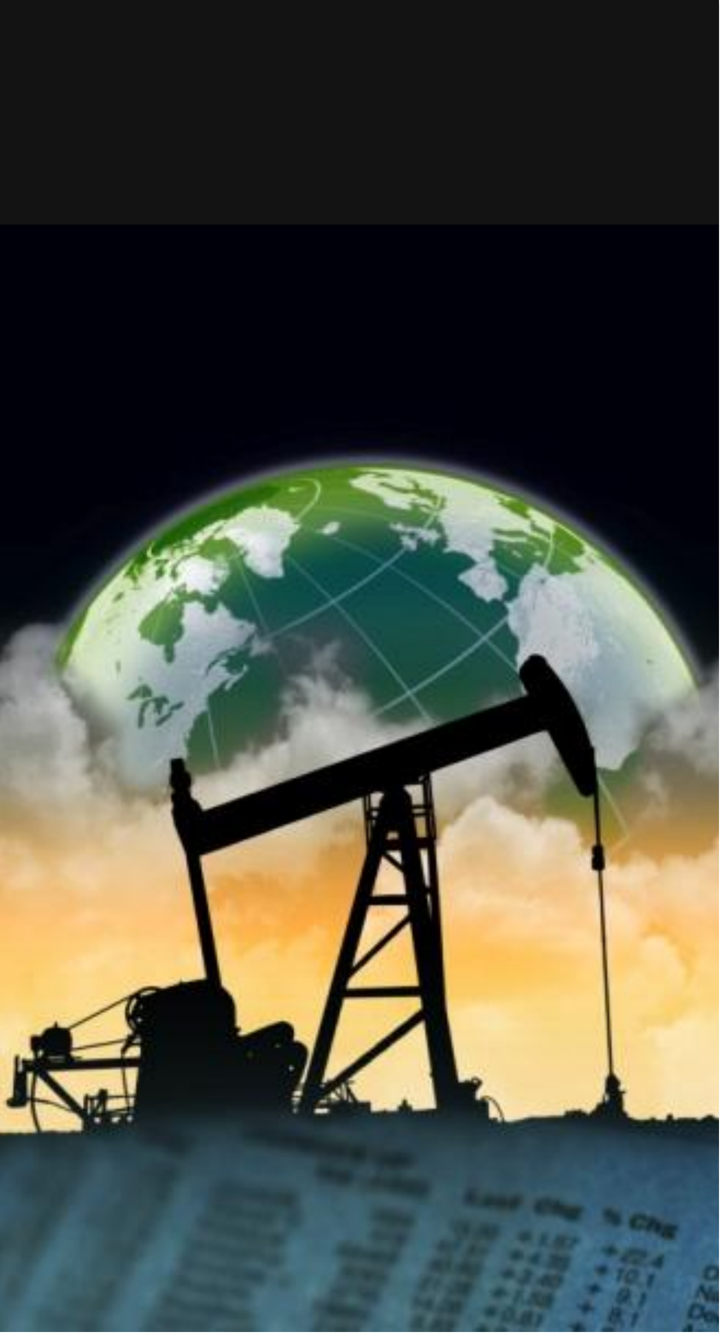


Alaska Senate Resources Committee:

Analysis of CSSB 192 incorporating Amendment B.9 “allowance for ‘new oil’”

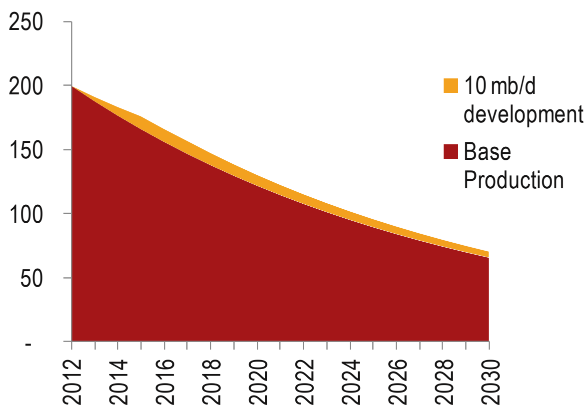
March 6, 2012

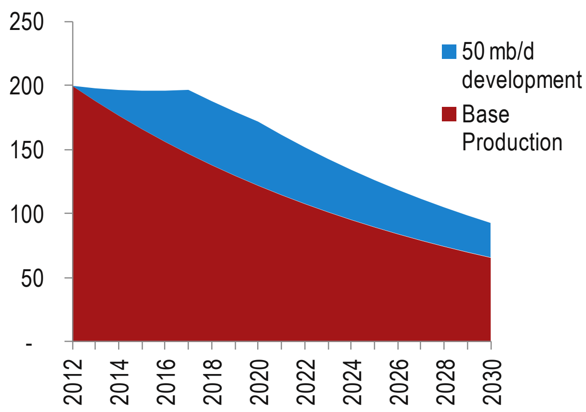
Janak Mayer
Manager, Upstream & Gas
PFC Energy

