Fiscal System Benchmarking

Gaffney, Cline and Associates

Glossary

- AK – Alaska
- bpd – barrels per day
- bbl – barrel
- BRIC – Brazil, Russia, India, China
- Capex – Capital Expenditures
- GOM – Gulf of Mexico
- IOC – International Oil Company
- INOC – International National Oil Company
- NS – North Slope
- NOC – National Oil Company
- FSU – Former Soviet Union
- IRR – Internal Rate of Return
- NPV – Net Present Value
- NOL – Net Operation Loss
- OECD – Organization for Economic Co-operation and Development
- Opex – Operating Expenditures
- PRT – Petroleum Revenue Tax
- PSC – Production Sharing Contract
- T&R – Tax and Royalty
- UK – United Kingdom

Objective

- Provide brief background on the evolution of hydrocarbon fiscal regimes
- Compare government take under Alaska Tax to other sample international regimes and to the US
- Percentage Government take:

$$\frac{\textit{Royalty + Gov. Share of Production + Taxes}}{\textit{Field Revenue – Capex – Opex}}$$

Agenda

1. Historical Perspective

2. Impact of Key Components

3. International benchmark

Reviewing Fiscal Comparisons

- **It is critical to understand the basis upon which any fiscal comparison is being made.**

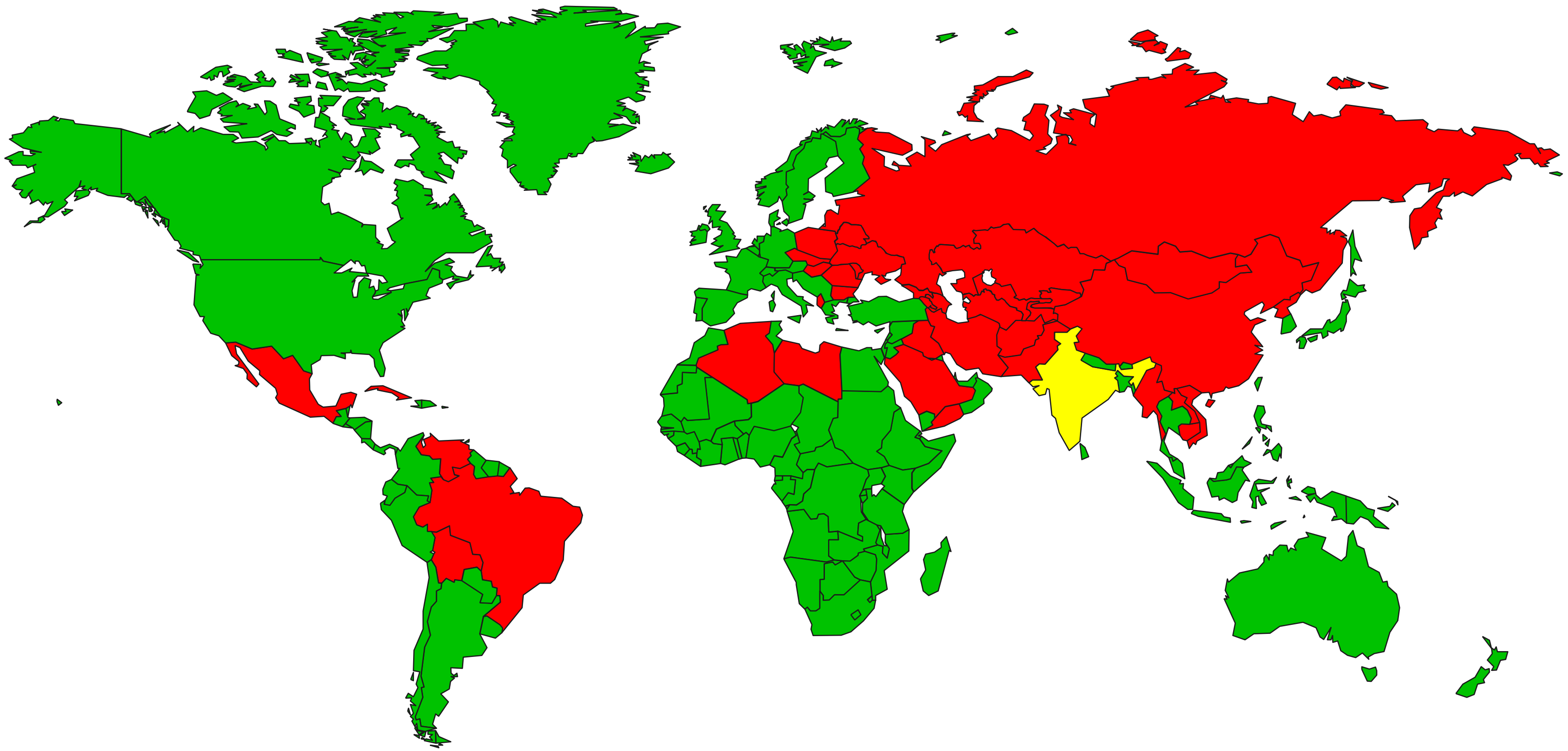
- **Some “results” can be misused if not placed in context for which they were intended.**

- **Need to know what they do and do not represent:**
  - Full cycle including Exploration?
  - From point of development investment decision?
  - Remaining life?
  - High price or low price scenario? …..etc.

Fiscal Take Also Depends…..

- **….On where you were and when!**
  - In the early 1980’s, prices were escalating, but the places to invest were limited.
    - The UK had a 90+% government take and investment activity level was high.
  - By the late 1990’s prices had remained low for most of the decade and upwards of 70 countries were holding license rounds in search of ‘revenues’.
    - The UK had eliminated all taxes but Corporate Income Tax in an attempt to attract investors.
- **Simple tables and charts of comparison are limited in their ability to explain why regimes change or the need for fiscal regime changes.**

The 1980s – Companies in Search of Countries



- Open to Foreign Investment in the Energy Sector
- Some Foreign Investment in the Energy Sector
- Limited Access to Foreign Investment in the Energy Sector

