

Alaska Senate Resources Committee:

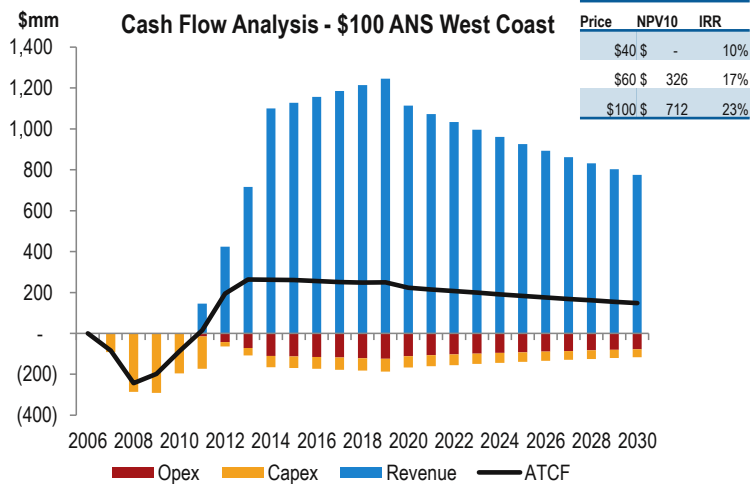
Requested Analysis of Possible ACES
Progressivity Caps Under Different Cost
Assumptions

February 27, 2012

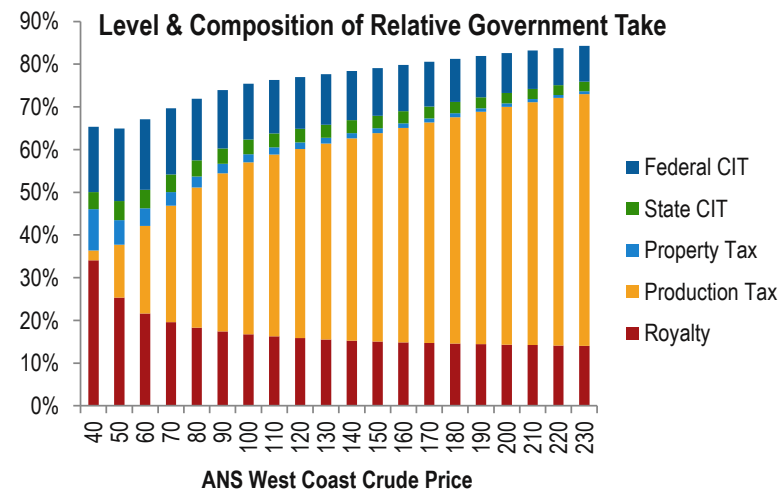
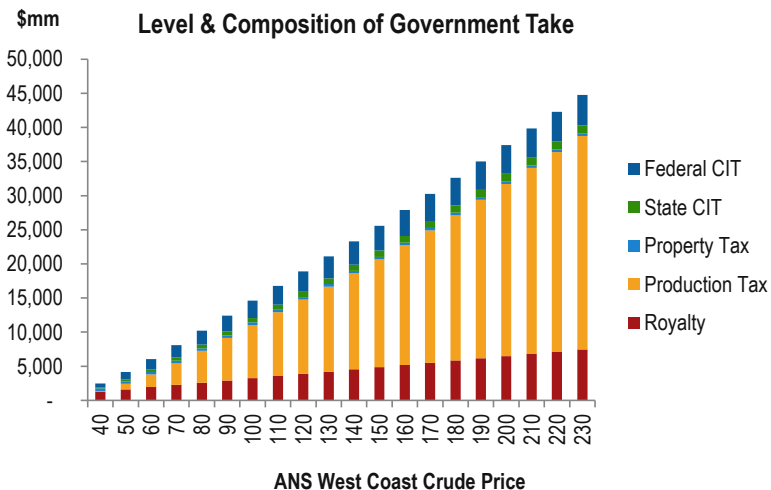
Janak Mayer
Manager, Upstream & Gas
PFC Energy

Cost Assumptions Underlying Development-Forward Analysis

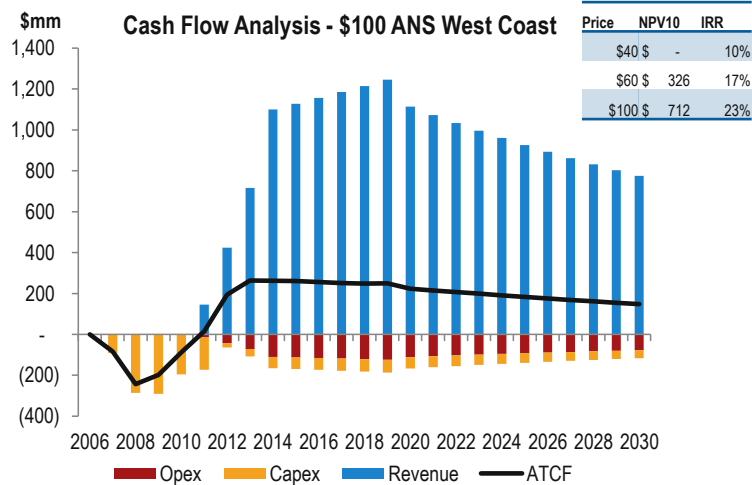
- Development-forward analysis has been undertaken by looking economics for a generic example low-cost field development. Cost examples underpinning the modeled scenarios are:
 - \$10 per flowing bbl operating expenditures
 - \$5 per bbl reserves initial development capital expenditures
 - \$5 per flowing bbl ongoing capital expenditures
 - \$7.40 per flowing bbl transportation costs
- These assumptions are broadly in keeping with actual reported costs for lower-cost production from the North Slope. They are in total higher than the calendar year 2010 costs reported by DOR for the Prudhoe Bay Unit, which are:
 - 1,314mm operating expenditures (~\$11.89 per flowing bbl)
 - \$561mm capital expenditures (includes both maintenance and additional new development ~\$5.08 per flowing bbl)
- On the following slides, the original analyses from the February 17 presentation to Senate Resources Committee have been reproduced, with some minor revisions, and with the addition analysis of production tax caps at 55% and 65%