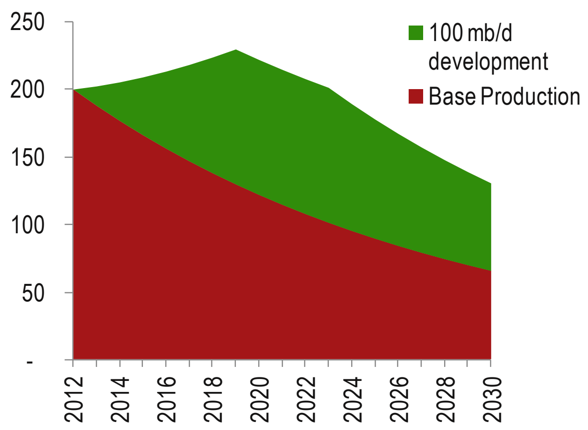
PFC Energy

Incremental Production on a Declining Base

- Central to understanding the impact of the “allowance for ‘new oil’” is an understanding of the impact of new source production on a company’s total production volumes, when that new source production is added to a declining base portfolio
  - The charts below assume a 6% decline rate for an existing North Slope producer currently producing 200 mb/d, and examine hypothetical new source projects that peak at 10mb/d, 50 mb/d and 100 mb/d respectively(on a working interest basis)
  - Given the pace at which such projects typically reach peak production, only the100 mb/d peak production new source development is actually capable of adding production that is incremental to prior years’ volumes







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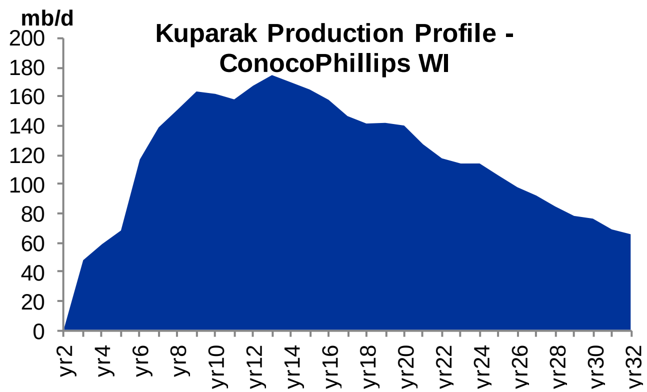
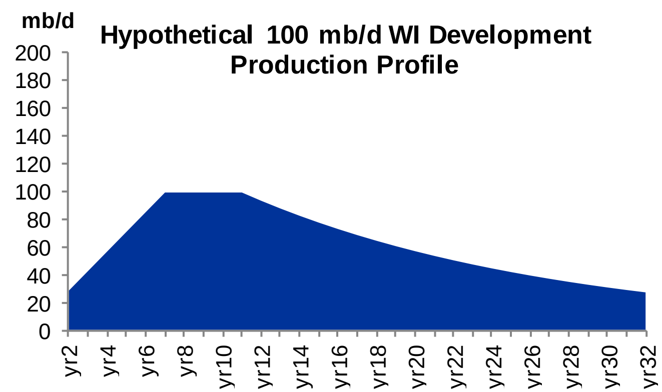
A Hypothetical 100 mb/d (Working Interest) development

- A new source development that produced 100 mb/d at peak for working interest partner would be a very significant new development. By way of comparison, Kuparak, the second largest field in North America, peaked at ~320 mb/d gross production
  - This represented **working interest production** to ConocoPhillips (the operator and majority shareholder) of **170 mbo/d**
  - Kuparak took 11 years (from 1981 to 1992) to reach this peak level of production
- Since it would take a development on the scale of 100 mb/d (working interest) to achieve “new oil” for an existing producer under the terms of the amendment, a development of this size has been modeled in the following analysis
  - A 7 year ramp-up to peak production has been assumed
  - Such a development would likely eclipse today’s production from Kuparak (122 mb/d gross, 66mb/d working interest to the majority shareholder)
  - It is important to note that this is a significantly more aggressive new-source production profile than is currently foreseen in recent statements by the major operators on their current development pipelines, even in the most optimistic circumstances





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Assumptions

- The following analysis assumes
  - A 6% base portfolio decline, in the case of a producer currently producing 200 mb/d
  - Costs for the base production portfolio of:
    - $12/ flowing bbl operating expenditure
    - $5/ flowing bbl maintenance capital expenditure
  - Costs for the 100 mb/d (working interest) New Development project of:
    - $13/ flowing bbl operating expenditure
    - $13/bbl reserves development capital expenditure
    - $1/ flowing bbl maintenance capital expenditure
  - These costs are deliberately lower than the previously modeled generic "high cost" new development used as a reference in previous analysis, since the hypothetical development modeled is significantly larger, and thus likely to have somewhat lower costs on a $/bbl basis

