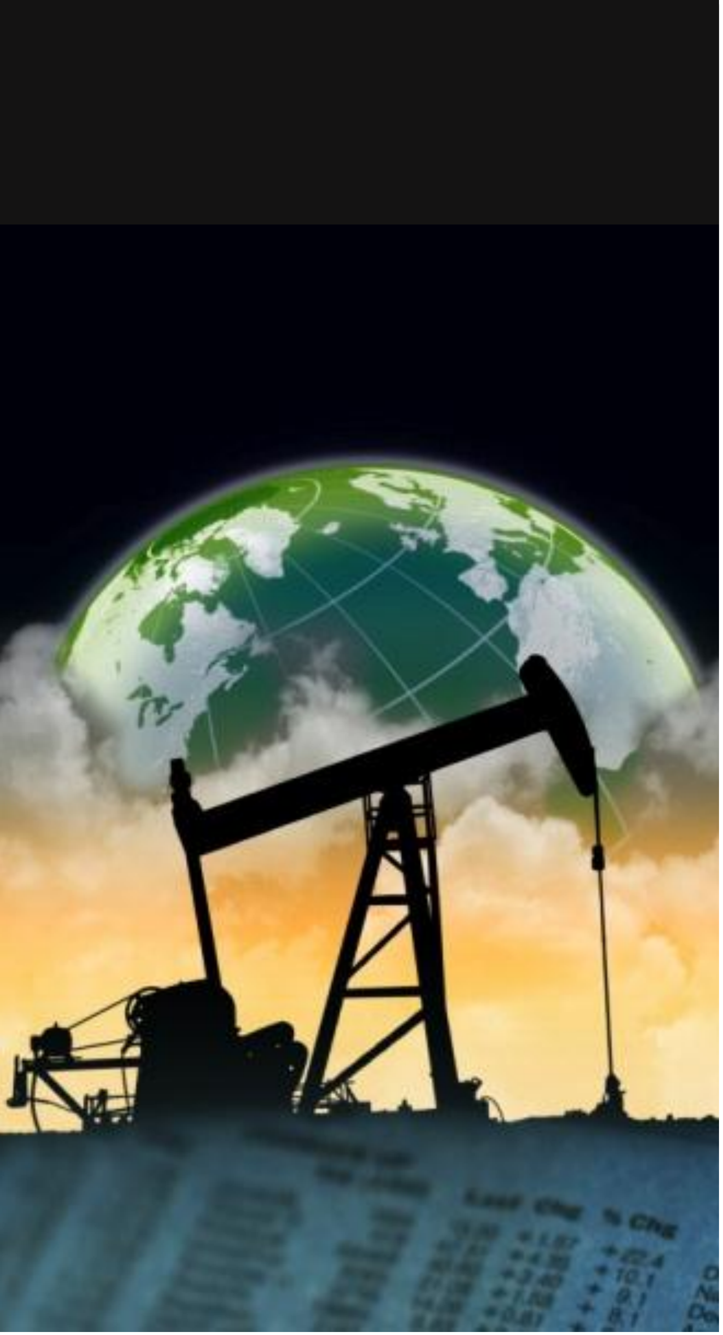


Discussion Slides: Alaska Senate Finance Committee

April 2, 2012

Janak Mayer
Manager, Upstream & Gas
PFC Energy

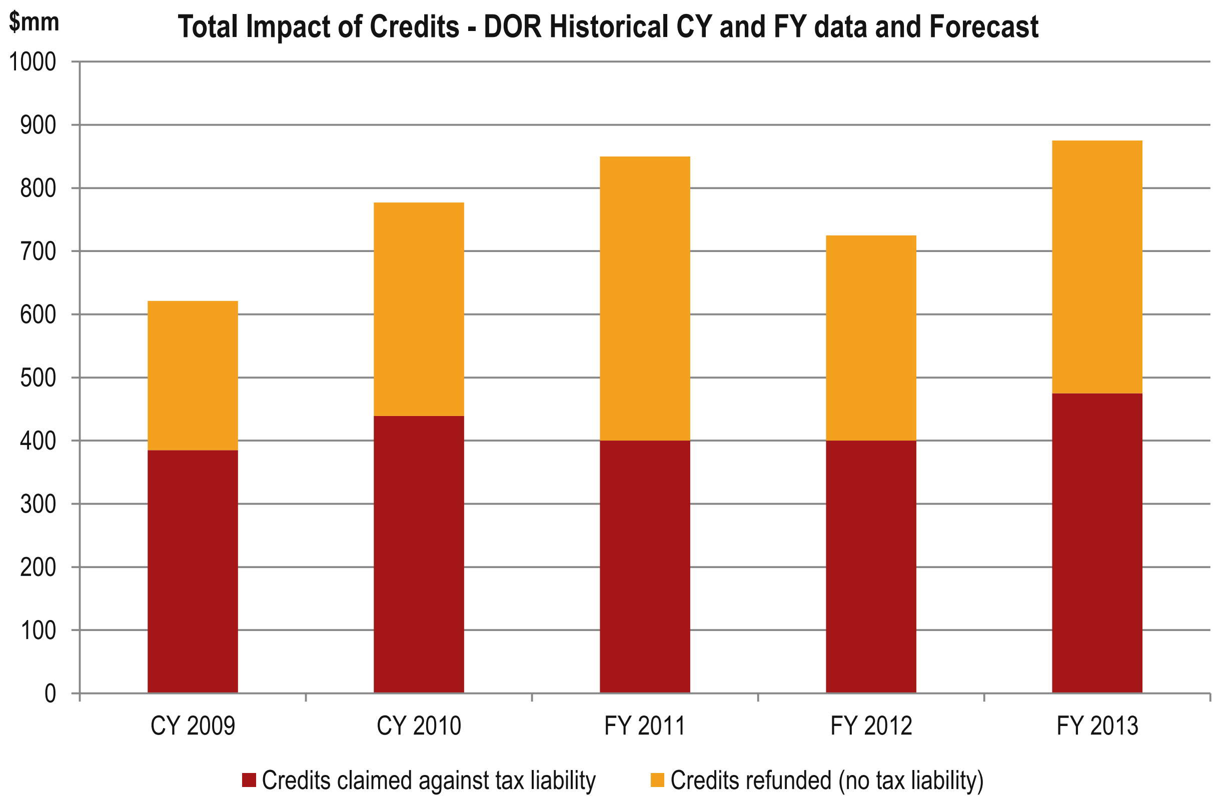
Tony Reinsch
Senior Director, Upstream & Gas
PFC Energy

Tax Credits Under ACES

Credit	Rate	Qualifying Expenditures	Certificates Can Be Submitted to State for Cash?
AS 43.55.023(a) **Qualified Capital Expenditures Credit**	20%	Qualified Capital Expenditures (including exploration)	Yes
AS 43.55.023(b) **Carried-Forward Annual Loss Credit**	25%	Excess Lease Expenditures (where Production Tax liability is insufficient to deduct costs)	Yes
AS 43.55.023(l) **Well Lease Expenditure Credit**	40%	Well Lease Expenditures (Intangible Drilling Costs) below North Slope	Yes
AS 43.55.025(a)(1-4) **Alternative Credit for Exploration**	30%	Exploration expenditures for wells more than 3 miles outside an existing area (if outside Cook Inlet)	Yes
AS 43.55.025(a)(1-4) **Alternative Credit for Exploration**	40%	Exploration expenditures for wells more than 25 miles outside an existing area (10 miles in Cook Inlet)	Yes
AS 43.55.025(a)(5) Cook Inlet Jack Up Rig	Up to 100%	First 3 unaffiliated wells drilled by same jack-up rig in Cook Inlet	Yes
AS 43.55.019 Education Credit	Max $5 million	Cash donations to educational institutions	No
AS 43.55.023(i) Transitional Investment Credit	20%	Expenses before March 31 2006 (pre-PPT)	No
AS 43.55.024(a) Middle Earth Credit	$6 million	Production below North Slope and outside Cook Inlet (Expires 2016)	No
AS 43.55.024(c) Small Producer Credit	$12 million	Producers with less than 50 mb/d average production (Expires 2016)	No