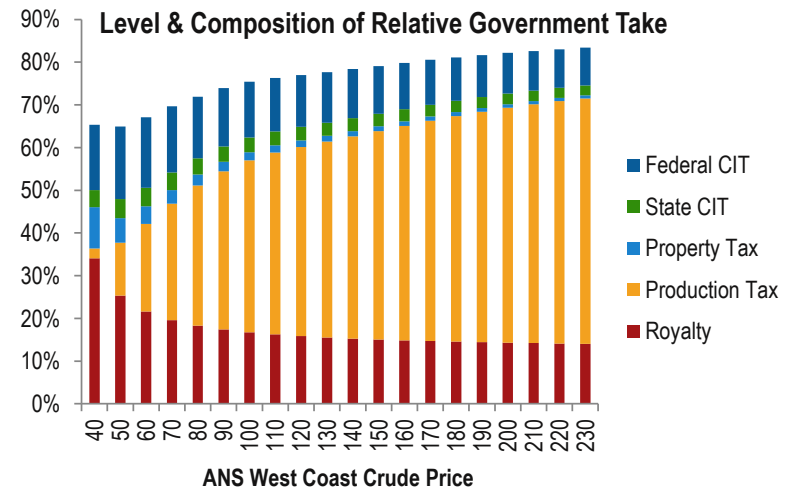
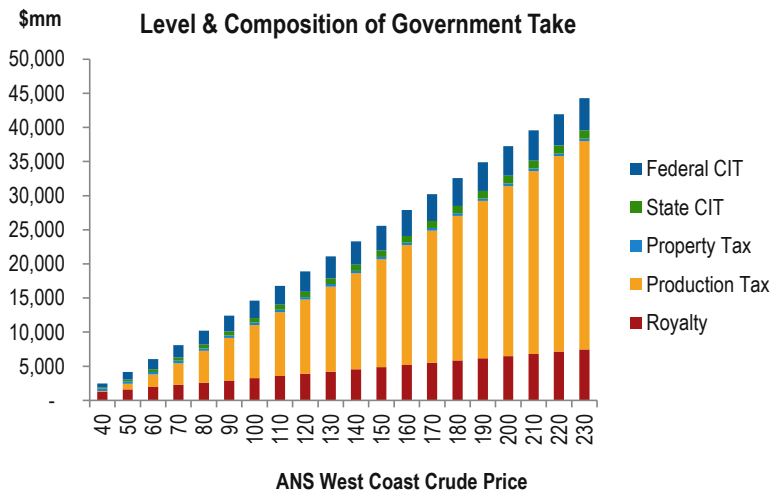
Price	Royalty	Production Tax	Property Tax	State CIT	Total State Take	Federal CIT	Total GT
40	34%	2%	10%	4%	50%	15%	65%
50	25%	12%	6%	4%	48%	17%	65%
60	22%	21%	4%	4%	51%	17%	67%
70	20%	27%	3%	4%	54%	16%	70%
80	18%	33%	3%	4%	58%	14%	72%
90	17%	37%	2%	4%	60%	14%	74%
100	17%	40%	2%	3%	62%	13%	75%
110	16%	43%	2%	3%	64%	13%	76%
120	16%	44%	2%	3%	65%	12%	77%
130	16%	46%	1%	3%	66%	12%	78%
140	15%	47%	1%	3%	67%	12%	78%
150	15%	49%	1%	3%	68%	11%	79%
160	15%	50%	1%	3%	69%	11%	80%
170	15%	52%	1%	3%	70%	10%	81%
180	15%	53%	1%	3%	71%	10%	81%
190	14%	54%	1%	3%	72%	10%	82%
200	14%	56%	1%	2%	73%	9%	83%
210	14%	57%	1%	2%	74%	9%	83%
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230	14%	59%	1%	2%	76%	8%	84%



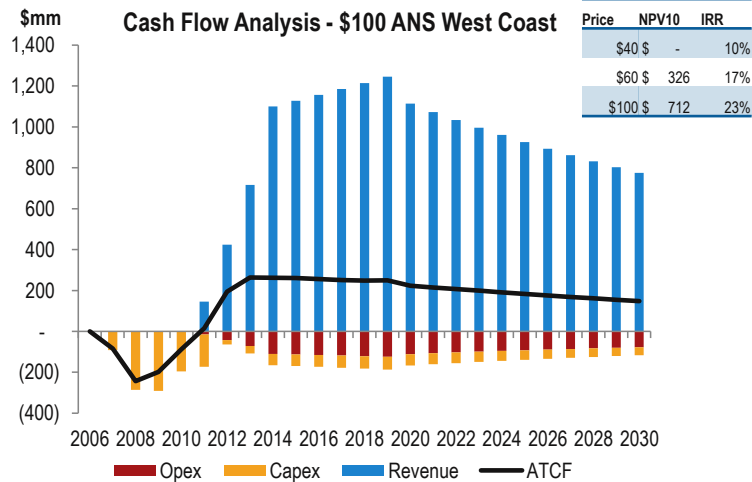
ACES – Capped at Maximum of 70%



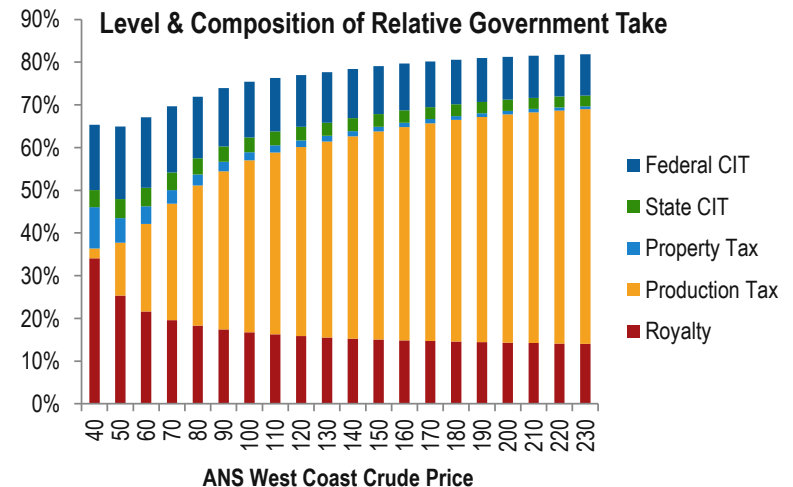
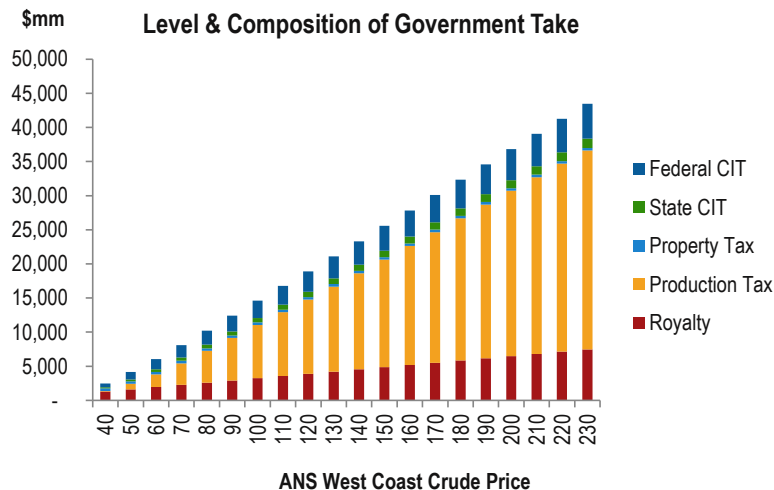
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60	22%	21%	4%	4%	51%	17%	67%
70	20%	27%	3%	4%	54%	16%	70%
80	18%	33%	3%	4%	58%	14%	72%
90	17%	37%	2%	4%	60%	14%	74%
100	17%	40%	2%	3%	62%	13%	75%
110	16%	43%	2%	3%	64%	13%	76%
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130	16%	46%	1%	3%	66%	12%	78%
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160	15%	50%	1%	3%	69%	11%	80%
170	15%	52%	1%	3%	70%	11%	81%
180	15%	53%	1%	3%	71%	10%	81%
190	14%	54%	1%	3%	72%	10%	82%
200	14%	55%	1%	3%	73%	10%	82%
210	14%	56%	1%	2%	73%	9%	83%
220	14%	57%	1%	2%	74%	9%	83%
230	14%	57%	1%	2%	75%	9%	83%



