Alaska's Equitable Share

Senate Finance Committee

09 November 2007

Topics

- GCA's understanding of the goals or drivers for Alaska's Petroleum Fiscal System?
- Description and comparison of the four fiscal structures under consideration
- Working from a portfolio of projects representative of the opportunities described by industry, show the impacts of each fiscal system
- Analysis of industry returns from the Prudhoe Bay drilling program

Goals

Goals for Fiscal Design

- **Based on the past two weeks we (GCA) see the State trying to achieve the following in this special session:**
  1. Fields with larger **profitability** should be paying more taxes
  2. Encourage investment in existing units
     - Reinvestment in producing assets
     - Investment in new developments
       - ❖ Conventional
       - ❖ Unconventional (i.e. heavy oil)
       - ❖ Gas
  3. Encourage new investment outside legacy units
     - Level playing field for incumbents and new entrants
  4. Durability
     - Don't want to be back 'fixing' things
  5. Build on prior tax dialogue

Goals 1, 2 & 4
The Fiscal Design Challenge

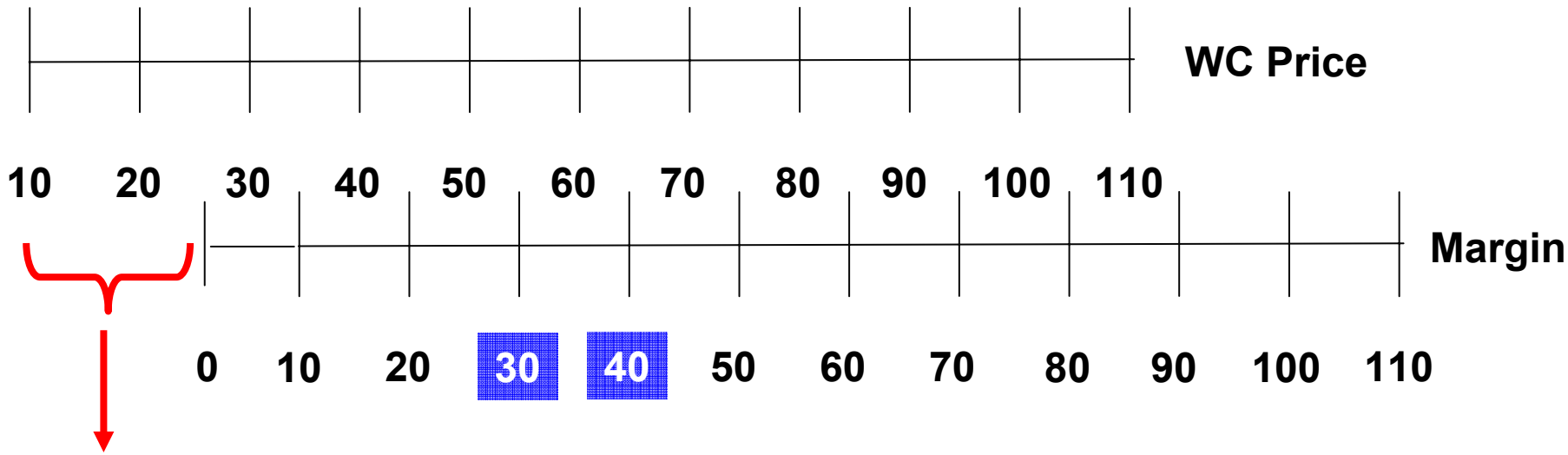
- **At the same time the State must address "The Take"**
  - (1) Capture the State's equitable share when margins are very high (as they are today)
  - (4) Include a form of progressive structure to adapt to the inevitable changes in the three main variables of the business:
    - Price
    - Production
    - Cost
- **…as well as "The Give Back"**
  - (2) Encouragement to reinvest profits for more development inside legacy units

Goal 3: Encourage New Investment

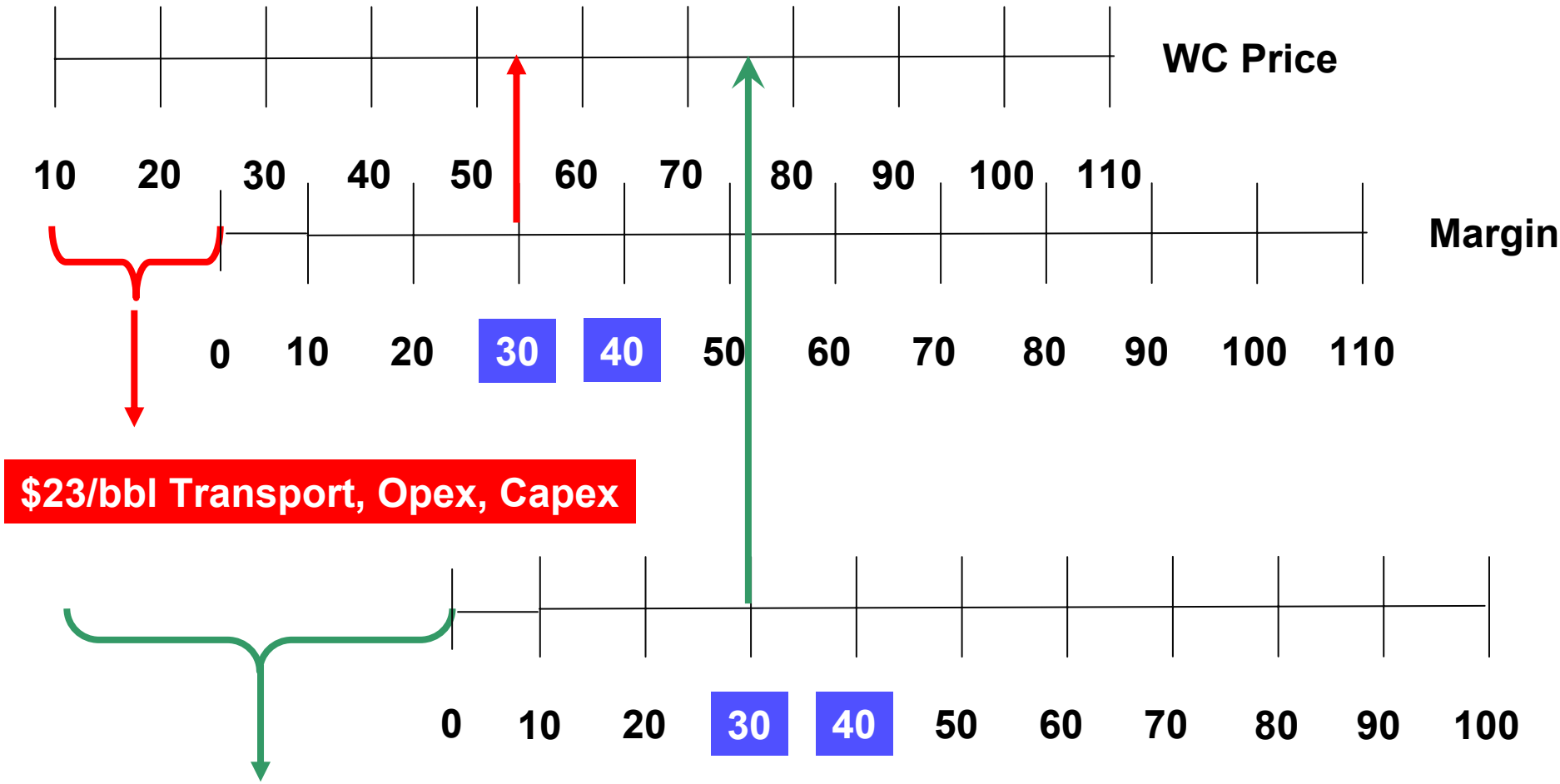
- **The proposed legislation appears to provide the right incentives to encourage investment in new fields**
  - Investment credits
  - Net Operating Loss credits
    - Aid to new entrants with no existing tax base
  - The net based systems by design lower the applicable production tax rate for fields with higher cost structure
    - More distant from infrastructure
    - Heavy Oil
    - Gas
- **Beyond the individual project, the State and industry benefit from new developments as they provide additional barrels down TAPS thus extending the productive life of existing reservoirs**

Key Point Easily Misunderstood

Price ≠ Margin



Margin/Price relationship changes with time and with project addition

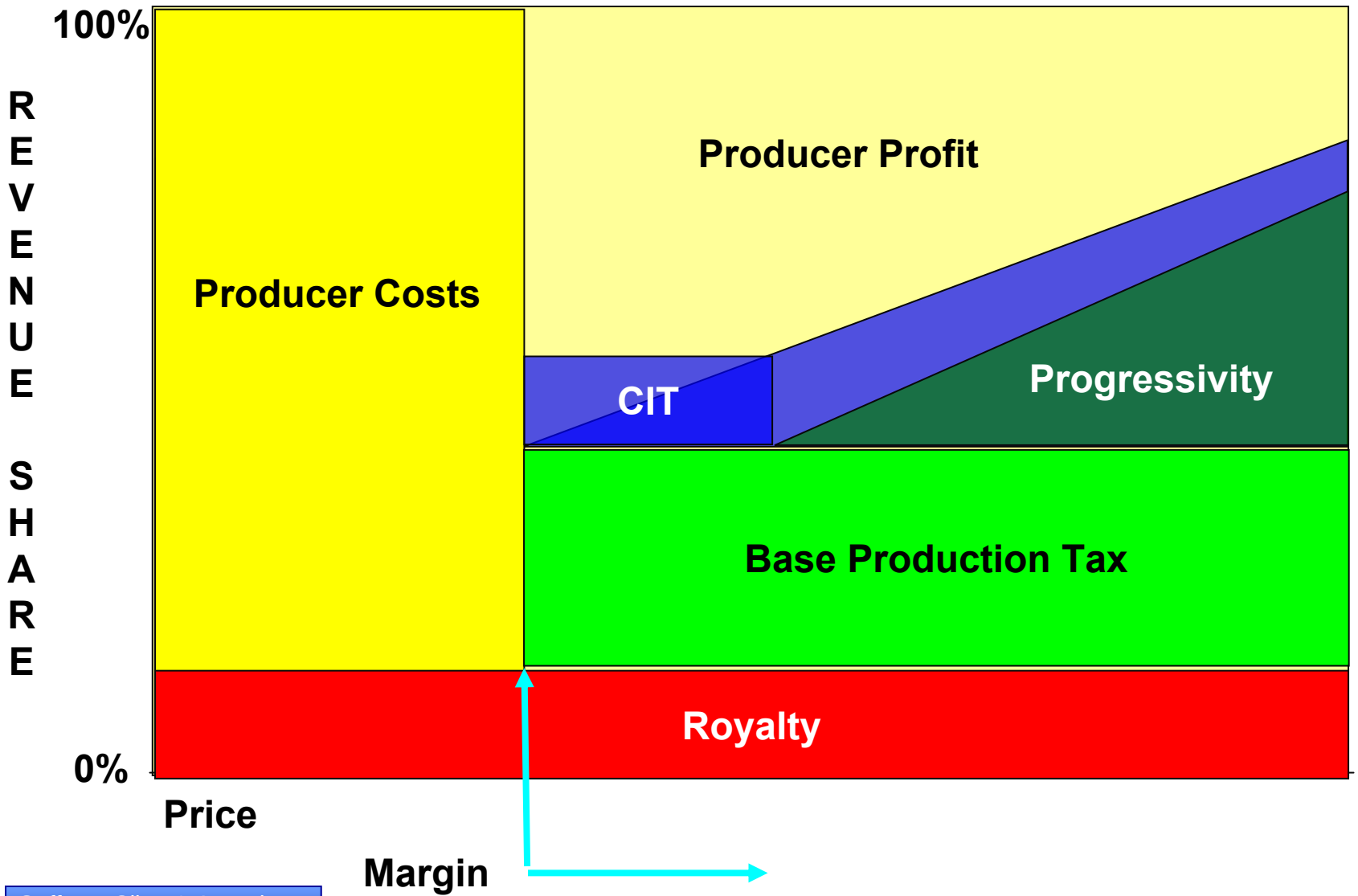


Regime Comparison

Regime Review

- **Four fiscal systems in discussion**
  - PPT
  - ACES
  - Senate CS

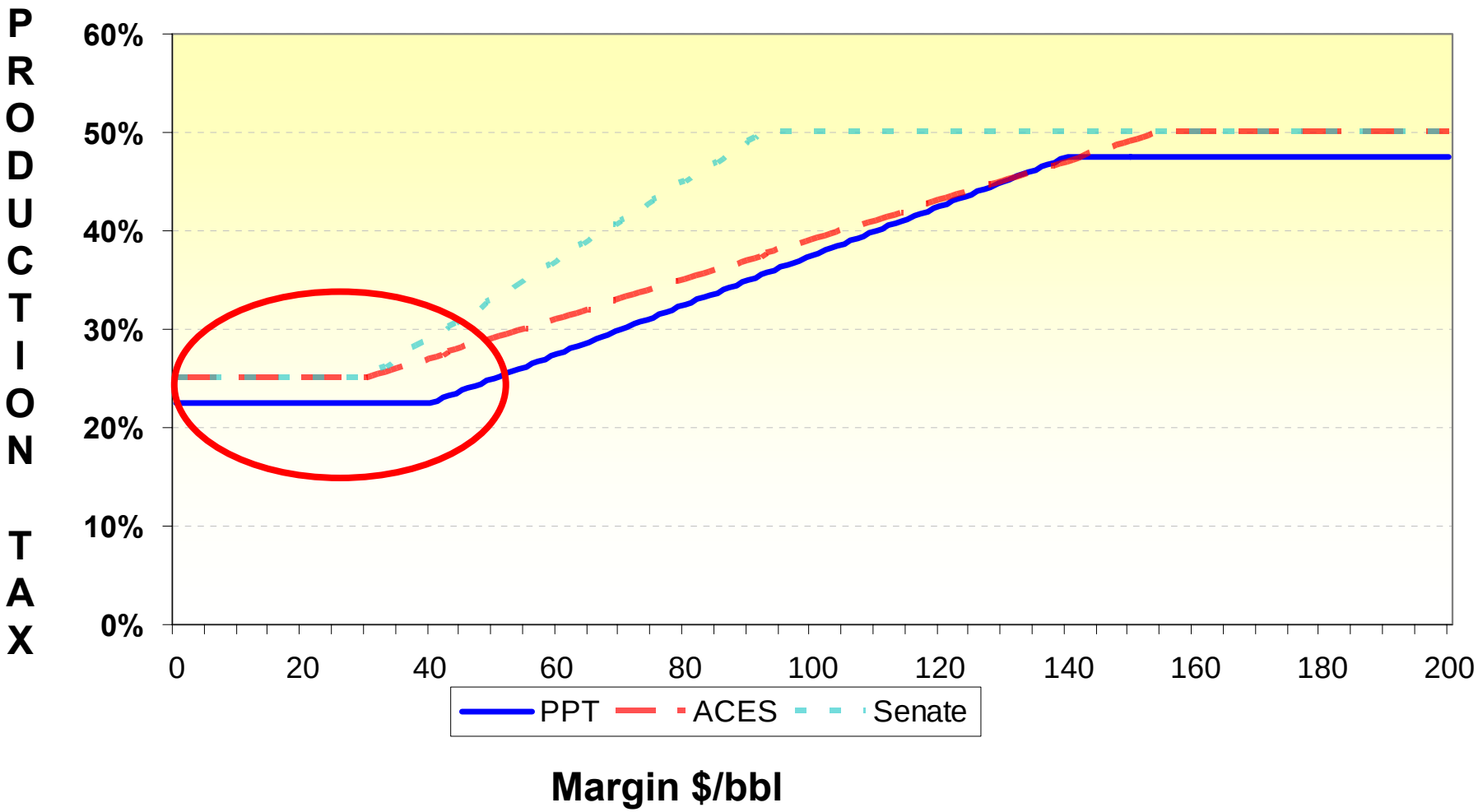
For PPT, ACES and Senate CS



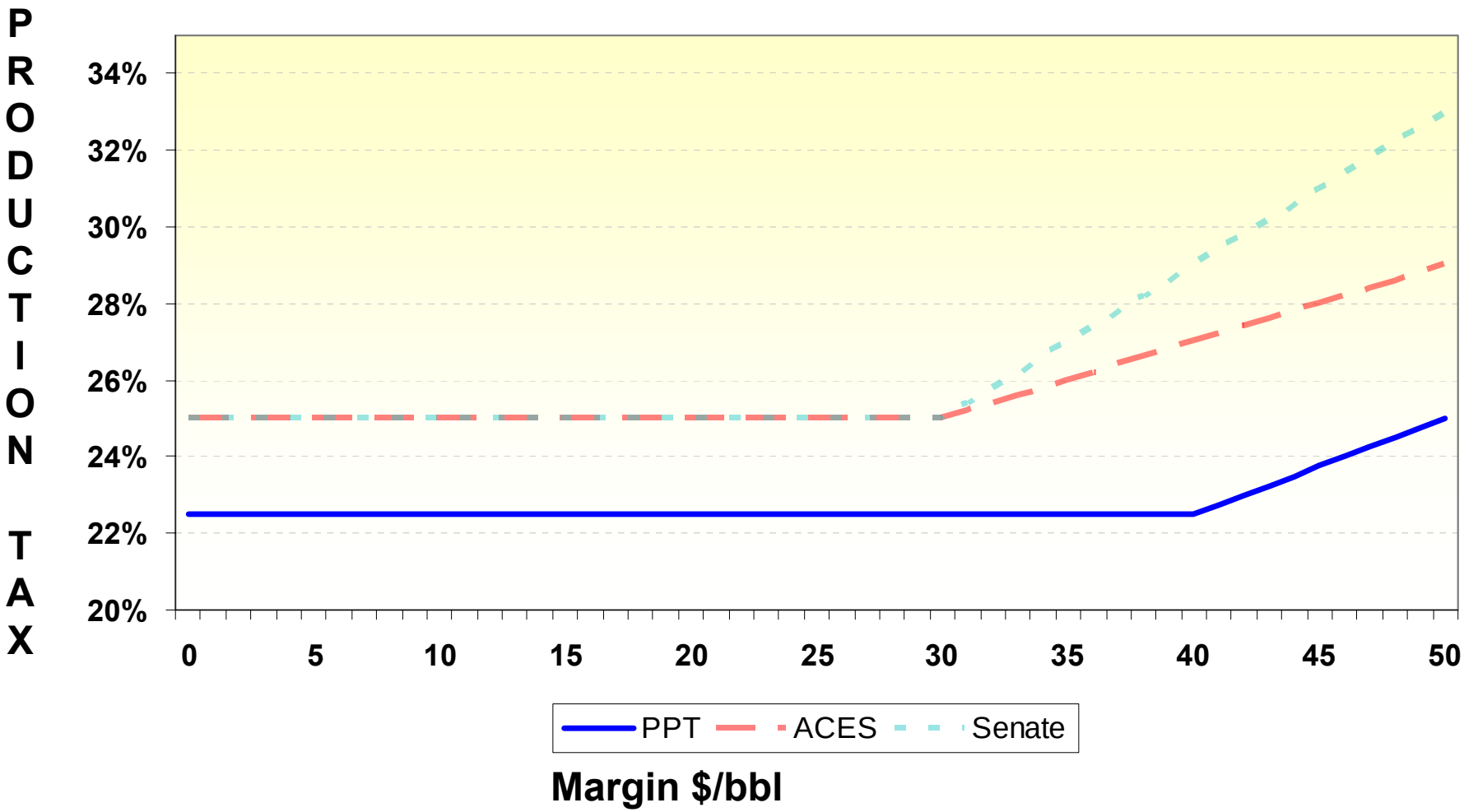
Summary of Terms

	Base	Kick-off	Progressivity	Cap
PPT	22.5%	$40	0.25%	47.5%
ACES	25%	$30	0.2%	50%
Senate	25%	$30	0.4%	50%

