

Time Value of Money

Money

	Year 1	Year 2	Year 3	Year 4	Year 5
US\$ in wallet					
US\$ in bank					
Inflation					
Interest Rate					
Cumulative Interest Rate					

Cost of printer ink

	Year 1	Year 2	Year 3	Year 4	Year 5
US\$ flat					
US\$ inflation					
Cumulative inflation					

Amount of printer ink

	Year 1	Year 2	Year 3	Year 4	Year 5
US\$ no inflation or interest					
US after inflation					
US\$ after inflation with interest					

	Year 1	Year 2	Year 3	Year 4	Year 5
Discount Rate					

Real versus Nominal

Costs	At Dec 31				
	2018	2019	2020	2021	2022
US\$ Nominal	1	1	1.00	1.00	1.00
Inflation Rate	0%	0%	0%	0%	0%
Multiplier		1	1.00	1.00	1.00

Money available

100

Chocolate Bars

Money Invested

Chocolate Bars	100.0	0.0	0.0	0.0	0.0
Chocolate Bars	100.0	0.0	0.0	0.0	0.0

US\$ Real (2018)

Money Available

Cost of Choc Bar

Year 6 Year 7 Year 8 Year 9 Year 10

Year 6 Year 7 Year 8 Year 9 Year 10

Year 6 Year 7 Year 8 Year 9 Year 10 2029

Year 6 Year 7 Year 8

2023 2024 2025 2026 2027 2028
1.00 1.00 1.00 1.00 1.00 1.00

0% 0% 0% 0% 0% 0%
1.00 1.00 1.00 1.00 1.00 1.00

0.0 0.0 0.0 0.0 0.0 0.0

Real and Nominal

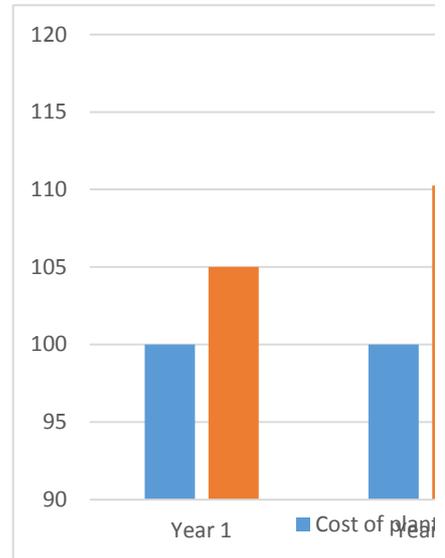
	Year 1	Year 2	Year 3	Year 4	Year 5
Real					
Nominal					
Inflation					
Inflation Factor					
Capex					
US\$2023					
Nominal					

Oil Price

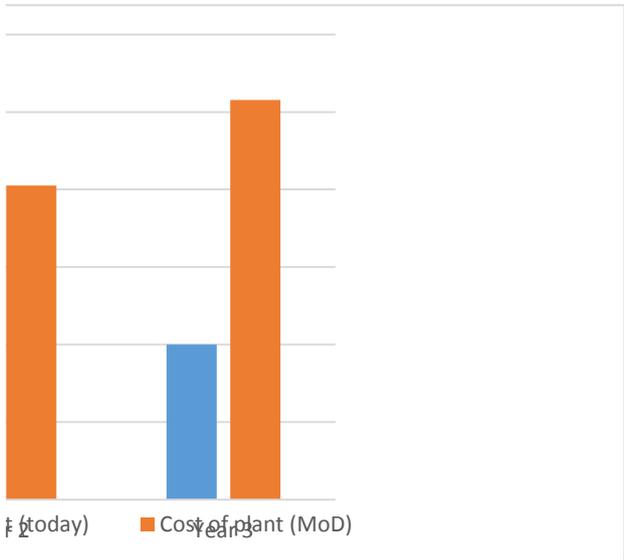
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Real							
Nominal							
Inflation							
Inflation Factor							

Cost of plant (today)
Cost of plant (MoD)

Year 8 Year 9 Year 10



Year 1	Year 2	Year 3	Total
100	100	100	300
105	110	116	331



Example Discounted Cashflow

Example 1

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Cashflow	-10	-10	-10	20	20	20	20
Discount Factor							
Discounted Cashflow							
NPV (Net Present Value)							

Discount Rate 0%

Excel Calculation

IRR

Example 2

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Capital Cost	-200	-200	-200				
Revenue				100	100	100	100
Operating Cost				-20	-20	-20	-20
Net Cashflow	-200	-200	-200	80	80	80	80
Discount Factor	1.08	1.16	1.24	1.34	1.44	1.54	1.66
Discounted Cashflow	-186.0	-173.1	-161.0	59.9	55.7	51.8	48.2
NPV	87.4						

Discount Rate 7.50%

IRR 9.57%

Excel Calculation

Year 8	Year 9	Year 10
20	20	20

Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16
100	100	100	100	100	100	100	100	100
-20	-20	-20	-20	-20	-20	-20	-20	-20
80	80	80	80	80	80	80	80	80
1.78	1.92	2.06	2.22	2.38	2.56	2.75	2.96	3.18
44.9	41.7	38.8	36.1	33.6	31.2	29.1	27.0	25.2

Year 17	Year 18	Year 19	Year 20
100	100	100	100
-20	-20	-20	-20
80	80	80	80
3.42	3.68	3.95	4.25
23.4	21.8	20.2	18.8

WACC Calculation

Risk Free Rate	4.50%	
Corporate Interest Rate	6.50%	
Equity market return	10.00%	
Company Beta	1.47	
Corporate Tax Rate	25%	
Debt:Equity Split	Debt 40%	Equity 60%
Cost of Debt	4.88%	
Cost of Equity	12.59%	
WACC	9.50%	

An Example Shale Gas Field

Sensitivities		1	0%
Oil or Gas Price	1	2	25%
Production	1	3	50%
Operating Costs & Transport	1	4	-25%
Capex	1	5	-50%

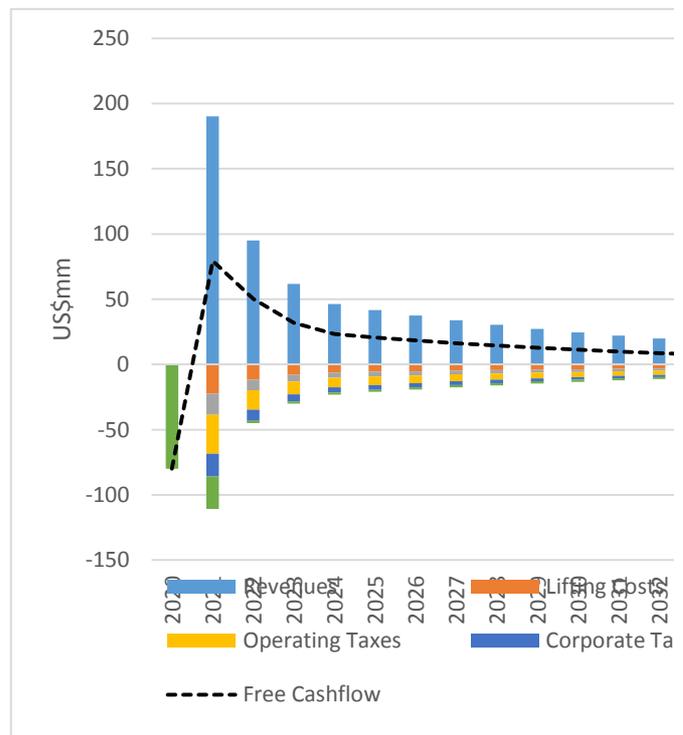
	2024	2025	2026	2027	2028	2029
Revenues	0	190	95	62	46	42
Operating Costs	0	-22	-12	-8	-6	-6
Transport Costs	0	-16	-8	-5	-4	-4
Operating Taxes	0	-30	-15	-10	-7	-7
EBITDA	0	122	60	39	29	26
Depreciation <i>Straight Line (0) or Unit of Prod (1)</i>	0 1	-35	-18	-11	-9	-8
EBIT	0	86	43	27	20	18
Tax on EBIT <i>Corporate Tax Rate</i>	0 20%	-17	-9	-5	-4	-4
Post tax cashflow	0	104	52	33	25	22
CAPEX	-80	-25	-2	-2	-2	-2
Free Cashflow (FCF)	-80	79	50	32	23	21
Cumulative FCF	-80	-1	50	81	105	125
Discount Rate	9.50%					
Discount Factor	1.10	1.20	1.31	1.44	1.57	1.72
Discounted Cashflow (DCF)	-73	66	38	22	15	12
NPV (\$mm)	129					
IRR (%)	65.5%					
Payback (years)	0	When does cumulative cashflow turn positive				
Excel Calculation	\$129					