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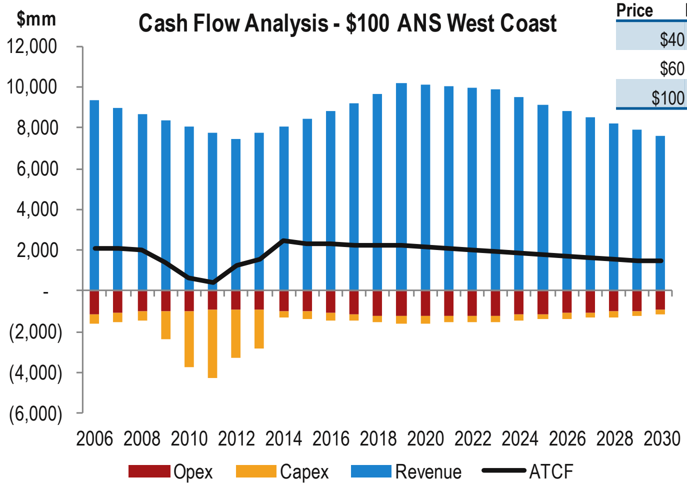
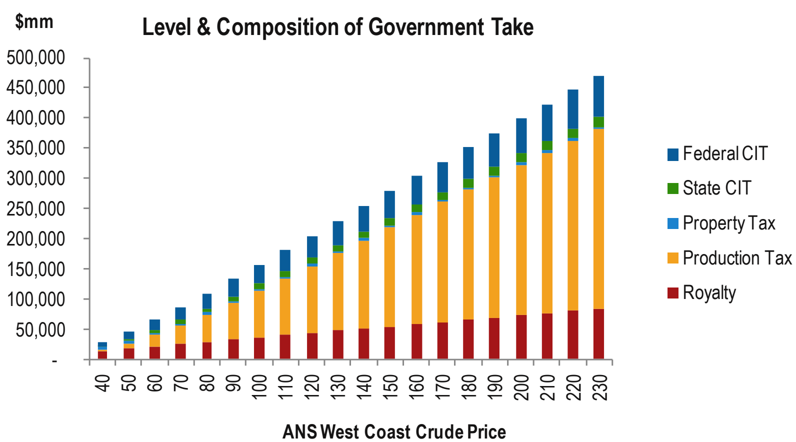
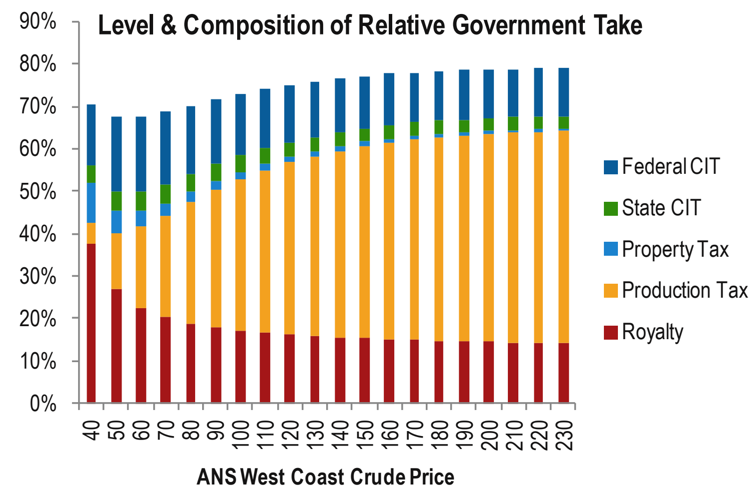
CSSB 192 with no allowance (Current Producer)



Price	NPV
$40	$ 1,184
$60	$ 7,555
$100	$ 16,737

Price	Royalty	Production Tax	Property Tax	State CIT	Total State Take	Federal CIT	Total GT
40	38%	5%	9%	4%	56%	15%	71%
50	27%	13%	5%	5%	50%	18%	68%
60	23%	19%	4%	5%	50%	18%	68%
70	20%	24%	3%	4%	52%	17%	69%
80	19%	29%	2%	4%	54%	16%	70%
90	18%	33%	2%	4%	56%	15%	72%
100	17%	36%	2%	4%	58%	15%	73%
110	17%	38%	2%	4%	60%	14%	74%
120	16%	41%	1%	4%	62%	13%	75%
130	16%	42%	1%	3%	63%	13%	76%
140	15%	44%	1%	3%	64%	13%	77%
150	15%	45%	1%	3%	65%	12%	77%
160	15%	46%	1%	3%	66%	12%	78%
170	15%	47%	1%	3%	66%	12%	78%
180	15%	48%	1%	3%	67%	12%	78%
190	15%	49%	1%	3%	67%	12%	79%
200	14%	49%	1%	3%	67%	11%	79%
210	14%	49%	1%	3%	67%	11%	79%
220	14%	50%	1%	3%	68%	11%	79%
230	14%	50%	1%	3%	68%	11%	79%





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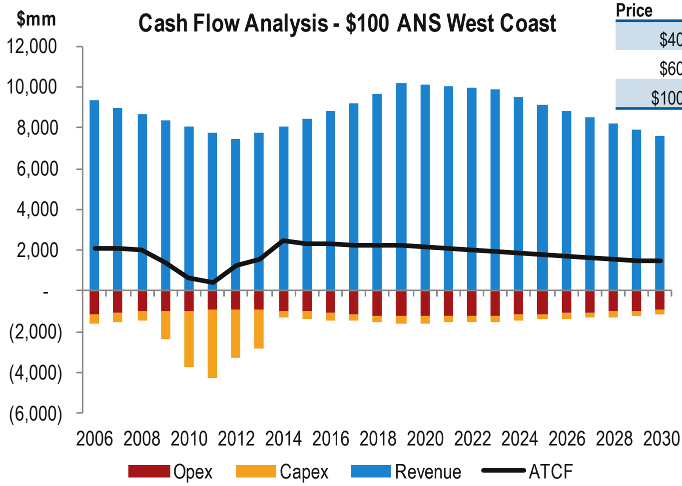
CSSB 192 with $10 allowance included in Production Tax Rate Calculations (Current Producer)