Three Fiscal Systems



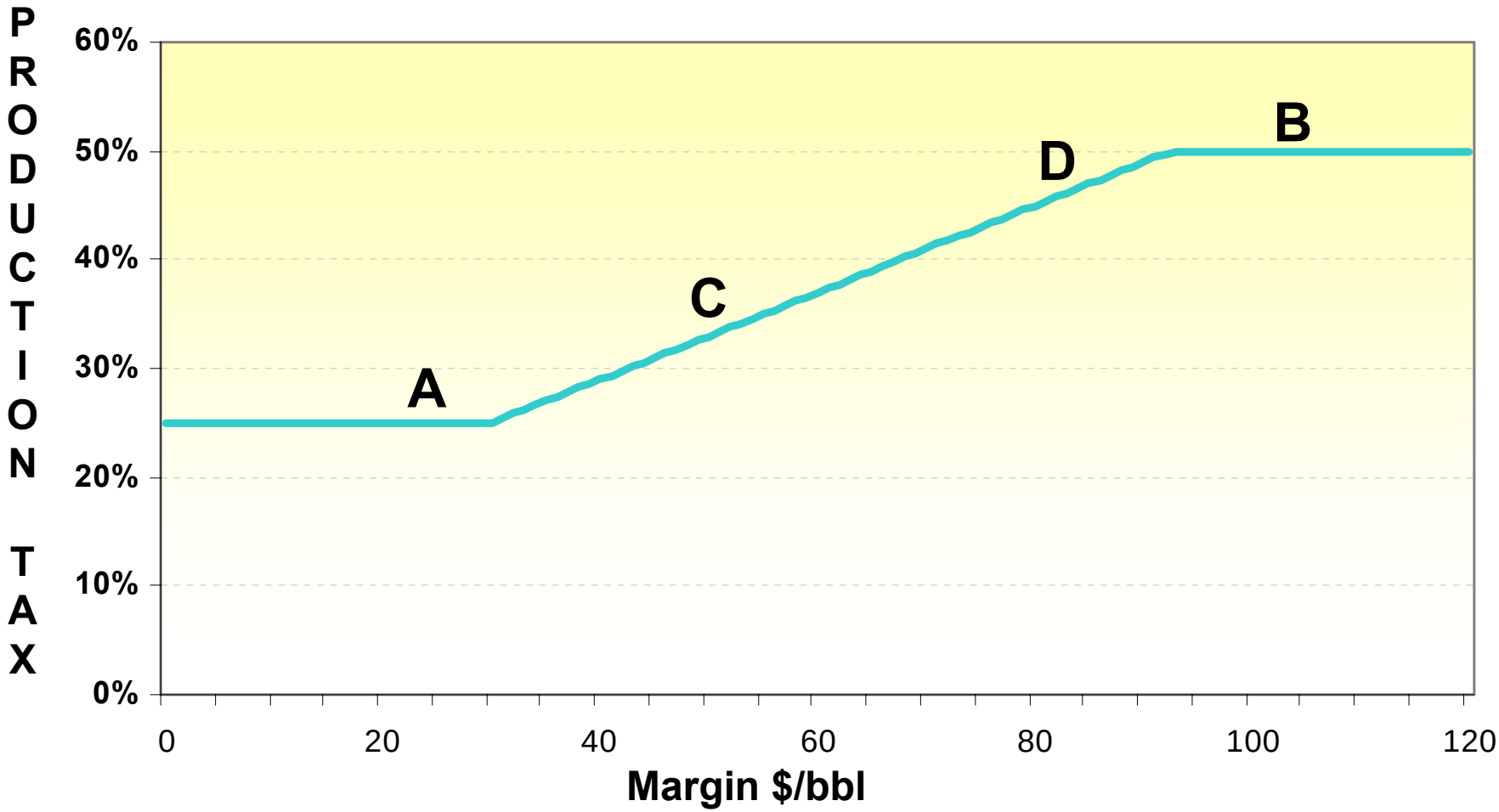
Likely Zone Of Operation



Progressivity Impacts

- **The use of progressivity creates a sizeable difference between the effective rate and the marginal rate of tax in relation to investment decisions**
  - This is present with the existing PPT language
  - The impact provides either:
    - A good sized “carrot” to invest; or
    - A good sized “stick” to not export after tax cash flow from Alaska

Margin Cases



Federal and State Income tax impacts excluded

An Example of Progressivity Impacts

- **Let's assume a company has $1000 before tax cash flow and is deciding whether or not to make a $100 investment (or roughly reinvest 10%)**
  - If the net margin before investment is under $30/bbl
    - Production tax savings associated with the $100 investment is 25%
  - If the net margin is greater than $92.5/bbl
    - Production tax savings associated with the $100 investment is 50%
  - If the net margin is between $31/bbl and $92.5/bbl
    - Production tax savings associated with the $100 investment ranges from 25% to over 100%

Taxpayer 'A' - Low Margin

- **$1000 net revenue @ a margin of $25/bbl**
  - Tax = $1000 x 25%
    Tax = $250
- **Now we invest $100- reduces net revenue to $900 and our margin to $22/bbl**
  - Tax = $900 x 25%
  - Tax = $225
- **Production Tax savings due to the investment**
  - Tax Savings = ($250 – $225)/$100
  - Tax Savings = 25/100
  - New Marginal Tax Rate = 25%

Taxpayer 'B' - High Margin

- **$1000 net revenue @ a margin of $125/bbl**
  - Tax = $1000 x 50%
    Tax = $500
- **Now we invest $100 that takes our net revenue to $900 and our margin to $110/bbl**
  - Tax = $900 x 50%
  - Tax = $450
- **Production Tax savings due to the investment**
  - Tax Savings = ($500 – $450)/$100
  - Tax Savings = 50/100
  - New Marginal Tax Rate = 50%

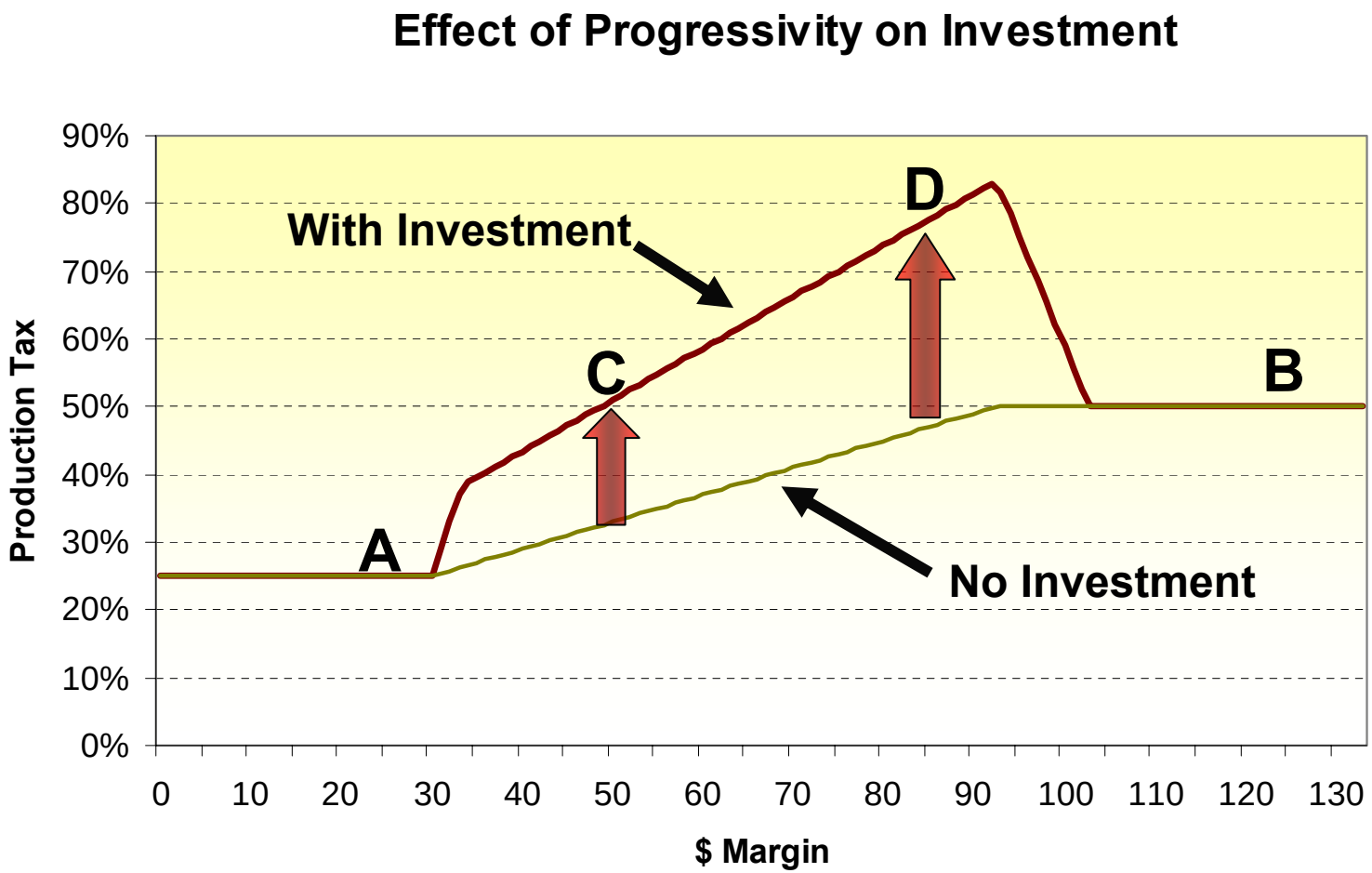
Taxpayer 'C' – Low on the slope

- **$1000 net revenue @ a margin of $50/bbl**
  - Tax = $1000 x 33%
    Tax = $330
- **Now we invest $100 that takes our net revenue to $900 and our margin to $45/bbl**
  - Tax = $900 x 31%
  - Tax = $279
- **Production Tax savings due to the investment**
  - Tax Savings = ($330 – $279)/$100
  - Tax Savings = 51/100
  - New Marginal Tax Rate = 51%

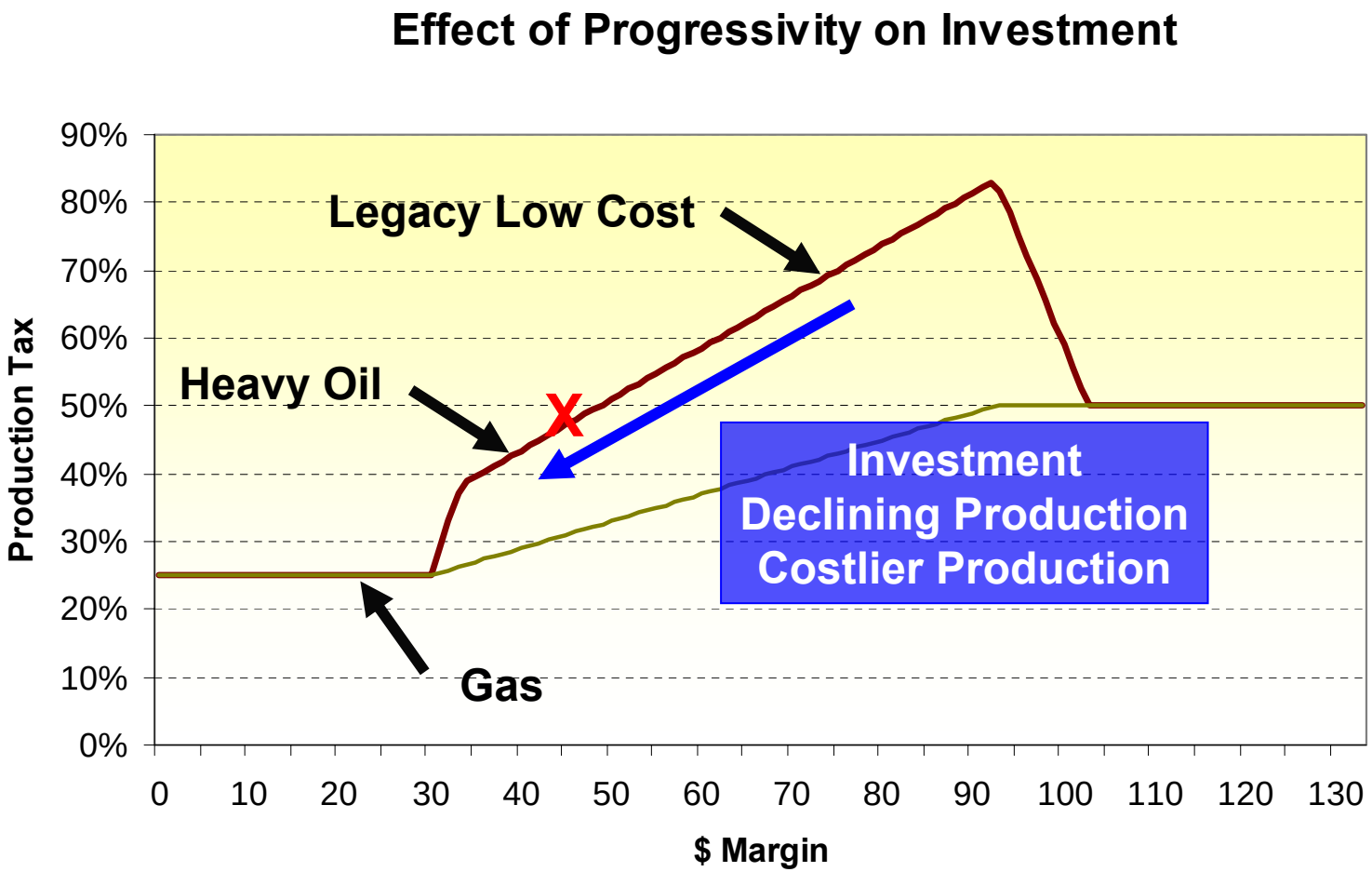
Taxpayer 'D' – High on the slope

- **$1000 net revenue @ a margin of $85/bbl**
  - Tax = $1000 x 47%
    Tax = $470
- **Now we invest $100 that takes our net revenue to $900 and our margin to $72/bbl**
  - Tax = $900 x 43.6%
  - Tax = $392
- **Production Tax savings due to the investment**
  - Tax Savings = ($470 – $392)/$100
  - Tax Savings = 78/100
  - New Marginal Tax Rate = 78%

‘C’ & ‘D’ New Marginal tax rate higher



Progressivity and Goals 1,2 & 3

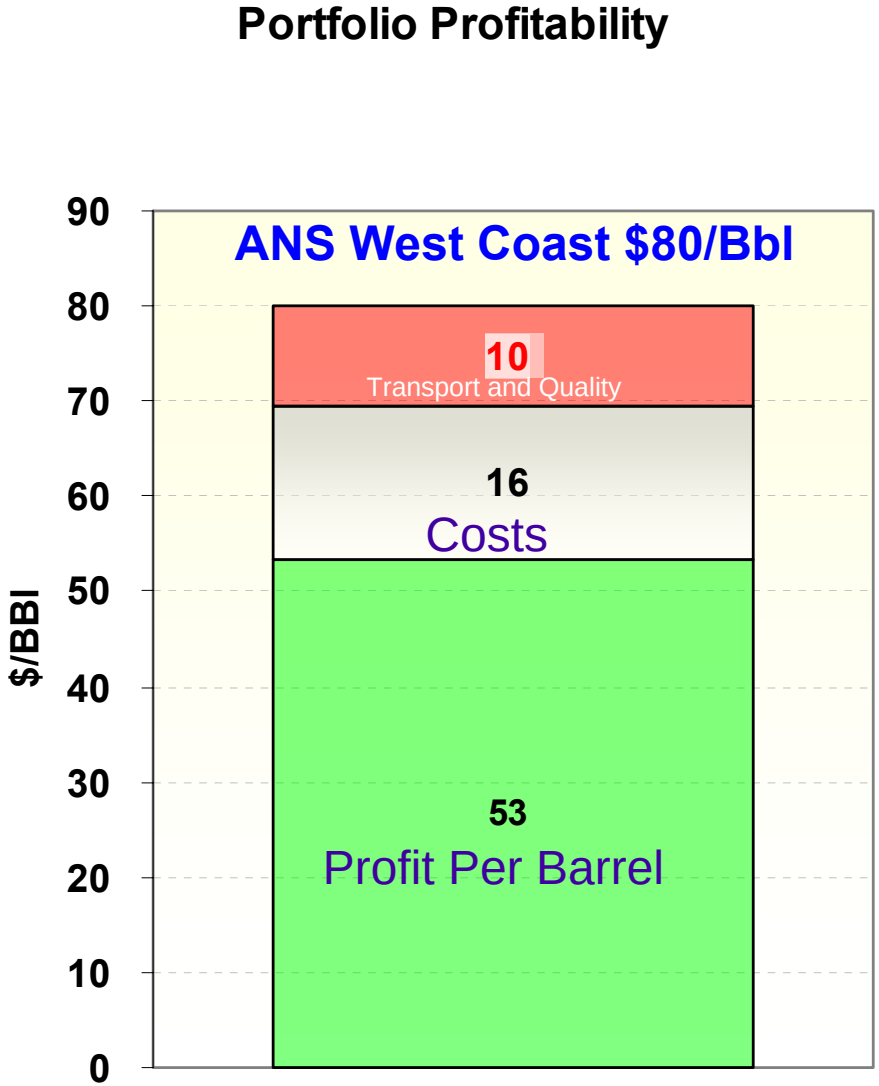


The Net Tax Structure

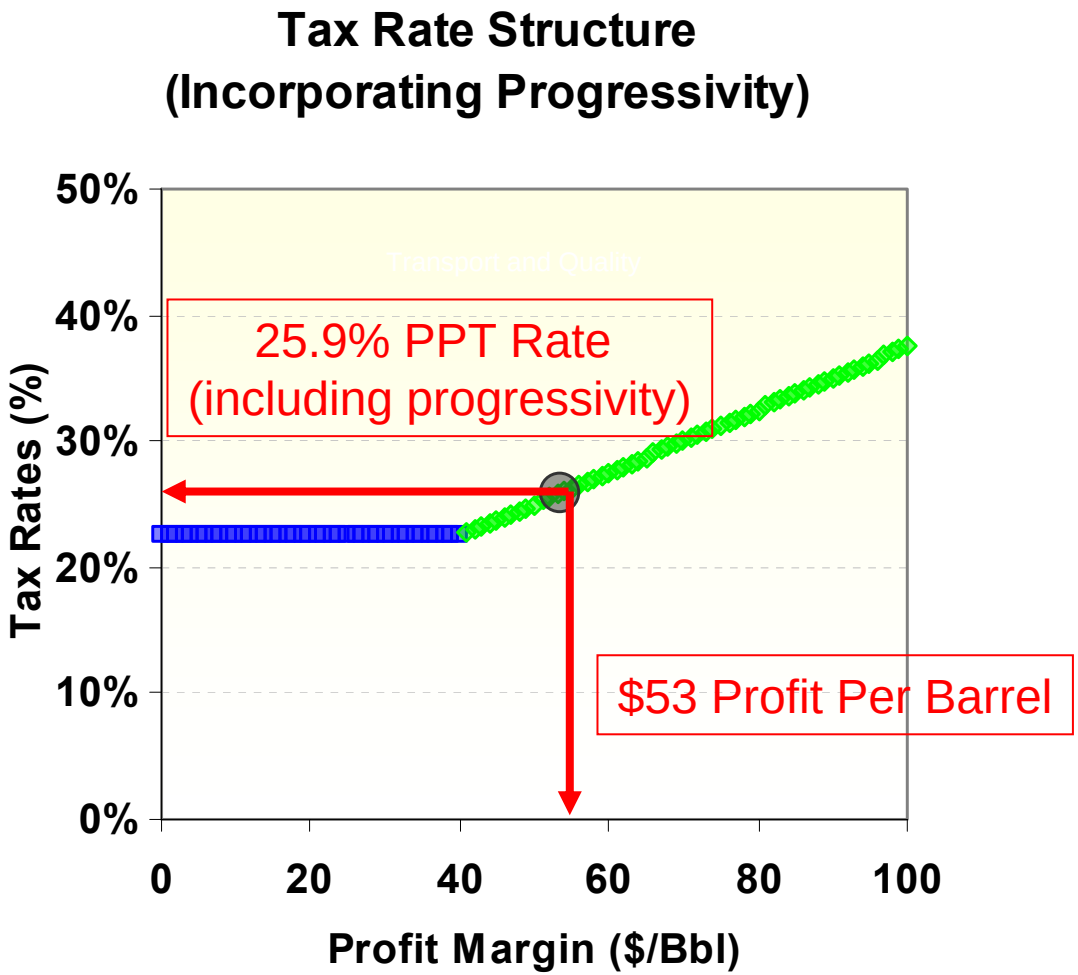
Net Tax Structure – “Headlines”

- Tax on net profits
- Contains progressivity feature that increases tax rate with increasing profitability per barrel
- Ringfenced so that profit per barrel reflects a company’s entire portfolio

Profitability As Typically Described



PPT - Based On $53/Bbl Profit …

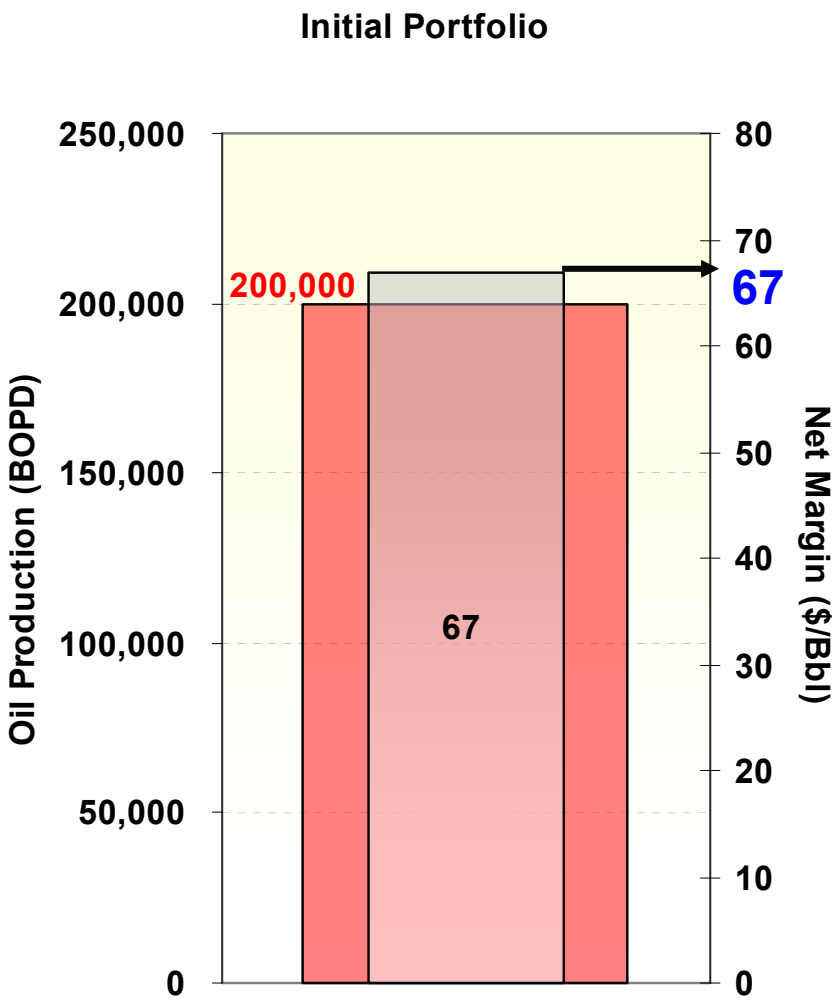


Misconception – Net Progressivity

- **"Net" taxes all fields at a single rate**
  - If only looking at the "headline" net tax rate, this would be the perception
  - In reality, when looking at the marginal impact of different parts of the portfolio, it taxes different fields or reservoirs at different rates
    - Based upon their individual profitability

