House Finance Committee

Alaska Fiscal System Discussion Slides

April 6 2013
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Manager, Upstream
PFC Energy
### ACES – Key Issues

<table>
<thead>
<tr>
<th>Issue</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Government Take and high degree of progressivity</td>
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<tr>
<td>Complex system</td>
<td>with often counter-intuitive effects</td>
</tr>
</tbody>
</table>
Regime Competitiveness - $80/bbl

Average Government Take of Global Fiscal Regimes at $80/bbl

- Syria
- Uzbekistan
- Bolivia
- Pakistan
- Oman
- Trinidad
- Azerbaijan
- Turkmenistan
- Vietnam
- Indonesia
- Norway
- Angola
- Algeria
- Malaysia
- Kazakhstan
- Venezuela
- ACES (New Development, 16.7%)
- Congo, Rep. of the
- ACES (New Development, 12.5%)
- US - TX (Eagleford)
- US - LA (Haynesville)
- Russia
- China
- India
- ACES (Existing Producer)
- Thailand
- US - ND (Bakken)
- Cote d'Ivoire
- Netherlands
- Yemen
- US - LA (conventional)
- Egypt
- Australia
- UK
- UAE
- Canada - Alberta Conv.
- Libya
- Nigeria
- US - TX (conventional)
- Philippines
- US - TX (Barnett)
- Argentina
- Brazil
- Equatorial Guinea
- Colombia
- Canada - Alberta GS
- US - GOM
- Gabon
- Denmark
- Canada - Nova Scotia
- New Zealand
- Peru
- Ireland

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

OECD
Alaska
Regime Competitiveness - $120/bbl

Average Government Take of Global Fiscal Regimes at $120/bbl

- Uzbekistan
- Syria
- Pakistan
- Azerbaijan
- Oman
- Turkmenistan
- Bolivia
- Trinidad
- Angola
- Algeria
- ACES (New Development, 16.7%)
- Norway
- Vietnam
- Kazakhstan
- Indonesia
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0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

OECDOECE
Alaska
## ACES – Key Issues

- High Government Take and high degree of progressivity means uncompetitive for investment at current prices

- **High marginal rates mean little incentive for producer efficiency**

- “Buydown” effect means incremental and standalone economics very different – with very different impacts for incumbent vs new producer

- Credits create significant downside exposure to state in low price environments, for high cost projects, and projects not on state lands

- Large scale gas sales would reduce taxes on oil

- Complex system, with often counter-intuitive effects
ACES: Average and Marginal Production Tax Rates

![ACES Average and Marginal Rates Graph](image-url)

- **Marginal Rate**
- **Average Rate**

- **Tax Rate**
- **PTV/boe ($/boe)**

- Key values:
  - Marginal Rate:
    - 0%
    - 10%
    - 20%
    - 30%
    - 40%
    - 50%
    - 60%
    - 70%
    - 80%
    - 90%
    - 100%
  - Average Rate:
    - 30
    - 40
    - 50
    - 60
    - 70
    - 80
    - 90
    - 100
    - 110
    - 120
    - 130
    - 140
    - 150
    - 160
    - 170
    - 180
    - 190
    - 200
    - 210
    - 220
    - 230

- Note: The graph shows the relationship between the tax rate and the PTV/boe ($/boe) for both average and marginal rates.
## Impact of Spending Under High Marginal Rates

### Calculation of ACES Tax: Additional Capital Spending

<table>
<thead>
<tr>
<th>Annual Taxable Production (Bbls)</th>
<th>50,000,000</th>
<th>50,000,000</th>
<th>50,000,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Expenditure ($)</td>
<td>$1,500,000,000</td>
<td>$1,500,000,000</td>
<td>$1,500,000,000</td>
</tr>
<tr>
<td>Additional Expenditure ($)</td>
<td>+ 250,000,000</td>
<td>250,000,000</td>
<td>250,000,000</td>
</tr>
<tr>
<td>Total Lease Expenditure ($)</td>
<td>$1,750,000,000</td>
<td>$1,750,000,000</td>
<td>$1,750,000,000</td>
</tr>
<tr>
<td>WC ANS Price ($/Bbl)</td>
<td>$80.00</td>
<td>$100.00</td>
<td>$120.00</td>
</tr>
<tr>
<td>Tax Value Prior To Additional Expenditure ($/Bbl)</td>
<td>$40.00</td>
<td>$60.00</td>
<td>$80.00</td>
</tr>
<tr>
<td>Additional Capital Spending Per-Barrel of Existing Production ($/Bbl)</td>
<td>5.00</td>
<td>5.00</td>
<td>5.00</td>
</tr>
<tr>
<td>Tax Value After Additional Expenditure ($/Bbl)</td>
<td>$35.00</td>
<td>$55.00</td>
<td>$75.00</td>
</tr>
</tbody>
</table>

