



# Alaska Senate Resources Committee:

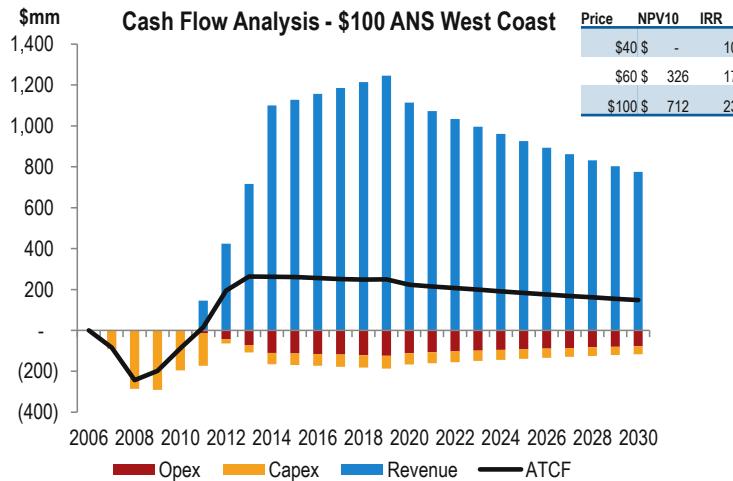
Requested Analysis of Possible ACES  
Progressivity Caps Under Different Cost  
Assumptions

February 27, 2012

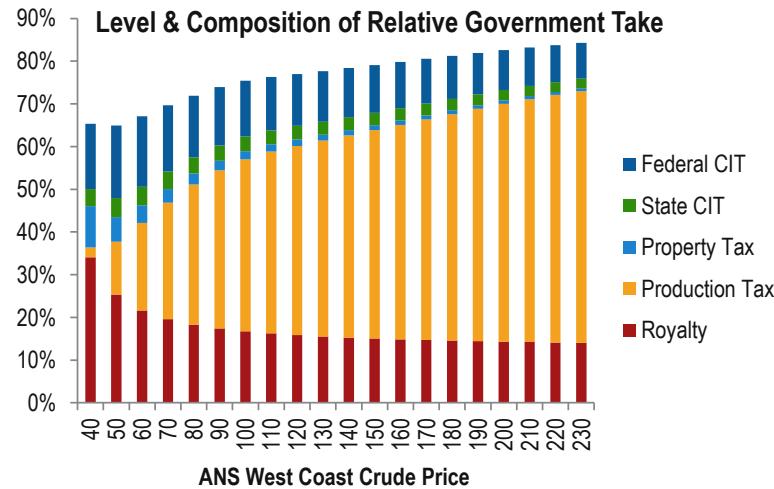
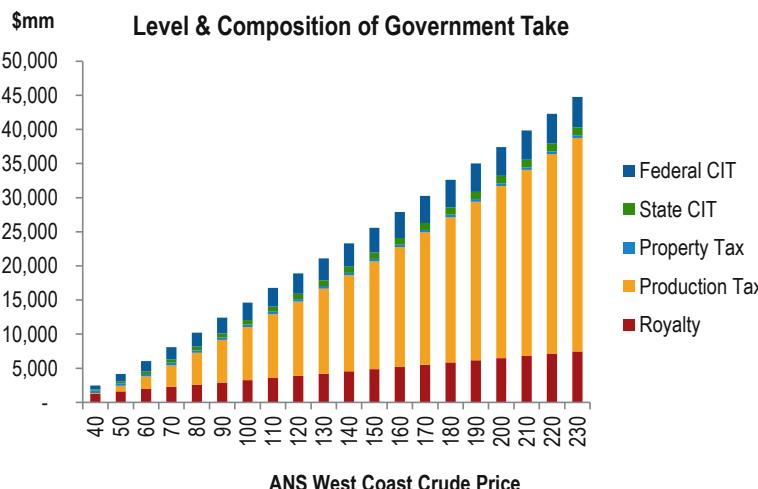
Janak Mayer  
Manager, Upstream & Gas  
PFC Energy

# Cost Assumptions Underlying Development-Forward Analysis

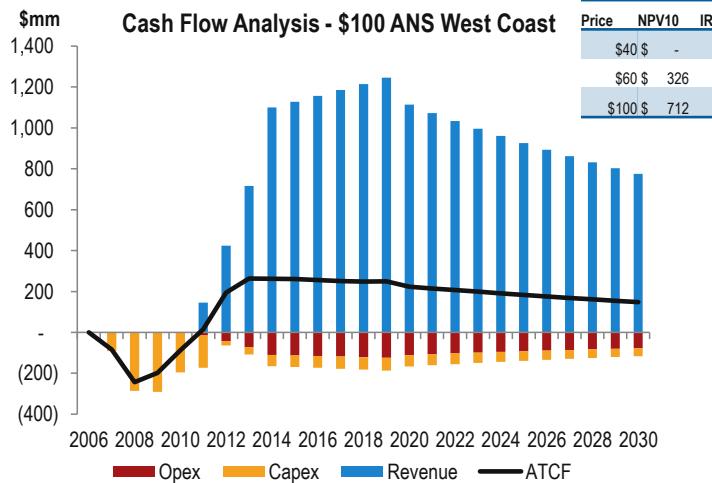
- Development-forward analysis has been undertaken by looking economics for a generic example low-cost field development. Cost examples underpinning the modeled scenarios are:
  - \$10 per flowing bbl operating expenditures
  - \$5 per bbl reserves initial development capital expenditures
  - \$5 per 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%