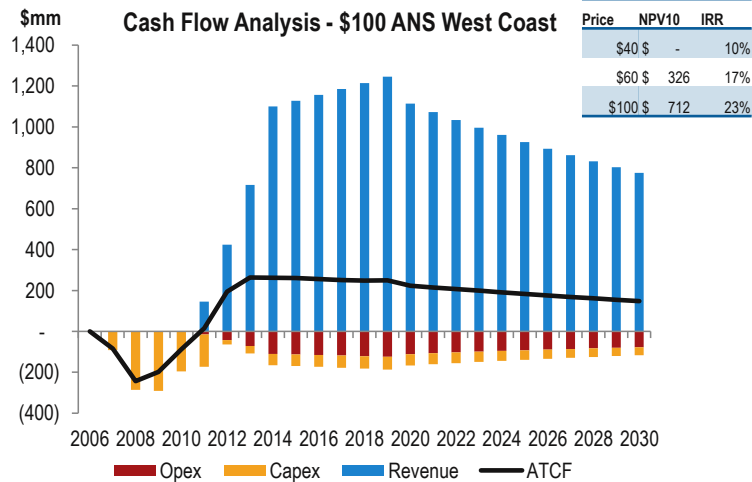
ACES – Capped at Maximum of 65%



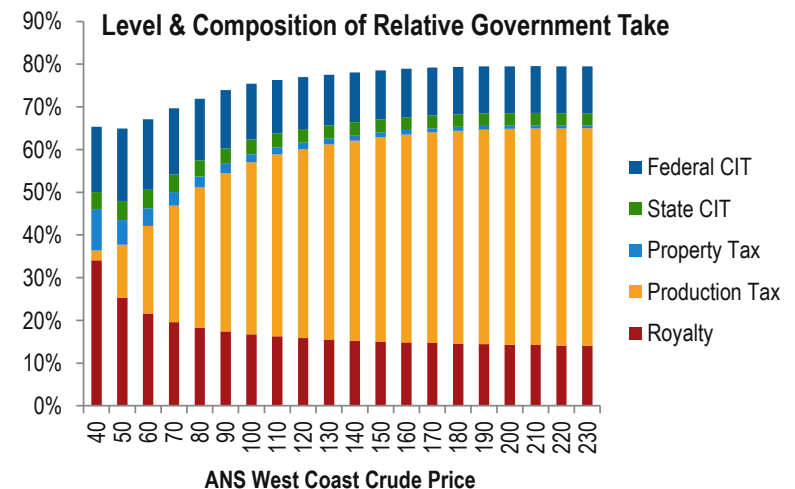
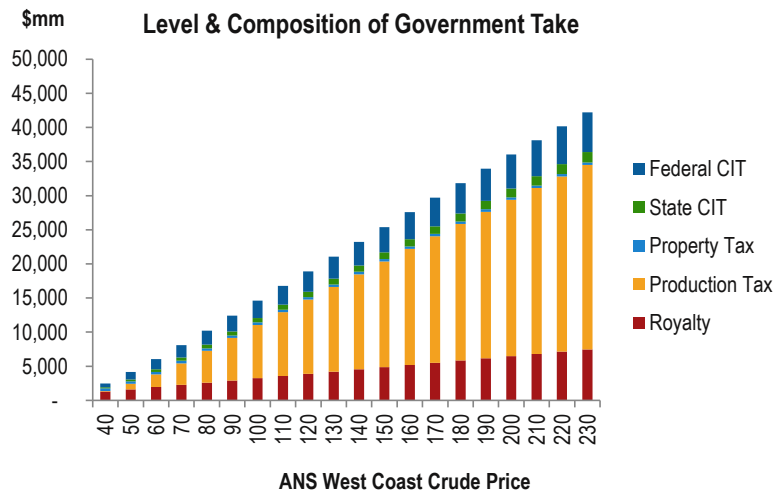
Price	Royalty	Production Tax	Property Tax	State CIT	Total State Take	Federal CIT	Total GT
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70	20%	27%	3%	4%	54%	16%	70%
80	18%	33%	3%	4%	58%	14%	72%
90	17%	37%	2%	4%	60%	14%	74%
100	17%	40%	2%	3%	62%	13%	75%
110	16%	43%	2%	3%	64%	13%	76%
120	16%	44%	2%	3%	65%	12%	77%
130	16%	46%	1%	3%	66%	12%	78%
140	15%	47%	1%	3%	67%	12%	78%
150	15%	49%	1%	3%	68%	11%	79%
160	15%	50%	1%	3%	69%	11%	80%
170	15%	51%	1%	3%	69%	11%	80%
180	15%	52%	1%	3%	70%	10%	81%
190	14%	53%	1%	3%	71%	10%	81%
200	14%	53%	1%	3%	71%	10%	81%
210	14%	54%	1%	3%	72%	10%	82%
220	14%	55%	1%	3%	72%	10%	82%
230	14%	55%	1%	3%	72%	10%	82%