Breakeven oil price **\$85.00** *After Goal Seek Function in Data:What If*

Alternative NPV (terminal value)
FCF for 10 years -73 79 50 32 23 21

Terminal Value						
Implied FCF	-73	79	50	32	23	21
Implied DCF	-67	66	38	22	15	12
NPV	210					
Plus Cash	0					
Less Debt	0					
Total NPV	210					
IRR	75%					
<i>EBITDA Multiple</i>	<i>20</i>					

	2020	2021	2022	2023	2024	2025
Revenues	0	190	95	62	46	42
Lifting Costs	0	-22	-12	-8	-6	-6
Transport	0	-16	-8	-5	-4	-4
Operating Taxes	0	-30	-15	-10	-7	-7
Corporate Tax	0	-17	-9	-5	-4	-4
Capex	-80	-25	-2	-2	-2	-2
Free Cashflow	-80	79	50	32	23	21



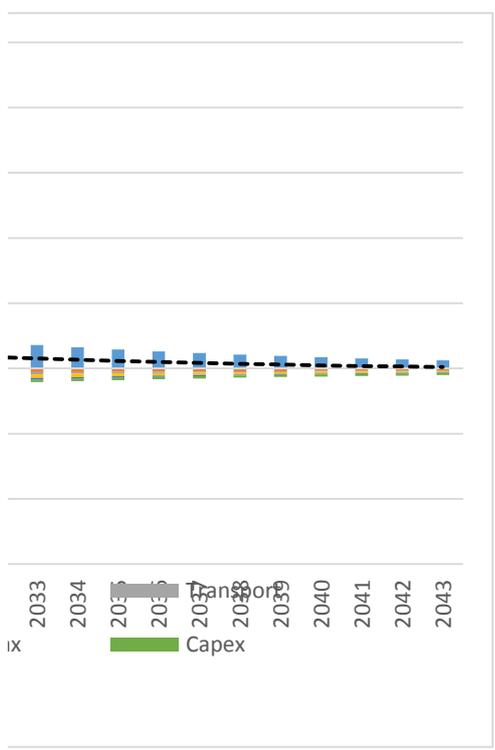
Base
High
Upside
Low
Downside

Results		
NPV	129	US\$mm
IRR	66%	%

2030	2031	2032	2033	2034	2035	2036	2037	2038
38	34	30	27	25	22	20	18	16
-5	-5	-4	-4	-4	-3	-3	-3	-3
-3	-3	-3	-2	-2	-2	-2	-2	-1
-6	-5	-5	-4	-4	-3	-3	-3	-3
23	21	19	17	15	13	12	11	9
-7	-6	-6	-5	-5	-4	-4	-3	-3
16	15	13	12	10	9	8	7	6
-3	-3	-3	-2	-2	-2	-2	-1	-1
20	18	16	14	13	12	10	9	8
-2	-2	-2	-2	-2	-2	-2	-2	-2
18	16	14	13	11	10	9	8	7
144	160	175	187	199	209	217	225	232
1.89	2.07	2.26	2.48	2.71	2.97	3.25	3.56	3.90
10	8	6	5	4	3	3	2	2
18	16	14	13	11				

					267
18	16	14	13	11	267
10	8	6	5	4	90

2026	2027	2028	2029	2030	2031	2032	2033	2034
38	34	30	27	25	22	20	18	16
-5	-5	-4	-4	-4	-3	-3	-3	-3
-3	-3	-3	-2	-2	-2	-2	-2	-1
-6	-5	-5	-4	-4	-3	-3	-3	-3
-3	-3	-3	-2	-2	-2	-2	-1	-1
-2	-2	-2	-2	-2	-2	-2	-2	-2
18	16	14	13	11	10	9	8	7



2039	2040	2041	2042	2043	2044	2045	2046	2047
15	13	12	11	10	9	8	7	6
-3	-2	-2	-2	-2	-2	-2	-2	-2
-1	-1	-1	-1	-1	-1	-1	-1	-1
-2	-2	-2	-2	-2	-1	-1	-1	-1
8	8	7	6	5	5	4	4	3
-3	-2	-2	-2	-2	-2	-1	-1	-1
6	5	4	4	3	3	3	2	2
-1	-1	-1	-1	-1	-1	-1	0	0
7	6	6	5	5	4	4	3	3
-2	-2	-2	-2	-2	-2	-2	-2	-2
6	5	4	4	3	2	2	2	1
237	242	246	250	253	255	257	259	260
4.27	4.68	5.12	5.61	6.14	6.73	7.37	8.07	8.83
1	1	1	1	0	0	0	0	0

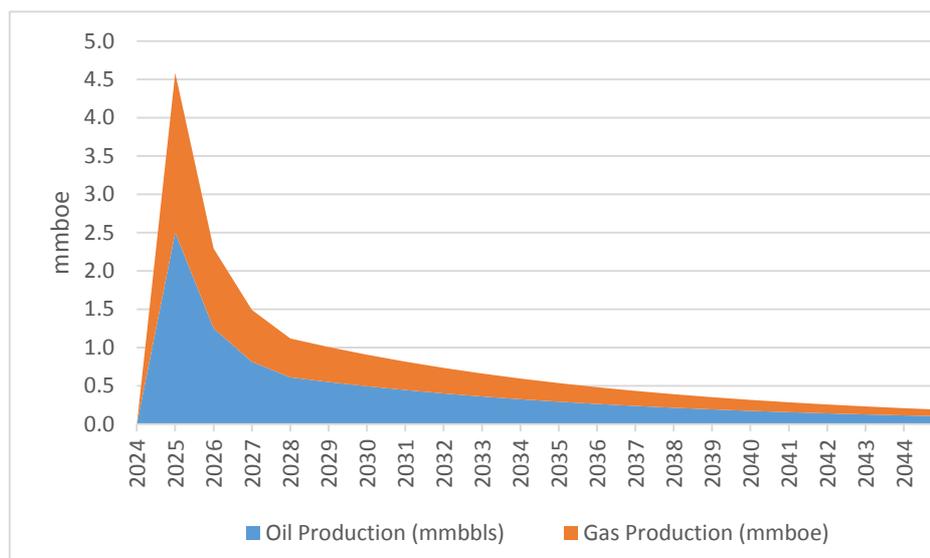
2035	2036	2037	2038	2039	2040	2041	2042	2043
15	13	12	11	10	9	8	7	6
-3	-2	-2	-2	-2	-2	-2	-2	-2
-1	-1	-1	-1	-1	-1	-1	-1	-1
-2	-2	-2	-2	-2	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-1	0	0
-2	-2	-2	-2	-2	-2	-2	-2	-2
6	5	4	4	3	2	2	2	1

