

**CRA International**  
**Review of Alaskan Fiscal Proposals**

**Presentation to Alaska House Finance Committee**



INTERNATIONAL

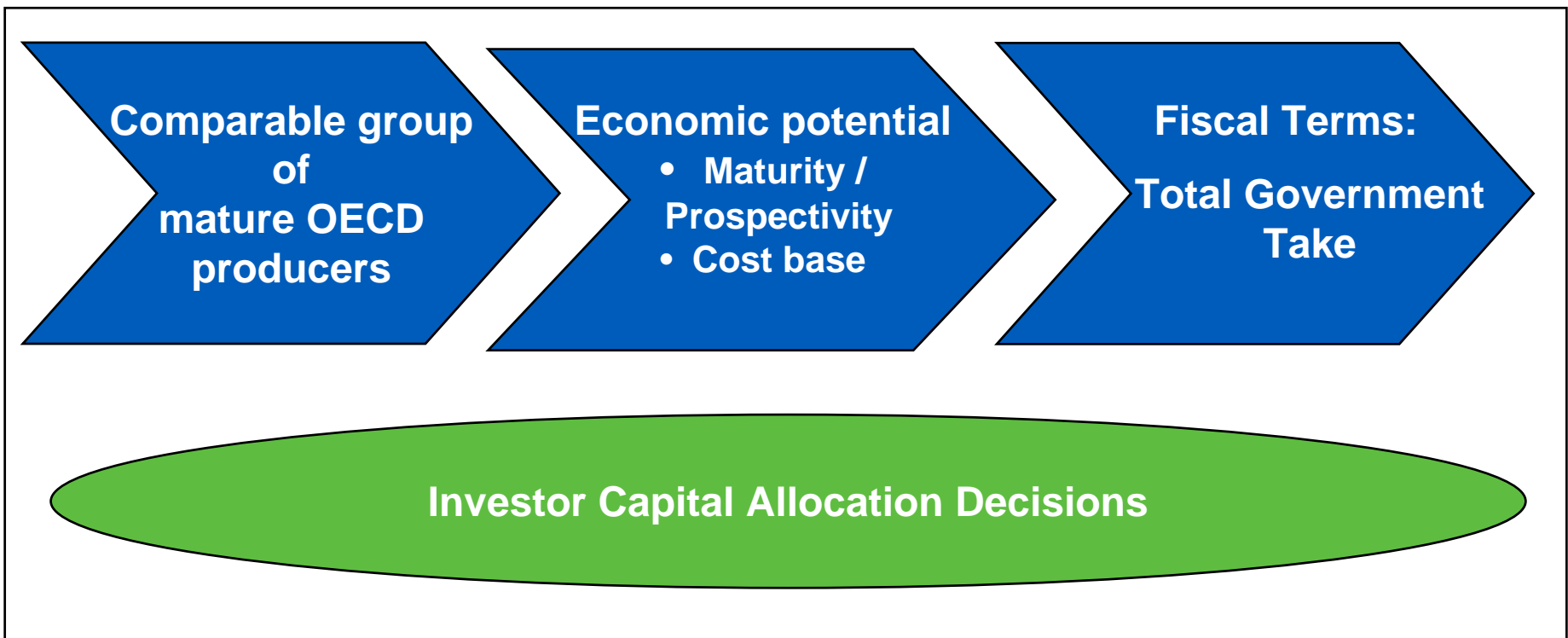
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**March 30, 2006**

## Disclaimer

## Overview of CRA Approach

Will the proposed changes to Alaska's fiscal system support new investment?



## Comparing Alaska's fiscal proposals to other mature OECD producing areas is the basis for a realistic appraisal of their impact on investment

### OECD<sup>1</sup> Oil & Gas Peer Group

- Alaska
- Australia NW Shelf
- Canada Oil Sands
- Norway
- UK North Sea
- US GoM Deep Water
- US GoM Shallow Water

### Common Investment Characteristics

#### **Similar strategic roles in overall investment portfolios**

- Large, established oil and gas producers
- Similar political and business risks

#### **High level of comparability**

- Remaining potential and costs are comparable from public data
- Similar fiscal structures

<sup>1</sup> Organization for Economic Cooperation and Development

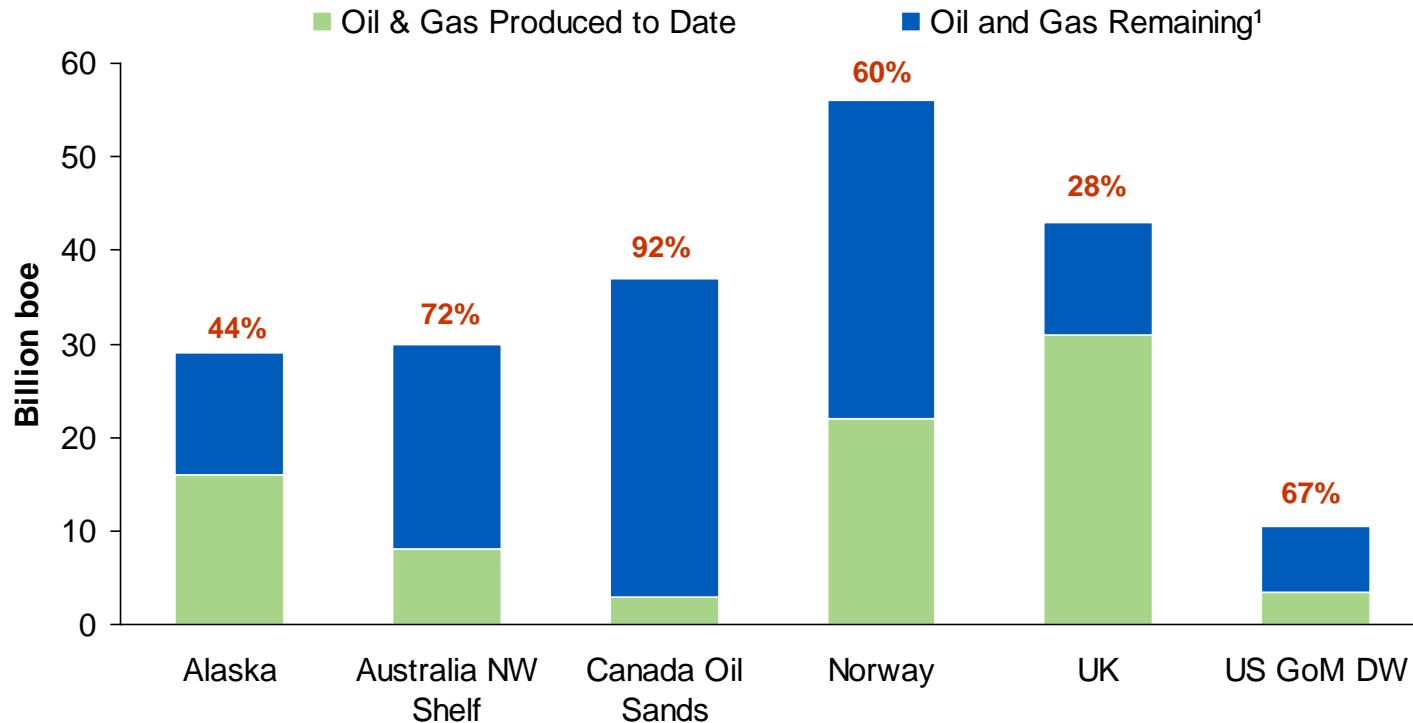
## Alaska's production declined by 6% between 2000 and 2004: in the middle of the group