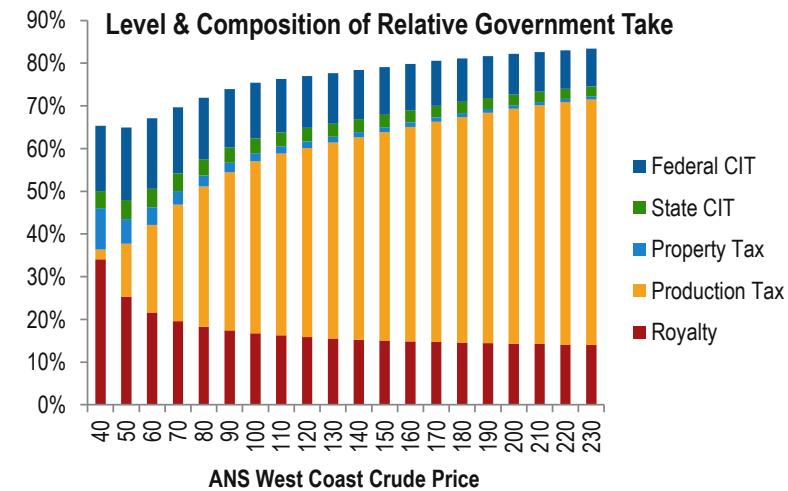
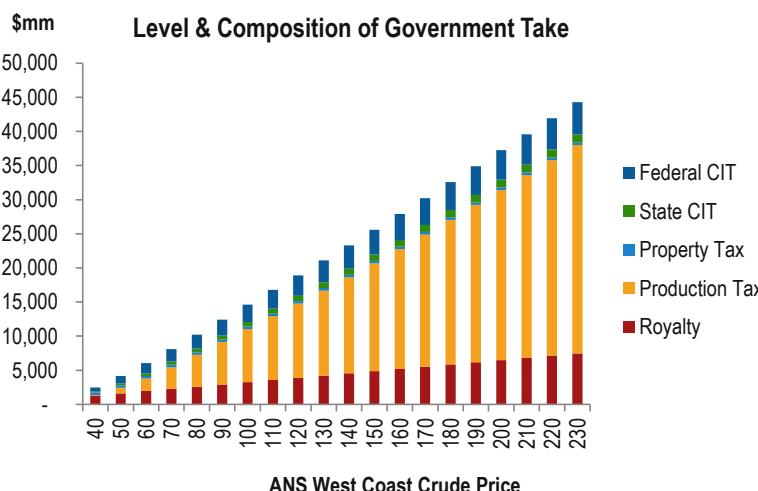
Price	Royalty	Production Tax	Property Tax	State CIT	Total State Take	Federal CIT	Total GT
40	34%	2%	10%	4%	50%	15%	65%
50	25%	12%	6%	4%	48%	17%	65%
60	22%	21%	4%	4%	51%	17%	67%
70	20%	27%	3%	4%	54%	16%	70%
80	18%	33%	3%	4%	58%	14%	72%
90	17%	37%	2%	4%	60%	14%	74%
100	17%	40%	2%	3%	62%	13%	75%
110	16%	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%
220	14%	58%	1%	2%	75%	9%	84%
230	14%	59%	1%	2%	76%	8%	84%



