Progressivity

Presentation to the
Senate Resources Committee

February 15, 2013

Introduction

1. Calculating the Production Tax Liability.

2. How Does the Basic Progressivity Calculation Work?

3. What are Some of the Problems with Progressivity?

ACES Tax Liability =

[Production Tax Value * Tax Rate] – Credits

- Production Tax Value = (Value - Costs)
  - ❑ Value = Volume of Taxable Oil & Gas Produced * Wellhead Value
  - ❑ Costs = Operating Expenditures + Capital Expenditures
- Tax Rate = 25% + 0.4% for every $1 per barrel that this "net income" exceeds $30, up to $92.50, then 0.1%
- Credits = (20% * Capital Expenditures)[1] + (20% * Eligible Transition Expenditures)[2] + Small Producer Credit [3]

(1) Spread over two years
(2) Limited to those credits earned while the PPT was in effect and could not be used
(3) Credit is for companies producing less than 100,000 bbls/day. Available up to $12 million for North Slope and/or Cook Inlet Producers, and $6 million for production outside of North Slope and Cook Inlet annually. Small producer credits cannot be redeemed for cash certificates or carried forward.

The Progressivity Function

- Found in AS 43.55.011 (g)
- Based on the *Production Tax Value* (PTV)
- When the PTV exceeds $30 per barrel of oil equivalent (BOE) the tax is levied at:
  - .4% per dollar until the PTV/bbl = $92.50
  - .1% per dollar that the PTV/bbl is greater than $92.50
  - Maximum rate of 50% (in addition to 25% base tax)
- Calculated monthly
- A single statewide calculation on all oil and gas

Progressivity: How it is Calculated.

- Based on page 108 of the 2012 Fall Revenue Sources Book.

- Taxable Production: 170,262,000

- GVPP = *Gross Value at the Point of Production*.

- PTV = *Production Tax Value*.

ANS West Coast Price:	$109.61
Transportation Costs:	-$8.81
GVPP:	**$100.80**
Deductible Lease Expend:	
Operating:	-$16.32
Capital:	-$19.61
Production Tax Value (PTV):	**$64.87**
Base Tax (25%):	$16.22

Illustration of tax calculation based on FY 2014 assumptions, Fall 2012 RSB appendix D-1c

Progressivity: How it is Calculated.

Calculating the Progressivity with a PTV/bbl = $64.87

- $64.87 - $30 = $34.87
- Because the PTV/bbl < $92.50
- $34.87 x .004 ≈ 13.95%

The 13.95% progressive tax is then applied to the PTV/bbl of $64.87 **not** to the $34.87

$64.87 x 13.95% = $9.05 per barrel

Therefore: the $9.05 progressive tax + $16.22 (25%) base tax = $25.27 production tax per barrel **before credits**.

Multiplied by the taxable production (170,262,000 bbls) = $4,302 million

Observations

- Progressivity increases the overall tax rate as the overall profitability (before state and federal income taxes) rises.

- Remember, progressivity is company specific and each company will have a different exposure because progressivity is sensitive to:
    - The oil price.
    - Spending.
    - Production.

- Progressivity is only one part of what makes the overall system progressive; it is not a factor at low oil prices.

Example 1: New Capital Spending in Fiscal Year 2014

- Based on page 108 of the 2012 Fall Revenue Sources Book.

- Taxable Production: 170,262,000.

- Increased capital spending by $500 million from $3,338.6 million to $3,836.6 million.

- CAPEX per barrel goes from $19.61 to $22.55 per barrel.

ANS West Coast Price:	$109.61
Transportation Costs:	-$8.81
GVPP:	**$100.80**
Deductible Lease Expend:	
Operating:	-$16.32
Capital:	-$22.55
Production Tax Value (PTV):	**$61.93**
Base Tax (25%):	$15.48

Example 1: New Capital Spending in Fiscal Year 2014

Calculating the Progressivity with a PTV/bbl = $61.93
- $61.93 - $30 = $31.93
- Because the PTV/bbl < $92.50
- $31.93 x .004 ≈ 12.77%

The 12.77% progressive tax is then applied to the PTV/bbl of $61.93 **not** to the $31.93

$61.93 x 12.77% = $7.91 per barrel

Therefore: the $7.91 progressive tax + $15.48 (25%) base tax = $23.39 production tax per barrel **before credits**.

Multiplied by the taxable production (170,262,000) = $3,983 million

Therefore – capital spending **went up $500 million** and state revenues **went down $319 million** before considering the credits.

Observations

- Progressivity based on the net production tax incentivizes spending.

- The level of the incentive depends on the price of oil and the cost structure of the investor **not** the project's economics.

- The value of the deduction often exceeds the value of the tax credits.

- This benefit is **only** available to incumbent producers and doesn't create a level playing field with new entrants.

Example 2: New Capital Spending in Fiscal Year 2014 with lower oil price

- Based on page 108 of the 2012 Fall Revenue Sources Book.
- Taxable Production: 170,262,000.
- Oil Prices decline $10 to $99.61
- Increased capital spending by $500 million from $3,338.6 million to $3,836.6 million
- CAPEX per barrel goes from $19.61 to $22.55 per barrel.