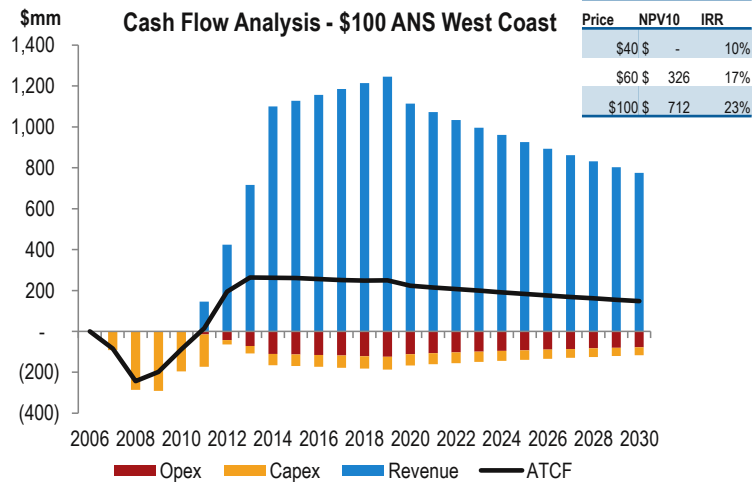
ACES – Capped at Maximum of 60%



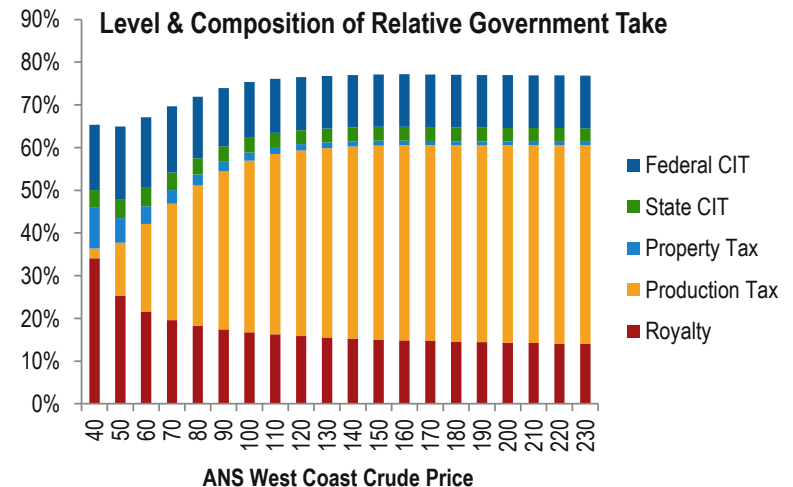
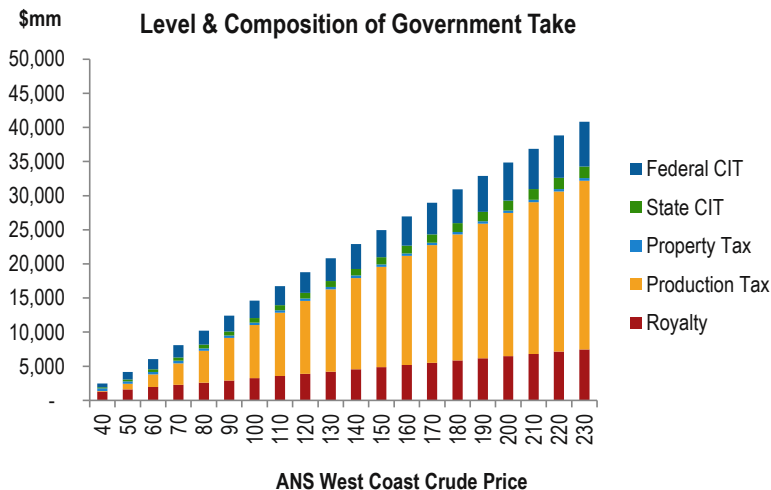
Price	Royalty	Production Tax	Property Tax	State CIT	Total State Take	Federal CIT	Total CIT
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50	25%	12%	6%	4%	48%	17%	65%
60	22%	21%	4%	4%	51%	17%	67%
70	20%	27%	3%	4%	54%	16%	70%
80	18%	33%	3%	4%	58%	14%	72%
90	17%	37%	2%	4%	60%	14%	74%
100	17%	40%	2%	3%	62%	13%	75%
110	16%	43%	2%	3%	64%	13%	76%
120	16%	44%	2%	3%	65%	12%	77%
130	16%	46%	1%	3%	66%	12%	78%
140	15%	47%	1%	3%	66%	12%	78%
150	15%	48%	1%	3%	67%	11%	79%
160	15%	49%	1%	3%	68%	11%	79%
170	15%	49%	1%	3%	68%	11%	79%
180	15%	50%	1%	3%	68%	11%	79%
190	14%	50%	1%	3%	68%	11%	79%
200	14%	51%	1%	3%	69%	11%	80%
210	14%	51%	1%	3%	69%	11%	80%
220	14%	51%	1%	3%	69%	11%	80%
230	14%	51%	1%	3%	69%	11%	79%



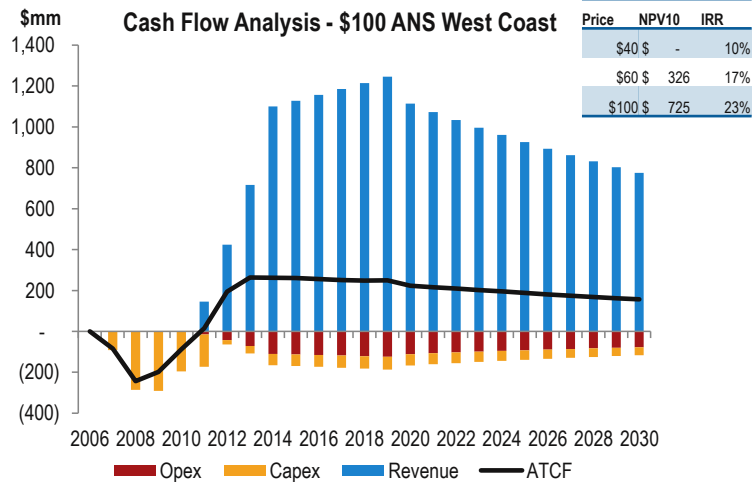
ACES – Capped at Maximum of 55%



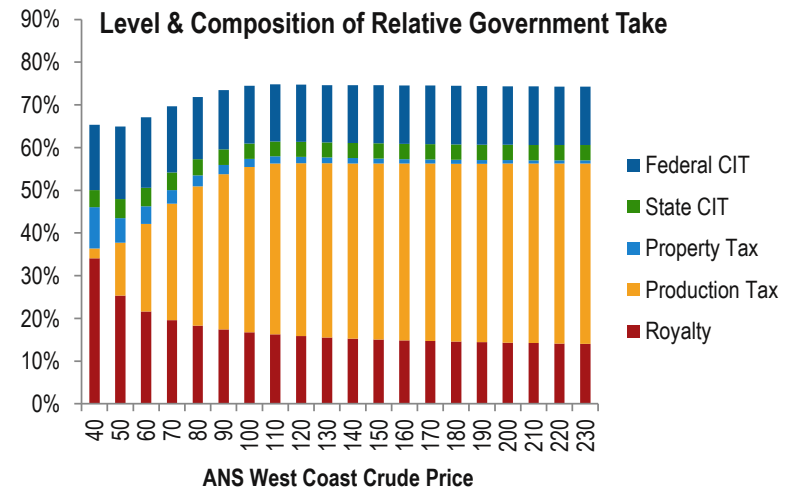
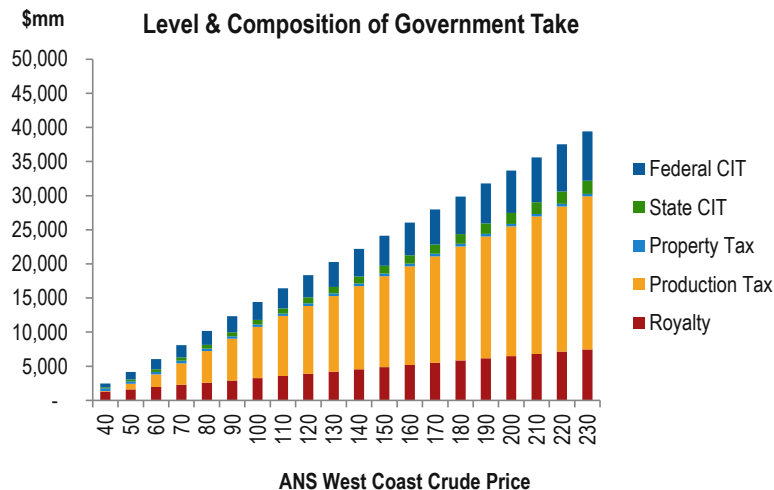
Price	Royalty	Production Tax	Property Tax	State CIT	Total State Take	Federal CIT	Total CIT
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50	25%	12%	6%	4%	48%	17%	65%
60	22%	21%	4%	4%	51%	17%	67%
70	20%	27%	3%	4%	54%	16%	70%
80	18%	33%	3%	4%	58%	14%	72%
90	17%	37%	2%	4%	60%	14%	74%
100	17%	40%	2%	3%	62%	13%	75%
110	16%	42%	2%	3%	63%	13%	76%
120	16%	43%	2%	3%	64%	12%	76%
130	16%	44%	1%	3%	64%	12%	77%
140	15%	45%	1%	3%	65%	12%	77%
150	15%	45%	1%	3%	65%	12%	77%
160	15%	46%	1%	3%	65%	12%	77%
170	15%	46%	1%	3%	65%	12%	77%
180	15%	46%	1%	3%	65%	12%	77%
190	14%	46%	1%	3%	65%	12%	77%
200	14%	46%	1%	3%	65%	12%	77%
210	14%	46%	1%	3%	65%	12%	77%
220	14%	46%	1%	3%	65%	12%	77%
230	14%	47%	1%	3%	65%	12%	77%