PFC Energy

Total Impact of Credits



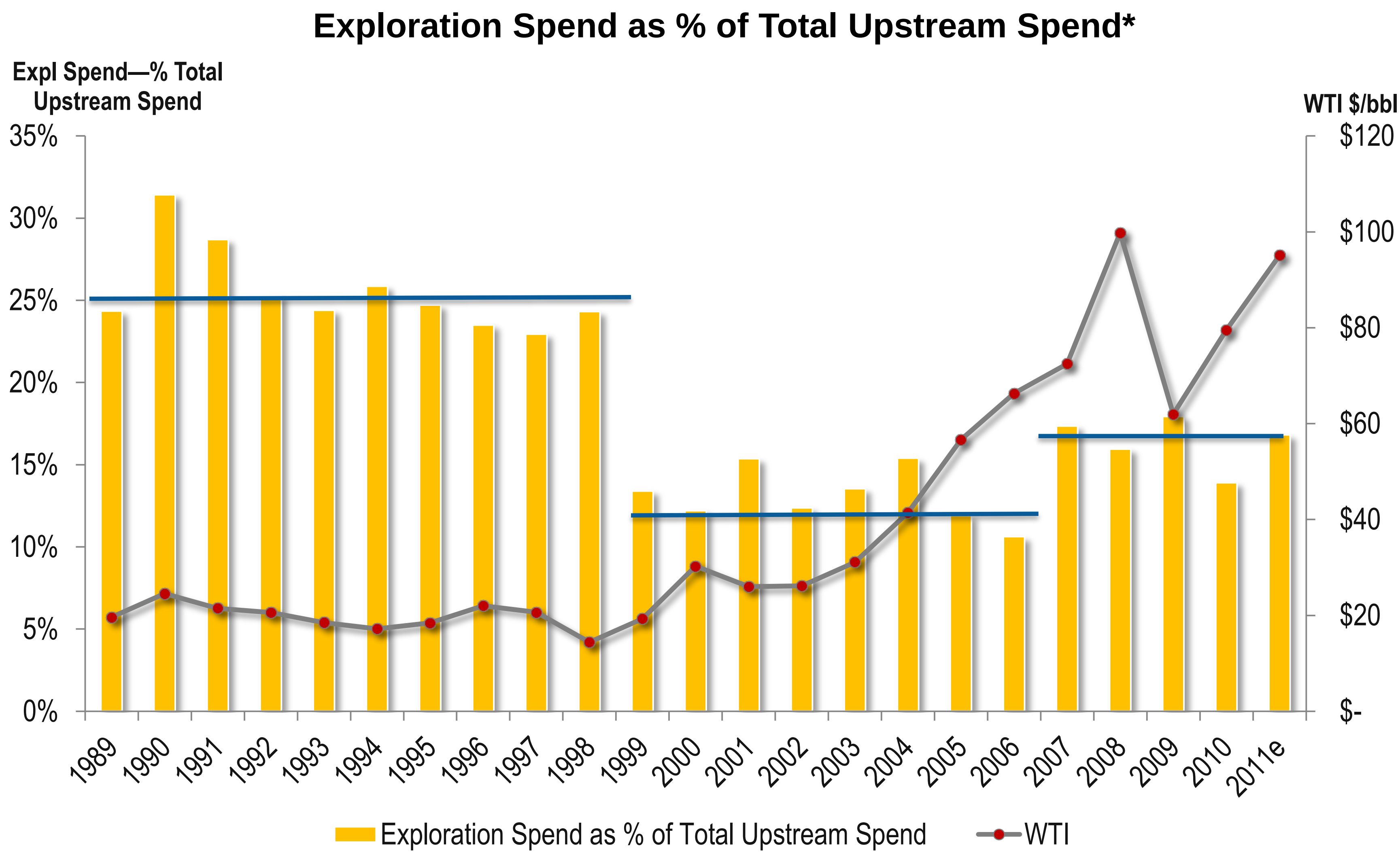
PFC Energy

Exploration Credits

Content

- ***Recent Trends in Exploration Activity and Basin Focus***
- Credits and Incentives: Lessons from the Past
  - National Energy Program (Canada)
  - Norwegian Continental Shelf (Norway)
- Development Cycle Time: Incenting the Required Activities

Rebound in Exploration Spending



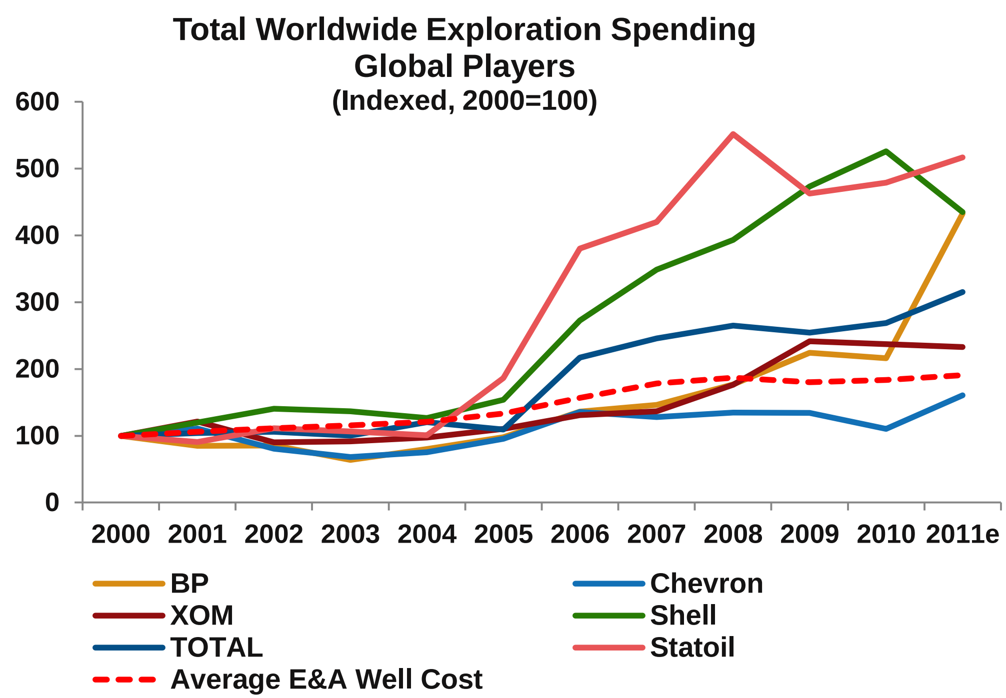
* *Data reflects Total Consolidated Operations for BP, CVX, ExxonMobil (excludes purchase of XTO), TOTAL, Shell, Eni (1992-2011 only), Anadarko, Apache, BG, ConocoPhillips, Devon, Hess, Marathon, Repsol, and Talisman*

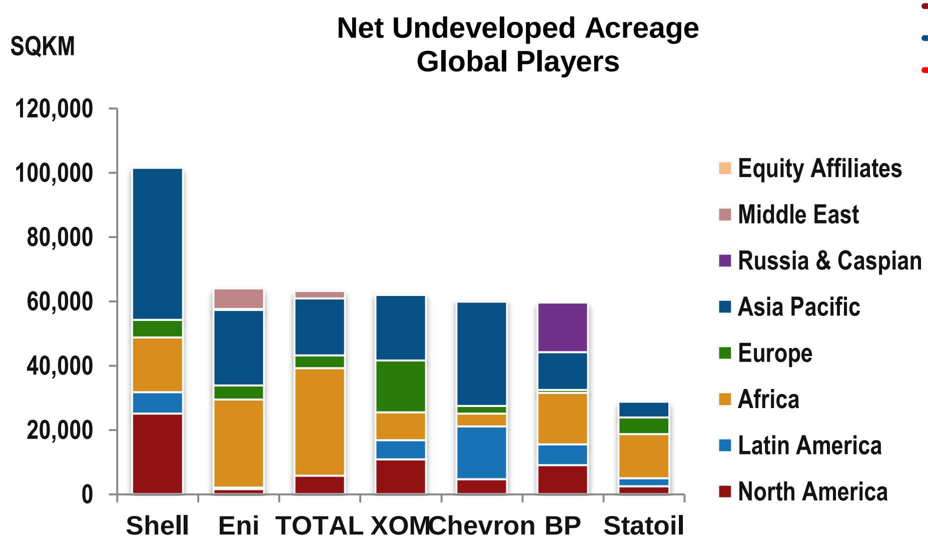
Source: Upstream Competition Service

PFC Energy

Trend in Worldwide Exploration: Global Players

- Exploration spending by many of the Global Players accelerated sharply in 2005-2006 as focus shifted to restocking the portfolio of development projects
- Statoil (North Sea) and Shell (Asia, North America) were early movers, quadrupling exploration spending since 2004
- The growth represents real activity gains, substantially outpacing the Exploration & Appraisal (E&A) Index



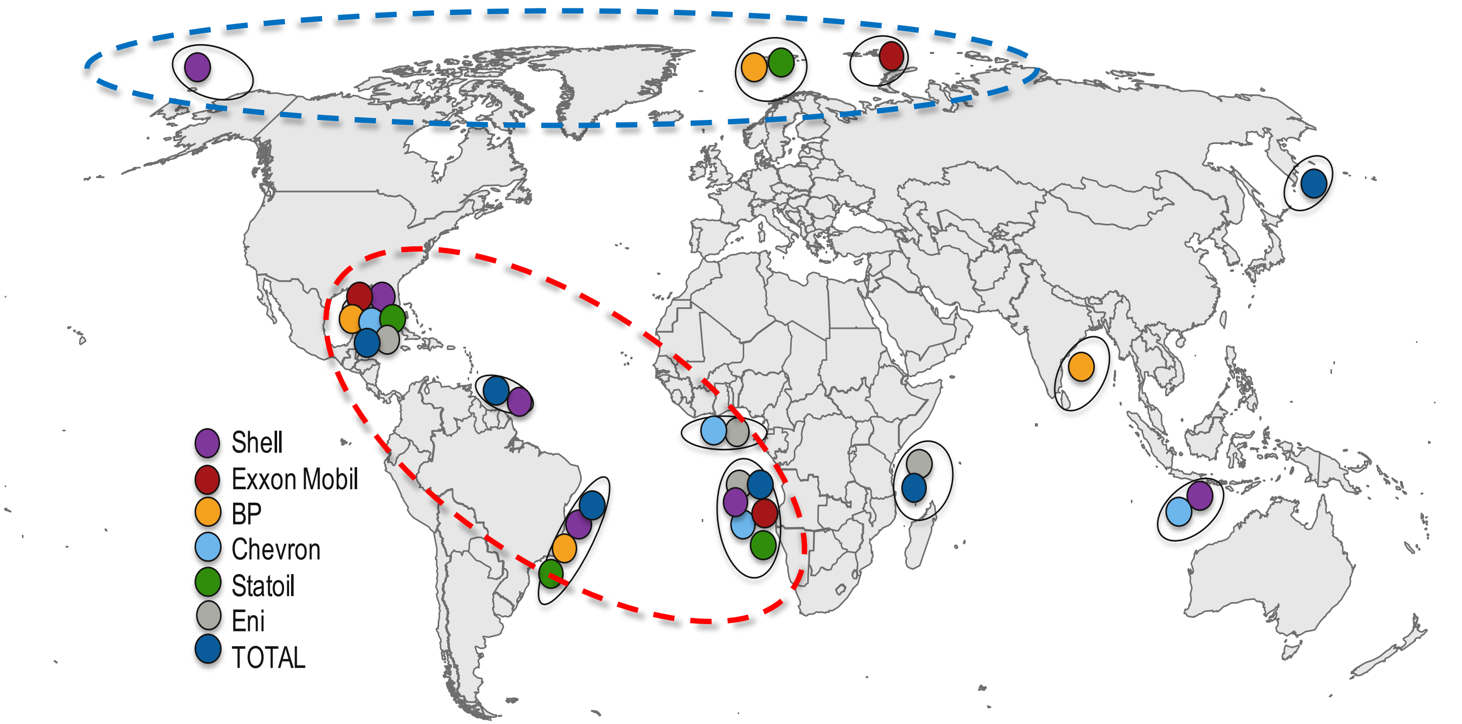


- Shell is the leader in undeveloped acreage holdings, at over 100 million sq.kms, in keeping with their "Last Land Grab" growth strategy.
  - Majority of acreage held by the Majors is in Asia and Africa; North America is material undeveloped acreage holding for Shell, XOM, and BP

