

Time Value of Money

Money	At Jan 1						
	2020	2021	2022	2023	2024	2025	2026
US\$ in wallet	0	0.0	0.0	0.0	0.0	0.0	0.0
US\$ in bank	0	0	0	0	0	0	0
US\$ (deflated)	0	0	0	0	0	0	0
Inflation	0%	0%	0%	0%	0%	0%	0%
Interest Rate	0%	0%	0%	0%	0%	0%	0%
Multiplier	1						

Cost of chocolate

	At Jan 1						
	2020	2021	2022	2023	2024	2025	2026
US\$ flat	0	0	0	0	0	0	0
US\$ inflation	0	0.00	0.00	0.00	0.00	0.00	0.00
US\$							

Bars of chocolate

	At Jan 1						
	2020	2021	2022	2023	2024	2025	2026
US\$	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
US\$	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
US\$							

Real versus Nominal

Costs	At Dec 31						
	2018	2019	2020	2021	2022	2023	2024
US\$ Nominal	0	0	0.00	0.00	0.00	0.00	0.00
Inflation Rate	0%	0%	0%	0%	0%	0%	0%
Multiplier		1	1.00	1.00	1.00	1.00	1.00

Money available

100
Chocolate Bars

Money Invested

100.0

Chocolate Bars

#DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0! #DIV/0!

US\$ Real (2018)

Money Available
Cost of Choc Bar

2027	2028	2029	2030
0.0	0.0	0.0	0.0
0	0	0	0
0	0	0	0
0%	0%	0%	0%
0%	0%	0%	0%

2027	2028	2029	2030
0	0	0	0
0.00	0.00	0.00	0.00

2027	2028	2029	2030
#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

2025	2026	2027	2028
0.00	0.00	0.00	0.00
0%	0%	0%	0%
1.00	1.00	1.00	1.00

#DIV/0! #DIV/0! #DIV/0! #DIV/0!

Year 9	Year 10
0.00	0.00

Example Discounted Cashflow

Example 1

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	
Cashflow		0	0	0	0	0	0	0
Discount Factor								
Discounted Cashflow								
NPV								
Discount Rate		0%						
Excel Calculation								

Example 2

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Capital Cost							
Revenue							
Operating Cost							
Net Cashflow							
Discount Factor							
Discounted Cashflow							
NPV							
Discount Rate							
IRR							
Excel Calculation							

Year 8	Year 9	Year 10
0	0	0

Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16
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Year 17 Year 18 Year 19 Year 20

WACC Calculation

Risk Free Rate	1.75%	
Corporate Interest Rate	3.50%	
Equity market return	10.00%	
Company Beta	2.5	
Corporate Tax Rate	20%	
Debt:Equity Split	Debt 60%	Equity 40%
Cost of Debt	2.80%	
Cost of Equity	22.38%	
WACC	10.63%	

An Example Shale Gas Field

Sensitivities		1	0%
Oil or Gas Price	1	2	15%
Production	1	3	30%
Operating Costs & Transport	1	4	-15%
Capex	1	5	-30%

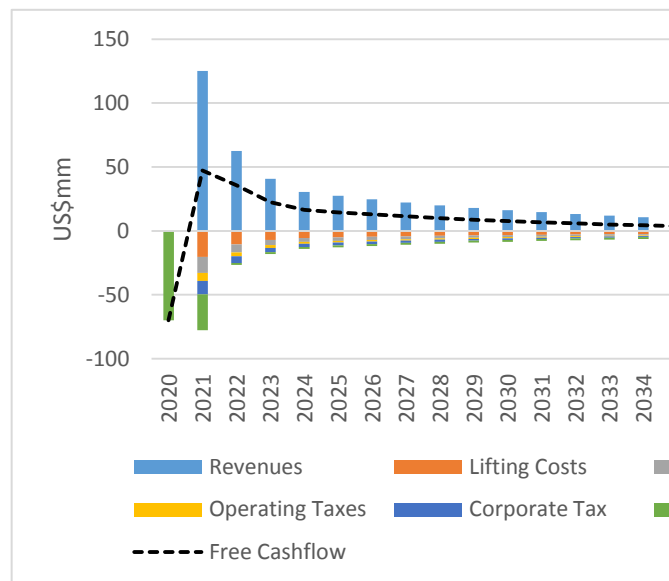
	2022	2023	2024	2025	2026	2027
Revenues	0	125	63	41	30	27
Operating Costs	0	-20	-11	-7	-6	-5
Transport Costs	0	-13	-6	-4	-3	-3
Operating Taxes	0	-6	-3	-2	-2	-1
EBITDA	0	86	43	27	20	18
Depreciation <i>Straight Line (0) or Unit of Prod (1)</i>	0 1	-33	-16	-11	-8	-7
EBIT	0	53	26	17	12	11
Tax on EBIT <i>Corporate Tax Rate</i>	0 20%	-11	-5	-3	-2	-2
Post tax cashflow	0	75	37	24	18	16
CAPEX	-70	-28	-2	-2	-2	-2
Free Cashflow (FCF)	-70	47	36	23	16	14
Cumulative FCF	-70	-23	13	36	52	66
Discount Rate	10.6%					
Discount Factor	1.11	1.22	1.35	1.50	1.66	1.83
Discounted Cashflow (DCF)	-63	39	26	15	10	8
NPV (\$mm)	64					
IRR (%)	41.6%					
Payback (years)	0	When does cumulative cashflow turn positive				
Excel Calculation	\$64					

Breakeven Gas Price \$5.00 *After Goal Seek Function in Data:What If*

Alternative NPV (terminal value)						
FCF for 10 years	-63	47	36	23	16	14

Terminal Value						
Implied FCF	-63	47	36	23	16	14
Implied DCF	-57	39	26	15	10	8
NPV	117					
Plus Cash	0					
Less Debt	0					
Total NPV	117					
IRR	51%					
<i>EBITDA Multiple</i>	<i>20</i>					

	2020	2021	2022	2023	2024	2025
Revenues	0	125	63	41	30	27
Lifting Costs	0	-20	-11	-7	-6	-5
Transport	0	-13	-6	-4	-3	-3
Operating Taxes	0	-6	-3	-2	-2	-1
Corporate Tax	0	-11	-5	-3	-2	-2
Capex	-70	-28	-2	-2	-2	-2
Free Cashflow	-70	47	36	23	16	14



