Presentation for

Alaska Legislature

October 18, 2017

IN3NERGY

be in the know

INTRODUCTION

WHAT WE DO

We are an energy consultancy with hands-on practical experience that combines technical know how (geoscience & engineering) with commercial acumen (economics, policy, contracts) to provide solutions within the Business of Energy.

We help you to stay **in** the know.

ABOUT IN3NERGY

OUR CLIENTS

GOVERNMENTS, MINISTRIES & NOCs

in over 24 countries

ENERGY EXECUTIVES

from super majors to entrepreneurial independents

FINANCIAL STAKEHOLDERS

Including banks, private equity, hedge funds, insurance companies

LAW FIRMS

and their clients as litigation & bankruptcy experts

ABOUT IN3NERGY

OUR WORK

- FISCAL STRATEGY
- BID/LICENSE ROUNDS
- ENERGY MASTER PLANS
- LEGISLATION
- CONTRACTS
- LNG
- REGULATION
- MODELING
- TRAININGS & WORKSHOPS

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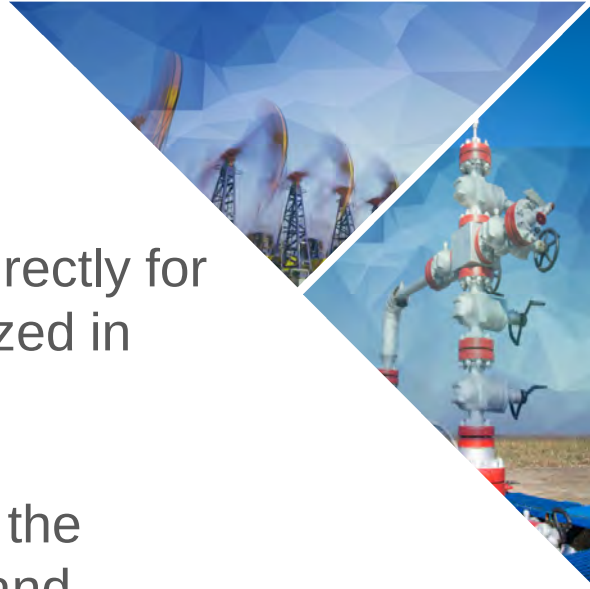
EXPERTISE



- On the ground practitioners that have worked directly for over two dozen foreign governments and analyzed in depth dozens more
- Have built simple and complex models to aid in the understanding of optionality, risk management and decision making
- Have negotiated multi-billion dollar contracts with and on behalf of multiple governments as well as producers of all sizes
- Background includes upstream and midstream, including LNG project development

EXPERIENCE

- Bring decades of US domestic and international experience from the 3 critical perspectives of the petroleum industry
  - Operator
  - Sovereign
  - Service Company
- **Fiscal Experience** - Designed or redesigned petroleum fiscal systems for multiple countries, e.g.
  - New countries like East Timor with no prior energy production or infrastructure,
  - Rebuilding countries like Iraq with extensive energy assets just emerging from years of war and conflict
  - Sophisticated countries like Saudi Arabia and Kuwait opening to foreign investors
  - Master energy plans and production sharing contract design for Middle East, AsiaPac and Latin America countries
  - Design and execution of multiple license rounds

AGENDA

1

INTRODUCTION

Set the stage

2

OIL AND GAS INDUSTRY

Fundamentals that impact fiscal policy

3

FISCAL SYSTEMS

Fiscal system design components overview

4

ALASKA IN OIL & GAS

What to contemplate

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EXPECTATIONS FOR THE DAY

FISCAL DESIGN 101

- Provide an overview of aspects of the petroleum industry that hopefully will aid in your understanding of the industry and the impact to the state and to the producers of existing and future proposed legislation
- What is normally a week long course for government officials has been condensed into a 6 hour overview
- This is for your benefit, so please do not hesitate to ask questions
- We are available tomorrow from 9 -12 at the LIO for personal or small group sessions to answer questions or provide additional detail
- Intent is to provide background and context and not to discuss specific bills or regulations

WHAT DO YOU HOPE TO LEARN?

FISCAL DESIGN 101

INTRODUCTION

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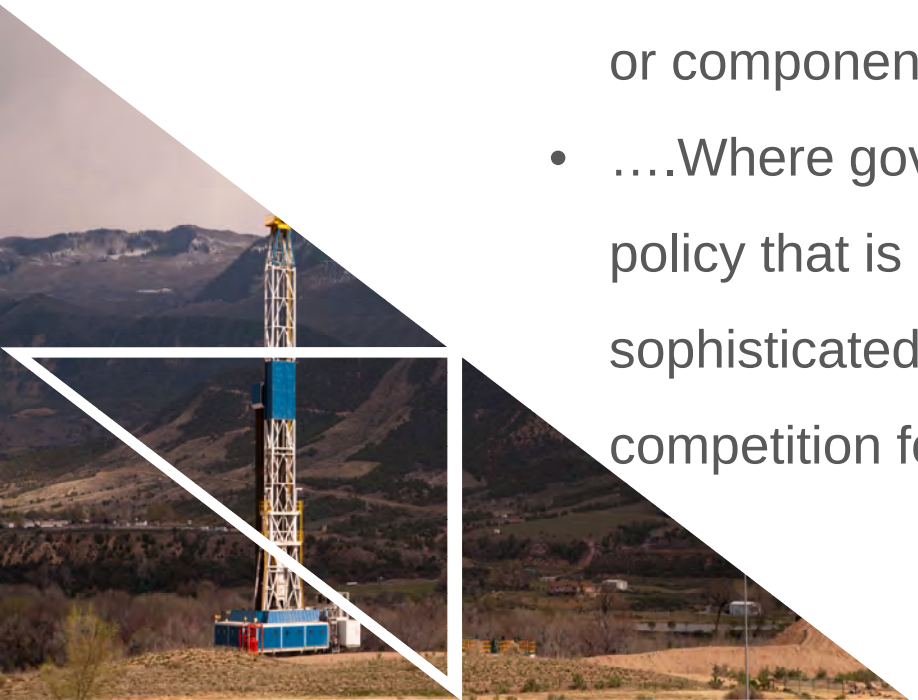
OIL & GAS INDUSTRY

CHANGE IS THE ONLY CONSTANT

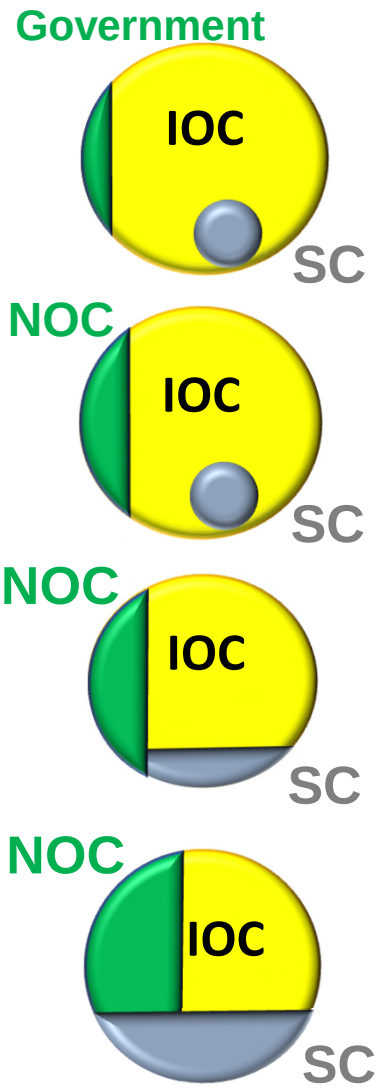
- The Petroleum industry has continually undergone change, thus it's important to balance preparing for the future while addressing the present….
- … in a global market, where no single region, player, or component is isolated from another, and…
- ….Where governments need to set petroleum fiscal policy that is responsive to a complex and sophisticated business environment in a global competition for oil company investment dollars



50 YEARS OF CHANGE- BALANCE OF POWER

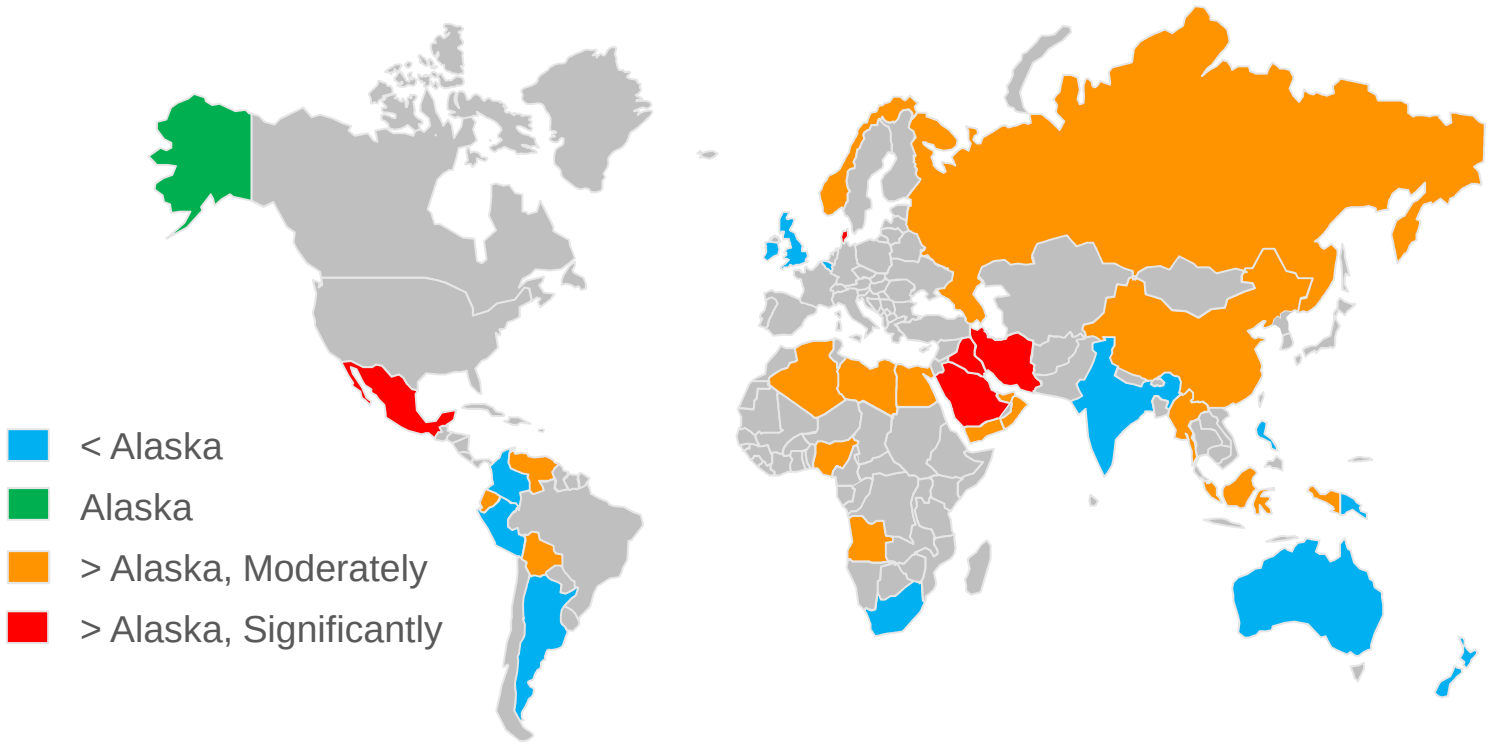
IOC: International Oil Company / **NOC:** National Oil Company / **SC:** Service Company

Up to 1970s	**Seven Sisters dominate** the petroleum industry Anglo-Persian (BP), Gulf Oil, Standard Oil of California (Chevron), Texaco, Royal Dutch Shell, Standard Oil of New Jersey (Esso) and Standard Oil Company of New York (Mobil) Resources and Markets controlled by Majors
1970s & 1980s	Resource control moving to State / Emergence of NOCs CNPC (China), Gazprom (Russia), NIOC (Iran), Petrobras (Brazil), PDVSA (Venezuela), PERTAMINA (Indonesia) PETRONAS (Malaysia) and Saudi Aramco (Saudi Arabia) Markets still controlled by IOCs ***IOCs increasingly outsource drilling services and related R&D to SCs***
1990s	**NOCs become international players** (INOCS) Competition for resources by IOCs/NOCS outside of home territory
2000s	SCs grow and expand range of services Host Governments look to **"disintermediate"** role of IOCs by contracting directly with SCs



HOW COMPETITIVE IS ALASKA?

ALASKA'S TAKE IS MIDDLE OF THE PACK



- Most people use some representation of marginal tax rates or average government take to incorrectly draw conclusions as to the competitiveness of a particular regime
- Today we will discuss the many other aspects of operations and taxation that must be considered as states compete for investment capital

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INVESTMENT DECISION MAKING

DIFFERENT APPROVAL CRITERIA

- The goal of most **sovereigns** is the 'optimal' development of its mineral resources
  - Multi-generational wealth
  - Growth of manufacturing capability
  - Quality of life (health, safety, environment)

- The goal of most **oil companies** is to make a profit and meet investor expectations (Which are not all the same)
  - Shareholders
  - Debt Holders
  - Private Equity
  - Joint Venture Partners

- The challenge is to find overlap between the two set of goals

OIL COMPANY INVESMENT DECISIONS

APPROVAL CRITERIA

- Oil companies use many different economic criteria for deciding where and when to invest, e.g.
  - IRR *internal rate of return or interest rate on their money*
  - ROI *return on investment*
  - NPV *present value of future cash flows*
  - Payout *time to get investment back*

- Economics are generally supplemented with a risk assessment, e.g. :
  - Reservoir/Drilling
  - Proximity to supplies and markets
  - Fiscal stability
  - Worker skill base

- Along with product price and costs, **time** has a big impact on economics and decision making

THE IMPORTANT IMPACT OF TIME

TIME CAN MAKE OR BREAK ECONOMICS

- Today, in the Mid-Continent area of the US it is possible to acquire acreage, drill and have a well on production tied to market in less than 60 days

- In many locations around the world the process of lease acquisitions to commercial production delivered to market can take up to 10 years

- Besides time impacting the economics in comparing projects it also raises the level of risk associated with a particular project

THE IMPACT OF TIME ON A PROJECT

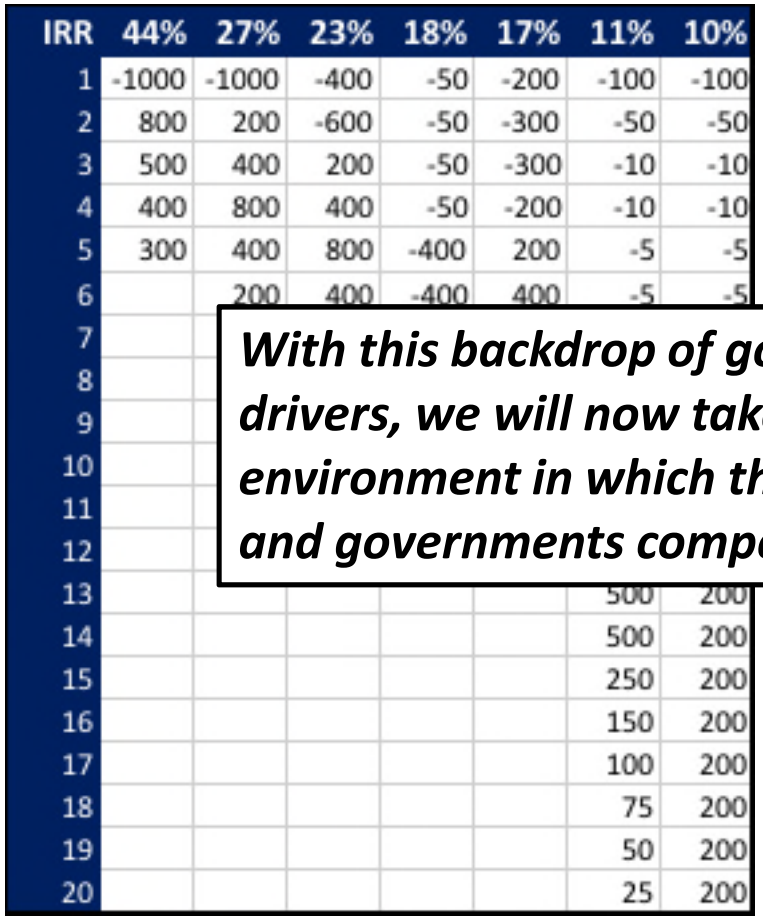
FROM "GO" TO "NO GO"

IRR	44%	27%	23%	18%	17%	11%	10%
1	-1000	-1000	-400	-50	-200	-100	-100
2	800	200	-600	-50	-300	-50	-50
3	500	400	200	-50	-300	-10	-10
4	400	800	400	-50	-200	-10	-10
5	300	400	800	-400	200	-5	-5
6		200	400	-400	400	-5	-5
7			200	200	800	-10	-10
8				400	400	-10	-10
9				800	200	-300	-300
10				400		-500	-500
11				200		100	200
12						250	200
13						500	200
14						500	200
15						250	200
16						150	200
17						100	200
18						75	200
19						50	200
20						25	200

- Project:
  - Investment of 1000
  - Total revenue back to the producer of 2000
- Table shows:
  - Different timing scenarios and
  - Different production profiles for the same project
- IRR ranges from 10% (likely not to get approved) to 44% (highly likely to get approved)
- Several scenarios are in the questionable area

THE IMPACT OF TIME ON A PROJECT

FROM "GO" TO "NO GO"



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5	300	400	800	-400	200	-5	-5
6		200	400	-400	400	-5	-5
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With this backdrop of government and oil company drivers, we will now take a look at the global environment in which the oil companies operate and governments compete

- Project:
  - Investment of 1000
  - Total revenue back to the producer of 2000

narios and profiles for

- IRR ranges from 10% (likely not to get approved) to 44% (highly likely to get approved)
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OIL & GAS INDUSTRY