Total Hydrocarbon Production Change 2000-2004		
Region	2004 Production (mboe/day)	Growth/decline since 2000
US GoM SW	738	-27%
Australia NWS	403	-27%
UK	2,144	-19%
<b>Alaska</b>	946	<b>-6%</b>
Norway	3,180	8% <sup>1</sup>
US GoM DW	1,037	26%
Canada Oil Sands	997	64%

<sup>1</sup> Norway's production dropped by 10% between 2004 and 2005, the loss almost entirely through decline in oil production  
 Source: CRA Analysis of public sources of production history in each area

## Alaska has 44% of its known conventional oil and gas reserves remaining

### Total Hydrocarbons Produced/Remaining

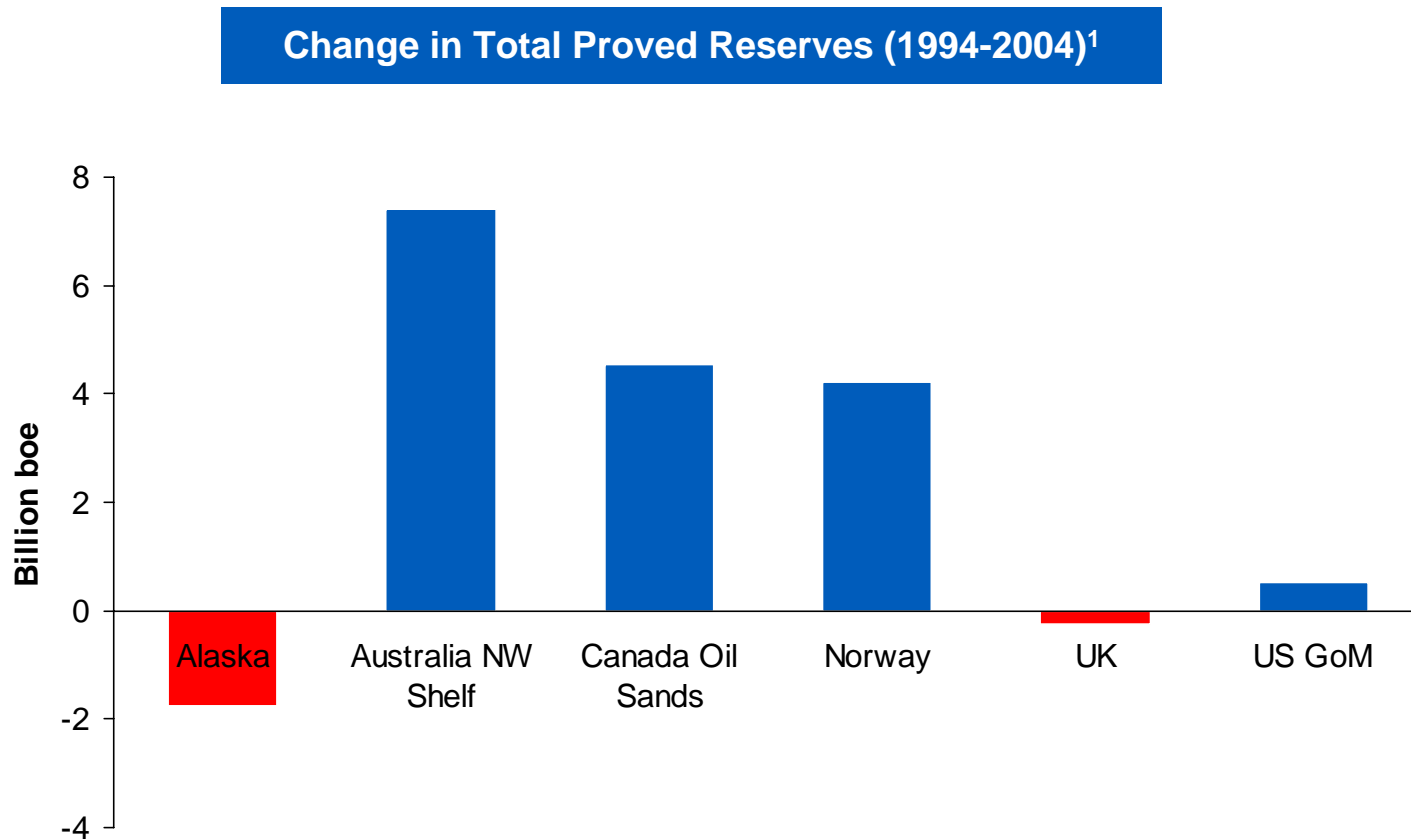


<sup>1</sup> Future estimates based on available data on '2P' or P50 basis: i.e. a central estimate of remaining potential