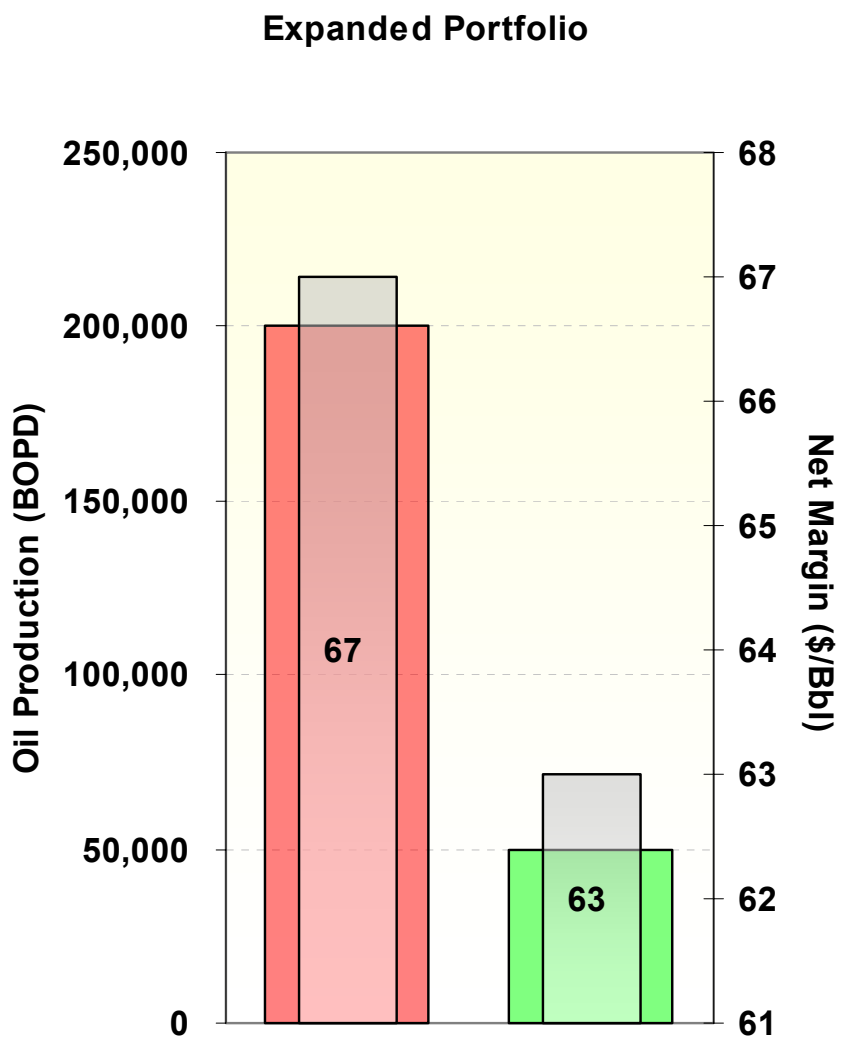
Understanding How "Net" Works

Start With A Single Asset



PPT Rate on this would be 29.25%

Now, Add Another Field



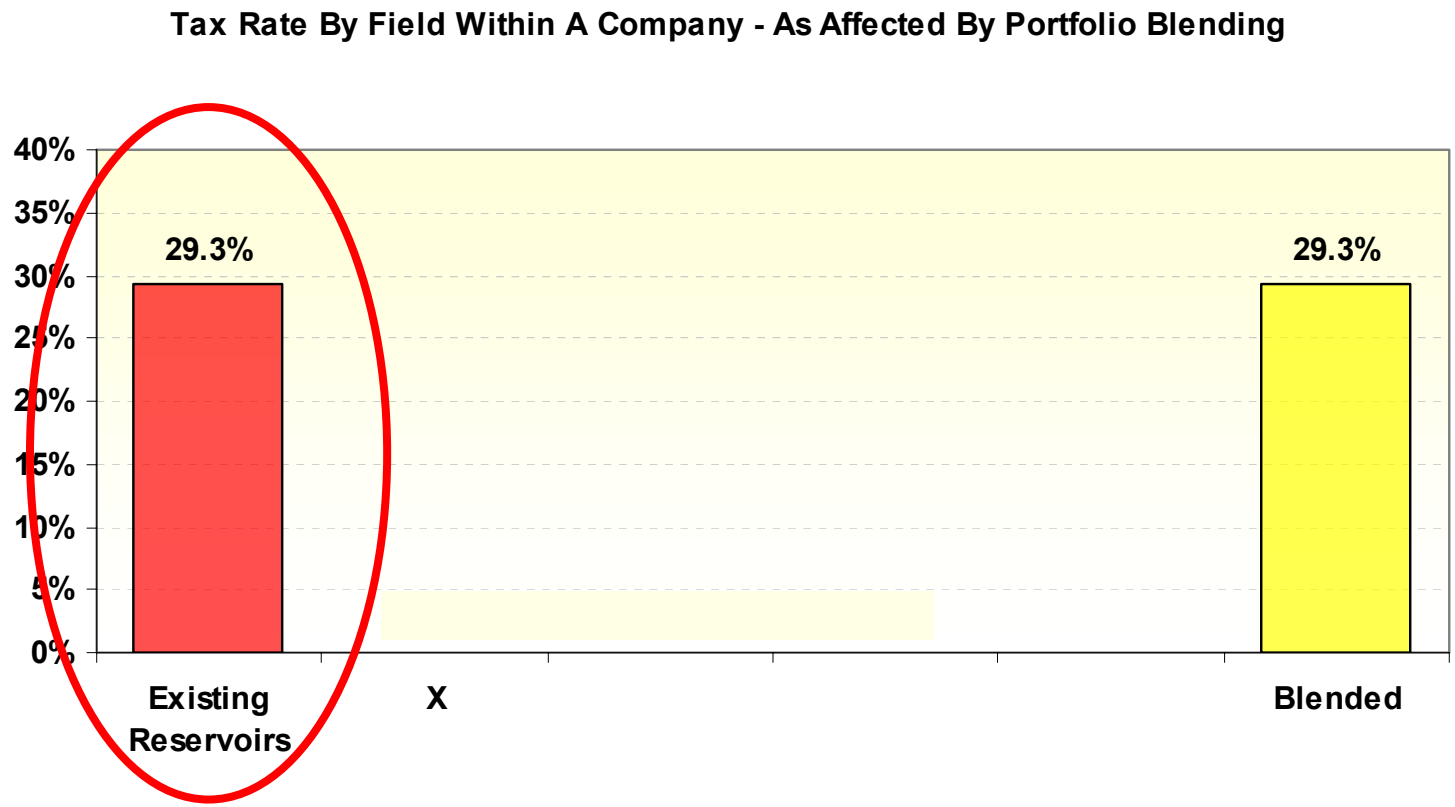
Average Net Margin on the expanded portfolio Is $66.20

PPT Rate on these fields Combined would be 29.1%

So, does this mean that I am paying 29.1% on each field ?

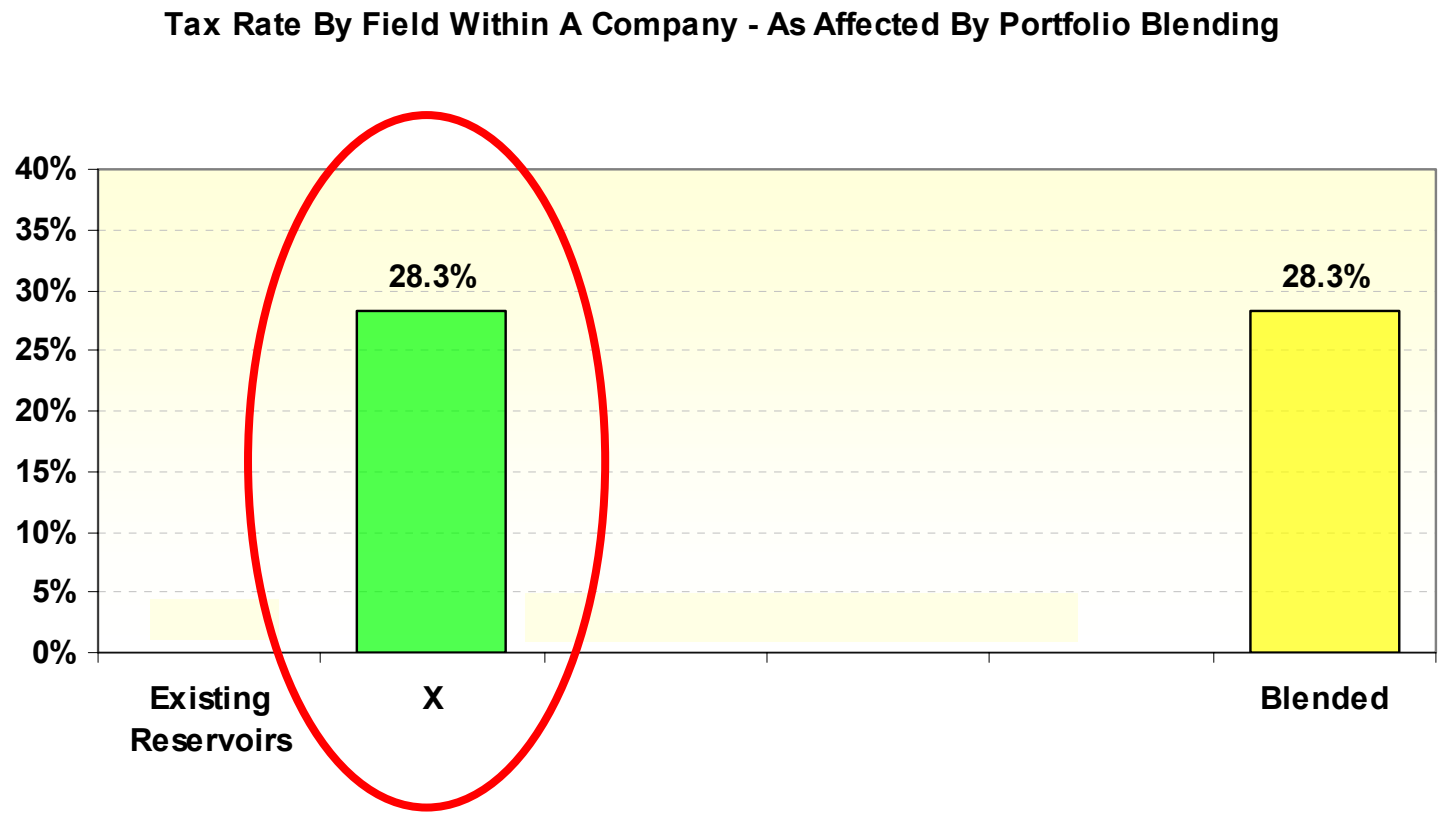
No ….

So, Does That Mean I Am Paying 29.1% On Each Field ?



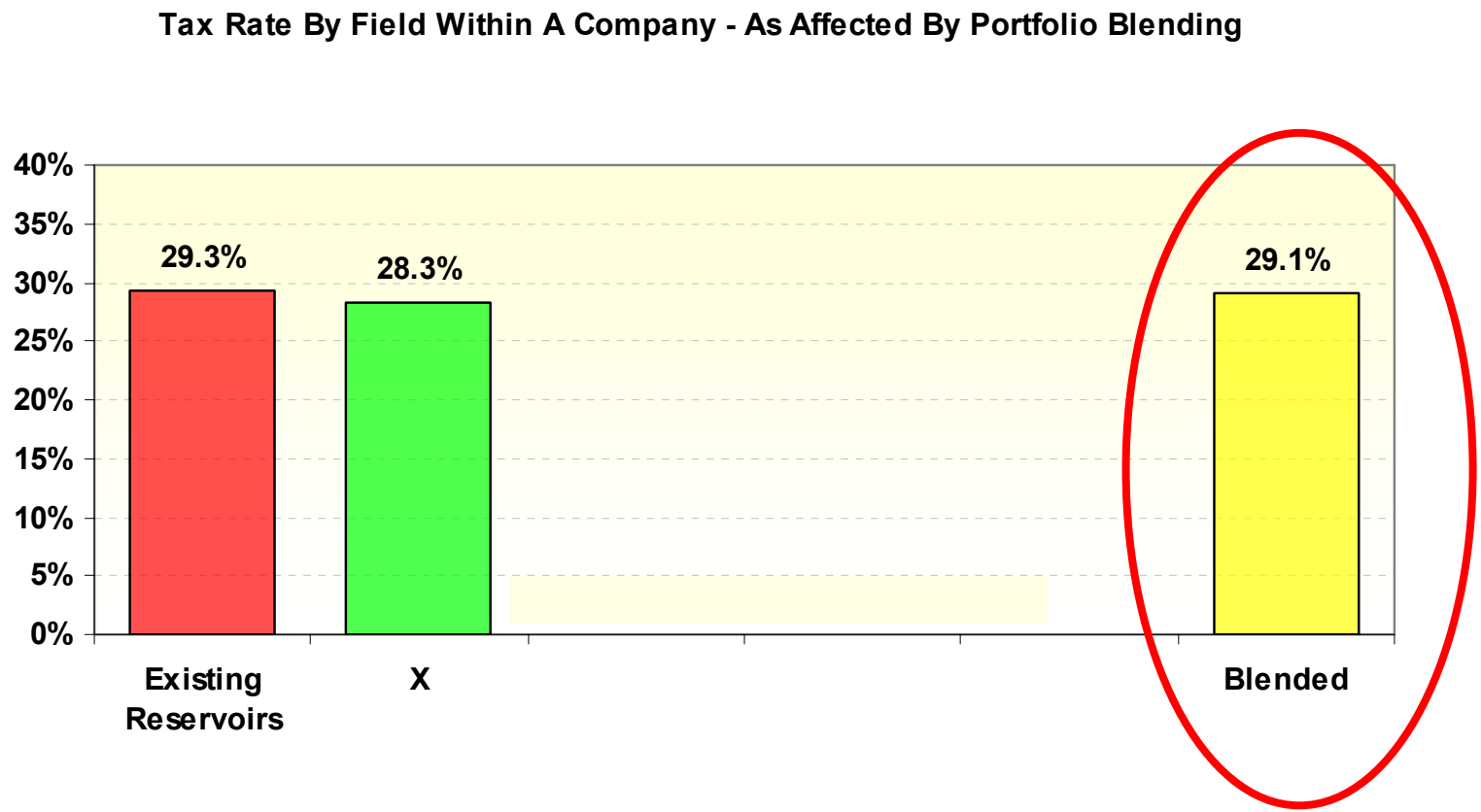
If I had just Existing Reservoirs, and did not develop anything new, I would pay tax on my profits at 29.3%

So, Does That Mean I Am Paying 29.1% On Each Field ?



If I had just Field X, I would pay tax on my profits at 28.3% - its margin is slightly lower

So, Does That Mean I Am Paying 29.1% On Each Field ?

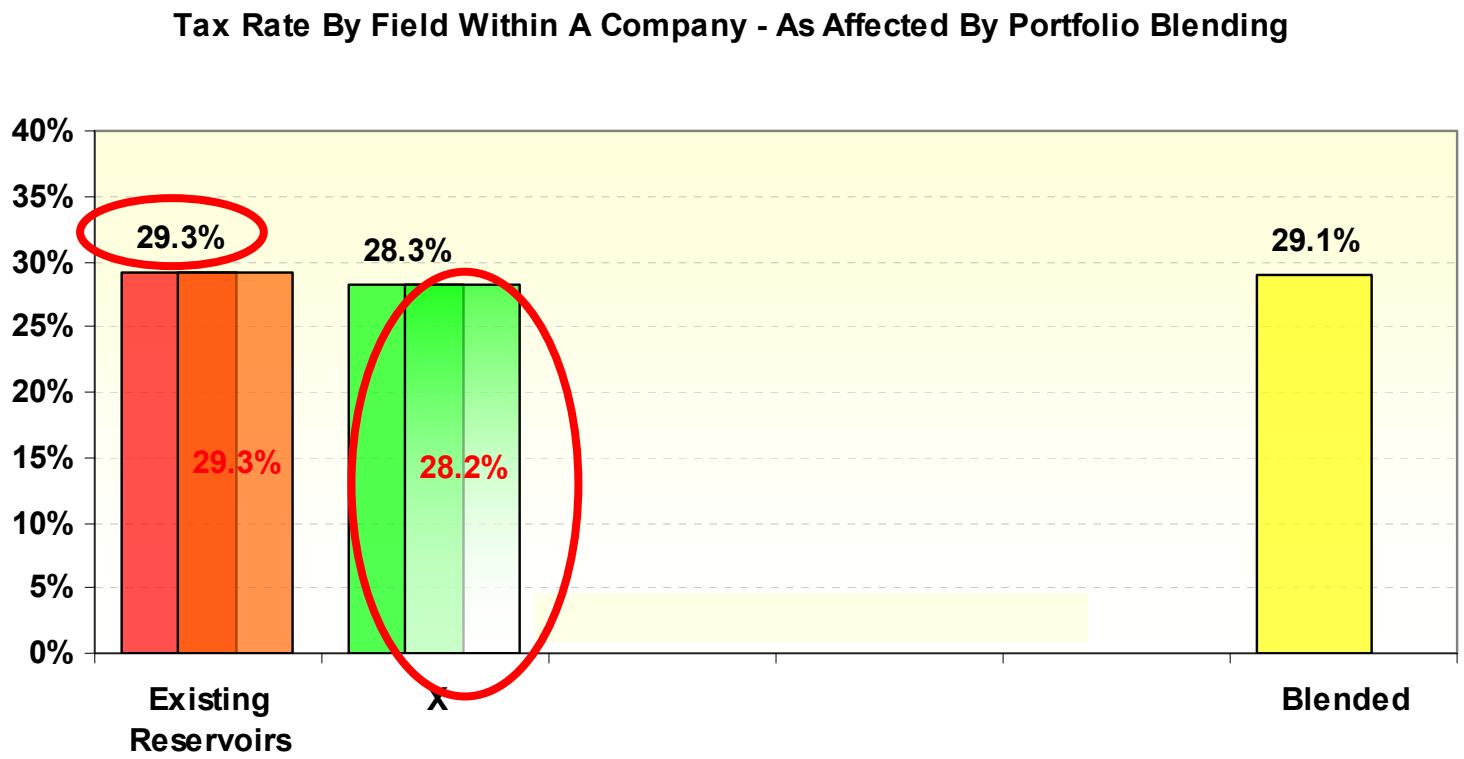


Both fields together, the rate is 29.1%

However, this does not tell the whole story .. .

The lower profitability field benefits from the progressivity structure

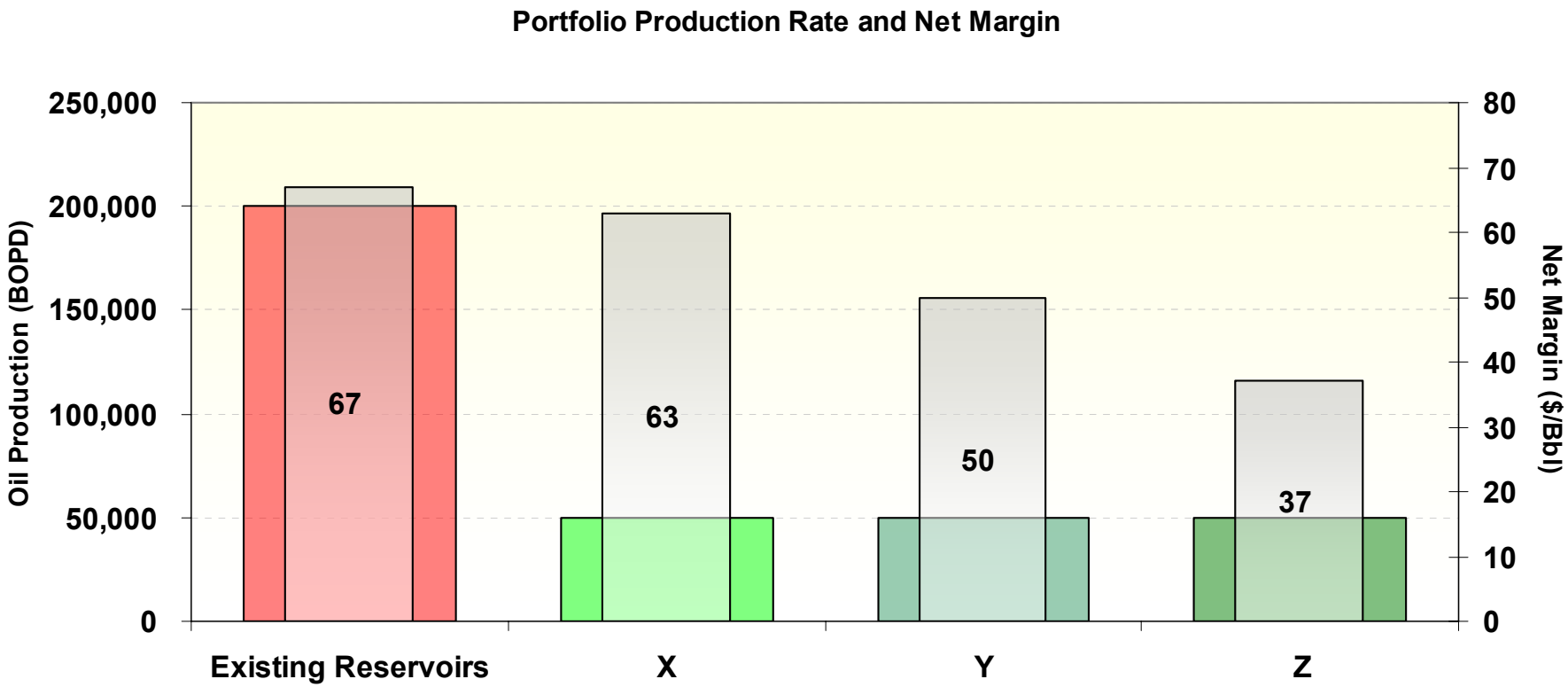
So, Does That Mean I Am Paying 29.1% On Each Field ?