GLOBAL FUNDAMENTALS THAT DRIVE FISCAL POLICY

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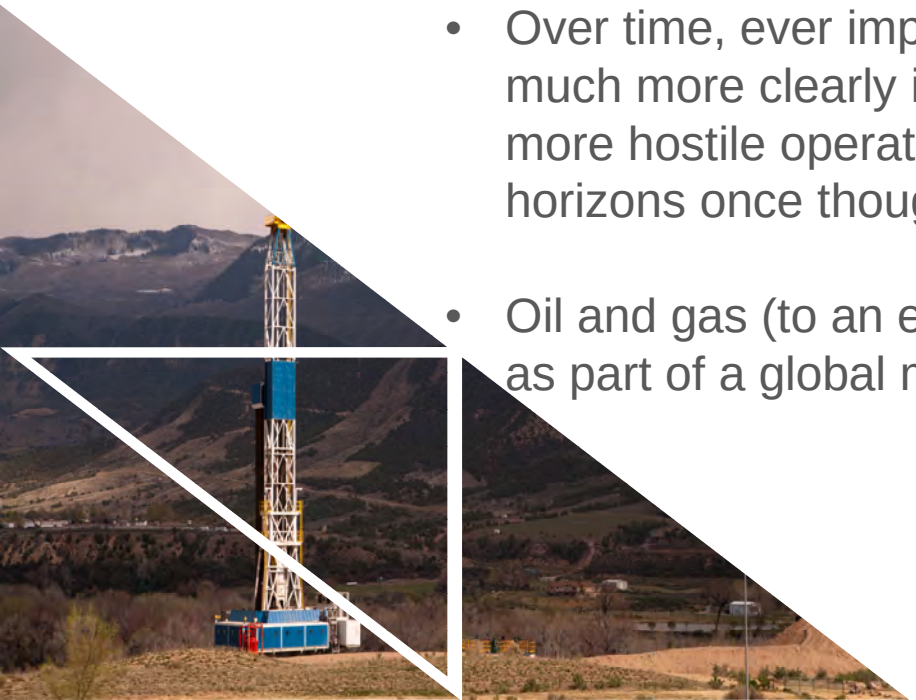
OIL & GAS INDUSTRY

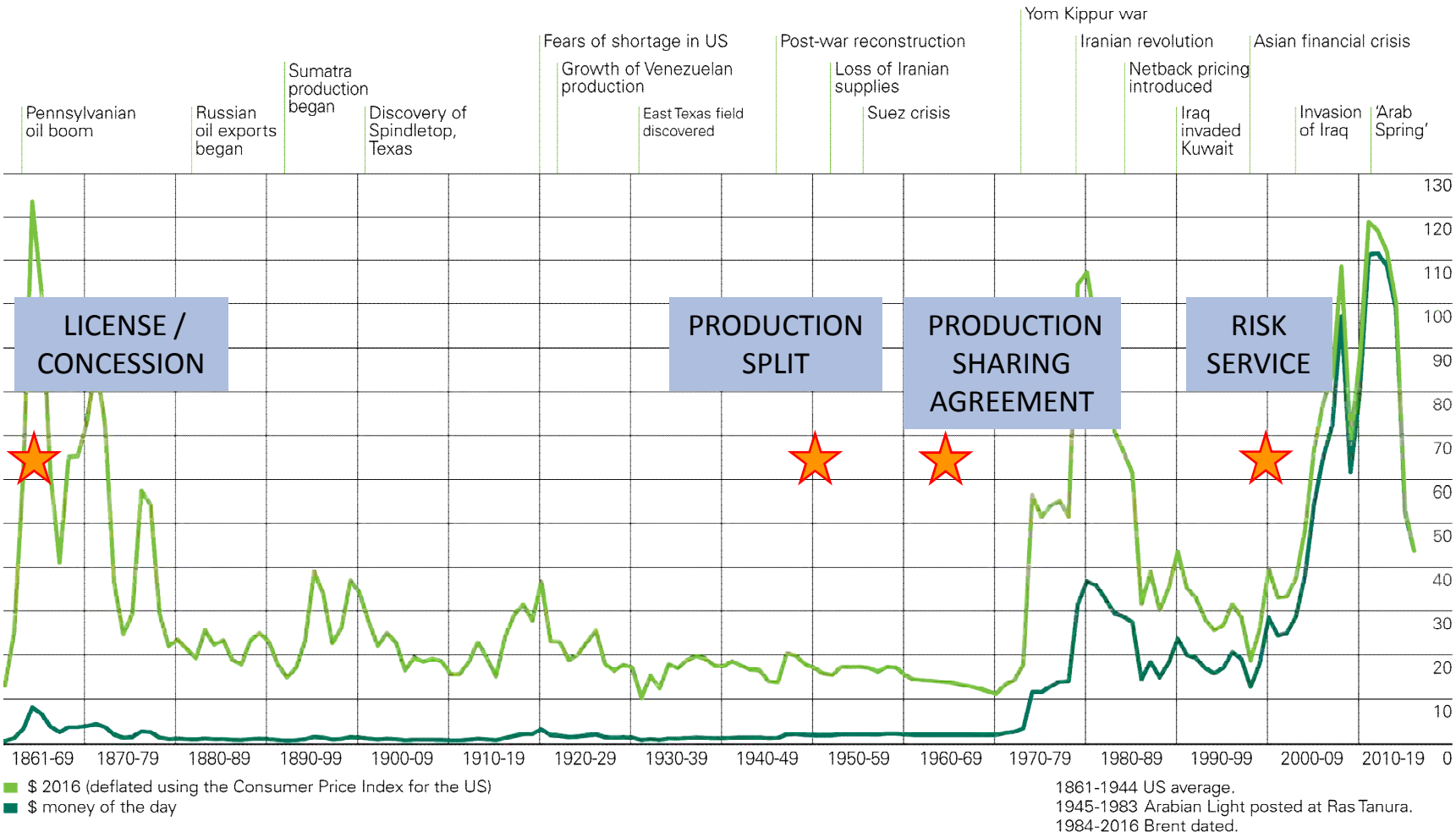
GENERAL CHARACTERISTICS

- For centuries, people have been accessing numerous naturally occurring oil and gas seeps around the globe
- The “modern” history of oil and gas development dates back to the mid 1800s (Pennsylvania, Azerbaijan)
- Over time, ever improving technology has allowed us to “see” much more clearly into the ground, drill deeper and longer in more hostile operating environments, and produce from horizons once thought impossible (shale)
- Oil and gas (to an ever increasing extent) are interconnected as part of a global market



CRUDE OIL PRICES 1861-2016

US DOLLARS PER BARREL



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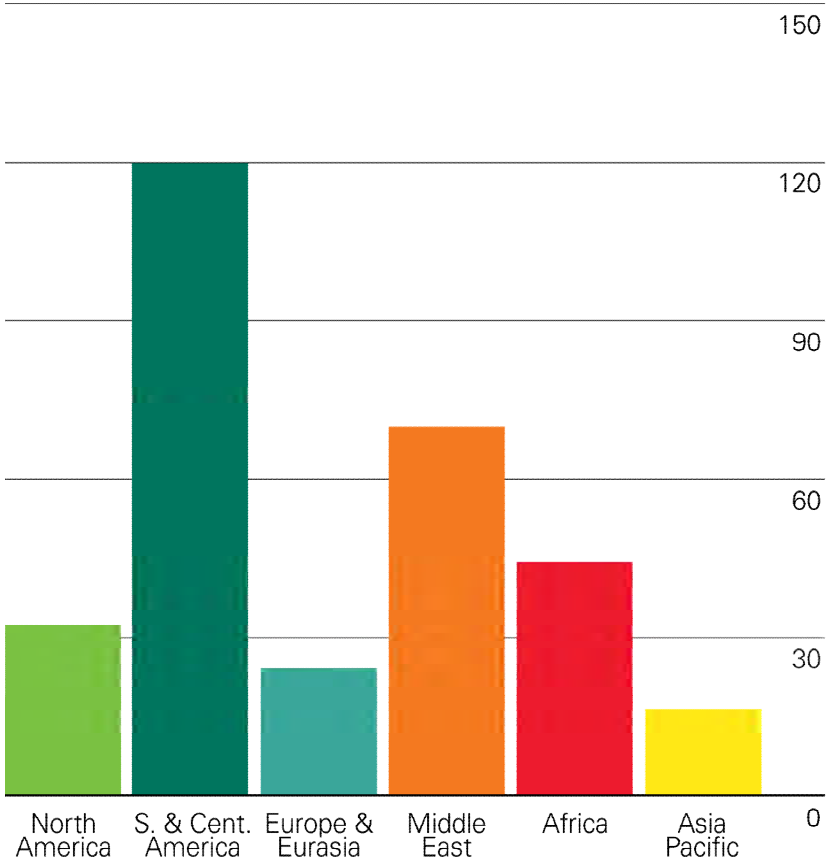
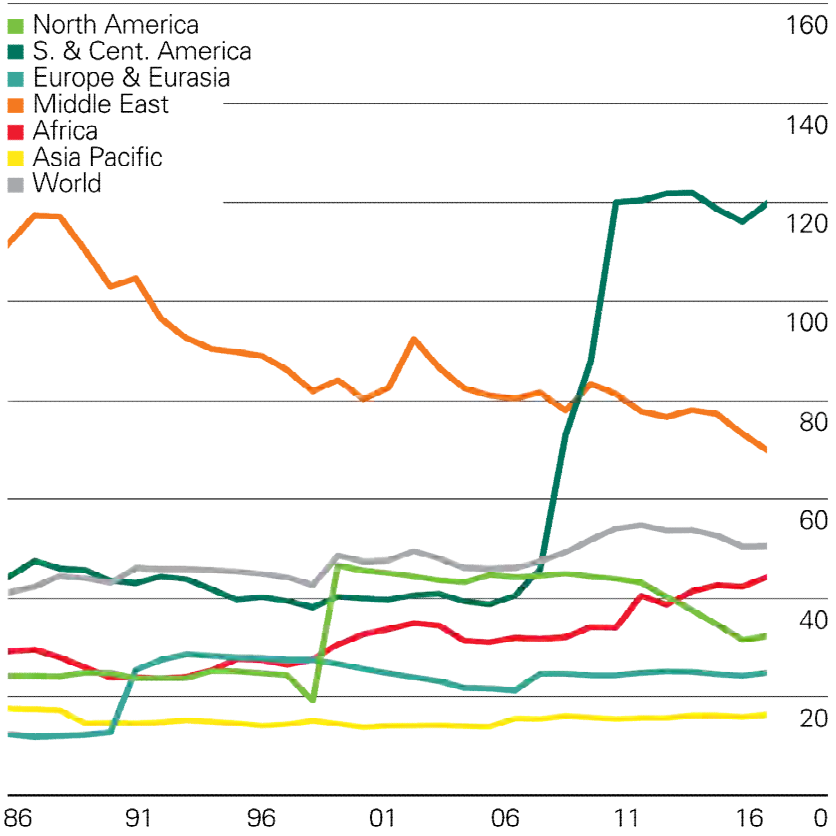
OIL RESERVES/PRODUCTION RATIOS

HOW MANY YEARS WILL THE COUNTRY'S OIL LAST?

2016 by region



History



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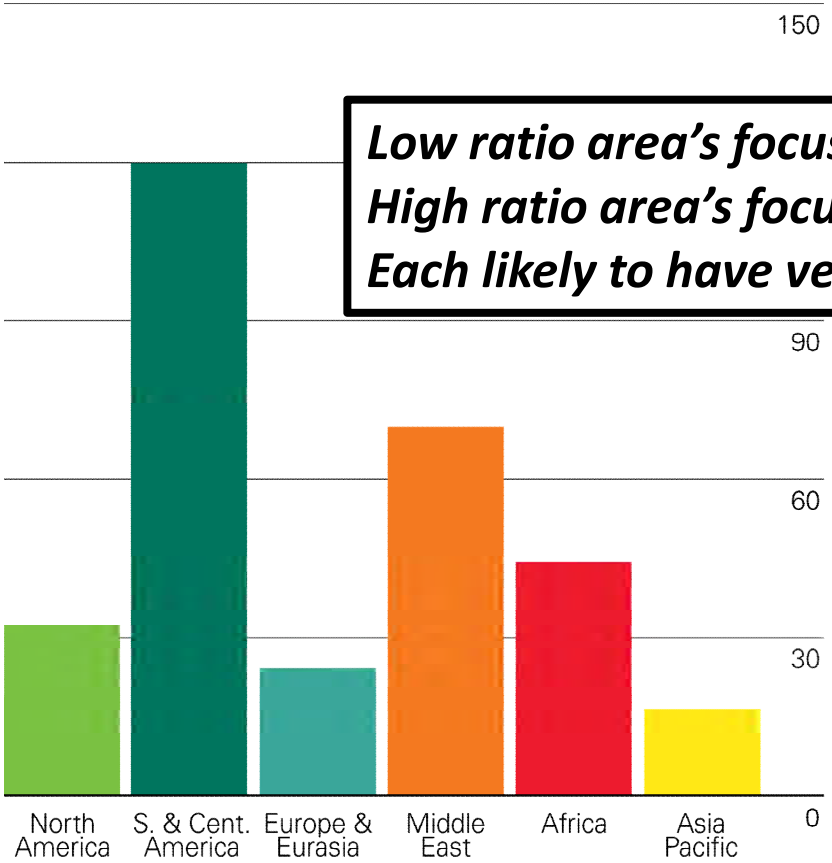
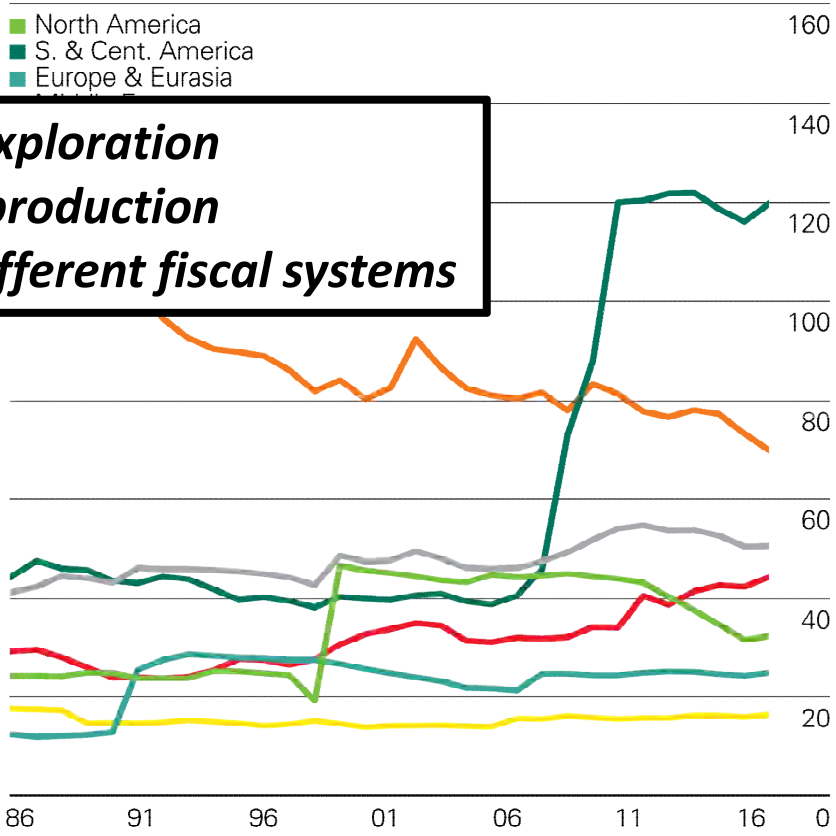


Low ratio area's focus is exploration
High ratio area's focus is production
Each likely to have very different fiscal systems

History



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RESOURCES VERSUS RESERVES

THE TERMS ARE NOT INTERCHANGEABLE

- Hydrocarbon Resources
  - The amount of oil and gas believed to be ‘pooled’ in a reservoir or reservoirs
  - Overly simplified, it is a mathematical exercise of
    L x W x H x % pore space

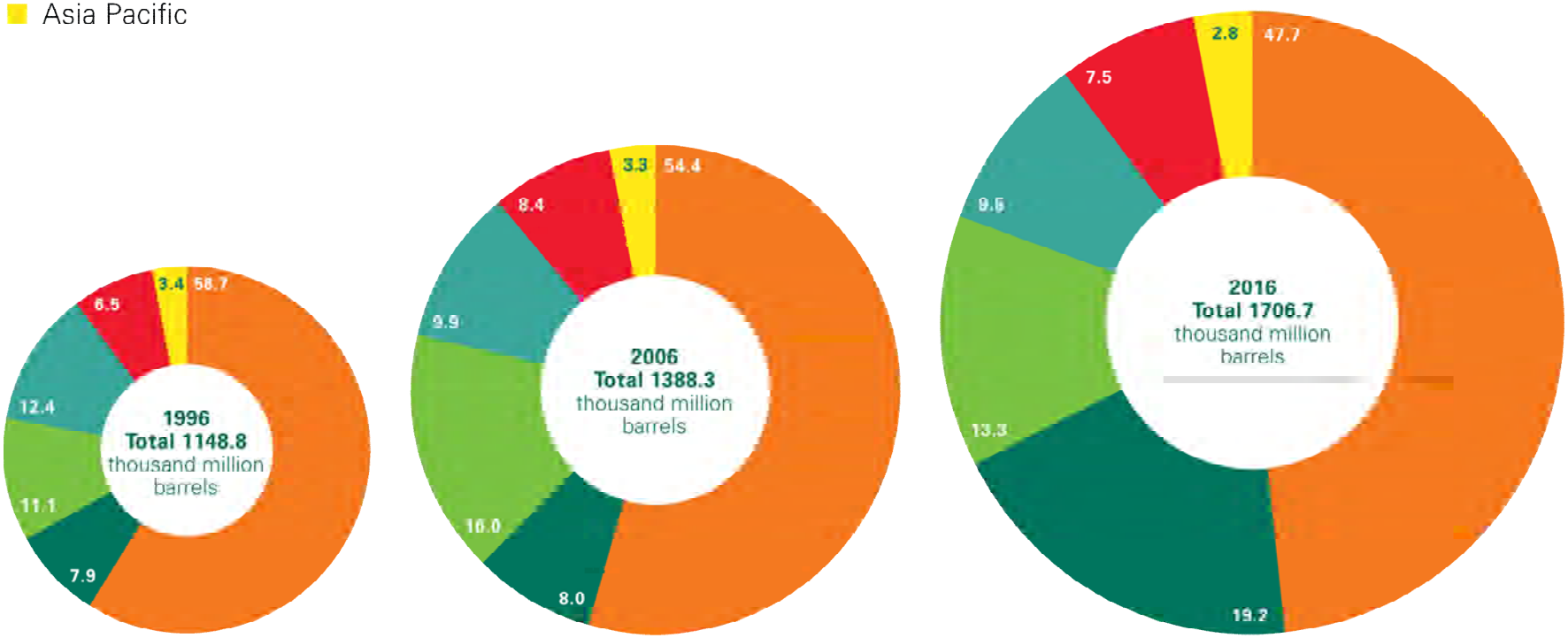
- Hydrocarbon Reserves
  - A fraction of the hydrocarbon resource amount
  - Only those resources that can be economically developed and produced under company and government approved plans

DISTRIBUTION OF PROVED OIL RESERVES

1996, 2006, 2016 AS PERCENTAGE

- Middle East
- S. & Cent. America
- North America
- Europe & Eurasia
- Africa
- Asia Pacific