PFC Energy

Selected Global Players: Regions of Exploration Focus

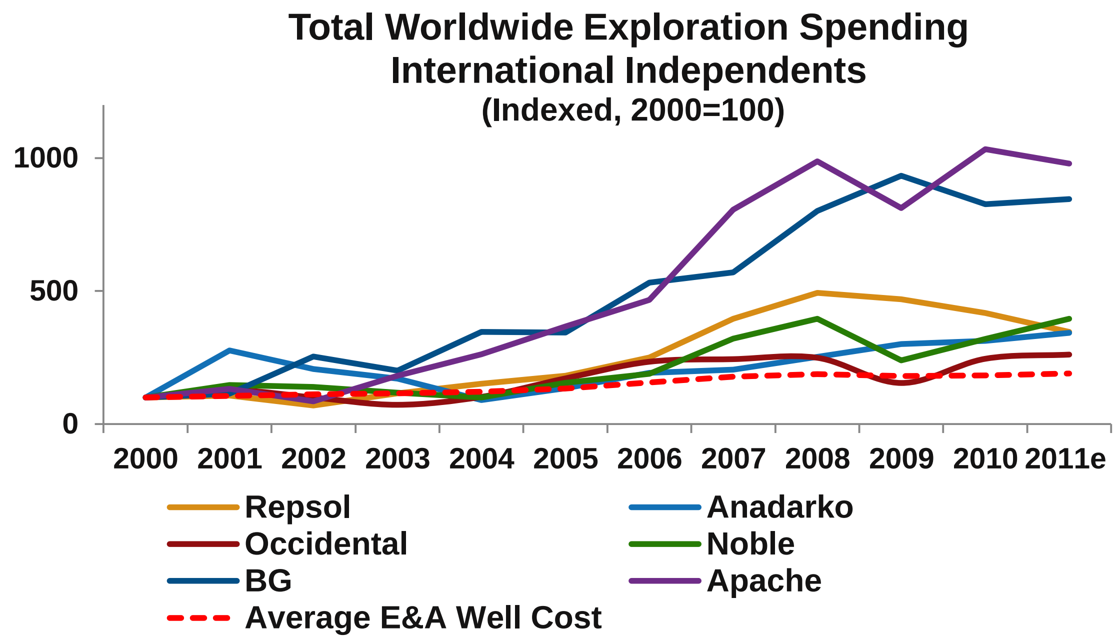
- Setting aside the move by virtually all of the Global Players into the US/Canada onshore resource plays (oil sands, shale gas. Shale oil), the focus of exploration interest is in the deepwater plays of the Atlantic Basin
- Emerging interest in a return to the Arctic Resource play, led by Shell in the Chuckchi Sea, BP and Statoil in the Norway and Barents Deepwater, and ExxonMobil securing a strategic association with Rosneft in the Russia Arctic
- Of note is the near complete decline of the Middle East as a growth driver for these large companies



PFC Energy

Trend in International Exploration: Independents

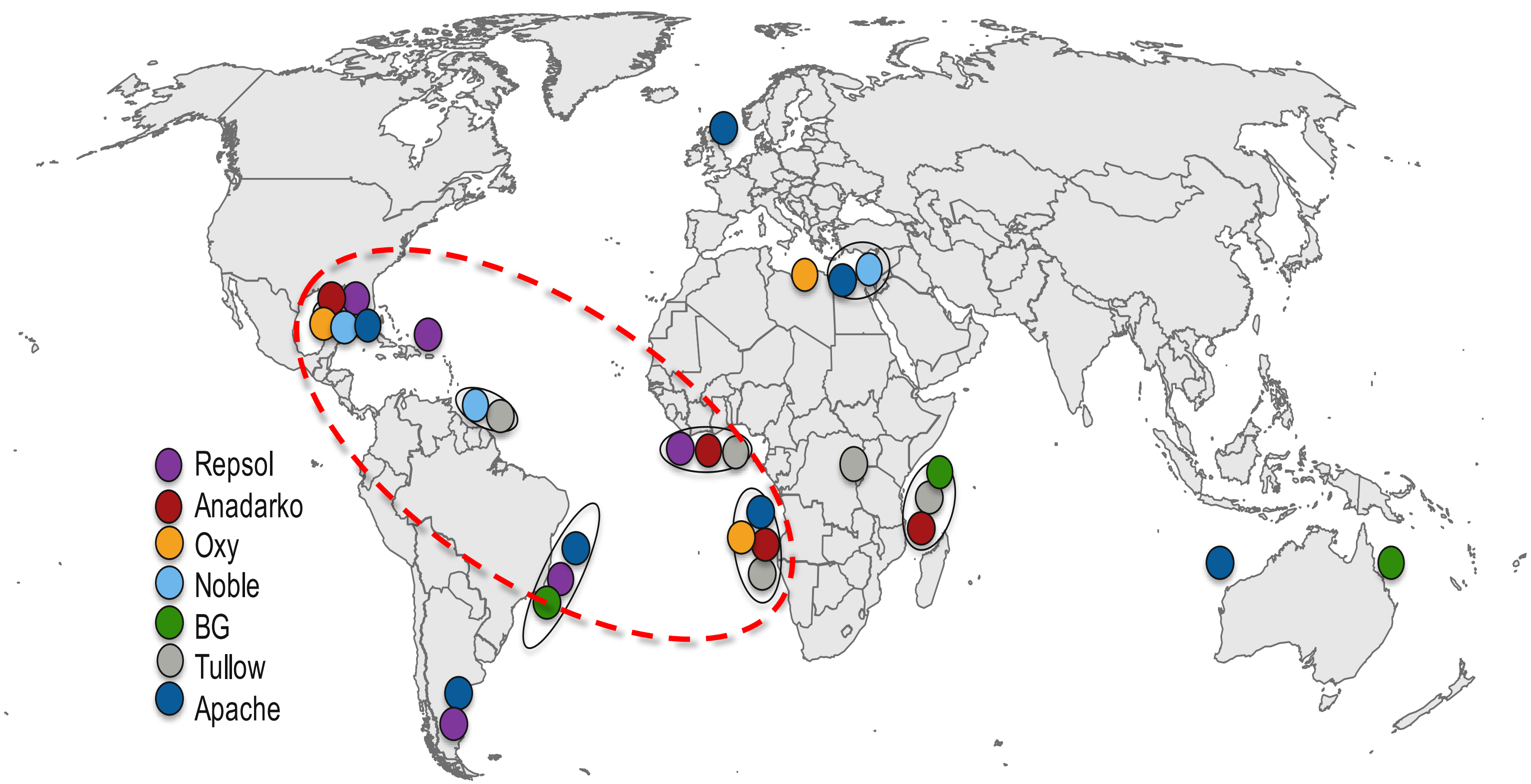
- The International Independents are a more disparate group when it comes to exploration activity:
  - Some, like Anadarko, have been material exploration players through the last decade;
  - Some, like BG and Apache, have aggressively growth their exploration activities through the past decade;
  - Others, like Occidental and Noble, have focused on development activity in a small number of play areas
- Exploration spending by Anadarko, BG, and Apache has hovered around the $1.3-1.5 bn mark for the last few years, high for the Indies and ~60% that of the smaller Global Players



PFC Energy

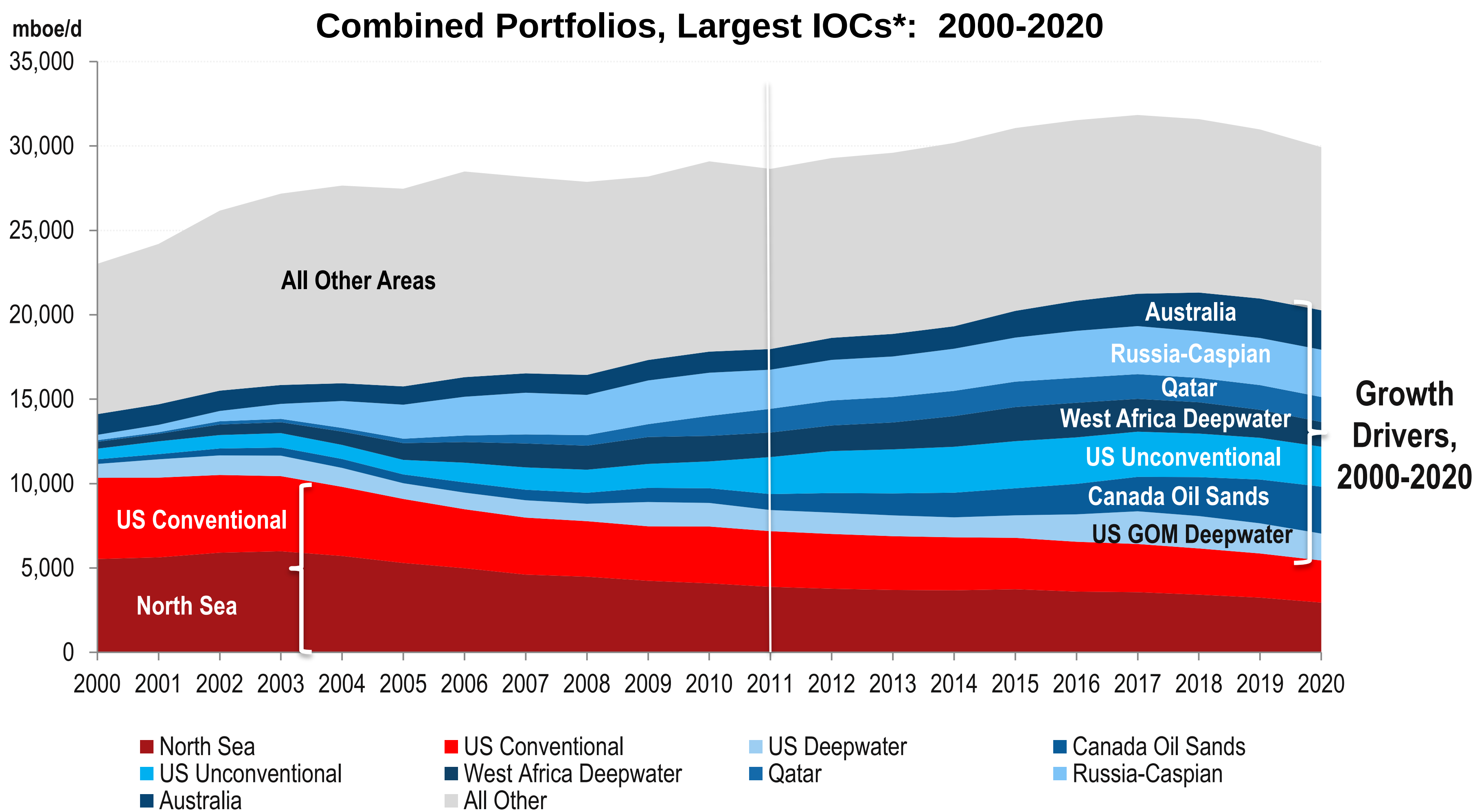
Selected International Players: Regions of Exploration Focus