The mathematics of this reduction means that actually while Existing Reservoirs continue to pay tax at a rate of 29.3%, The effective rate on Field X is actually 28.2% …. … less than it would be if it were developed stand-alone

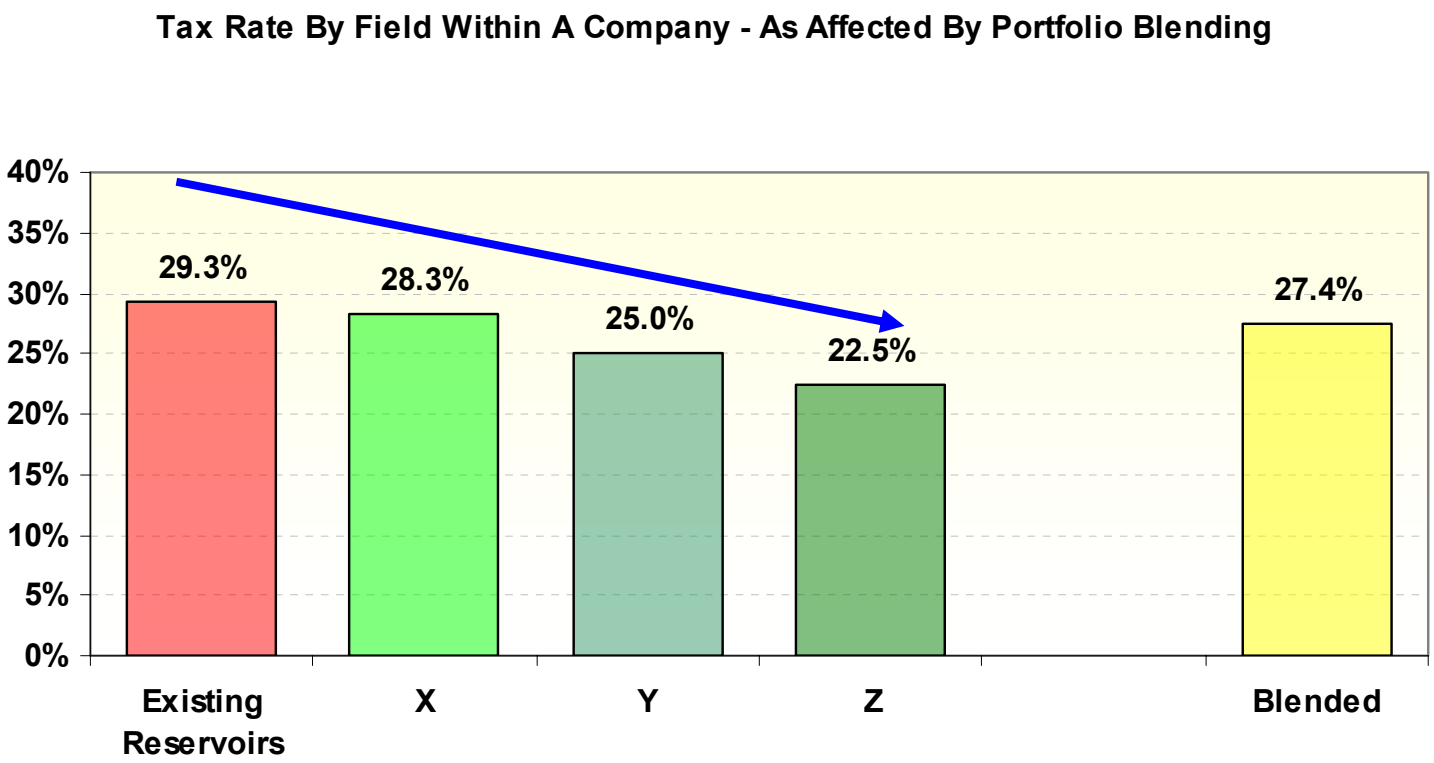
This Impact Can Be Seen Further In A Broader Portfolio

Consider A Portfolio Of 4 Fields



.. One producing 200,000 bopd and three others, each producing 50,000 bopd, and each of decreasing profitability

Tax rates if stand alone development

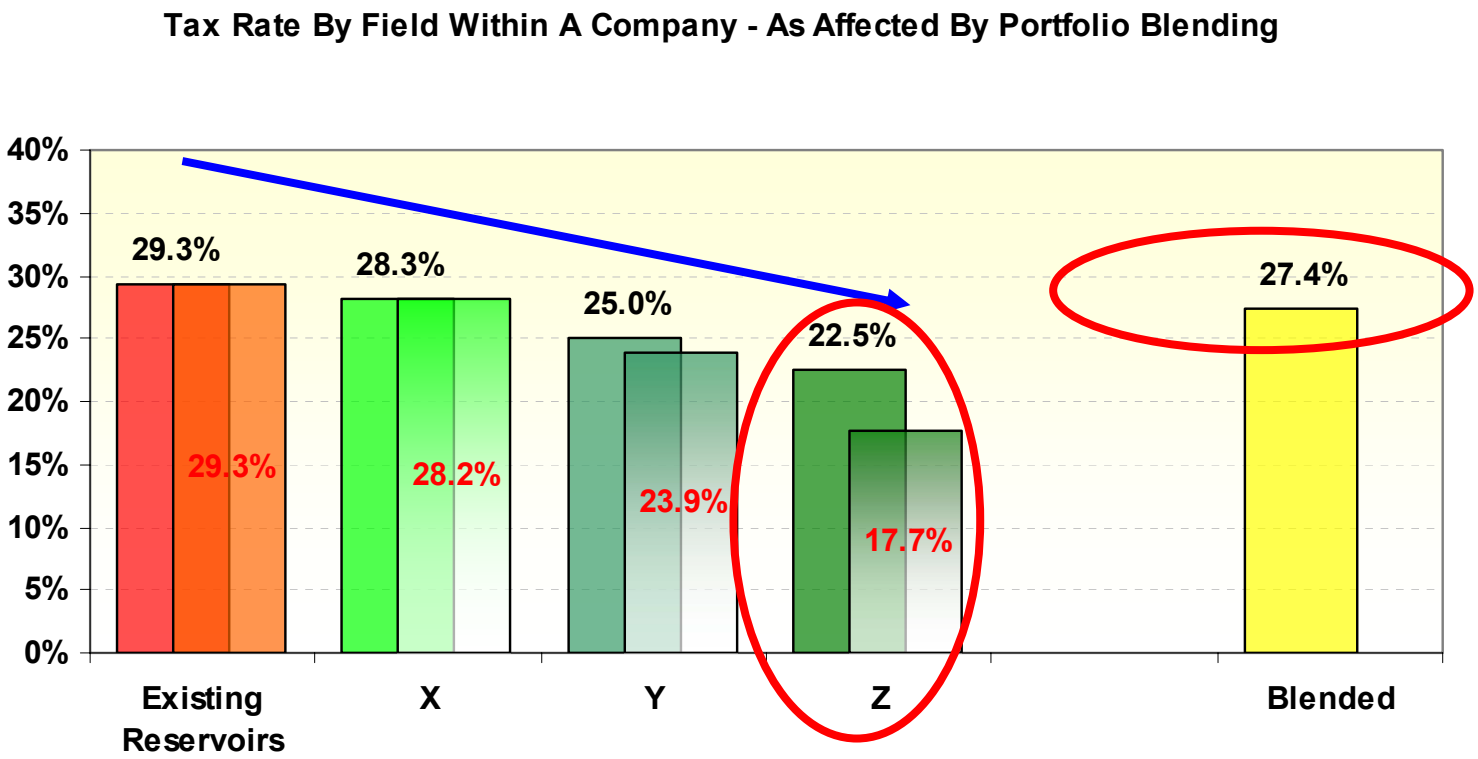


The progressivity can be seen through the lower tax rate on lower margin fields

The Least Profitable Field ..

… can actually have an effective rate below the basic rate

The Impact On The Lower Margin Fields Is More Noticeable



The effective rate on some lower-margin fields may even be lower than the basic rate (22.5% in PPT)

This is manifested in the blended rate being lower than the weighted average rate

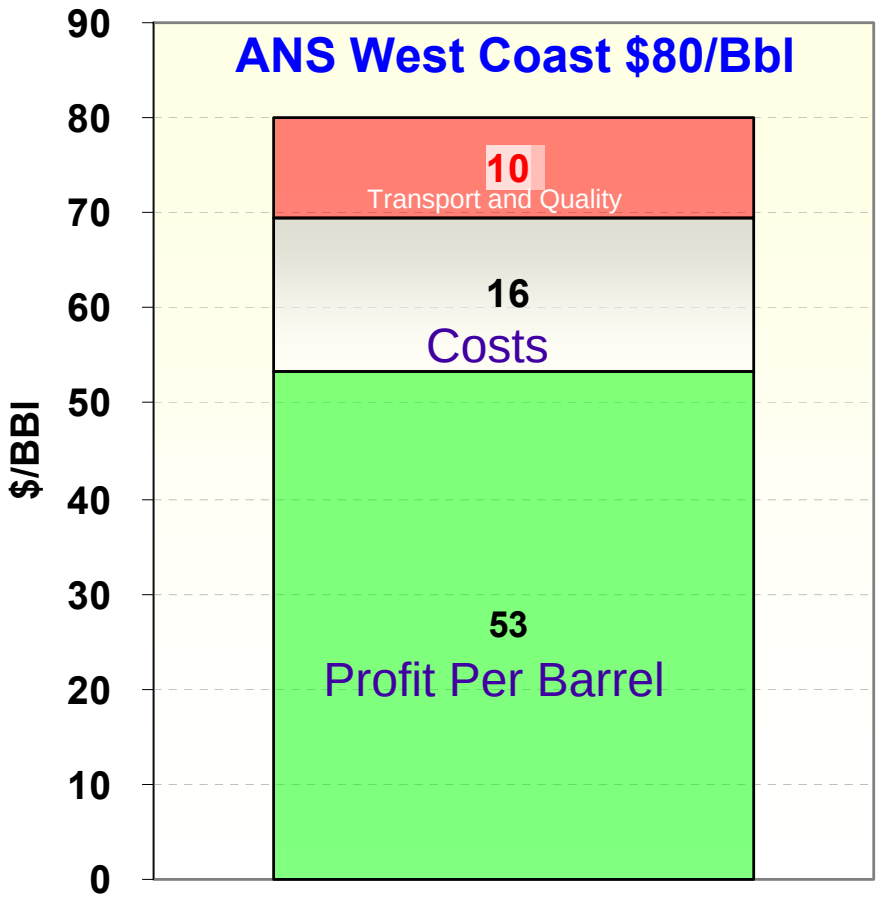
The Impact Of Capital Investment

How The Net Tax System Operates

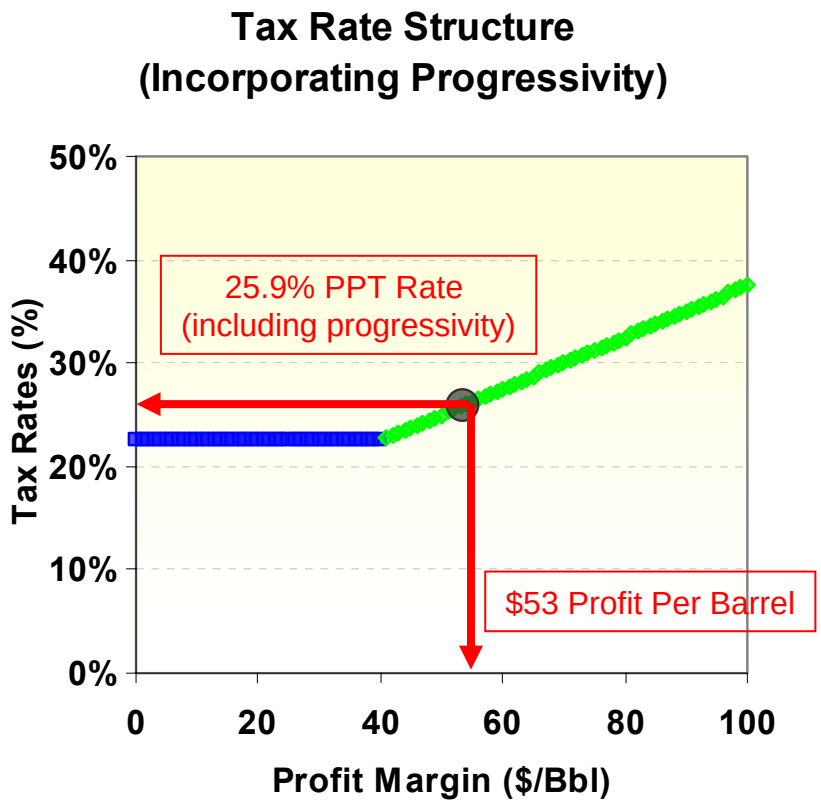
- **"Net" taxes all fields at a single rate**
  - If only looking at the "headline" net tax rate, this would be the perception
  - In reality, when looking at the marginal impact of different parts of the portfolio, it taxes different fields or reservoirs at different rates
    - Based upon their individual profitability
- **Further, it doesn't tax operating profits, but retained cash flow after reinvestment**

Remember These Slides ?

Portfolio Profitability



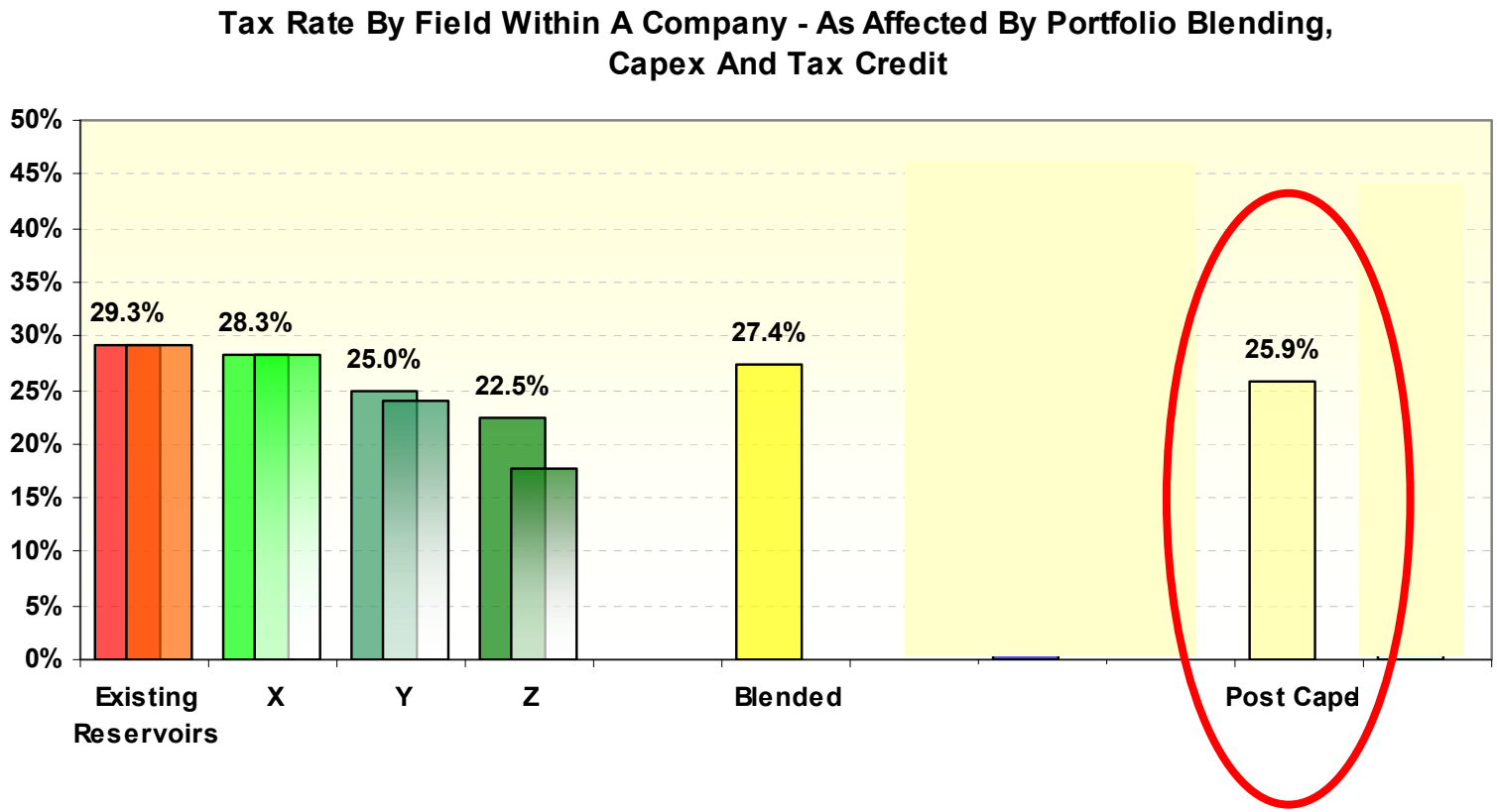
The portfolio in the previous slides had a blended rate of 27.4%, not 25.9% ….



Assume that 27.4% is the rate that will be payable before further capital investment decisions are made …

… in this example $800 million

Capital Spending Has An Impact On Rate, Too ….

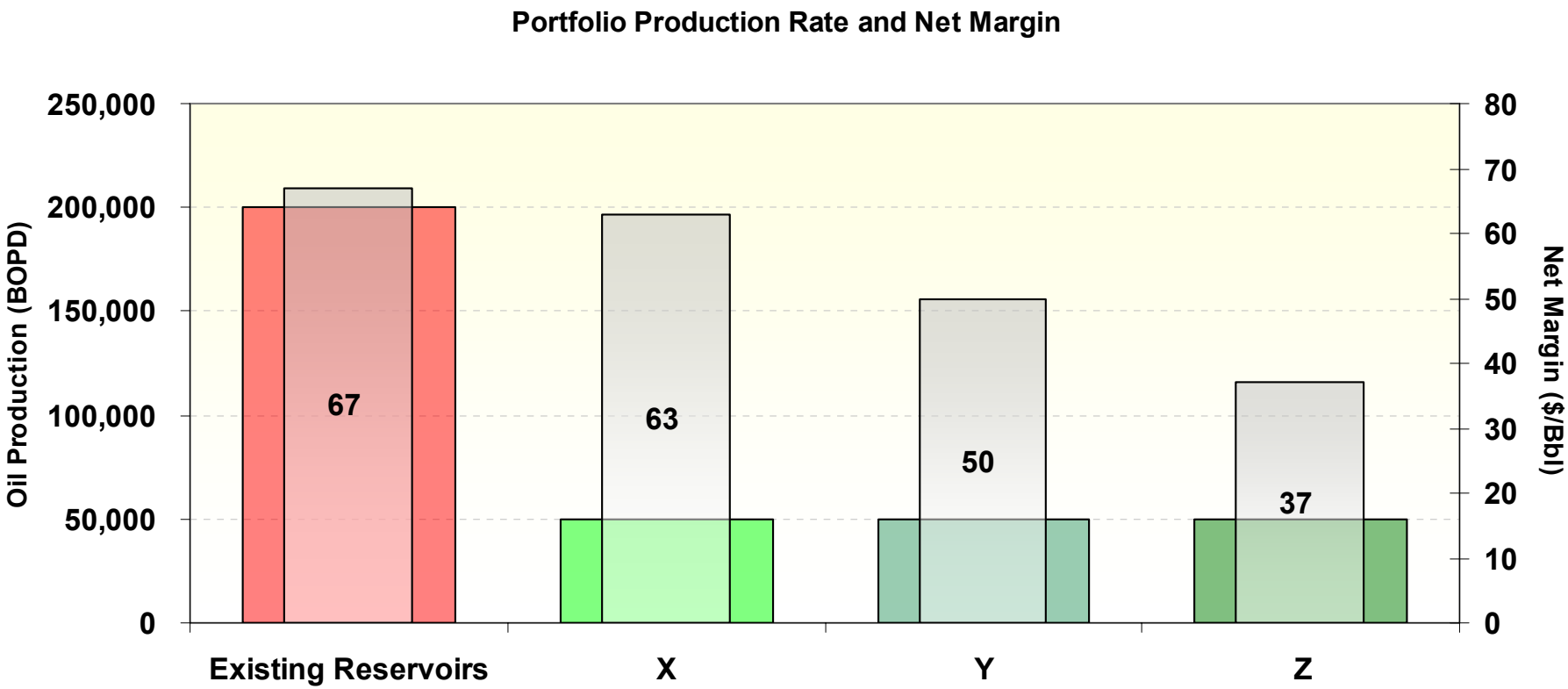


This reduces the rate payable from 27.4% to 25.9%

How ?