Numbers in red are percentage of total remaining

Sources: MMS, DOIR, Canadian Association of Petroleum Producers, NPD, DTI, DOE

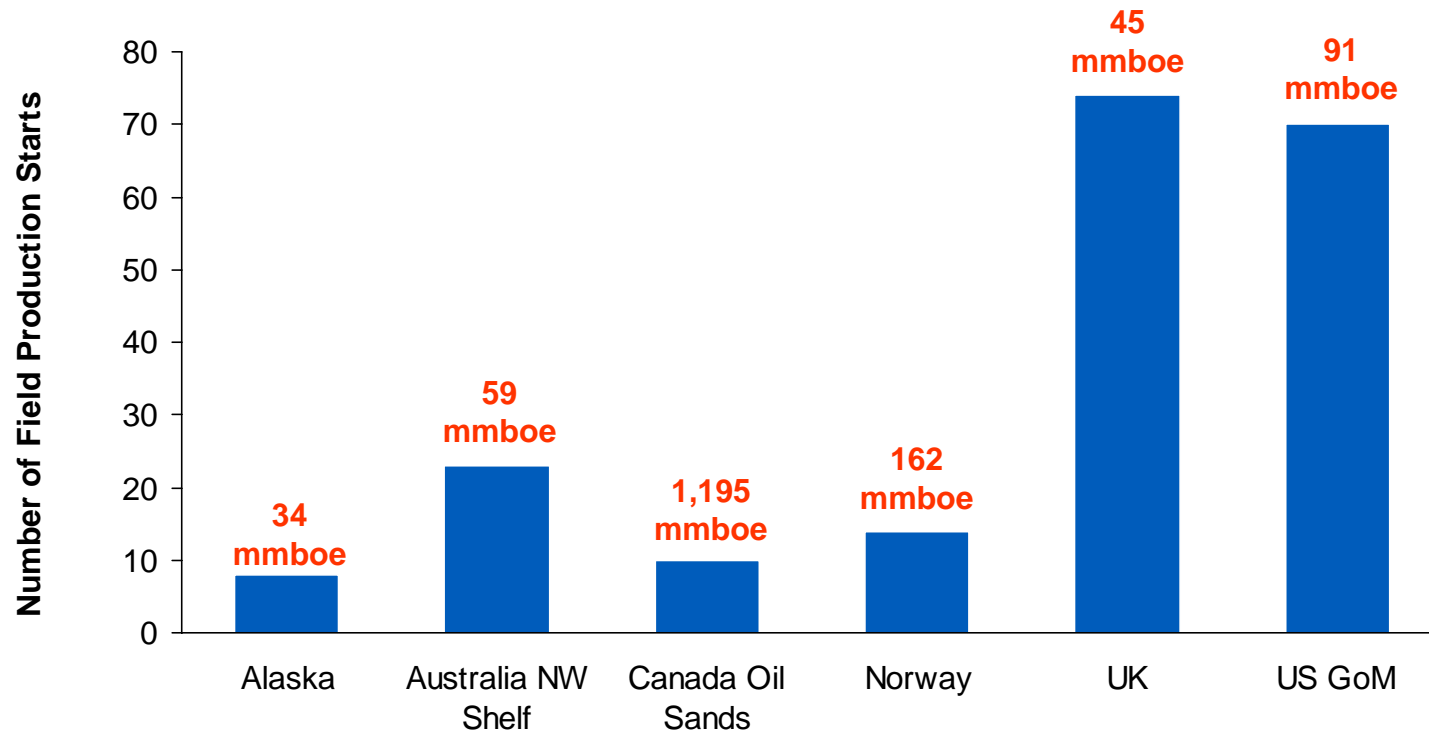
## Alaska and the UK are the only regions within the OECD group to show a decline in proven oil and gas reserves over the last decade



<sup>1</sup> – Figures based on proved (P1) reserves  
Sources: BP Statistical Review & EIA

**Alaska has had only eight new fields start production since 2001 and the average field size was the smallest of the group**

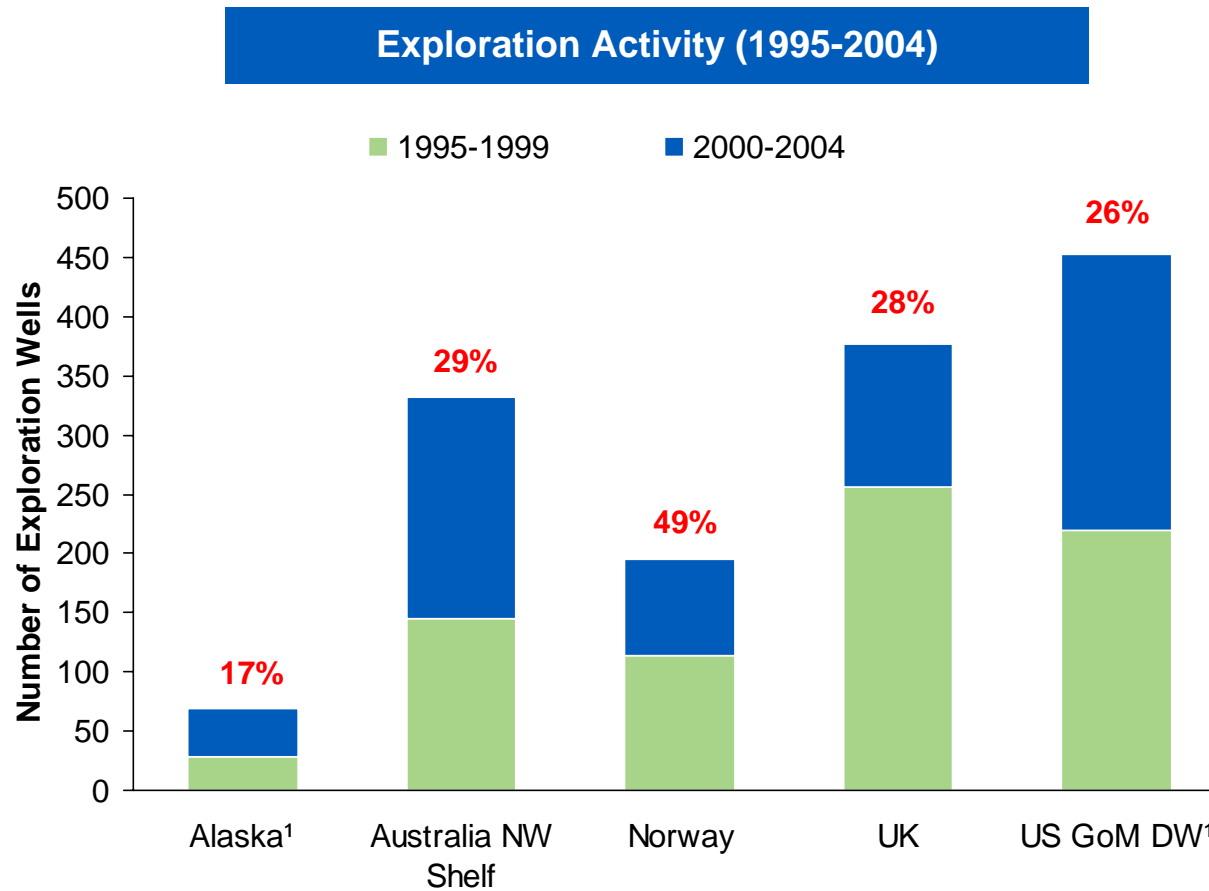
**Field Production Starts (2001-2005)**



Numbers in Red show average development size for new fields in each region over 2001-2005