The early 2000's – Countries in Search of Companies

Open to Foreign Investment in the Energy Sector

Some Foreign Investment in the Energy Sector

Limited Access to Foreign Investment in the Energy Sector

The 2010's - Returning Nationalism, Transparency…

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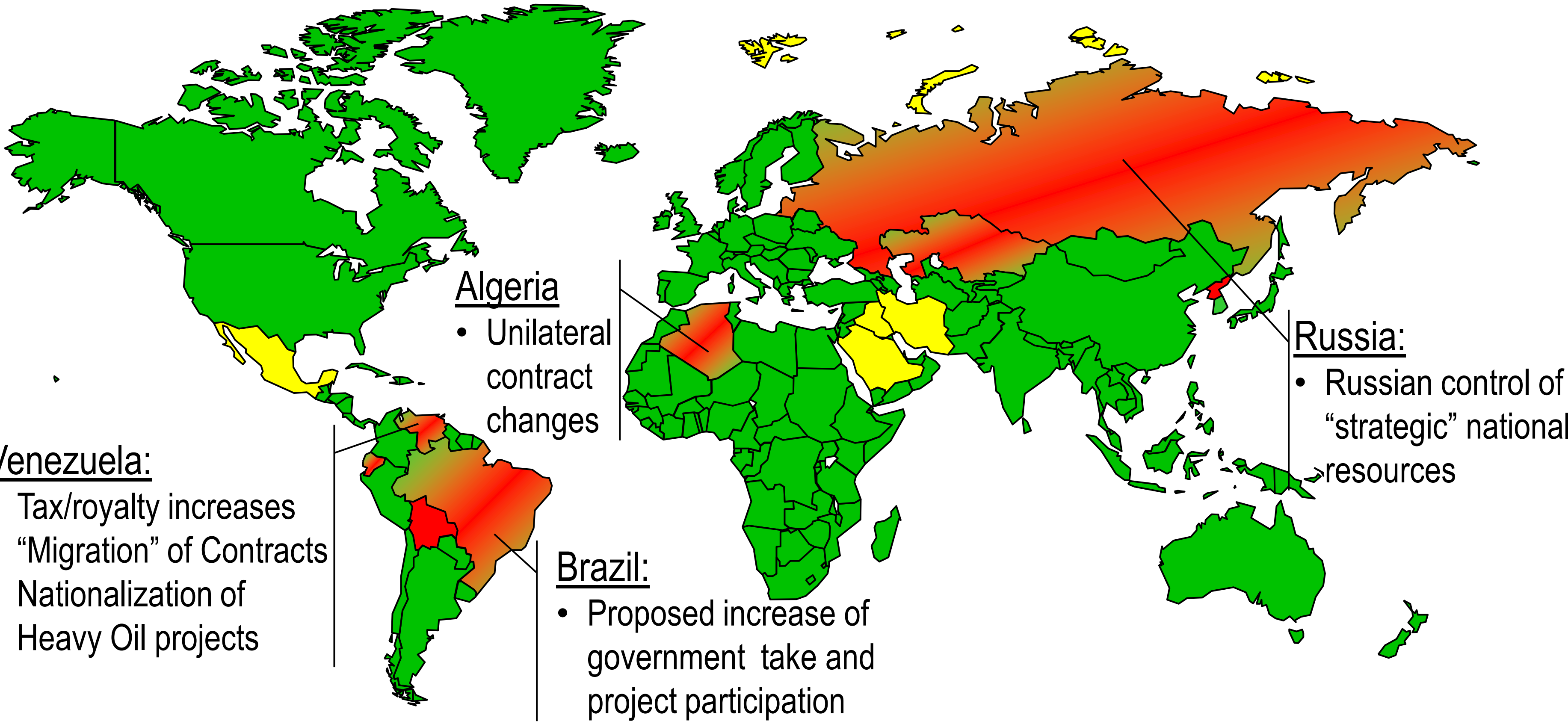

- **Open to Foreign Investment in the Energy Sector**
- **Some Foreign Investment in the Energy Sector**
- **Reduced Access for Foreign Investment in the Energy Sector**

...and Competition from International National Oil Companies (INOCs)

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Contract Awards in Recent Iraq Bidding Rounds

Contract Area	Consortium (*Operators – INOCs underlined)	Plateau Prod. Target (b/d)	Final Rem. Fee (US$/bbl)
Rumaila	BP*, CNPC	2,850,000	2.00
West Qurna 1	ExxonMobil*, Shell	2,325,000	1.90
Majnoon	Shell*, PETRONAS	1,800,000	1.39
West Qurna 2	Lukoil*, Statoil	1,800,000	1.15
Zubair	Eni*, Occidental, Kogas	1,200,000	2.00
Halfaya	CNPC*, PETRONAS, Total	535,000	1.40
Garraf	PETRONAS*, Japex	230,000	1.49
Badra	Gazprom*, TPAO, Kogas, PETRONAS	170,000	5.50
Qaiyarah	Sonangol	120,000	5.00
Najmah	Sonangol	110,000	6.00

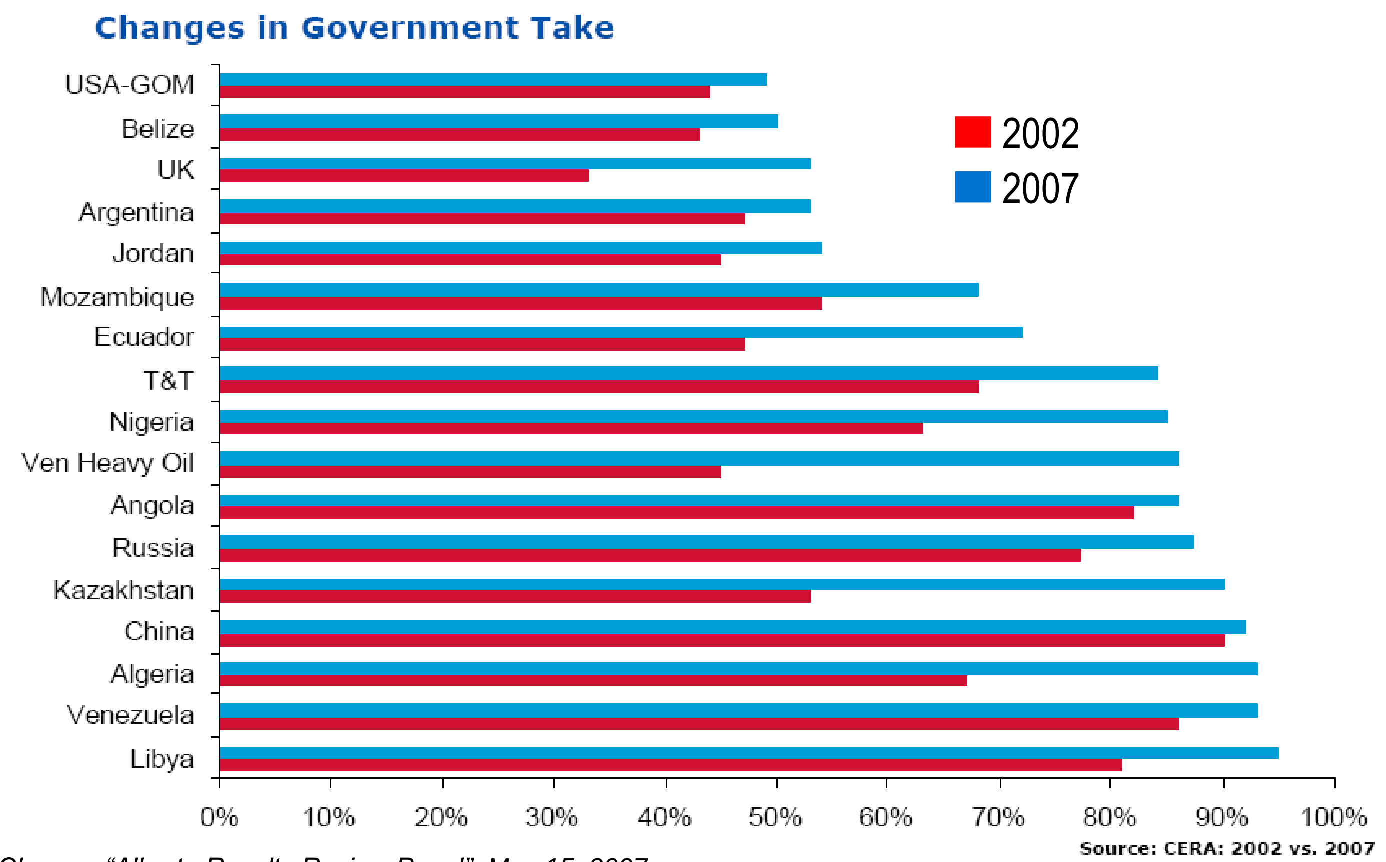
Creating "Best" Fiscal Systems

- **Countries continually assess their internal needs and their world-wide competitive position to set hydrocarbon fiscal terms.**
  - Attract Investment
  - Generate revenue for the treasury
  - Create jobs, increase local skill base