Production

	Oil		Gas		
	mmbbls	kbpd	Bcf	mmcf	
Resources	100		500		
Recovery Factor	10%		10%		
Reserves	10		50		
Start date	5 years after first capex		Peak as % Reserves	5 years after first capex	
Peak Production (mmbbls)	2.5	7	25%	12.5	34
Time to Peak (yrs)	1			0	
Length of Peak (yrs)	1			0	
Decline rate (%) Yrs 2,3,4,5+	50%	35%	25%	10%	50%

	2024	2025	2026	2027	2028	2029
Oil production	0.00	2.50	1.25	0.81	0.61	0.55
Total oil produced to 2040	9.9					
Barrels per day		6849	3425	2226	1670	1503
Gas Production	0.00	12.50	6.25	4.06	3.05	2.74
Total gas produced to 2040	49.6					

	2024	2025	2026	2027	2028	2029
Oil Production (mmbbls)	0.0	2.5	1.3	0.8	0.6	0.5
Gas Production (mmboe)	0.0	2.1	1.0	0.7	0.5	0.5
Total (mmboe)	0.0	4.6	2.3	1.5	1.1	1.0



Production Scenarios

Total Produced

Oil Production Scenarios

1	9.92
2	12.39
3	14.87
4	7.44
5	4.96

Gas Production Scenarios

1	49.58
2	61.97
3	74.37
4	37.18
5	24.79

Total

18 mmboe

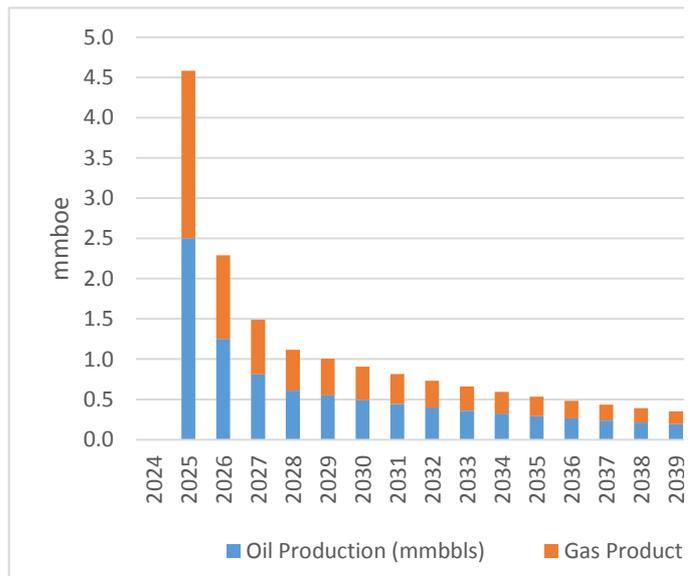
Peak as %
Reserves

25%

25% 10%

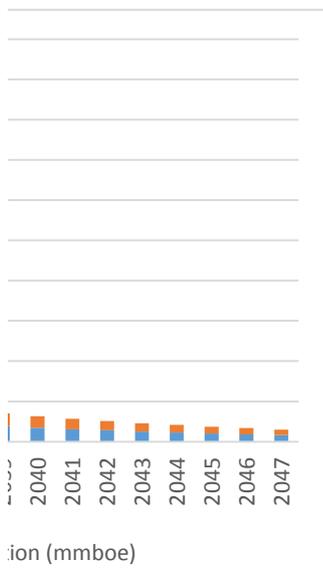
2030	2031	2032	2033	2034	2035	2036	2037	2038
0.49	0.44	0.40	0.36	0.32	0.29	0.26	0.24	0.21
1352	1217	1095	986	887	799	719	647	582
2.47	2.22	2.00	1.80	1.62	1.46	1.31	1.18	1.06

2030	2031	2032	2033	2034	2035	2036	2037	2038
0.5	0.4	0.4	0.4	0.3	0.3	0.3	0.2	0.2
0.4	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2
0.9	0.8	0.7	0.7	0.6	0.5	0.5	0.4	0.4



2039	2040	2041	2042	2043	2044	2045	2046	2047
0.19	0.17	0.15	0.14	0.13	0.11	0.10	0.09	0.08
524	472	424	382	344	309	278	251	226
0.96	0.86	0.77	0.70	0.63	0.56	0.51	0.46	0.41

2039	2040	2041	2042	2043	2044	2045	2046	2047
0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2



Domestic Oil Price

Base Case	42.5	42.5	42.5	42.5	42.5	42.5
Scenario 2	53.1	53.1	53.1	53.1	53.1	53.1
Scenario 3	63.8	63.8	63.8	63.8	63.8	63.8
Scenario 4	31.9	31.9	31.9	31.9	31.9	31.9
Scenario 5	21.3	21.3	21.3	21.3	21.3	21.3

Domestic Gas Price

Base Case	3.0	3.0	3.0	3.0	3.0	3.0
Scenario 2	3.8	3.8	3.8	3.8	3.8	3.8
Scenario 3	4.5	4.5	4.5	4.5	4.5	4.5
Scenario 4	2.3	2.3	2.3	2.3	2.3	2.3
Scenario 5	1.5	1.5	1.5	1.5	1.5	1.5

Export Gas Price

Base Case	11.1	11.1	11.1	11.1	11.1	11.1
Scenario 2	13.8	13.8	13.8	13.8	13.8	13.8
Scenario 3	16.6	16.6	16.6	16.6	16.6	16.6
Scenario 4	8.3	8.3	8.3	8.3	8.3	8.3
Scenario 5	5.5	5.5	5.5	5.5	5.5	5.5

Slope 13%

42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5
53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1
63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8
31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9
21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3

3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5

11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1
13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8
16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6
8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5

2047

0.1

0.1

0.0

43

85

3

1

4

0.4

3.0

11.1

0

0

1

1

2

6

0.1

0.1 25%

0.1 50%

0.1 -25%

0.0 -50%

0.4

0.5 25%

0.6 50%

0.3 -25%

0.2 -50%

85.0

106.3

127.5

63.8

42.5

42.5
53.1
63.8
31.9
21.3

3.0
3.8
4.5
2.3
1.5

11.1
13.8
16.6
8.3
5.5

Capital Expenditure

	Total mmboe	Oil mmbbls	Gas bcf	mmboe pe Wells	
Reserves	18	10	50		
Wells	14			1.33	13.8
Capex per well	10.0				
Capex per bbl	7.64		1.272727		
Total capex	140				
% up to first prod	75%	105			
% first oil to peak	0%	0			
Maintenance capex	25%	35			

	First Capex		First gas			
	2024	2025	2026	2027	2028	2029
US\$mm	80	25	1.6	1.6	1.6	1.6
Before first oil	105					
Maintenance	35.2					
Total	140.2					

Sensitivities

2	100	31	2	2	2	2
3	120	38	2	2	2	2
4	60	19	1	1	1	1
5	40	13	1	1	1	1
25%						
50%						
-25%						
-50%						

Field Comparisons

	Cost /bbl	Capex	Reserves	Peak Prod	Peak Prod
	US\$/bbl	US\$mm	mmbbls	kbpd	mmbbls
Kashagan (Kazakhstan)	10.46	136000	13000	1500	547.5
ACG (Azerbaijan)	4.00	20000	5000	620	226.3
Thunderhorse (Gulf of Mexico)	5.00	5000	1000	250	91.25
Novy Port (Russia onshore)	3.25	4500	1385	161	58.64
Ghawar (Saudi)	3.50	248500	71000	5000	1825
Lula (Brazil deep water)	9.04	75000	8300	500	182.5

US shale	\$10mm	per well
Ultimate recovery per well	8.0	bcf per well
	1.33	mmboe per well