ACES – Capped at Maximum of 50%



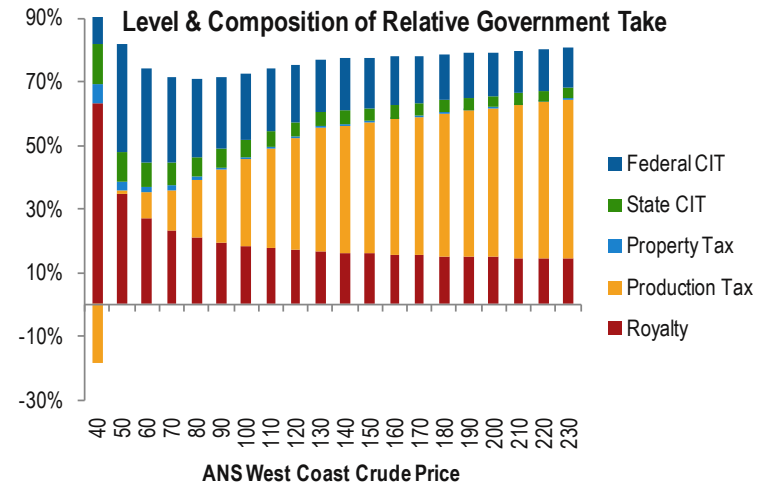
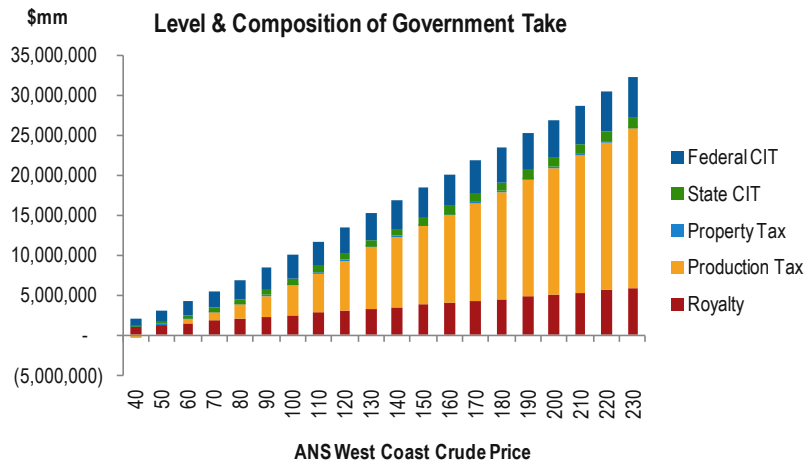
Price	Royalty	Production Tax	Property Tax	State CIT	Total State Take	Federal CIT	Total CIT
40	34%	2%	10%	4%	50%	15%	65%
50	25%	12%	6%	4%	48%	17%	65%
60	22%	21%	4%	4%	51%	17%	67%
70	20%	27%	3%	4%	54%	16%	70%
80	18%	33%	3%	4%	57%	14%	72%
90	17%	36%	2%	4%	60%	14%	73%
100	17%	39%	2%	4%	61%	14%	74%
110	16%	40%	2%	4%	61%	13%	75%
120	16%	41%	2%	4%	61%	13%	75%
130	16%	41%	1%	4%	61%	13%	75%
140	15%	41%	1%	4%	61%	14%	75%
150	15%	41%	1%	4%	61%	14%	75%
160	15%	41%	1%	4%	61%	14%	75%
170	15%	42%	1%	4%	61%	14%	75%
180	15%	42%	1%	4%	61%	14%	74%
190	14%	42%	1%	4%	61%	14%	74%
200	14%	42%	1%	4%	61%	14%	74%
210	14%	42%	1%	4%	61%	14%	74%
220	14%	42%	1%	4%	61%	14%	74%
230	14%	42%	1%	4%	61%	14%	74%