Degree of Middle East influence shrinking



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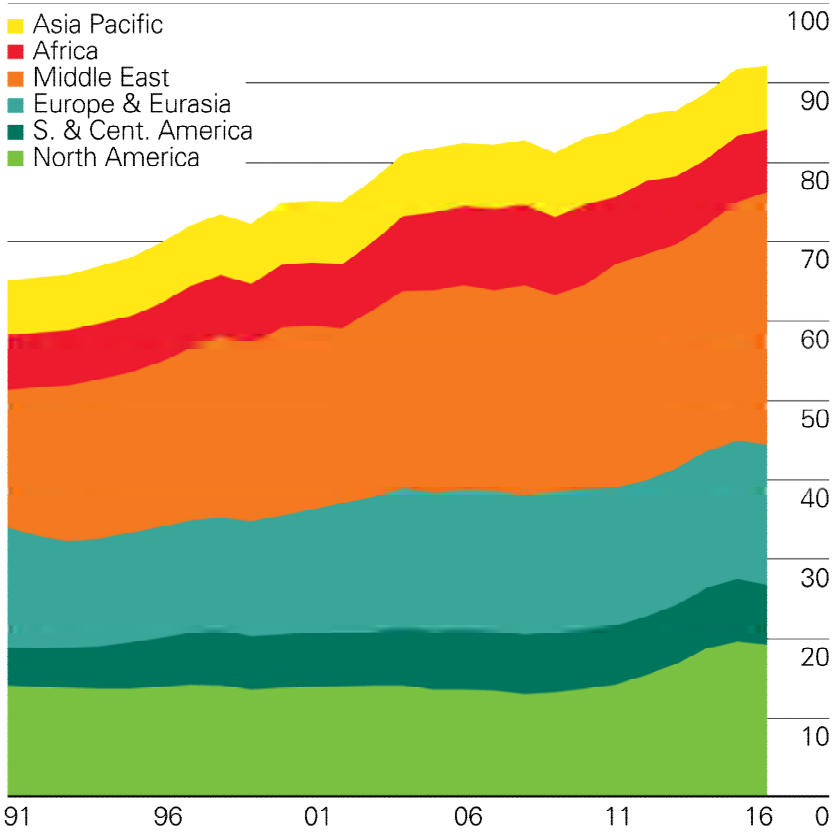
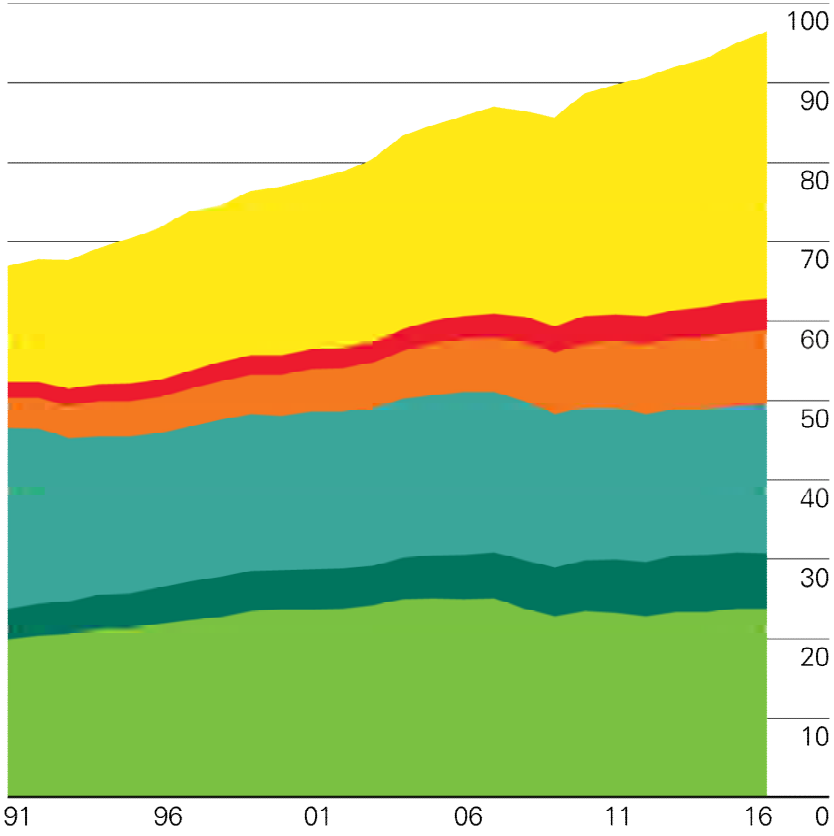
OIL PRODUCTION/CONSUMPTION BY REGION

MILLION BARRELS PER DAY

Production by region



Consumption by region



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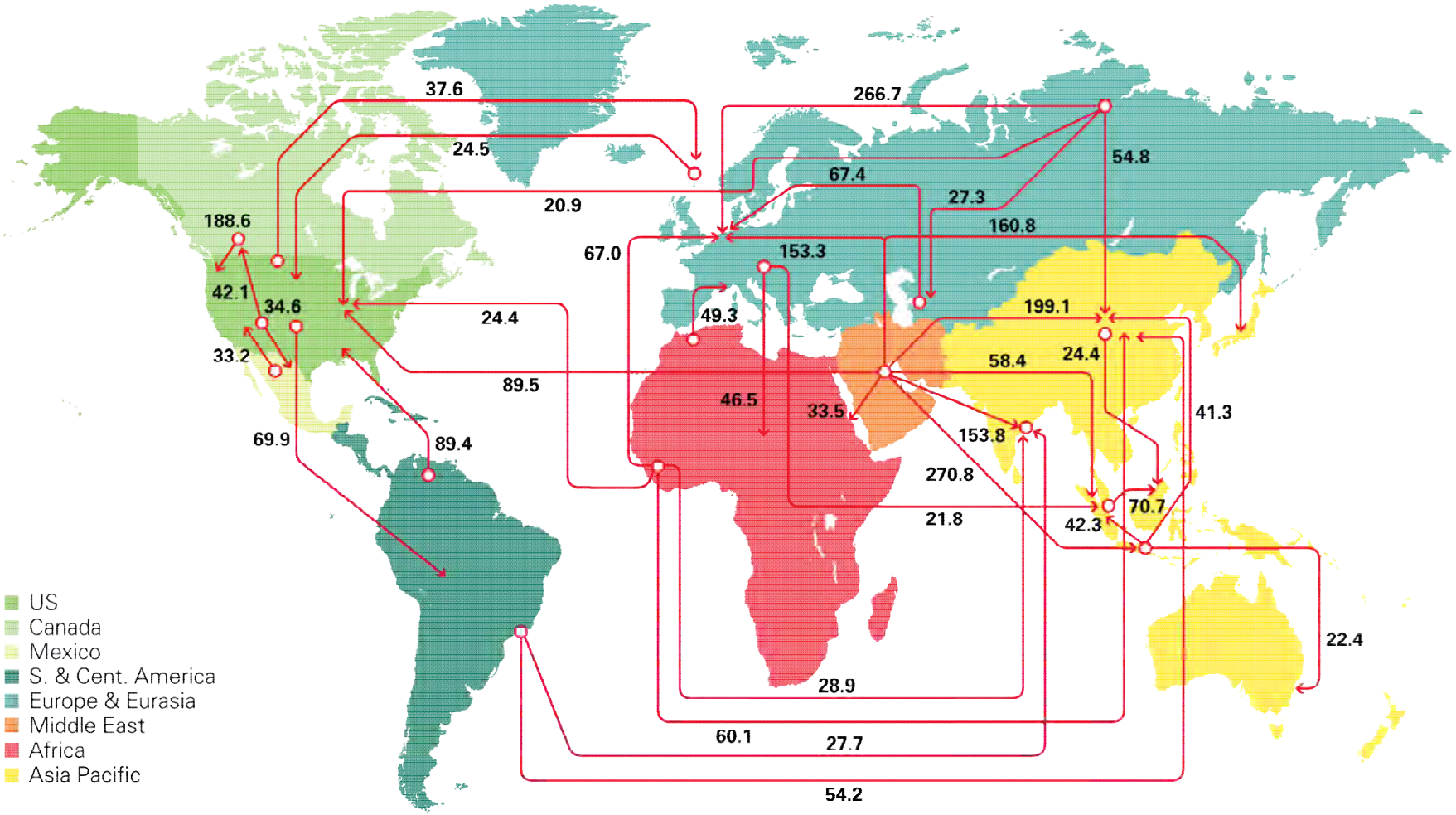
MAJOR OIL TRADE MOVEMENTS 2016

TRADE FLOWS WORLDWIDE (MILLION TONNES)



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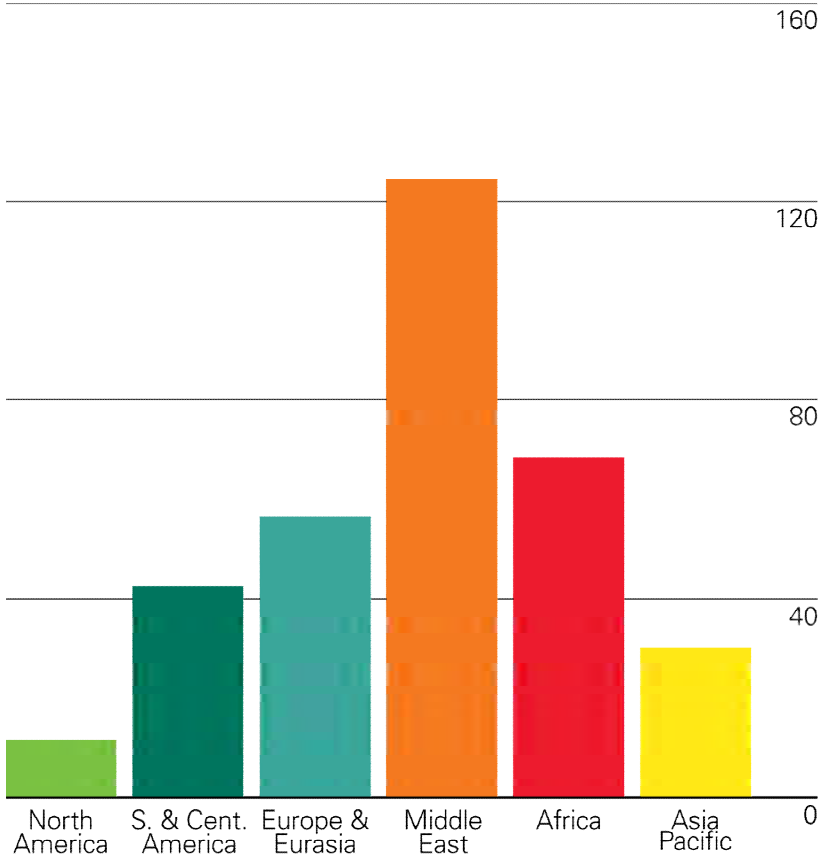
Window into Geopolitical Risk

GAS RESERVES/PRODUCTION RATIOS

YEARS

2016 by region



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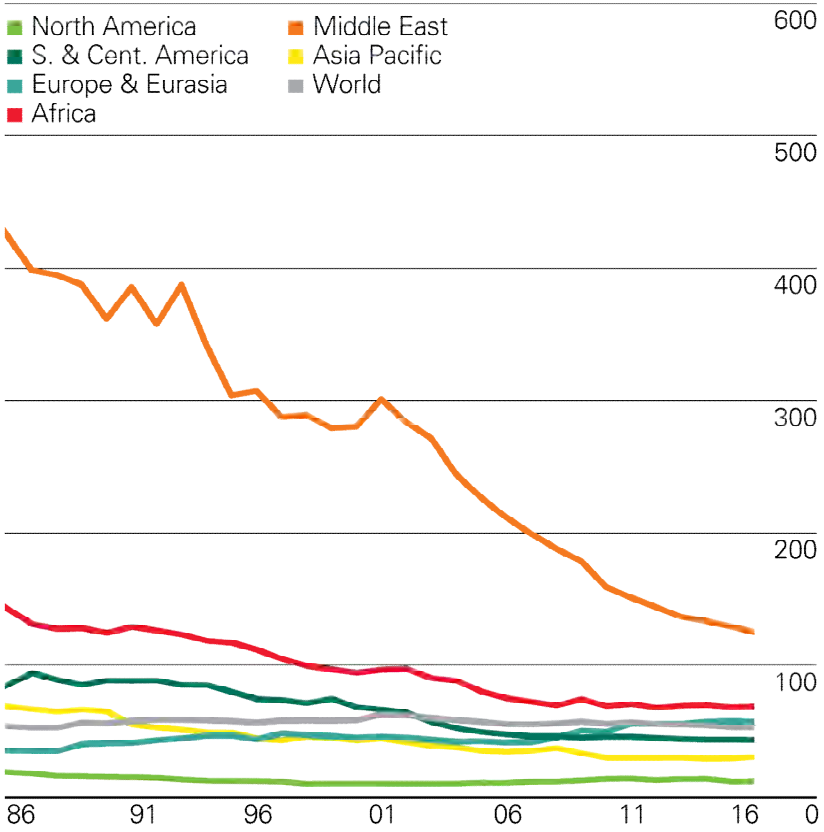

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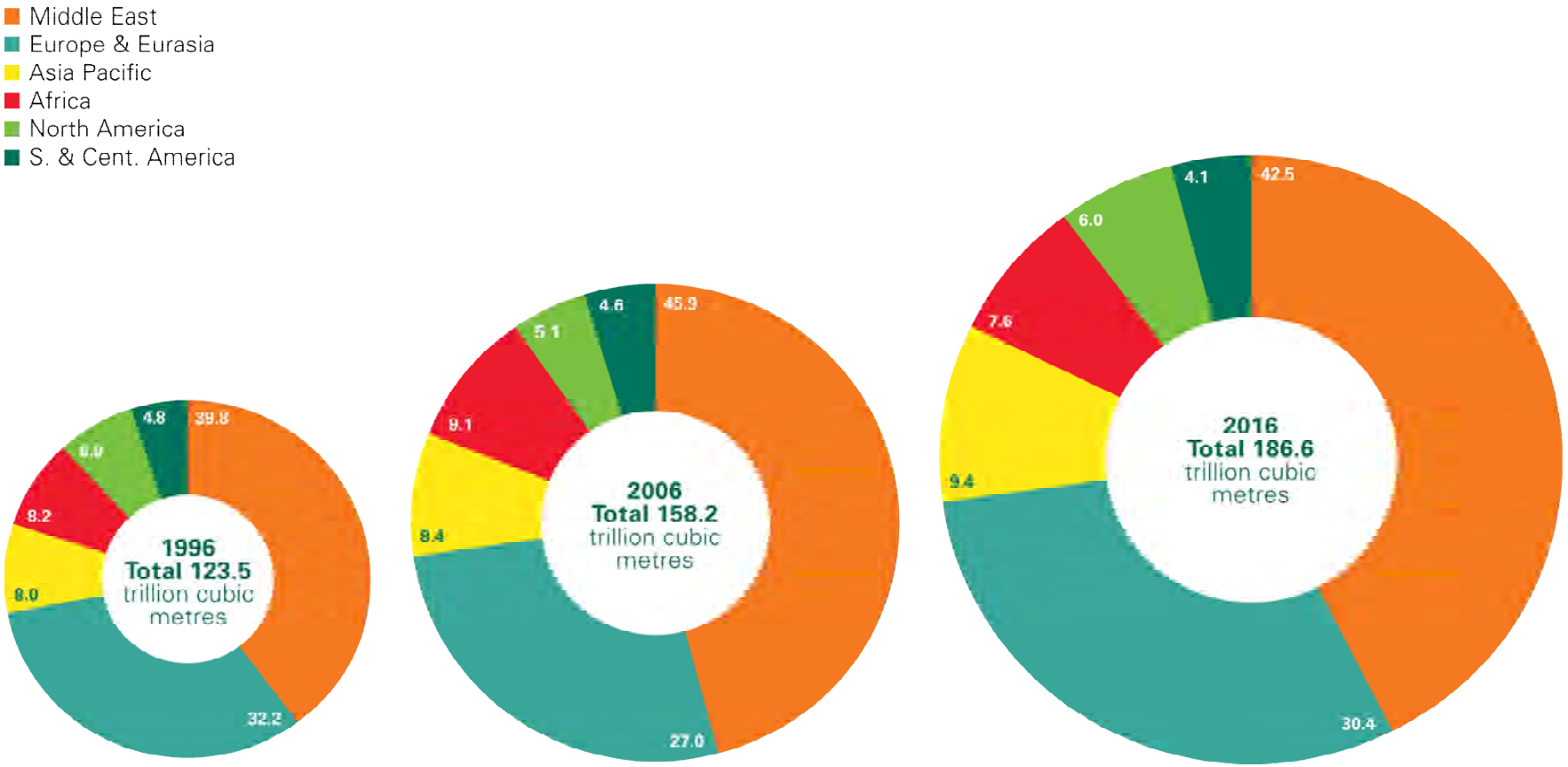
DISTRIBUTION OF PROVED GAS RESERVES