- **There are roughly as many systems in place as there are countries with petroleum legislation.**
  - Many areas of similarity
  - Many areas of difference
  - Different 'vintages' can be active at the same time

Countries Adapting to Higher Prices

Assessment of Oil and Gas Jurisdictions is Complex and Continuous



Source: Chevron "Alberta Royalty Review Panel" May 15, 2007

Industry "Take" Assessments

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- **The many studies that attempt to "rank" regimes are typically based on:**
  - Marginal Government Take
  - Average Government Take
  - Total Government Take
  - Risk
  - Stability

- **While informative in the right context, the aspects of fiscal regimes that these studies do not cover or rank can at times be more important.**

What these studies tend to Ignore

- Signature bonuses
- Time Value
- Investment Credits
- Ringfencing
- Tax credits
- Booking Reserves
- Lifting Rights
- Domestic Obligations
- Different oil/gas rates
- Lease rentals
- Limits on cost recovery
- Exclusions
- Cross crediting
- Timing of Take
- Allowable costs
- Uplifts

Many of the above can have a significant financial impact and if included might generate a different ranking outcome.

New Players Today – the International National Oil Companies

- **National Oil Companies (NOCs) are investing internationally**
  - The focus of their expansion includes Middle East, Former Soviet Union, Africa and Latin America
  - For example, China-Africa trade: $4 billion in 1995, $40 billion in 2005, expected to be over $100 billion in 2010

- **INOCs are changing the competitive landscape**
  - Different (lower?) investment criteria
  - Different drivers
  - Government to government deals
    - China and India to cooperate on energy acquisitions
    - Emergence of the BRIC *(Brazil, Russia, India, China)* alliance

Then there are the Hidden Drivers

- **“Punished by Reward”**
  - Compensation packages drive decision making
  - Good deals are sometimes passed up to do deals that score more bonus points
  - These are usually not obvious nor acknowledged

- **Examples of executives’ performance targets:**
  - Maintaining reserve replacement/growth
  - Reducing cost per barrel
  - Increasing market share

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- Shared royalty
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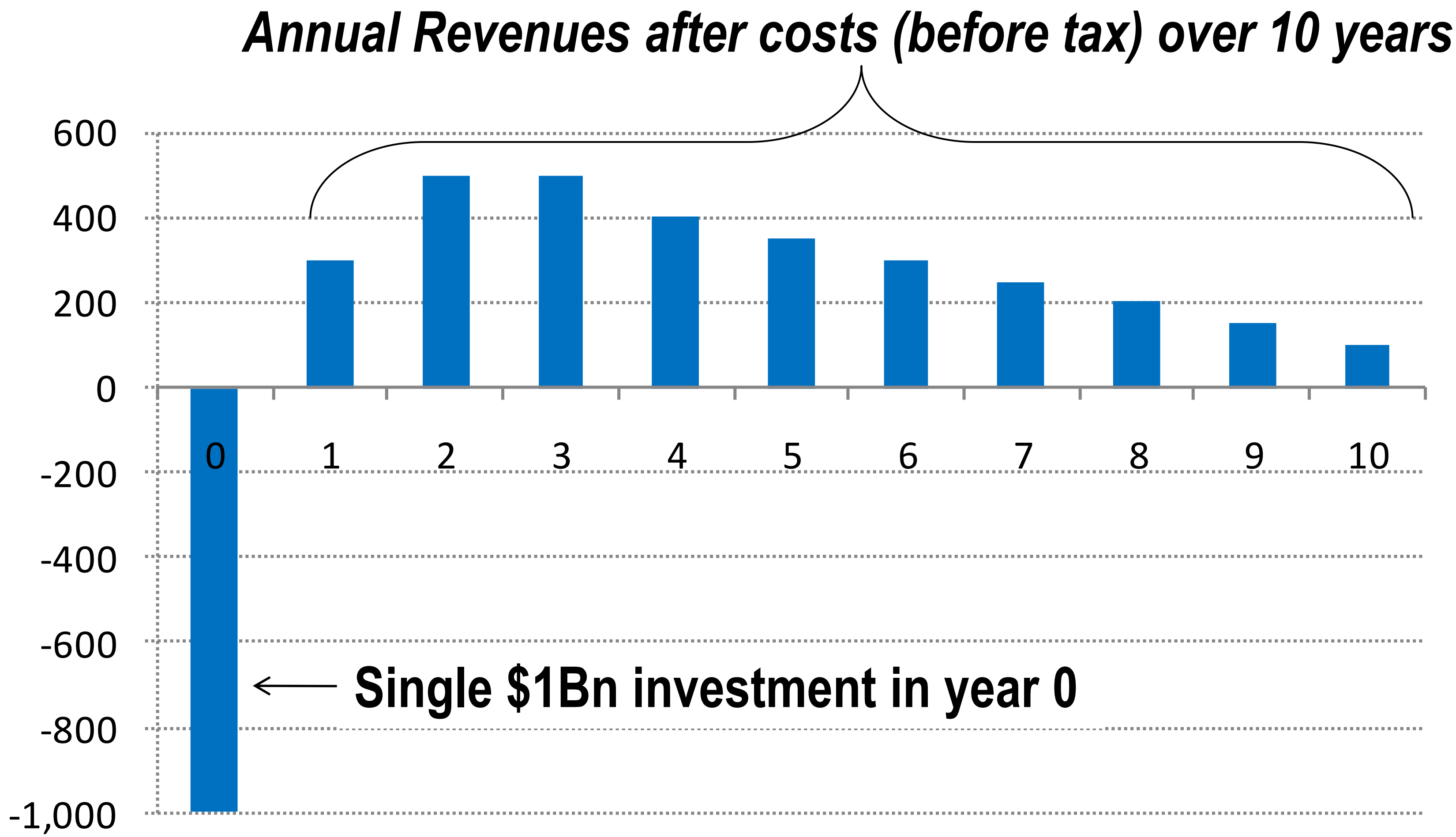
Time Value of Money

- **Most fiscal regime comparisons do not adequately compare the time value of benefits in one regime versus another.**

- **Alaska is very generous to investors in that it allows all eligible costs to be deducted immediately from revenue (and even receive cash back) plus provides capital and exploration credits for the same expenses.**