- The Independents are similarly positioned in the US/Canada onshore resource plays (oil sands, shale gas. Shale oil), and the deepwater plays of the Atlantic Basin
- The Independents are also at the forefront of new basin development, such as the Equatorial Margin, East Africa Deepwater, South America "North Tier" deepwater play, Argentina shale gas, and Lake Albert basin (Uganda)
- The Independents are not as prominent in the high cost, high risk exploration opportunities in the Arctic offshore



PFC Energy

IOC Growth Centered on Successful "New Frontiers"…

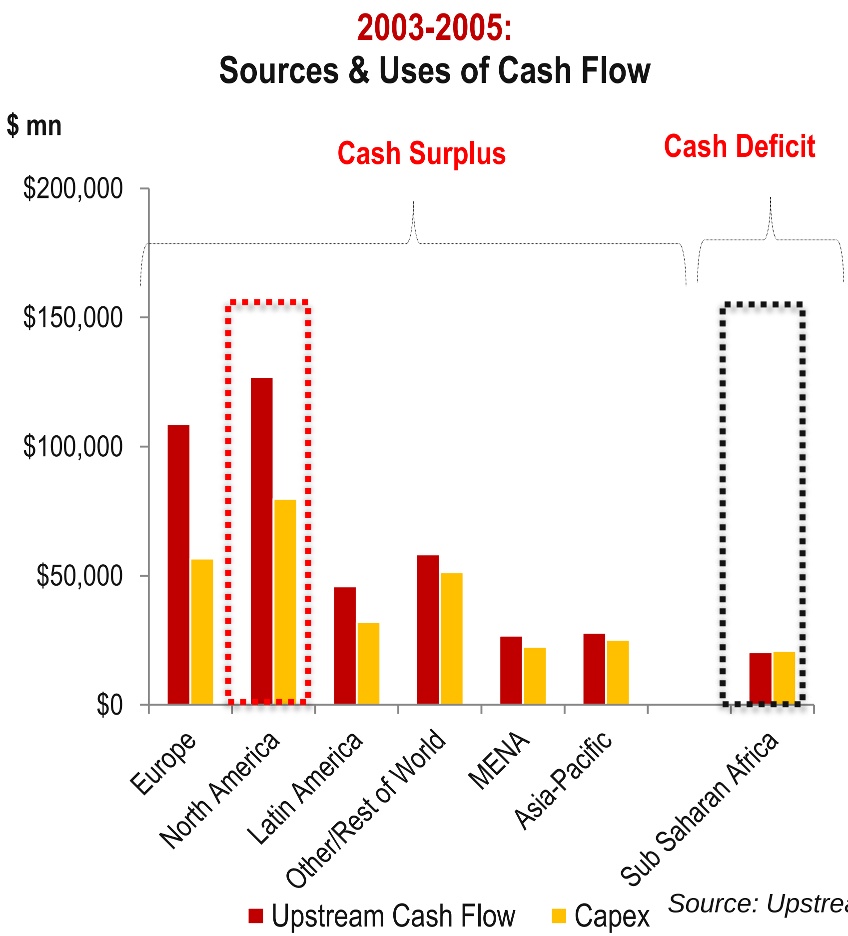


Source: Upstream Competition Service

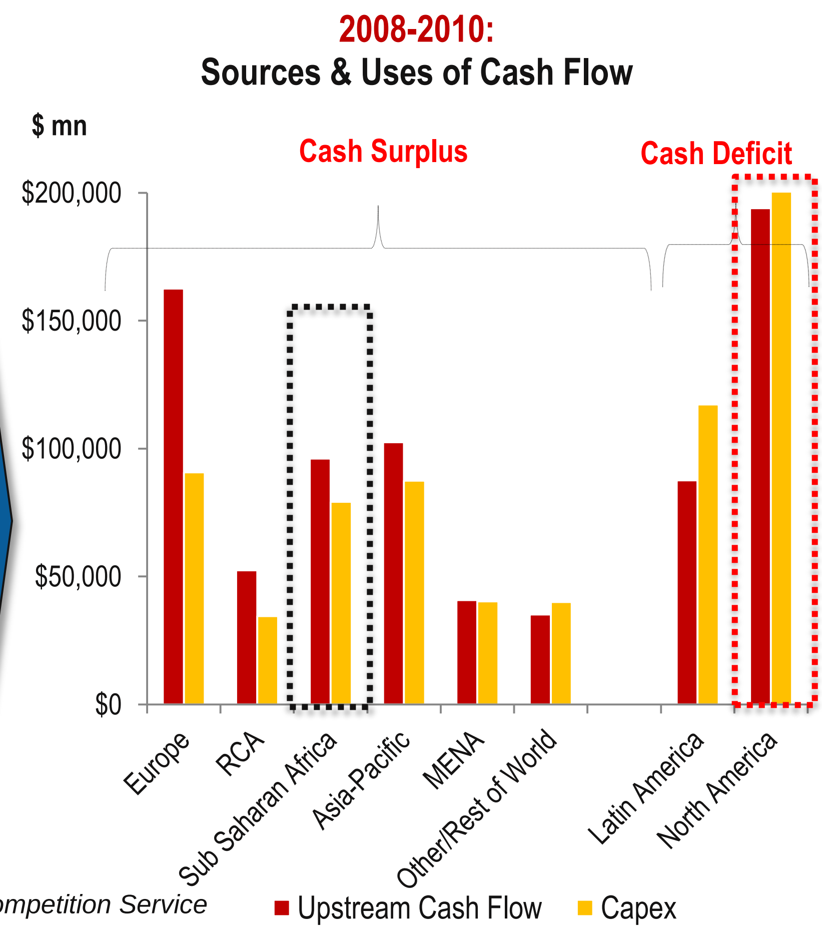
* *Includes: Anadarko, Apache, BG, BHP, BP, CNRL, Chevron, ConocoPhillips, Devon, EnCana, Eni, ExxonMobil, Hess, Husky Oil, Marathon, Murphy, Nexen, Noble Energy, Oxy, Repsol , Santos, Shell, Suncor, Talisman, TOTAL, Woodside*

PFC Energy

…Financed by Redirection of Free Cash Flow



Source: Upstream Competition Service



Along with Europe, Sub-Saharan Africa is now a key cash generating region for the Global Players—with surplus cash flow now supporting growth in North America

** Includes data from the following companies: Anadarko, Apache, BG, BHP, BP, CNRL, Chevron, ConocoPhillips, Devon, EnCana, Eni, ExxonMobil, Hess, Husky Oil, Marathon, Murphy, Nexen, Noble Energy, Oxy, Petrobras, Repsol YPF, Santos, Shell, Statoil, Suncor, Talisman, TOTAL, Woodside*

PFC Energy

Content

- Recent Trends in Exploration Activity and Basin Focus
- ***Credits and Incentives: Sharing Exploration Risk***
  - National Energy Program (Canada)
  - Norwegian Continental Shelf (Norway)
- Development Cycle Time: Incenting the Required Activities

PFC Energy

Exploration and Government Risk Taking

- By and large, Governments have refrained from engaging in the business of upstream risk
  - In emerging basins, nascent National Oil Companies (NOCs) will usually have “back-in provisions” within Poduction Sharing contracts, allowing entry into development projects as an equity participant at the point of sanction. Are prohibited from engaging in exploration activity
  - In more mature basins, the NOC may engage fully from license award to production (Petora in Norway, ONGC in India, PDVSA in Venezuela) assuming it has internalized the necessary degree of technical sophistication and dry-hole tolerance
- Exploration credits/rebates are, in essence, a direct engagement by the government in exploration risk. As such, they have been used sparingly outside of the context of the tax and royalty regime

Canada's National Energy Program: An Experiment in Intervention Gone Awry

- The NEP was introduced to both enhance Canadian ownership in Upstream activities, and to accelerate the discovery and development of domestic resources to enhance security of supply and support energy subsidies to domestic consumers

Jurisdiction	Petroleum Incentive Payments: Exploration Activity	Other Government Risk Sharing	Comments

Alberta	• Cdn Ownership >50%: 10% approved costs
	• Cdn Ownership >60%: 25% approved costs
	• Cdn Ownership >65%: 35% approved costs
		• Development projects:
		  • Cdn Ownership > 10%: 10% approved costs
		  • Cdn Ownership >65%: 20% approved costs
		• Same applied to oil sands and EOR developments
			• Incentives provided to both exploration and development activities

Federal Lands	• Cdn Ownership >50%: 35% approved costs • Cdn Ownership >60%: 65% approved costs • Cdn Ownership >65%: 80% approved costs	• PetroCanada given 25% carried back-in option, convertible up to sanction decision. Paid by P-C share of production (grossed up by 15% per annum to reflect interest and inflation)	• Incentive exploratory well had to be >3 miles from a cased well, OR to a deeper horizon => incented deeper drilling in less prospective areas • 5 year Royalty holiday applied on production

PFC Energy

National Energy Program (Canada) and Exploration Incentives

- NEP introduced substantial distortions into the E&P decision making process. In particular, incented Upstream activity towards less prospective and higher cost areas, and introduced "artificial" demand for Upstream services
  - Drilling costs (seismic, rigs, etc.) accelerated rapidly as demand soared in new and unsupported exploration environments
  - Many companies were effectively "drilling for PIP grants" with commercial discoveries representing the Failure case

Exploration Well Costs	Canadian Arctic	Atlantic Offshore
1966-1970	$4.3 mm	$1.2 mm
1971-1975	$3.6 mm	$3.8 mm
1976-1980	$24.4 mm	$22.4 mm
1981-1985	**$63.2 mm**	**$45.8 mm**
1986-1990	$44.2 mm	$20.5 mm

Canada's National Energy Program:

- The decline in crude prices in the mid-1980s forced the withdrawal of virtually all aspects of the NEP
- Alberta:
  - PIP grants replaced by Royalty Tax Credits (75% rising to 90% with maximum credit per well)
  - Exploration Incentives restructured as either:
    - 12 month Royalty holiday on eligible wells to a maximum per well;
    - Royalty exemption on cumulative production, linked to well depth and location
    - Exploration Drilling Incentive Program: 50% credit set off against subsequent royalties
  - Moved away from credits/rebates outside of the royalty and tax environment => *reward success, not simply effort*.
- Federal:
  - PetroCanada back-in eliminated;
  - Royalty linked to "payout" of development
    - 1% royalty rising to 5% at rate of 1% per 18 months
    - Royalty jumps to 30% net CF after Payout
  - Exploration Tax Credit of 25% for well costs above $5 mm, used to reduce Federal Income Tax. If not taxable => direct refund of up to 40% of non-utilized credit