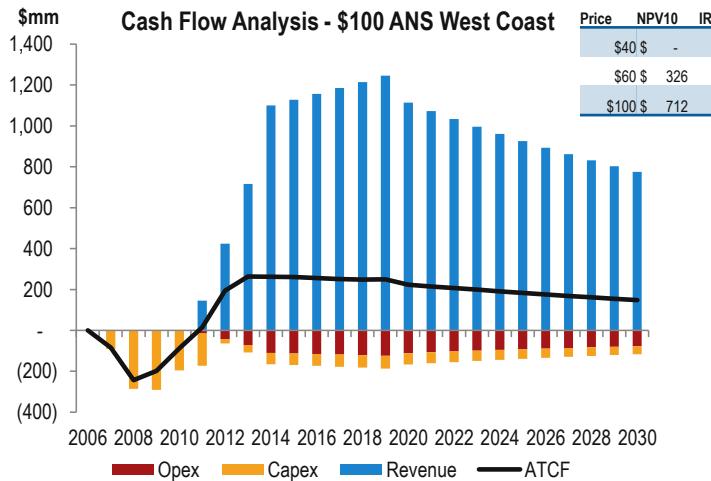
# ACES – Capped at Maximum of 70%



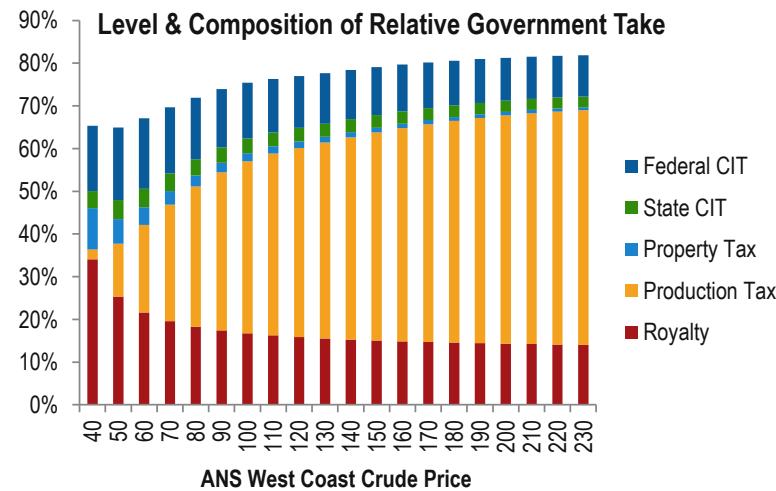
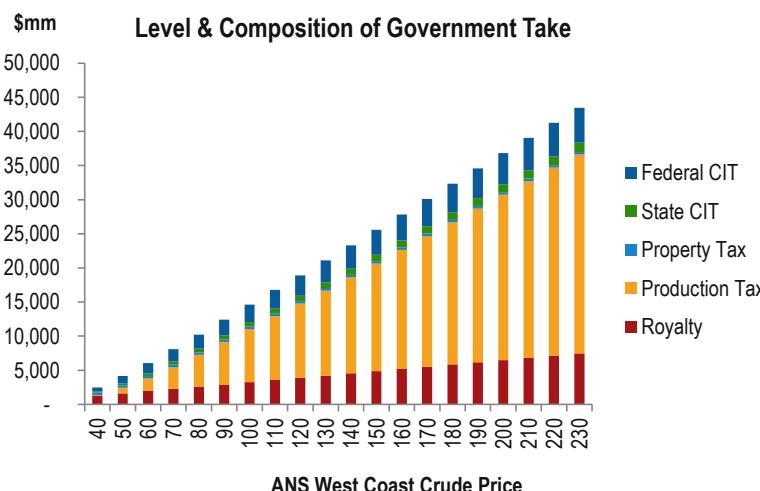
Price	Royalty	Production Tax	Property Tax	State CIT	Total State Take	Federal CIT	Total GT
40	34%	2%	10%	4%	50%	15%	65%
50	25%	12%	6%	4%	48%	17%	65%
60	22%	21%	4%	4%	51%	17%	67%
70	20%	27%	3%	4%	54%	16%	70%
80	18%	33%	3%	4%	58%	14%	72%
90	17%	37%	2%	4%	60%	14%	74%
100	17%	40%	2%	3%	62%	13%	75%
110	16%	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%	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%



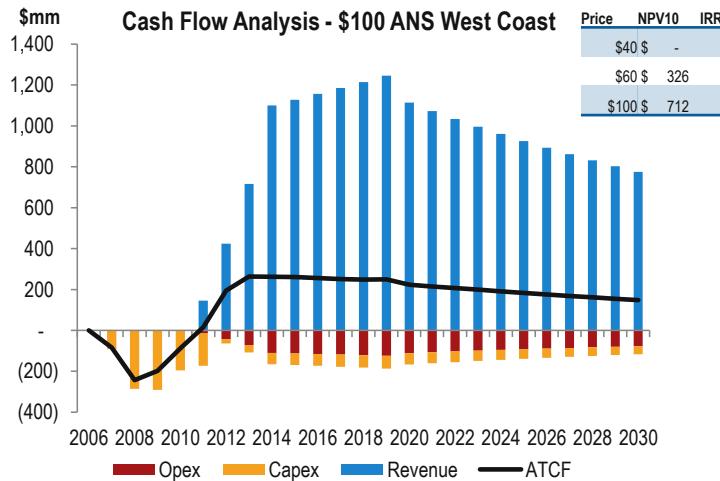
# ACES – Capped at Maximum of 65%



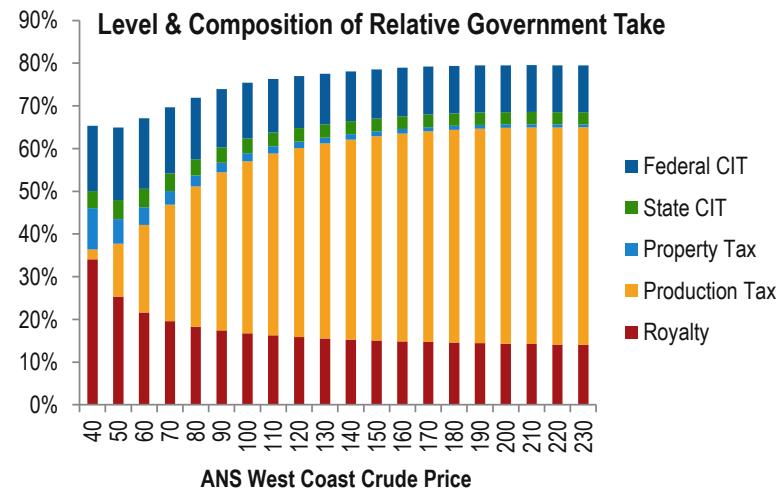
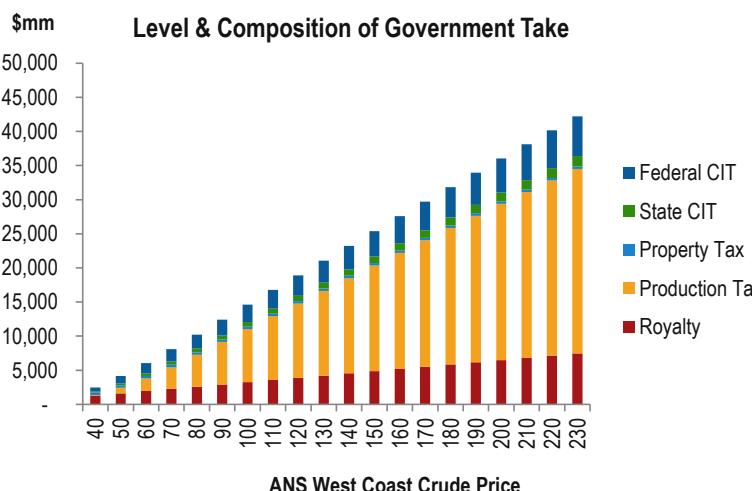
Price	Royalty	Production Tax	Property Tax	State CIT	Total State Take	Federal CIT	Total GT
40	34%	2%	10%	4%	50%	15%	65%
50	25%	12%	6%	4%	48%	17%	65%
60	22%	21%	4%	4%	51%	17%	67%
70	20%	27%	3%	4%	54%	16%	70%
80	18%	33%	3%	4%	58%	14%	72%
90	17%	37%	2%	4%	60%	14%	74%
100	17%	40%	2%	3%	62%	13%	75%
110	16%	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%	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%