Simplified Field Model

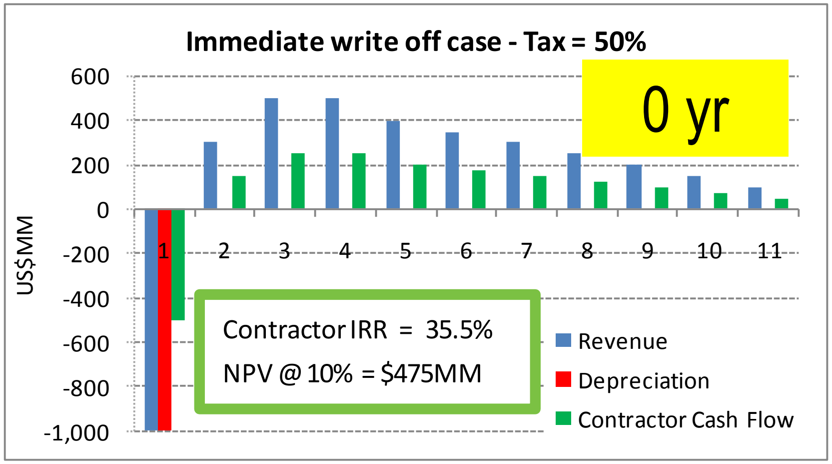


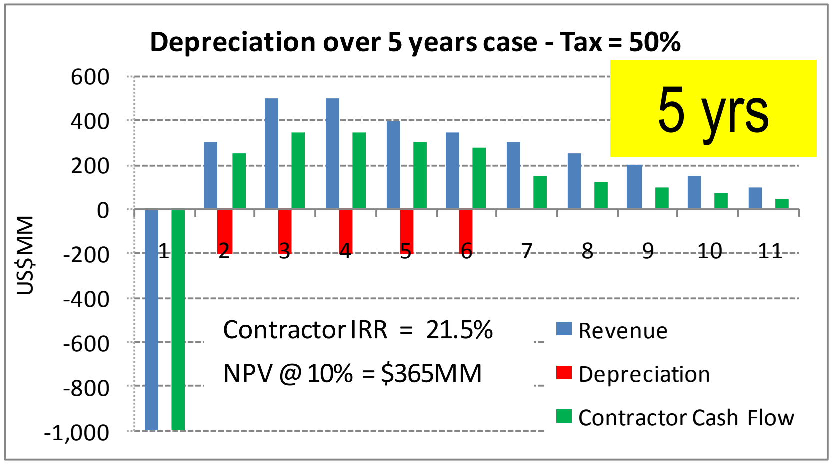
Note: This is not intended to represent any Alaska asset

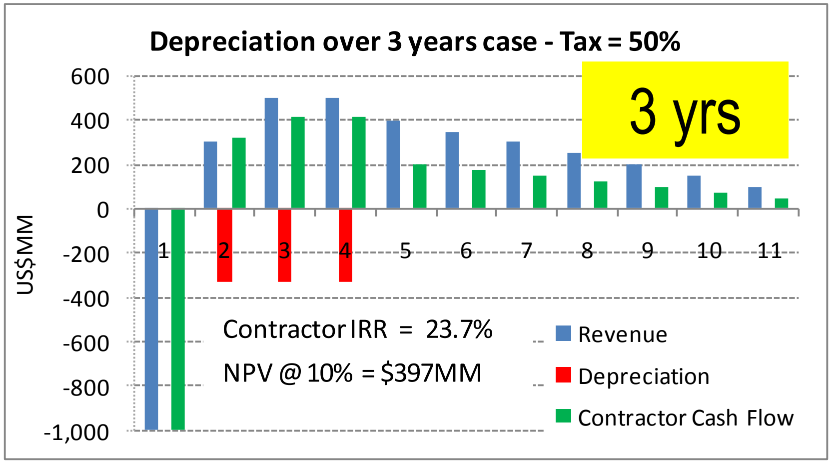
Scenarios

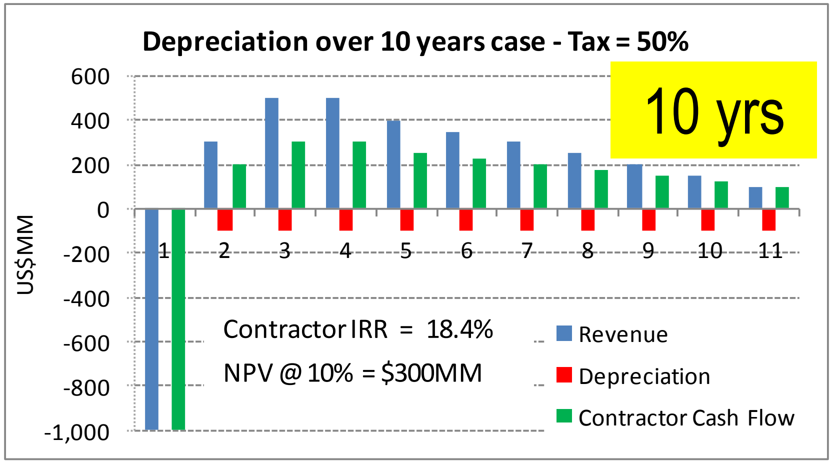
- **Range of depreciation from other regimes**
  - Straight line 3 year, 5 year and 10 year
  - Compared to immediate write off, such as Alaska allows
- **Single tax rates**
  - To illustrate the time value effect
  - Not looking to highlight other nuances in one regime versus another
- **Investment credits, such as Alaska allows**

Impact of Depreciation on Investors' Internal Rate of Return (IRR) and Net Present Value (NPV)









Note: Cashed Out Net Operating Losses (NOLs)