Price	NPV
$40	$ 1,193
$60	$ 7,562
$100	$ 16,752

Price	Royalty	Production Tax	Property Tax	State CIT	Total State Take	Federal CIT	Total GT
40	38%	5%	9%	4%	56%	15%	71%
50	27%	13%	5%	5%	50%	18%	68%
60	23%	19%	4%	5%	50%	18%	68%
70	20%	24%	3%	4%	52%	17%	69%
80	19%	29%	2%	4%	54%	16%	70%
90	18%	33%	2%	4%	56%	15%	72%
100	17%	36%	2%	4%	58%	15%	73%
110	17%	38%	2%	4%	60%	14%	74%
120	16%	41%	1%	4%	62%	14%	75%
130	16%	42%	1%	3%	63%	13%	76%
140	15%	44%	1%	3%	64%	13%	77%
150	15%	45%	1%	3%	65%	12%	77%
160	15%	46%	1%	3%	66%	12%	78%
170	15%	47%	1%	3%	66%	12%	78%
180	15%	48%	1%	3%	67%	12%	78%
190	15%	49%	1%	3%	67%	12%	79%
200	14%	49%	1%	3%	67%	12%	79%
210	14%	49%	1%	3%	67%	11%	79%
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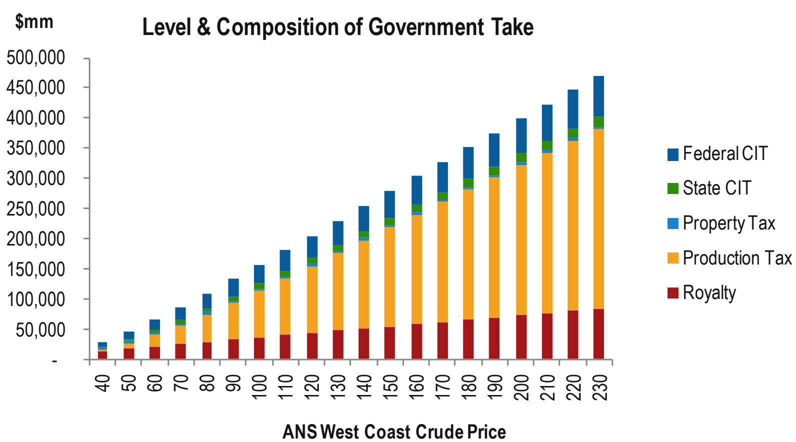

