Response to Request from Rep. Tuck

# COMPARISON OF REVENUE FROM PPT (DE-COUPLED) VERSUS STATUS QUO

April 13, 2010

Alaska Department of Revenue

# Description of the Analysis



- Compared the Overall State tax revenue generated by the status quo combined tax (ACES) versus the PPT tax system as if it had been de-coupled.
- Primary difference between the two:
  - PPT progressivity calculation kicks off at $40 profit per barrel, and has a slope of .25% per dollar; compared to status quo of a $30 kick off, and .4% slope;
  - PPT base tax rate was 22.5% compared to 25% status quo.

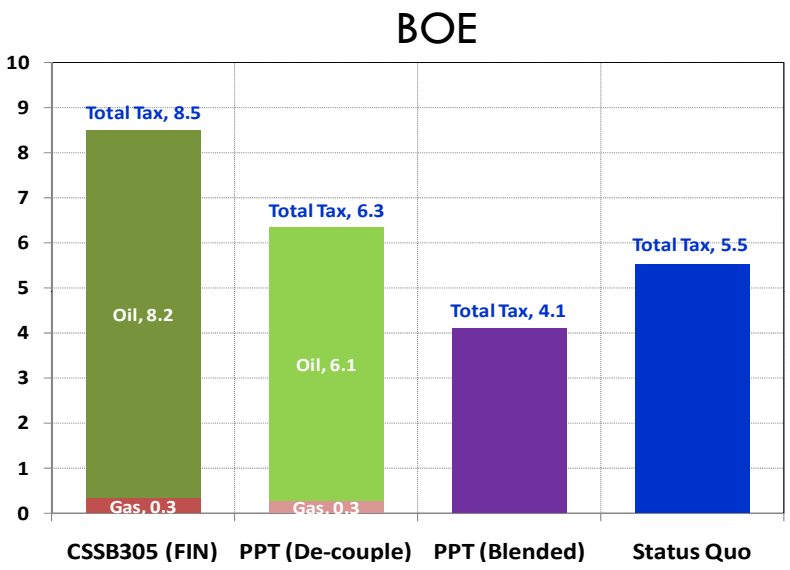
# Example Cases

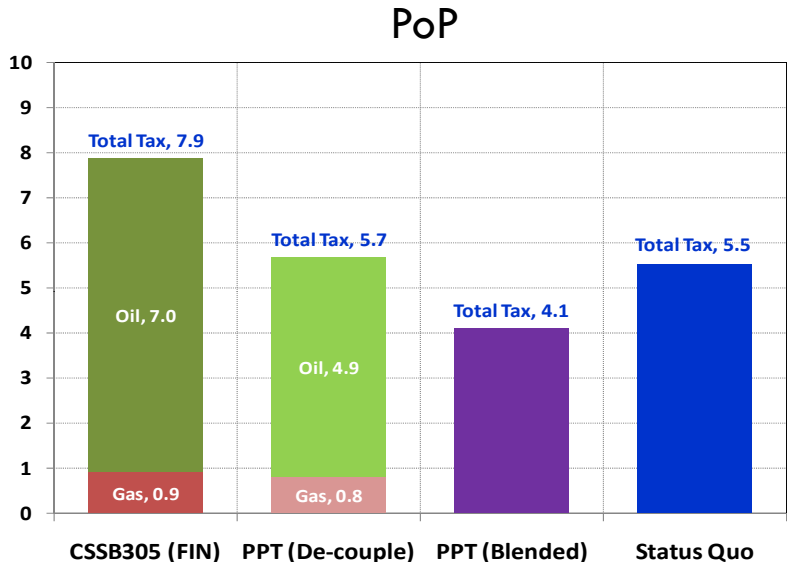
## State Production Tax Revenue

Oil: 500 Mbbl/d and Gas: 4.5 Bcf/d