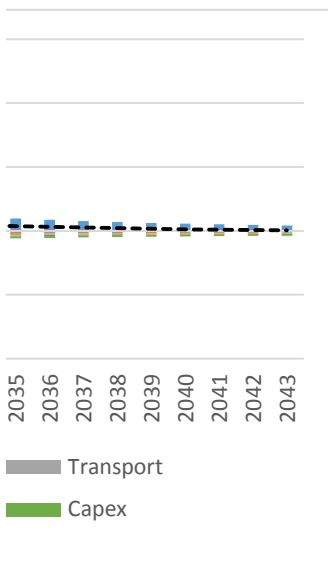
Base
High
Upside
Low
Downside

Results
NPV 64 US\$mm
IRR 42% %

2028	2029	2030	2031	2032	2033	2034	2035	2036
25	22	20	18	16	15	13	12	11
-5	-4	-4	-4	-3	-3	-3	-3	-2
-2	-2	-2	-2	-2	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-1	-1	-1
16	15	13	12	10	9	8	7	7
-6	-6	-5	-5	-4	-4	-3	-3	-3
10	9	8	7	6	5	5	4	4
-2	-2	-2	-1	-1	-1	-1	-1	-1
14	13	11	10	9	8	7	7	6
-2	-2	-2	-2	-2	-2	-2	-2	-2
13	11	10	9	8	7	6	5	4
79	91	101	109	117	124	129	134	139
2.03	2.24	2.48	2.75	3.04	3.36	3.72	4.11	4.55
6	5	4	3	3	2	2	1	1
13	11	10	9	8				

					185
13	11	10	9	8	185
6	5	4	3	3	55

2026	2027	2028	2029	2030	2031	2032	2033	2034
25	22	20	18	16	15	13	12	11
-5	-4	-4	-4	-3	-3	-3	-3	-2
-2	-2	-2	-2	-2	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-1	-1	-1
-2	-2	-2	-1	-1	-1	-1	-1	-1
-2	-2	-2	-2	-2	-2	-2	-2	-2
13	11	10	9	8	7	6	5	4



2037	2038	2039	2040	2041	2042	2043	2044	2045
10	9	8	7	6	6	5	5	4
-2	-2	-2	-2	-2	-2	-2	-2	-1
-1	-1	-1	-1	-1	-1	-1	0	0
0	0	0	0	0	0	0	0	0
6	5	5	4	4	3	3	2	2
-3	-2	-2	-2	-2	-1	-1	-1	-1
3	3	3	2	2	2	1	1	1
-1	-1	-1	0	0	0	0	0	0
5	5	4	4	3	3	2	2	2
-2	-2	-2	-2	-2	-2	-2	-2	-2
4	3	3	2	2	1	1	1	0
142	145	148	150	152	153	154	154	155
5.03	5.57	6.16	6.82	7.54	8.34	9.23	10.21	11.30
1	1	0	0	0	0	0	0	0

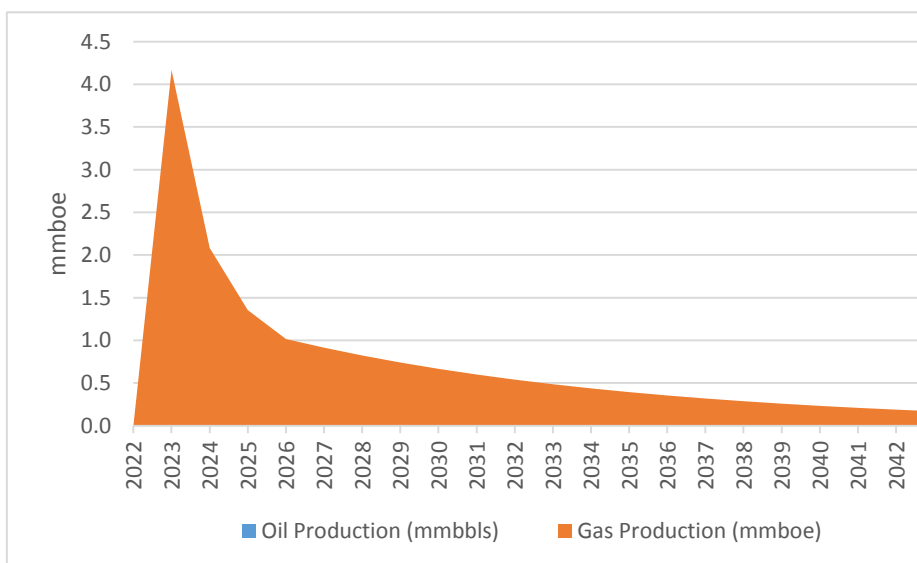
2035	2036	2037	2038	2039	2040	2041	2042	2043
10	9	8	7	6	6	5	5	4
-2	-2	-2	-2	-2	-2	-2	-2	-1
-1	-1	-1	-1	-1	-1	-1	0	0
0	0	0	0	0	0	0	0	0
-1	-1	-1	0	0	0	0	0	0
-2	-2	-2	-2	-2	-2	-2	-2	-2
4	3	3	2	2	1	1	1	0

Production

	Oil			Gas	
	mmbbls	kbpd		Bcf	mmcf/d
Resources	0			1000	
Recovery Factor	0%			10%	
Reserves	0			100	
Start date	5 years after first capex		Peak as % Reserves	5 years after first capex	
Peak Production (mmbbls)	0	0	0%	25	68
Time to Peak (yrs)	0			1	
Length of Peak (yrs)	0			1	
Decline rate (%) Yrs 2,3,4,5+	0%			50%	35%

	2022	2023	2024	2025	2026	2027
Oil production	0.00	0.00	0.00	0.00	0.00	0.00
Total oil produced to 2040	0.0					
Barrels per day		0	0	0	0	0
Gas Production	0.00	25.00	12.50	8.13	6.09	5.48
Total gas produced to 2040	99.2					

	2022	2023	2024	2025	2026	2027
Oil Production (mmbbls)	0.0	0.0	0.0	0.0	0.0	0.0
Gas Production (mmboe)	0.0	4.2	2.1	1.4	1.0	0.9
Total (mmboe)	0.0	4.2	2.1	1.4	1.0	0.9