Sources: Alaskan DNR , WA Government, NPD, UK DTI and Offshore Magazine

## Alaska has the lowest exploration (wildcat) activity and success rate in the OECD comparison group

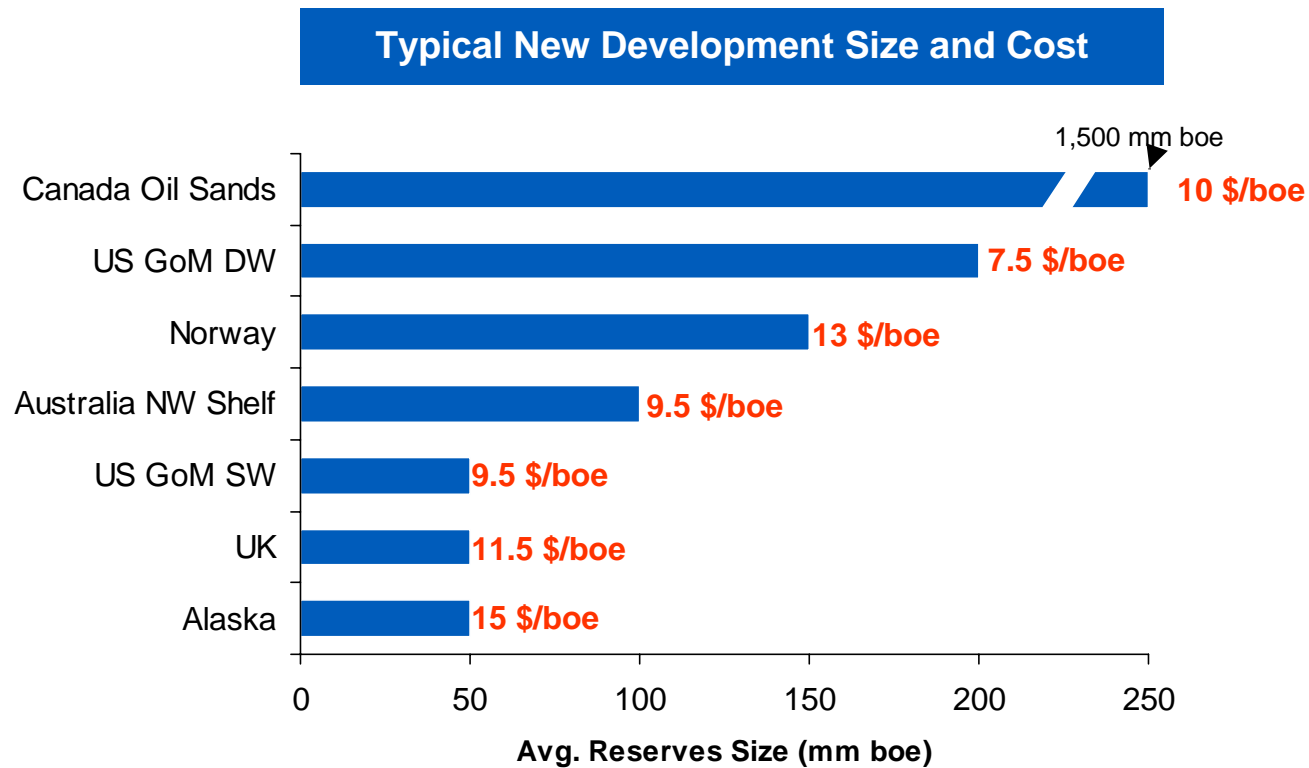


Numbers in red show exploration success per region in the period 2000-1H2004

<sup>1</sup> Alaskan and US GoM drilling numbers discounted by 50% from DNR / MMS figures for Exploration and Appraisal drilling

Sources: Alaskan DNR, Oil & Gas Resources of Australia, NPD and UK DTI, MMS

## Likely new developments in Alaska are relatively small and high cost



Figures in red show total technical costs: CRA estimates of capex and opex for a typical field.

NB Alaskan total costs include an allowance for the incremental effects of TAPS, transportation and Jones Act shipping requirement costs.

Source: CRA Analysis of public sources of field development activity in each area.

## Alaska emerges on a variety of measures as a relatively mature and high cost petroleum area

	Alaska	Australia NWS	Canada Oil Sands	Norway	UK	US GoM DW	US GoM SW
<b>Production Trend</b>	-6%	-27%	54%	8%	-19%	26%	-27%
<b>Reserves Produced</b>	56%	28%	8%	40%	72%	33%	(High)
<b>Proved Reserves Replacement</b>	Negative	Very Positive	Very Positive	Very Positive	Slightly Negative	(Positive)	(Negative)
<b>New Field Starts/Field Size</b>	8 / 34 mm boe	22 / 59 mm boe	10 / 1,195 mm boe	14 / 162 mm boe	70 / 45 mm boe	65 / 91 mm boe	65 / 91 mm boe
<b>Exploration Wells</b>	65	320	n/a	180	350	450	(Large)
<b>Exploration Success Rate</b>	17%	29%	n/a	49%	28%	26%	(Mid-range)
<b>New Field Technical Cost (\$/boe)</b>	15	9.5	10	13	11.5	7.5	9.5

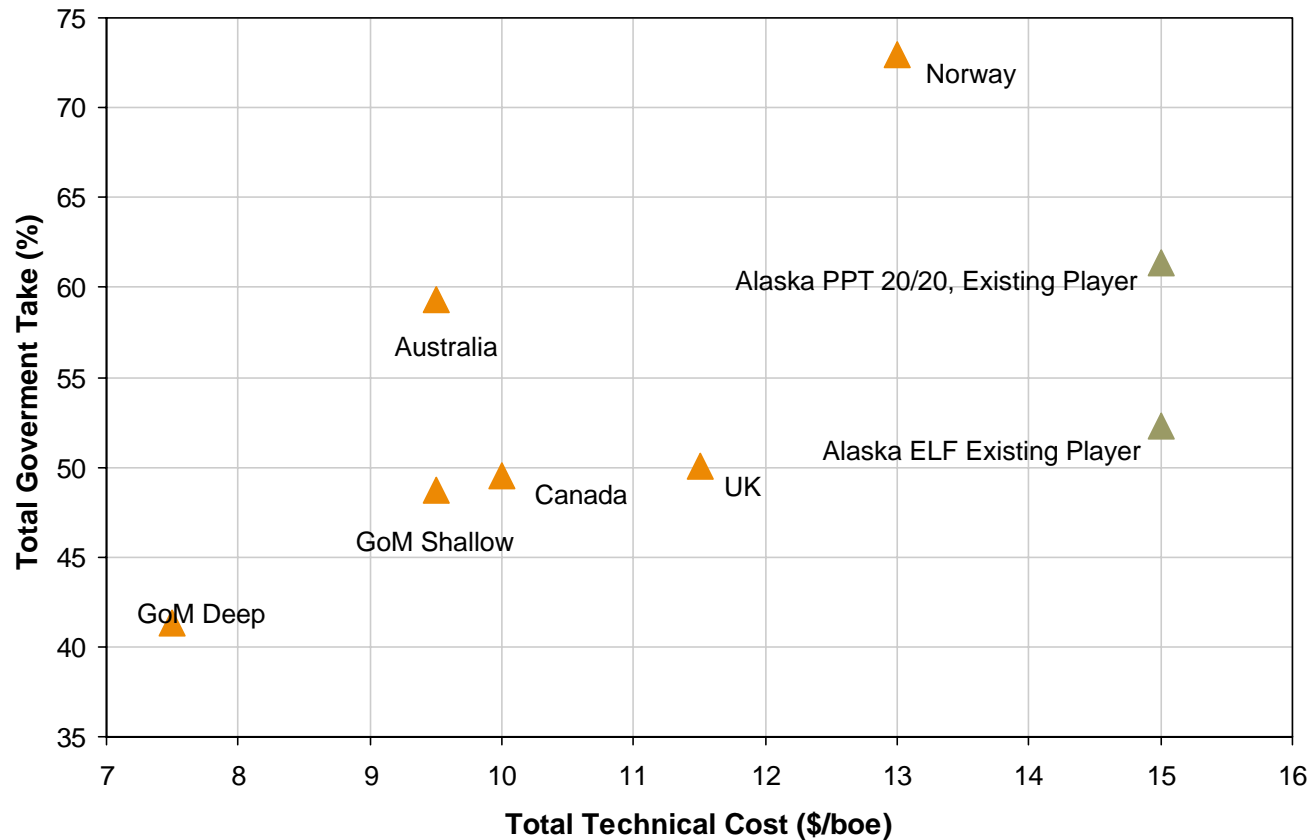
**Key to remaining prospectivity levels**