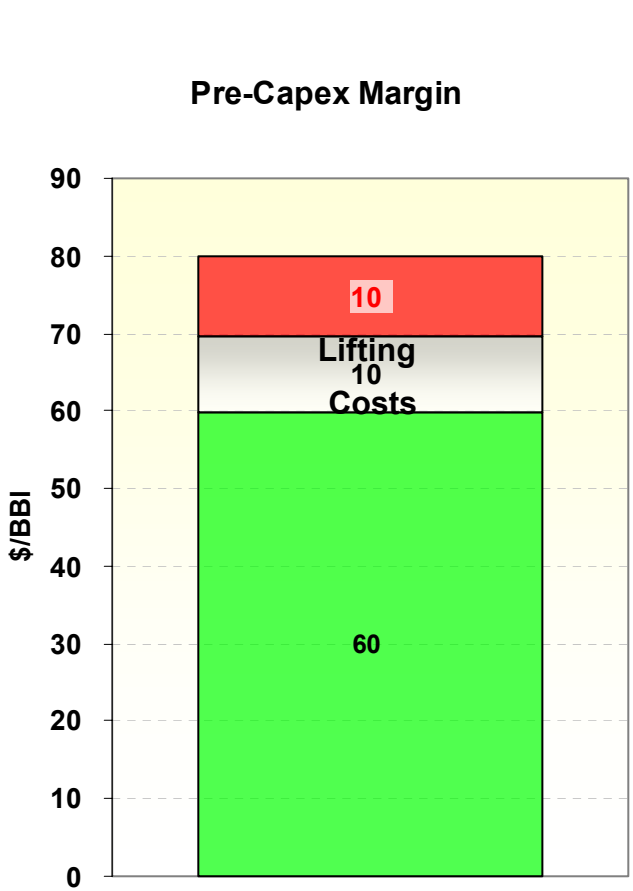
The Portfolio Produces 350,000 Bopd

this is 127.75 Million Barrels Per Year

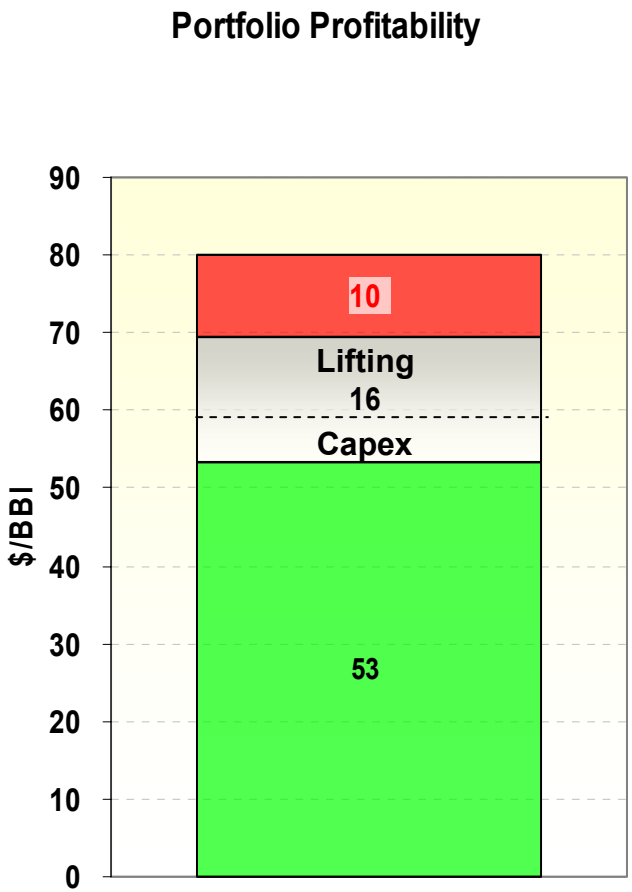


$800 million of capex is $6.26 per barrel of production at 350,000 Bopd (127.75 million barrels per year)

The $6.26 Per Barrel Capital Increases "Costs" And Lowers The Tax Rate



Tax Rate
27.4%

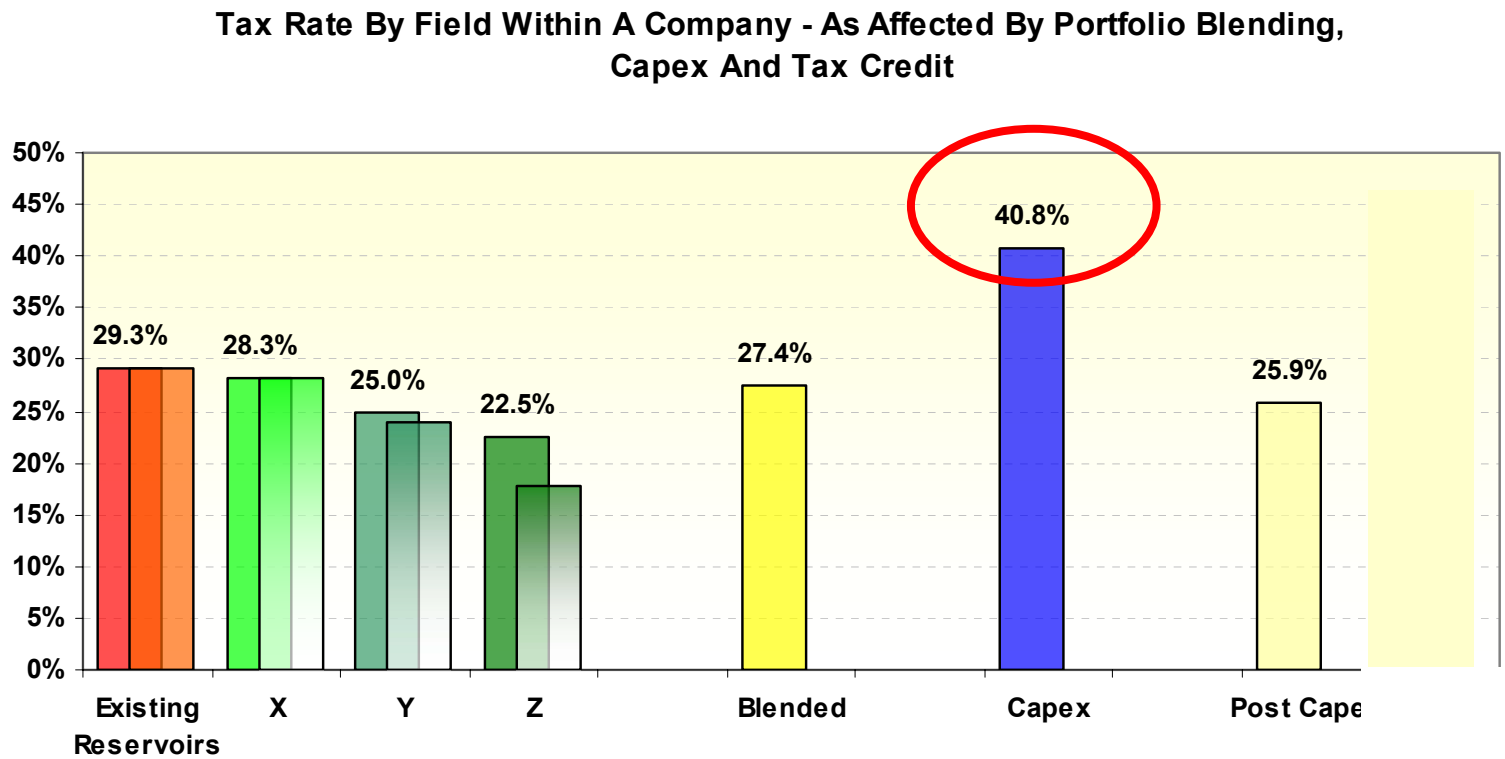


Tax Rate
25.9%

This Can Be looked At Differently Though …

… as a tax rebate on the capex

The Reduction In Tax Rate Lowers The Net Investment Cost To Companies

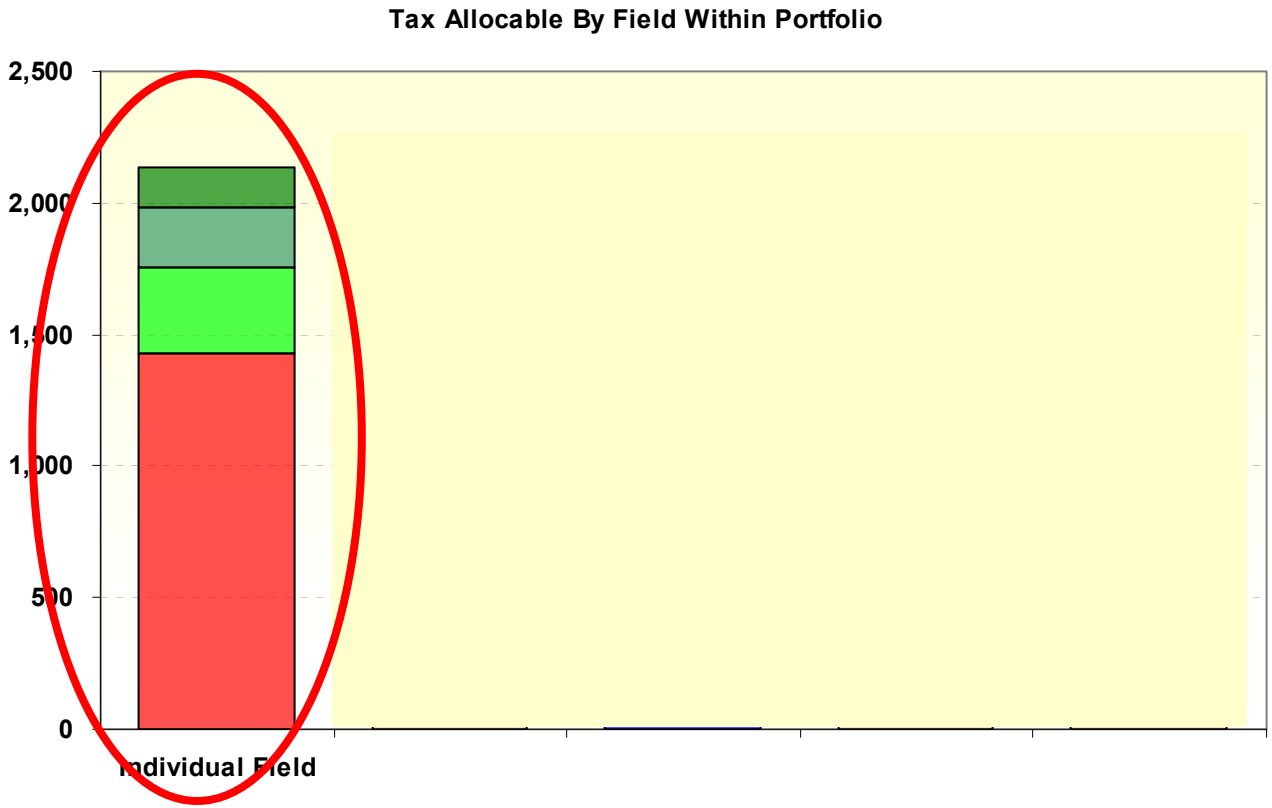


It is the same as still paying the blended rate of 27.4% on the portfolio production (or having an effective rate of 29.3% on Existing Reservoirs .. down to 17.7% on Field Z) and Alaska paying* 40.8% of that $800 million capital

This 40.8% is higher than the Blended tax rate … and is a function of the capex per barrel and the overall portfolio cost and margin structure

* from PPT only – does not include State and Federal tax effects

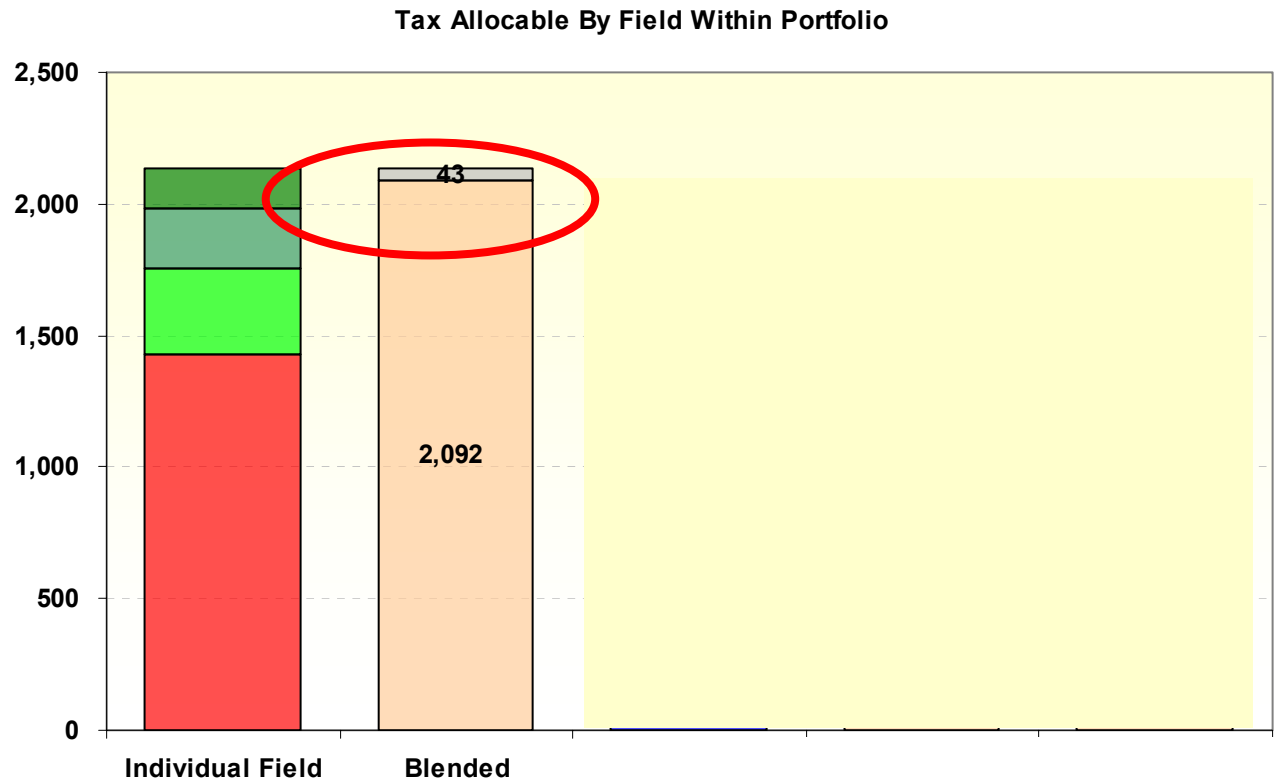
Look At The Tax System Through The Amount Of Tax Payable …



As individual fields, and at these assumed oil prices and costs, this portfolio would pay $2,135 million in PPT

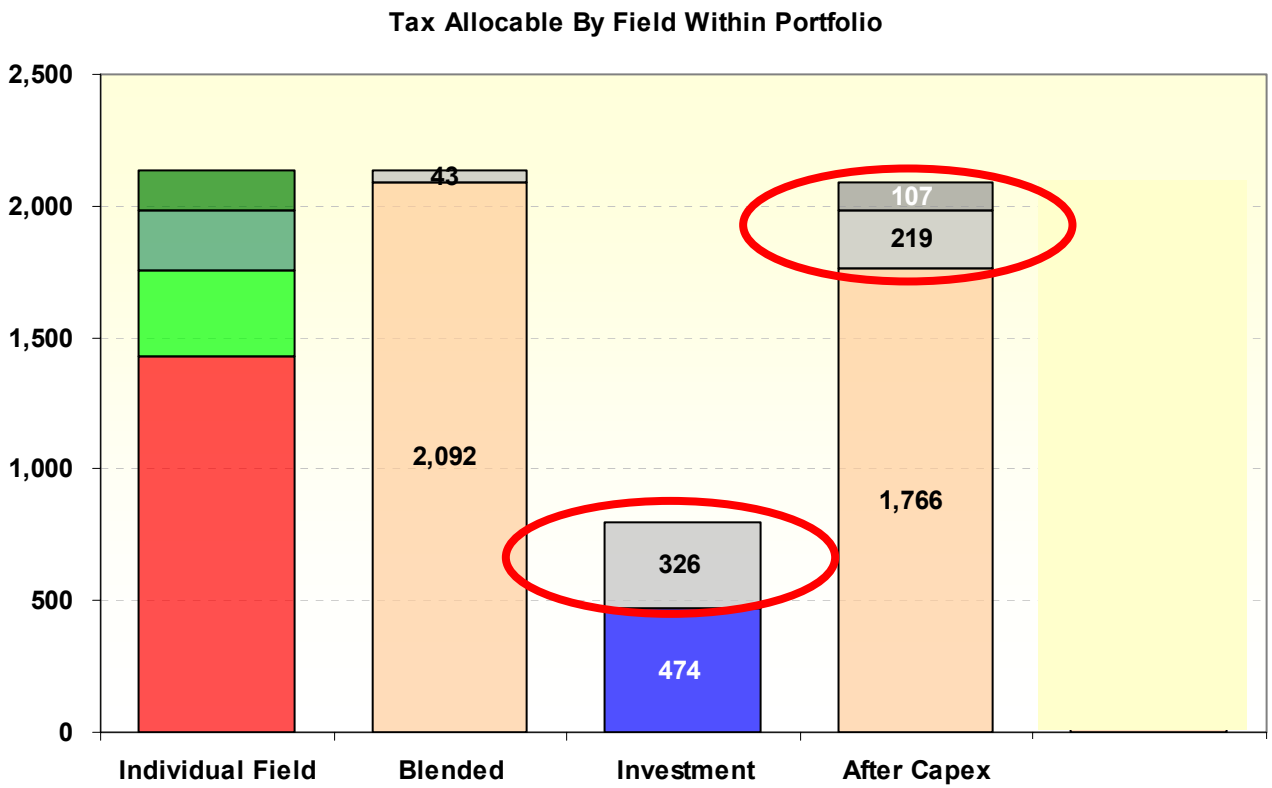
* from PPT only – does not include State and Federal tax effects

Portfolio Effects Lower Total Tax



Putting all fields in one portfolio (company) lowers this to $2,092 million … a saving of $ 43 million

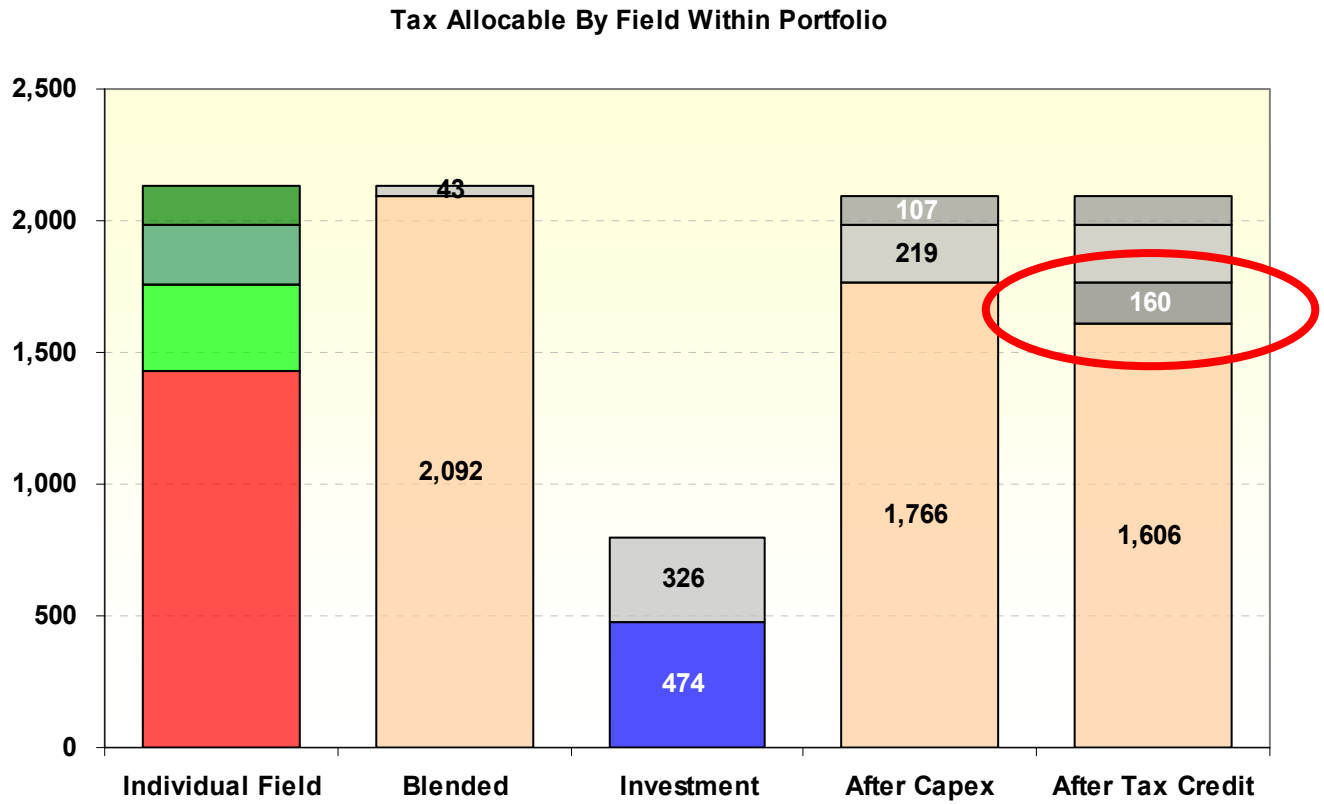
The Big Winner Though Is Capex



In this example the State pays $326 million (40.8%) of the capital (the percentage will vary based on overall portfolio net margin per barrel) The $326 million can be allocated as $219 million from reducing taxable income at 27.4% and $107 million from lowering the rate from 27.4% to 25.9%