Production Scenarios

Total Produced

Oil Production Scenarios

1	0.00
2	0.00
3	0.00
4	0.00
5	0.00

Gas Production Scenarios

1	99.15
2	114.03
3	128.90
4	84.28
5	69.41

Total

17

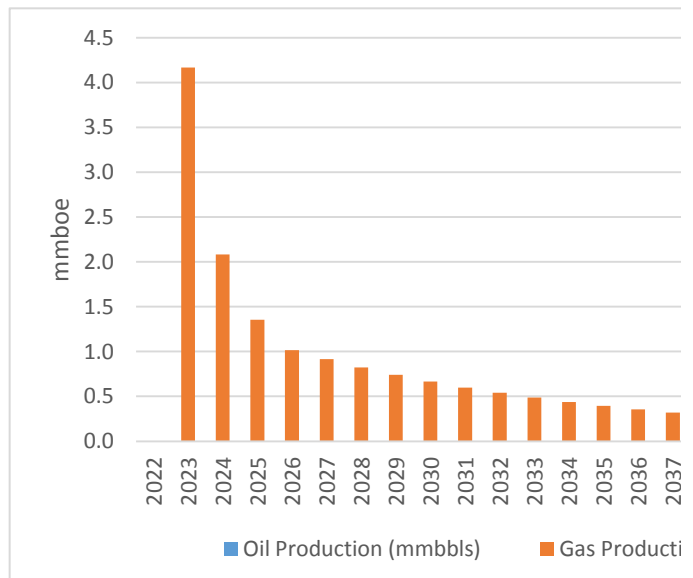
Peak as %
Reserves

25%

25% 10%

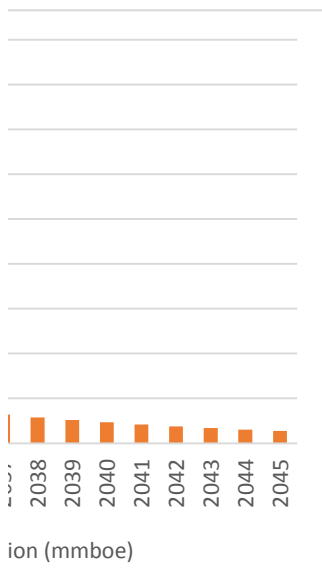
2028	2029	2030	2031	2032	2033	2034	2035	2036
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0	0	0	0
4.94	4.44	4.00	3.60	3.24	2.91	2.62	2.36	2.12

2028	2029	2030	2031	2032	2033	2034	2035	2036
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.8	0.7	0.7	0.6	0.5	0.5	0.4	0.4	0.4
0.8	0.7	0.7	0.6	0.5	0.5	0.4	0.4	0.4



2037	2038	2039	2040	2041	2042	2043	2044	2045
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0	0	0	0
1.91	1.72	1.55	1.39	1.25	1.13	1.02	0.91	0.82

2037	2038	2039	2040	2041	2042	2043	2044	2045
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1
0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1



Revenue Calculation

<i>Export %</i>	<i>Oil</i>	<i>0%</i>
	<i>Gas</i>	<i>0%</i>

	2022	2023	2024	2025	2026	2027
Oil Production	0.0	0.0	0.0	0.0	0.0	0.0
Domestic Sales	0.0	0.0	0.0	0.0	0.0	0.0
Export Sales	0.0	0.0	0.0	0.0	0.0	0.0
<i>Domestic Oil Price</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>Export Oil Price</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
Domestic Revenue	0	0	0	0	0	0
Export Revenue	0	0	0	0	0	0
Total Oil Revenue	0	0	0	0	0	0
Gas Production	0.0	25.0	12.5	8.1	6.1	5.5
<i>Domestic Gas Price</i>	<i>5.0</i>	<i>5.0</i>	<i>5.0</i>	<i>5.0</i>	<i>5.0</i>	<i>5.0</i>
<i>Export Gas Price</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>
Domestic Sales	0	25	13	8	6	5
Export Sales	0	0	0	0	0	0
Domestic Revenue	0	125	63	41	30	27
Export Revenue	0	0	0	0	0	0
Total Gas Revenue	0	125	63	41	30	27
Total Revenues	0	125	63	41	30	27
Oil Production Scenarios						
1	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0
Gas Production Scenarios						
1	0.0	25.0	12.5	8.1	6.1	5.5
2	0.0	28.8	14.4	9.3	7.0	6.3
3	0.0	32.5	16.3	10.6	7.9	7.1
4	0.0	21.3	10.6	6.9	5.2	4.7
5	0.0	17.5	8.8	5.7	4.3	3.8
Export Oil Price	64					
Base Case	0.0	0.0	0.0	0.0	0.0	0.0
Scenario 2	0.0	0.0	0.0	0.0	0.0	0.0
Scenario 3	0.0	0.0	0.0	0.0	0.0	0.0
Scenario 4	0.0	0.0	0.0	0.0	0.0	0.0
Scenario 5	0.0	0.0	0.0	0.0	0.0	0.0

Domestic Oil Price

Base Case	0.0	0.0	0.0	0.0	0.0	0.0
Scenario 2	0.0	0.0	0.0	0.0	0.0	0.0
Scenario 3	0.0	0.0	0.0	0.0	0.0	0.0
Scenario 4	0.0	0.0	0.0	0.0	0.0	0.0
Scenario 5	0.0	0.0	0.0	0.0	0.0	0.0

Domestic Gas Price

Base Case	5.0	5.0	5.0	5.0	5.0	5.0
Scenario 2	5.8	5.8	5.8	5.8	5.8	5.8
Scenario 3	6.5	6.5	6.5	6.5	6.5	6.5
Scenario 4	4.3	4.3	4.3	4.3	4.3	4.3
Scenario 5	3.5	3.5	3.5	3.5	3.5	3.5

Export Gas Price

Base Case	0.0	0.0	0.0	0.0	0.0	0.0
Scenario 2	0.0	0.0	0.0	0.0	0.0	0.0
Scenario 3	0.0	0.0	0.0	0.0	0.0	0.0
Scenario 4	0.0	0.0	0.0	0.0	0.0	0.0
Scenario 5	0.0	0.0	0.0	0.0	0.0	0.0

Slope 10%

0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5

0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

2045

0.0

0.0

0.0

0

0

0

0

0

0.8

5.0

0.0

1

0

4

0

4

4

0.0

0.0 15%

0.0 30%

0.0 -15%

0.0 -30%

0.8

0.9 15%

1.1 30%

0.7 -15%

0.6 -30%

0.0

0.0

0.0

0.0

0.0

0.0
0.0
0.0
0.0
0.0

5.0
5.8
6.5
4.3
3.5

0.0
0.0
0.0
0.0
0.0

Capital Expenditure

	Total mmboe	Oil mmbbls	Gas bcf	
Reserves	17	0	100	Bcf per well
Wells	13			8 12.5
Capex per well	10.0			
Capex per bbl	7.80		1.3	
Total capex	130			
% before first oil	75%	98		
% first oil to peak	0%	0		
Maintenance capex	25%	33		

	First Capex First oil					
	2022	2023	2024	2025	2026	2027
US\$mm	70	28	1.5	1.5	1.5	1.5
Before first oil	98					
Maintenance	33					
Total	131					

Sensitivities

2	81	32	2	2	2	2
3	91	36	2	2	2	2
4	60	24	1	1	1	1
5	49	20	1	1	1	1
15%						
30%						
-15%						
-30%						