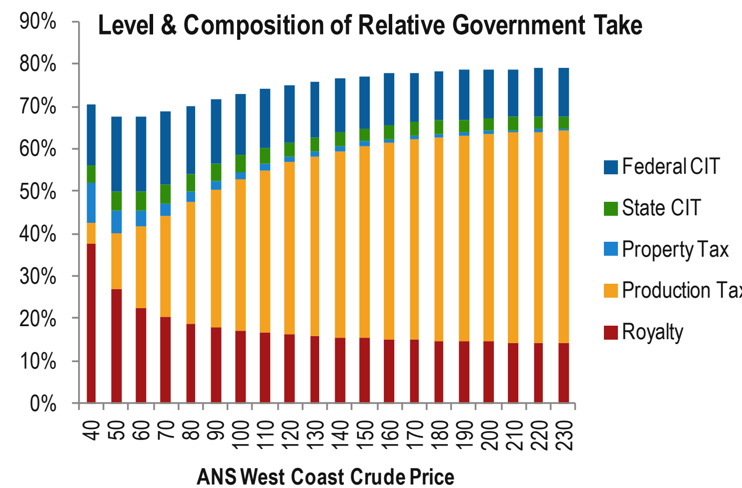

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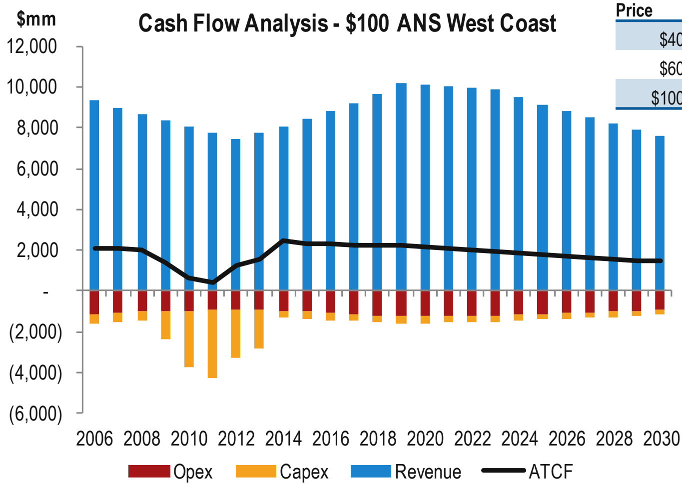
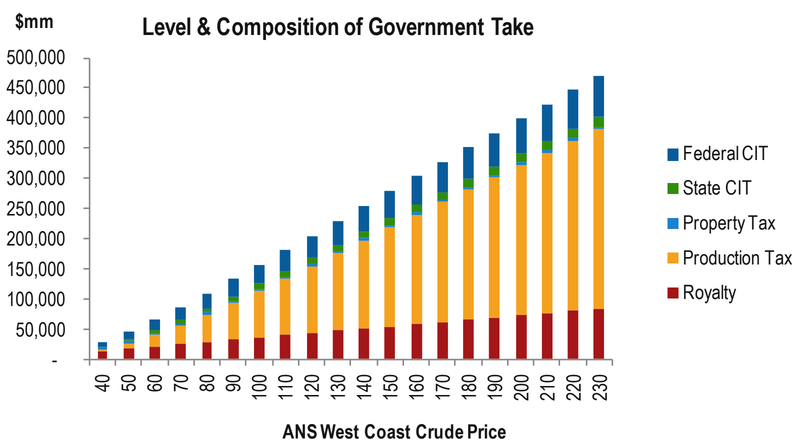
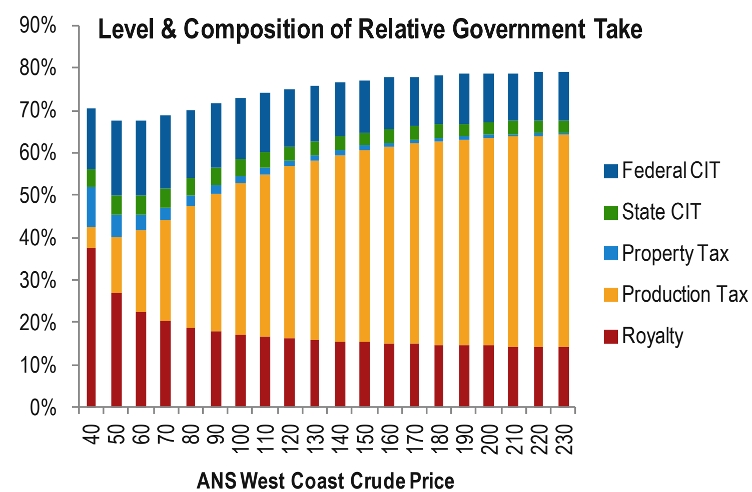
CSSB 192 with $10 allowance not included in Production Tax Rate Calculations (Current Producer)



Price	NPV
$40	$ 1,193
$60	$ 7,560
$100	$ 16,746

Price	Royalty	Production Tax	Property Tax	State CIT	Total State Take	Federal CIT	Total GT
40	38%	5%	9%	4%	56%	15%	71%
50	27%	13%	5%	5%	50%	18%	68%
60	23%	19%	4%	5%	50%	18%	68%
70	20%	24%	3%	4%	52%	17%	69%
80	19%	29%	2%	4%	54%	16%	70%
90	18%	33%	2%	4%	56%	15%	72%
100	17%	36%	2%	4%	58%	15%	73%
110	17%	38%	2%	4%	60%	14%	74%
120	16%	41%	1%	4%	62%	14%	75%
130	16%	42%	1%	3%	63%	13%	76%
140	15%	44%	1%	3%	64%	13%	77%
150	15%	45%	1%	3%	65%	12%	77%
160	15%	46%	1%	3%	66%	12%	78%
170	15%	47%	1%	3%	66%	12%	78%
180	15%	48%	1%	3%	67%	12%	78%
190	15%	49%	1%	3%	67%	12%	79%
200	14%	49%	1%	3%	67%	12%	79%
210	14%	49%	1%	3%	67%	11%	79%
220	14%	50%	1%	3%	68%	11%	79%
230	14%	50%	1%	3%	68%	11%	79%