#### Taxes Before Additional Expenditure
- **Tax Rate (%)**: 29.0%, 37.0%, 45.0%
- **Production Tax Before Credits ($)**: $580,000,000, $1,110,000,000, $1,800,000,000
- **Capital Credits (20% x Capital Expenditures) ($)**: - 300,000,000, 300,000,000, 300,000,000
- **Production Tax After Credits ($)**: $280,000,000, $810,000,000, $1,500,000,000

#### Taxes After Additional Expenditure
- **Tax Rate (%)**: 27.0%, 35.0%, 43.0%
- **Production Tax Before Credits ($)**: $472,500,000, $962,500,000, $1,612,500,000
- **Capital Credits (20% x Capital Expenditures) ($)**: - 350,000,000, 350,000,000, 350,000,000
- **Production Tax After Credits ($)**: $122,500,000, $612,500,000, $1,262,500,000

#### Reduction in Taxes From Additional Expenditure
- **Before Credits**: $107,500,000, $147,500,000, $187,500,000
- **Additional Credits**: + 50,000,000, 50,000,000, 50,000,000
- **Total Reduction in Taxes After Credits**: $157,500,000, $197,500,000, $237,500,000

| Reduction in Tax as % of Expenditure | 63% | 79% | 95% |
| Due to Change in Taxes (Buy Down Effect) | 43% | 59% | 75% |
| Due to Additional Credits | 20% | 20% | 20% |
### ACES – Key Issues

- High Government Take and high degree of progressivity means uncompetitive for investment at current prices
- High marginal rates mean little incentive for producer efficiency
- “Buydown” effect means incremental and standalone economics very different – with very different impacts for incumbent vs new producer
- Credits create significant downside exposure to state in low price environments, for high cost projects, and projects not on state lands
- Large scale gas sales would reduce taxes on oil
- Complex system, with often counter-intuitive effects
ACES - $18/bbl Capex New Development, Standalone

ACES, 12.5% Royalty, $18/bbl New Development, Standalone

Level & Composition of Government Take

Split of Net Present Value of Production

Cashflow Analysis - $100/bbl

Economic Summary

<table>
<thead>
<tr>
<th>GTD</th>
<th>NPV/boe</th>
<th>IRR</th>
<th>Cash Margin</th>
</tr>
</thead>
<tbody>
<tr>
<td>$60/bbl</td>
<td>69.59%</td>
<td>1.76</td>
<td>17.21%</td>
</tr>
<tr>
<td>$100/bbl</td>
<td>73.31%</td>
<td>3.44</td>
<td>21.74%</td>
</tr>
<tr>
<td>$120/bbl</td>
<td>75.25%</td>
<td>4.99</td>
<td>25.64%</td>
</tr>
<tr>
<td>$140/bbl</td>
<td>76.63%</td>
<td>6.46</td>
<td>28.60%</td>
</tr>
</tbody>
</table>
ACES - $18/bbl Capex New Development, Incremental to Incumbent

ACES, 12.5% Royalty, $18/bbl New Development, Standalone

Economic Summary

<table>
<thead>
<tr>
<th>Capex</th>
<th>GTD</th>
<th>NPV/boe</th>
<th>IRR</th>
<th>Cash Margin</th>
</tr>
</thead>
<tbody>
<tr>
<td>$60/bbl</td>
<td>64.37%</td>
<td>3.29</td>
<td>23.91%</td>
<td>22.65</td>
</tr>
<tr>
<td>$100/bbl</td>
<td>69.43%</td>
<td>5.65</td>
<td>35.22%</td>
<td>27.14</td>
</tr>
<tr>
<td>$120/bbl</td>
<td>71.19%</td>
<td>7.86</td>
<td>49.46%</td>
<td>30.67</td>
</tr>
<tr>
<td>$140/bbl</td>
<td>74.70%</td>
<td>6.16</td>
<td>40.57%</td>
<td>35.21</td>
</tr>
</tbody>
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### ACES – Key Issues

- High Government Take and high degree of progressivity means uncompetitive for investment at current prices

- High marginal rates mean little incentive for producer efficiency

- “Buydown” effect means incremental and standalone economics very different – with very different impacts for incumbent vs new producer

- **Credits create significant downside exposure to state in low price environments, for high cost projects, and projects not on state lands**