Field Comparisons

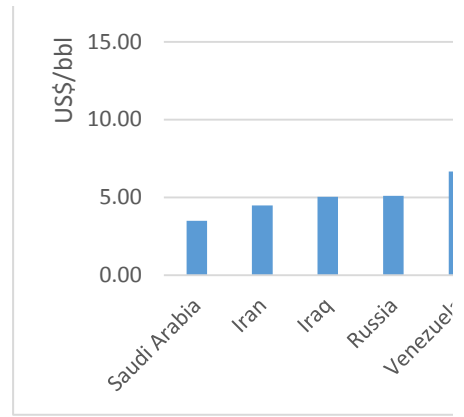
	Cost /bbl	Capex	Reserves	Peak Prod	Peak Prod
	US\$/bbl	US\$mm	mmbbls	kbpd	mmbbls
Kashagan (Kazakhstan)	10.46	136000	13000	1500	547.5
ACG (Azerbaijan)	4.00	20000	5000	620	226.3
Thunderhorse (Gulf of Mexico)	5.00	5000	1000	250	91.25
Novy Port (Russia onshore)	3.25	4500	1385	161	58.64
Ghawar (Saudi)	3.50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

US shale	\$7mm	per well
Ultimate recovery per well	8.0	bcf per well

Global Comparisons

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

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

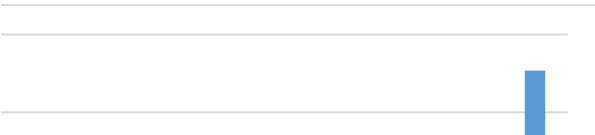
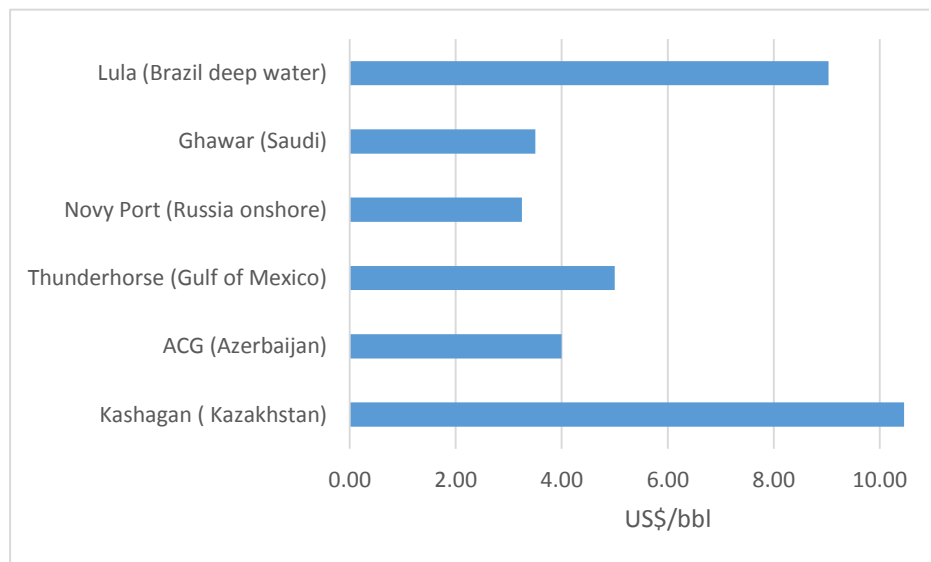


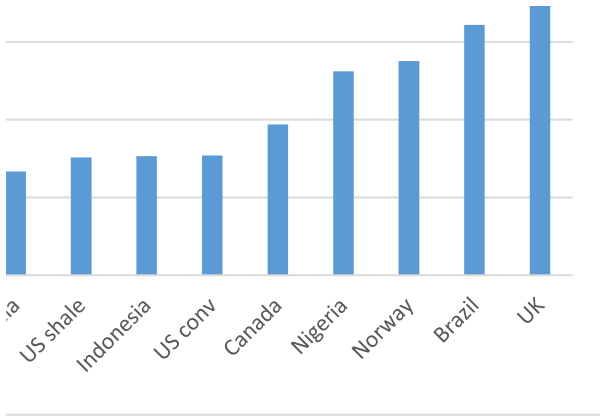
2028	2029	2030	2031	2032	2033	2034	2035	2036
1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5

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

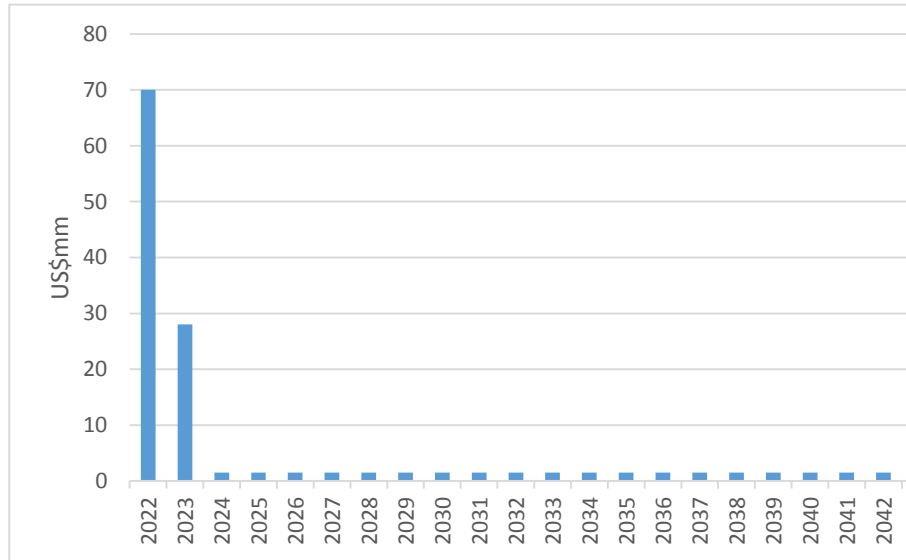
248
88
55
77
136
411





2037	2038	2039	2040	2041	2042	2043	2044	2045
1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5

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	97 US\$mm						
Variable	4.68 US\$/bbl		80%				
Fixed	19 US\$mm		20%				
Years production	23						
	2022	2023	2024	2025	2026	2027	2028
US\$mm	0.0	20.3	10.6	7.2	5.6	5.1	4.7
Total	97						

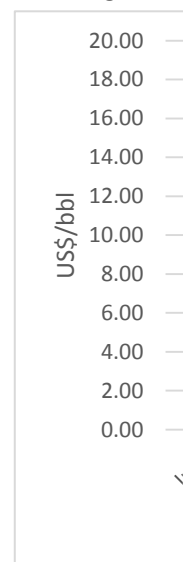
Base Case and Sensitivities

1	5.85
2	15%
3	30%
4	-15%
5	-30%

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	3.00 US\$/bbl
Gas	0.50 US\$/mcf