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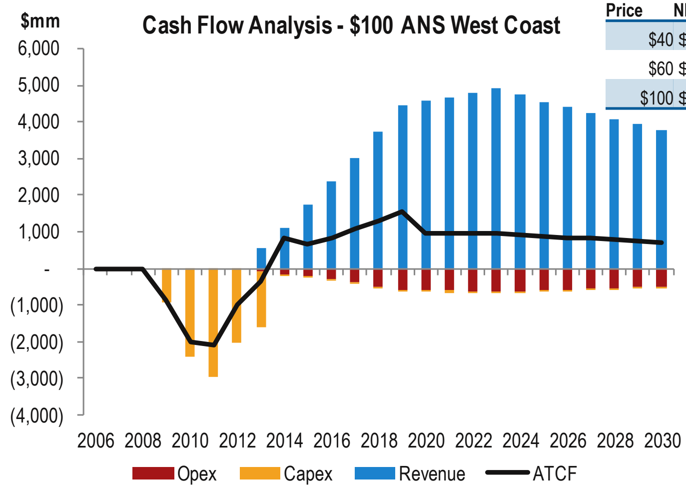
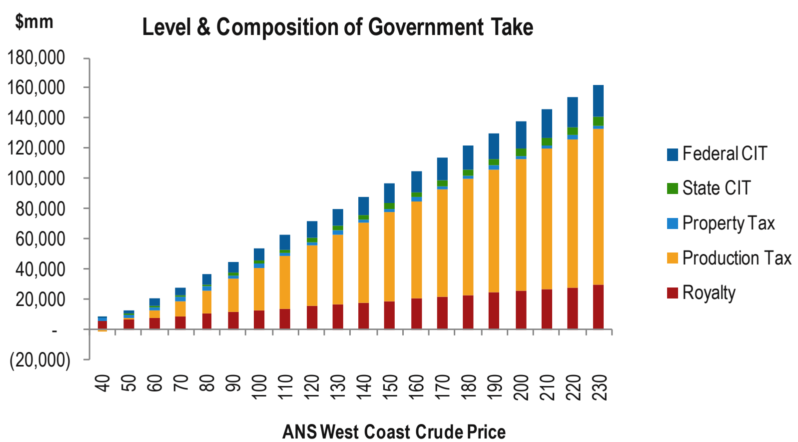
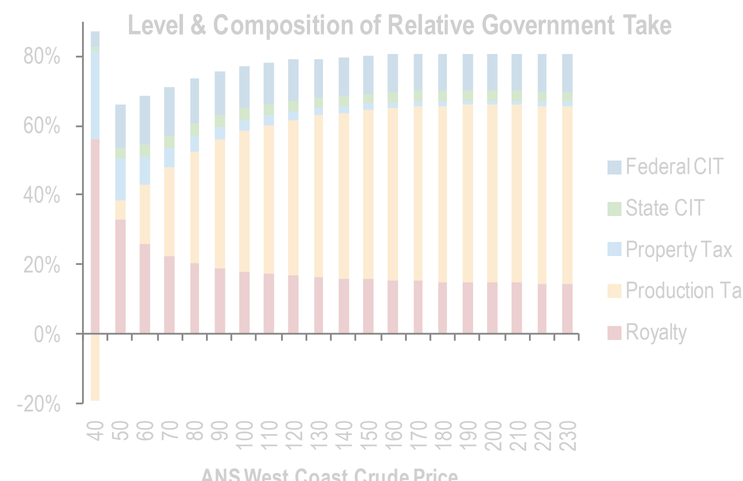
CSSB 192 with no allowance (Non-Current Producer)



Price	NPV	IRR
$40	$ -2,224	3%
$60	$ -913	7%
$100	$ 276	11%

Price	Royalty	Production Tax	Property Tax	State CIT	Total State Take	Federal CIT	Total GT
40	56%	-19%	25%	1%	64%	5%	68%
50	33%	5%	12%	3%	54%	13%	66%
60	26%	17%	8%	4%	55%	14%	69%
70	22%	25%	6%	4%	57%	14%	71%
80	20%	32%	5%	3%	60%	13%	74%
90	19%	37%	4%	3%	63%	12%	75%
100	18%	40%	3%	3%	65%	12%	77%
110	17%	43%	3%	3%	66%	12%	78%
120	17%	45%	3%	3%	67%	12%	79%
130	16%	46%	2%	3%	68%	11%	79%
140	16%	48%	2%	3%	69%	11%	80%
150	16%	49%	2%	3%	69%	11%	80%
160	16%	50%	2%	3%	70%	11%	80%
170	15%	50%	2%	3%	70%	11%	81%
180	15%	51%	2%	3%	70%	11%	81%
190	15%	51%	1%	3%	70%	11%	81%
200	15%	51%	1%	3%	70%	11%	81%
210	15%	51%	1%	3%	70%	11%	81%
220	15%	51%	1%	3%	70%	11%	81%
230	14%	51%	1%	3%	70%	11%	80%





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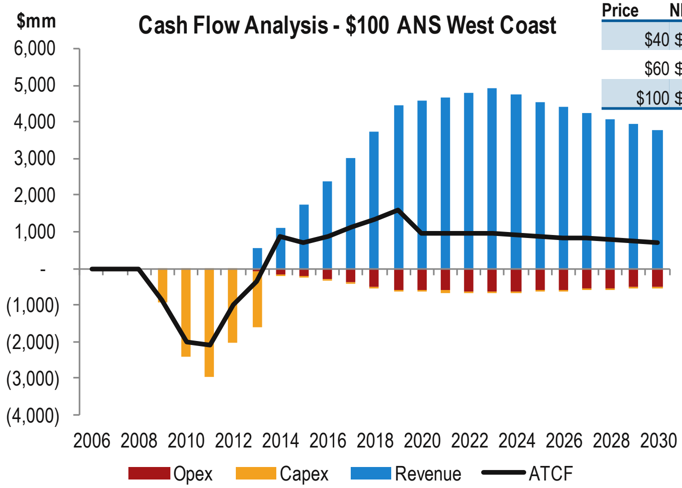
CSSB 192 with $10 allowance included in Production Tax Rate Calculations (Non-Current Producer)