- Large scale gas sales would reduce taxes on oil

- Complex system, with often counter-intuitive effects
At $75/bbl oil, the NPV of state spending on credits is higher than the NPV of all state government take for the project. However, the project still generates positive NPV for the company – a major concern for liability to the state.
ACES - $35/bbl Capex New Development, Incremental to Incumbent

ACES, 12.5% Royalty, $18/bbl New Development, Standalone

Cashflow Analysis - $100/bbl

Split of Net Present Value of Production

Economic Summary

<table>
<thead>
<tr>
<th>Price</th>
<th>GT0</th>
<th>NPV/boe</th>
<th>IRR</th>
<th>Cash Margin</th>
</tr>
</thead>
<tbody>
<tr>
<td>$60/bbl</td>
<td>59.89%</td>
<td>1.09</td>
<td>14.67%</td>
<td>23.79</td>
</tr>
<tr>
<td>$100/bbl</td>
<td>65.84%</td>
<td>4.23</td>
<td>23.81%</td>
<td>29.35</td>
</tr>
<tr>
<td>$120/bbl</td>
<td>67.62%</td>
<td>7.17</td>
<td>34.96%</td>
<td>33.22</td>
</tr>
<tr>
<td>$140/bbl</td>
<td>73.26%</td>
<td>6.71</td>
<td>28.24%</td>
<td>37.32</td>
</tr>
</tbody>
</table>
### ACES – Key Issues

- High Government Take and high degree of progressivity means uncompetitive for investment at current prices
- High marginal rates mean little incentive for producer efficiency
- “Buydown” effect means incremental and standalone economics very different – with very different impacts for incumbent vs new producer
- Credits create significant downside exposure to state in low price environments, for high cost projects, and projects not on state lands
- **Large scale gas sales would reduce taxes on oil**
- Complex system, with often counter-intuitive effects
• Under ACES, production tax value is assessed on a combined BTU-equivalent basis for both oil and gas production
  – So long as no major gas export project is under development, this has no impact
  – In the event of the development of a major gas export project, however, when gas prices are significantly lower than oil prices, this could lead to significant reductions in Government Take
### ACES – Key Issues

- High Government Take and high degree of progressivity means uncompetitive for investment at current prices
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- “Buydown” effect means incremental and standalone economics very different – with very different impacts for incumbent vs new producer
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- Large scale gas sales would reduce taxes on oil
- **Complex system, with often counter-intuitive effects**
## ACES and SB21: Issues and Aims

<table>
<thead>
<tr>
<th>ACES - Issues</th>
<th>SB21 - Aims</th>
</tr>
</thead>
<tbody>
<tr>
<td>• High Government Take and high degree of progressivity means uncompetitive for investment at current prices</td>
<td>• Relatively neutral at a competitive level of Government Take, while further improving competitiveness for new projects</td>
</tr>
<tr>
<td>• Credits create significant downside exposure to state in low price environments, for high cost projects, and projects not on state lands</td>
<td>• Limit downside risk to state from credits</td>
</tr>
<tr>
<td>• “Buydown” effect means incremental and standalone economics very different – with very different impacts for incumbent vs new producer</td>
<td>• Balance system with even impacts for incumbent vs new producer</td>
</tr>
<tr>
<td>• High marginal rates mean little incentive for producer efficiency</td>
<td>• More neutral regime creates low, constant marginal rates – strong incentive for producer efficiency</td>
</tr>
<tr>
<td>• Complex system, with often counter-intuitive effects</td>
<td>• Simplify the fiscal system</td>
</tr>
</tbody>
</table>
## ACES and SB21: Key Changes

<table>
<thead>
<tr>
<th></th>
<th>ACES</th>
<th>HCS SB21 (RES)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Base Tax Rate</strong></td>
<td>25%</td>
<td>33%</td>
</tr>
<tr>
<td><strong>Progressivity</strong></td>
<td>0.4% per dollar of per barrel-PTV from $30 to $92.50; 0.1% per dollar of per barrel-PTV above $92.50</td>
<td>None – although $/bbl credit creates an implicit ‘reverse’ progressivity that counteracts regressive nature of royalty, leading to overall neutrality – or slight progressivity in case of varying credit</td>
</tr>
<tr>
<td><strong>Maximum Tax Rate</strong></td>
<td>75%</td>
<td>33%</td>
</tr>
<tr>
<td><strong>Incentives for New Production</strong></td>
<td>None</td>
<td>Gross Revenue Exclusion (GRE): In calculating the PTV, a producer’s 20% of gross revenues from eligible production are excluded. Oil is from new unit, new PA, PA expansions.</td>
</tr>
<tr>
<td><strong>$/bbl Credit</strong></td>
<td>None</td>
<td>$5 if eligible for GRE, else variable from $8 to $0 depending on price</td>
</tr>
<tr>
<td><strong>Capital Credit</strong></td>
<td>20% of all qualified capital expenditures</td>
<td>Eliminated after Dec 31 for North Slope</td>
</tr>
<tr>
<td><strong>NOL Credit</strong></td>
<td>25% for Carry-Forward Annual Loss Credit, monetizable for small producer over 2 years</td>
<td>35% for Carry-Forward Annual Loss Credit, monetizable for small producer over one year</td>
</tr>
<tr>
<td><strong>Small Producer Credit</strong></td>
<td>Expires 2016</td>
<td>Extended to 2022</td>
</tr>
<tr>
<td><strong>Exploration Credit</strong></td>
<td>Expires 2016</td>
<td>Expires 2016</td>
</tr>
</tbody>
</table>
ACES and SB21: Government Take Comparison
Base Production