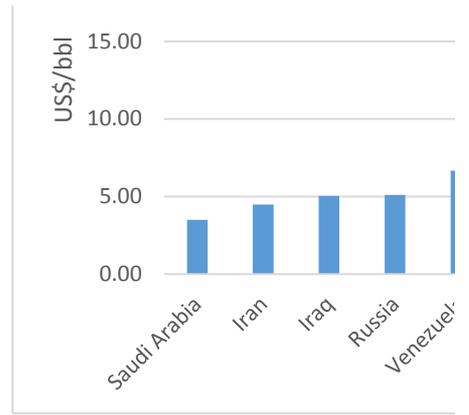
Global Comparisons

	Capex US\$/bbl
Saudi Arabia	3.50
Iran	4.48
Iraq	5.03

25.00

20.00

Russia	5.10
Venezuela	6.66
US shale	7.56
Indonesia	7.65
US conv	7.70
Canada	9.69
Nigeria	13.10
Norway	13.76
Brazil	16.09
UK	22.67

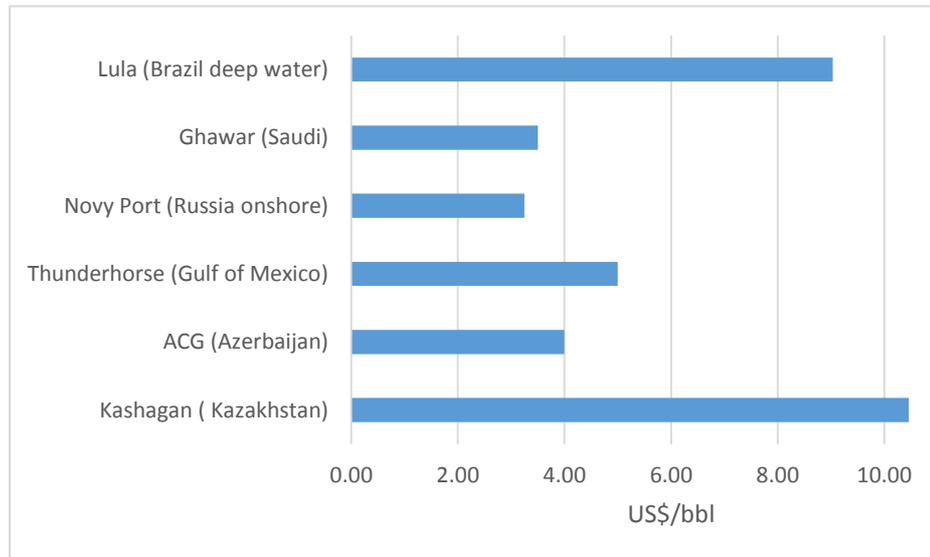


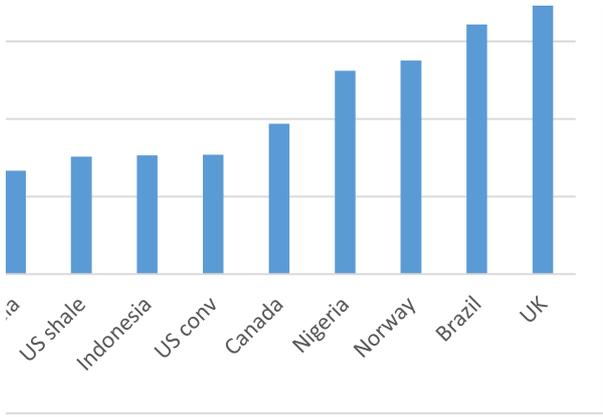
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1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6

2	2	2	2	2	2	2	2	2
2	2	2	2	2	2	2	2	2
1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1

Capex/
peak bbl
US\$/bbl

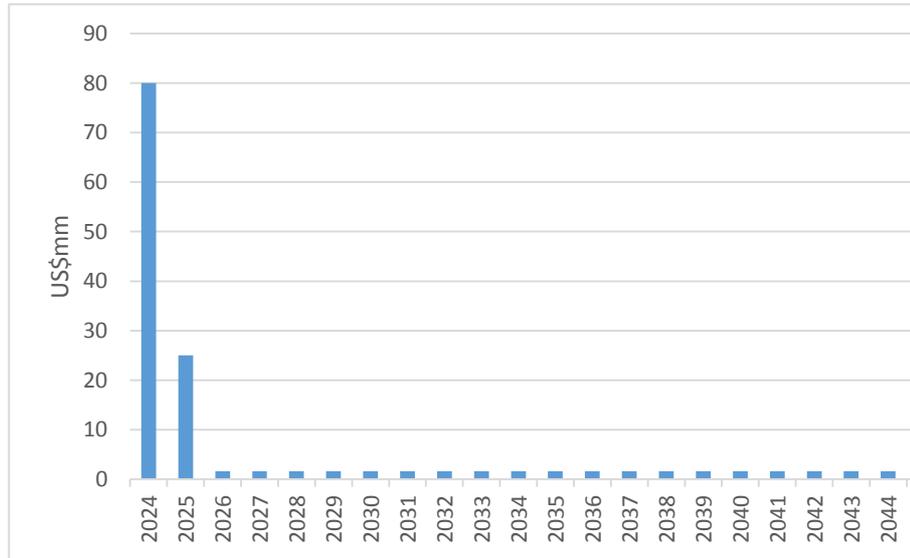
248
88
55
77
136
411





2039	2040	2041	2042	2043	2044	2045	2046	2047
1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6

2	2	2	2	2	2	2	2	2
2	2	2	2	2	2	2	2	2
1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1





Operating Costs

Lifting Costs	5.85 US\$/boe	real					
Total for model	106 US\$mm						
Variable	4.68 US\$/bbl		80%				
Fixed	21 US\$mm		20%				
Years production	23						
	2024	2025	2026	2027	2028	2029	2030
US\$mm	0.0	22.4	11.6	7.9	6.2	5.6	5.2
Total	106						

Base Case and Sensitivities

1	5.85
2	25%
3	50%
4	-25%
5	-50%

Global Comparisons

	Lifting US\$/bbl		Transport US\$/bbl
Iran	1.94	Saudi Arabi	2.49
Iraq	2.16	Iran	2.67
Russia	2.98	Iraq	2.47
Saudi Arabia	3.00	Russia	2.69
Norway	4.24	Indonesia	3.63
US conv	5.15	US conv	3.11
US shale	5.85	Norway	3.12
Indonesia	6.87	US shale	3.52
Venezuela	7.94	Canada	2.92
Nigeria	8.81	Venezuela	2.54
Brazil	9.45	Nigeria	2.97
Canada	11.56	Brazil	2.80
UK	17.36	UK	4.30