1996, 2006, 2016 AS PERCENTAGE



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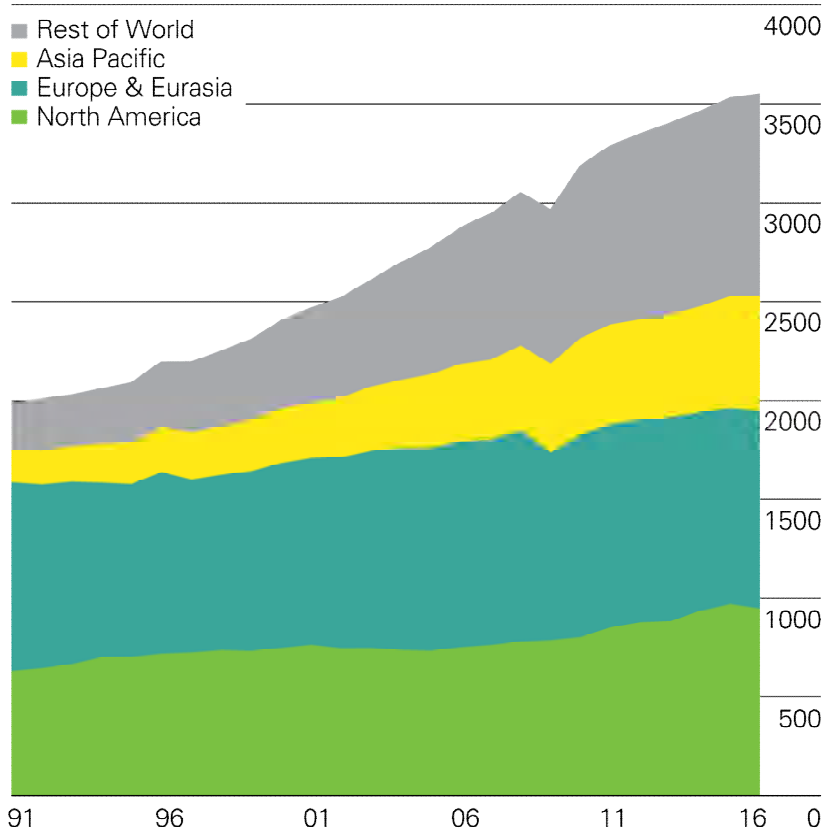
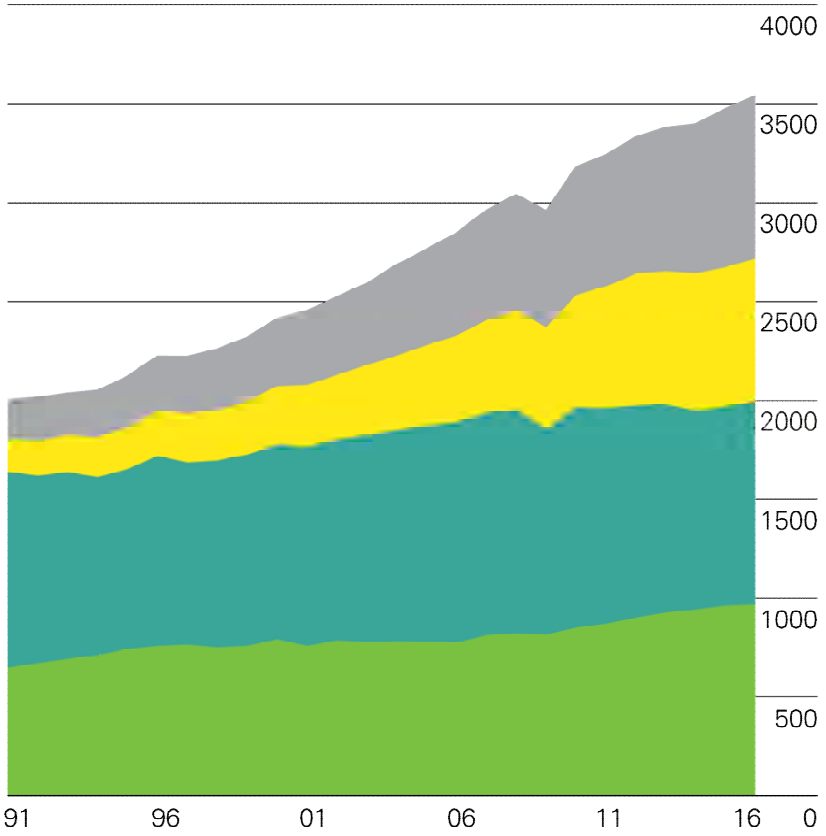
GAS PRODUCTION/CONSUMPTION BY REGION

BILLION CUBIC METRES

Production by region



Consumption by region



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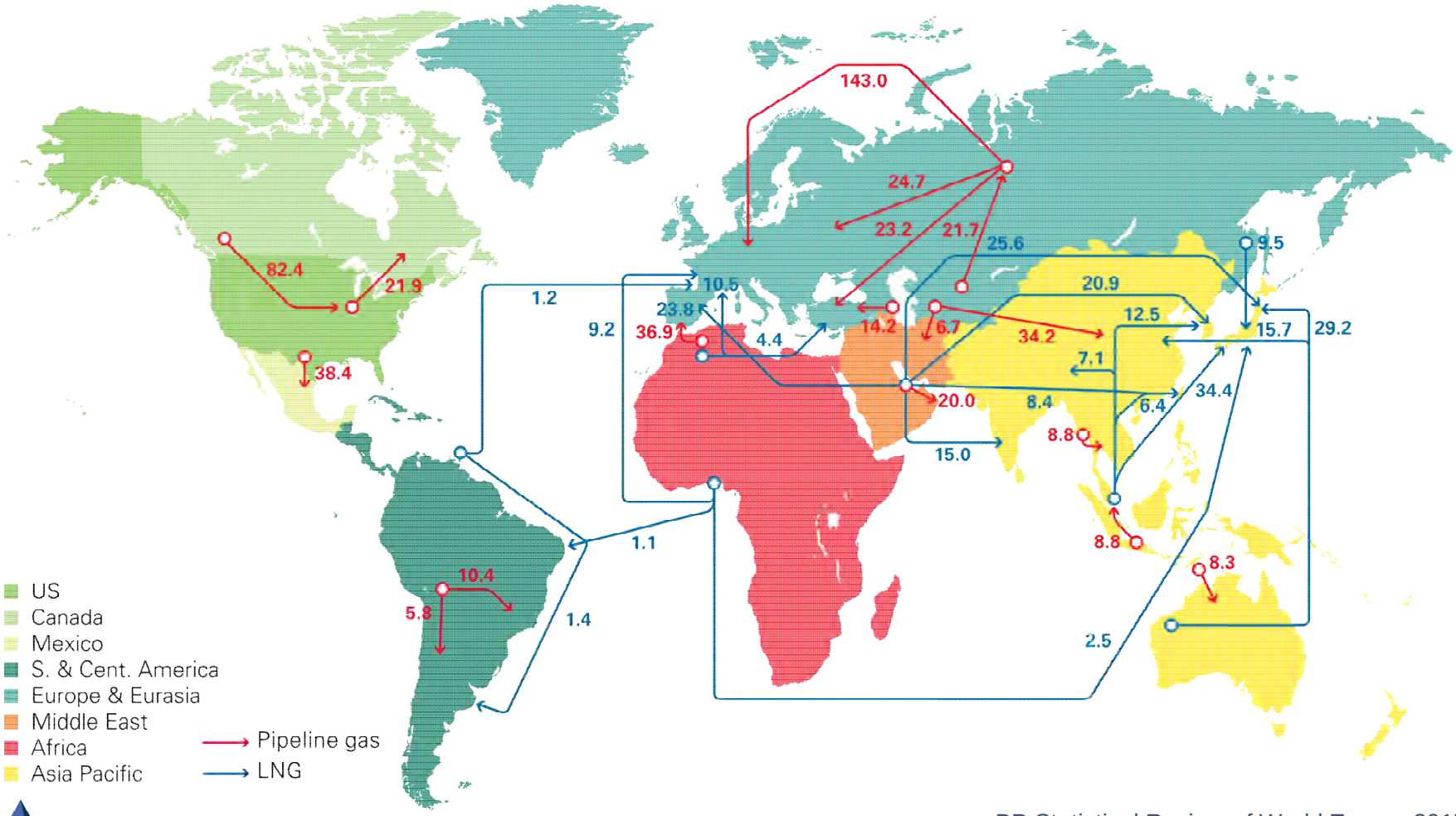
MAJOR GAS TRADE MOVEMENTS 2016

TRADE FLOWS WORLDWIDE (BILLION CUBIC METRES)



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HYDROCARBONS

CONVENTIONAL TO UNCONVENTIONAL

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WHAT IS A HYDROCARBON?

THE FUNDAMENTAL STRUCTURE

- **Hydrocarbon:** an organic compound containing only carbon and hydrogen and includes petroleum, natural gas, coal, and bitumen
  - 1 Carbon – Methane
  - 2 Carbons – Ethane
  - 3 Carbons – Propane
  - 4 Carbons – Butane
  - Heavier – LPGs, Natural Gas Liquids, all the way to asphalt

- They serve as fuels and lubricants as well as raw materials for the production of many of our every day items including plastics (your cell phone and computer, water bottles, baby toys), fibers (your clothes), synthetic rubbers (car parts), solvents, explosives, and industrial chemicals

Source: Marriam-Webster, Britannica

HYDROCARBONS ARE NOT CREATED EQUAL

CRUDE OIL

- The value of a barrel of crude oil, and the costs to produce that barrel, are dependent on the quality of the crude
  - Range from Light to Heavy (**API Gravity**)
    e.g. water, honey, peanut butter
  - Can be Sweet or Sour (mainly **Sulphur** content)
    (Can require more expensive specialty steels)

- Crude oil is priced regionally against a 'marker crude'
  - WTI (West Texas Intermediate)
  - Brent (UK)
  - Arab Light (ME)

- Value differences from one crude to the next can be as much as 20%
  - TAPS has a Quality Bank to adjust for quality differences

HYDROCARBONS ARE NOT CREATED EQUAL

NATURAL GAS

- Natural Gas is classified as **associated gas or non-associated gas**
  - As the term implies, associated gas is gas produced in conjunction with crude oil
  - Non-associated gas is produced from a predominately gaseous reservoir

- Gas is measured by **Heating value (BTU/cf)**
  - 930 BTU/cf is ‘dry’ methane
  - The higher the BTU value the more ‘liquids’ or NGLs that can be produced
  - The liquids value can be substantially greater than the gas value

- On an energy equivalent basis 6000cf of gas = 1 barrel of crude
  - i.e. on parity $1 MMBtu = $6/barrel
  - Fluctuations in the relative pricing also drives investments

- Like crude oil, gas can be “sour” requiring specialty steels as well as being poisonous (need for safety precautions)

HYDROCARBONS ARE NOT CREATED EQUAL

FISCAL CONSIDERATIONS

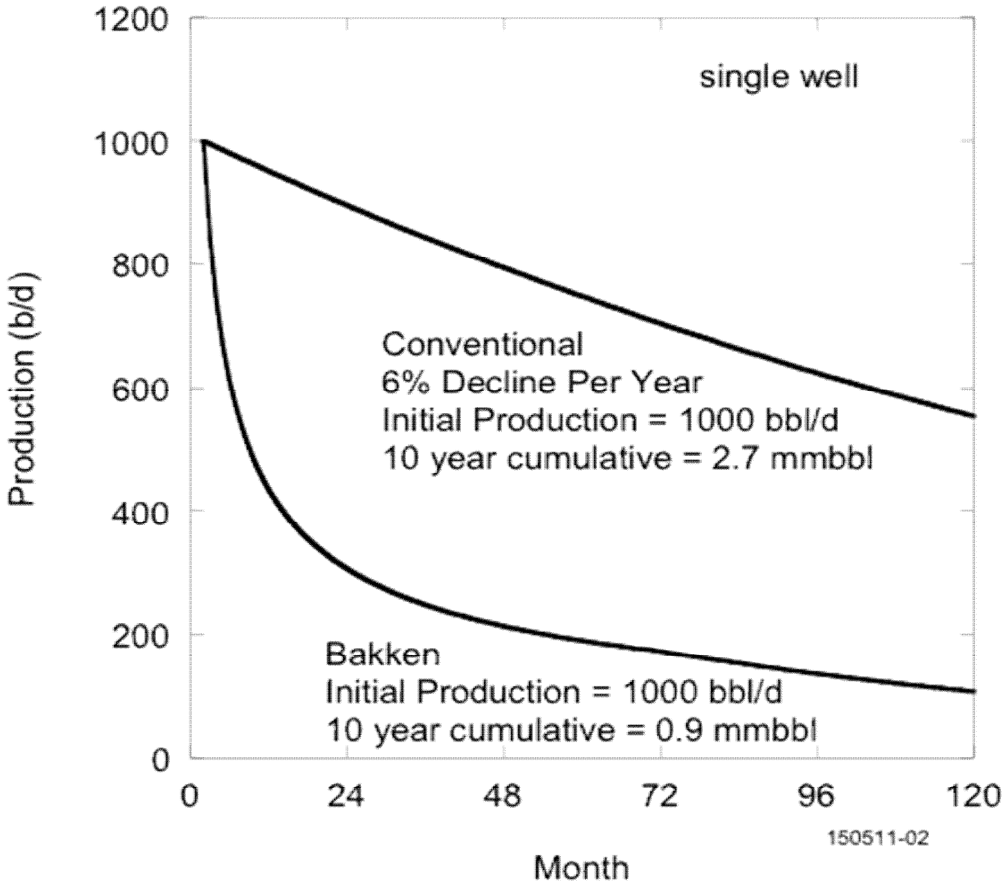
- Some regimes treat oil and gas differently
  - All Oil separate from all gas
  - Oil and Associated Gas separate from Non-associated Gas
    - Number of cubic feet of gas per barrel of oil determines whether it is associated or non-associated
  - NGLs can be treated as upstream or midstream
  - Transportation
    - Some treated as upstream while other as midstream or downstream
    - Can be based on distance, pipe diameter, interstate, first point of commingling, etc.

- The designation impacts deductibility of costs as well as incentives and tax rates

- Some regimes reduce investment risk by allowing excess costs and revenues to be “cross-charged” or “cross-credited” against the other

TYPE CURVE COMPARISON

CONVENTIONAL VERSUS UNCONVENTIONAL

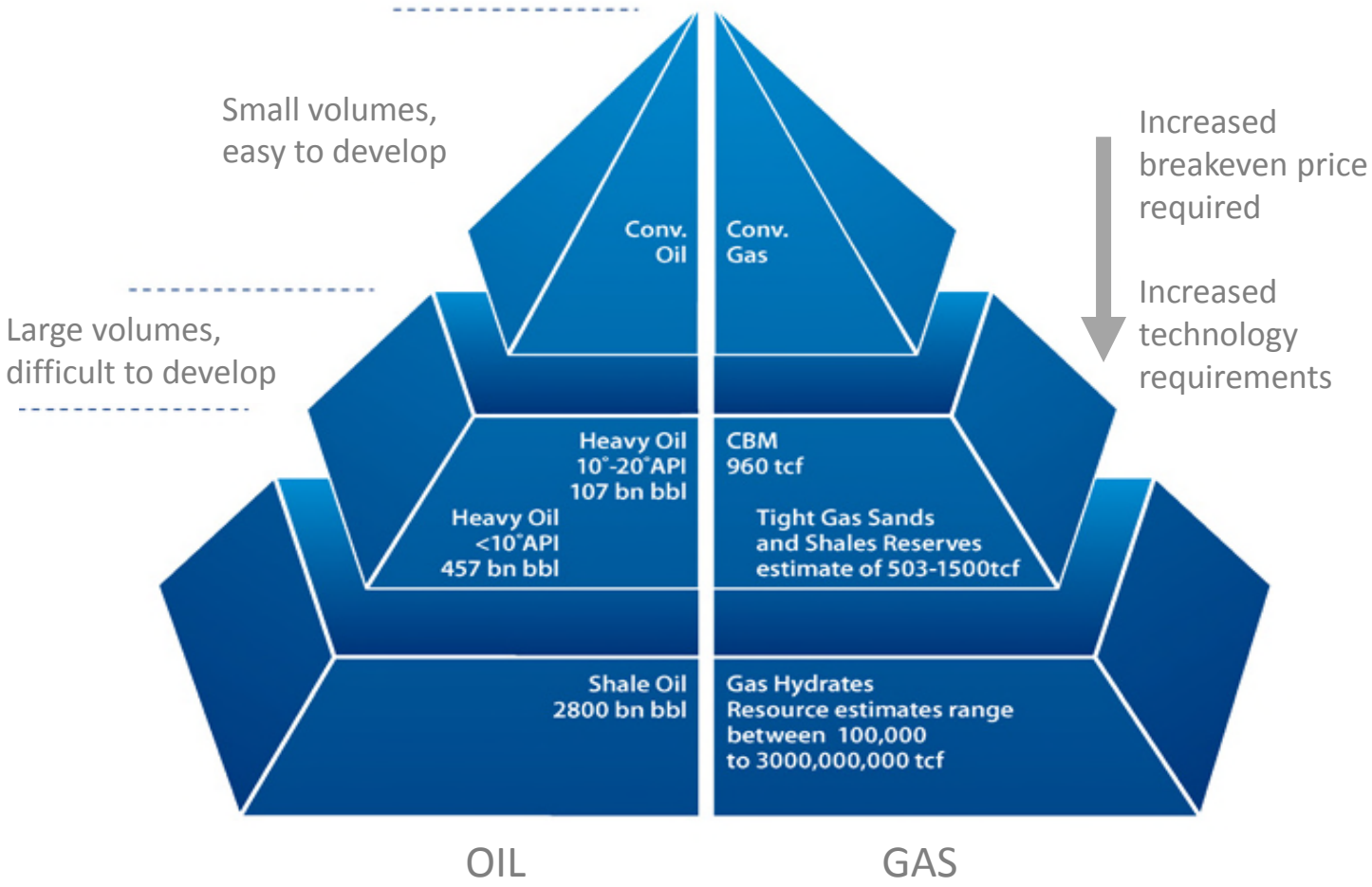


- The drilling, completion and production operations of conventional wells are very different to the same for unconventional
- The steep early decline in shale wells require constant drilling to maintain overall field rates
- To extract economic volumes requires years of operation at low levels for the unconventional

Source: MIT CEEPR

HYDROCARBONS ARE NOT CREATED EQUAL

FISCAL CONSIDERATIONS



INDUSTRY STRUCTURE

HOW IT'S ORGANIZED

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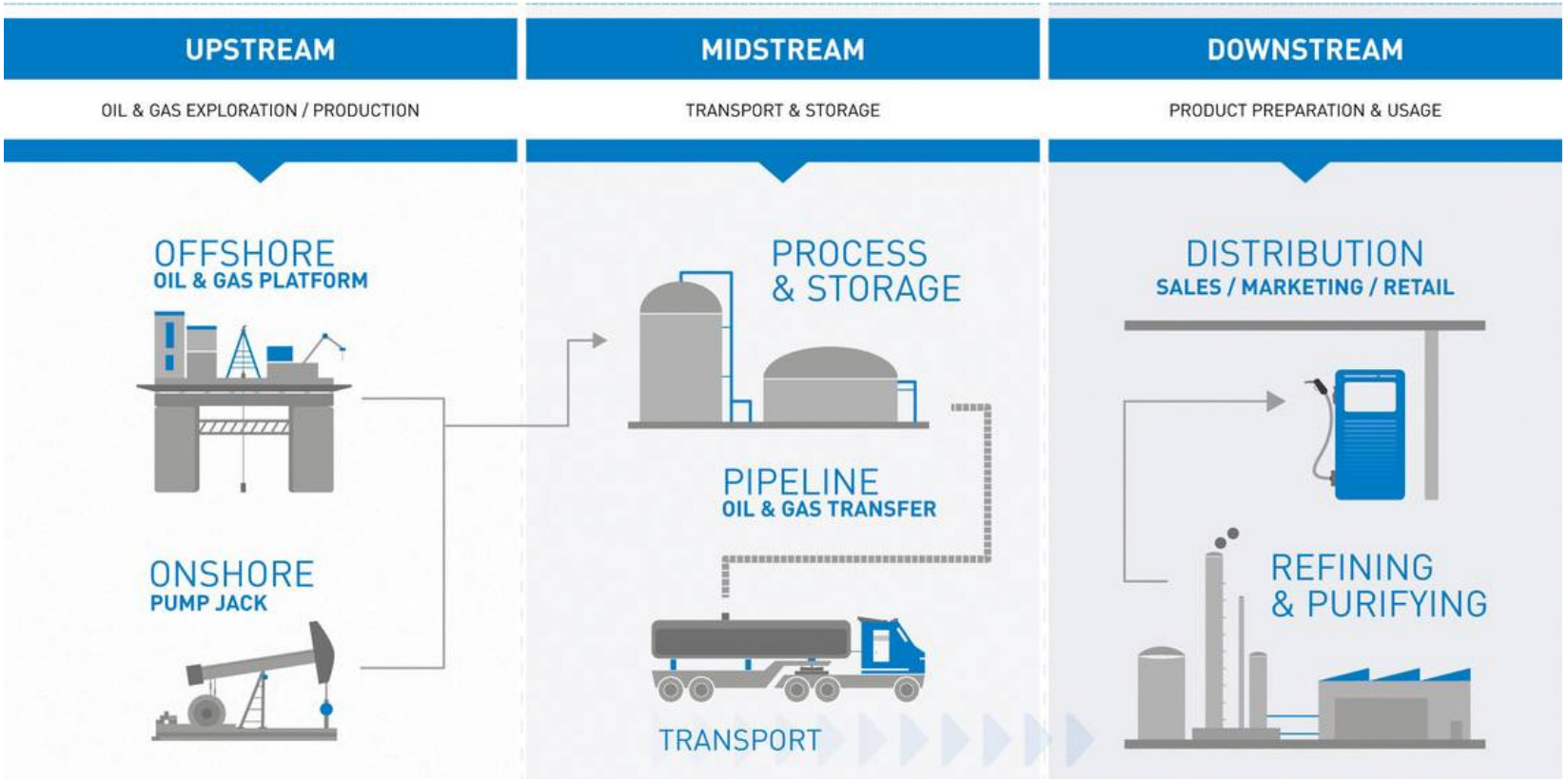
THE VALUE CHAIN