Undiscounted Government Take for Base Production
ACES and SB21

GT0

ACES  SB 21  CS SB21 (FIN)  HCS SB21 (RES)
ACES and SB21: Government Take Comparison
$18/bbl New Development, Standalone

Undiscounted Government Take for new $18/bbl Development, 12.5% Royalty, Standalone, Small Producer - ACES and SB21

50% 55% 60% 65% 70% 75% 80% 85% 90% 95% 100% 105% 110% 115% 120% 125% 130% 135% 140% 145% 150%

GT0

ACESSSB 21CS SB21 (FIN)HCS SB21 (RES)
ACES and SB21: Government Take Comparison
$18/bbl New Development, Standalone

Undiscounted Government Take for new $18/bbl Development, 12.5% Royalty, Standalone, Small Producer - ACES and SB21

- ACES
- SB 21
- CS SB21 (FIN)
- HCS SB21 (RES)
ACES and SB21: Government Take Comparison
$18/bbl New Development, Standalone

ACES and HCS SB21 (RES) - Marginal and Average Rates

Tax Rate

PTV/boe ($/boe)

ACES Marginal Rate
HCS SB21 (RES) Marginal Rate (fixed $5/bbl credit)
ACES Average Rate
HCSB21 Average Rate (fixed $5/bbl credit)
Linear Function for Credit may be preferable to Step Function

### Credit level under Step versus Linear Function

<table>
<thead>
<tr>
<th>$/bbl</th>
<th>Stepped Credit</th>
<th>Linear Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>$80</td>
<td>$8</td>
<td>$8</td>
</tr>
<tr>
<td>$90</td>
<td>$7</td>
<td>$7</td>
</tr>
<tr>
<td>$100</td>
<td>$6</td>
<td>$6</td>
</tr>
<tr>
<td>$110</td>
<td>$5</td>
<td>$5</td>
</tr>
<tr>
<td>$120</td>
<td>$4</td>
<td>$4</td>
</tr>
<tr>
<td>$130</td>
<td>$3</td>
<td>$3</td>
</tr>
<tr>
<td>$140</td>
<td>$2</td>
<td>$2</td>
</tr>
<tr>
<td>$150</td>
<td>$1</td>
<td>$1</td>
</tr>
<tr>
<td>$160</td>
<td>$0</td>
<td>$0</td>
</tr>
</tbody>
</table>

### Marginal Rate under Step versus Linear Function

**Linear Credit Function**

Credit = \( \max(0, \min(8, 16 - \frac{GVPP}{10})) \)

$16 minus one tenth of the Gross Value of Production; not to exceed $8 or be below $0
Credits – NOL, Exploration & Small Producer

- Impact of ACES on project economics is very different for an incumbent vs a new producer
  - At current prices, incumbent experiences impact of ‘buydown’ effect, with new spending reducing tax rate from levels above 25% (plus also impact of capital credit)
  - New producer receives only impact of 25% NOL credit (plus capital credit)
- Fully monetizable NOL credit for small producers evens this playing field
  - All producers receive effective 33% government support for spending, whether new or incumbent
    - Flat, low marginal rate maintains strong incentive for efficiencies and cost control
    - No undue exposure to the state from higher cost projects at low prices
- Aim is to even the playing field and limit the level of support for exploration as well as other forms of spending
  - Allowing the Exploration credit to sunset, but having the fully monetizable 33% NOL credit means 33% government support for exploration spending
  - Again, even impact between incumbent vs new producer
- When the impacts of the system are even between incumbent vs new producer, strong argument that extending ‘small producer’ credit is less warranted
- Overall impact is to significantly simplify the system
Government Take Competitiveness

Alaska Government Take Competitiveness - Comparable Regimes


Series1  Series2  Series3  Series4
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