PFC Energy

Norwegian Continental Shelf: Incentives in a Modern Context

- Oil production in Norway peaked in 2001 and has fallen by ~45% since then. Growth in gas production allowed BOE volumes to rise till 2004, and have been in decline ever since
- Fiscal system provides incentives for exploration activity

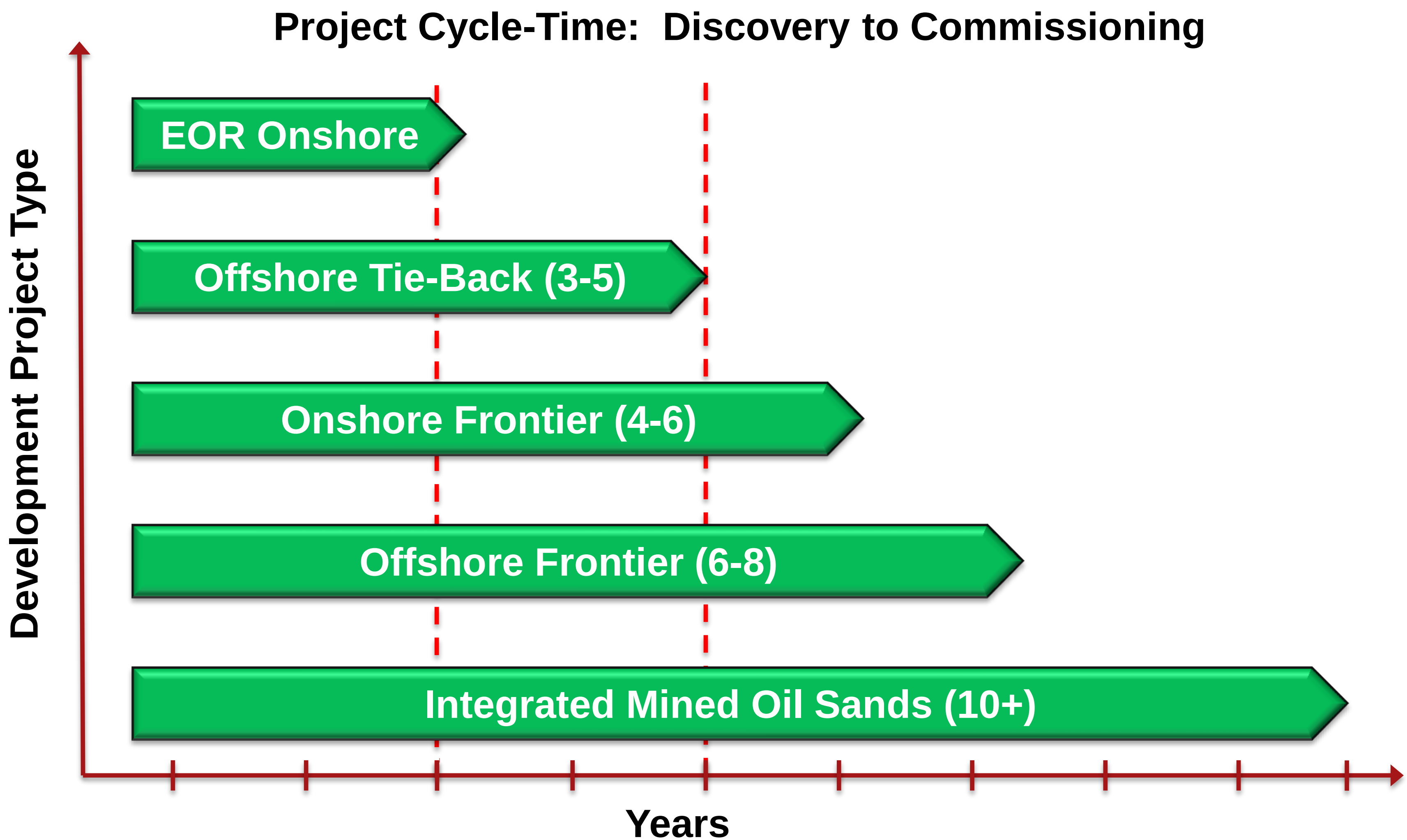
Initiative		Comment
Base Production Tax	• 25%	• Applied to net income from Petroleum activities
Special Tax	• 50%	• Applied to net income geenrated from petroleum activities, to capture resource rent above "normal profits"
Government Investment	• Petoro	• Engages in exploration and development activity as full equity partner; pays share of costs and receives 100% of revenue from its working interest position
Exploration Incentives	• 78%	• Applies to companies in non-taxable position. Since government allows uplift of loss carry-forward at a risk-free interest rate, it is indifferent between refund or offset • Introduced to expand the competitor landscape, bringing in new Upstream companies
License access		• All companies require ***pre-approval for financial, technical, and operating capability*** prior to bidding on a License in the Norwegian Continental Shelf (NCS)

PFC Energy

Content

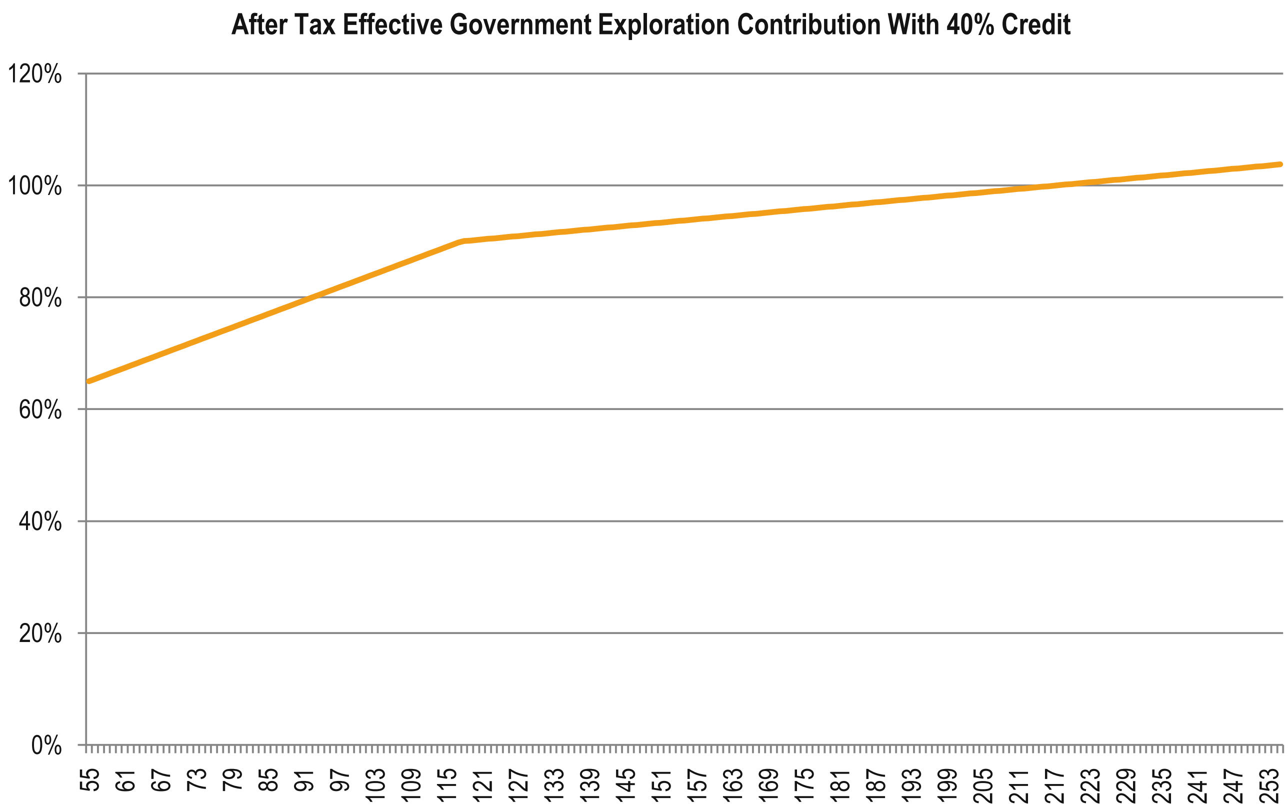
- Recent Trends in Exploration Activity and Basin Focus
- Credits and Incentives: Lessons from the Past
  - National Energy Program (Canada)
  - Norwegian Continental Shelf (Norway)
- ***Development Cycle Time: Incenting the Required Activities***

Cycle Time to Production



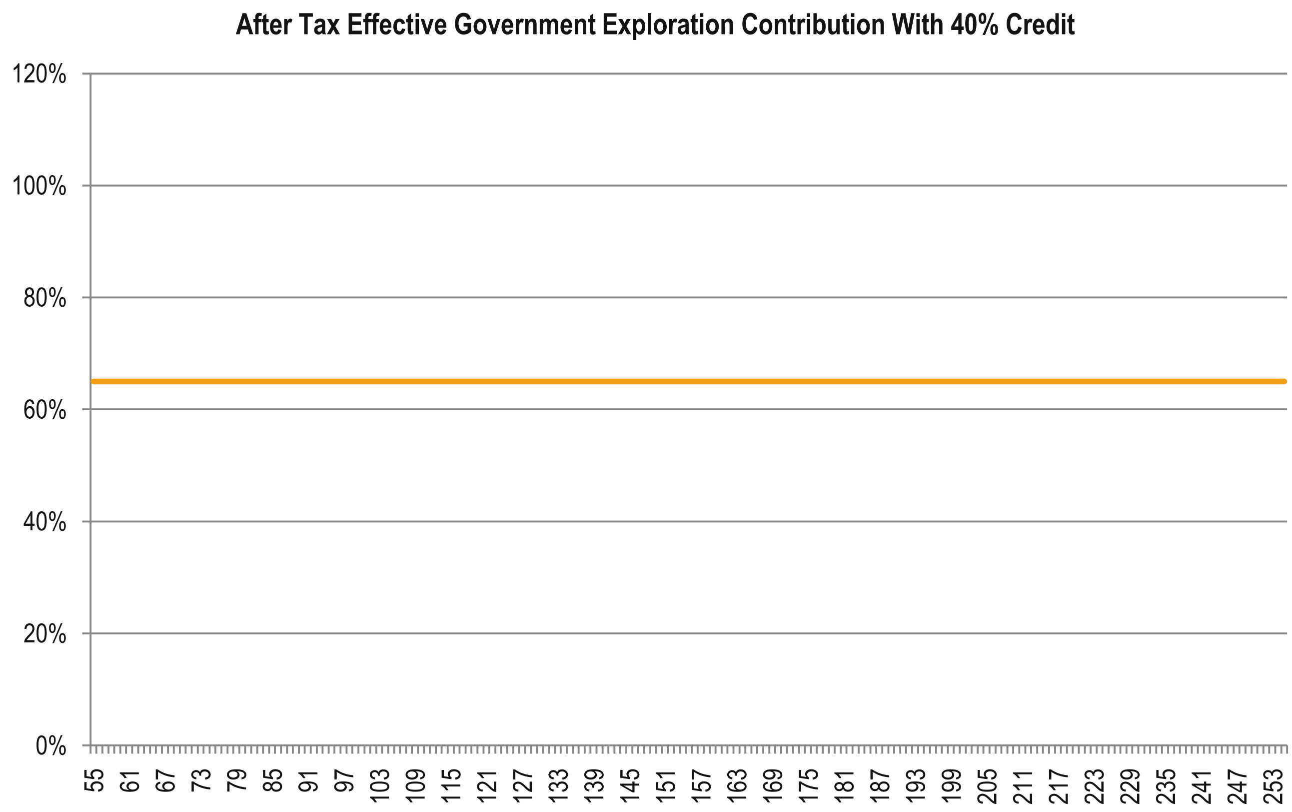
Tool and Target: Direct Incentives to the Desired Outcome