FROM A PROSPECT TO END USER

- The oil and gas industry is broadly categorized into 3 sectors: **Upstream, Midstream,** and **Downstream**



Source: www.ecom-e.com

THE VALUE CHAIN

FROM A PROSPECT TO END USER

- The oil and gas industry is broadly categorized into 3 sectors: **Upstream, Midstream,** and **Downstream**

Petroleum Fiscal Policy	Separately Regulated	Highly competitive
High Risk High Reward	Lower Risk Lower Return	Lower Risk Lower Return
Full of Unknowns	Well Defined	Some Price Regulation

Source: www.ecom-e.com

THE VALUE CHAIN

DOWNSTREAM CHALLENGES

- Midstream and Downstream activities impact Upstream Value and Economics

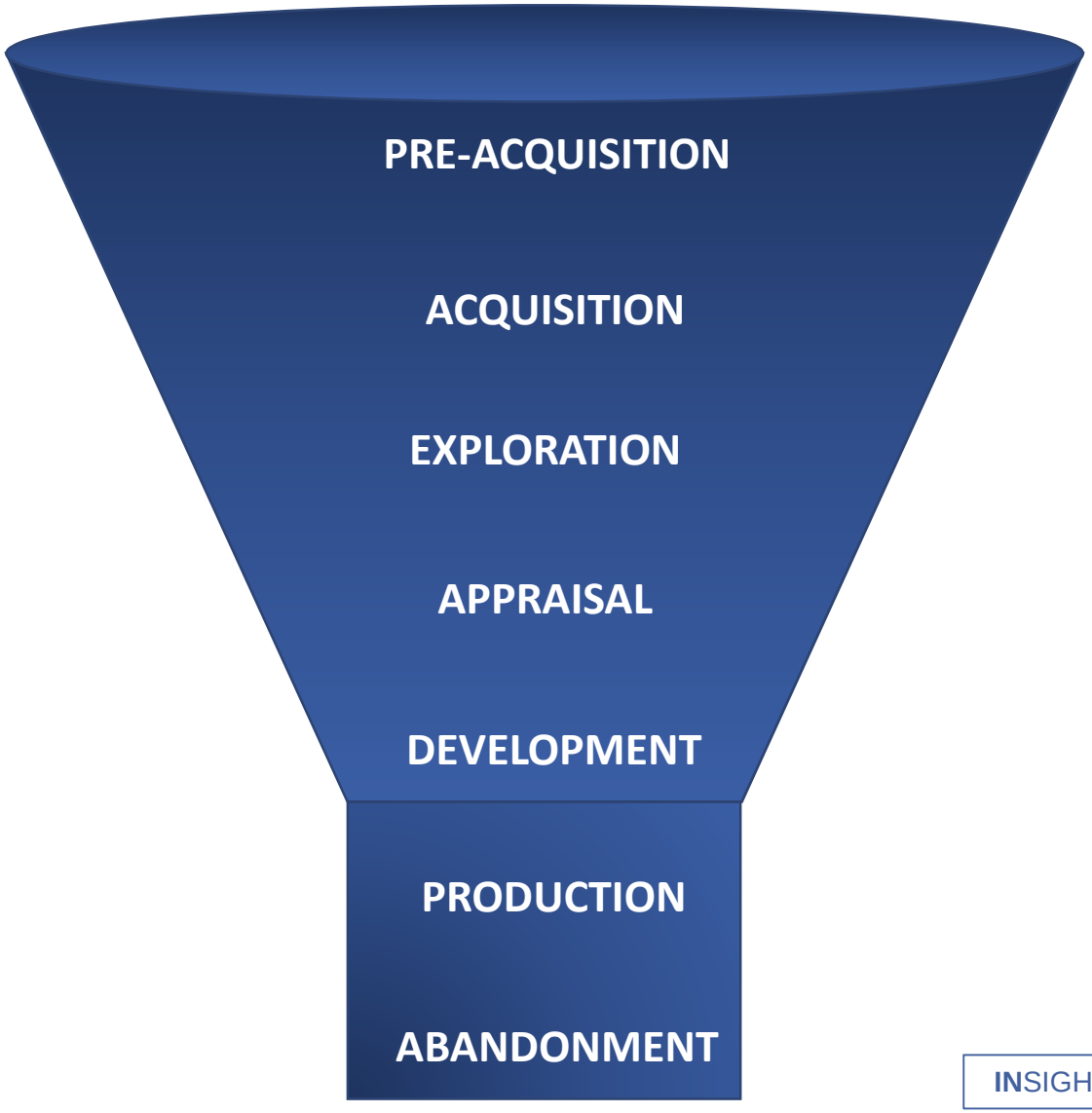
- Midstream Issues:
  - Available Capacity, firm versus interruptible
  - Third party access, commercial or regulated
  - Timing of Availability
  - Quality specifications (mainly gas treating)

- Downstream Issues:
  - Market availability
  - Third Party or Affiliate sales
  - Market versus regulated pricing

Source: www.ecom-e.com

UPSTREAM LIFE CYCLE

STAGES



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FISCAL REGIMES

OVERVIEW OF FUNDAMENTALS

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OIL COMPANIES

WHY DO YOU NEED THEM?

INSIGHT. INQUIRY. INGENUITY.

WHO OWNS THE OIL AND GAS?

MAINLY THE "STATE"

- Basically, with the primary exception of the United States, mineral rights are held by Sovereigns (commonly referred to as the state or government)

- Governments, through any number of different processes, grant the right to others to develop and monetize those minerals. They accomplish this through a variety of means, including:
  - Legislation
  - Regulation
  - Contracts

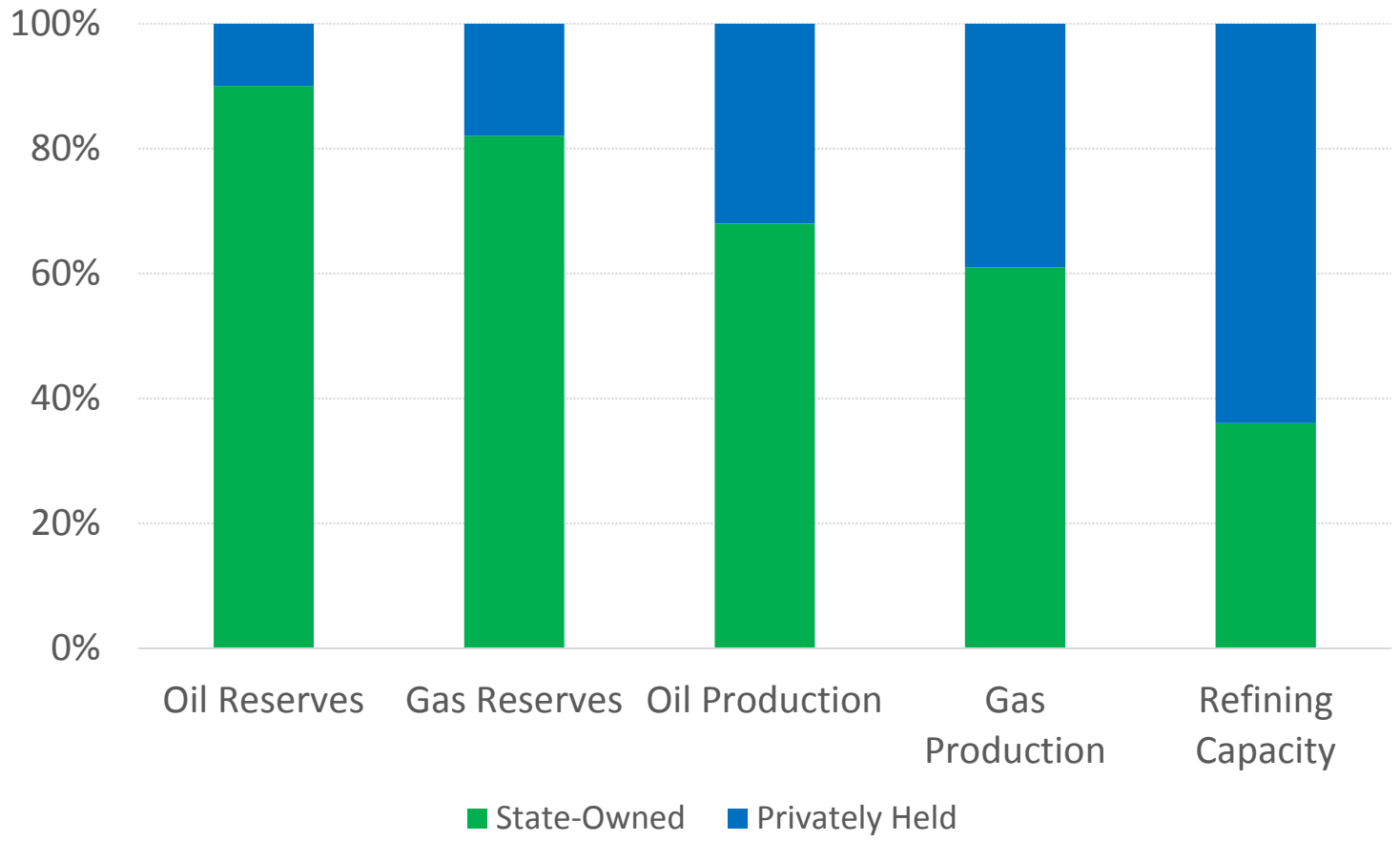
- From the granting of mineral exploitation rights to the delivery of products to market, the entire process is generally governed by what is commonly referred to as a "Petroleum Fiscal System"

THE NEED FOR OIL COMPANIES

- Governments, who control the vast majority of mineral resources, generally lack the requisite resources to effectively and efficiently exploit their mineral riches
- The necessary investment **capital**, trained **personnel**, **technology** and **market** access are largely held by the private sector
- Additionally, as “easy” oil declines and technologically challenged oil becomes more the focus, the **large project management** skills of the oil companies (sometimes referred to as IOCs or international oil companies) becomes all the more important

OWNERSHIP OF PETROLEUM ASSETS

WORLDWIDE



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FISCAL SYSTEM DESIGN

PETROLEUM

INSIGHT. INQUIRY. INGENUITY.

IT IS ALWAYS ABOUT SHARING BENEFITS

PETROLEUM INVESTMENTS

- IOCs are encouraged to invest in a given country or project by governments providing investors a fiscal framework with the opportunity to earn returns better than other alternatives on offer via the:
  - Method of sharing benefits
  - Degree of sharing benefits
  - Timing of sharing benefits
  - Risk / Benefit balance

- Regimes and fiscal systems that share benefits that align with IOC investment decision-making metrics, timing and processes can be expected to be most robust, and to attract the most investment dollars

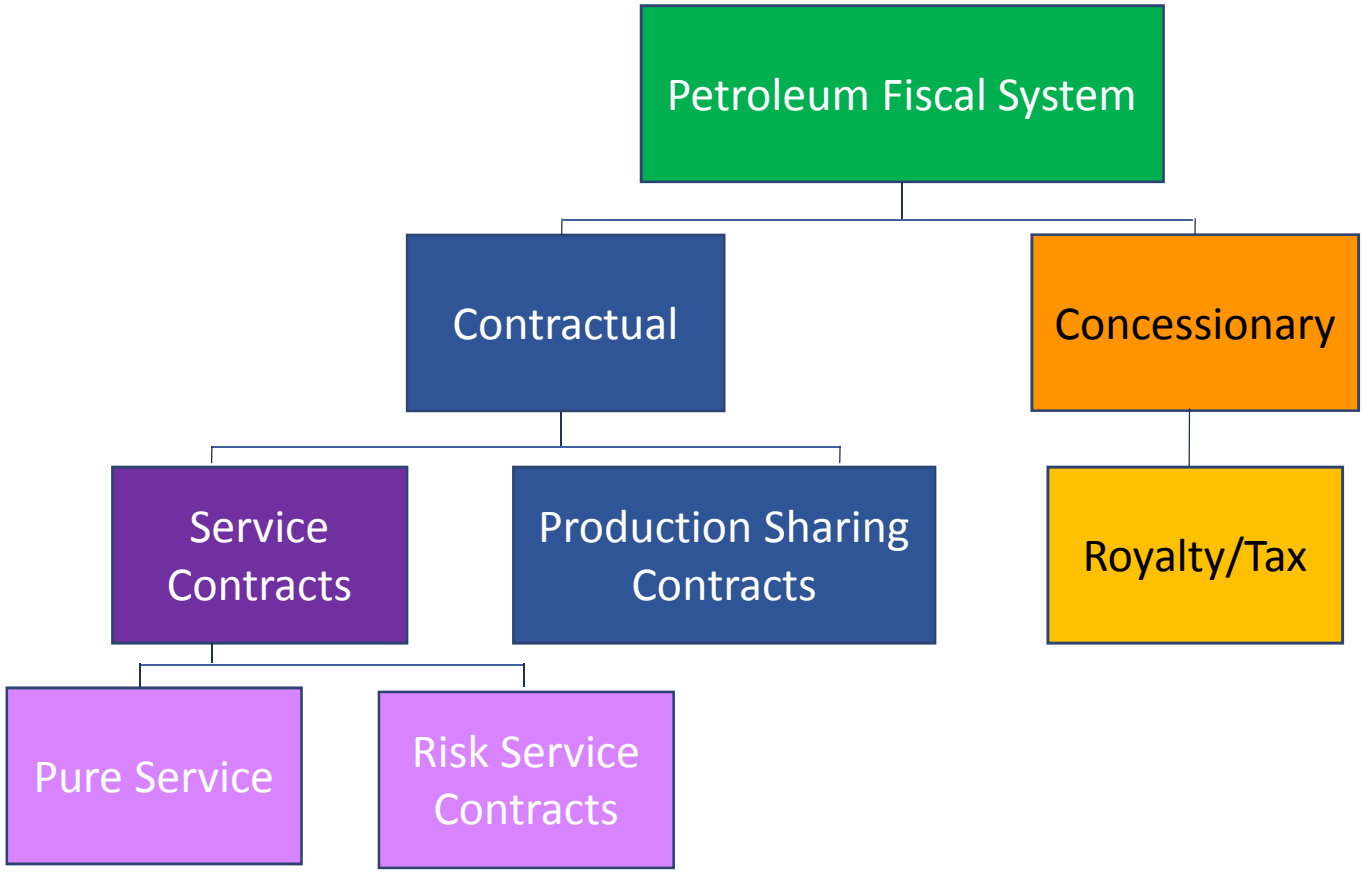
SHARING BENEFITS

ECONOMIC RENT

- Determining the right amount of government take is not and never has been an easy task
- Ideally, governments try to set their petroleum fiscal terms to capture 100% of **economic rent**
- However, in the real world, fiscal terms are set ***ex ante*** (prospectively), not ***ex post*** (retroactively), thus
  - Sometimes they capture <100% and give investors some additional returns (in practice a necessary condition)
  - Sometimes they capture >100%, and stifle activity
- A good system will have flexibility, or self correcting terms in order to adjust to the ever changing conditions of the real world

SHARING BENEFITS

TYPICAL METHODS IN USE TODAY



Fiscal Systems

Two General Types

Three Risk/Reward Structures

State Control

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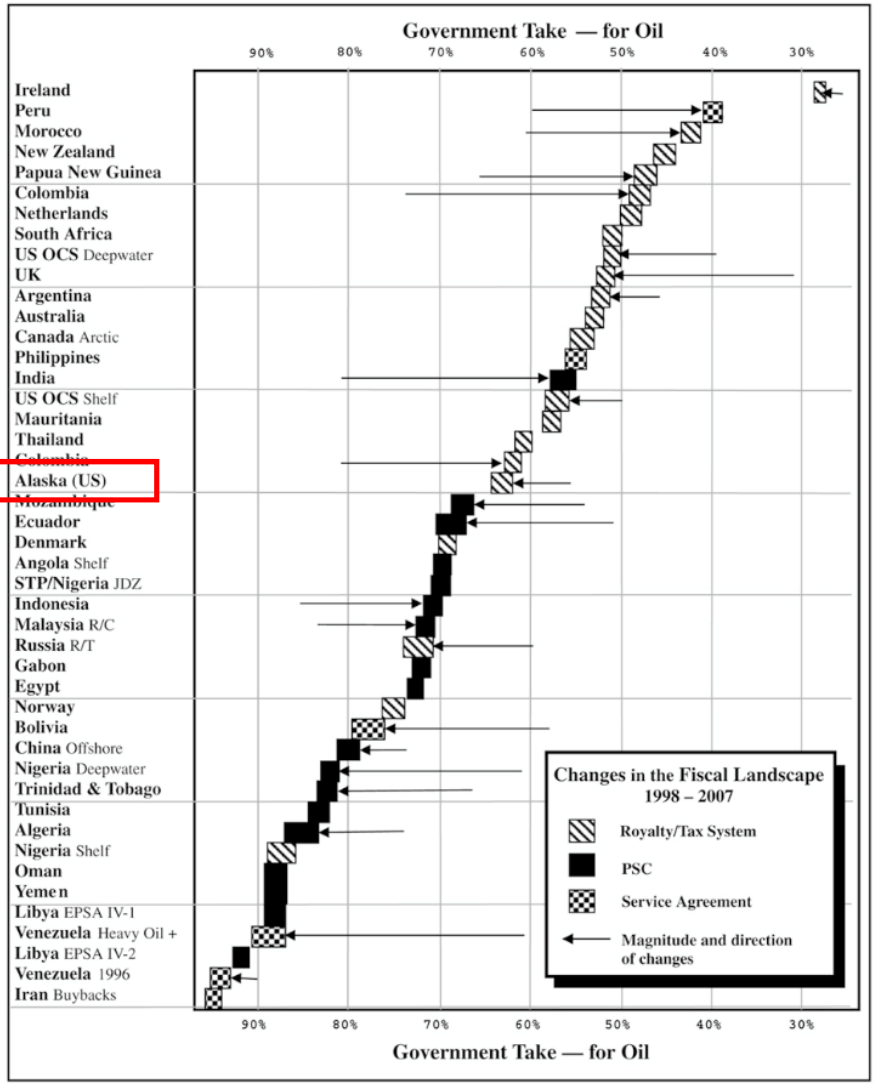
SHARING BENEFITS