Capex: $2.2Bn and Opex: $2.2Bn

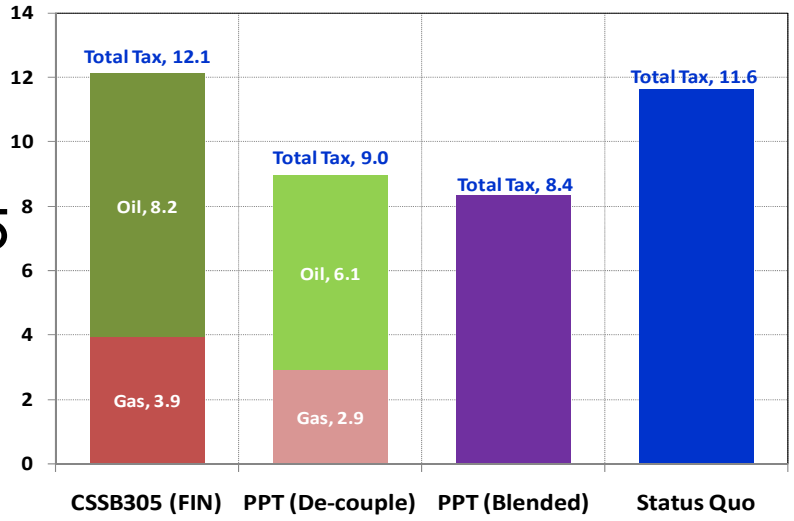


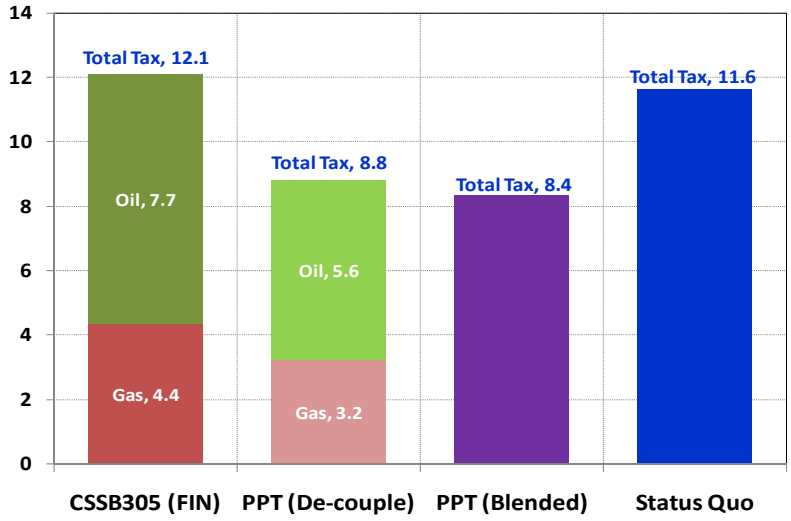
$120/$8 (15:1)




$120/$15 (8:1)



# Total Tax Take Comparison



- Model Assumptions:
  - One year snapshot
  - 4.5 Bcf/d and either 500 Mbbl/d or 200 Mbbl/d
  - Total Opex = $2.2 Bn and Total Capex = $2.2 Bn

- Ran multiple cases varying oil price from 40 to 200 $/bbl and gas price parity from 6 to 26
- Ran the above cases for each of BOE, PoP and Fixed cost allocation methodology

# Total Tax PPT ("de-coupled") less Status Quo
# Cost Allocation: BOE Basis



Oil: 500 Mbbl/d and Gas: 4.5 Bcf/d
Capex: $2.2Bn and Opex: $2.2Bn

Gas Price Parity

Oil Price ($/bbl)

| | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 190 | 200 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | (0.1) | (0.2) | (0.3) | (0.8) | (1.5) | (2.2) | (3.0) | (3.9) | (4.9) | (5.2) | (5.1) | (4.8) | (4.6) | (4.7) | (5.0) | (5.9) | (7.0) |
| 8 | 0.4 | (0.1) | (0.2) | (0.0) | (0.3) | (0.8) | (1.4) | (2.0) | (2.7) | (3.4) | (4.2) | (4.5) | (4.5) | (4.9) | (5.2) | (5.6) | (5.9) |
| 10 | 0.4 | 0.4 | (0.0) | 0.1 | 0.2 | 0.0 | (0.3) | (0.6) | (1.1) | (1.7) | (2.3) | (2.9) | (3.7) | (4.2) | (4.6) | (5.1) | (5.5) |
| 12 | 0.4 | 0.7 | 0.4 | 0.2 | 0.3 | 0.4 | 0.3 | 0.2 | (0.1) | (0.4) | (0.8) | (1.3) | (1.9) | (3.0) | (3.8) | (4.3) | (4.8) |
| 14 | 0.4 | 0.7 | 0.6 | 0.5 | 0.5 | 0.7 | 0.7 | 0.7 | 0.6 | 0.4 | 0.2 | (0.0) | (0.5) | (1.5) | (2.7) | (3.6) | (4.0) |
| 16 | 0.4 | 0.7 | 0.8 | 0.8 | 0.8 | 0.9 | 1.0 | 1.0 | 1.0 | 1.0 | 0.9 | 0.8 | 0.5 | (0.3) | (1.3) | (2.4) | (3.3) |
| 18 | 0.4 | 0.7 | 1.0 | 1.0 | 1.0 | 1.1 | 1.3 | 1.3 | 1.3 | 1.4 | 1.4 | 1.4 | 1.2 | 0.5 | (0.3) | (1.2) | (2.3) |
| 20 | 0.4 | 0.7 | 1.1 | 1.1 | 1.2 | 1.3 | 1.5 | 1.7 | 1.6 | 1.7 | 1.8 | 1.8 | 1.7 | 1.1 | 0.4 | (0.4) | (1.3) |
| 22 | 0.4 | 0.7 | 1.1 | 1.3 | 1.3 | 1.5 | 1.7 | 1.9 | 2.0 | 2.0 | 2.0 | 2.2 | 2.2 | 1.6 | 1.0 | 0.3 | (0.5) |
| 24 | 0.4 | 0.7 | 1.1 | 1.4 | 1.5 | 1.6 | 1.9 | 2.2 | 2.3 | 2.4 | 2.4 | 2.5 | 2.5 | 2.0 | 1.5 | 0.8 | 0.1 |
| 26 | 0.4 | 0.7 | 1.1 | 1.5 | 1.6 | 1.7 | 2.0 | 2.3 | 2.5 | 2.6 | 2.8 | 2.9 | 2.8 | 2.4 | 1.9 | 1.2 | 0.6 |

PPT > STATUS QUO

PPT = STATUS QUO

PPT < STATUS QUO

# Total Tax PPT ("de-coupled") less Status Quo
# Cost Allocation: Point of Production (PoP) Basis



Oil: 500 Mbbl/d and Gas: 4.5 Bcf/d
Capex: $2.2Bn and Opex: $2.2Bn

Gas Price Parity

Oil Price ($/bbl)

| | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 190 | 200 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | (0.1) | (0.2) | (0.3) | (0.9) | (1.5) | (2.2) | (3.0) | (3.9) | (5.0) | (5.2) | (5.1) | (4.8) | (4.5) | (4.7) | (5.0) | (5.9) | (7.0) |
| 8 | 0.0 | (0.1) | (0.2) | (0.2) | (0.5) | (1.0) | (1.6) | (2.2) | (2.8) | (3.5) | (4.4) | (4.7) | (4.5) | (4.8) | (5.2) | (5.5) | (5.8) |
| 10 | 0.0 | (0.1) | (0.2) | (0.2) | (0.1) | (0.3) | (0.6) | (1.0) | (1.5) | (2.1) | (2.6) | (3.2) | (3.9) | (4.2) | (4.6) | (5.0) | (5.5) |
| 12 | 0.0 | 0.1 | (0.1) | (0.2) | (0.0) | 0.1 | (0.1) | (0.3) | (0.6) | (1.0) | (1.4) | (1.9) | (2.3) | (3.1) | (3.9) | (4.4) | (4.8) |
| 14 | 0.0 | 0.1 | (0.0) | (0.2) | (0.0) | 0.2 | 0.2 | 0.1 | (0.0) | (0.2) | (0.5) | (0.8) | (1.2) | (1.8) | (2.9) | (3.7) | (4.1) |
| 16 | 0.0 | 0.1 | 0.2 | (0.1) | (0.1) | 0.2 | 0.4 | 0.4 | 0.3 | 0.2 | 0.1 | (0.1) | (0.3) | (0.7) | (1.7) | (2.7) | (3.6) |
| 18 | 0.0 | 0.1 | 0.4 | 0.1 | (0.1) | 0.2 | 0.5 | 0.5 | 0.6 | 0.5 | 0.5 | 0.4 | 0.3 | 0.1 | (0.7) | (1.6) | (2.7) |
| 20 | 0.0 | 0.1 | 0.5 | 0.3 | 0.1 | 0.1 | 0.4 | 0.6 | 0.7 | 0.8 | 0.8 | 0.8 | 0.8 | 0.7 | (0.0) | (0.8) | (1.7) |
| 22 | 0.0 | 0.1 | 0.5 | 0.4 | 0.3 | 0.3 | 0.4 | 0.7 | 0.8 | 0.9 | 1.0 | 1.1 | 1.1 | 1.1 | 0.5 | (0.2) | (1.0) |
| 24 | 0.0 | 0.1 | 0.5 | 0.5 | 0.4 | 0.4 | 0.6 | 0.8 | 0.9 | 1.1 | 1.2 | 1.3 | 1.4 | 1.5 | 1.0 | 0.3 | (0.4) |
| 26 | 0.0 | 0.1 | 0.5 | 0.6 | 0.5 | 0.6 | 0.7 | 0.9 | 1.0 | 1.1 | 1.3 | 1.5 | 1.6 | 1.7 | 1.3 | 0.7 | 0.0 |

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Oil: 200 Mbbl/d and Gas: 4.5 Bcf/d
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Gas Price Parity ↓