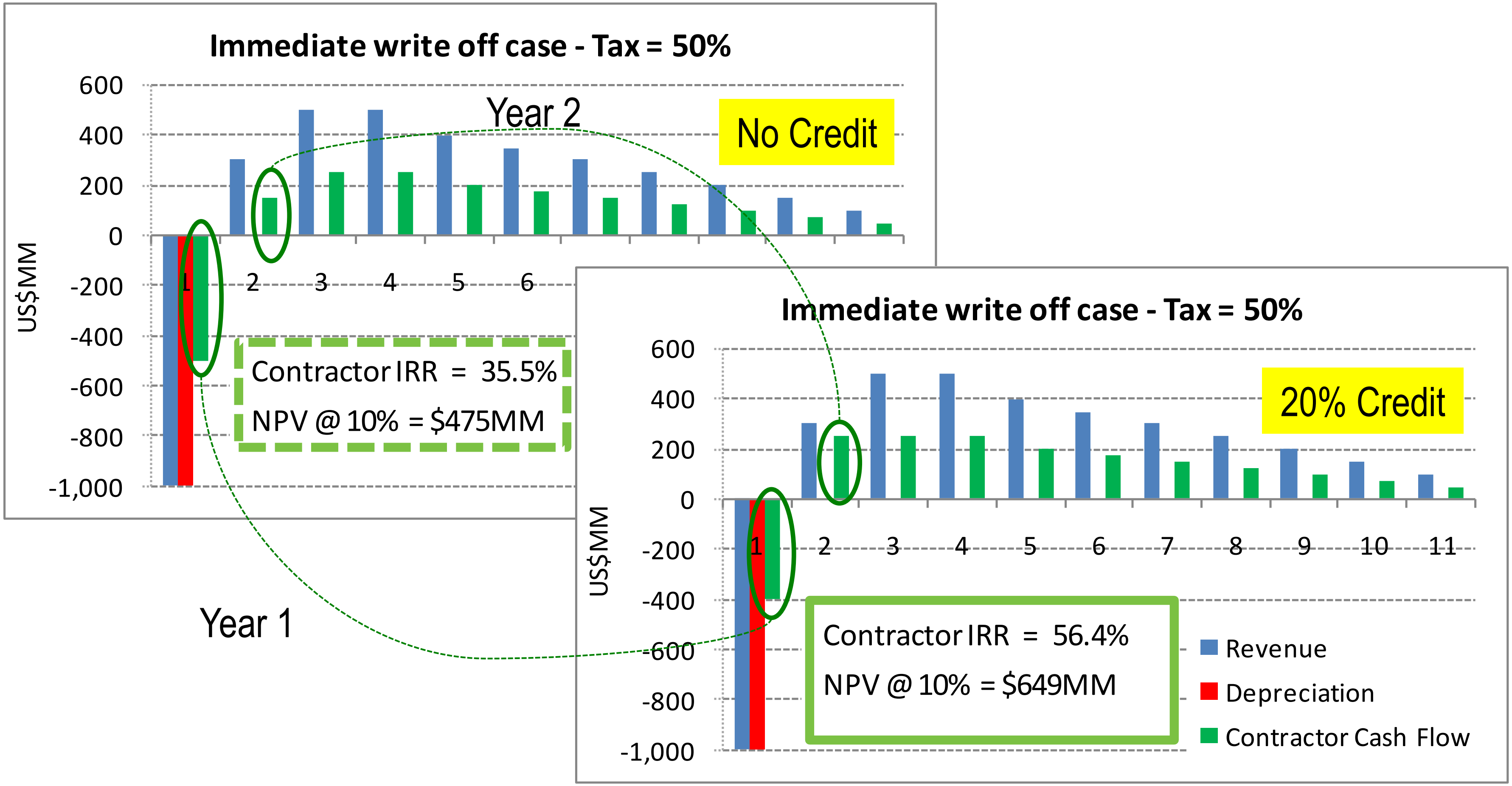
Tax Impact of Depreciation

Depreciation	Tax Rate	Producer IRR	NPV_{10} (US$MM)
Immediate write off	**50%**	**35.5%**	**475**
3 years	50%	23.7%	397
5 years	50%	21.5%	365
10 years	50%	18.4%	300
Immediate = 3 yrs	<u>58%</u>	**35.5%**	**~397**
Immediate = 5 yrs	<u>62%</u>	**35.5%**	**~365**
Immediate = 10 yrs	<u>69%</u>	**35.5%**	**~300**

- **<u>The economic impact of immediate write off is significant</u>**
- **For a same tax rate of 50%, the longer the depreciation, the lower the producer IRR and the lower the producer NPV**

Note: The IRR of the immediate write off case is not impacted by the tax rate as any increase is balanced by a proportional cashed out NOL

Impact of 20% investment credits over 2 years



Investment Credits Impact

Depreciation	Tax Rate	Investment Credits	NPV_{10} Match (US$MM)
Immediate write off	**50%**	**0%**	**475**
Immediate write off	**50%**	**20%**	**649**
Immediate write off	76%	20%	**~397**
3 years	50%	0%	397
Immediate write off	80%	20%	**~365**
5 years	50%	0%	365
Immediate write off	87%	20%	**~300**
10 years	50%	0%	300

- **A fiscal regime with a combination of immediate write off and investment credits can compete favorably on select financial metrics with regimes with lower Government Takes**

What these studies tend to Ignore

- Signature bonuses
- Time Value
- Investment Credits
- **Ringfencing**
- Tax credits
- Booking Reserves
- Lifting Rights
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Ringfencing

- **Fiscal regime comparative studies tend to use single type fields or stand alone existing fields.**
- **Most contracts or licenses in the world are ‘ringfenced’.**
  – Implication: The same producer, in the same country, can have a highly profitable project but be unable to offset or deduct losses from another project.
  – One of the biggest surges of activity in the UK offshore occurred when the ringfence around PRT (their special petroleum tax) was removed.

Why Ringfencing Matters

- **Some might evaluate the economics of Alaska's heavy oil opportunities as a stand alone projects**
  - Market price lower than NS crude based on quality
  - Higher development and operating costs
  - Ignores fact that project is connected (fiscally) to existing operations

Simple Ringfence Example

- **Assume existing NS oil project**
  - Production 650,000 bpd
  - Market oil price $70/bbl
  - Transportation costs of $7/bbl
  - Upstream costs $18/bbl (50% opex, 50% capex)

- **Potential NS heavy oil project**
  - Production 250,000 bpd
  - Market oil price 90% of NS oil price (quality)
  - Transportation costs of $7/bbl
  - Upstream costs twice as high as oil project $36/bbl

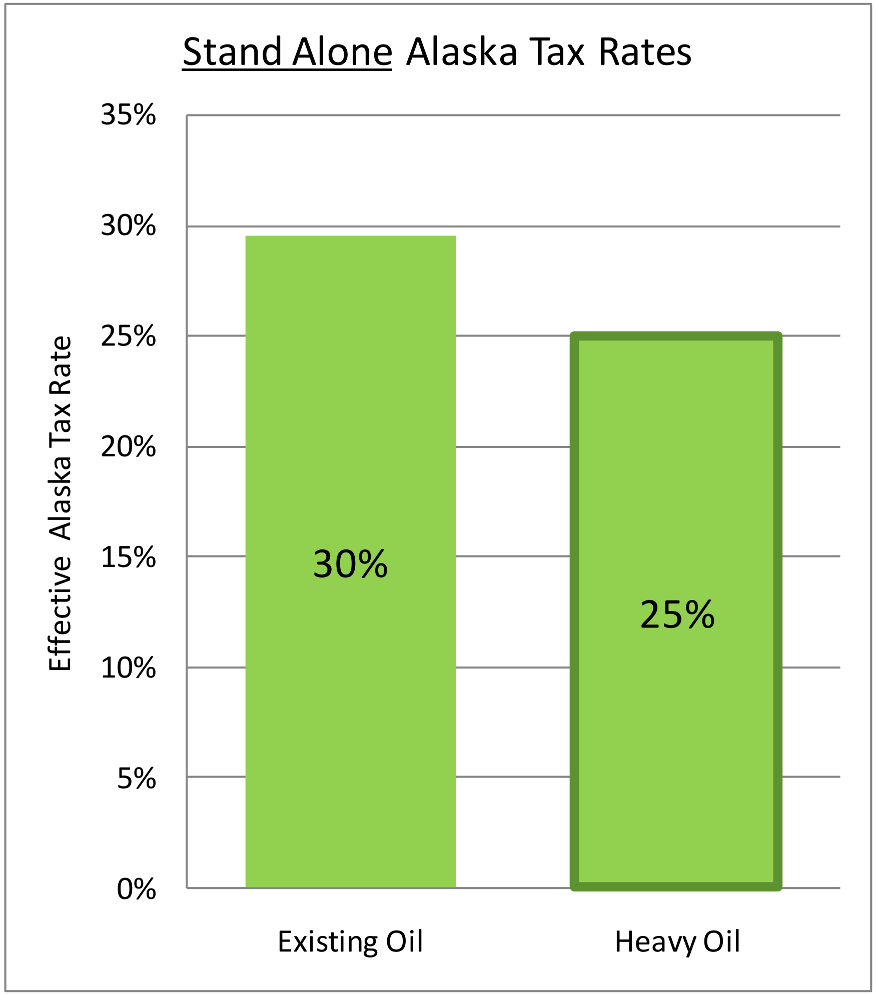
Heavy Oil and Alaska Tax

- **The following charts present one year ‘snapshot’ views of the Alaska tax in two cases:**
  - Project ringfence
  - North Slope-wide ringfence as allowed under Production Tax Law
- **This illustrates the State available assistance for Heavy Oil developments**