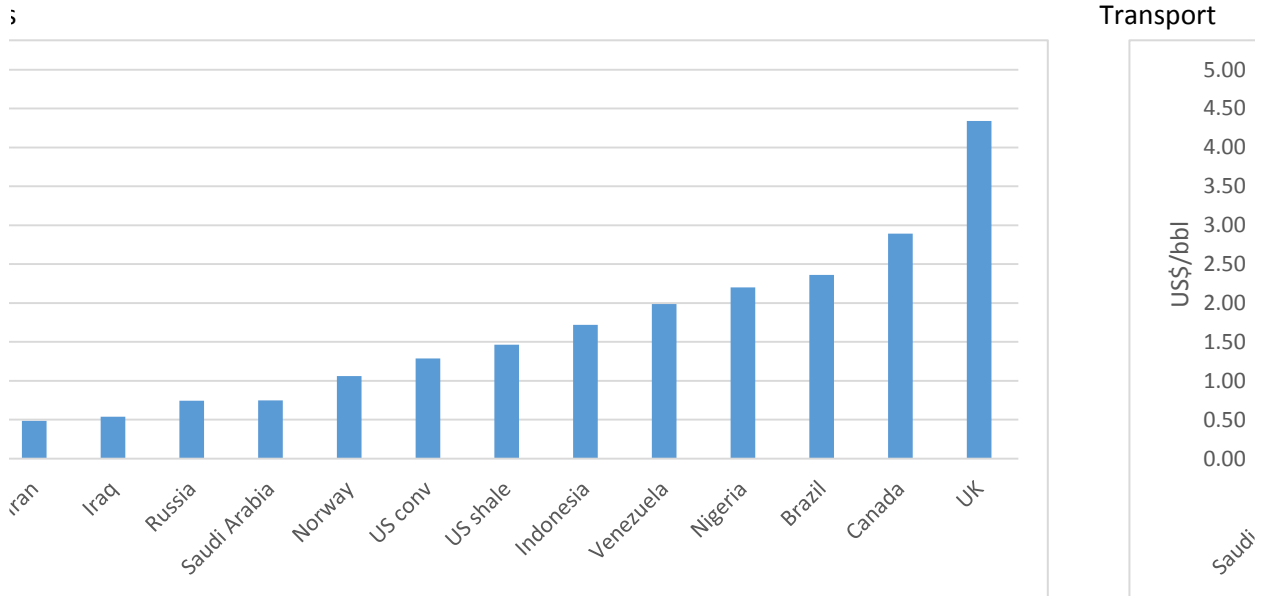
	2022	2023	2024	2025	2026	2027	2028
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Oil (US\$mm)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gas (US\$mm)	0.0	12.5	6.3	4.1	3.0	2.7	2.5
Total (US\$mm)	0.0	12.5	6.3	4.1	3.0	2.7	2.5

Base Case and Sensitivities

1	3.00
2	15%
3	30%
4	-15%
5	-30%

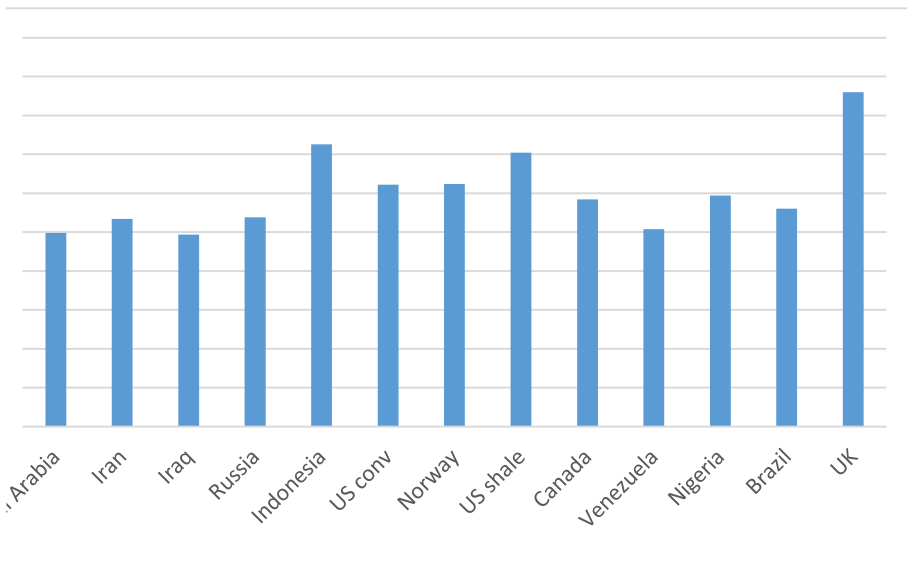
2029 **2030** **2031** **2032** **2033** **2034** **2035** **2036**
 4.3 4.0 3.6 3.4 3.1 2.9 2.7 2.5



2029 **2030** **2031** **2032** **2033** **2034** **2035** **2036**

0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.2	2.0	1.8	1.6	1.5	1.3	1.2	1.1
2.2	2.0	1.8	1.6	1.5	1.3	1.2	1.1

2037 2.3 2038 2.2 2039 2.0 2040 1.9 2041 1.8 2042 1.7 2043 1.6 2044 1.6



2037 2038 2039 2040 2041 2042 2043 2044

0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.0	0.9	0.8	0.7	0.6	0.6	0.5	0.5
1.0	0.9	0.8	0.7	0.6	0.6	0.5	0.5

2045

1.5

2045

0.0

0.4

0.4

Operating Taxes

Oil Tax

Export Tax Sliding of export barrels
Royalty 0.0% of oil revenues
Other taxes 0.0% of total revenues

Export Oil Price 0 0 0 0 0 0

	2022	2023	2024	2025	2026	2027
Export Tax	0.0	0.0	0.0	0.0	0.0	0.0
Royalty	0.0	0.0	0.0	0.0	0.0	0.0
Other	0.0	0.0	0.0	0.0	0.0	0.0
Total	0	0	0	0	0	0

Export Tax

Cut-off point 0 US\$/bbl
Tax 0% above cut-off point

Export Tax (\$/bbl) 0 0 0 0 0 0

Gas Tax

Export Tax 0% export revenues
Royalty 0.25 US\$/mcf

	2022	2023	2024	2025	2026	2027
Export Tax	0	0	0	0	0	0
Royalty	0	6.3	3.1	2.0	1.5	1.4
Total	0	6.3	3.1	2.0	1.5	1.4
Total Operating Taxes	0	6.3	3.1	2.0	1.5	1.4
Total US\$/boe		1.50	1.50	1.50	1.50	1.50

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	130
Years of Production	23
Annual Depreciation (US\$mm)	5.7

	2022	2023	2024	2025	2026	2027
Depreciation	0	5.7	5.7	5.7	5.7	5.7
<i>Production</i>	<i>0</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>
Total	130					

Unit of Production

Total Reserves	17
Total Produced	17
Total Capex	130
Depreciation per barrel	7.87

	2022	2023	2024	2025	2026	2027
Depreciation	0	32.8	16.4	10.7	8.0	7.2
Total	130					

2028	2029	2030	2031	2032	2033	2034	2035	2036
5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
1	1	1	1	1	1	1	1	1

