returns to Albertans from the production of their resources. The floor price will apply to the price of bitumen.**

The BVM approach above is aimed at reflecting, generally and at appropriate times, the market value that NAL producers could have received for their bitumen had they sold it in the open market in Alberta.

The floor price is not intended to establish bitumen value a substantial portion of the time, but to offer protection to Albertans as resource owners from low pricing environments when appropriate to do so. The level of the floor price (i.e. what deduction of dollars/barrel from Maya) will be monitored on a continuing basis, and amended by the government from time to time as the overall markets change. The initial calculation will be announced by the government prior to the implementation of the BVM.

The floor price will be applied to bitumen price for 2009, but as there are differences in quality of bitumen the Department will consider as it develops the details of the GPW calculations for January 1, 2010 the applicability of the floor price to WCS with whatever other adjustments or rules may be necessary.

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