Stand Alone - Project Ringfence

- **If ringfenced as separate projects, as in many fiscal regimes, existing oil tax rate would be 30% and heavy oil would be 25%**

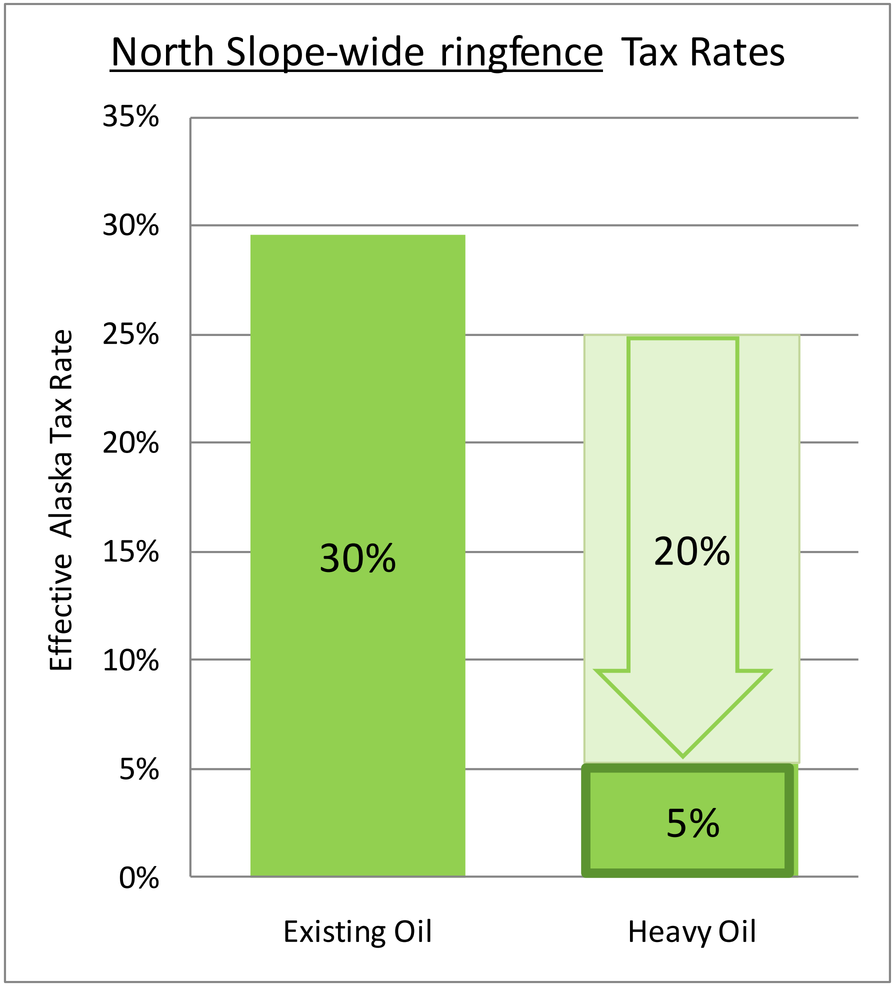
- **However, reality is this needs to be viewed as a blended portfolio**



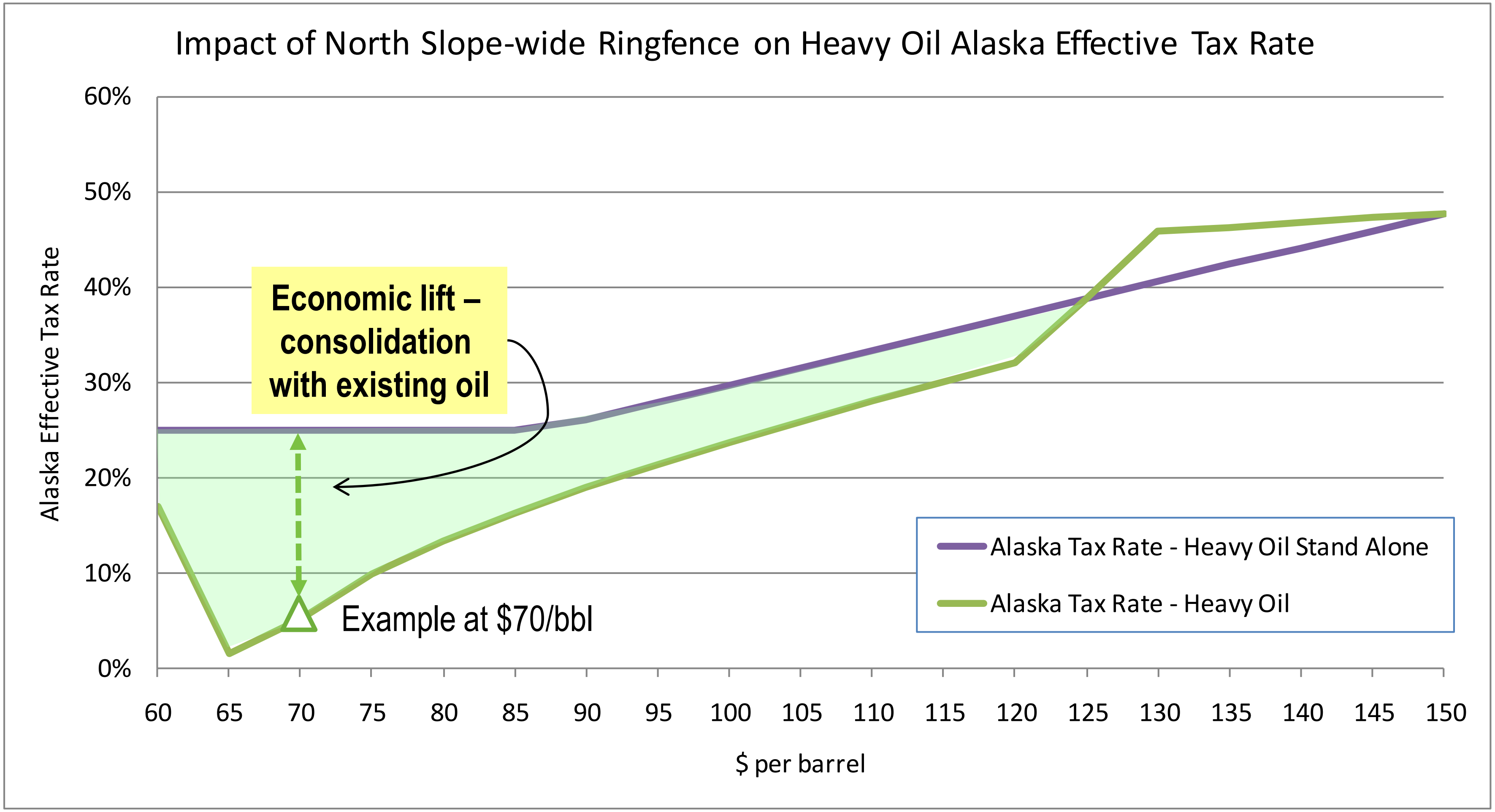
Oil Price - ANS West Coast : $70/bbl

North Slope-wide Ringfence

- **If the Producer adds the heavy oil project to its portfolio, the heavy oil project will effectively be taxed at 5% instead of 25%**
- **The effective tax on heavy oil varies across a range of oil prices**