High ■ Mid-range ■ Low ■

Source: CRA Analysis

## The basic<sup>1</sup> PPT 20/20 proposal already gives Alaska the second highest level of total government take within the group

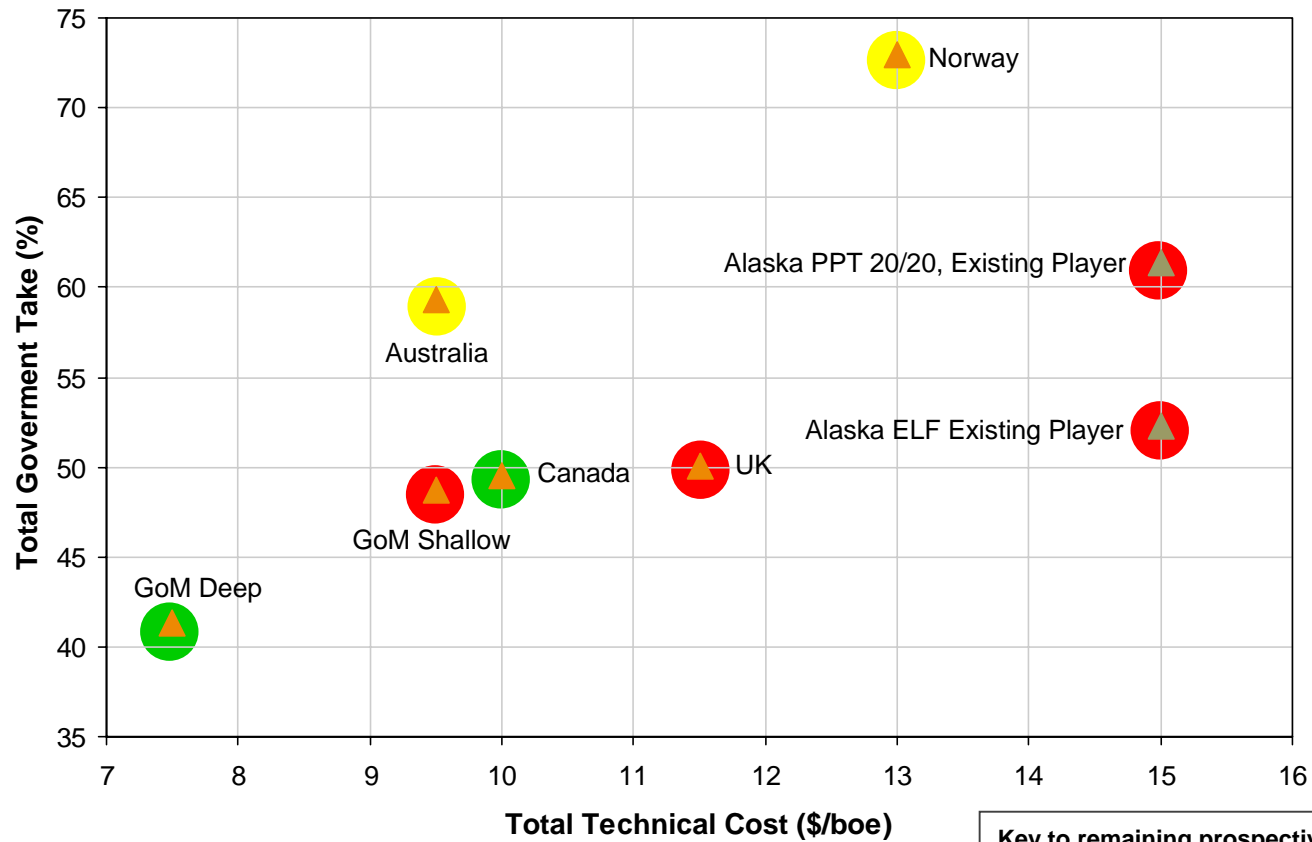
Total Government Take versus Total Technical Costs



<sup>1</sup> i.e. the original HB 488 bill.  
Source: CRA Analysis

# High costs and lack of prospectivity compound the impact of Alaska's high overall government take

**Total Government Take versus Total Technical Costs**



Colors indicate CRA's assessment of prospectivity in each region.  
 Source: CRA Analysis