Lifting Costs



Company examples

Rosneft	3.10
Lukoil	4.26
BP	6.90
Chesapeake	2.92

Transport Costs

Oil	3.52 US\$/bbl
Gas	0.59 US\$/mcf

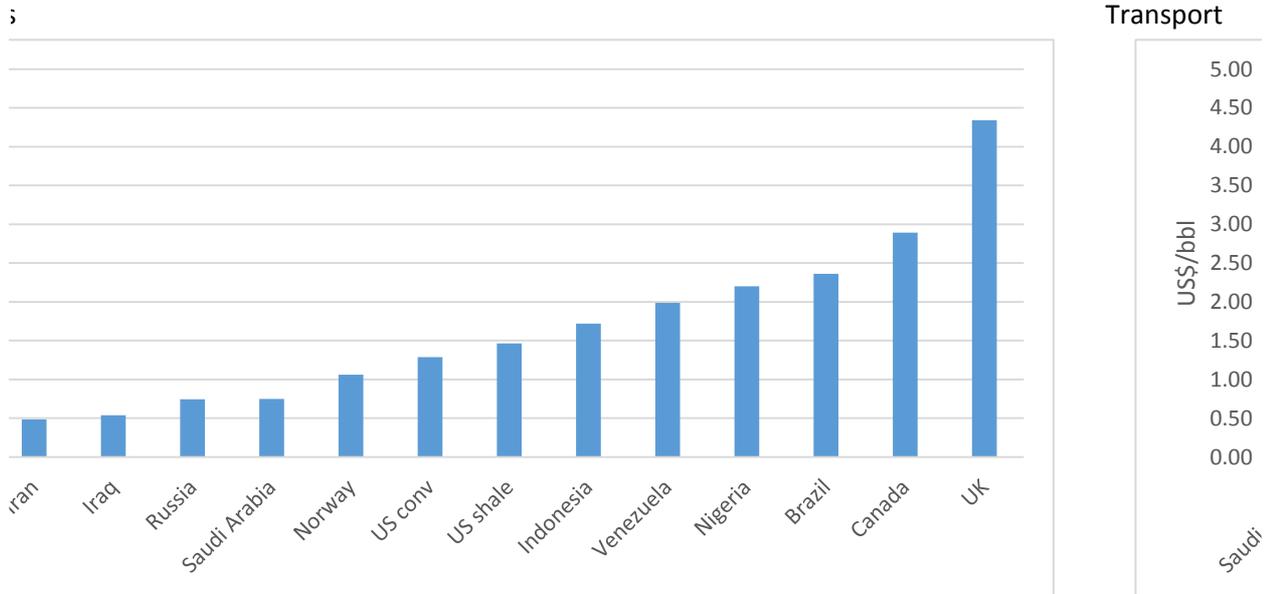
	2024	2025	2026	2027	2028	2029	2030
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Oil (US\$mm)	0.0	8.8	4.4	2.9	2.1	1.9	1.7
Gas (US\$mm)	0.0	7.3	3.7	2.4	1.8	1.6	1.4
Total (US\$mm)	0.0	16.1	8.1	5.2	3.9	3.5	3.2

Base Case and Sensitivities

1	3.52
2	25%
3	50%
4	-25%
5	-50%

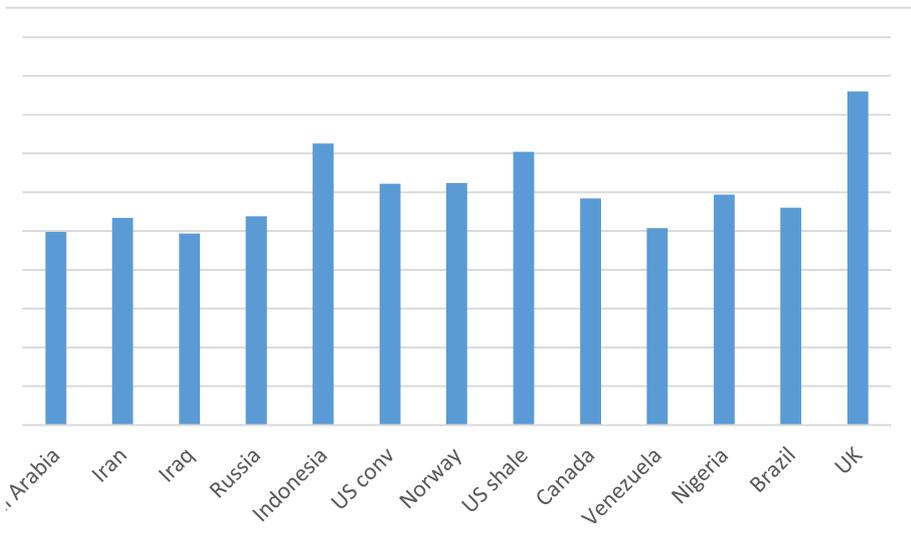
2031 **2032** **2033** **2034** **2035** **2036** **2037** **2038**
 4.7 4.4 4.0 3.7 3.4 3.2 3.0 2.7



2031 **2032** **2033** **2034** **2035** **2036** **2037** **2038**

1.6	1.4	1.3	1.1	1.0	0.9	0.8	0.7
1.3	1.2	1.1	0.9	0.9	0.8	0.7	0.6
2.9	2.6	2.3	2.1	1.9	1.7	1.5	1.4

2039 2.6 2040 2.4 2041 2.3 2042 2.1 2043 2.0 2044 1.9 2045 1.8 2046 1.7



2039 2040 2041 2042 2043 2044 2045 2046

0.7	0.6	0.5	0.5	0.4	0.4	0.4	0.3
0.6	0.5	0.5	0.4	0.4	0.3	0.3	0.3
1.2	1.1	1.0	0.9	0.8	0.7	0.7	0.6

2047

1.6

2047

0.3

0.2

0.5

Operating Taxes

Oil Tax

Export Tax	Sliding	of export barrels
Royalty	10.0%	of oil revenues
Other taxes	1.0%	of total revenues

Export Oil Price	85	85	85	85	85	85
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	2024	2025	2026	2027	2028	2029
Export Tax	0.0	5.6	2.8	1.8	1.4	1.2
Royalty	0.0	12.8	6.4	4.1	3.1	2.8
Other	0.0	1.9	1.0	0.6	0.5	0.4
Total	0	20.3	10.1	6.6	4.9	4.4

Export Tax

Cut-off point	40	US\$/bbl
Tax	25%	above cut-off point

Export Tax (\$/bbl)	11.25	11.25	11.25	11.25	11.25	11.25
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Gas Tax

Export Tax	10%	export revenues
Royalty	0.5	US\$/mcf

	2024	2025	2026	2027	2028	2029
Export Tax	0	3	2	1	1	1
Royalty	0	6.3	3.1	2.0	1.5	1.4
Total	0	9.7	4.9	3.2	2.4	2.1

Total Operating Taxes	0	30.0	15.0	9.7	7.3	6.6
Total US\$/boe		6.54	6.54	6.54	6.54	6.54

Gross Taxes

	US\$/bbl
Saudi Arabia	0
Iran	0
Iraq	0.91
Russia	8.44
Indonesia	1.55
US conv	5.03
Norway	0.19
US shale	6.42
Canada	2.48
Venezuela	10.48
Nigeria	4.11

Brazil
UK

6.66
0

Depreciation

Straight Line

Total Capex	140
Years of Production	23
Annual Depreciation (US\$mm)	6.1

	2024	2025	2026	2027	2028	2029
Depreciation	0	6.1	6.1	6.1	6.1	6.1
<i>Production</i>	<i>0</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>
Total	140					

Unit of Production

Total Reserves	18
Total Produced	18
Total Capex	140
Depreciation per barrel	7.70

	2024	2025	2026	2027	2028	2029
Depreciation	0	35.3	17.6	11.5	8.6	7.7
Total	140					

2030	2031	2032	2033	2034	2035	2036	2037	2038
6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
1	1	1	1	1	1	1	1	1

2030	2031	2032	2033	2034	2035	2036	2037	2038
7.0	6.3	5.6	5.1	4.6	4.1	3.7	3.3	3.0

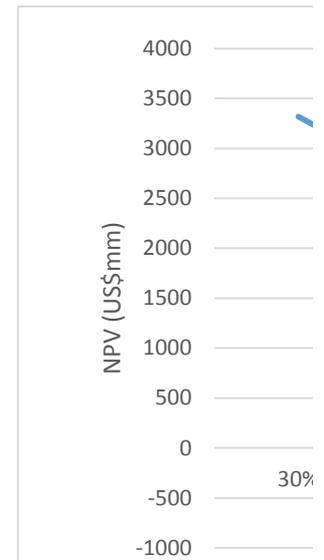
2039	2040	2041	2042	2043	2044	2045	2046	2047
6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
1	1	1	1	1	1	1	1	1