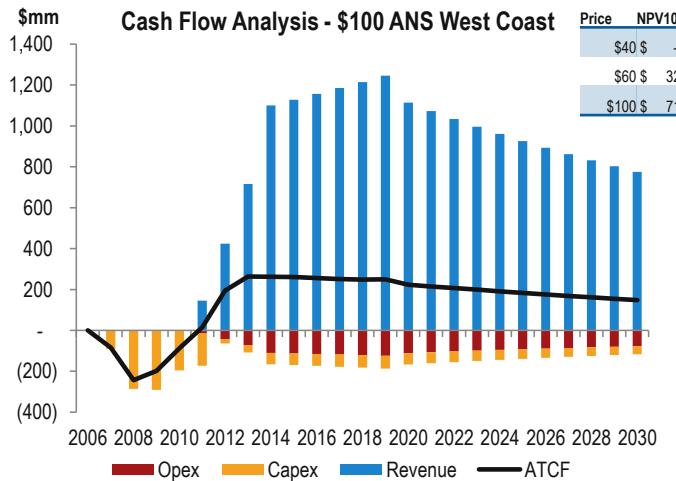
# ACES – Capped at Maximum of 60%



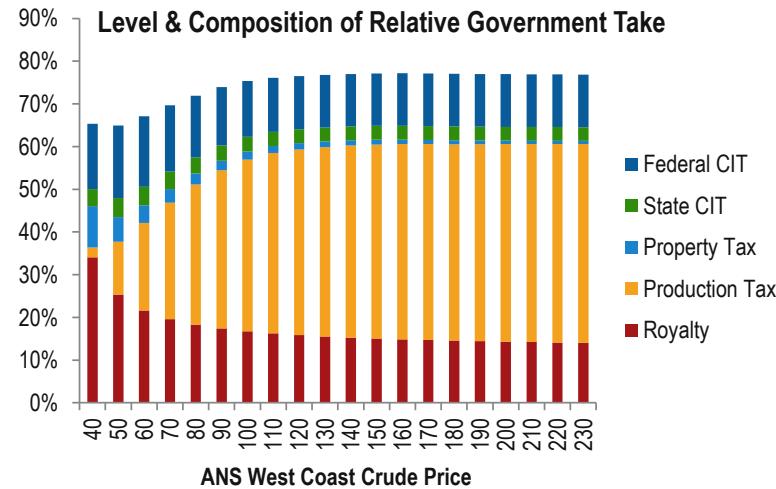
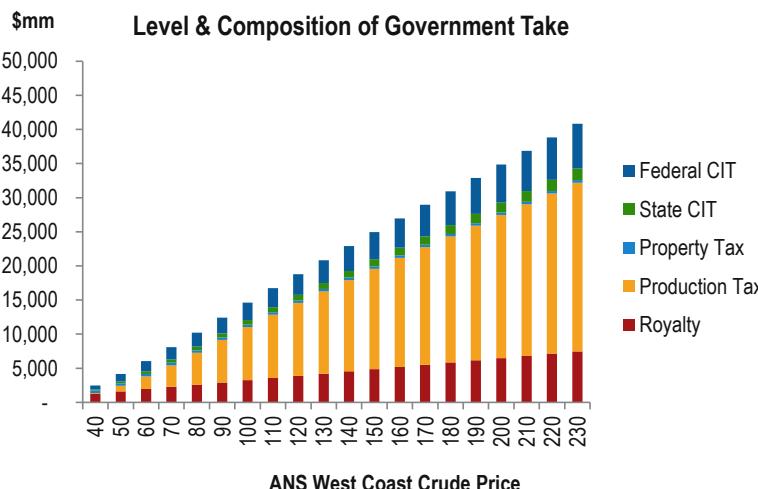
Price	Royalty	Production Tax	Property Tax	State CIT	Total State Take	Federal CIT	Total GT
40	34%	2%	10%	4%	50%	15%	65%
50	25%	12%	6%	4%	48%	17%	65%
60	22%	21%	4%	4%	51%	17%	67%
70	20%	27%	3%	4%	54%	16%	70%
80	18%	33%	3%	4%	58%	14%	72%
90	17%	37%	2%	4%	60%	14%	74%
100	17%	40%	2%	3%	62%	13%	75%
110	16%	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%	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%