2028	2029	2030	2031	2032	2033	2034	2035	2036
6.5	5.8	5.2	4.7	4.2	3.8	3.4	3.1	2.8

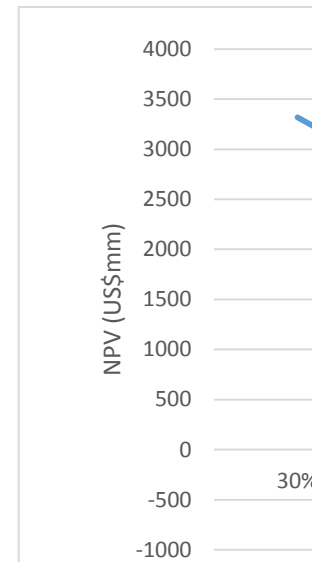
2037	2038	2039	2040	2041	2042	2043	2044	2045
5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
1	1	1	1	1	1	1	1	1

2037	2038	2039	2040	2041	2042	2043	2044	2045
2.5	2.3	2.0	1.8	1.6	1.5	1.3	1.2	1.1

Sensitivities

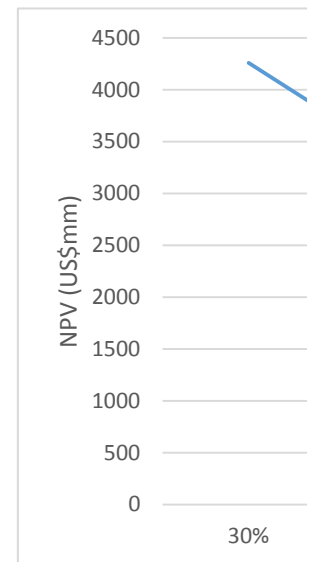
Oil Price

	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

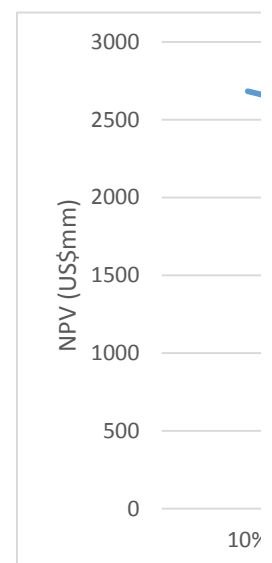
	NPV
30%	1735
15%	1942
0%	2149
-15%	2356
-30%	2563

Corporate Tax Rate

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

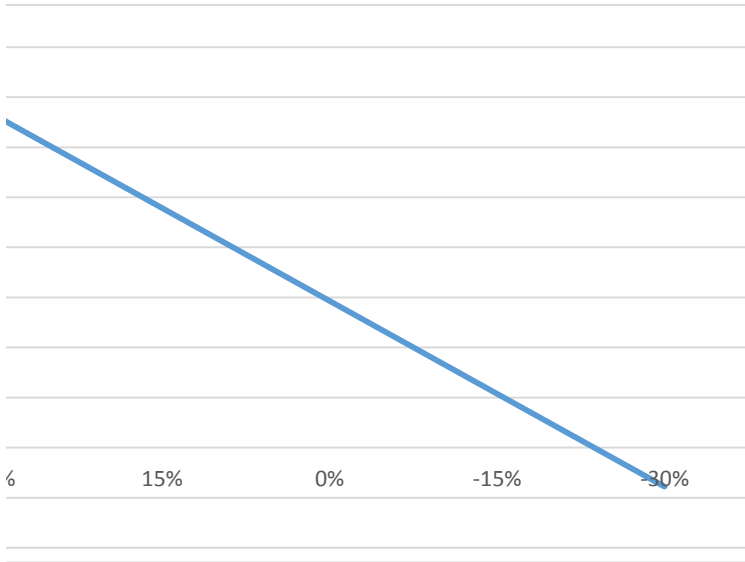
Discount Rate

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

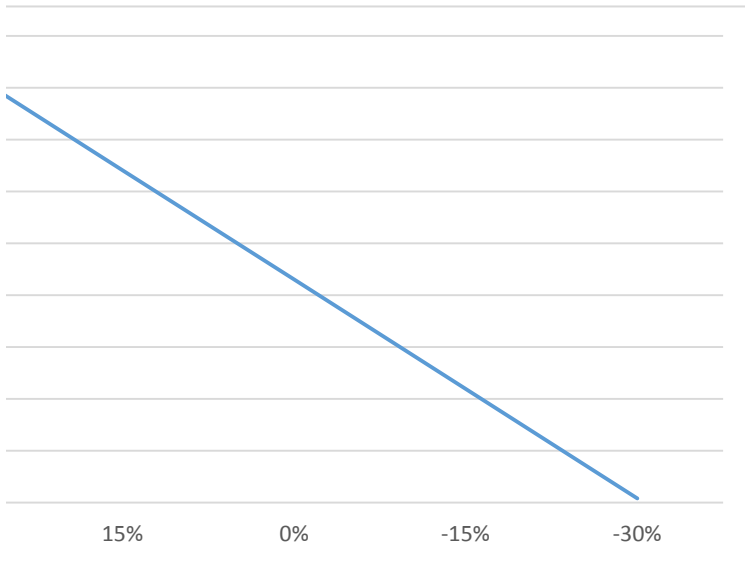


Summary

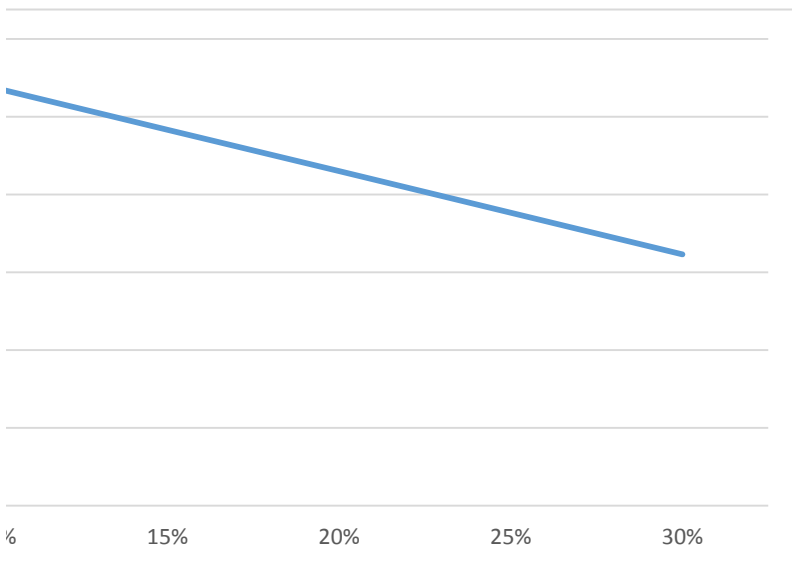
	Oil Price	Production Capex	Opex	Corp Tax	Disc. Rate	
Downside	-388	40	1012	1735	1615	-154
Low	539	1094	1580	1942	1882	496
Base	1465	2149	2149	2149	2149	2149
High	2392	3203	2717	2356	2415	2932
Upside	3318	4257	3285	2563	2682	5152