Analysis Using DOR FY2013 Estimated Average Costs

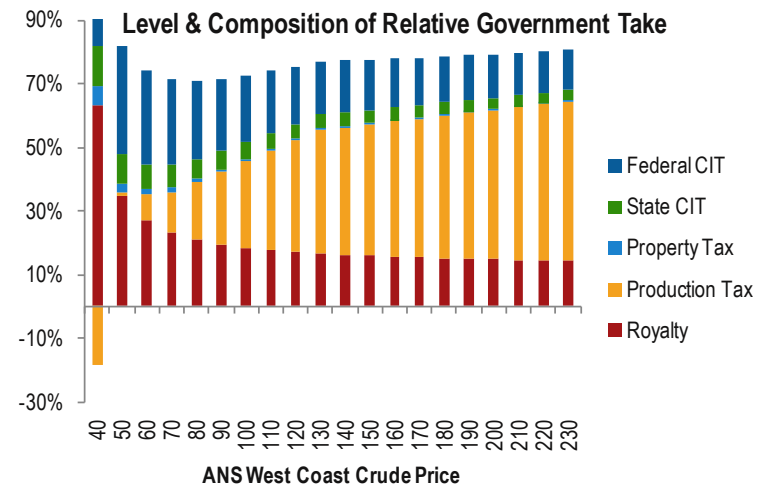
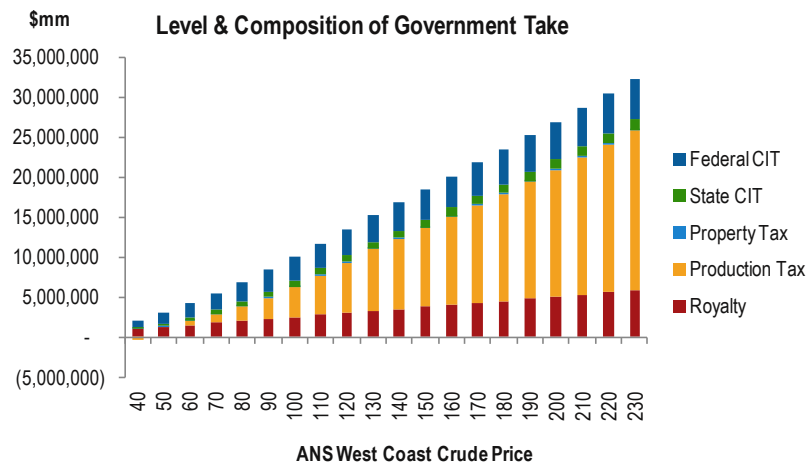
- As requested, an alternate analysis of ACES and the various potential maximum production tax rates has also been performed using DOR FY2013 forecast North Slope cost and production figures
 - By using a 'snapshot' of costs and production for a given year, the analysis inherently no longer presents a development-forward lifecycle analysis, since it combines initial development capex for some projects with ongoing spending on others
 - As a result, such an analysis should be performed only as a snapshot of a single year
 - As such, such an analysis represents a high-level approximation of Government Take in that particular year, not over the actual lifecycle of a particular asset type
 - Such an analysis also does not account for the 'bracket-creep' or 'stealth-tax' effect of inflation over time
- DOR FY2013 cost forecasts are:
 - \$13.75 per taxable barrel operating expenditures
 - \$15.36 per taxable barrel capital expenditures
 - \$8.56 per taxable barrel transportation costs
- On a per-flowing-barrel basis, these equate to:
 - \$11.71 /bbl operating expenditures
 - \$13.07 /bbl capital expenditures
 - \$7.29 /bbl transportation costs
- On the following slides, the ACES system, along with ACES with maximum production tax levels set at 50%, 55%, 60%, 65% and 70% has been analyzed, using these cost figures

	Royalty	Production Tax	Property Tax	State CIT	Total State Take	Federal CIT	Total CIT
Price							
40	63%	-19%	6%	13%	63%	49%	112%
50	35%	1%	3%	9%	48%	34%	82%
60	27%	9%	2%	8%	45%	29%	74%
70	23%	13%	1%	7%	44%	27%	71%
80	21%	18%	1%	6%	46%	25%	71%
90	19%	23%	1%	6%	49%	23%	72%
100	18%	27%	1%	6%	52%	21%	73%
110	18%	31%	1%	5%	54%	20%	74%
120	17%	35%	1%	5%	57%	18%	76%
130	17%	39%	0%	4%	60%	17%	77%
140	16%	40%	0%	4%	61%	16%	77%
150	16%	41%	0%	4%	62%	16%	78%
160	16%	43%	0%	4%	63%	15%	78%
170	15%	44%	0%	4%	63%	15%	78%
180	15%	45%	0%	4%	64%	14%	79%
190	15%	46%	0%	4%	65%	14%	79%
200	15%	47%	0%	4%	66%	14%	79%
210	15%	48%	0%	3%	66%	13%	80%
220	15%	49%	0%	3%	67%	13%	80%
230	15%	50%	0%	3%	68%	13%	81%



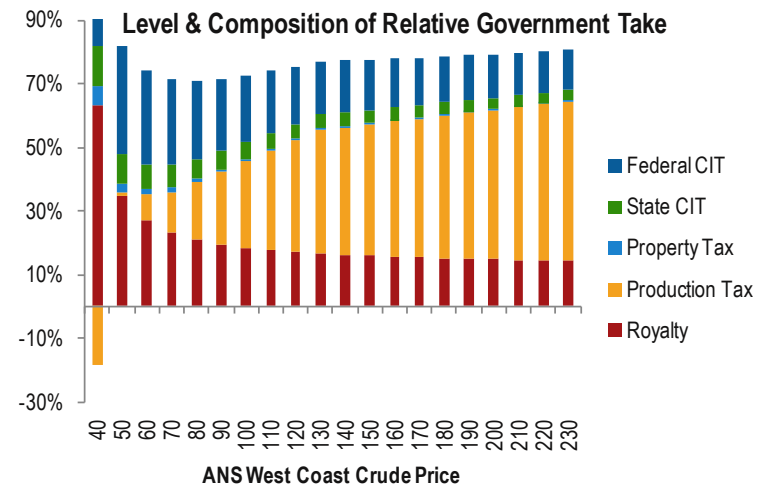
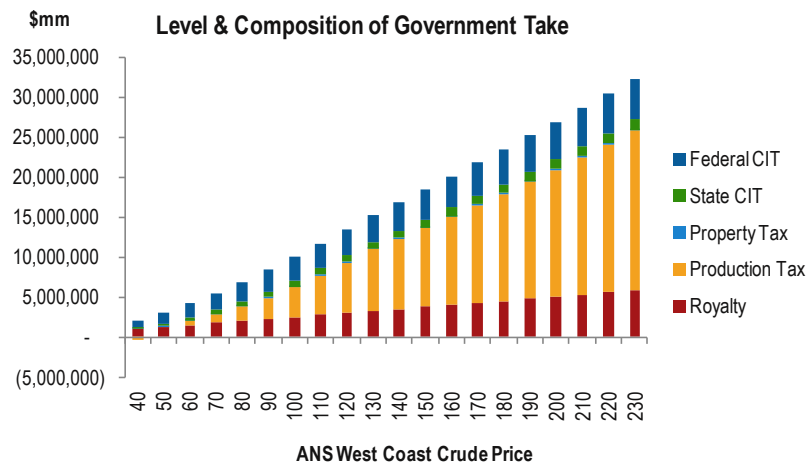
ACES – Capped at Maximum of 70%

Price	Royalty	Production Tax	Property Tax	State CIT	Total State Take	Federal CIT	Total CIT
40	63%	-19%	6%	13%	63%	49%	112%
50	35%	1%	3%	9%	48%	34%	82%
60	27%	9%	2%	8%	45%	29%	74%
70	23%	13%	1%	7%	44%	27%	71%
80	21%	18%	1%	6%	46%	25%	71%
90	19%	23%	1%	6%	49%	23%	72%
100	18%	27%	1%	6%	52%	21%	73%
110	18%	31%	1%	5%	54%	20%	74%
120	17%	35%	1%	5%	57%	18%	76%
130	17%	39%	0%	4%	60%	17%	77%
140	16%	40%	0%	4%	61%	16%	77%
150	16%	41%	0%	4%	62%	16%	78%
160	16%	43%	0%	4%	63%	15%	78%
170	15%	44%	0%	4%	63%	15%	78%
180	15%	45%	0%	4%	64%	14%	79%
190	15%	46%	0%	4%	65%	14%	79%
200	15%	47%	0%	4%	66%	14%	79%
210	15%	48%	0%	3%	66%	13%	80%
220	15%	49%	0%	3%	67%	13%	80%
230	15%	50%	0%	3%	68%	13%	81%



