Oil Sands Royalty
New Royalty Framework

December 12, 2008
Purpose

- Outline the changes to the oil sands royalty reporting as a result on the implementation of the New Royalty Framework (NRF)
Background – OSRR 97 Royalty Regime

Background: The fundamental features of the OSRR 97 royalty regime are:

• Revenues less Costs

• Determine and collect royalty at the project level

• Immediate recognition of cash outlays (that meet the cost eligibility rules) for the recovery, processing and transportation of oil sands on project lands.

• Crown royalty share is calculated on the volume of oil sands products that are measured and delivered at the Royalty Calculation Point. Royalty paid under OSRR 97, is based on the value of oil sands products that are sold in an arm’s length transaction or at fair market value if sold at non arm’s length.
Reporting Requirements

- Monthly royalty reports and royalty payments are due on or before the last day of the month following the production month.

- End Of Period (EOP) statements are due by March 31 of the year following the production year.

- Operator’s forecast for the next production year is due by December 15 of the current production year.

Note: Oil sands royalty projects governed by Crown Agreements are not subject to the New Royalty Framework. However, these projects must report royalty on the royalty reports required for 2009.
New Royalty Framework

- Effective from January 2009 Production
- Fundamental features of the OSRR 97 remained unchanged.

New Features for OSRR 2009:
1. Price sensitive straight line royalty rates instead of fixed 1% of gross and 25% of net revenues.
2. Bitumen Valuation Methodology (BVM)
3. Royalty assessed on the Crown royalty share of oil sands products at the Royalty Calculation Point (RCP) but valued on the sales within that month.
4. Inventory (special one time reporting)
(1) Royalty Formulas

**Gross Royalty Rate:** Royalty rate calculated monthly based on the actual WTI prices and exchange rate for the month.

RG% = Gross Royalty Rate - Straight line sliding scale royalty rate applied to project gross revenue; calculated to 5 decimal places. RG% range from 1% to a maximum of 9%

- **Minimum Royalty Rate**
  \[ RG% = 1\% \text{ for } W \leq L \]

- **Maximum Royalty Rate**
  \[ RG% = 9\% \text{ for } W \geq H \]

- **Royalty Rate Formula**
  \[ RG% = [1\% + (W - L) \times FG] \text{ for } L < W < H \]

Where:

- \( W \) = WTI price in Canadian Dollars (CAD$) per barrel
- \( L \) = CAD $55/bbl
- \( H \) = CAD $120/bbl
- \( FG \) = 8%/$65 per barrel increase in A (straight line relation)

L and H are not indexed to inflation.
Royalty Formulas (Con`t)

Net Royalty Rate:

- An annual royalty rate calculated monthly based on the simple average of the monthly actual WTI prices and exchange rates available until that point and future WTI prices and exchange rates for the remaining months of the year.

- A monthly gross royalty rate based on the simple annual average of actual and estimated monthly WTI prices will also be calculated for a post payout project because the royalty payable for a post payout project is the greater of the gross revenue times the gross royalty rate or the net revenue times the net revenue royalty rate.

- RN% = Net Royalty Rate - Straight line sliding scale royalty rate applied to project net revenue; calculated to 5 decimal places.

- RN% range from 25% to a maximum of 40%
Net Royalty Rate (con't)

• Minimum Royalty Rate
  • RN% = 25 % for \( W \leq L \)

• Maximum Royalty Rate
  • RN% = 40 % for \( W \geq H \)

• Price Sensitive Royalty Rate
  • RN% = \([25 \% + (W - L) \times FN]\) for \( L < W < H \)

Where:
• \( W \) = WTI price in CAD$/bbl
• \( L \) = CAD$55/bbl
• \( H \) = CAD$120/bbl
• \( FN \) = 15 %/$65 per barrel increase in A (straight line relation)
• \( L \) and \( H \) are not indexed to inflation.

Note: (i) \`W` is the production month WTI price for pre-payout royalty calculation and the production year average WTI price for post-payout royalty calculation

(ii) Formulas are the working level representation of the legal version for OSRR 2009.
Monthly Royalty Rates

• For each production month, Oil Sands Operations will calculate and publish by the 5th working day of the month following the production month:
  – Pre-Payout Gross Royalty Rate
  – Post-Payout Gross Royalty Rate
  – Post-Payout Net Royalty Rate

• The actual royalty rate for pre-payout projects will be based on the actual WTI price for the month.

• Estimates of the average annual gross and net royalty rates for post-payout projects will be based on the average of the actual and estimated WTI prices for the year.

• The December royalty rates will be the actual annual average royalty rate for the Period for a post payout project.