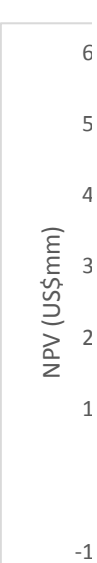
Oil Price

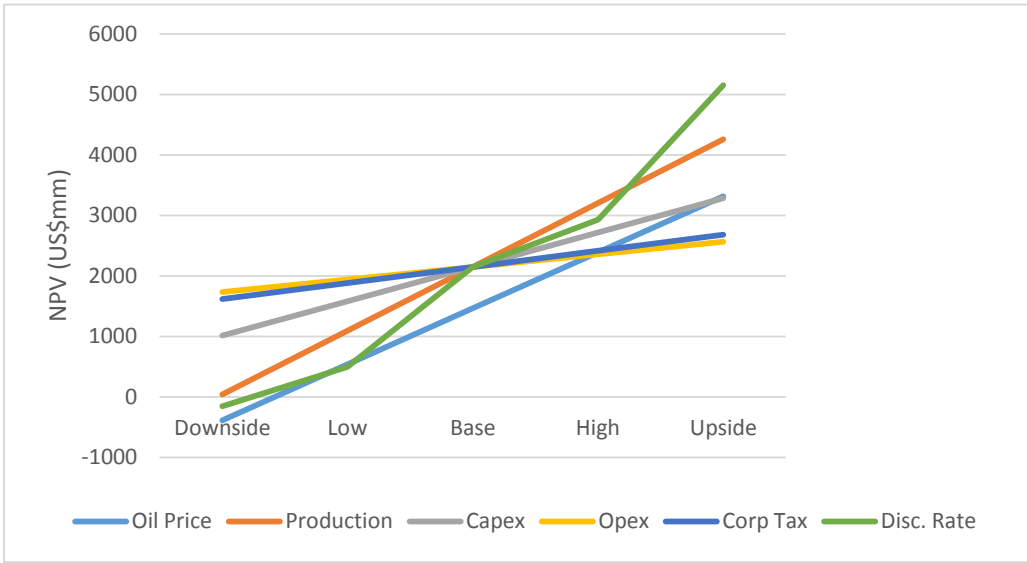


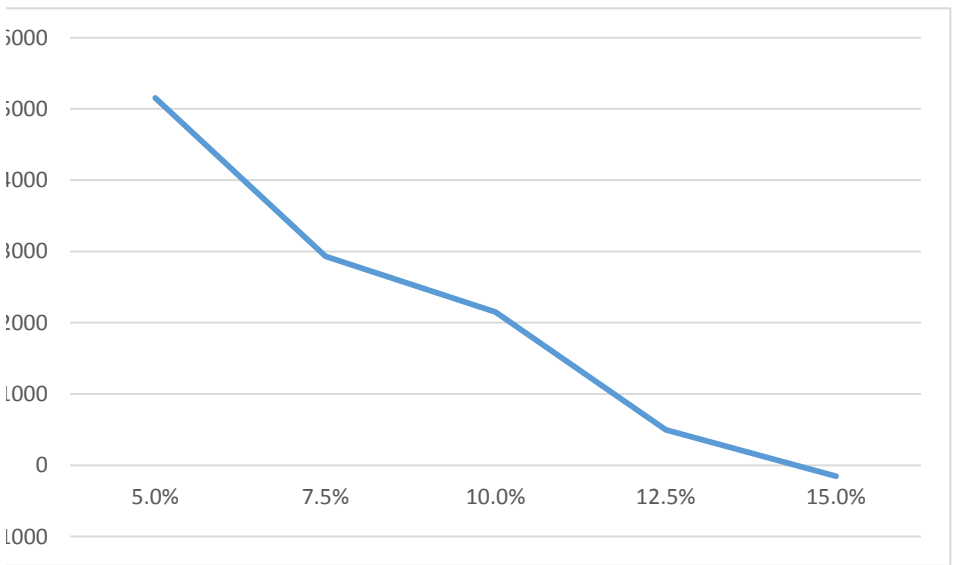
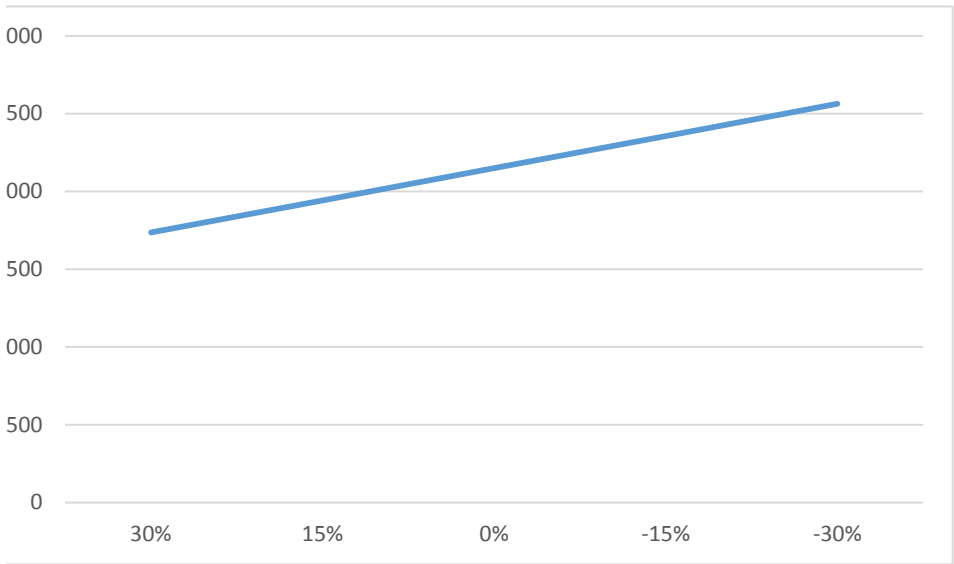
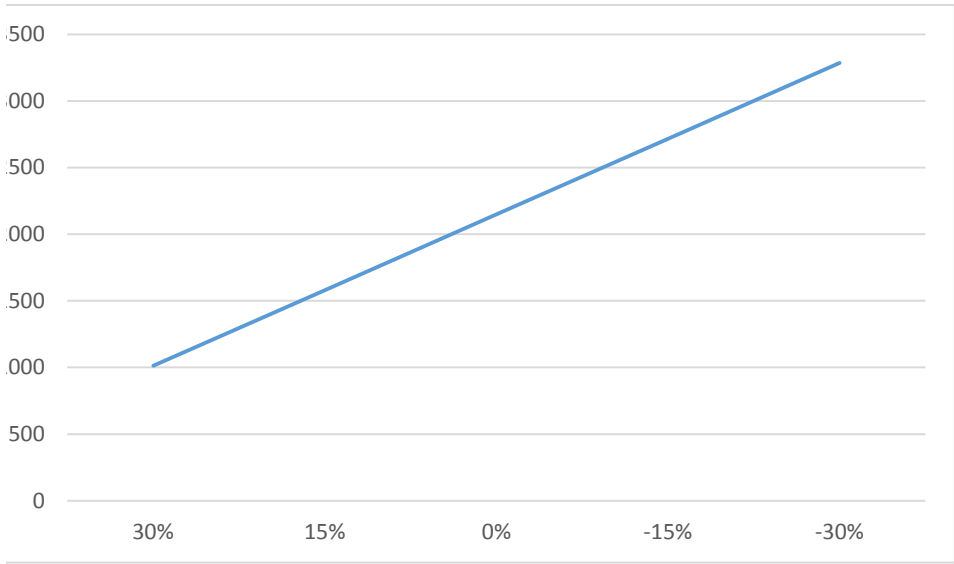
Production