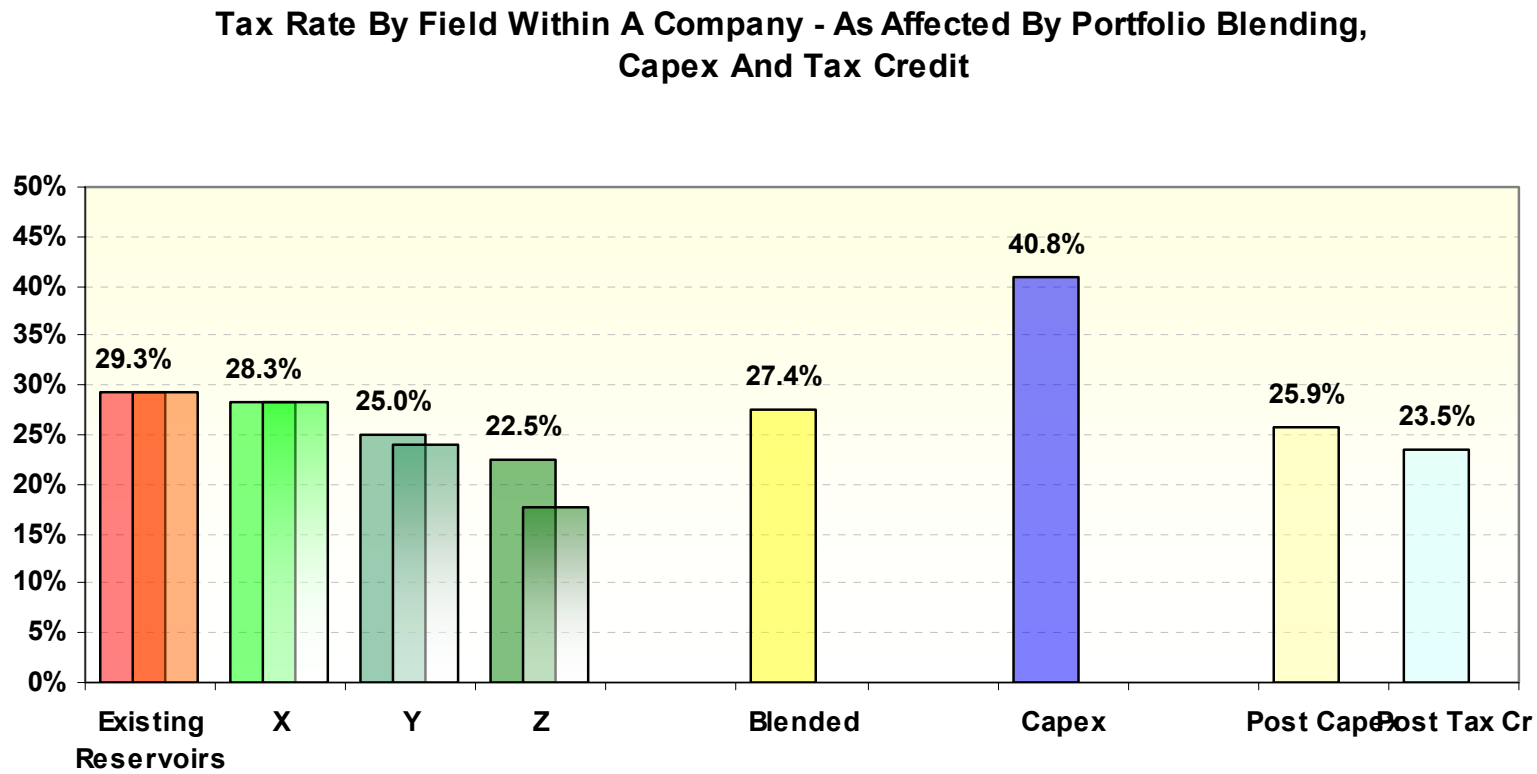
But Wait ! That Is Not All ….

Investment Credits Also Apply ..



Investment Credits Take a further $160 million (20% of $800 million) from the tax payable

After Investment Credits …



… has the effect of lowering the tax rate further, to 23.5%*

(note: the tax rate is not actually lowered, but this is the mathematical effect)

* In this example

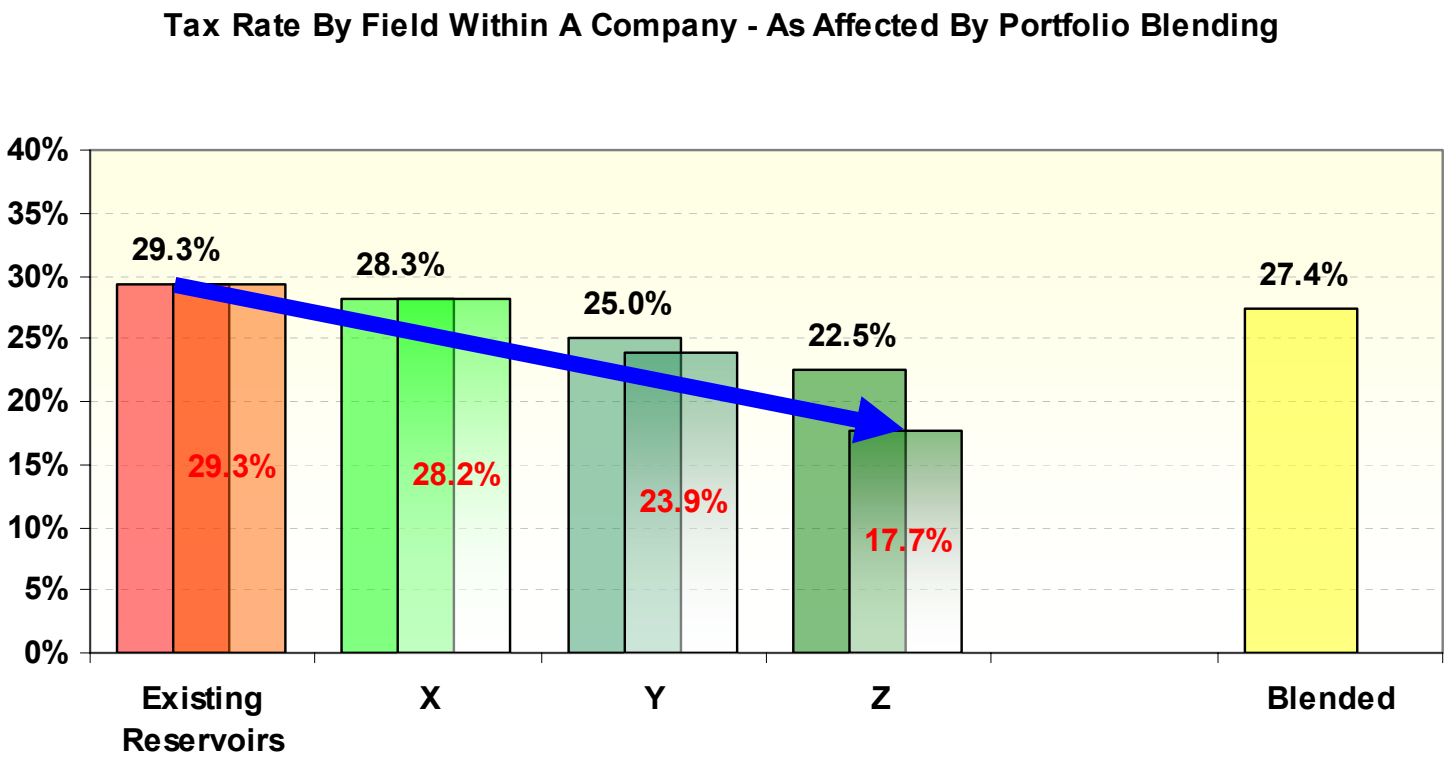
Tax Structure As Applied Under Various Structures

PPT
ACES
Senate Judiciary

Progressivity

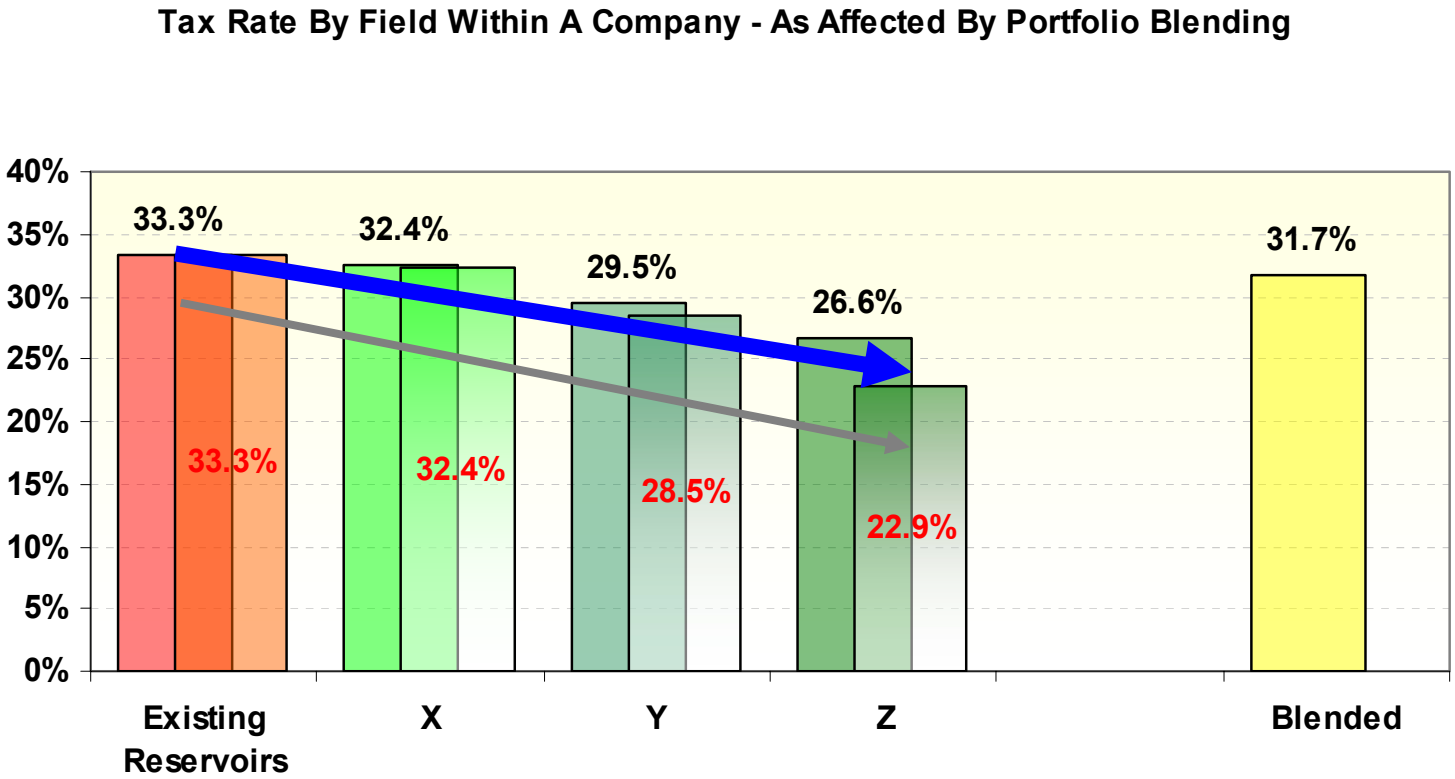
- **PPT**
  - Basic rate of 22.5%
  - Tax rate increases 0.25% for every dollar that net cash flow per barrel exceeds $40
- **ACES**
  - Basic rate of 25%
  - Tax rate increases 0.2% for every dollar that net cash flow per barrel exceeds $30
- **Senate Judiciary**
  - Basic rate of 25%
  - Tax rate increases 0.4% for every dollar that net cash flow per barrel exceeds $30

PPT Progressivity



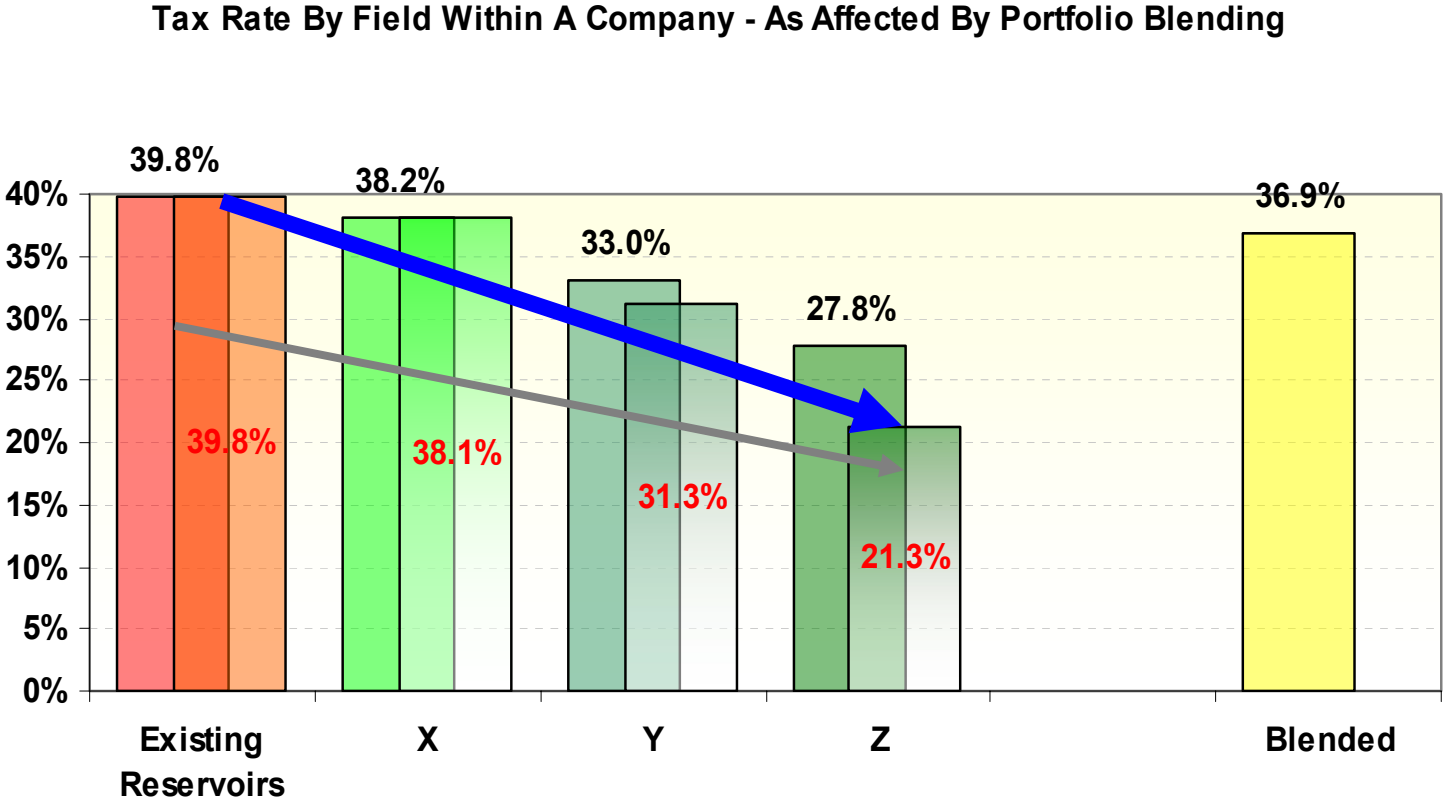
The progressivity can be seen through the lower effective tax rate on lower margin fields

ACES Progressivity



The progressivity feature is maintained, although ACES has a higher base rate (25% compared to PPT 22.5%) and a shallower progressivity (0.2% compared to 0.25%), starting $10 earlier ($30 rather than $40 net cash flow per barrel)

Senate Judiciary Progressivity



The Senate Judiciary CS starts at the same point as ACES, but has a progressivity of 0.4%, rather than 0.2%
As a result, while this results in an overall larger take, the less profitable field in this example actually benefits from a lower rate

Conclusions

- A net tax on the "profit margin" is actually a tax on a company's retained cash flow and not just a tax on simple profitability

- The progressive feature in PPT, in ACES, and in the Senate Judiciary CS allows fields of different profitability within the same company to have different effective tax rates

- More aggressive net progressivity provides a greater differentiation on the effective rate

Actual Prudhoe Results

Where is the tipping point?

- **Quite legitimately several legislators have asked how far (increasing taxes) is just right and how far is too far?**
  - The companies, for obvious reasons, have passed on the opportunity to describe in numerical terms what impact a change in Alaska taxes will have
    - Decision making process has many factors
    - Worldwide better rock trumps fiscal systems
    - Appears the majority of capital spending of the major Alaskan oil companies is in regimes with higher government take
  - All consultants acknowledged that taxes are but one of many factors that control decision making, and cannot say with certainty what tax rate is just right

Testing the Tipping Point

- **Industry testimony to previous committees paints a fairly clear picture of one very important aspect of North Slope operations**
  - AOGA letter which reflects "the full consensus of the members of the AOGA Tax Committee, with no dissent"
  - BP's very detailed presentation on Prudhoe Bay area
  - Conoco's useful insight on project economics
  - And other information supplied by Anadarko, Chevron, Exxon and Pioneer.
- **Details presented were then double checked against annual reports, SEC filings, analyst presentations and other company press releases where available**

Overall Observations

- **Based on the testimony and presentations from industry GCA believes:**
  - There is significant upside in terms of barrels of oil to be produced by investing to reduce the natural field decline rate in the major North Slope fields
  - The economics of reinvestment in existing producing assets on the North Slope are extremely profitable
    - Evaluated with actual costs, production and prices as reported by BP
    - Profitable even when tested against various stress points

AOGA Testimony to the House

In discussing the merits of HB 2001 versus PPT and the Administration's concerns, we must always keep in mind the real-world situation that Alaska faces. The greatest challenge that confronts this generation of Alaskans and the next is the ongoing decline of oil production, which has been, is today, and promises to remain the cornerstone of the finances of state government.

- **The fiscal system chosen must recognize the current and near-term importance of improving production from existing assets.**

AOGA Testimony – Recent Success

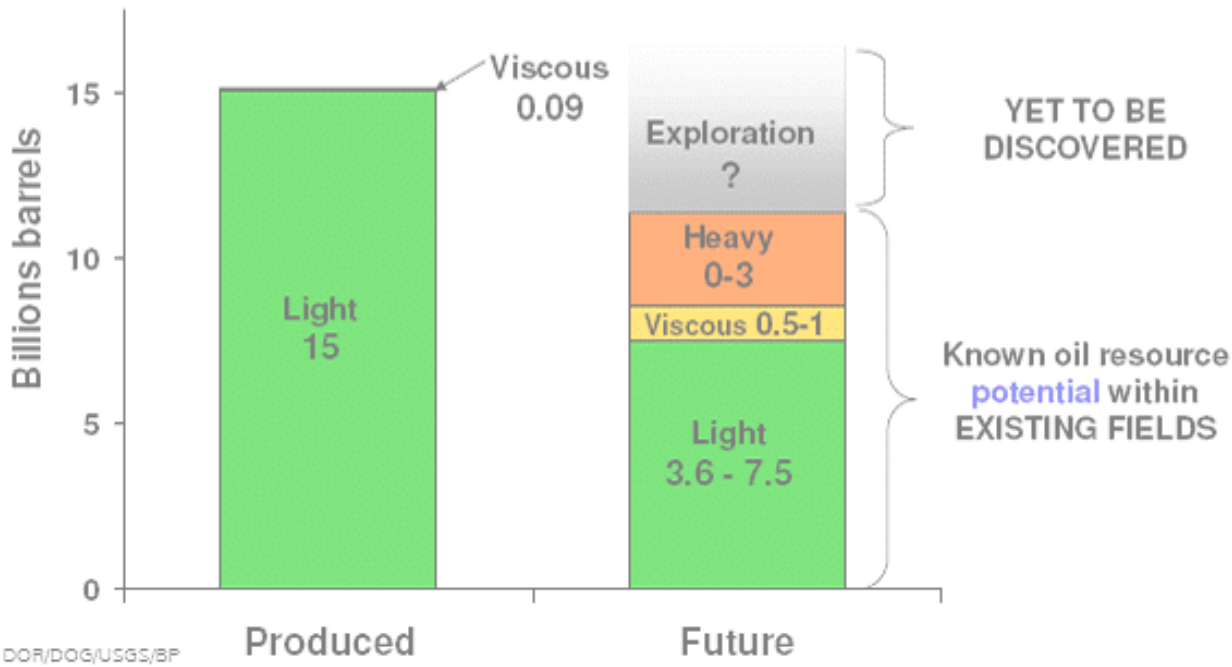
This gets us to investment in currently producing fields. Fortunately, there are investments that can be made, and are being made, in these fields to slow their decline. In the short term, this is in-fill drilling — that is, drilling new wells into the portions of a reservoir that are between the wells that have already been drilled. This accelerates the drainage of oil from the rock that currently lies in between existing wells. In-fill drilling last year contributed some 70,000 barrels a day to production from the Prudhoe Bay field. To put this into perspective, a 70,000 barrel per day field would be the 4th largest stand-alone field on the North Slope today.