Heavy Oil Effective Tax Rates



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Selection of benchmarks

- **Exploration and Production ‘hotspots’ where the Majors are investing**
- **Range of fiscal regimes**
  - Production Sharing Contract, Royalty, Technical Services Contract, Special Taxes
- **Range of locations**
  - US, South America, Europe, Africa, Middle East, Asia Pacific

Benchmarks: Selected "hotspots"

GCA Analysis Assumptions

- **DOR's North Slope Production and Revenue forecasts (no gas pipeline case)**
  - 4.4 Billion barrels of oil produced
  - $23/bbl Capex + Opex + Tariffs (non indexed)
- **Used GCA proprietary fiscal regime information**
  - Inclusive of all nuances that are part of a particular regime including many ignored by other regimes
- **Compared Government Take at $70 & $150/bbl**

Remaining NS Oil Profile Total Government Take

Note: Oil price $70-$150/bbl

Total Government Take - Alaska

Industry Profit NPV 10 (US$B)

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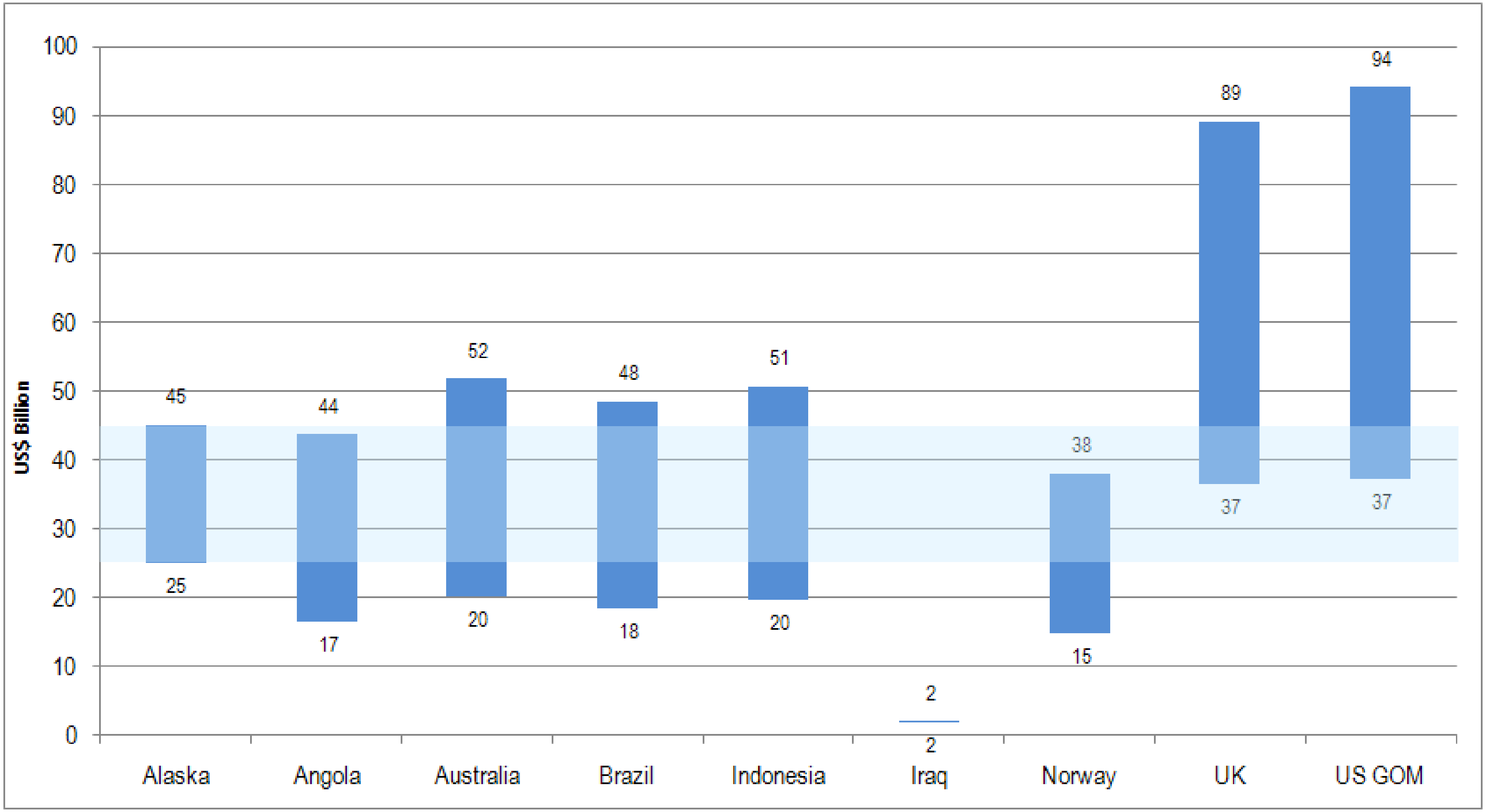

Note: Oil price $70-$150/bbl

Industry Profit NPV 10 - Alaska

Observations

- **Bearing in mind the limitations of any benchmarking exercise, we observe the following:**
  - These results are in the same range as the ones provided by various industry players and consultants.
  - The total Government Take in Alaska appears to be competitive with most hydrocarbon prolific areas.
  - The Government Take in the recent Iraq contracts, which have attracted significant international competition (including from Industry players present in Alaska) is the highest.