**Key to remaining prospectivity levels**

High	<span style="color: green;">●</span>	Mid-range	<span style="color: yellow;">●</span>	Low	<span style="color: red;">●</span>
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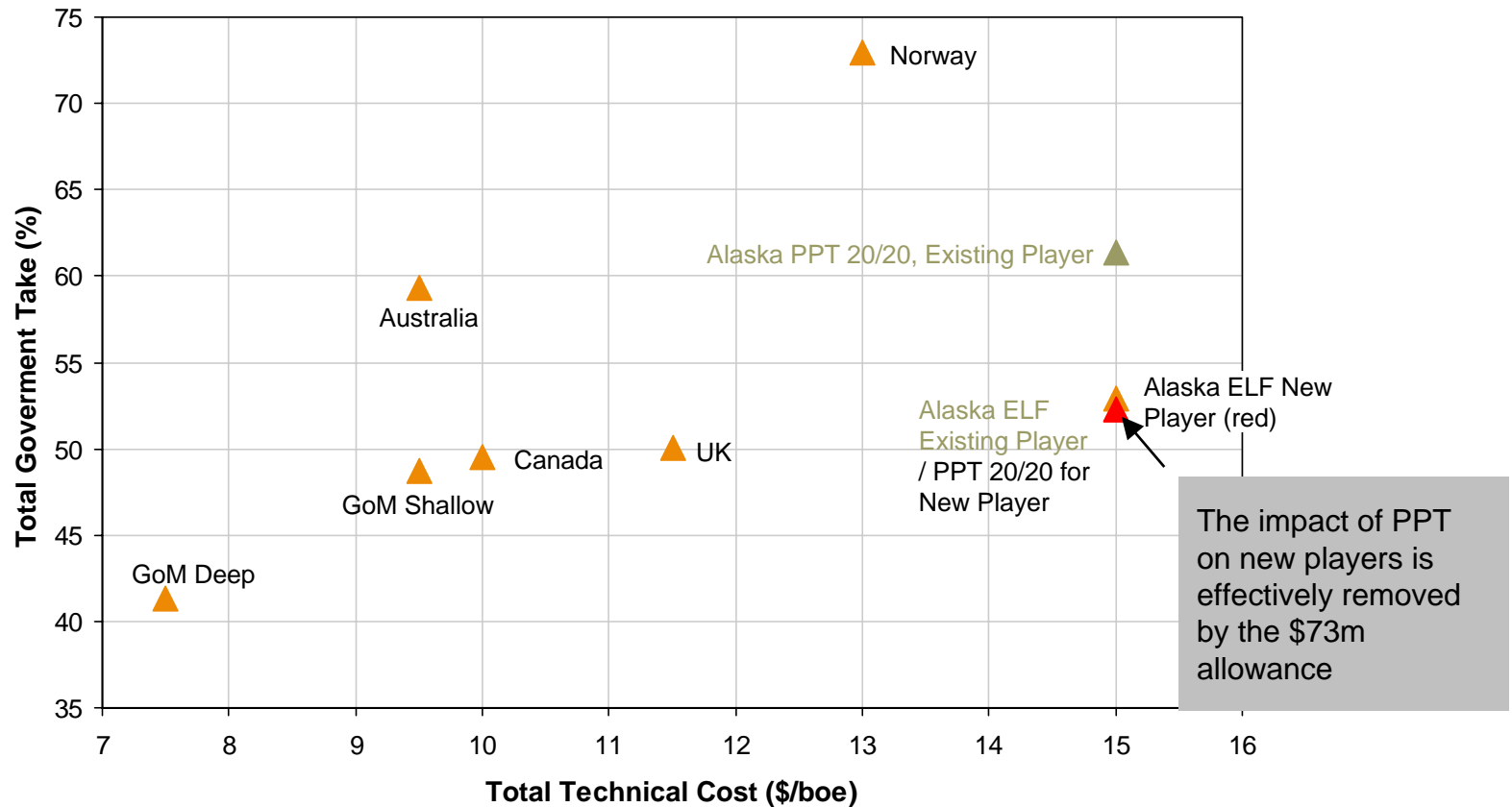


## **Norway's high tax rates are sustainable for an area with high prospectivity and other supporting factors**

- **Norway is significantly less mature than Alaska on all the basic quantitative measures (production growth, reserves, exploration success) and investment is further supported by industry perceptions of its prospectivity**
- **Norway's high tax rates also reflect a number of other structural and policy factors:**
  - Very generous tax relief on exploration investment
  - Presence of three leading players with high government ownership and for whom Norway is their 'core area'
  - Successive governments' policies of 'measured development' in the oil and gas sector as a whole

# The impact of PPT on new entrants' first field development would be removed by the \$73m tax allowance

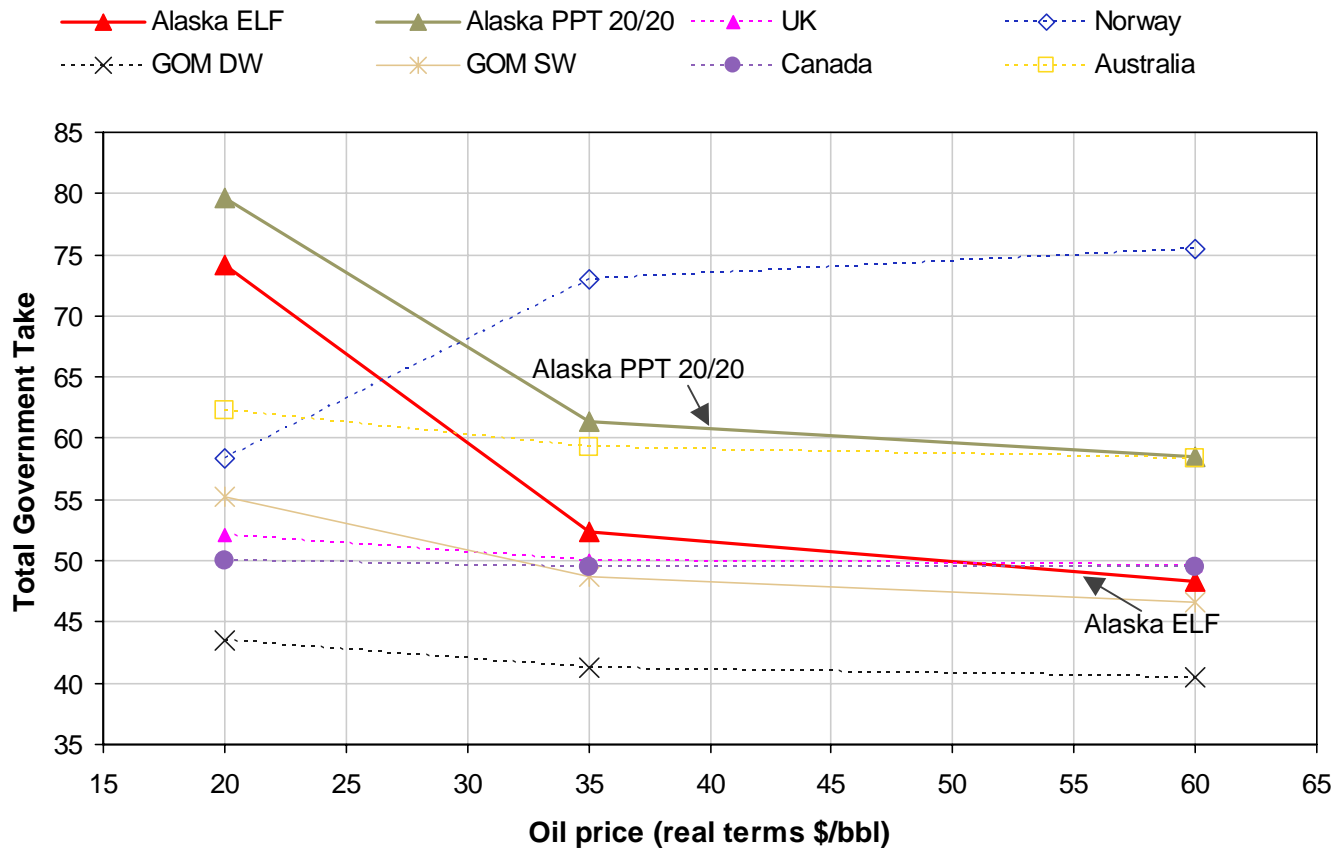
Total Government Take versus Total Technical Costs