• Operators must use the royalty rates published http://www.energy.gov.ab.ca/OilSands/584.asp to calculate royalty payable.
Sample of Published Monthly Royalty Rates

Oil Sands Monthly Royalty Rates
For Jan 2009

Royalty Rates
Pre-payout Gross: 5.84200% (based on Pined Month actual WTI Price)
Post-payout Gross: 6.31600% (based on the estimated average WTI price for Pined Year)
Post-payout Net: 34.81500% (based on the estimated average WTI price for Pined Year)

WTI Prices and Exchange Rates

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<tr>
<th>Month</th>
<th>WTI Price USCS</th>
<th>Exchange Rate</th>
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<tbody>
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<td>0.98200000</td>
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<td>Jun 2009 Est</td>
<td>95.68</td>
<td>0.98200000</td>
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<tr>
<td>Jul 2009 Est</td>
<td>97.64</td>
<td>0.98200000</td>
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<tr>
<td>Aug 2009 Est</td>
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<td>Oct 2009 Est</td>
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<td>Nov 2009 Est</td>
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</tr>
<tr>
<td>Dec 2009 Est</td>
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<td>0.98200000</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td>95.83</td>
</tr>
</tbody>
</table>

Gross Royalty Formula
Minimum Royalty Rate: \( R_{\text{G}} = 1\% \) for \( W \leq L \)
Maximum Royalty Rate: \( R_{\text{G}} = 9\% \) for \( W \geq H \)
Price Sensitive Royalty Rate: \( R_{\text{G}} = (W - L)/P_{\text{H}} \) for \( L < W < H \)

Net Royalty Formula
Minimum Royalty Rate: \( R_{\text{N}} = 25\% \) for \( W \leq L \)
Maximum Royalty Rate: \( R_{\text{N}} = 40\% \) for \( W \geq H \)
Price Sensitive Royalty Rate: \( R_{\text{N}} = (25\% + (W - L)/P_{\text{H}}) \) for \( L < W < H \)

\( W = \text{WTI Price CAD$}, \quad L = \text{CAD$55/bbl}, \quad H = \text{CAD$90/bbl}, \quad P_{\text{H}} = 8\% \) per barrel increase in \( A \) (straight line relation)

Note: Formulas are a working level representation of the legal version that is in O&SRR2009.
(2) Bitumen Valuation Methodology (BVM)

• The New Royalty Framework will include a Bitumen Valuation Methodology (“BVM”), which will be used to value bitumen for royalty purposes in cases where a project has insufficient third party dispositions to determine a representative unit price. This will be particularly important for projects with integrated upgraders that are paying royalty based on bitumen.

• The basis for the BVM pricing model will be the price of Western Canadian Select (“WCS”), a heavy blend composed mostly of bitumen and diluents, at Hardisty Alberta. The value of individual project bitumen will then be adjusted to reflect their densities and the cost of transporting them to market.

• The necessary data for the BVM calculation will be provided on ADOE and CAPP web sites. It is intended that a valuation model will be available on the CAPP website to facilitate the BVM calculation process.
(3) Royalty Payment At the Royalty Calculation Point

The Crown’s share of an oil sands product will now be deemed to have been transferred – “disposed of” – to the lessee immediately downstream of the Royalty Calculation Point (“the RCP”).

• Royalty will be payable on the volume of oil sands products delivered and measured at the RCP during the production month, whether or not the lessee has actually sold or otherwise disposed of those products.

• Valuation of an oil sands product delivered at the RCP in a month will be based on dispositions of that product during the month, as follows:

  (a) If ratio of the volume of third party dispositions of the product in the month to the volume of the product delivered to the RCP in the month is greater than or equal to the Third Party Disposition Threshold of 40 %, then the unit price calculated for the third party dispositions will be used to value all the volumes delivered at the RCP in that month.
(b) If ratio of the volume of third party dispositions to the volume of the product delivered to the RCP is less than the Third Party Disposition Threshold, then:

(i) If the product is cleaned crude bitumen, then the unit price calculated for the third party dispositions will value a volume at the RCP equal to that disposed of in third party dispositions, and the other volumes will be valued according to the BVM.

(ii) For any other oil sands product, the unit price calculated for the third party dispositions of the product will value a volume at the RCP equal to that disposed of in third party dispositions, and the other volumes will be valued at a fair market value to be determined by the Minister.