ANS West Coast Price:	$99.61
Transportation Costs:	-$8.81
GVPP:	**$90.80**
Deductible Lease Expend:	
Operating:	-$16.32
Capital:	-$22.55
Production Tax Value (PTV):	**$51.93**
Base Tax (25%):	$12.98

Illustration of tax calculation based on FY 2014 assumptions, Fall 2012 RSB appendix D-1c

Calculating the Progressivity with a PTV/bbl = $51.95

- $51.93 - $30 = $21.93

- Because the PTV/bbl < $92.50

- $21.93 x .004 ≈ 8.77%

$51.93 x 8.77% = $4.56 per barrel

Therefore: the $4.56 progressive tax + $12.98 (25%) base tax = $17.54 production tax per barrel **before credits**.

Multiplied by the taxable production (170,262,000) = $2,986 million

The same equation run **without** the additional capital spending (Capital at $19.61 / bbl) derives $3,265 million.

Therefore the benefit of the deduction of an additional $500 million in capital spending at an oil price of $109.61 was **$319 million** but at an oil price of $99.61 was **$279 million**.

Observations

- Since the value of a deduction is dependent on the price of oil it is very difficult for a company to predict the value of the deduction especially with long lead time projects.

- The reduction in taxes is temporary, since as soon as the spending is done the tax rate rises back to the higher rate.

- This effect can potentially create misalignments amongst working interest owners in the same field.

  - If one working interest owner is spending and another isn't, then the value of the incremental spending to the company that is already spending will be less than to the one that isn't.

- Greater incentive to spend at higher prices than at lower prices – the opposite of what is needed to make projects economic.

Example 3: Cutting Costs

- Again, based on page 108 of the 2012 Fall Revenue Sources Book.

- Taxable Oil Production: 170,262,000

- Reduce the capital cost per barrel by $5.

ANS West Coast Price:	$109.61
Transportation Costs:	-$8.81
GVPP:	**$100.80**
Deductible Lease Expend:	
Operating:	-$16.32
Capital:	-$14.61
Production Tax Value (PTV):	**$69.87**
Base Tax (25%):	$17.47

Illustration of tax calculation based on FY 2014 assumptions, Fall 2012 RSB appendix D-1c

Example 3: Cutting Costs

Calculating the Progressivity with a PTV/bbl = $69.87

- $69.87 - $30 = $39.87
- Because the PTV/bbl < $92.50
- $39.87 x .004 ≈ 15.95%

$69.87 x 15.95% = $11.14 per barrel

Therefore: the $11.14 progressive tax + $17.47 (25%) base tax = $28.61 production tax per barrel **before credits**.

Before the cost savings, taxes per barrel were $25.27

Therefore a reduction in capital cost per barrel of $5 **leads to a tax increase of $3.34 per barrel.**

With progressivity, producer keeps $1.66 of the $5 in cost savings ($5-$3.34); without progressivity, producer keeps $3.75 of the $5 in cost savings ($5-$1.25)

Observations

- When cutting costs increases taxes it creates distortions in decision making and behavior.

- Technology that improves economic value will create the same effect as cutting costs because it increases the production tax value and therefore, the progressive tax rate.

- Similarly, things that reduce the production tax value reduce the tax rate.

- Much stronger incentive to keep costs under control without progressivity – good for both producer and state.

Example 4: Gas sales
(the decoupling dilemma)

- Based on page 108 of the 2012 Fall Revenue Sources Book.

- Taxable Production: 170,262,000.

- Plus gas sale of 1 BCF/day (60,833,333 BOE for year)

- Gas price of $8 / mmboe and transportation of $4.50 / mmboe

- Costs per BOE same as for oil – for illustration purposes

ANS West Coast Price:	$93.39
Transportation Costs:	-$13.60
GVPP:	**$79.79**
Deductible Lease Expend:	
Operating:	-$16.32
Capital:	-$19.61
Production Tax Value (PTV):	**$43.86**
Base Tax (25%):	$10.97

Gas sales: The Decoupling Dilemma

- The "Decoupling" problem was identified and thoroughly discussed during the 26th Alaska Legislature.
- Fundamentally, it is a problem exacerbated by the net based progressive function when a high value product (light oil) is blended with a low value product (gas).

- For the purposes of this example, we assumed 1 BCF/ day of gas sales in addition to FY 14 oil production.
- Gas price for the purpose of the example will be $8 per mmbtu (6 mmbtu = 1 barrel of oil equivalent). With transportation costs of $4.50 per mmbtu.
- 170,262,000 barrels of taxable oil are sold at $109.61 per barrel.
- 60,833,333 "barrels" of gas are sold at $48 per BOE.
- This gives us a blended price of $93.39 per BOE and lower overall revenues.
  - GVPP / BOE falls from $100.80 to $79.79
    - due to both lower value and higher transport costs for gas
  - Progressive tax rate falls from 13.95% to 5.55%
  - Revenue **before credits** falls from $4,302 billion to $3,096 billion

- This is an illustration only to demonstrate the decoupling dilemma.

Summary

- Progressivity is not simple:
  - It reduces the cash margin per barrel in ways that leaves Alaska uncompetitive.
  - It is highly sensitive—making it difficult to predict for the State of Alaska and taxpayers.
  - It creates misalignments between working interest owners based on individual spending programs.
  - It incentivizes spending—but not necessarily investments that lead to production.
  - It mutes the incentive to save costs or utilize technology.
  - It creates the decoupling dilemma.

Progressivity Inhibits a North Slope decline turnaround at high prices

Historical Oil Production Curves with Nominal WTI Price

Thank You