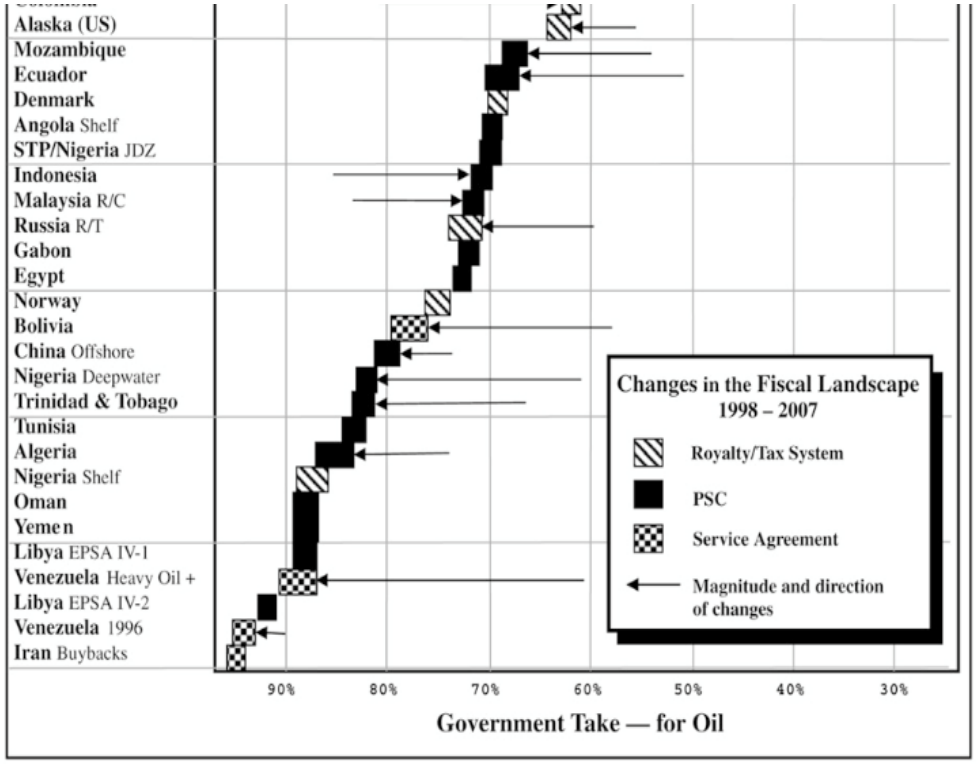
TO WHAT DEGREE



- Determining the right amount of government take is not an easy task
- Chart shows marginal dollar take (or non-producer share)
  - Lower state take is to the top & to the right of the chart
  - Higher state take is to the bottom & to the left of the chart
- A rational assumption would be that the bulk of the petroleum investment dollars would be spent in countries in the top half of the table
- But actual industry spending favors the bottom half of the table
- **There is more to energy investment decision making than marginal tax rates**

SHARING BENEFITS

RISK/BENEFIT BALANCE



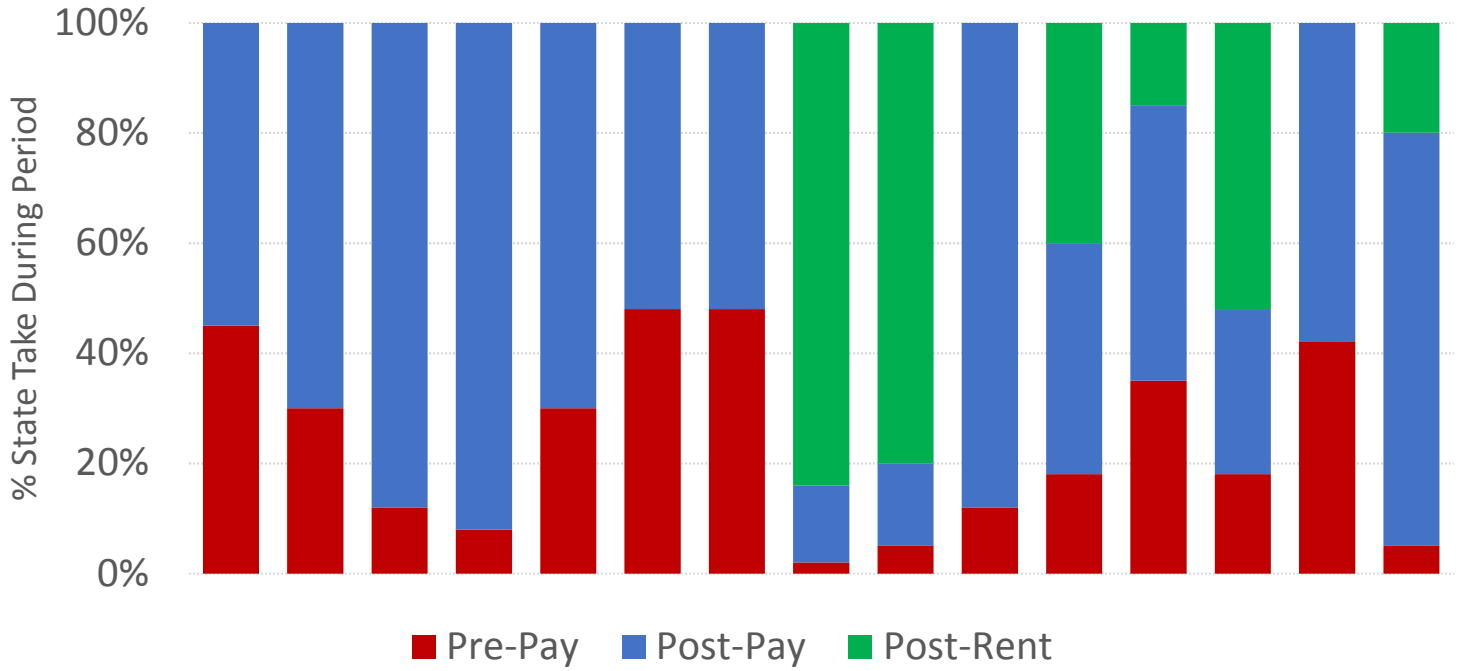
Source: Plot from Daniel Johnston

- Determining the right amount of state take is not an easy task
- Licenses and contracts contain any number of terms that incentivize investment
- A few examples:
  - Bonuses
  - Investment Credits
  - Cost Uplift
  - Immediate deductibility
  - IRR and ROI Metrics
  - Allowable Costs
  - NOC participation
  - Ring Fencing

Sizable investments are made in countries in the lower half of the chart

SHARING BENEFITS

TIMING IS CRITICAL

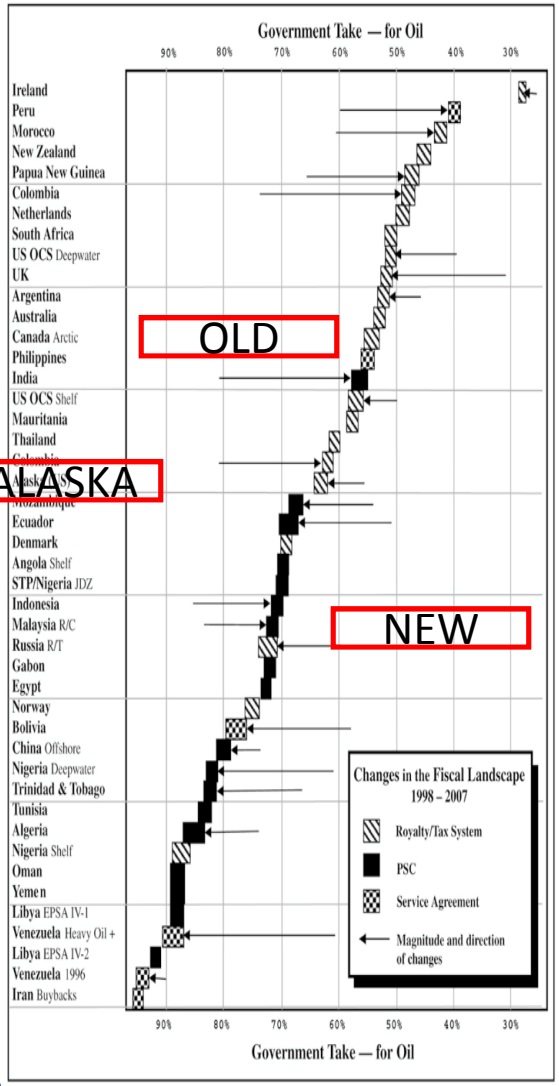


Pre-Pay: *Before Investor has recovered his costs*
Post-Pay: *After cash payout but before a 15% return on capital*
Post-Rent: *After cash payout plus 15% return have been recovered by investor*

The earlier the government take, the riskier the investment

COMPARATIVE DATA

PARTIAL TRUTHS – WHAT IS BEING PRESENTED?



- "**Old**" Leases in the lower 48
  - 12.5% royalty
  - 4% severance tax
  - $5 – $25/acre
  - 30 years or life of production whichever is longer
  - For 160 acre spaced well **16.5% gross** off the top and acquisition cost of **$800 to $4000**

- "**New**" Leases in lower 48
  - 20% to 25% royalty
  - 7% to 11% severance tax
  - $2,500 to $25,000 per acre
  - 5 year term, 25 with production
  - For 160 acre spaced well up to **36% gross** off the top and acquisition cost of **$400,000 to $4 million**

RING FENCING

HOW DEFINED

- “Ring fencing” is a term commonly used to describe the tax entity
- It can be used solely for petroleum taxation but in some cases is also used for income tax
- Types of ring fencing include:
  - Product Type – oil, gas, NGLs
  - Age – by vintage of contract
  - Geography – North Slope, Middle Earth, Cook Inlet
  - Area – License, Unit, Field
  - Tax Payer – Project/SPV, Individual companies
  - Custom – unique and regime driven

RING FENCING

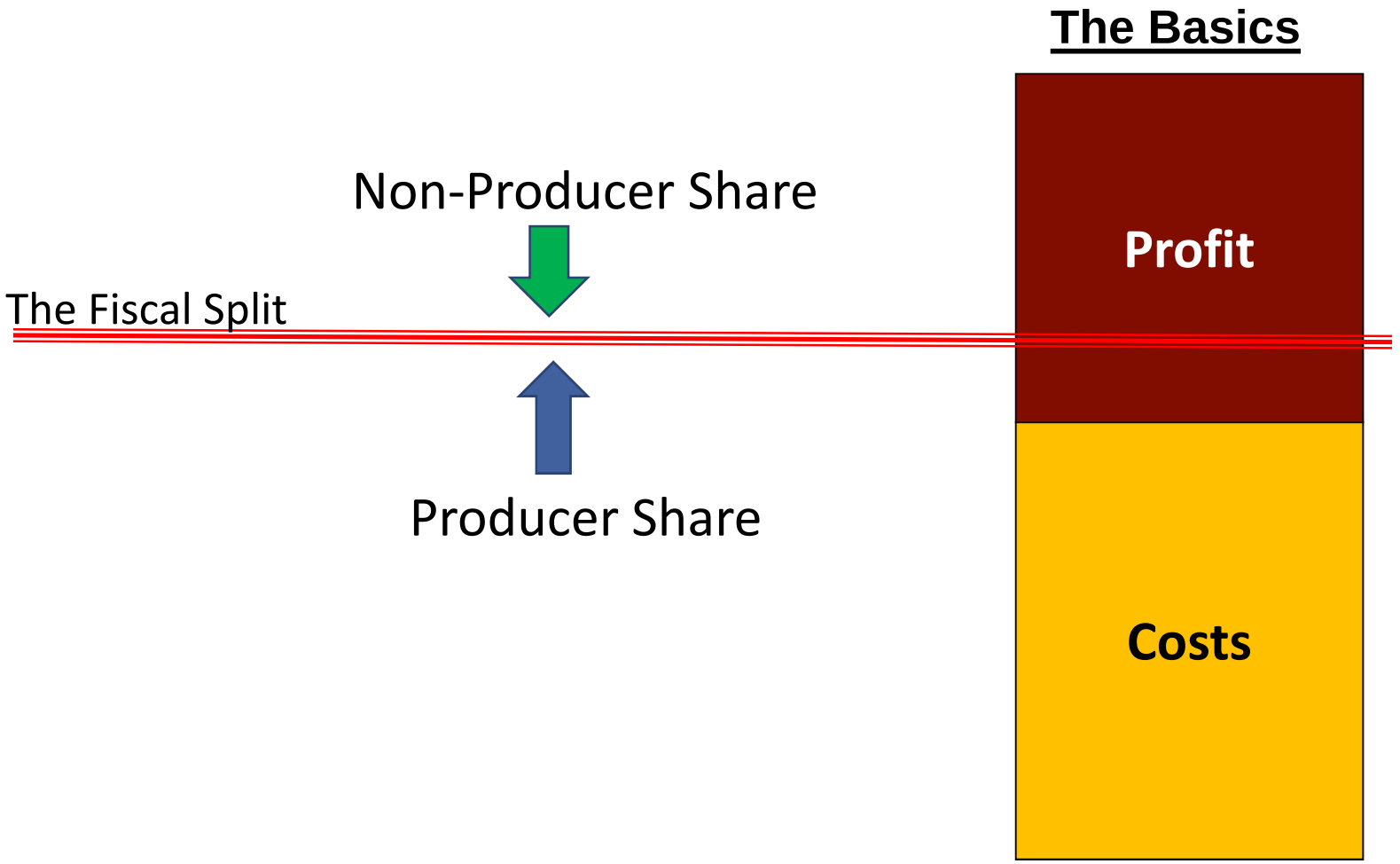
SUB UNITS

- There can be further division within the larger ring fenced areas:
  - Variable petroleum tax rates on a field level
    (Establishes the preliminary tax liability)
  - Credits on a unit level
    (Unused credits for one field available to other unit fields)
  - CIT paid on a country level
    (All costs and credits lumped together by taxpayer)

- Narrowly defined ring fenced areas are perceived as very high risk whereas broadly defined ring fenced areas present much less risk
  - Cross crediting can help
  - Broader areas “averages” things out