(c) If there are no third party dispositions of the product in the month, then the product will be valued according to the BVM, in the case of cleaned crude bitumen, or its fair market value to be determined by the Minister, in all other cases.
Example of Unit Price Calculation (OSRR 2009)

PQ - Total volume of oil sands products produced and delivered at the RCP for the month 10,000 m³
TQ - Total quantity of oil sands products disposed of in the month 6,000 m³
Sale price received for third party disposition $300.00 /m³
Handling charge for third party disposition $25.00 /m³
Adjusted BVM price $295.00 /m³
TC – total consideration received or receivable in the 3rd party disposition
HC- handling charges in relation to the 3rd party disposition
TD – 3rd party disposition quantity

Scenario (1)

TPD % - ALD disposition as a % of PQ in the month 4000.0 m³ = 40%
N ALD % - NALD disposition as % of PQ for the month 2000.0 m³ = 20%

Arms length disposition meets Third party Disposition Threshold of 40%, therefore use 3rd party price to value

Unit Price = (TC - HC) / TD

((4000 x $300) – (4000 x $25)) / 4000 = $275/m³

Scenario (2) = No AL disposition during the month, then Unit price = BVM = $295.00 /m³

Unit price = Adjusted BVM = $295.00 /m³
Example of Unit Price Calculation (con’t)

Scenario (3)
TPD % - AL disposition as a % of PQ in the month 2000.0 m³ = 20%
N ALD % - NAL disposition as % of PQ for the month 4000.0 m³ = 40%
NQ – production quantity at RCP less AL disposition
P - BVM or FVM as determined by the Minister
CD - Cost of diluent if Oil Sands Product is a blend

Arm’s length disposition did not meet Third party Disposition Threshold of 40%, therefore use a blended price of AL and NAL sales to value RCPV

Unit Price = ((TC-HC) + ((NQ x P) + CD)) / PQ
= (((2000 x $300) – (2000 x $25)) +((10,000- 2,000)x $295 ) + $0) / 10,000
=(( $600,000- $50,000) + (8000 x$295)) /10,000
=$ 291/ m³
(4) Inventory at December 31, 2008.

- Require Statement of Crown Royalty Inventory Volumes (one-time only) for applicable OSR Projects

  - Identify volumes of oil sands products which have crossed the RCP but were not disposed of at December 31, 2008 (i.e. volumes where royalty has not been paid). Includes volumes used as line fill and in tankage.

For integrated projects that will transition to bitumen royalty in 2009, the Crown’s share of inventory volumes will also include upgraded products in intermediate stages of processing including those in tankage, and within the upgrader’s process equipment (vessels and lines) if that upgrader is part of the Royalty Project at December 31, 2008.

  - Identify volumes of diluents or diesel that were supplied to the royalty project from an integrated upgrader that will no longer be part of the royalty project on January 1, 2009 or which originated as bitumen but where no royalty has been assessed.

- Due on January 31, 2009. Volumes or calculated volumes need to be auditable and acceptable to the ERCB.

Royalty Calculation for Non Project Wells - New Royalty Framework

- Any oil sands well that is not part of an approval granted under OSRR 97 or OSRR 2009 (i.e. non project wells) must pay cash royalty to the Crown at the heavy oil rates prescribed by the Petroleum Royalty Regulation.

- Crown Royalty Share is the quantity of crude oil obtained from the well event (i.e. production), multiplied by the Crown royalty rate, multiplied by the Crown interest percentage.

- The New Royalty Framework formulas have two distinct components, volume (rq) and price sensitivity (rp). The formulas are capped at 35% for rp and 30% for rq; and the combined total will not exceed 50%.

- The formula for price (rp) changes as the price increases, and formula for quantity (rq) changes as the production increases. No longer require royalty factors, select prices, or vintage of the oil. Do require the correct density of the oil to determine which par price to use.
Royalty Calculation for Non Project Wells  (Con`t)

• There will be four par prices for each of these density categories:
  
  – Light – density < 850 kg/m³ or 35° API
  
  – Medium – density 850 kg/m³ or 35° API and greater, but less than 900 kg/m³ or 25.7° API
  
  – Heavy – density 900 kg/m³ or 25.7° API and greater, but less than 925 kg/m³ or 21.5° API
  
  – Ultra Heavy – density 925 kg/m³ or 21.5° API

• The Ultra Heavy (density 925 kg/m³ or 21.5° API) par price should be used to calculate the royalty payable on production from non project oil sands
Example — Calculation of Crown Royalty Volume

Production: 195.0 m³
Par price $145.00 (for Ultra Heavy – density 925 kg/m³ or 21.5° API)
Crown Interest 66.66667%

\[ rp = \left( \frac{PP - Sp1}{Sp1} \right) \times 0.0006 \times 100 \]
\[ = \left( \frac{145 - 190}{190} \right) \times 0.0006 \times 100 \]
\[ = -2.7\% \]

\[ rq = \left( \frac{Q - SQ1}{SQ1} \right) \times 0.0010 \times 100 \]
\[ = \left( \frac{195 - 106.4}{106.4} \right) \times 0.0010 \times 100 \]
\[ = 8.86\% \]