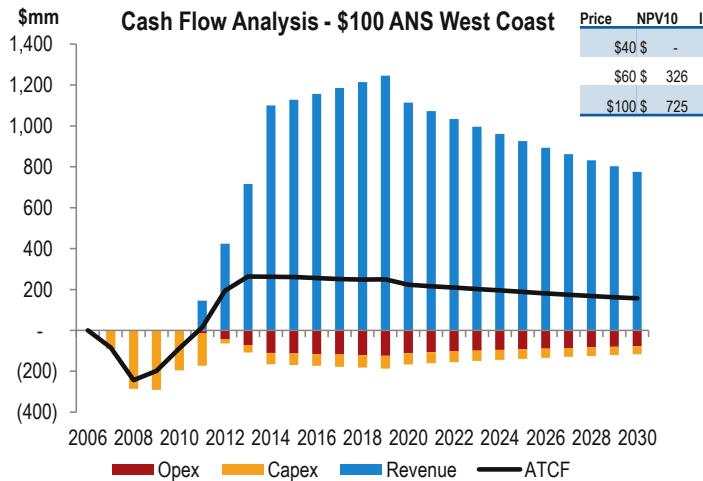
# ACES – Capped at Maximum of 55%



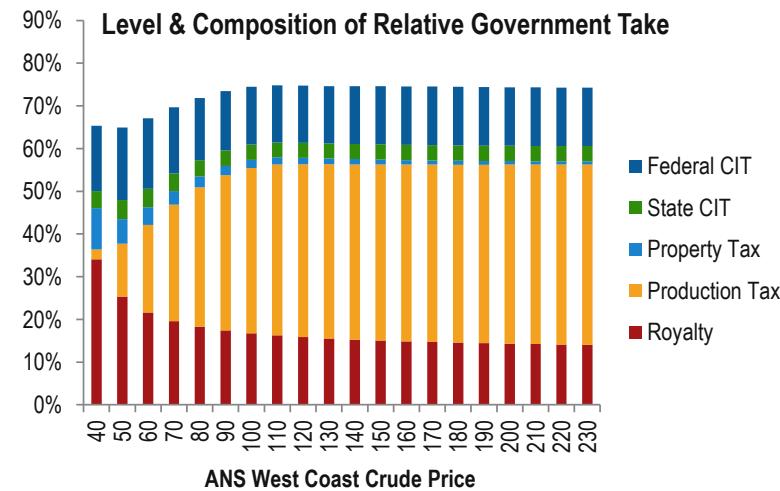
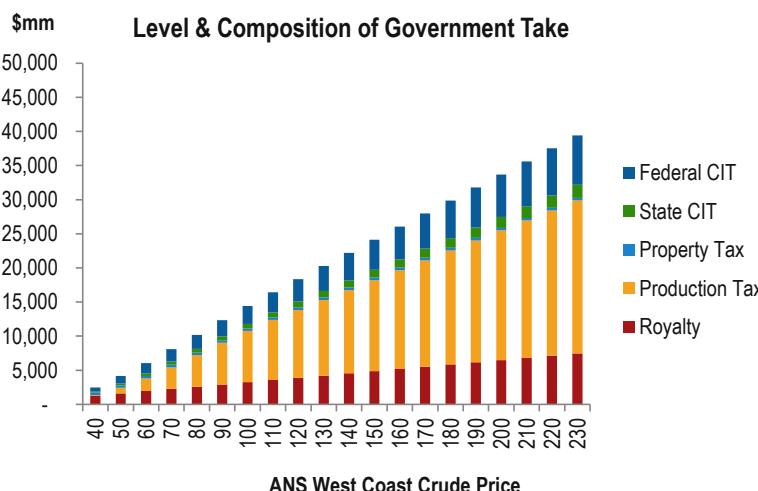
Price	Royalty	Production Tax	Property Tax	State CIT	Total State Take	Federal CIT	Total GT
40	34%	2%	10%	4%	50%	15%	65%
50	25%	12%	6%	4%	48%	17%	65%
60	22%	21%	4%	4%	51%	17%	67%
70	20%	27%	3%	4%	54%	16%	70%
80	18%	33%	3%	4%	58%	14%	72%
90	17%	37%	2%	4%	60%	14%	74%
100	17%	40%	2%	3%	62%	13%	75%
110	16%	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%



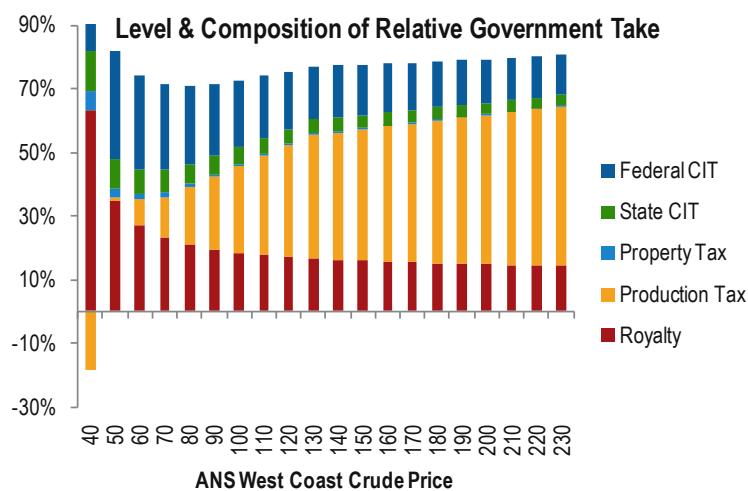
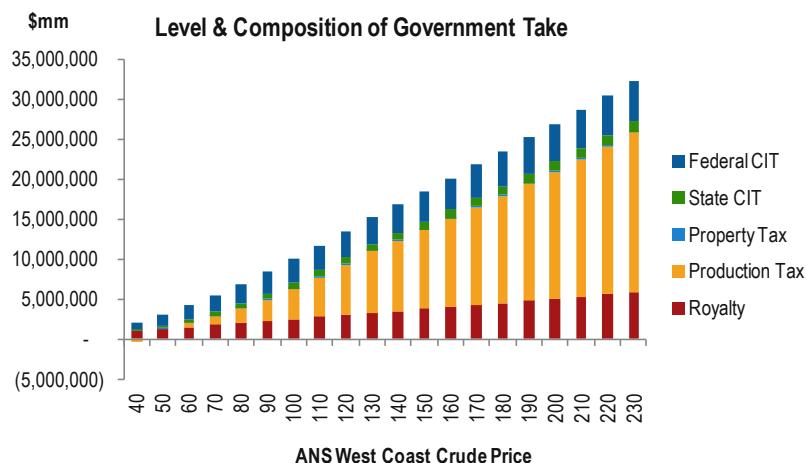
Price	Royalty	Production Tax	Property Tax	State CIT	Total State Take	Federal CIT	Total GT
40	34%	2%	10%	4%	50%	15%	65%
50	25%	12%	6%	4%	48%	17%	65%
60	22%	21%	4%	4%	51%	17%	67%
70	20%	27%	3%	4%	54%	16%	70%
80	18%	33%	3%	4%	57%	14%	72%
90	17%	36%	2%	4%	60%	14%	73%
100	17%	39%	2%	4%	61%	14%	74%
110	16%	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