Price	NPV	IRR
$40	$ -2,207	3%
$60	$ -872	7%
$100	$ 359	11%

Price	Royalty	Production Tax	Property Tax	State CIT	Total State Take	Federal CIT	Total GT
40	56%	-20%	25%	1%	63%	5%	68%
50	33%	5%	12%	3%	53%	13%	66%
60	26%	17%	8%	4%	54%	14%	68%
70	22%	25%	6%	4%	57%	14%	71%
80	20%	32%	5%	3%	60%	13%	73%
90	19%	36%	4%	3%	63%	12%	75%
100	18%	40%	3%	3%	65%	12%	77%
110	17%	43%	3%	3%	66%	12%	78%
120	17%	45%	3%	3%	67%	12%	79%
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140	16%	47%	2%	3%	69%	11%	79%
150	16%	49%	2%	3%	69%	11%	80%
160	16%	49%	2%	3%	69%	11%	80%
170	15%	50%	2%	3%	70%	11%	80%
180	15%	50%	2%	3%	70%	11%	80%
190	15%	51%	1%	3%	70%	11%	80%
200	15%	51%	1%	3%	70%	11%	80%
210	15%	51%	1%	3%	70%	11%	81%
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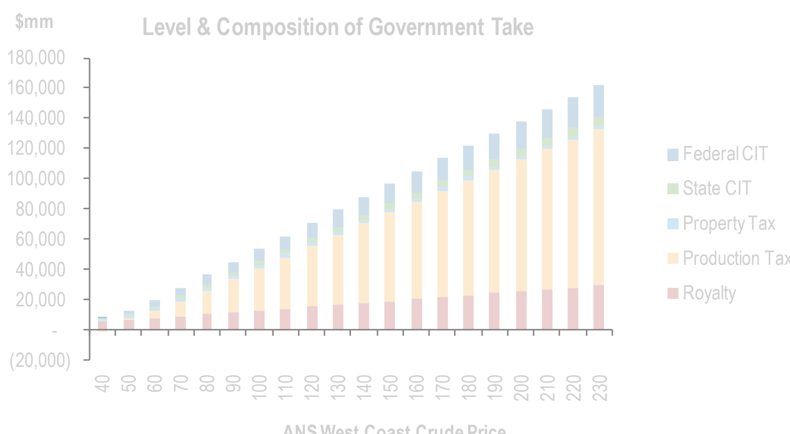

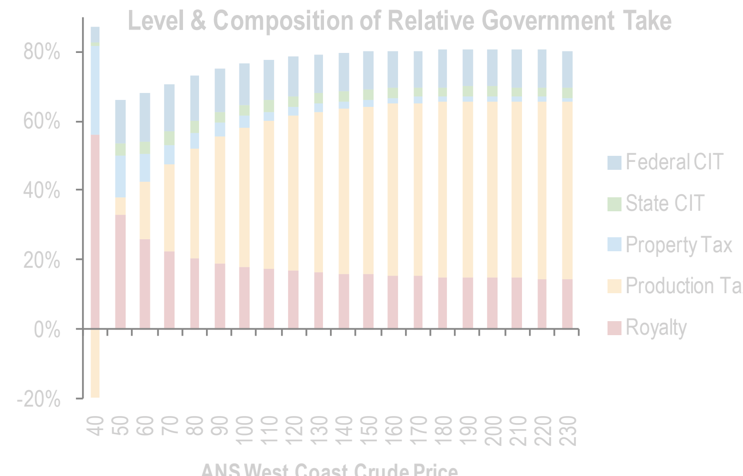

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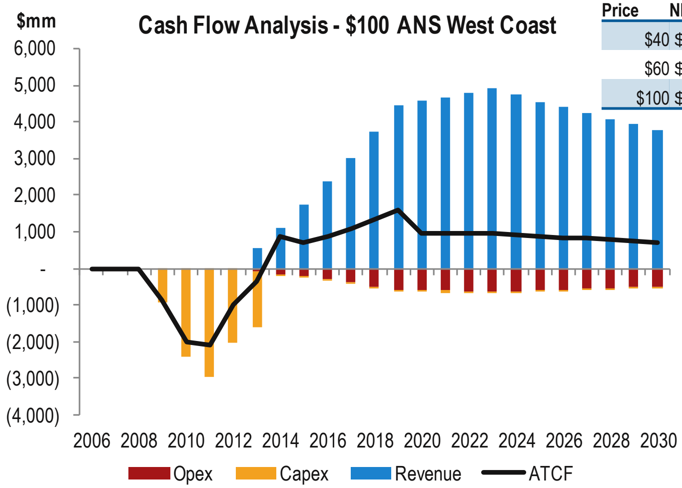
CSSB 192 with $10 allowance not included in Production Tax Rate Calculations (Non-Current Producer)