<sup>1</sup> i.e. the original HB 488 bill.  
Source: CRA Analysis

## Changing assumptions on oil price highlights the regressive nature of the Alaskan regime, especially at lower prices

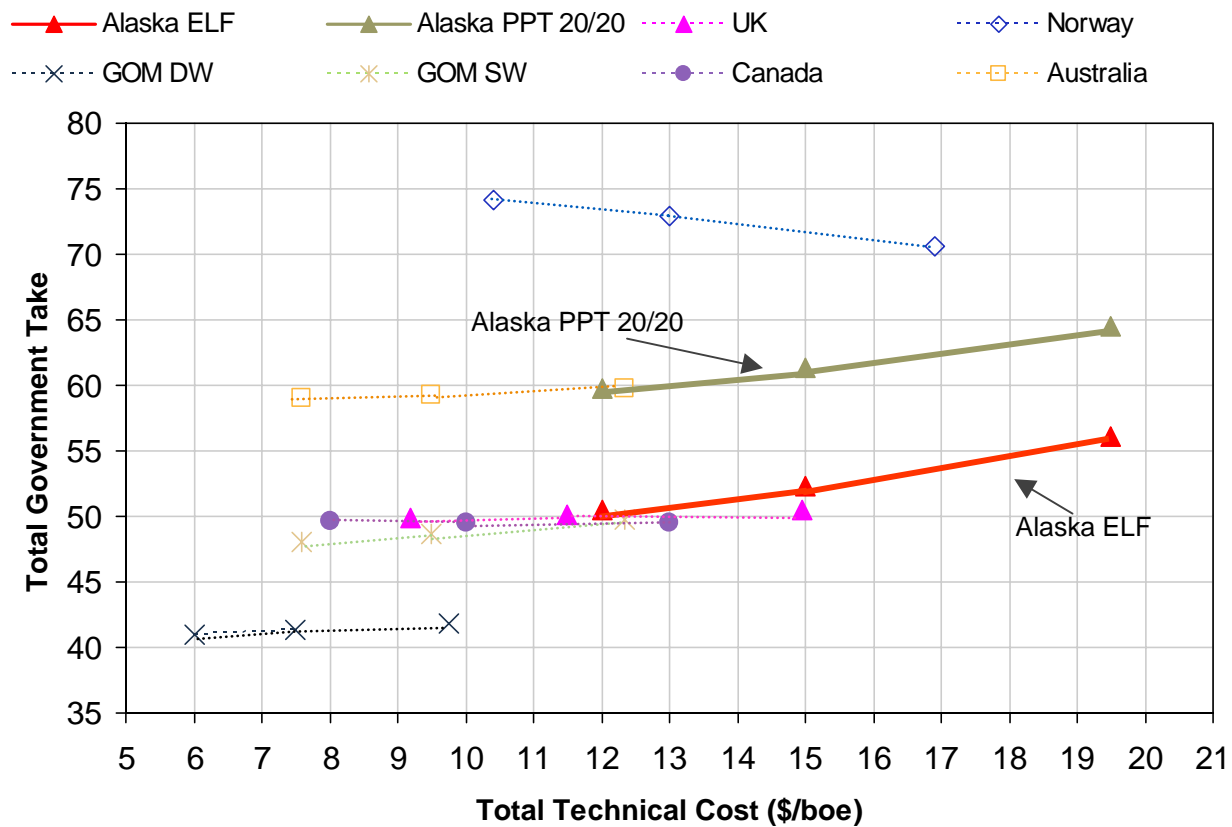
**Total Government Take for Different Oil Prices**



Source: CRA Analysis of Total Government Take for existing Alaskan participants

## Changing assumptions about cost of new field development also highlights a regressive aspect of Alaska's system – current and proposed

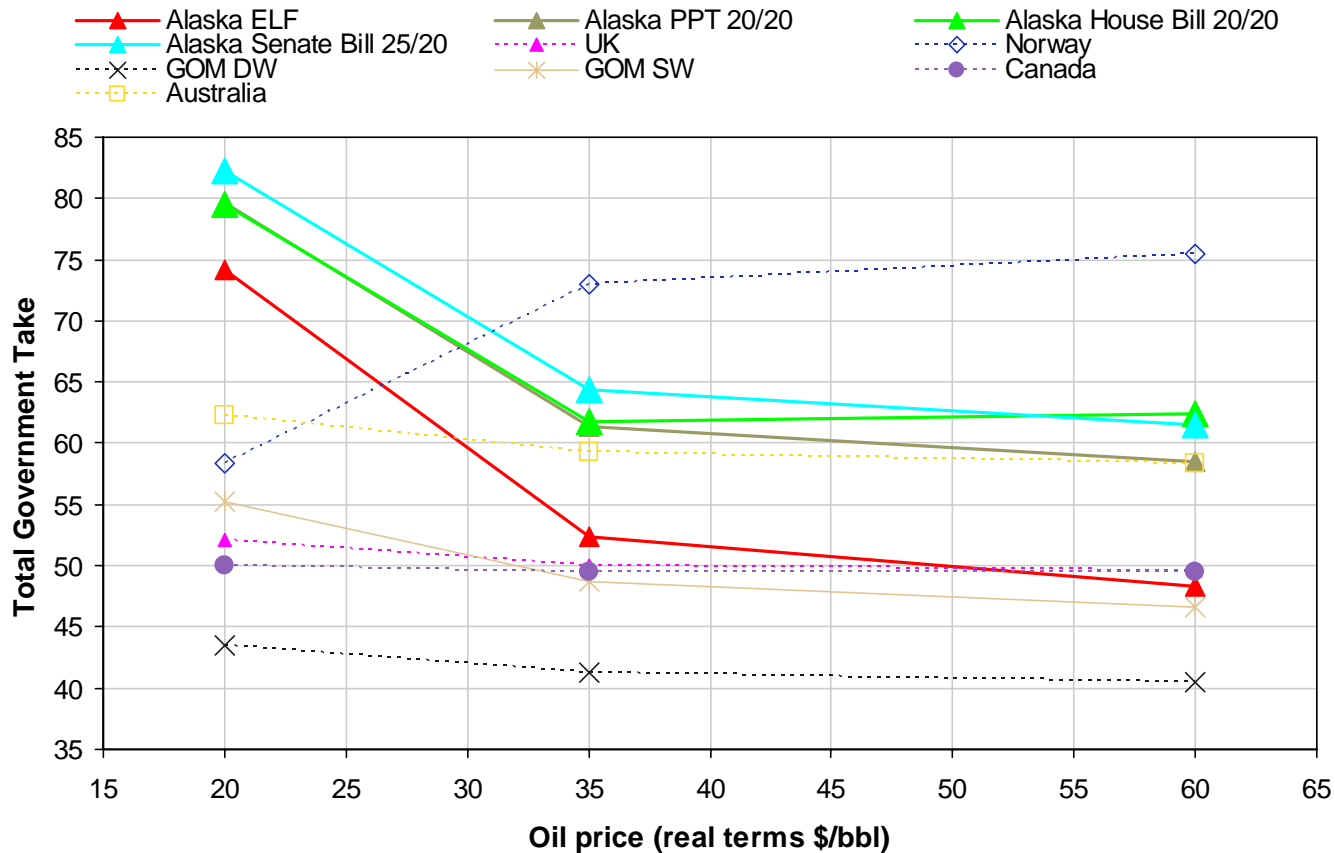
**Total Government Take for Different Cost Structures**