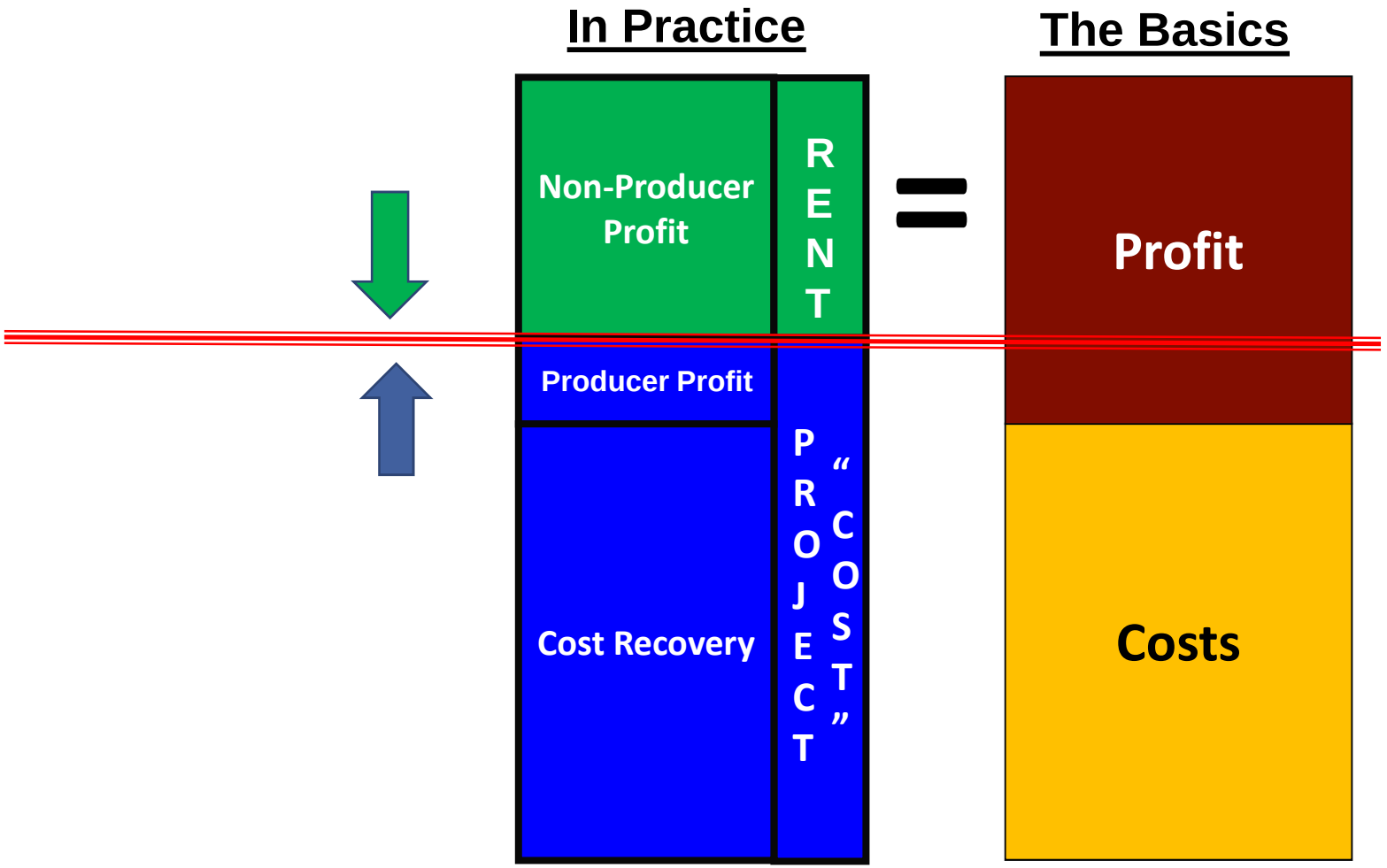
FISCAL SYSTEM DESIGN

PHILOSOPHY



FISCAL SYSTEM DESIGN

PHILOSOPHY



FISCAL SYSTEM DESIGN

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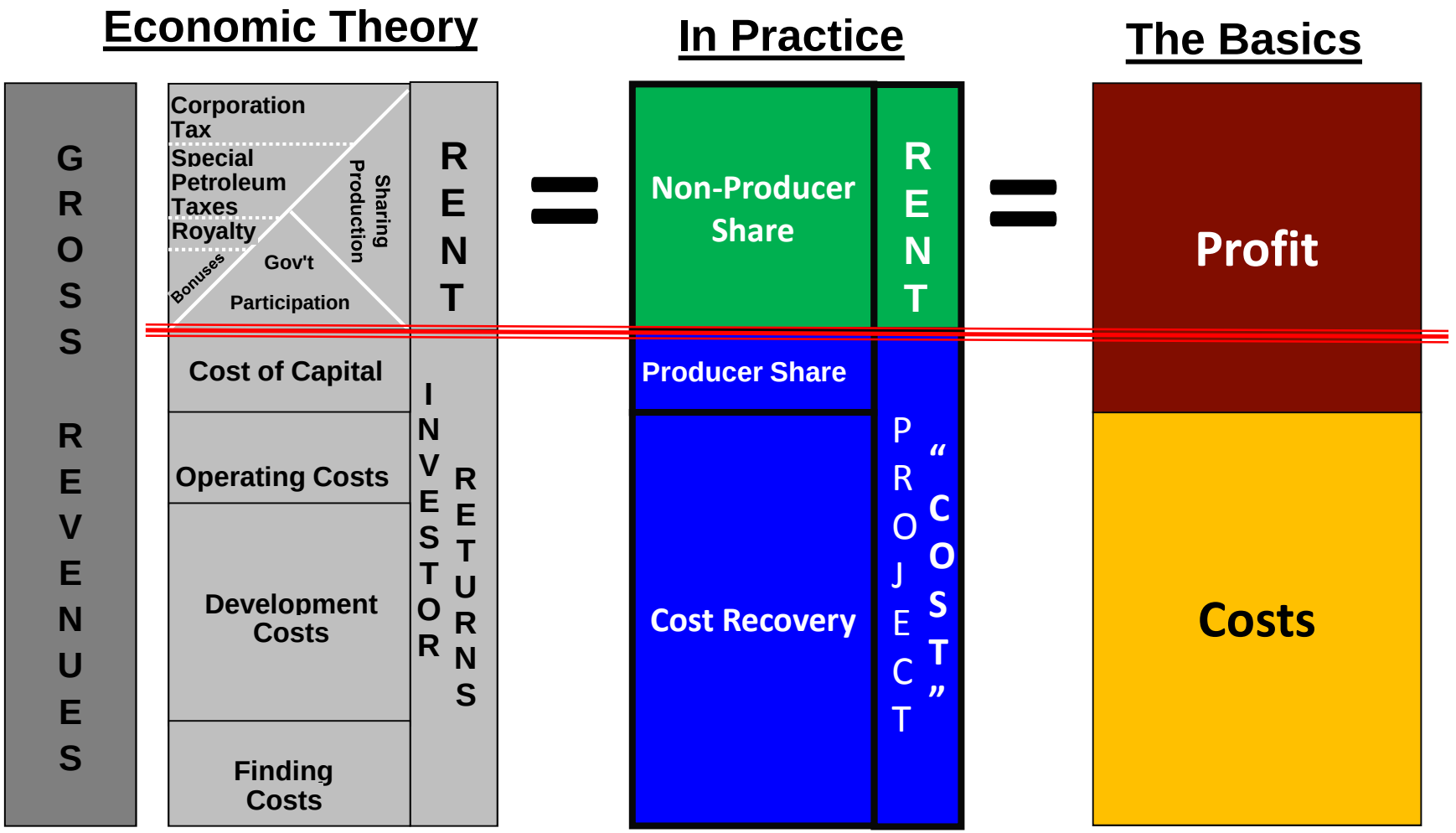
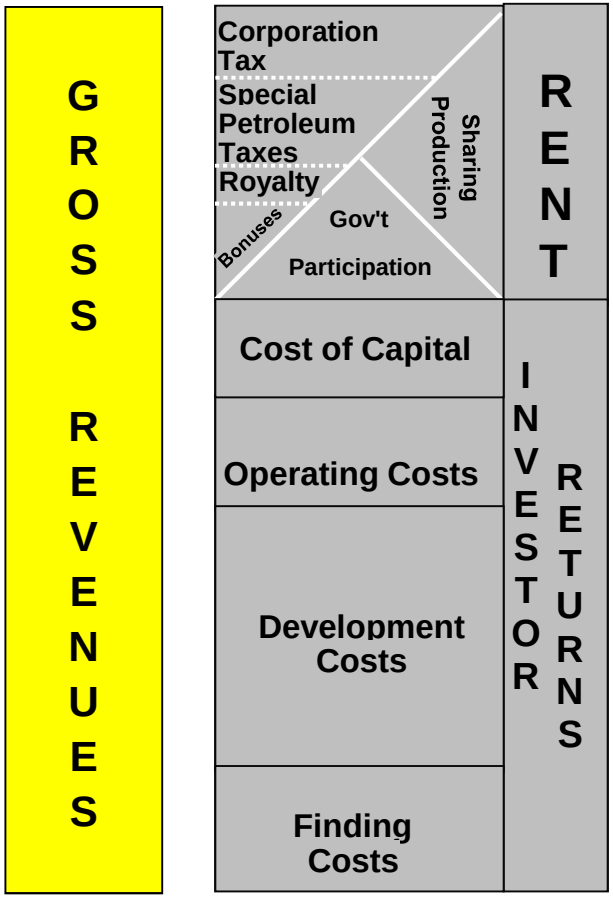


FISCAL SYSTEM DESIGN

OPTIONS



- This appears to be very simple, just take production and multiply by the price
  But …….
- Price:
  - Where is the pricing point?
  - How does it relate to published indices?
  - Third party / arm's length vs. Affiliate sale / non arm's length
  - Quality adjustments
- Production:
  - Where measured
  - Who suffers losses
  - Lease use – free or chargeable
- Allowable Net back costs
  - Processing
  - Transportation
  - Shipping

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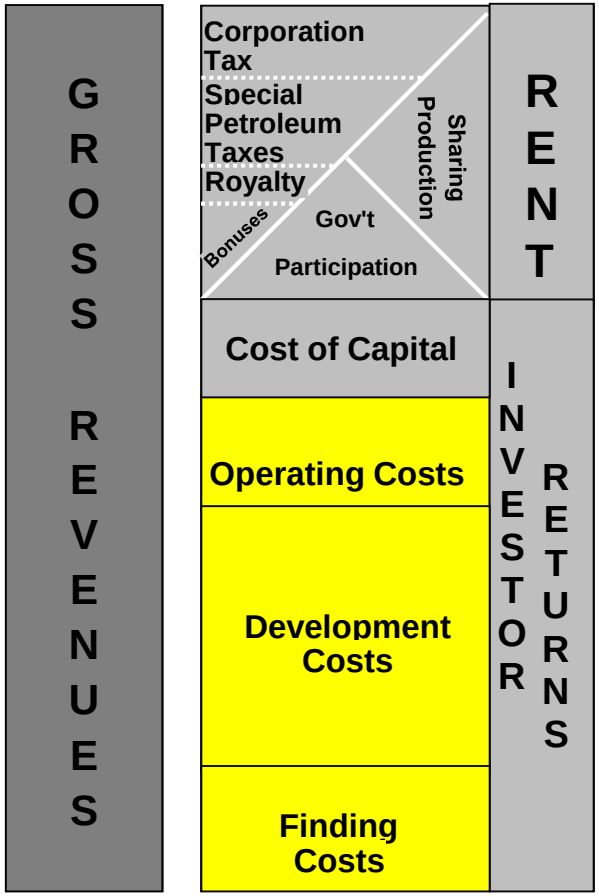
FISCAL SYSTEM DESIGN

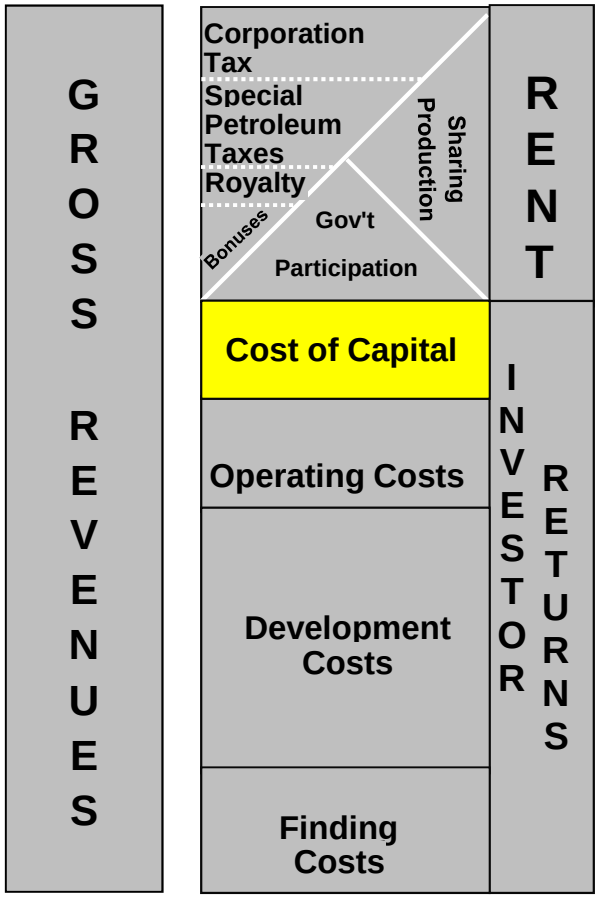
OPTIONS



- Project and decision making economics include ALL the associated costs
- Fiscal systems often disallow costs for a variety of reasons, e.g.
  - Bonuses, Annual Rentals
  - Overhead, Outside Country
  - Spill, Abandonment
- Other systems compensate for time a reward for specific actions:
  - Credits
  - Uplift
- These costs can be substantial and not including them in the fiscal system creates an expectation of a higher return for costs that are allowed

FISCAL SYSTEM DESIGN

OPTIONS



- One of the more contentious items is the “fair” return to the producer for the capital invested
- Producer overall returns on capital expectations can vary significantly
  - Their actual cost of capital
    - Shareholder equity
    - Bonds
    - Debt
  - Long run returns
  - Alternatives available at the time
- There is also a need to make ‘a little extra’ on successful projects to pay for unsuccessful exploration

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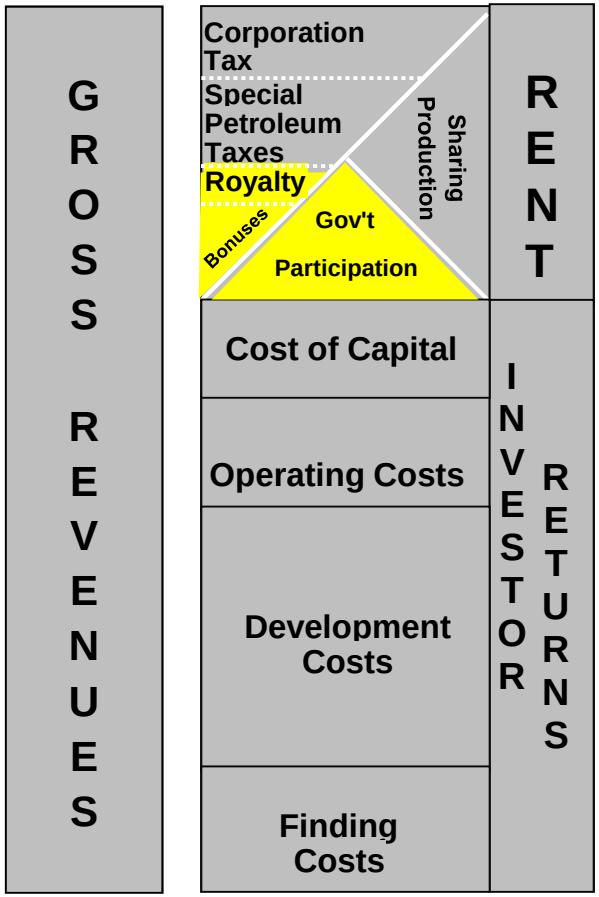
FISCAL SYSTEM DESIGN

OPTIONS



- Certain aspects of the non producer take, which constitute part of the “rent” are actually collected based on gross revenues
- These items present themselves as a hurdle that must be overcome before the producer realizes any value to start recovering costs and earning a profit
- Known as ‘regressive” elements, i.e. they get more burdensome as prices fall, they are payable even if the producer is not making a profit. The magnitude of their impact depends on the price and cost structure

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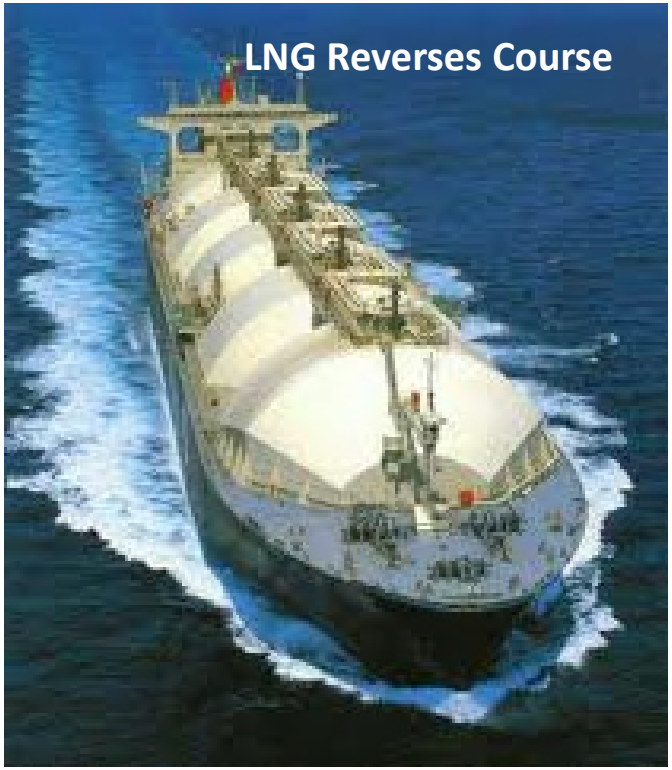
FISCAL SYSTEM DESIGN CONSIDERATIONS

ANTICIPATING AND RESPONDING TO RAPID CHANGE

- USA 2005 looking ahead to 2015
  - Plans for IMPORTING >8 bcf/d of LNG
  - 40+ regasification terminals in permitting
- US 2015, just one decade later
  - Developed a 180 year supply of natural gas
  - ~10 bcf/d EXPORT capacity built or under construction
  - 40+ filings for more liquefaction terminals
- Add pipeline exports to Mexico during this period there is over a **20 bcf/d supply/demand flip** in 10 years
- Driven by shale gas, activities on 5 continents has been impacted



FISCAL SYSTEM DESIGN CONSIDERATIONS

THE "FIXED" VERSUS "VARIABLE" DEBATE

- With so many options and so many moving parts, a flexible, self-correcting structure is a much more stable structure
  - The industry is in a constant state of change
  - As world-wide and local fiscal conditions fluctuate, the profit available for sharing will change
  - Fiscal structures must be flexible to accommodate this
- Good fiscal design without complementary institutional structures may still not achieve the desired goals
- Fiscal design needs to be within the administrative and audit capacity of the relevant governing institutions
- A simpler system usually proves out to be more viable than a theoretically ideal but complex system

FISCAL SYSTEM DESIGN

HOW TO APPROACH

- First, ask for and expect to be shown something other than a comparative table to explain differences between Alaska and other fiscal systems competing for IOC capital
  - The ‘obvious’ aspects don’t drive investment decisions
  - Understand the true differentiators
  - Ask why your IOCs are spending billions on countries with a ‘higher tax rate’
- Second, establish your drivers or long term goals
  - Multi-generational wealth creation
  - Fill the pipeline
  - Bring power to the villages
- Third, review multiple options modelled against different future scenarios to improve chances of realizing goals
- Last, draw conclusions of competitiveness from a review of all aspects of your multifaceted system

FISCAL SYSTEM DESIGN

BEWARE THE FLAW OF AVERAGES

- This chart exemplifies how quickly things can change from when particular legislation was passed

	Spending ($millions)	Production / day (000)	Production Year (million)	Per Barrel		
				Tarriff & Transport	Opex & Capex	Total Cost
2007	3,201	734.2	268.0	$ 5.40	$ 11.94	$ 17.34
2008	3,560	715.4	261.1	$ 6.05	$ 13.63	$ 19.68
2009	3,688	692.8	252.9	$ 6.38	$ 14.58	$ 20.96
2010	3,525	642.6	234.5	$ 6.01	$ 15.03	$ 21.04
2011	3,858	599.9	219.0	$ 6.67	$ 17.62	$ 24.29
2012	2,975	579.3	211.4	$ 8.37	$ 14.07	$ 22.44
2013	4,442	531.6	194.0	$ 9.76	$ 22.89	$ 32.65
2014	5,212	530.4	193.6	$ 10.42	$ 26.92	$ 37.34
2015	5,615	501.0	182.9	$ 9.72	$ 30.71	$ 40.43
2016	4,842	514.9	187.9	$ 9.88	$ 25.76	$ 35.64

Source: DOR, Ken Alper

PPT
ACES
SB21
HB247
HB111

- However, building a fiscal system off of economic runs based on "averages" does not address reality or the outliers, which are the very things that need to be addressed