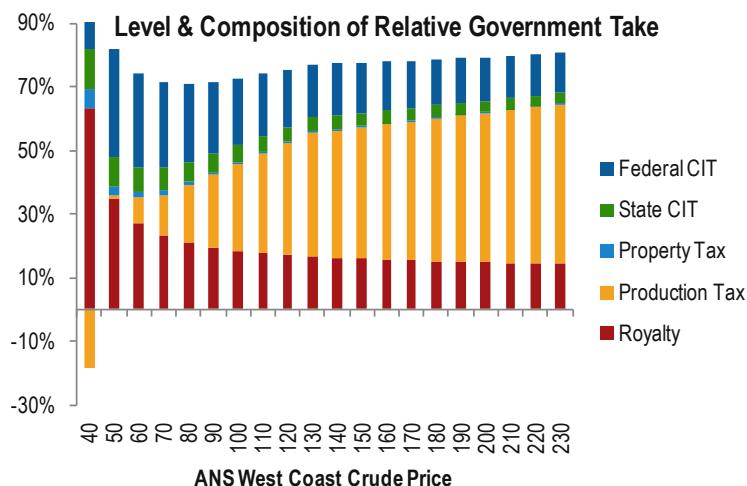
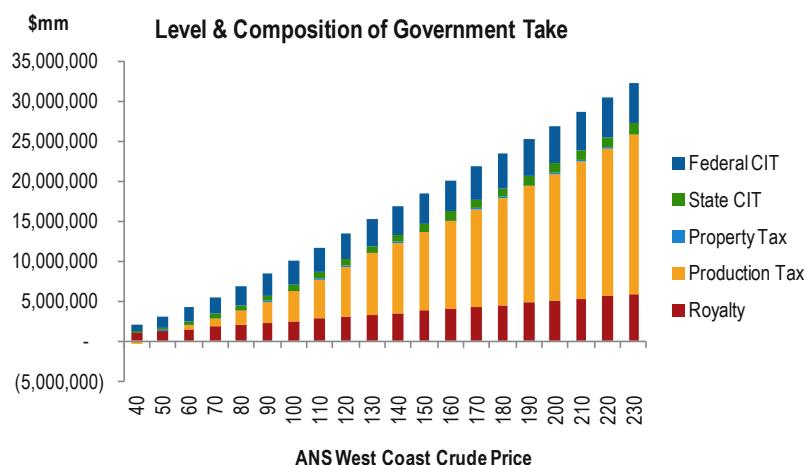
- As requested, an alternate analysis of ACES and the various potential maximum production tax rates has also been performed using DOR FY2013 forecast North Slope cost and production figures
  - By using a ‘snapshot’ of costs and production for a given year, the analysis inherently no longer presents 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

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%



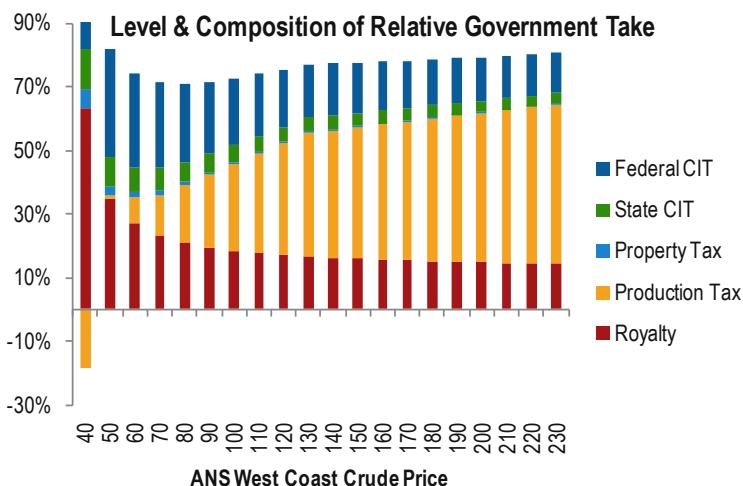
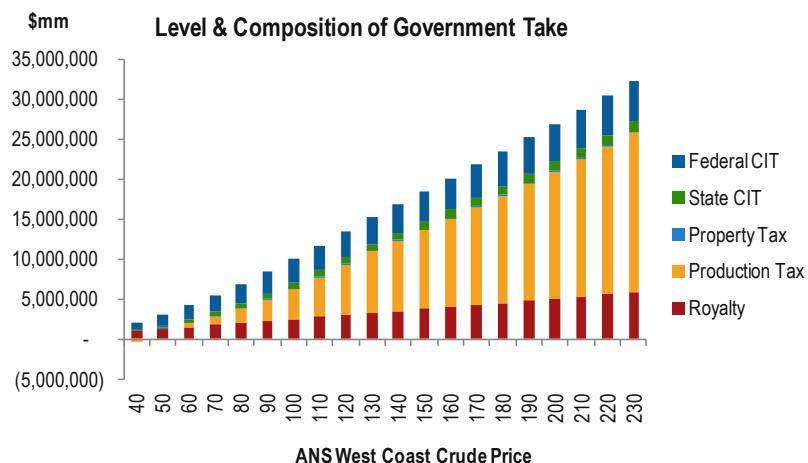
# ACES – Capped at Maximum of 70%