Royalty Rate = (sp +rq) = 6.16%
Royalty Volume = 12.0 m³ (6.16% x 195.0)
Crown Royalty Volume = 8.0 m³ (12.0 m³ x 66.66667%)
Royalty Formulas – Conventional Oil

R% = Price Component ($/m³) + Quantity Component (m³/month)
R% has a minimum of 0% and a maximum of 50%

### Price Component ($/m³)

<table>
<thead>
<tr>
<th>Price ($/m³)</th>
<th>r_p</th>
</tr>
</thead>
<tbody>
<tr>
<td>PP &lt;= Sp₂</td>
<td>((PP-Sp₁)*0.0006)*100</td>
</tr>
<tr>
<td>Sp₂ &lt; PP &lt;= Sp₃</td>
<td>(((PP-Sp₂)*0.0010)+0.0360)*100</td>
</tr>
<tr>
<td>PP &gt; Sp₃</td>
<td>(((PP-Sp₃)*0.0005)+0.1860)*100</td>
</tr>
<tr>
<td>Maximum</td>
<td>35%</td>
</tr>
</tbody>
</table>

PP is the par price for the month in $/m³
Note: r_p can be negative

### Quantity Component (m³/month)

<table>
<thead>
<tr>
<th>Quantity (m³/month)</th>
<th>r_q</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q &lt;= Sq₁</td>
<td>((Q-Sq₁)*0.0026)*100</td>
</tr>
<tr>
<td>Sq₁ &lt; Q &lt;= Sq₂</td>
<td>((Q-Sq₁)*0.0010)*100</td>
</tr>
<tr>
<td>Sq₂ &lt; Q &lt;= Sq₃</td>
<td>(((Q-Sq₂)*0.0007)+0.0912)*100</td>
</tr>
<tr>
<td>Q &gt; Sq₃</td>
<td>(((Q-Sq₃)*0.0003)+0.1657)*100</td>
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<tr>
<td>Maximum</td>
<td>30%</td>
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Q is the monthly production in m³
Note: r_q can be negative

### Royalty Parameters

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<th>Price ($/m³)</th>
<th>% Change (%/$/m³)</th>
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<td>$190.00</td>
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<tr>
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<tr>
<td>Sp₃</td>
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<table>
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<tr>
<th>Quantity (m³/month)</th>
<th>% Change (%/m³/month)</th>
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<tbody>
<tr>
<td>Sq₁</td>
<td>106.4</td>
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<tr>
<td>Sq₂</td>
<td>197.6</td>
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<tr>
<td>Sq₃</td>
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### Examples

<table>
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<tr>
<th>Price ($/m³)</th>
<th>Quantity (m³/month)</th>
<th>r_p</th>
<th>r_q</th>
<th>R%</th>
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<td>200</td>
<td>50</td>
<td>0.60%</td>
<td>-14.66%</td>
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<td>200</td>
<td>200</td>
<td>0.60%</td>
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<td>17.77%</td>
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<td>-14.66%</td>
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<td>300</td>
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<td>200</td>
<td>23.60%</td>
<td>9.17%</td>
<td>32.77%</td>
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</table>
Royalty Reports

Changes were made to the monthly and annual royalty reports in order to implement the sliding scale royalty rates required by the New Royalty Framework. Operators are required to use these forms effective January 1, 2009 for both pre and post NRF royalty reporting. The published monthly royalty rates need to be entered on the respective royalty form before the royalty payable for the month can be calculated. Additional information will be required by the reporting enhancement required by CARE (Cost Analysis and Reporting Enhancement).

Note: By January 16, 2009 Final forms will be posted in http://www.energy.alberta.ca/OilSands/582.asp
Legislation and Policy References

- Mines & Mineral Act
- Oil Sands Royalty Regulation, 1997 (OSRR 97)
- Oil Sands Royalty Regulation, 2009 (OSRR 2009)
- Alberta Oil Sands Royalty Guidelines

Contacts:
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Maria Lee - Manager, Oil Sands Royalty (780) 415-2081
Royalty Forms

- New form for Pre-Payout Monthly Royalty Calculation - similar to GFE
- New field for royalty rates
- New form for Conventional Oil Sands Royalty Calculation
- New form for `one time` reporting of Inventory as at Dec 31/08
Go to Excel spreadsheets:

- Pre-Payout MRC (old)
- Pre-Payout MRC (new)
- Post-Payout GFE
- Pre-Payout EOP
- Post-Payout EOP
- Conventional Oil Sands Royalty Calculation
- Statement of Crown Royalty Inventory Volumes
QUESTIONS

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