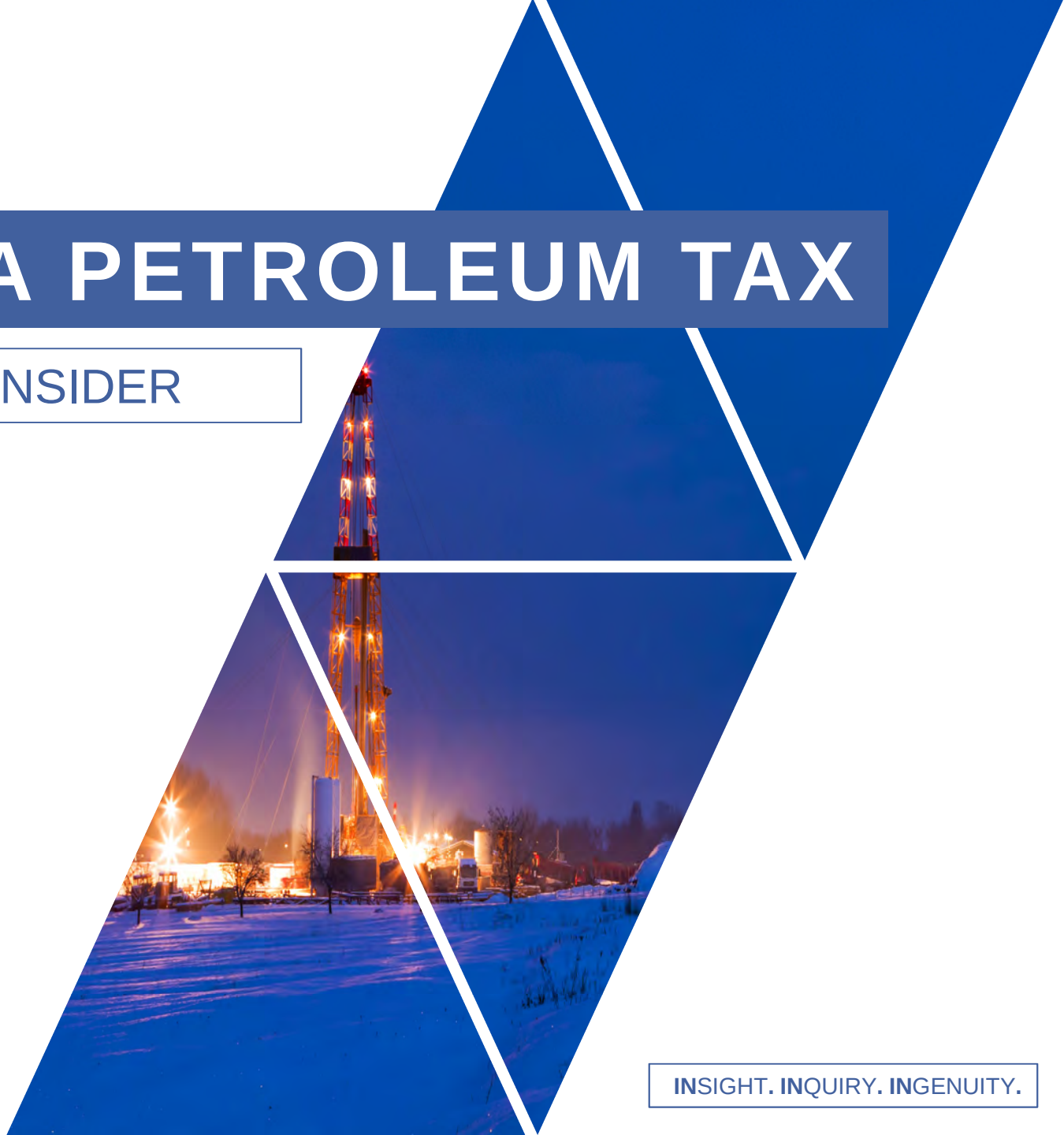
FISCAL SYSTEM DESIGN

TAKEAWAYS

- First, ask for and expect an understanding of competing fiscal systems
- Second, there is no ‘ideal’ structure for sharing the benefits of oil and gas development so understand your drivers
- The pieces of a fiscal system, and how they are deployed, have been undergoing constant change as all parties become more educated. Regardless of the structure:
  - Companies will optimize their operations and profits
  - Which can lead to unintended results
- Each taxing regime is to an extent unique
- **All petroleum taxation structures in use today have biases**

ALASKA PETROLEUM TAX

THINGS TO CONSIDER



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INSIGHT. INQUIRY. INGENUITY.

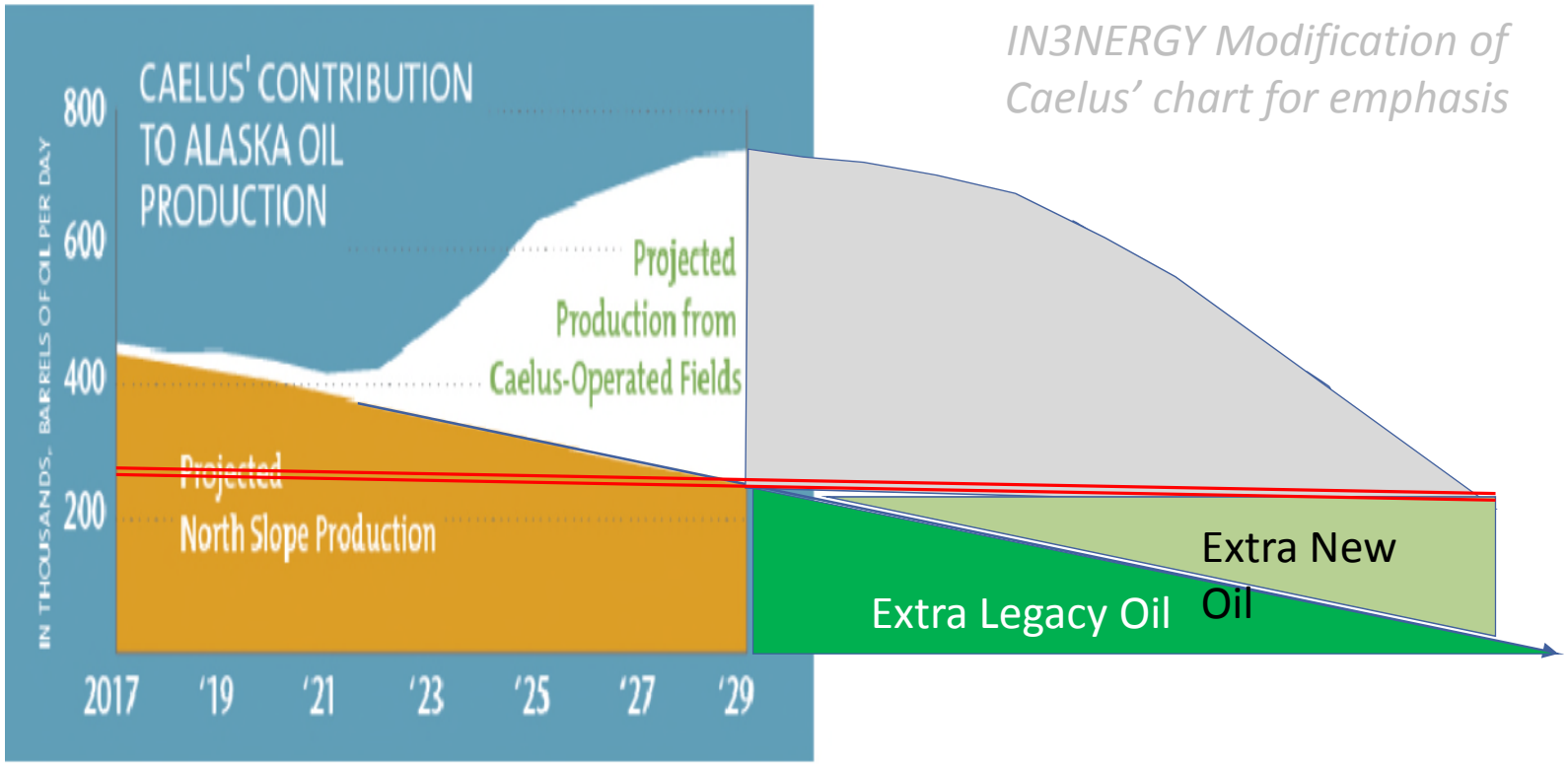
ALASKA DESIGN PARAMETERS

YOUR UNIQUE FISCAL STRUCTURE DRIVERS

- TAPS is the life-blood of the North Slope. Keeping enough oil flowing through it is critical
- It is realistic to only think in terms of 1 or 2 new NS prospects coming on line each year
- Each of those prospects will have a > 5 year lead time
- Thus, there are only 5 to 10 different possible new fields to look at for what may be possible in the next 5 years
- They should each be modeled independently and collectively to understand the impact of fiscal system parameters on their economics

TAPS THROUGHPUT

NEEDS NEW NORTH SLOPE PRODUCTION



IN3NERGY Modification of Caelus' chart for emphasis

- TAPS is the life-blood of the North Slope. Keeping enough oil flowing through it is critical
- **$8Bn to $50Bn additional revenue to Alaska**
  - This needs to be included in any 'analysis' when looking at how to incentivize major new NS discoveries through the extended development and production phases
  - Existence of extended life of TAPS may also encourage additional work in legacy fields

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THE ALASKA "TAX VALUE CHAIN"

QUESTIONS SPECIFIC TO ALASKA?

- Market
  - Less marketing fees
  - Less shipping
  - Less TAPS
  - [Less inter-field lines]

  Netback
- Gross Value at the Point of Production – GVPP
  - Royalty
  - [GVR or gross value reduction]
  - Capital Expenditures – Capex
  - Operating Expenditures – Opex
  - Carry forward losses – NOLs
  - [Uplift]
- Taxable Value

THE ALASKA "TAX VALUE CHAIN"

QUESTIONS SPECIFIC TO ALASKA?

- Taxable Value
  - Preliminary tax
  - Less carry forward credits
  - Less per barrel credits
  - [Less GVR credits]
- "Net" Petroleum Tax Owed
  - Calculate "Gross" Minimum Tax
  - If applicable choose the greater of Gross & Net
- Actual Tax Payable
  - State CIT calculation
  - Federal CIT calculation
- Producer Period Cash Flow

THE ALASKA "TAX VALUE CHAIN"

QUESTIONS SPECIFIC TO ALASKA?

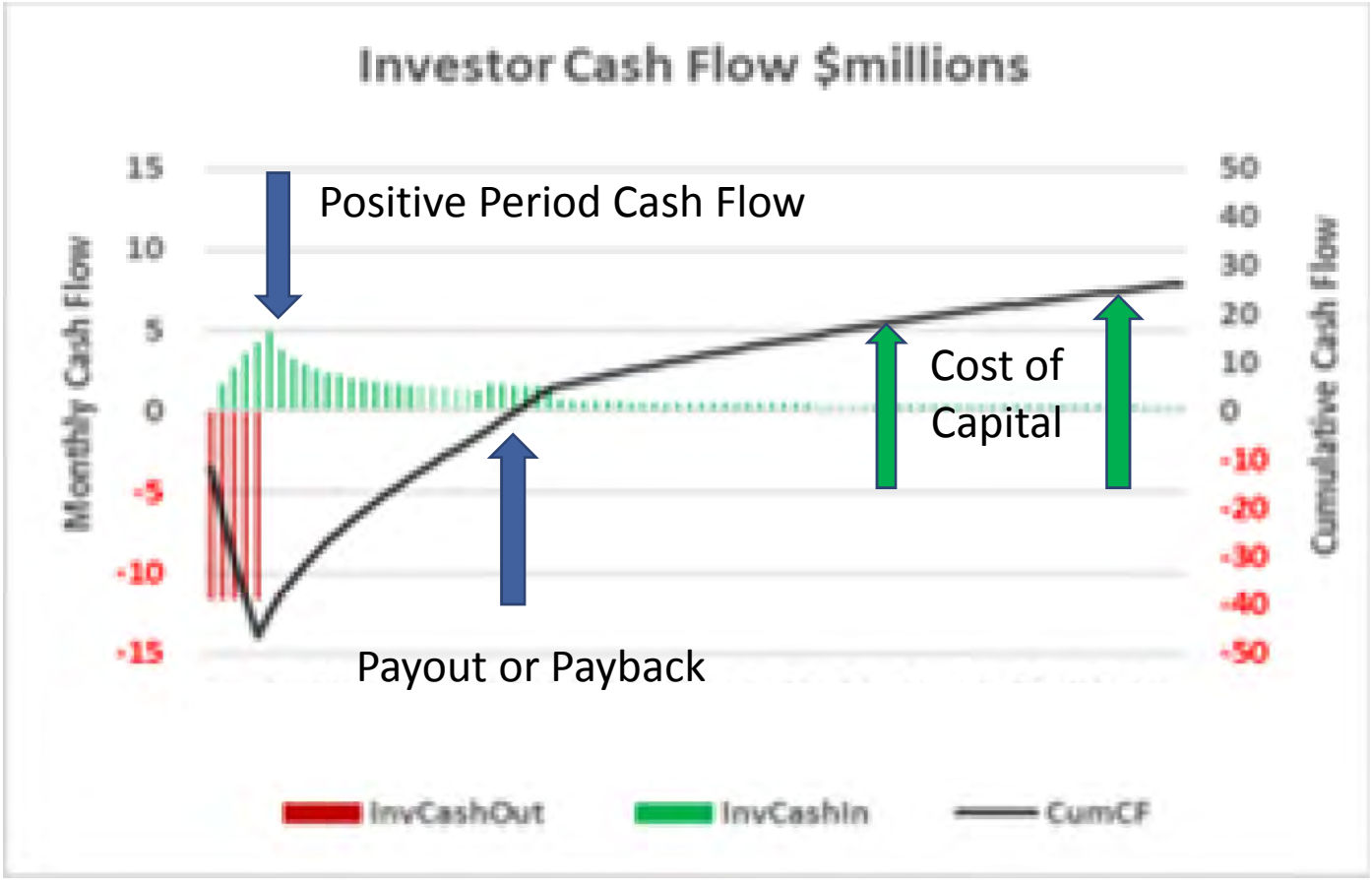
- Ownership Issues - $1 more or less to the State of Alaska does not necessarily mean $1 less or more in the producer's pocket
  - Private
  - State
  - Federal

- State as the Owner
  - Royalty in cash or in kind
  - Equity in projects such as LNG

- Joint venture partnerships
  - Only moves as fast as the slowest member

THE "HOCKEY STICK"

POSITIVE CASH FLOW DOES NOT EQUAL PROFIT



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THE "HOCKEY STICK"

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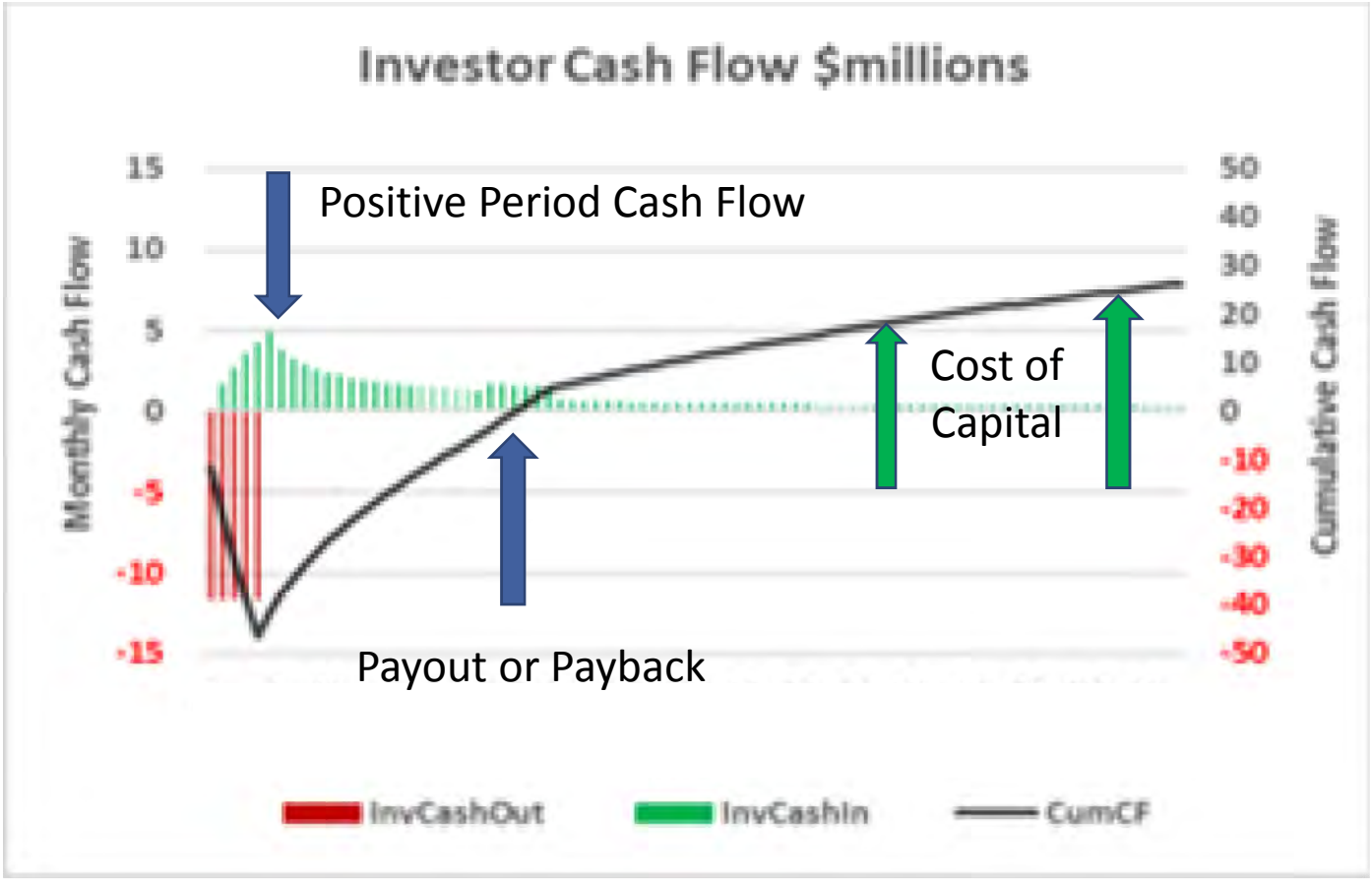

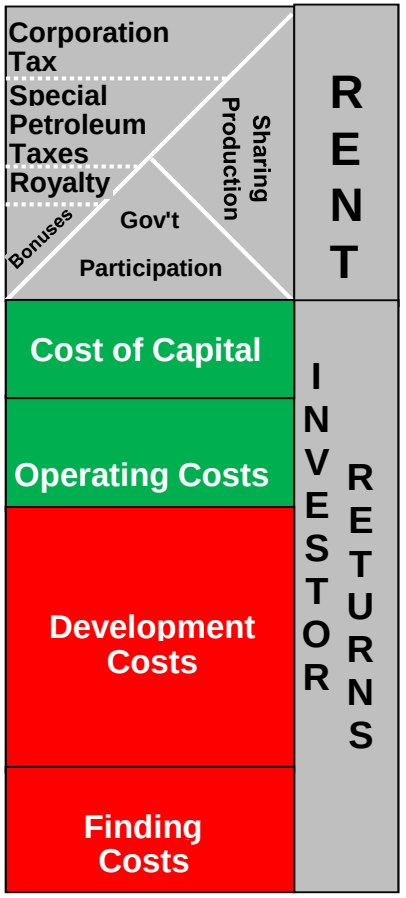

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ALASKA DESIGN PARAMETERS

QUESTIONS SPECIFIC TO ALASKA?

- ANY QUESTIONS ON HOW TO UNDERSTAND ALASKA IN RELATION TO WHAT WE HAVE DISCUSSED?

- UNANSWERED QUESTIONS FROM THE BEGINNING OF THE DAY

THANK YOU

QUESTIONS?

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be in the know

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