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%



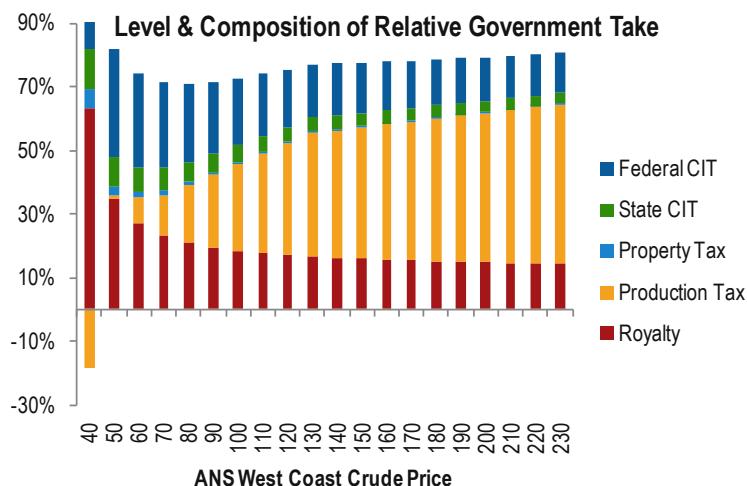
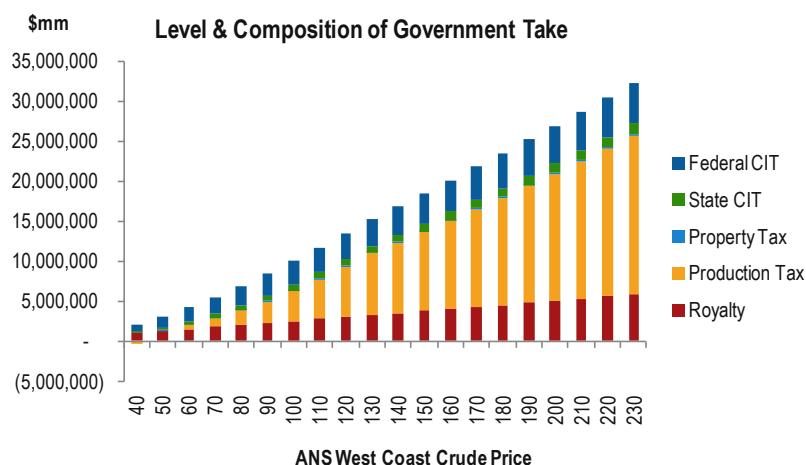
# ACES – Capped at Maximum of 65%

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%



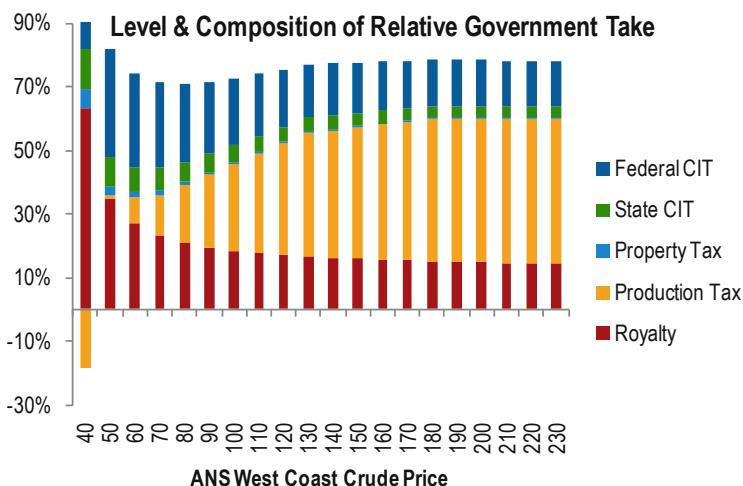
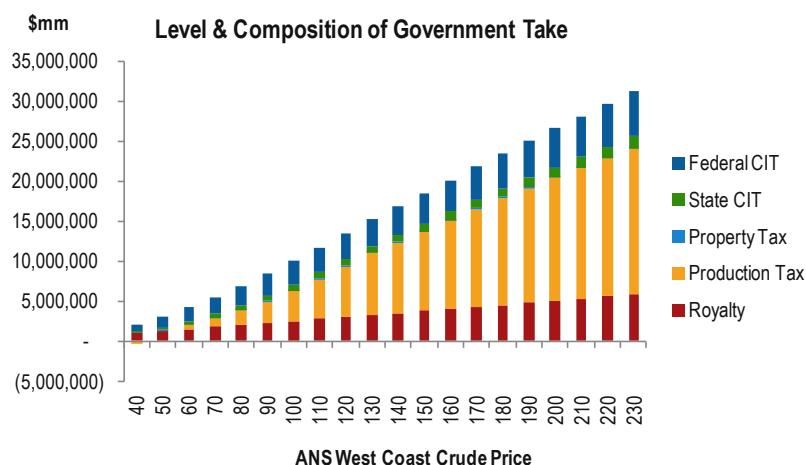
# ACES – Capped at Maximum of 60%

Price	Royalty	Production Tax	Property Tax	State CIT	Total State Take	Federal CIT	Total 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%