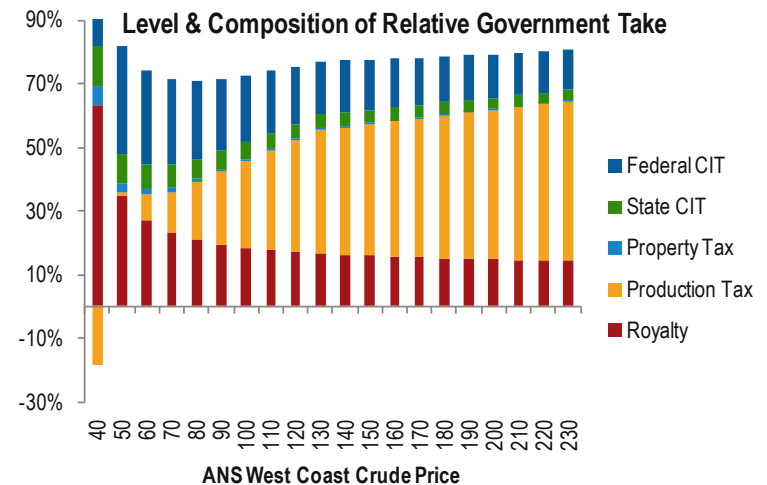
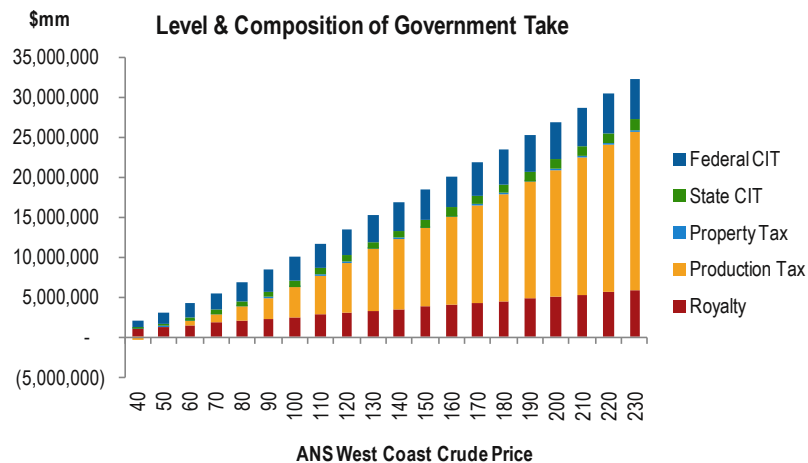
ACES – Capped at Maximum of 65%

Price	Royalty	Production Tax	Property Tax	State CIT	Total State Take	Federal CIT	Total GT
40	63%	-19%	6%	13%	63%	49%	112%
50	35%	1%	3%	9%	48%	34%	82%
60	27%	9%	2%	8%	45%	29%	74%
70	23%	13%	1%	7%	44%	27%	71%
80	21%	18%	1%	6%	46%	25%	71%
90	19%	23%	1%	6%	49%	23%	72%
100	18%	27%	1%	6%	52%	21%	73%
110	18%	31%	1%	5%	54%	20%	74%
120	17%	35%	1%	5%	57%	18%	76%
130	17%	39%	0%	4%	60%	17%	77%
140	16%	40%	0%	4%	61%	16%	77%
150	16%	41%	0%	4%	62%	16%	78%
160	16%	43%	0%	4%	63%	15%	78%
170	15%	44%	0%	4%	63%	15%	78%
180	15%	45%	0%	4%	64%	14%	79%
190	15%	46%	0%	4%	65%	14%	79%
200	15%	47%	0%	4%	66%	14%	79%
210	15%	48%	0%	3%	66%	13%	80%
220	15%	49%	0%	3%	67%	13%	80%
230	15%	50%	0%	3%	68%	13%	81%



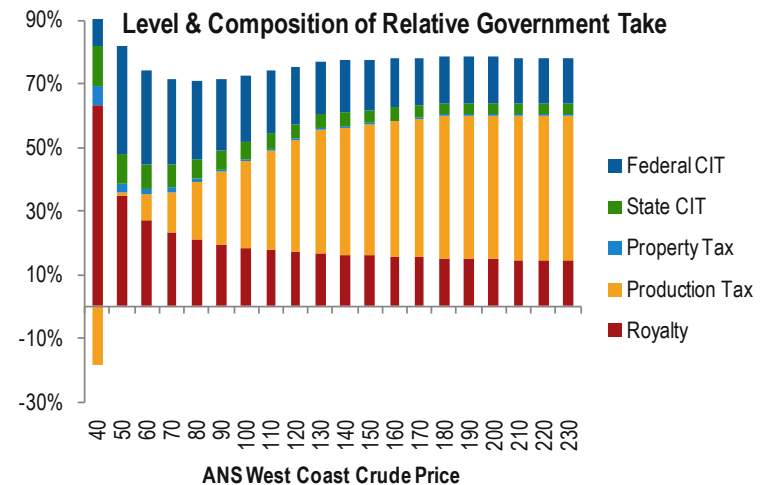
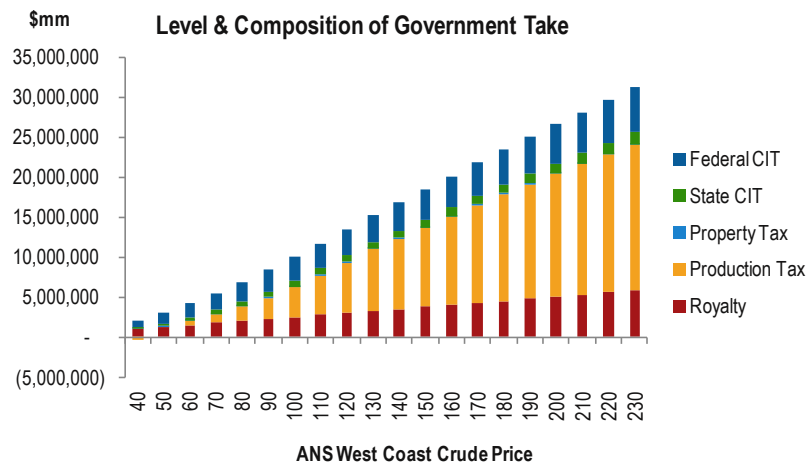
ACES – Capped at Maximum of 60%