High Levels of Exploration Support under ACES



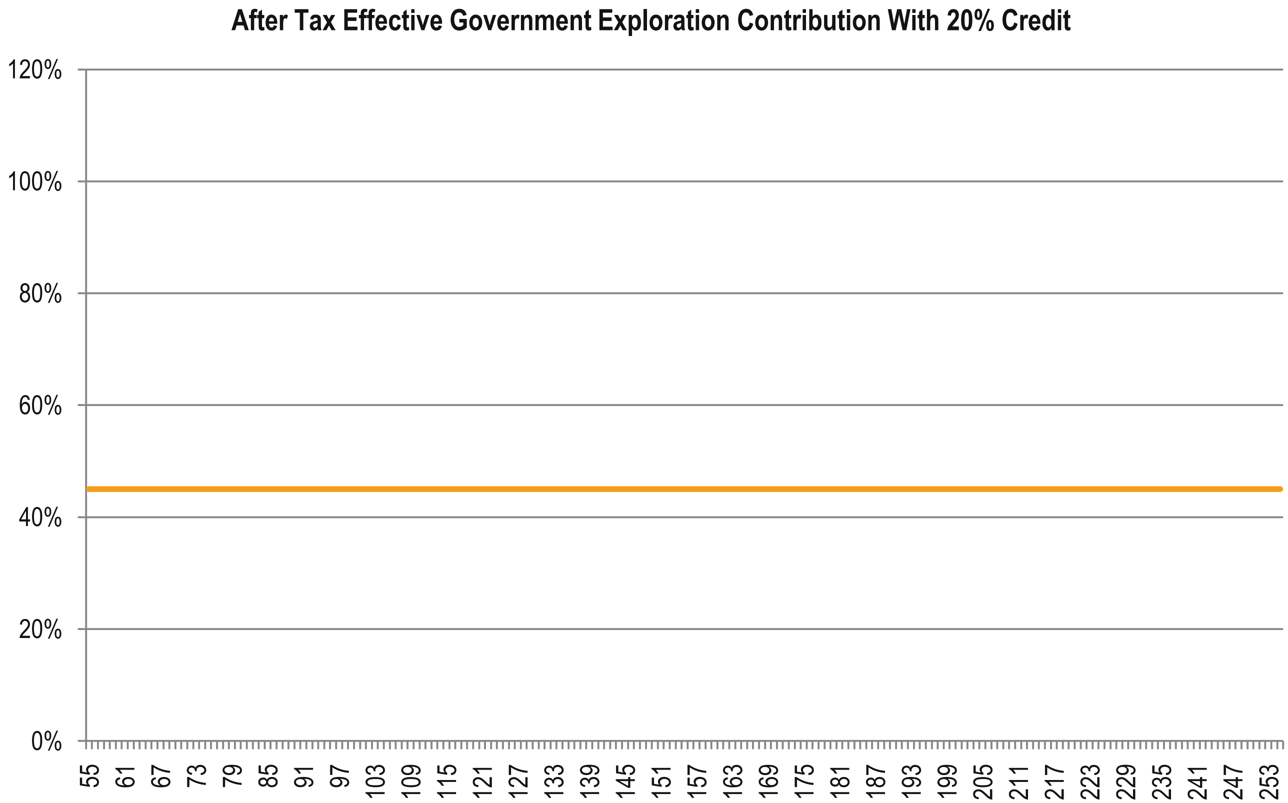
PFC Energy

Reduced Levels of Exploration Support under Progressive Severance Option



PFC Energy

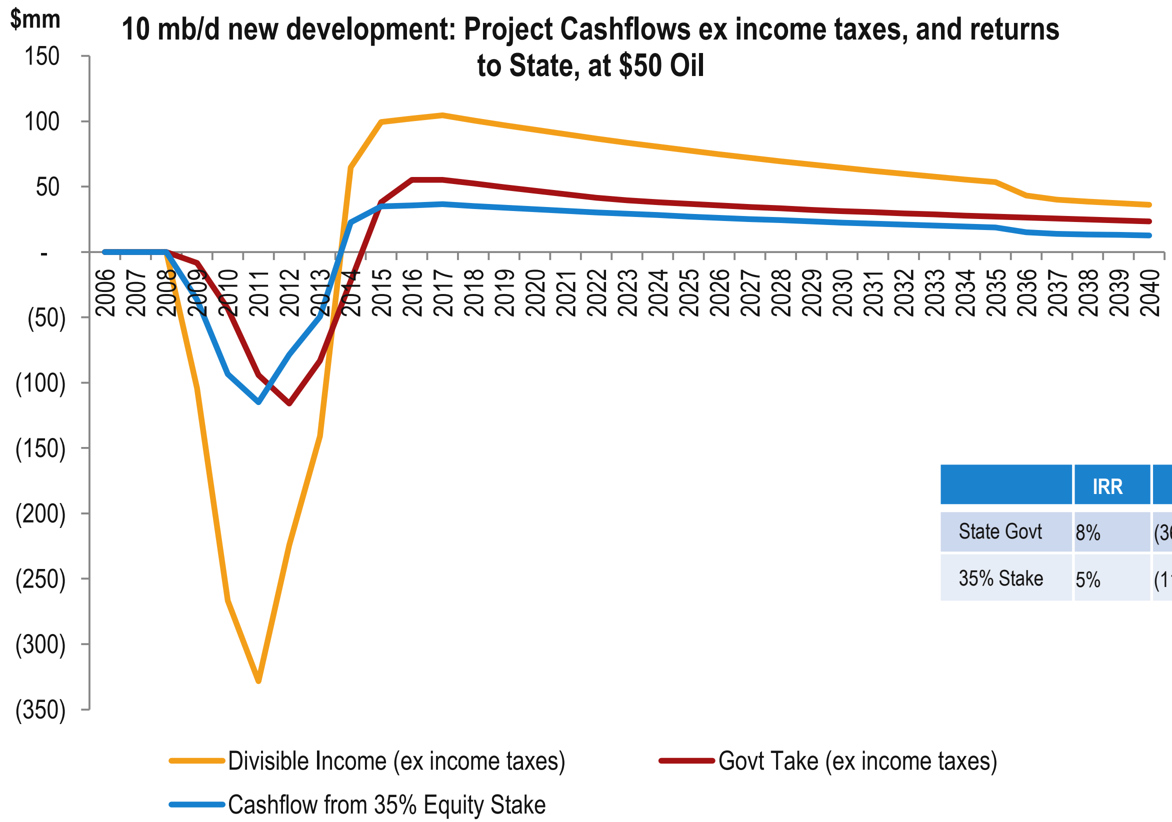
Levels of Exploration Support under Progressive Severance Option with 20% Exploration Credit



PFC Energy

Capital Credits

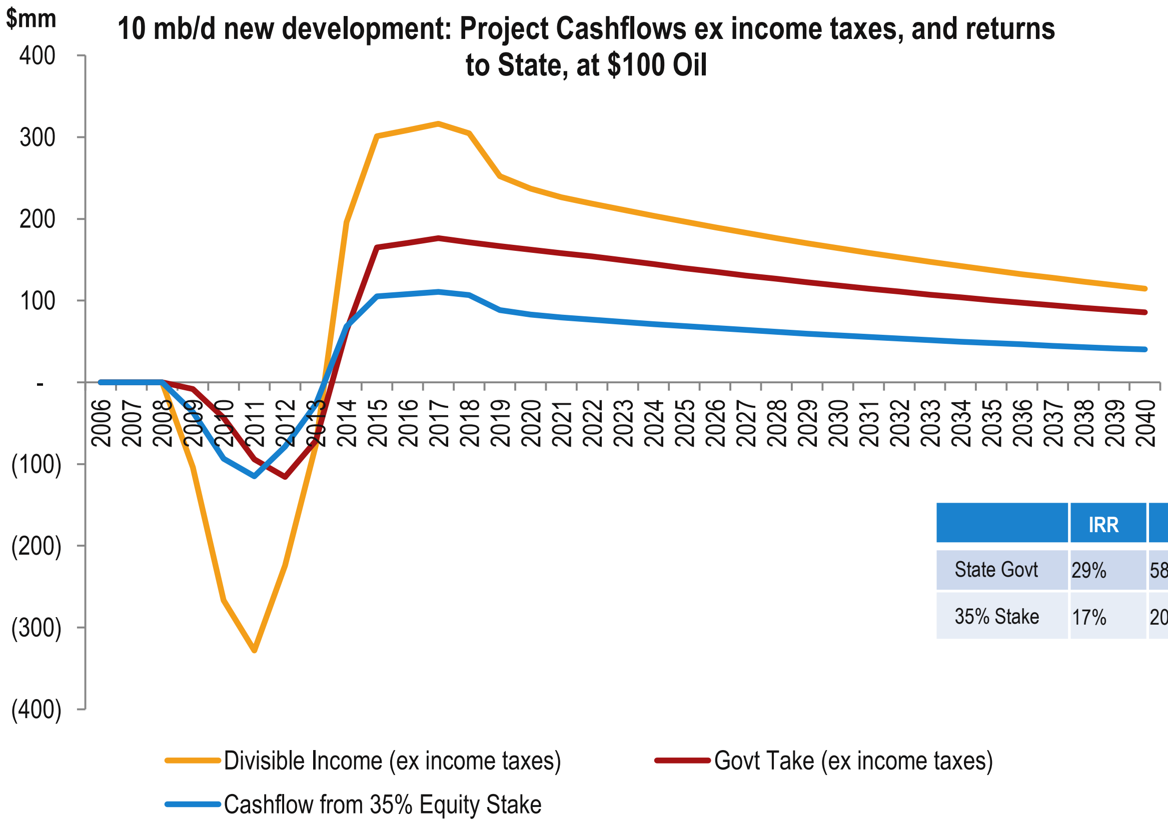
Capital Credit – Return on Investment Under ACES at $50 Oil