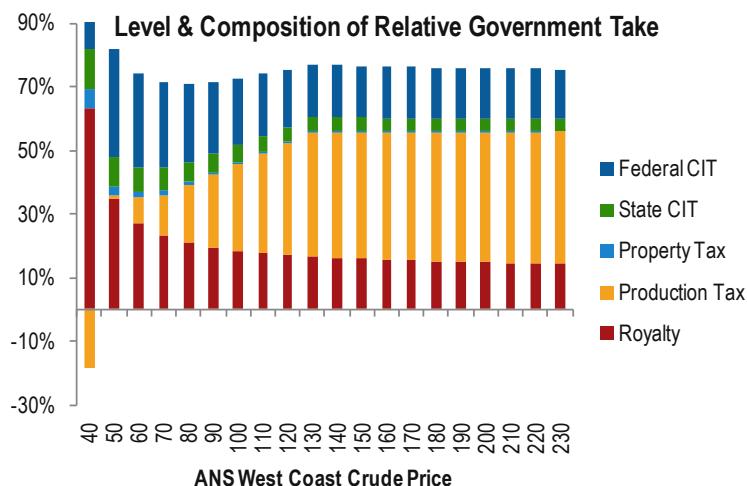
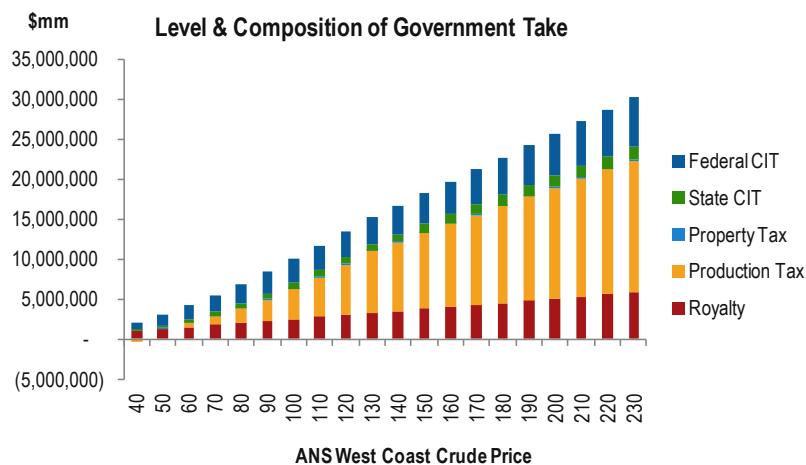
# ACES – Capped at Maximum of 55%

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%	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 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%	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%



# Main Regional Offices

## Asia

### PFC Energy, Kuala Lumpur

Level 27, UBN Tower #21  
10 Jalan P. Ramlee  
50250 Kuala Lumpur, Malaysia  
Tel (60 3) 2172-3400  
Fax (60 3) 2072-3599

### PFC Energy, Singapore

9 Temasek Boulevard  
#09-01 Suntec Tower Two  
Singapore 038989  
Tel (65) 6407 1440  
Fax (65) 6407 1501

### PFC Energy, China

79 Jianguo Road  
China Central Place Tower II, 9/F, Suite J  
Chaoyang District  
Beijing 100025, China  
Tel (86 10) 5920-4448  
Fax (86 10) 6530-5093

## Europe

### PFC Energy, France

19 rue du Général Foy  
75008 Paris, France  
Tel (33 1) 4770-2900  
Fax (33 1) 4770-5905

### PFC Energy International, Lausanne

1-3, rue Marterey  
1003 Lausanne, Switzerland  
Tel (41 21) 721-1440  
Fax: (41 21) 721-1444

## North America

### PFC Energy, Washington D.C.

1300 Connecticut Avenue, N.W.  
Suite 800  
Washington, DC 20036, USA  
Tel (1 202) 872-1199  
Fax (1 202) 872-1219

### PFC Energy, Houston

2727 Allen Parkway, Suite 1300  
Houston, Texas 77019 ,USA  
Tel (1 713) 622-4447  
Fax (1 713) 622-4448

[www.pfcenergy.com](http://www.pfcenergy.com) | [info@pfcenergy.com](mailto:info@pfcenergy.com)

# Notice

This material is protected by United States copyright law and applicable international treaties including, but not limited to, the Berne Convention and the Universal Copyright Convention. Except as indicated, the entire content of this publication, including images, text, data, and look and feel attributes, is copyrighted by PFC Energy. PFC Energy strictly prohibits the copying, display, publication, distribution, or modification of any PFC Energy materials without the prior written consent of PFC Energy.

These materials are provided for the exclusive use of PFC Energy clients (and/or registered users), and may not under any circumstances be transmitted to third parties without PFC Energy approval.

PFC Energy has prepared the materials utilizing reasonable care and skill in applying methods of analysis consistent with normal industry practice, based on information available at the time such materials were created. To the extent these materials contain forecasts or forward looking statements, such statements are inherently uncertain because of events or combinations of events that cannot reasonably be foreseen, including the actions of governments, individuals, third parties and market competitors. **ACCORDINGLY, THESE MATERIALS AND THE INFORMATION CONTAINED THEREIN ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY, ACCURACY, OR FITNESS FOR A PARTICULAR PURPOSE.** Conclusions presented herein are intended for information purposes only and are not intended to represent recommendations on financial transactions such as the purchase or sale of shares in the companies profiled in this report.

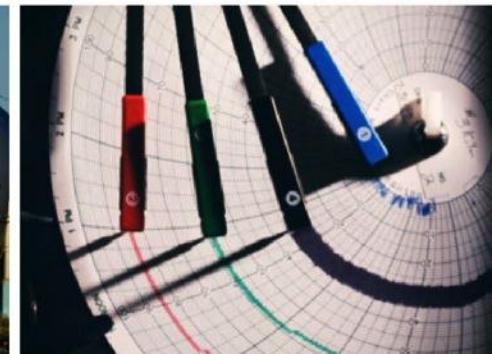
PFC Energy has adjusted data where necessary in order to render it comparable among companies and countries, and used estimates where data may be unavailable and or where company or national source reporting methodology does not fit PFC Energy methodology. This has been done in order to render data comparable across all companies and all countries.

This report reflects information available to PFC Energy as of the date of publication. Clients are invited to check our web site periodically for new updates.

© PFC Energy, Inc. License restrictions apply. Distribution to third parties requires prior written consent from PFC Energy.



A trusted advisor to energy  
companies and governments for  
over twenty five years



PFC Energy