2039	2040	2041	2042	2043	2044	2045	2046	2047
2.7	2.4	2.2	2.0	1.8	1.6	1.4	1.3	1.2

Sensitivities

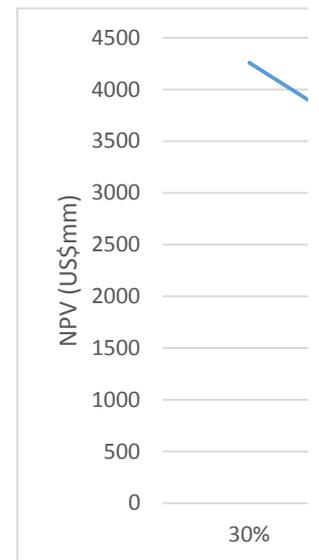
Oil Price

	NPV
30%	3318
15%	2392
0%	1465
-15%	539
-30%	-388



Production

	NPV
30%	4257
15%	3203
0%	2149
-15%	1094
-30%	40



Capex

	NPV
30%	1012
15%	1580
0%	2149
-15%	2717
-30%	3285

Opex

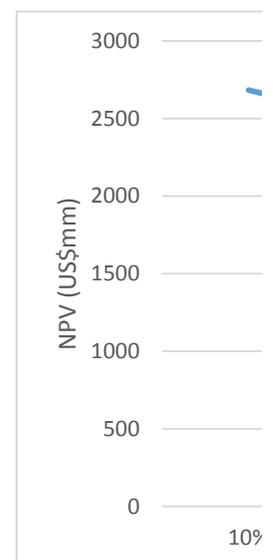
	NPV
30%	1735
15%	1942
0%	2149
-15%	2356
-30%	2563

Corporate Tax Rate

	NPV
10%	2682
15%	2415
20%	2149
25%	1882
30%	1615

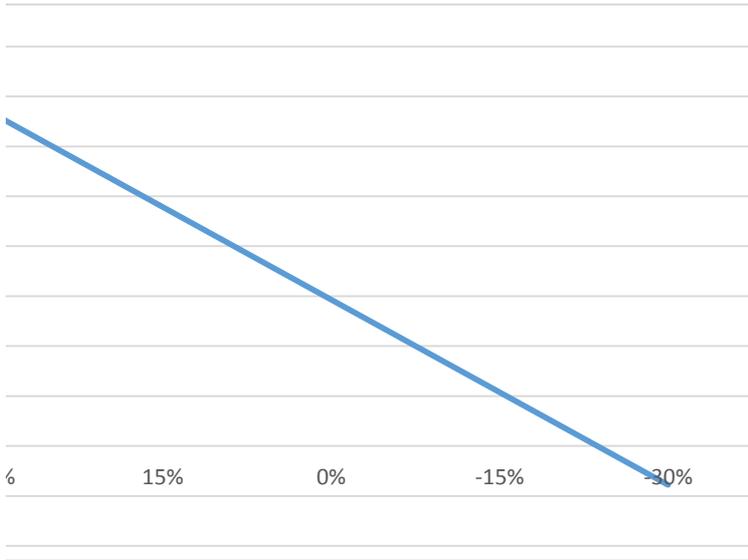
Discount Rate

	NPV
5.0%	5152
7.5%	2932
10.0%	2149
12.5%	496
15.0%	-154

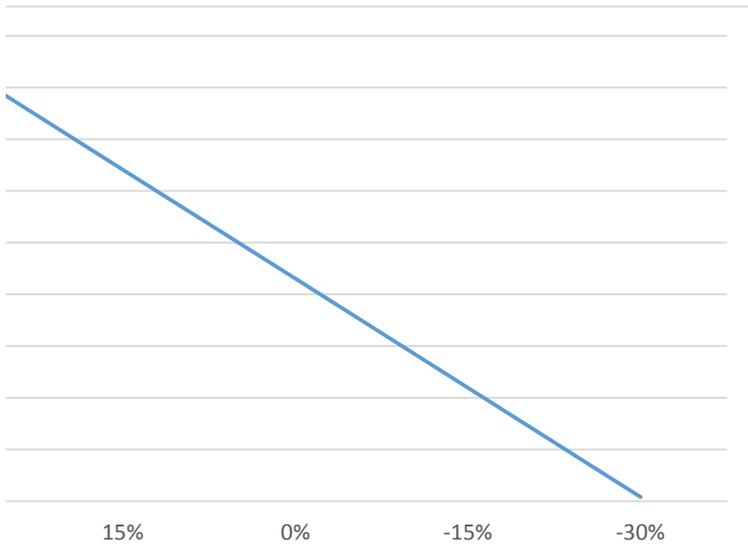


Summary

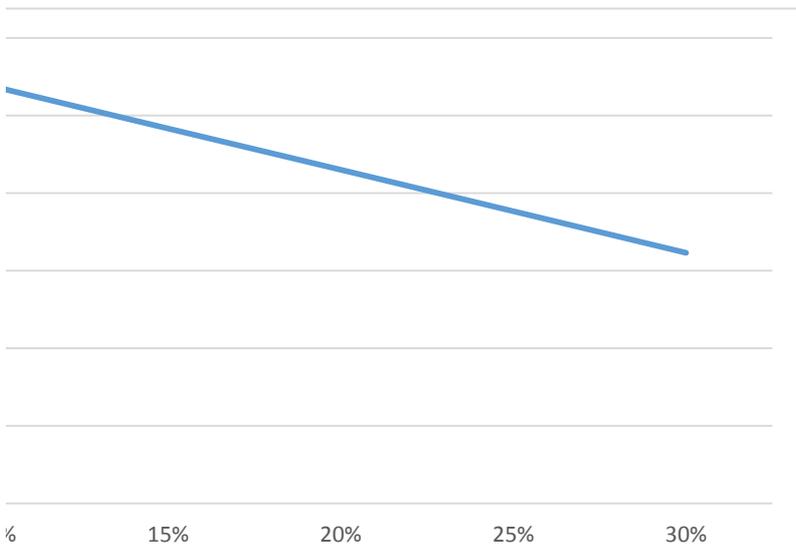
	Oil Price	Production Capex	Opex	Corp Tax	Disc. Rate	
Downside	-388	40	1012	1735	1615	-154
Low	539	1094	1580	1942	1882	496
Base	1465	2149	2149	2149	2149	2149
High	2392	3203	2717	2356	2415	2932
Upside	3318	4257	3285	2563	2682	5152