	IRR	NPV
State Govt	8%	(36)
35% Stake	5%	(111)

PFC Energy

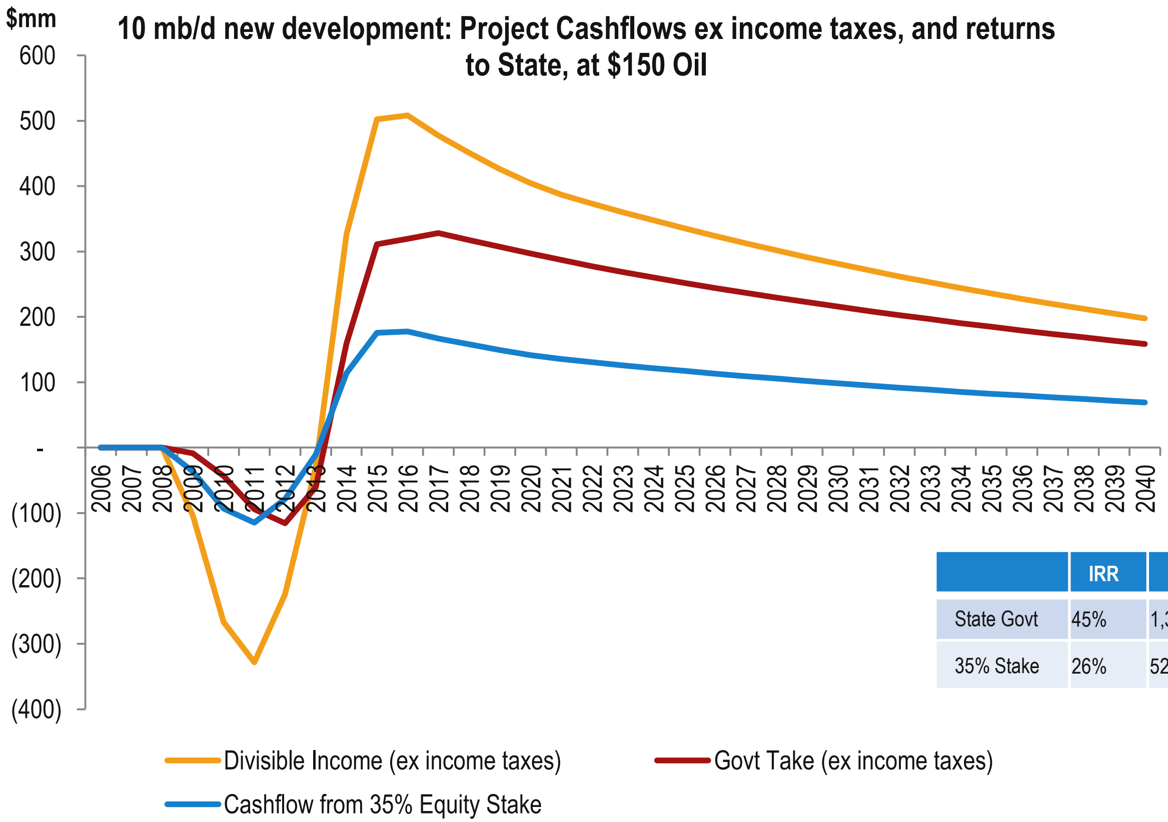
Capital Credit – Return on Investment Under ACES at $100 Oil



	IRR	NPV
State Govt	29%	588
35% Stake	17%	205

PFC Energy

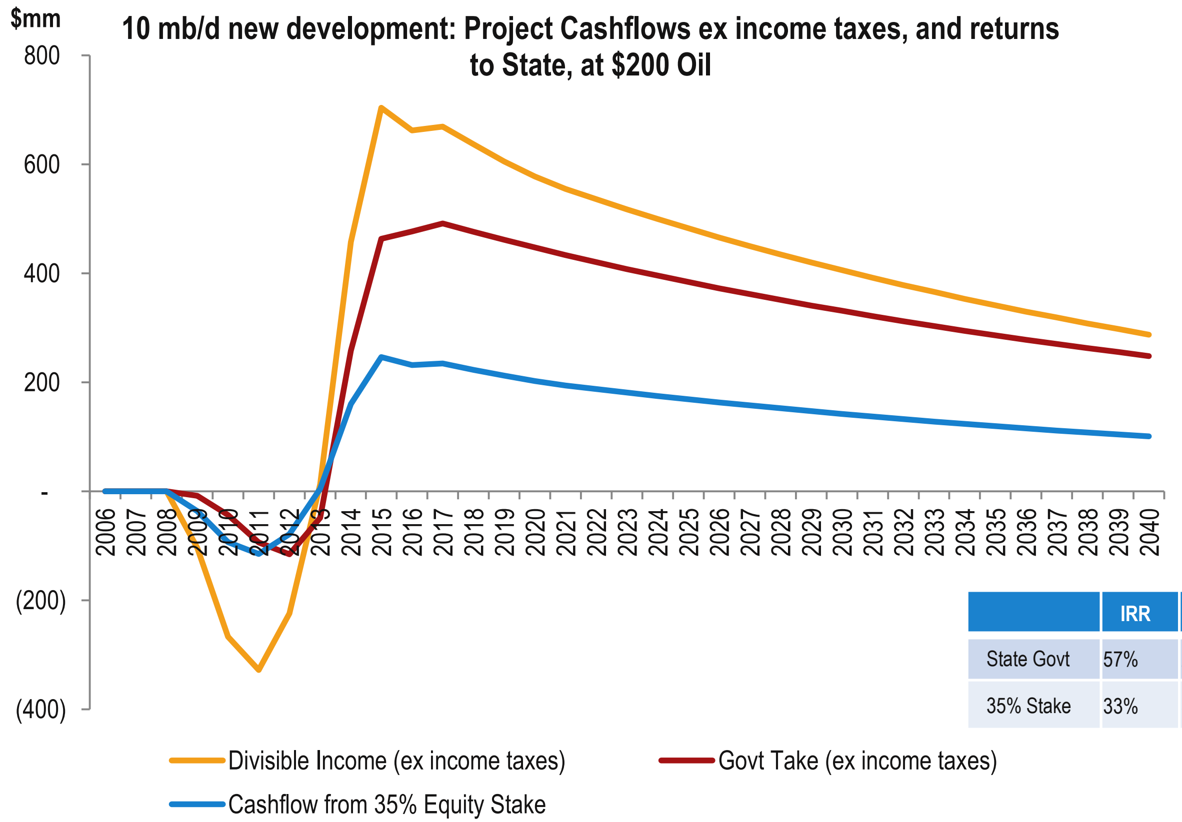
Capital Credit – Return on Investment Under ACES at $150 Oil



	IRR	NPV
State Govt	45%	1,314
35% Stake	26%	524

PFC Energy

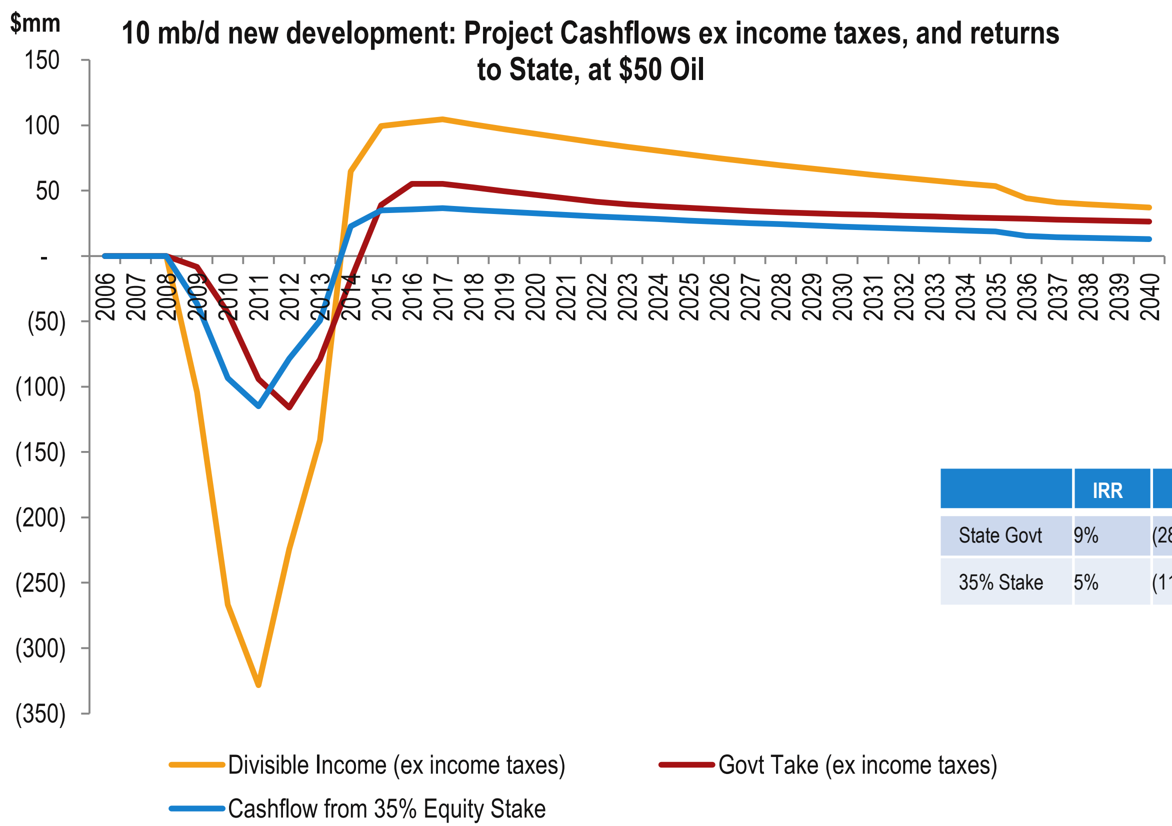
Capital Credit – Return on Investment Under ACES at $200 Oil