Price	Royalty	Production Tax	Property Tax	State CIT	Total State Take	Federal CIT	Total CIT
40	63%	-19%	6%	13%	63%	49%	112%
50	35%	1%	3%	9%	48%	34%	82%
60	27%	9%	2%	8%	45%	29%	74%
70	23%	13%	1%	7%	44%	27%	71%
80	21%	18%	1%	6%	46%	25%	71%
90	19%	23%	1%	6%	49%	23%	72%
100	18%	27%	1%	6%	52%	21%	73%
110	18%	31%	1%	5%	54%	20%	74%
120	17%	35%	1%	5%	57%	18%	76%
130	17%	39%	0%	4%	60%	17%	77%
140	16%	40%	0%	4%	61%	16%	77%
150	16%	41%	0%	4%	62%	16%	78%
160	16%	43%	0%	4%	63%	15%	78%
170	15%	44%	0%	4%	63%	15%	78%
180	15%	45%	0%	4%	64%	14%	79%
190	15%	46%	0%	4%	65%	14%	79%
200	15%	47%	0%	4%	66%	14%	79%
210	15%	48%	0%	3%	66%	13%	80%
220	15%	49%	0%	3%	67%	13%	80%
230	15%	50%	0%	3%	68%	13%	81%



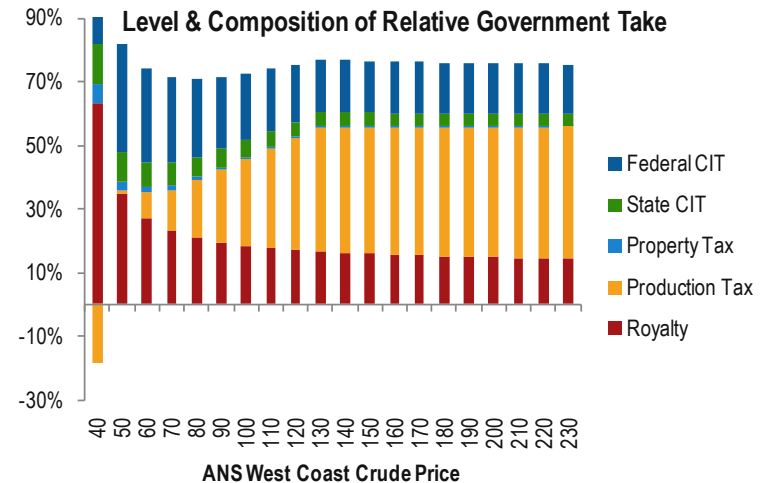
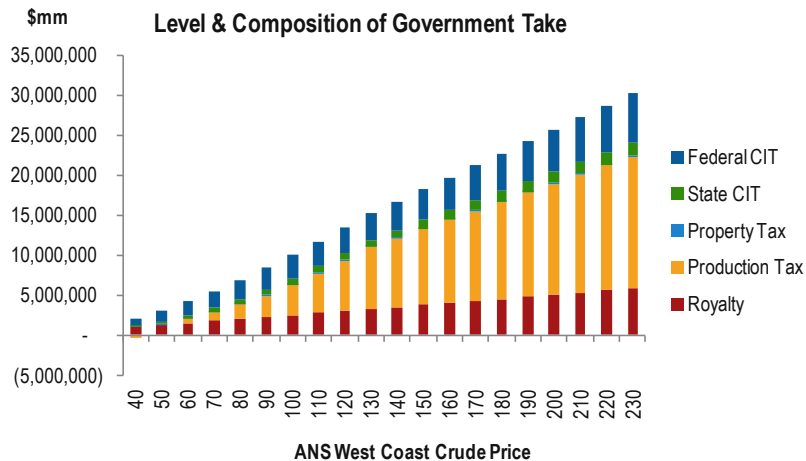
ACES – Capped at Maximum of 55%

Price	Royalty	Production Tax	Property Tax	State CIT	Total State Take	Federal CIT	Total CIT
40	63%	-19%	6%	13%	63%	49%	112%
50	35%	1%	3%	9%	48%	34%	82%
60	27%	9%	2%	8%	45%	29%	74%
70	23%	13%	1%	7%	44%	27%	71%
80	21%	18%	1%	6%	46%	25%	71%
90	19%	23%	1%	6%	49%	23%	72%
100	18%	27%	1%	6%	52%	21%	73%
110	18%	31%	1%	5%	54%	20%	74%
120	17%	35%	1%	5%	57%	18%	76%
130	17%	39%	0%	4%	60%	17%	77%
140	16%	40%	0%	4%	61%	16%	77%
150	16%	41%	0%	4%	62%	16%	78%
160	16%	43%	0%	4%	63%	15%	78%
170	15%	44%	0%	4%	63%	15%	78%
180	15%	45%	0%	4%	64%	14%	79%
190	15%	45%	0%	4%	64%	14%	78%
200	15%	45%	0%	4%	64%	14%	78%
210	15%	45%	0%	4%	64%	14%	78%
220	15%	45%	0%	4%	64%	14%	78%
230	15%	46%	0%	4%	64%	14%	78%



ACES – Capped at Maximum of 50%

Price	Royalty	Production Tax	Property Tax	State CIT	Total State Take	Federal CIT	Total CIT
40	63%	-19%	6%	13%	63%	49%	112%
50	35%	1%	3%	9%	48%	34%	82%
60	27%	9%	2%	8%	45%	29%	74%
70	23%	13%	1%	7%	44%	27%	71%
80	21%	18%	1%	6%	46%	25%	71%
90	19%	23%	1%	6%	49%	23%	72%
100	18%	27%	1%	6%	52%	21%	73%
110	18%	31%	1%	5%	54%	20%	74%
120	17%	35%	1%	5%	57%	18%	76%
130	17%	39%	0%	4%	60%	17%	77%
140	16%	39%	0%	4%	60%	17%	77%
150	16%	40%	0%	4%	60%	16%	77%
160	16%	40%	0%	4%	60%	16%	76%
170	15%	40%	0%	4%	60%	16%	76%
180	15%	40%	0%	4%	60%	16%	76%
190	15%	41%	0%	4%	60%	16%	76%
200	15%	41%	0%	4%	60%	16%	76%
210	15%	41%	0%	4%	60%	16%	76%
220	15%	41%	0%	4%	60%	15%	76%
230	15%	41%	0%	4%	60%	15%	76%



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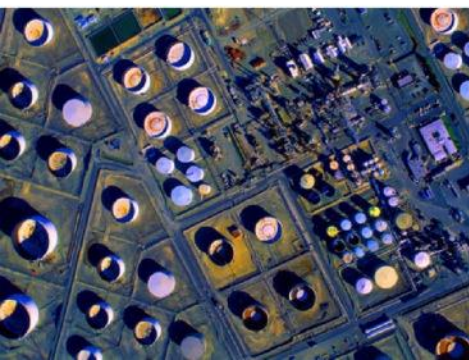
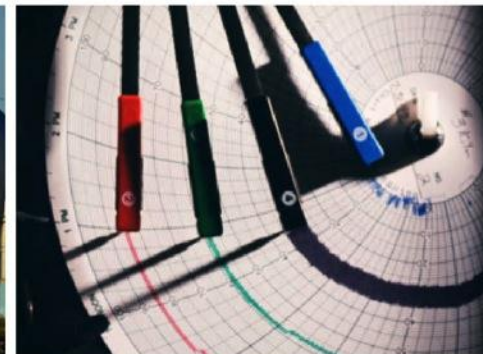
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