- **AOGA, with the 100% backing of their member organization touted the importance of infill drilling along with its success**
- **Additional production of 70,000 bopd was achieved with the 2006 infill drilling program.**

Potential infill upside

The future of North Slope oil still tied to existing fields

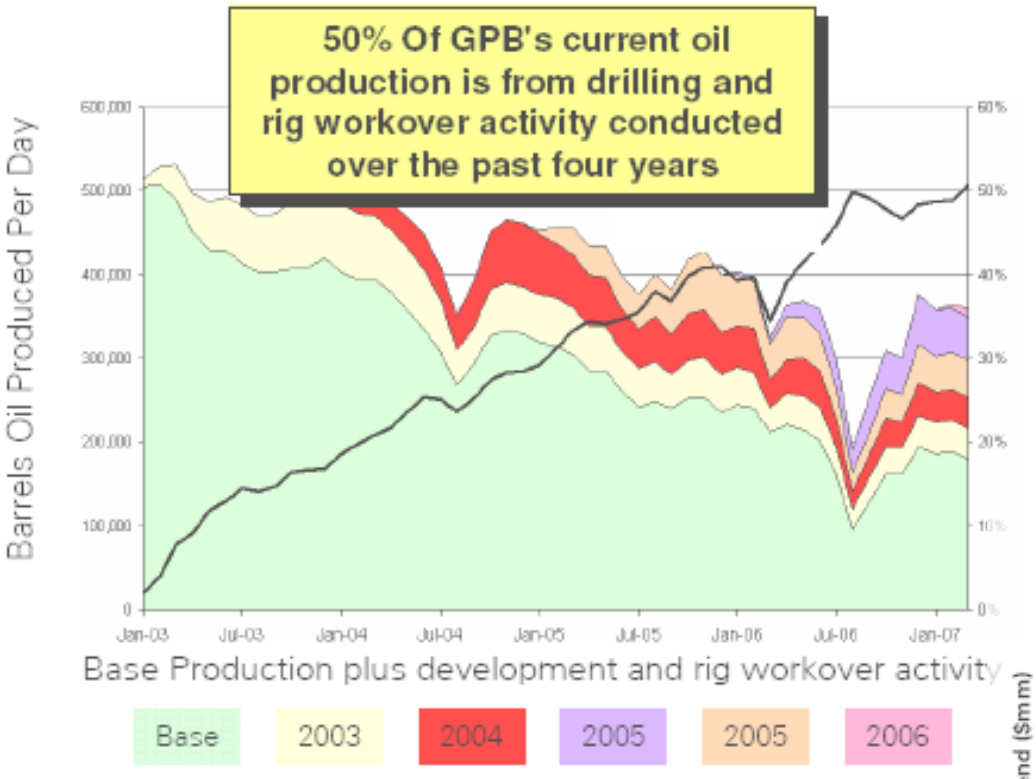
Sustained investment in light oil development is critical to developing heavy oil and new fields

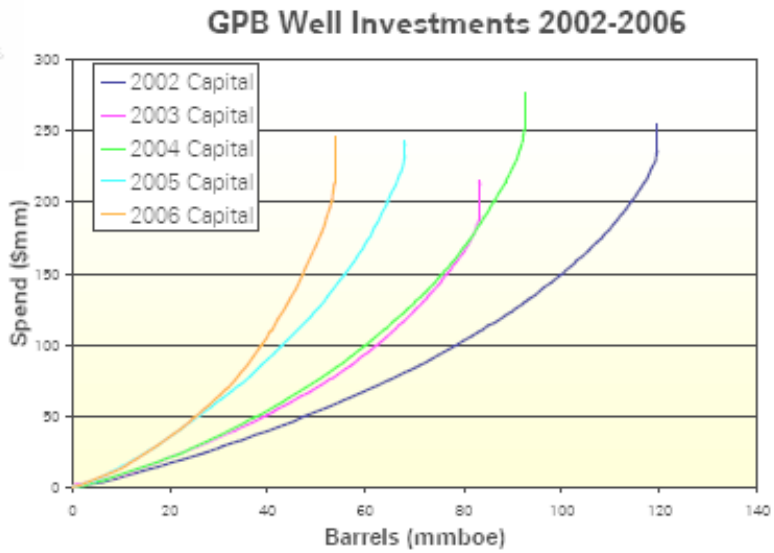


Source: DOR/DOG/USGS/BP

- **BP noted that light oil represented as much as 7.5 Bn bbls out of a total of 11.5 Bn bbls**
- **Light oil ~ 70% of the identified potential**

Prudhoe Bay infill drilling results





BP House testimony page 12

Costlier Development

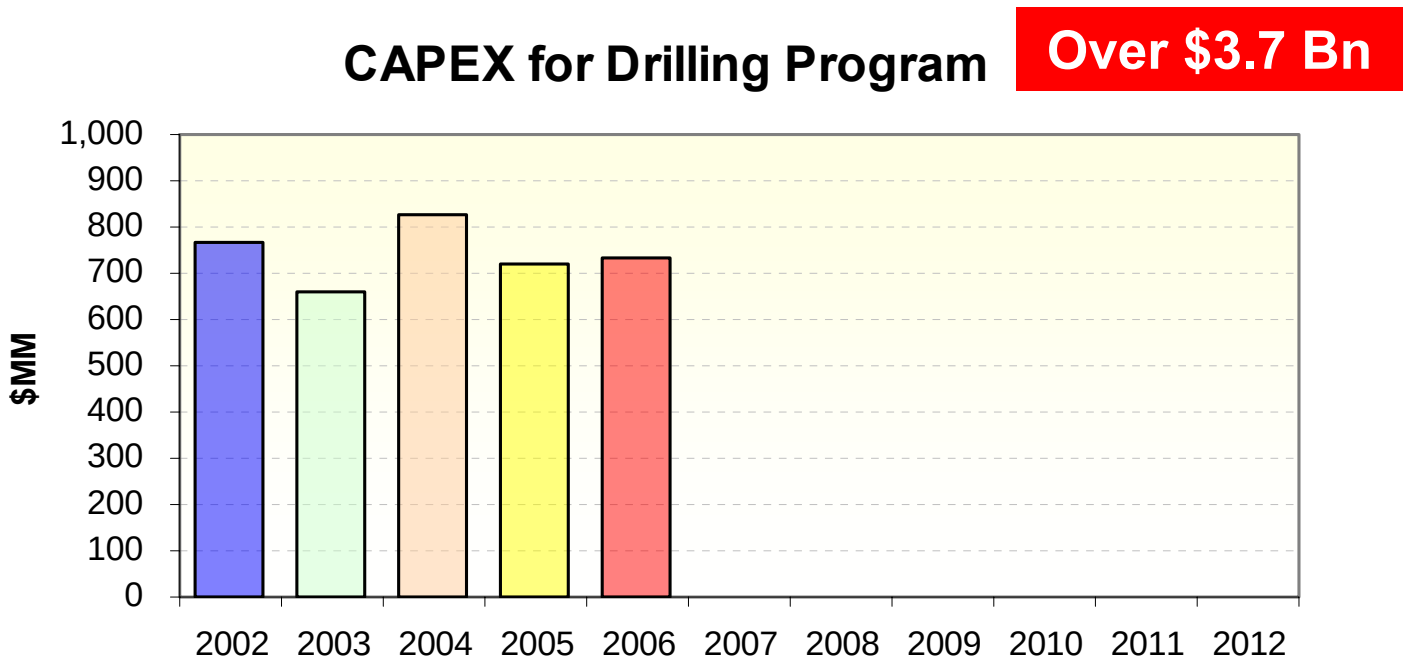
- **It is getting more expensive to develop a barrel of reserves (BP Infill program)**

	2002	2003	2004	2005	2006
Capex	255	220	275	240	245
MMbls	120	90	80	60	50
$/bbl	2.13	2.44	3.44	4.00	4.90

- **Contrast the above per barrel F&D costs with:**
  - $2 or less CAPEX for Prudhoe and Kuparuk to date
    - $19bn to produce 9.5 bn bbls
  - The P/K upside at $3.5(15%), $7.7 (6%), $12 (3%)
  - Pioneer's view of average F&D for Lower-48 of $14

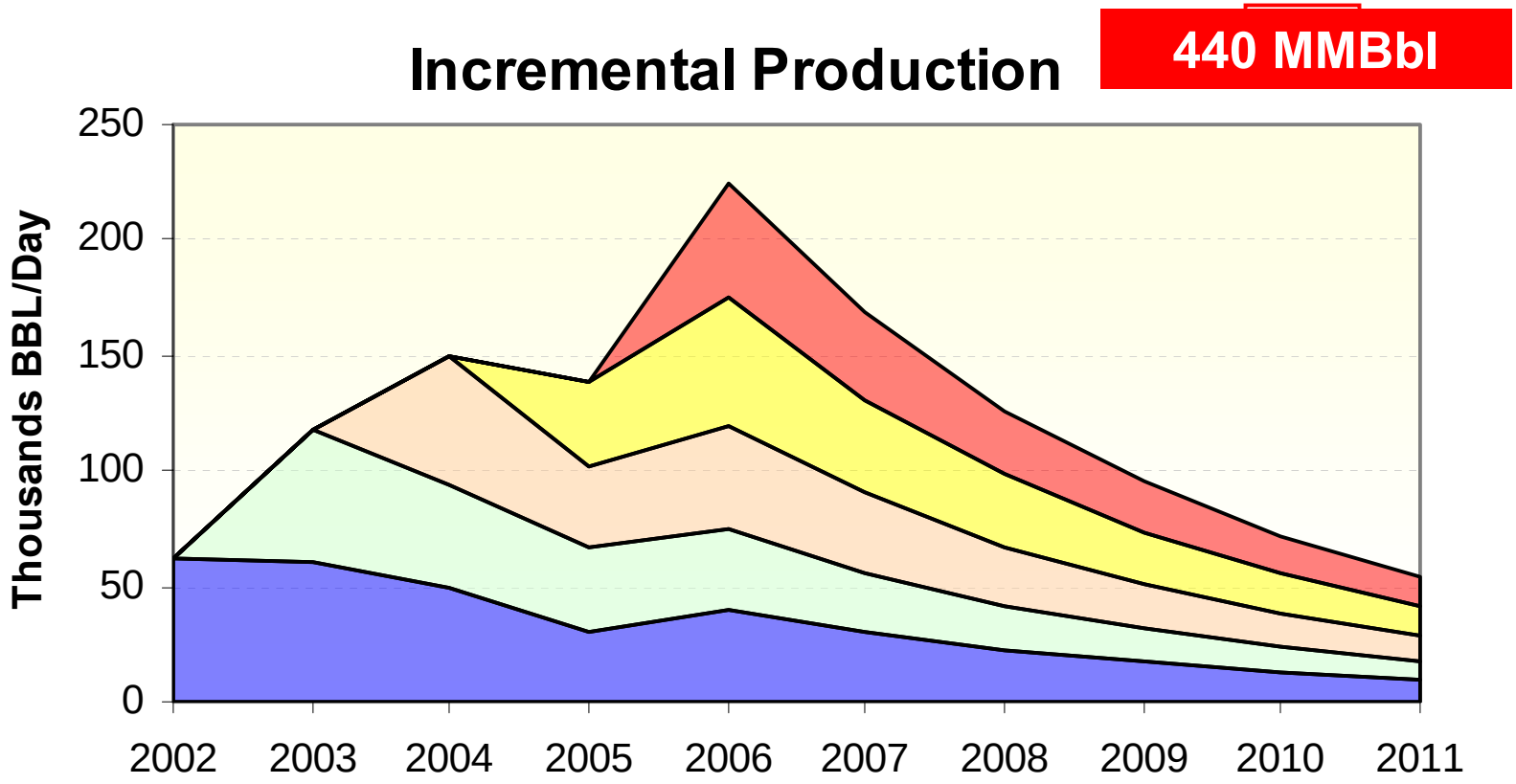
5 Year Prudhoe Drilling Program

- **BP noted that for every dollar spent on an infill well another two dollars were spent on injection and surface facilities – base case is 300% Capex**



BP – Prudhoe Bay

- **Production from infill program as presented by BP**

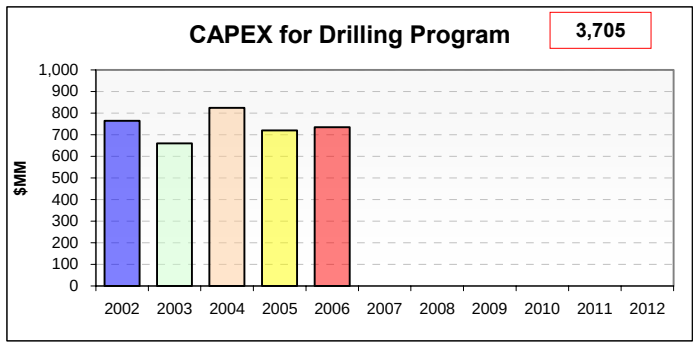


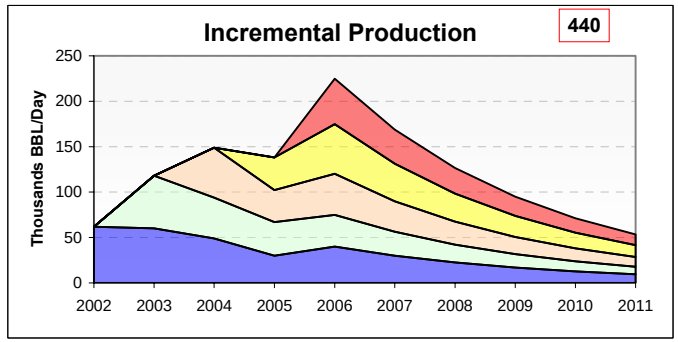
Input Controls

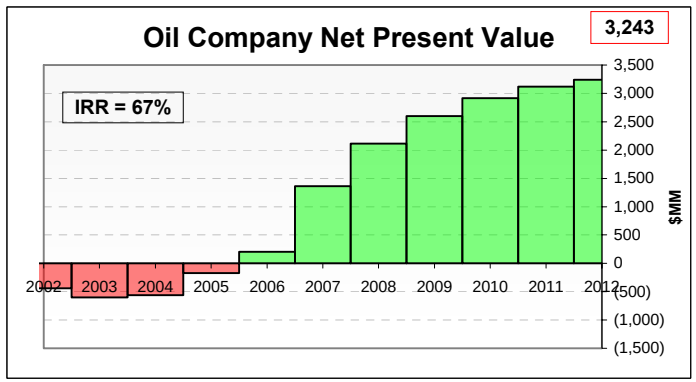
Modeling the Prudhoe Success contained in AOGA/BP Testimony

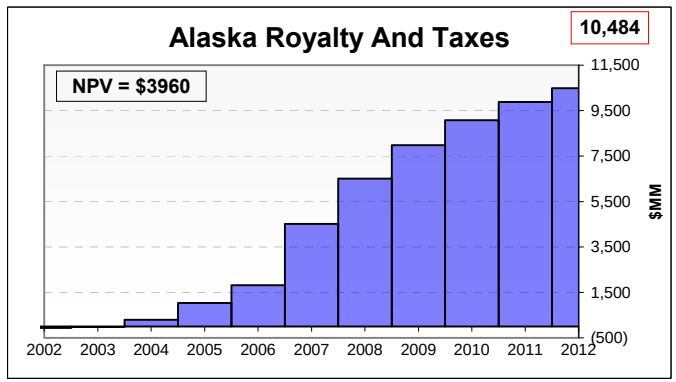
Drilling Prgram Year
- 2002
- 2003
- 2004
- 2005
- 2006

Capex Multiplier	300%
Opex Multiplier	100%
Production Multiplier	100%
Discount Rate	15%
Royalty	12.5%
Net Tax Rate	22.5%
Progressivity	0.25%
Progressivity Start	40
Price	80









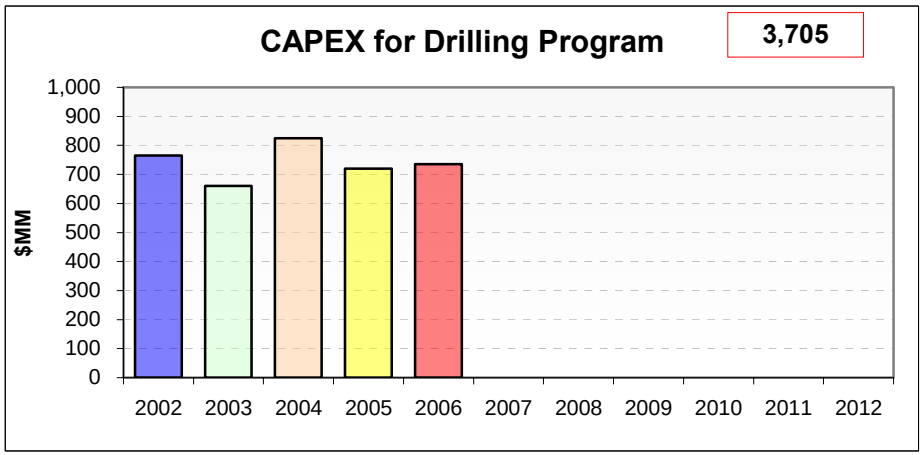
Tax Credits from outset

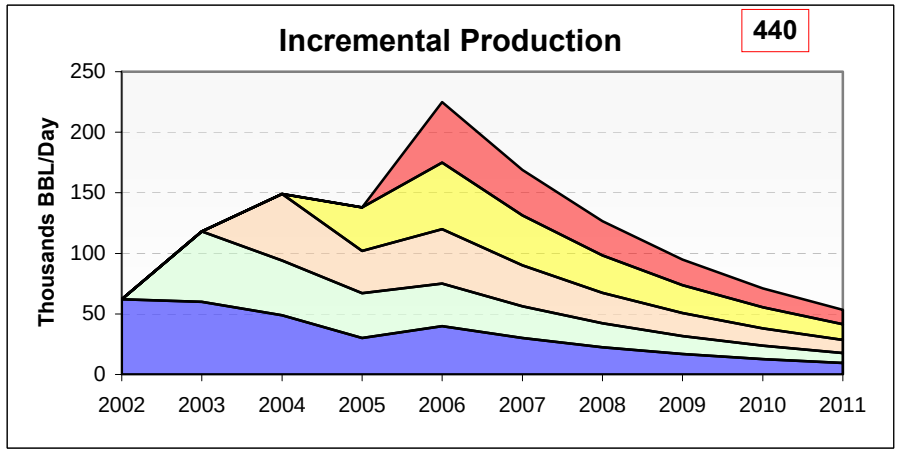
Actual oil price (but based on PPT) thru 2006, then Fcst

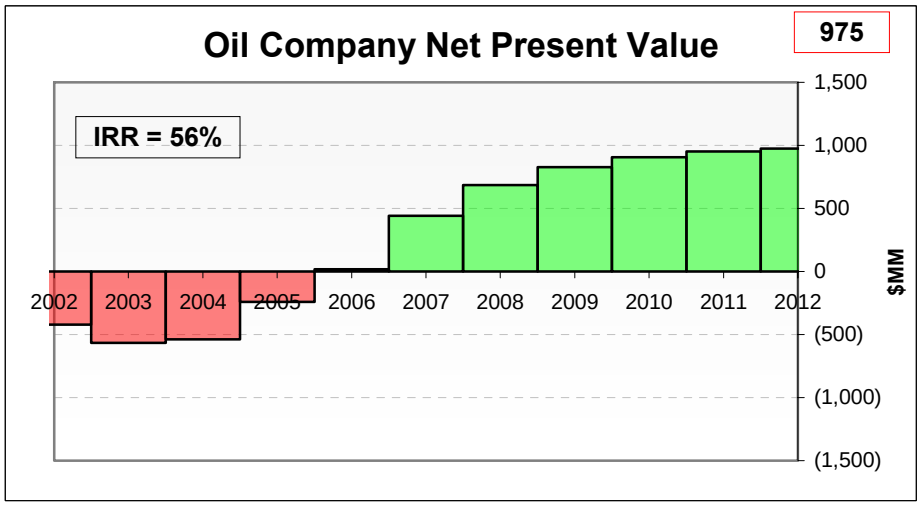
Robust drilling program

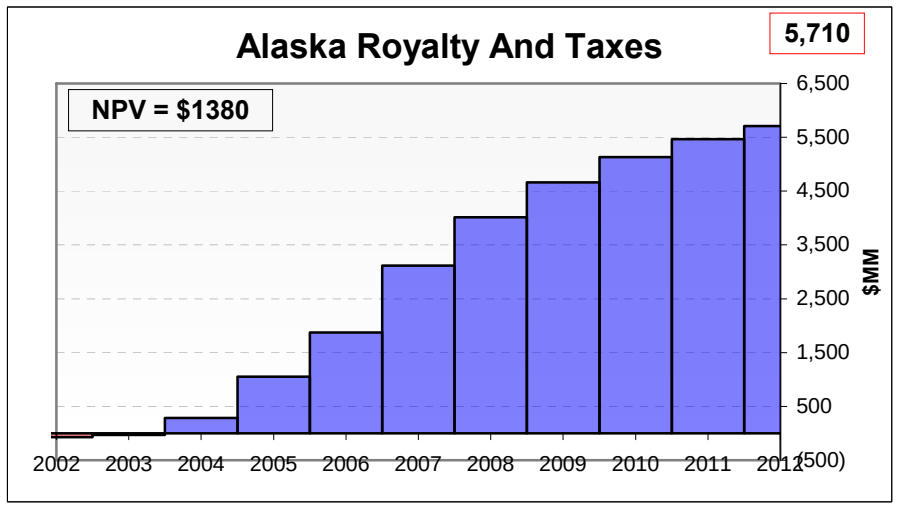
- **Remains profitable at:**
  - 300% capex
  - 200% opex
  - 25% discount rate
  - $50 ANS
  - High progressivity