Oil Price

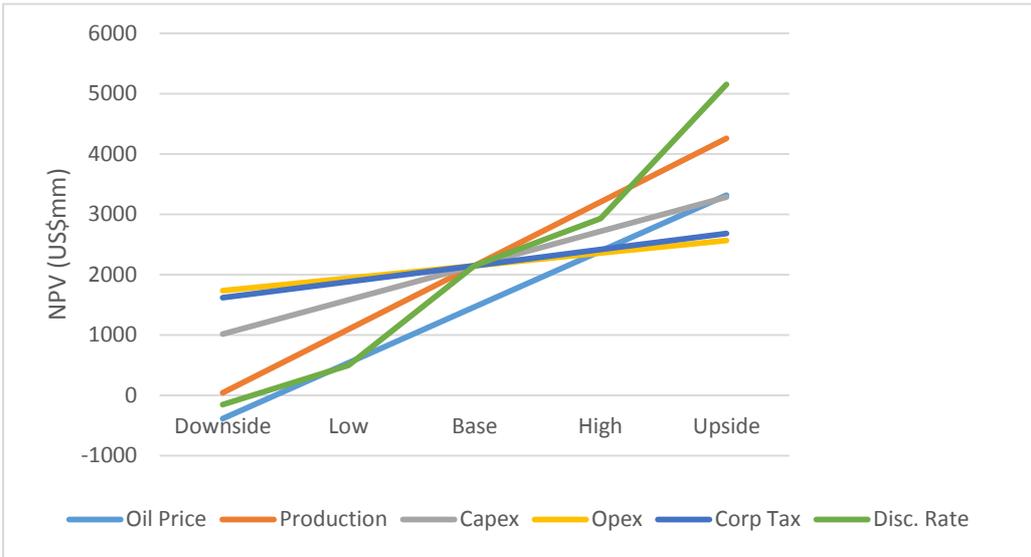


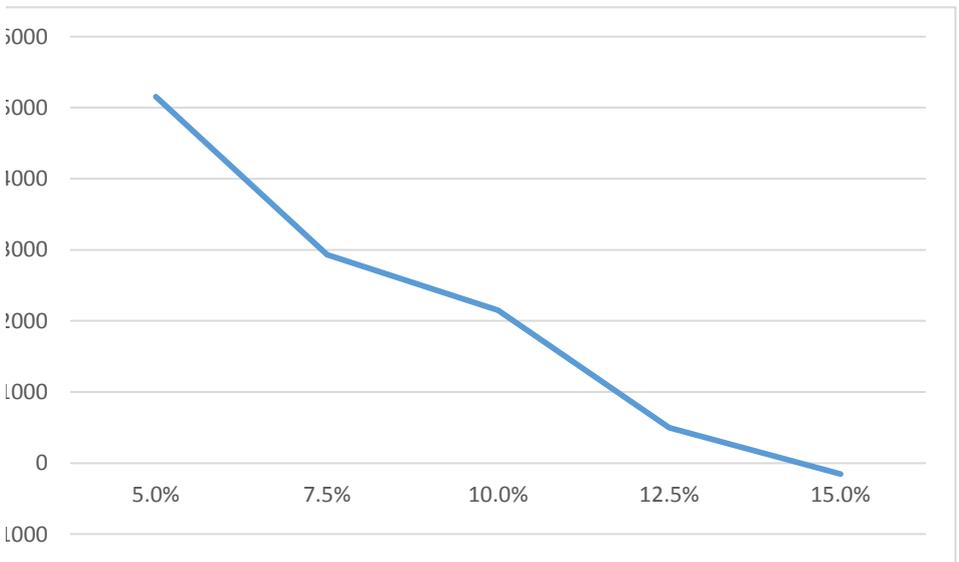
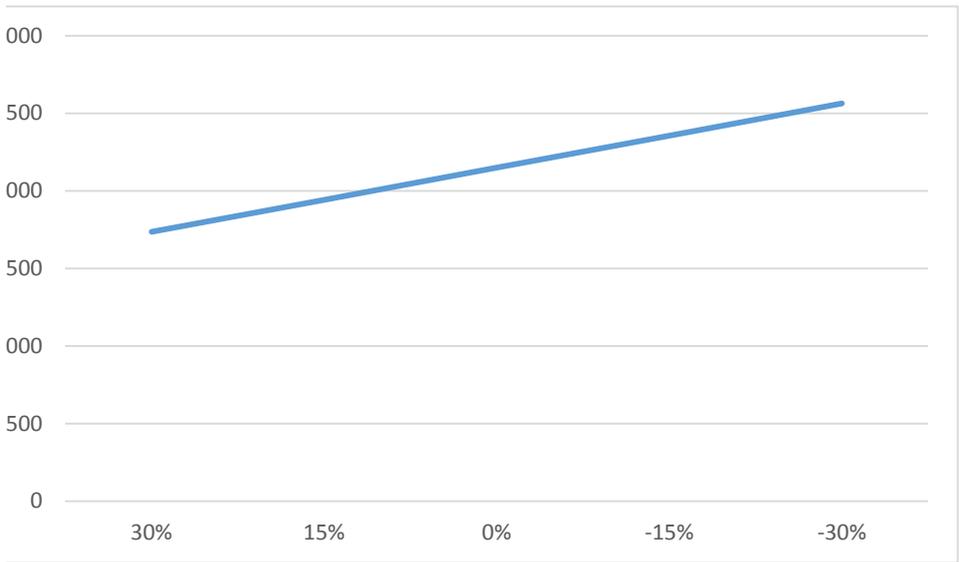
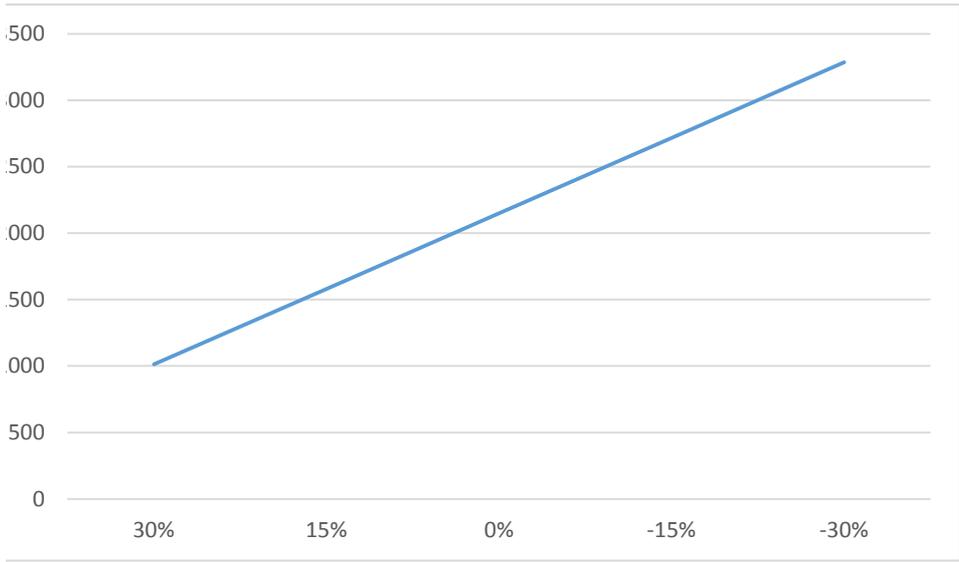
Production



Tax Rate







Exploration Well Analysis

Chance of Success	0%
Cost of Well	0 US\$mm
NPV of Success	129
Dry Hole	0.0
Successful Well	0
EMV	0

PSA Regime

	2017	2018	2019	2020	2021	2022
Company Revenues	0	94	47	31	23	21
Operating Costs	0	-22	-12	-8	-6	-6
Transport Costs	0	-16	-8	-5	-4	-4
Operating Taxes	0	0	0	0	0	0
EBITDA	0	56	27	17	13	11
Depreciation	0	-35.2987	-17.6493	-11.4721	-8.60405	-7.74364
EBIT	0	20	10	6	4	4
Tax on EBIT <i>Corporate Tax Rate</i>	0 20%	-4.06413	-1.93959	-1.196	-0.85077	-0.7472
Post tax cashflow	0	52	25	16	12	11
CAPEX	-80	-25	-1.6	-1.6	-1.6	-1.6
Free Cashflow (FCF)	-80	27	24	15	10	9
Cumulative FCF	-80	-53	-30	-15	-5	5
Discount Rate	10%					
Discount Factor	1.10	1.21	1.33	1.46	1.61	1.77
Discounted Cashflow (DCF)	-73	22	18	10	6	5
NPV (\$mm)	6					
IRR (%)	13%					