	IRR	NPV
State Govt	57%	2,120
35% Stake	33%	853

PFC Energy

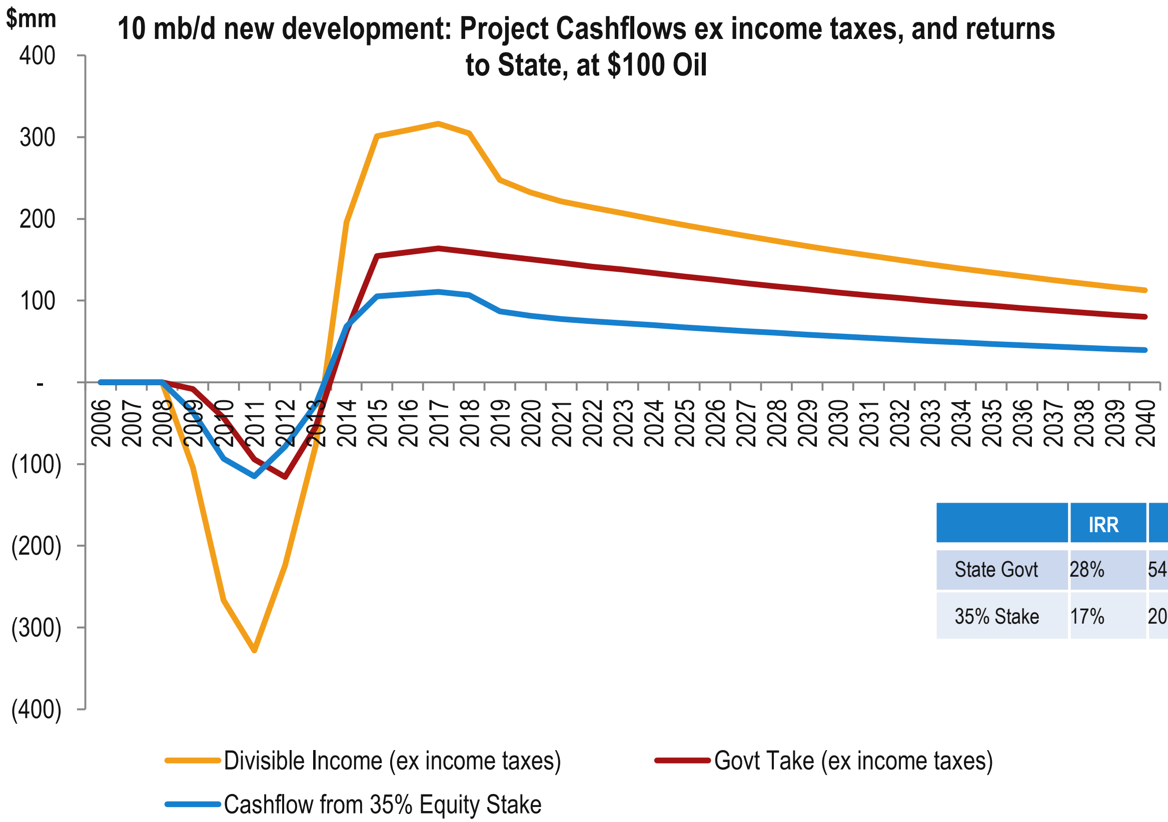
Capital Credit – Return on Investment Under Severance Option 1 at $50 Oil



	IRR	NPV
State Govt	9%	(28)
35% Stake	5%	(111)

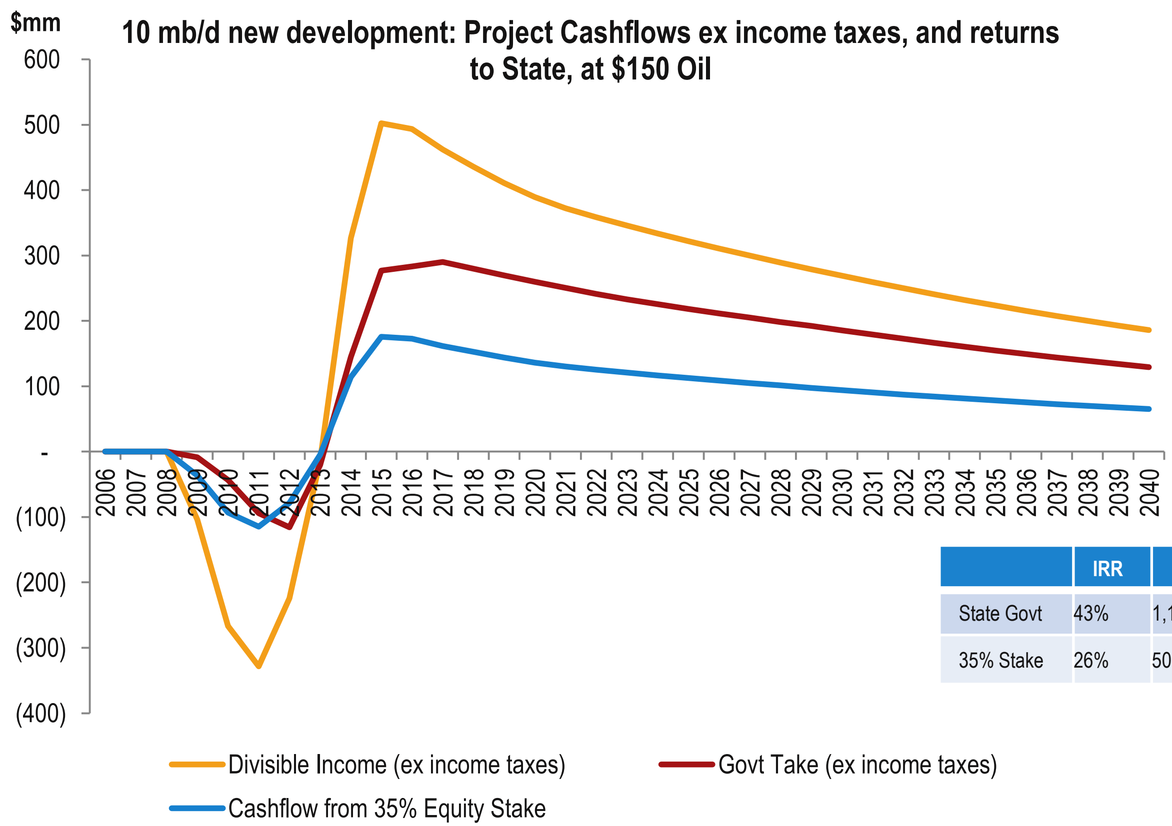
PFC Energy

Capital Credit – Return on Investment Under Severance Option 1 at $100 Oil



	IRR	NPV
State Govt	28%	543
35% Stake	17%	200

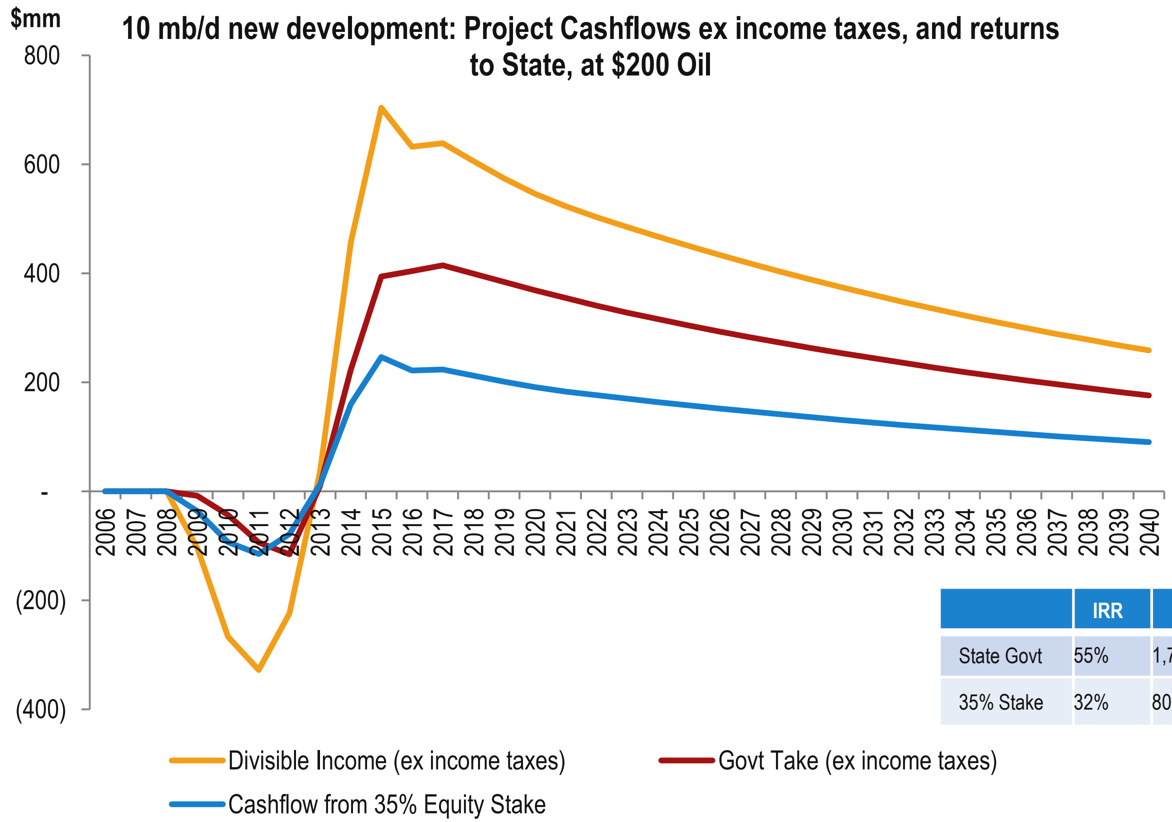
Capital Credit – Return on Investment Under Severance Option 1 at $150 Oil



	IRR	NPV
State Govt	43%	1,143
35% Stake	26%	503

PFC Energy

Capital Credit – Return on Investment Under Severance Option 1 at $200 Oil



	IRR	NPV
State Govt	55%	1,724
35% Stake	32%	805

PFC Energy