Oil Price ($/bbl) →

| | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 190 | 200 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | 0.0 | (0.1) | (0.2) | (0.3) | (0.8) | (1.3) | (1.8) | (2.5) | (3.2) | (4.0) | (3.9) | (3.8) | (3.6) | (3.5) | (3.4) | (4.0) | (4.7) |
| 8 | 0.0 | 0.0 | (0.1) | (0.1) | (0.0) | (0.2) | (0.5) | (1.0) | (1.4) | (1.8) | (2.3) | (2.9) | (3.5) | (3.7) | (3.9) | (4.0) | (4.1) |
| 10 | 0.0 | 0.0 | 0.1 | (0.0) | 0.0 | 0.1 | 0.2 | 0.0 | (0.2) | (0.6) | (0.9) | (1.2) | (1.6) | (2.2) | (2.9) | (3.6) | (3.9) |
| 12 | 0.0 | 0.0 | 0.1 | 0.3 | 0.2 | 0.2 | 0.3 | 0.5 | 0.4 | 0.3 | 0.1 | (0.1) | (0.4) | (0.9) | (1.4) | (2.0) | (2.6) |
| 14 | 0.0 | 0.0 | 0.1 | 0.3 | 0.5 | 0.4 | 0.4 | 0.6 | 0.7 | 0.8 | 0.7 | 0.7 | 0.5 | 0.2 | (0.3) | (0.8) | (1.3) |
| 16 | 0.0 | 0.0 | 0.1 | 0.3 | 0.6 | 0.7 | 0.6 | 0.6 | 0.8 | 1.0 | 1.1 | 1.1 | 1.1 | 0.9 | 0.6 | 0.2 | (0.3) |
| 18 | 0.0 | 0.0 | 0.1 | 0.3 | 0.6 | 0.9 | 0.9 | 0.8 | 0.9 | 1.0 | 1.3 | 1.4 | 1.5 | 1.3 | 1.1 | 0.8 | 0.5 |
| 20 | 0.0 | 0.0 | 0.1 | 0.3 | 0.6 | 0.9 | 1.1 | 1.1 | 1.1 | 1.2 | 1.3 | 1.6 | 1.8 | 1.7 | 1.5 | 1.3 | 1.0 |
| 22 | 0.0 | 0.0 | 0.1 | 0.3 | 0.6 | 0.9 | 1.2 | 1.2 | 1.3 | 1.4 | 1.5 | 1.7 | 1.9 | 1.9 | 1.8 | 1.6 | 1.4 |
| 24 | 0.0 | 0.0 | 0.1 | 0.3 | 0.6 | 0.9 | 1.2 | 1.4 | 1.5 | 1.6 | 1.7 | 1.9 | 2.1 | 2.1 | 2.0 | 1.9 | 1.7 |
| 26 | 0.0 | 0.0 | 0.1 | 0.3 | 0.6 | 0.9 | 1.2 | 1.5 | 1.6 | 1.7 | 1.9 | 2.0 | 2.2 | 2.3 | 2.1 | 2.1 | 2.0 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | 0.0 | (0.1) | (0.2) | (0.3) | (0.9) | (1.3) | (1.9) | (2.5) | (3.2) | (4.0) | (4.0) | (3.8) | (3.6) | (3.5) | (3.4) | (4.0) | (4.7) |
| 8 | 0.0 | 0.0 | (0.1) | (0.1) | (0.1) | (0.3) | (0.7) | (1.1) | (1.5) | (1.9) | (2.4) | (3.0) | (3.6) | (3.7) | (3.9) | (4.0) | (4.1) |
| 10 | 0.0 | 0.0 | 0.0 | (0.1) | (0.1) | (0.1) | (0.0) | (0.2) | (0.5) | (0.9) | (1.2) | (1.5) | (1.9) | (2.3) | (2.9) | (3.6) | (3.8) |
| 12 | 0.0 | 0.0 | 0.0 | 0.0 | (0.1) | (0.1) | (0.0) | 0.1 | 0.0 | (0.1) | (0.4) | (0.6) | (0.9) | (1.1) | (1.5) | (2.0) | (2.7) |
| 14 | 0.0 | 0.0 | 0.0 | 0.0 | (0.1) | (0.1) | (0.0) | 0.1 | 0.2 | 0.2 | 0.1 | 0.0 | (0.1) | (0.3) | (0.6) | (1.0) | (1.5) |
| 16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | (0.1) | (0.1) | 0.0 | 0.2 | 0.3 | 0.4 | 0.4 | 0.3 | 0.2 | 0.1 | (0.2) | (0.6) |
| 18 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | (0.1) | (0.0) | 0.1 | 0.3 | 0.5 | 0.6 | 0.6 | 0.6 | 0.6 | 0.4 | 0.1 |
| 20 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | (0.1) | (0.0) | 0.1 | 0.2 | 0.4 | 0.6 | 0.7 | 0.8 | 0.8 | 0.9 | 0.6 |
| 22 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | (0.1) | 0.0 | 0.2 | 0.4 | 0.6 | 0.8 | 0.9 | 1.0 | 1.1 | 1.0 |
| 24 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | (0.1) | (0.0) | 0.1 | 0.3 | 0.5 | 0.8 | 1.0 | 1.1 | 1.2 | 1.2 |
| 26 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | (0.0) | 0.1 | 0.3 | 0.5 | 0.7 | 1.0 | 1.2 | 1.3 | 1.4 |

PPT > STATUS QUO  PPT = STATUS QUO  PPT < STATUS QUO

# Observations



- In many of the instances, the status quo combined tax would result in more overall tax revenue than PPT decoupled.
- Provides insight into the perception of the "appropriate" state share of oil and gas revenues once a major gas sale occurs.
- Results are an interesting reflection on whether the state is "losing" revenue under a combined tax system.