Price	NPV	IRR
$40	$ -2,207	3%
$60	$ -879	7%
$100	$ 327	11%

Price	Royalty	Production Tax	Property Tax	State CIT	Total State Take	Federal CIT	Total GT
40	56%	-20%	25%	1%	63%	5%	68%
50	33%	5%	12%	3%	53%	13%	66%
60	26%	17%	8%	4%	54%	14%	68%
70	22%	25%	6%	4%	57%	14%	71%
80	20%	32%	5%	3%	60%	13%	73%
90	19%	37%	4%	3%	63%	12%	75%
100	18%	40%	3%	3%	65%	12%	77%
110	17%	43%	3%	3%	66%	12%	78%
120	17%	45%	3%	3%	67%	12%	79%
130	16%	46%	2%	3%	68%	11%	79%
140	16%	48%	2%	3%	69%	11%	80%
150	16%	49%	2%	3%	69%	11%	80%
160	16%	49%	2%	3%	69%	11%	80%
170	15%	50%	2%	3%	70%	11%	80%
180	15%	50%	2%	3%	70%	11%	80%
190	15%	51%	1%	3%	70%	11%	80%
200	15%	51%	1%	3%	70%	11%	81%
210	15%	51%	1%	3%	70%	11%	81%
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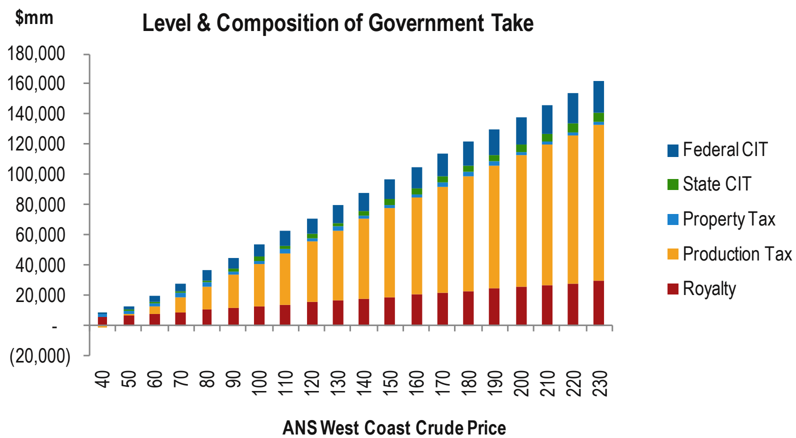

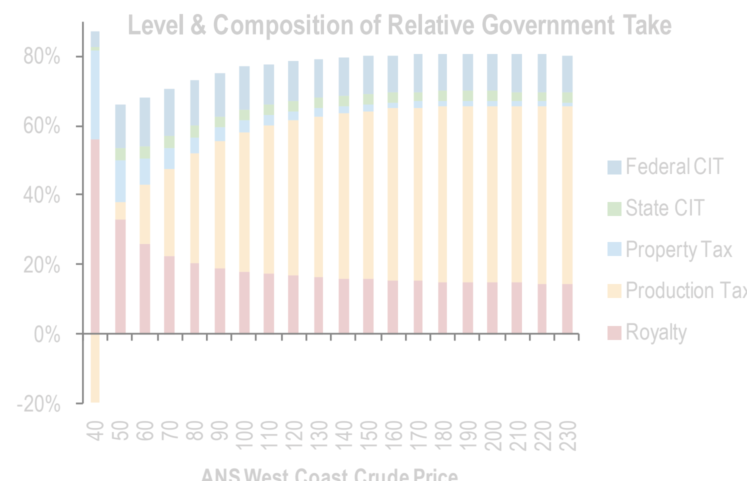

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Conclusions

- Even under highly aggressive assumptions regarding the potential for a new-source development for a given company, the impact of the $10 allowance for “new oil” is almost undetectable
  - In the context of both a development by an existing producer, and a development by a new producer, Relative Government Take changes only by fractions of a percentage point, at most
  - For an existing producer, portfolio NPV rises by only a tenth of a percentage point
  - For a new producer, the impact on project value is greater, but remains insignificant in the context of a $10 billion capital development
- The major reason for this is because rather than providing an ongoing allowance for new-source production, the amendment provides an allowance only for production that, in a given year, is incremental to the previous year’s production
  - For an existing producer with declining base production, only a very large development is capable of producing “new oil” under this development at all
  - Even for a new producer, the value of the allowance remains highly limited
- An allowance which was instead provided for new-source production could potentially have a greater impact, however adequately defining such new-source production could be difficult in practice, particularly in an environment where most new production will come from existing areas

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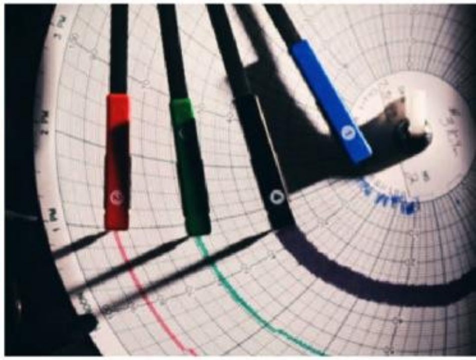

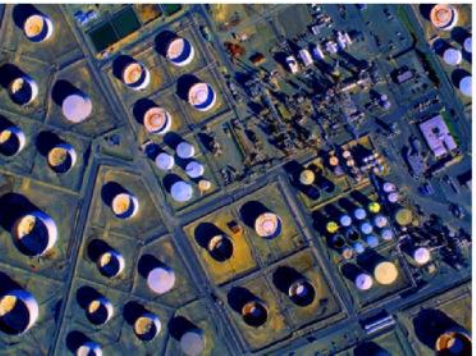

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