Source: CRA Analysis of Total Government Take for existing Alaskan participants

# The House and Senate proposals add to the levels of government take for the Alaskan field development

**Total Government Take for Different Oil Prices**



Source: CRA Analysis of Total Government Take for existing Alaskan participants

## Alaska’s resource potential lies mostly in its existing assets, and in undeveloped gas and heavy oil reserves

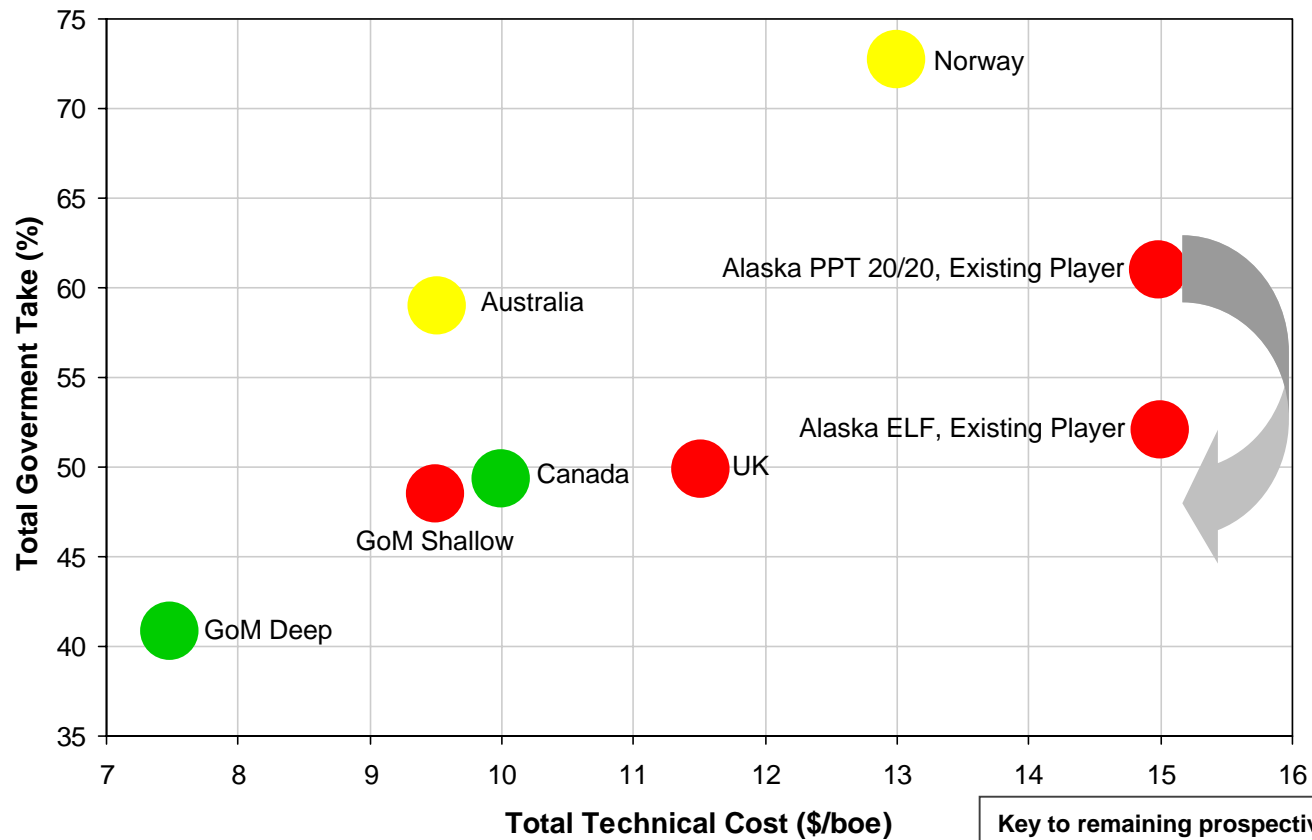
Alaska’s Resource Potential		
Resource Type	Comparative Size <sup>1</sup>	Incentivised by PPT 20/20 proposal?
Producing Fields / EOR	2-5 bn boe	No: higher tax take = direct disincentive
Known Undeveloped Resources: <i>Conventional Oil</i>	~0.5 bn boe	Only small new players have some incentive
Known Undeveloped Resources: <i>Conventional Gas</i>	6-8 bn boe	No: higher tax take = direct disincentive Gas pipeline approval could transform picture
Known Undeveloped Resources: <i>Heavy Oil</i>	5 bn bbl	Higher tax rates may cause serious delay to heavy oil development
Exploration Potential (YTF)	<1 bn bbl oil potential? Gas potential may be higher	Only small new players have some incentive

NB YTF = “Yet to Find”

Source: Alaska DNR, USGS, CRA estimates of incremental potential

# If Alaska wishes the new legislation to stimulate investment, a new system that reduces total tax take would be required

## Total Government Take versus Total Technical Costs



Colors indicate CRA's assessment of prospectivity in each region.  
Source: CRA Analysis

**Key to remaining prospectivity levels**

High ● Mid-range ● Low ●



## **Increasing Alaska's oil and gas taxes will have a price**

- **We recognize the dilemma of balancing revenues and investment**
- **Alaska is mature, but has undeveloped potential**
  - Low prospectivity and new field size
  - High cost base
  - BUT huge known resources, heavy oil especially
- **Current fiscal proposals do not help competitiveness in OECD peer group**