Understanding the Message

Government Take Studies

- **To make a valid comparison of Alaska's fiscal system requires knowing the basis on which on comparisons are being made:**
  - IRR or rate of return?
  - NPV? Undiscounted? What discount rate?
  - Marginal take at the absolute worse 'spot' in the fiscal regime or averaged across a range of expected outcomes?
  - Single fields or portfolios?
  - High rate oil developments versus extended plateau gas developments?
- **What is it you are being shown?**

Vintage

- **Many countries have producers operating under a number of different vintage agreements.**
  – Most of the older agreements are specific to the field(s) being produced. A comparison to these would be misleading and unfair.
  – Even if older agreements provide opportunity for new exploration, the new projects may be ringfenced.
  – New investors can't receive the terms of the older agreements.
- **When the oil companies offer their comparison, what vintage agreement are they using?**

Vintage – Trinidad & Tobago

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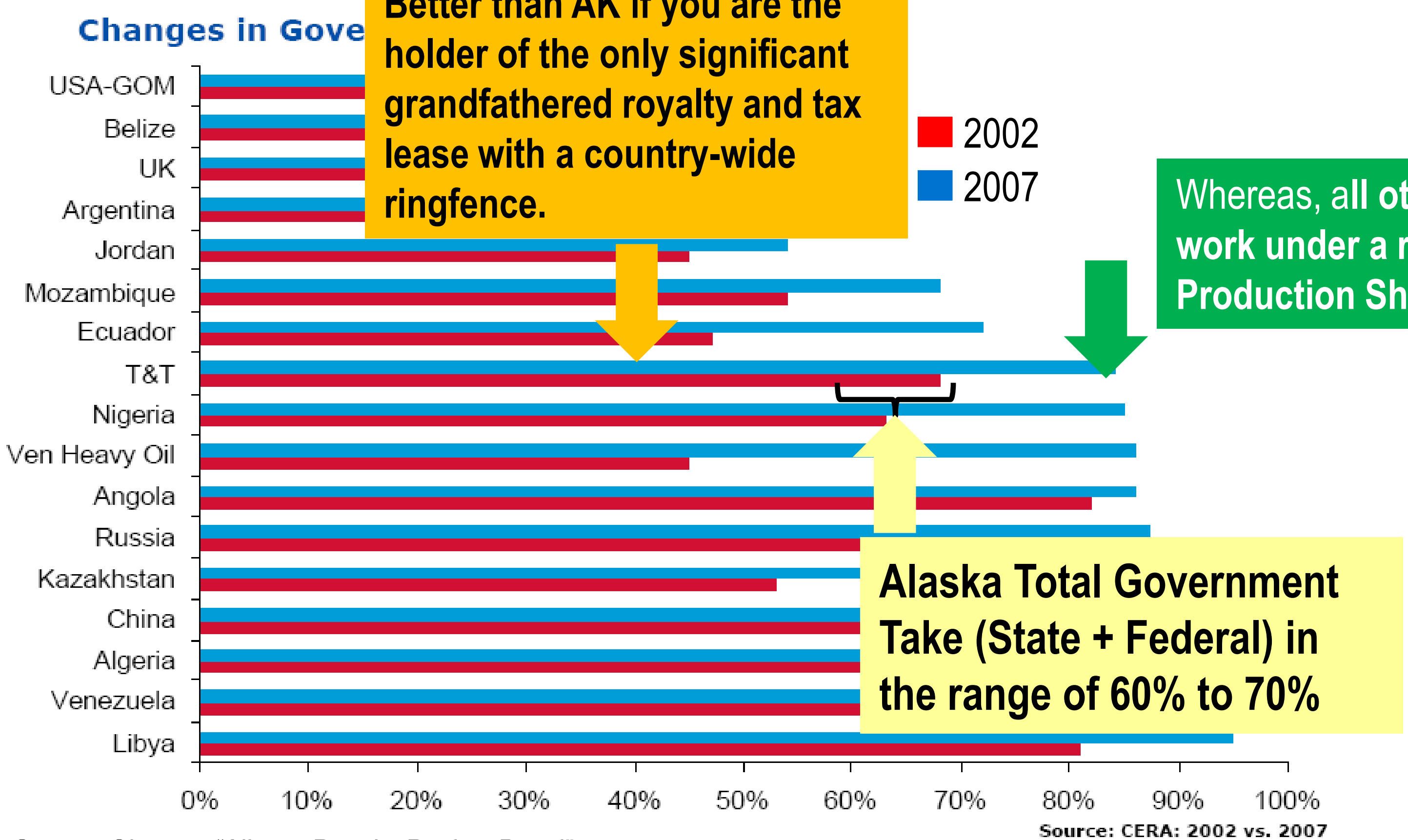
Assessment of Oil and Gas Jurisdictions is Complex and Continuous



Better than AK if you are the holder of the only significant grandfathered royalty and tax lease with a country-wide ringfence.

Whereas, **all others have to work under a ringfenced Production Sharing Contract!**

Alaska Total Government Take (State + Federal) in the range of 60% to 70%

Source: Chevron "Alberta Royalty Review Panel" May 15, 2007

OECD vs. Non-OECD

- **One would think that a non-OECD environment would carry higher risk – and therefore need a greater reward**
  - Non-OECD countries control the vast majority of all hydrocarbons
  - Non-OECD countries also average very high total Government Take
  - Yet, major producers continue to include high take non-OECD countries as part of their portfolio
    - Recent Iraq deals

OECD: Organization for Economic Co-operation and Development

List of OECD Countries

Australia	Austria	Belgium	Canada
Czech Republic	Denmark	Finland	France
Germany	Greece	Hungary	Iceland
Ireland	Italy	Japan	Korea
Luxembourg	Mexico	Netherlands	New Zealand
Norway	Poland	Portugal	Slovak Republic
Spain	Sweden	Switzerland	Turkey
United Kingdom	United States		

Which Gulf of Mexico (GOM)?

- **Really three different GOMs with different economics and different government terms**
  - Shallow water, paid for platforms, producing fields from relatively low depths, low operating cost structure and relatively inexpensive transportation to market.
  - Recent deep water developments, new state-of-the-art platforms, producing from deep horizons, challenging technology, high cost to drill, high cost to operate, long distance to market.
  - Recent ultra deep drilling from the shallow water shelf, middle range costs, close to shore and market.
- **Old 12.5% federal royalty vs. new 18.75% federal royalty**

At what oil price?

- **Relatively low prices**
  - Progressive systems take the minimum
  - Regressive systems take a larger bite
  - Comparison studies of the progressive Alaska tax regime would cast Alaska in a better light
- **Very high prices**
  - Progressive systems take a big bite
  - Regressive systems look favorable
  - Comparison studies of Alaska would cast Alaska in a worse light
- **Best comparisons use a number of prices across a reasonable range so that the workings of the fiscal system can be adequately assessed.**

Does it include all Government Take?

- **Bonuses**
  - Even though these can vary from lease to lease, are they included?
  - Recent $1Bn bonuses paid in Angola
  - Sizeable bonuses paid in other regimes as well
- **Domestic Market Obligation**
  - Has the requirement to provide a portion of the oil and gas to the local market at a discount been taken into account?
- **Government Partner**
  - Has the government participation been included, even if it is as a full paying equity partner?

Available Investment Capital

- **Producer spending can be put in three categories:**
  - Mandatory – loss of license if they don’t
  - Should – monetary penalties / loss of production if they don’t
  - Discretionary
- **2008 was a big Industry spend year. Now oil prices have fallen and global economy is in a recession. How much of the lack of new discretionary spending in Alaska is because the ‘tax is too high’ versus significant spending being directed to the top two categories above?**

Wrap Up

- **Understand what comparative studies <u>are</u> and <u>are not</u> before you draw conclusions.**
- **Many important factors such as timing, ringfencing, signature bonuses are often left out.**
- **Do not underestimate the value of immediate write off and capital credits in balancing differences between Alaska and other regimes that may lack these, but have lower government take.**
- **Alaska's government take is competitive with most hydrocarbon prolific areas.**