Revenue Calculation

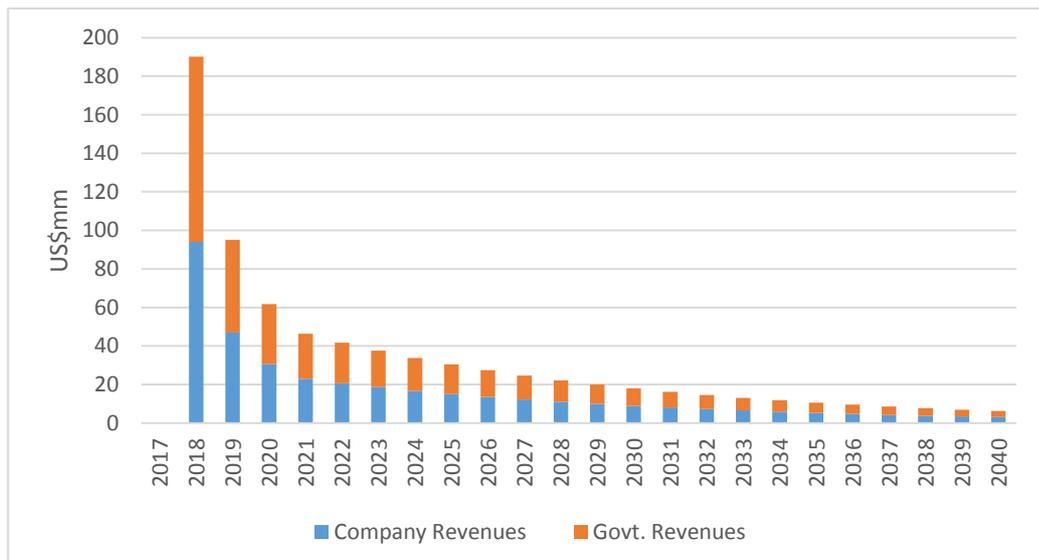
	Company	Govt				
Cost Oil	80%					
Profit Oil	50%	50%				
	2017	2018	2019	2020	2021	2022
Total Revenues	0	190	95	62	46	42
Govt Royalty	0	2	1	1	0	0
Taxable Revenues	1%	0	188	94	61	46
Cost Oil						
80% of Revenues	0	151	75	49	37	33

Accumulated Cost Oil		151	226	275	312	345
Annual Costs		-64	-21	-15	-12	-11
Accumulated Costs		-64	-85	-100	-111	-122
		87	141	175	200	223
Payback		1	1	1	1	1
Cost Oil to Company	0	0	0	0	0	0
Profit Oil	0	188	94	61	46	41
Profit Oil						
Company	0	94	47	31	23	21
Govt	0	94	47	31	23	21
Total Company Revenues	0	94	47	31	23	21
	2017	2018	2019	2020	2021	2022
Company Revenues	0	94	47	31	23	21
Govt. Revenues	0	96	48	31	23	21

2023	2024	2025	2026	2027	2028	2029	2030	2031
19	17	15	14	12	11	10	9	8
-5	-5	-4	-4	-4	-3	-3	-3	-3
-3	-3	-3	-2	-2	-2	-2	-2	-1
0	0	0	0	0	0	0	0	0
10	9	8	7	6	6	5	4	4
-7	-6	-6	-5	-5	-4	-4	-3	-3
3	3	2	2	2	2	1	1	1
-1	-1	0	0	0	0	0	0	0
10	9	8	7	6	5	5	4	4
-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6
8	7	6	5	4	4	3	3	2
13	19	26	31	35	39	42	45	47
1.95	2.14	2.36	2.59	2.85	3.14	3.45	3.80	4.18
4	3	3	2	2	1	1	1	1

2023	2024	2025	2026	2027	2028	2029	2030	2031
38	34	30	27	25	22	20	18	16
0	0	0	0	0	0	0	0	0
37	33	30	27	24	22	20	18	16
30	27	24	22	20	18	16	14	13

374	401	425	447	466	484	500	514	527
-10	-9	-9	-8	-7	-7	-6	-6	-6
-132	-141	-150	-158	-165	-172	-178	-184	-190
242	260	275	289	301	312	321	329	337
1	1	1	1	1	1	1	1	1
0	0	0	0	0	0	0	0	0
37	33	30	27	24	22	20	18	16
19	17	15	14	12	11	10	9	8
19	17	15	14	12	11	10	9	8
19	17	15	14	12	11	10	9	8
2023	2024	2025	2026	2027	2028	2029	2030	2031
19	17	15	14	12	11	10	9	8
19	17	15	14	12	11	10	9	8



2032	2033	2034	2035	2036	2037	2038	2039	2040
7	6	6	5	5	4	4	3	3
-3	-2	-2	-2	-2	-2	-2	-2	-2
-1	-1	-1	-1	-1	-1	-1	-1	-1
0	0	0	0	0	0	0	0	0
3	3	3	2	2	2	1	1	1
-3	-2	-2	-2	-2	-2	-1	-1	-1
1	1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
3	3	3	2	2	2	1	1	1
-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6
2	1	1	1	0	0	0	0	-1
48	50	51	51	51	51	51	51	50
4.59	5.05	5.56	6.12	6.73	7.40	8.14	8.95	9.85
0	0	0	0	0	0	0	0	0

2032	2033	2034	2035	2036	2037	2038	2039	2040
15	13	12	11	10	9	8	7	6
0	0	0	0	0	0	0	0	0
14	13	12	10	9	9	8	7	6
12	10	9	8	8	7	6	6	5

538	549	558	566	574	581	587	592	597
-5	-5	-5	-5	-4	-4	-4	-4	-4
-196	-201	-206	-210	-215	-219	-223	-227	-231
343	348	352	356	359	362	364	366	367
1	1	1	1	1	1	1	1	1
0	0	0	0	0	0	0	0	0
14	13	12	10	9	9	8	7	6
7	6	6	5	5	4	4	3	3
7	6	6	5	5	4	4	3	3
7	6	6	5	5	4	4	3	3
2032	2033	2034	2035	2036	2037	2038	2039	2040
7	6	6	5	5	4	4	3	3
7	7	6	5	5	4	4	4	3

Questions

Real and Nominal

	2018	2019	2020	2021	2022	2023
Q1	100	102.5	105.1	107.7	110.4	113.1

Q2

	2018	2019	2020	2021	2022	2023
Real	60	60	60	60	60	60
Nominal	60	61.20	62.42	63.67	64.95	66.24

Inflation 2%

Real +1%	60	60.60	61.21	61.82	62.44	63.06
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NPV and DCF

Q1

	2018	2019	2020	2021	2022	2023	2024	2025
US\$m	100	100	100	100	100	100	100	100
Discount factor	1.10	1.21	1.33	1.46	1.61	1.77	1.95	2.14
Discount Rate	10%							
DCF	91	83	75	68	62	56	51	47
NPV	614							
NPV Excel	614							

Q2

	2018	2019	2020	2021	2022	2023	2024	2025
Capex	-187.5	-187.5	-187.5	-187.5	-187.5			
Cashflow						100	150	200
Net Cashflow	-188	-188	-188	-188	-188	100	150	200
Discount Factor	1.1	1.21	1.33	1.46	1.61	1.77	1.95	2.14
Discount Rate	10%							
DCF	-170	-155	-141	-128	-116	56	77	93
NPV	381							
NPV Excel	381							
IRR	16%							
Cost Inflation	1.25							

2026	2027
100	100
2.36	2.59
42	39

2026	2027	2028	2029	2030	2031	2032	2033	2034
250	300	300	300	300	300	300	270	243
250	300	300	300	300	300	300	270	243
2.36	2.59	2.85	3.14	3.45	3.80	4.18	4.59	5.05
106	116	105	96	87	79	72	59	48

2035	2036	2037
219	197	177
219	197	177
5.56	6.12	6.73
39	32	26