Overly Stressed Case









Model Demonstration

North Slope Potential

Production Drives Revenue

Decline Rate	15%	**6%**	3%
Produced Barrels	1.3 bn	3.9 bn	7.5 bn
Industry Investment	$5 bn	$25 bn	$70 bn
		Status quo	

- **Built a generic model based on the above barrels and investments**
  - Used indicated decline rates
  - 250,000 bpd abandonment rate
    (Based on the oil companies' and AOGA presentation of the mechanical limit of 300,000 bpd for TAPS and the above decline rates and produced barrels)

Under PPT

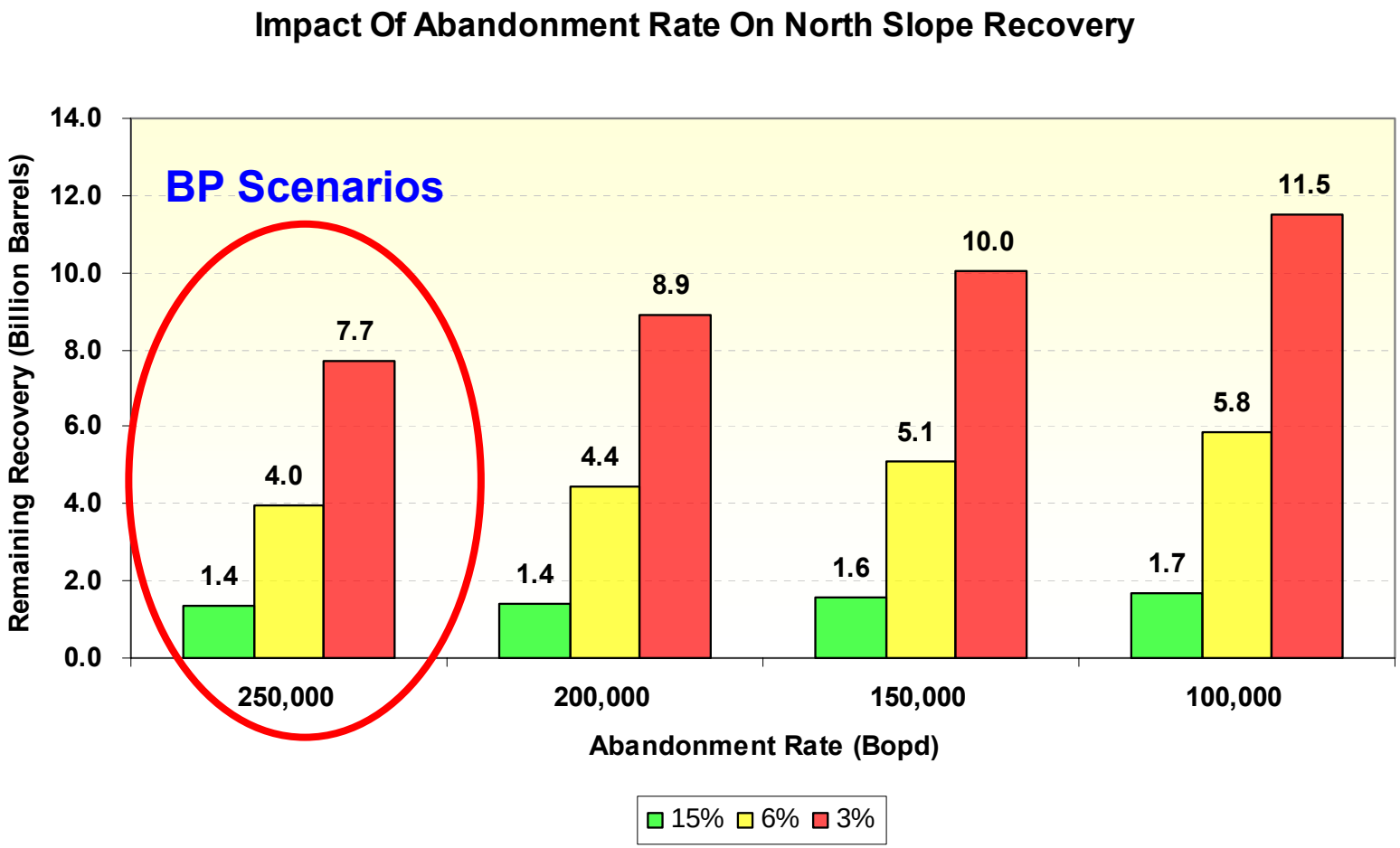
Production Drives Revenue

Decline Rate	15%	**6%**	3%
Produced Barrels	1.3 bn	3.9 bn	7.5 bn
Industry Investment	$5 bn	$25 bn	$70 bn
		Status quo	

- **NPV10 = $Bn** • **$15 - $20** • **$30 - $40** • **$35 - $45**
- **NPV0 = $Bn** • **$22 - $27** • **$55 - $75** • **$90 - $125**
- **NPV0 = $/bbl** • **$15 - $20** • **$14 - $19** • **$12 - $17**

~ $80/bbl WTI, $70/bbl NS

Delaying TAPS Abandonment



Summary

- **Oil Companies must show "reasonable certainty" about future investments and expected production to be able to book oil in the ground as reserves**
  - There is pressure in the market place to declare 'proved reserves' as soon as feasible -- important to shareholder and analyst growth expectations and stock price
  - If the production volumes associated with the 6% and 3% decline scenarios have already been booked as proved reserves, then to **not** undertake the continuing infill investments would require a significant write down of reserves

- **The Prudhoe Bay infill drilling program as presented by AOGA and BP is so profitable that under even the most extreme net tax structure, oil companies should want to continue their reinvestment program.**

Backup

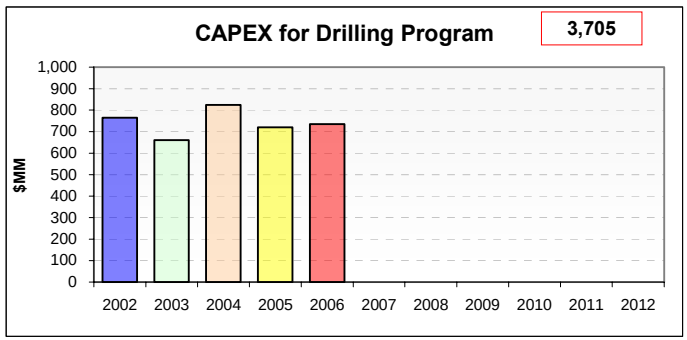
Actual drilling program assuming PPT applies throughout

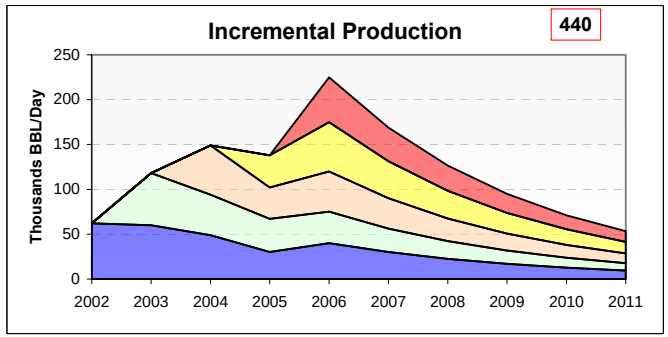
- Without investment credits pre 2006
- Oil Company IRR = 53%, NPV10 = $4 billion

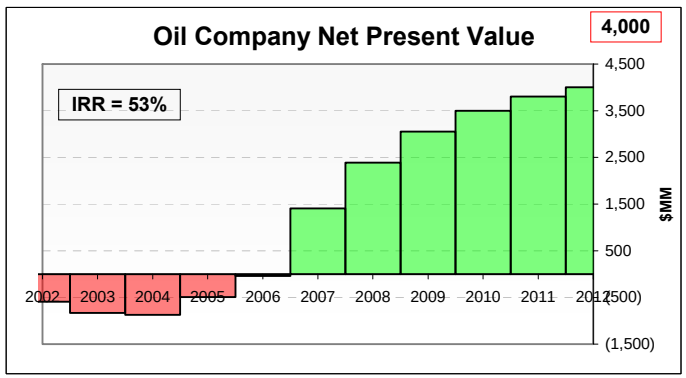
Modeling the Prudhoe Success contained in AOGA/BP Testimony

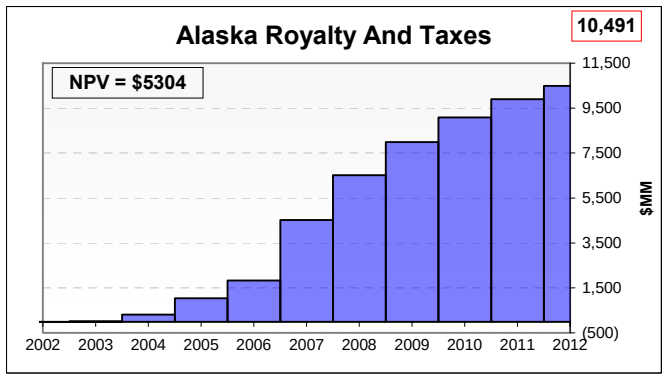
Drilling Prgram Year
2002 ☑
2003 ☑
2004 ☑
2005 ☑
2006 ☑

Capex Multiplier	300%
Opex Multiplier	100%
Production Multiplier	100%
Discount Rate	10%
Royalty	12.5%
Net Tax Rate	22.5%
Progressivity	0.25%
Progressivity Start	40
Price	80









☐ No tax credits 2002-2005

☐ Actual oil price (but based on PPT) thru 2006, then Fcst

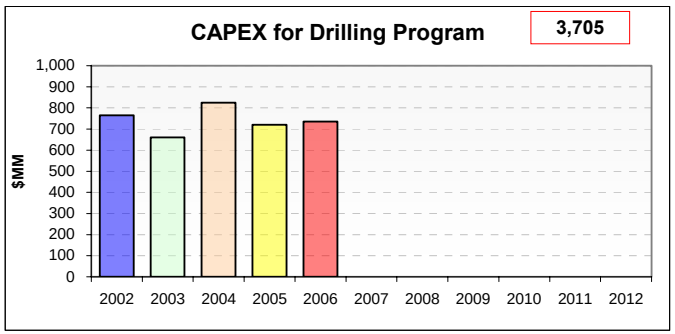
Assuming PPT from 2002 with credits

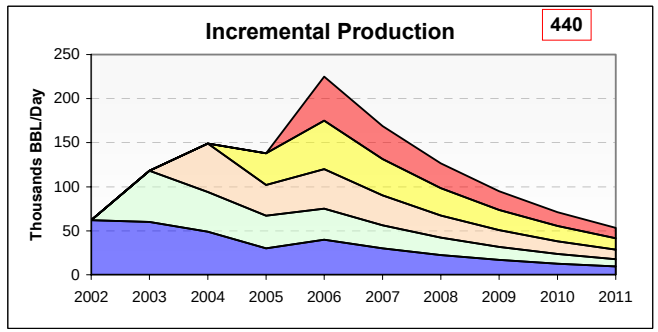
- With investment credits pre 2006
- Oil Company IRR = 67%, NPV10 = $4.4 billion

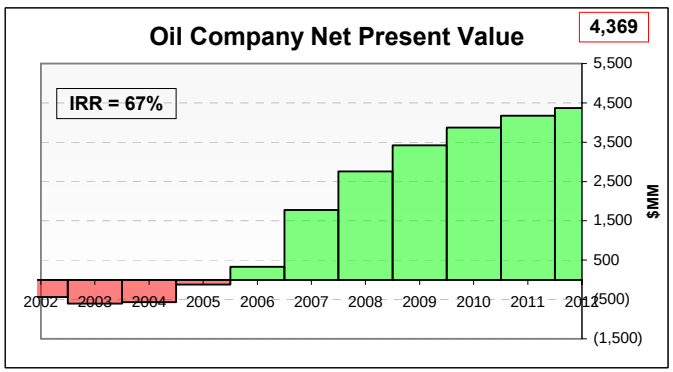
Modeling the Prudhoe Success contained in AOGA/BP Testimony

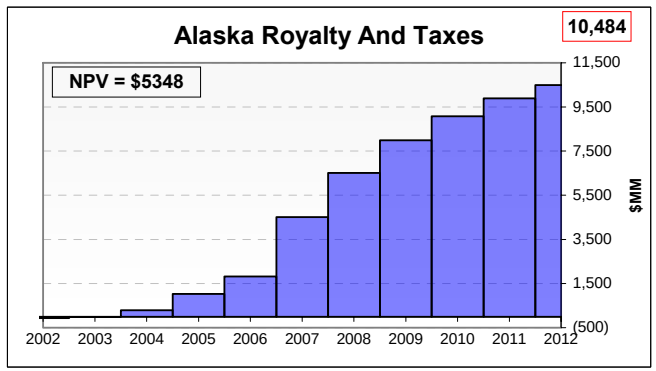
Drilling Prgram Year
2002
2003
2004
2005
2006

Capex Multiplier	300%
Opex Multiplier	100%
Production Multiplier	100%
Discount Rate	10%
Royalty	12.5%
Net Tax Rate	22.5%
Progressivity	0.25%
Progressivity Start	40
Price	80









Tax Credits from outset

Actual oil price (but based on PPT) thru 2006, then Fcst

Duplicate 2002 – 2006 Program Starting in 2008

- Capex to 360%, $60 oil, Senate CS, Forecast mode
- Oil Company IRR = 72% and NPV10 = $3473 MM

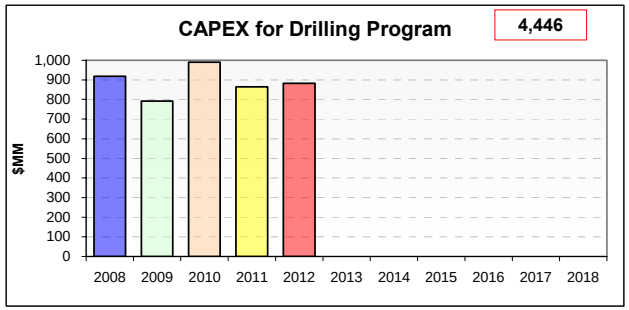
Modeling the Prudhoe Success contained in AOGA/BP Testimony

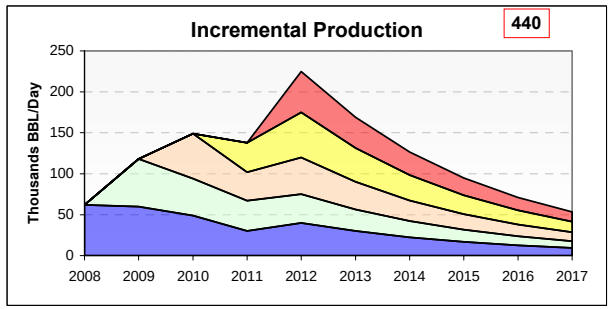
Drilling Prgram Year
2002
2003
2004
2005
2006

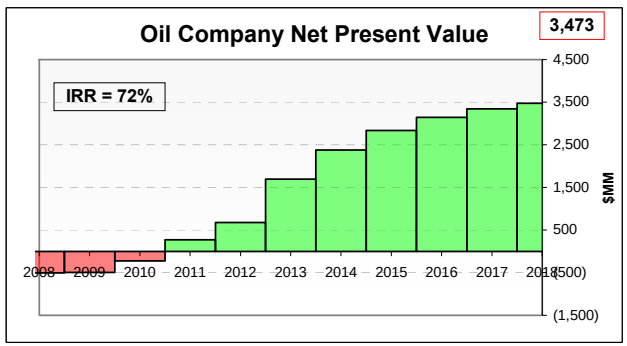
Capex Multiplier	360%
Opex Multiplier	100%
Production Multiplier	100%
Discount Rate	10%
Royalty	12.5%
Net Tax Rate	25.0%
Progressivity	0.40%
Progressivity Start	30
Price	60

Tax Credits from outset

Forecast Only Mode







Forecast at the NYMEX strip price

- All things the same, but oil at $80 per barrel
- Oil Company IRR = 101%, NPV10 = $4,888 MM

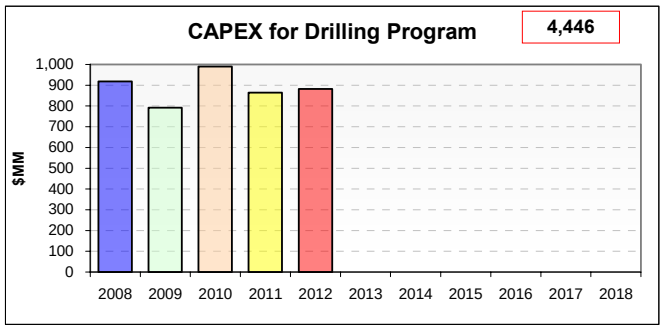
Modeling the Prudhoe Success contained in AOGA/BP Testimony

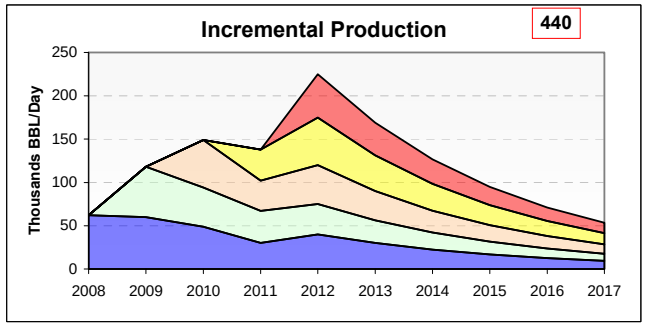
Drilling Prgram Year
2002
2003
2004
2005
2006

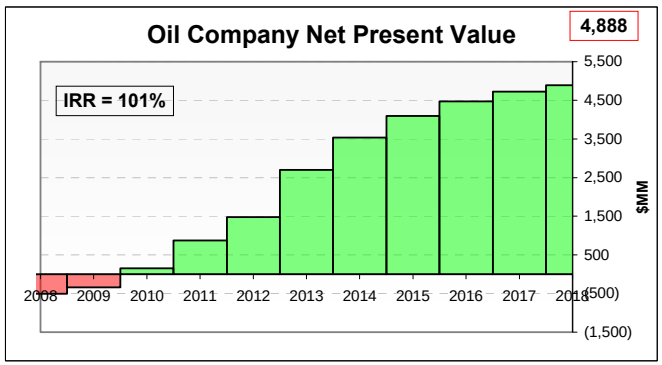
Capex Multiplier	360%
Opex Multiplier	100%
Production Multiplier	100%
Discount Rate	10%
Royalty	12.5%
Net Tax Rate	25.0%
Progressivity	0.40%
Progressivity Start	30
Price	80

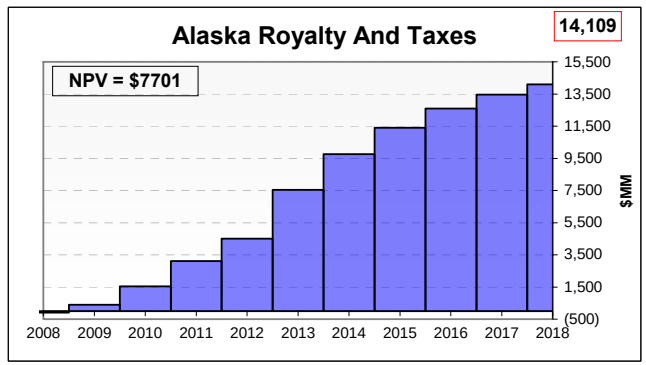
Tax Credits from outset

Forecast Only Mode









Senate CS – Forecast Mode, $80 oil

- **IRR = 123%, NPV10 = $5.375 billion**

Modeling the Prudhoe Success contained in AOGA/BP Testimony

Drilling Prgram Year
2002
2003
2004
2005
2006

Capex Multiplier	300%
Opex Multiplier	100%
Production Multiplier	100%
Discount Rate	10%
Royalty	12.5%
Net Tax Rate	25.0%
Progressivity	0.40%
Progressivity Start	30
Price	80

Tax Credits from outset

Forecast Only Mode