Tax Rate







Exploration Well Analysis

Chance of Success	0%
Cost of Well	0 US\$mm
NPV of Success	64
Dry Hole	0.0
Successful Well	0
EMV	0

PSA Regime

	2017	2018	2019	2020	2021	2022
Company Revenues	0	62	31	20	15	14
Operating Costs	0	-20	-11	-7	-6	-5
Transport Costs	0	-13	-6	-4	-3	-3
Operating Taxes	0	0	0	0	0	0
EBITDA	0	29	14	9	6	6
Depreciation	0	-32.7773	-16.3887	-10.6526	-7.98947	-7.19052
EBIT	0	-4	-2	-2	-2	-1
Tax on EBIT <i>Corporate Tax Rate</i>	0 20%	0.748595	0.458363	0.356781	0.309619	0.29547
Post tax cashflow	0	30	15	9	7	6
CAPEX	-70	-28	-1.5	-1.5	-1.5	-1.5
Free Cashflow (FCF)	-70	2	13	8	5	5
Cumulative FCF	-70	-68	-55	-47	-42	-38
Discount Rate	10%					
Discount Factor	1.10	1.21	1.33	1.46	1.61	1.77
Discounted Cashflow (DCF)	-64	1	10	5	3	3
NPV (\$mm)	-35					
IRR (%)	#NUM!					

Revenue Calculation

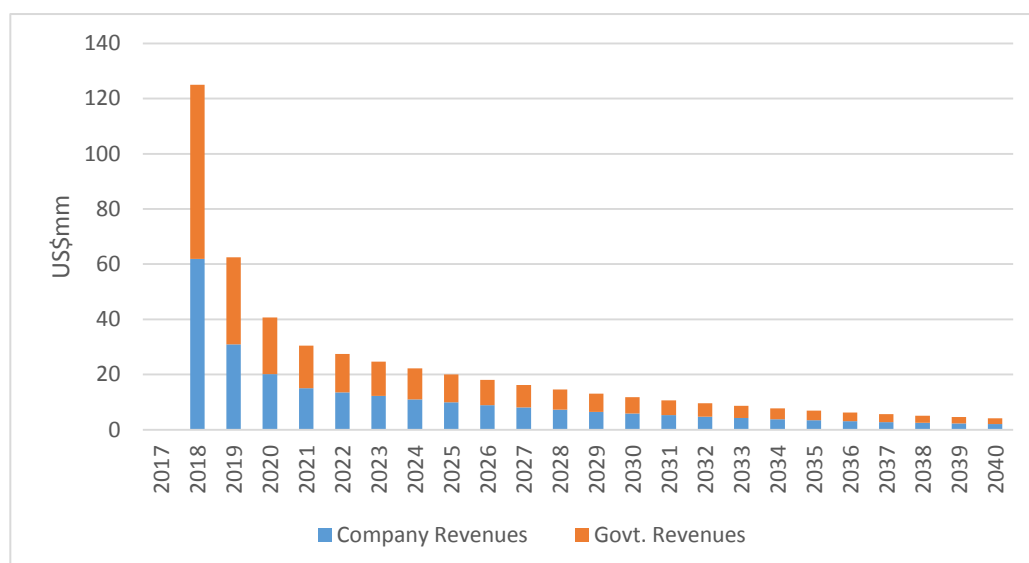
	Company	Govt				
Cost Oil	80%					
Profit Oil	50%	50%				
	2017	2018	2019	2020	2021	2022
Total Revenues	0	125	63	41	30	27
Govt Royalty	0	1	1	0	0	0
Taxable Revenues	0	124	62	40	30	27
	1%					
Cost Oil						
80% of Revenues	0	99	50	32	24	22

Accumulated Cost Oil		99	149	181	205	227
Annual Costs		-61	-18	-13	-10	-9
Accumulated Costs		-61	-79	-92	-102	-111
		38	69	89	103	115
Payback		1	1	1	1	1
Cost Oil to Company	0	0	0	0	0	0
Profit Oil	0	124	62	40	30	27
Profit Oil						
Company	0	62	31	20	15	14
Govt	0	62	31	20	15	14
Total Company Revenues	0	62	31	20	15	14
	2017	2018	2019	2020	2021	2022
Company Revenues	0	62	31	20	15	14
Govt. Revenues	0	63	32	21	15	14

2023	2024	2025	2026	2027	2028	2029	2030	2031
12	11	10	9	8	7	6	6	5
-5	-4	-4	-4	-3	-3	-3	-3	-2
-2	-2	-2	-2	-2	-1	-1	-1	-1
0	0	0	0	0	0	0	0	0
5	4	4	3	3	3	2	2	2
-6	-6	-5	-5	-4	-4	-3	-3	-3
-1	-1	-1	-1	-1	-1	-1	-1	-1
0	0	0	0	0	0	0	0	0
5	5	4	4	3	3	3	2	2
-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
4	3	3	2	2	1	1	1	0
-34	-31	-28	-26	-24	-23	-22	-21	-20
1.95	2.14	2.36	2.59	2.85	3.14	3.45	3.80	4.18
2	2	1	1	1	0	0	0	0

2023	2024	2025	2026	2027	2028	2029	2030	2031
25	22	20	18	16	15	13	12	11
0	0	0	0	0	0	0	0	0
24	22	20	18	16	14	13	12	11
20	18	16	14	13	12	10	9	8

246	264	279	294	307	318	328	338	346
-9	-8	-7	-7	-6	-6	-6	-5	-5
-120	-128	-136	-143	-149	-155	-161	-166	-171
126	136	144	151	158	163	168	172	175
1	1	1	1	1	1	1	1	1
0	0	0	0	0	0	0	0	0
24	22	20	18	16	14	13	12	11
12	11	10	9	8	7	6	6	5
12	11	10	9	8	7	6	6	5
12	11	10	9	8	7	6	6	5
2023	2024	2025	2026	2027	2028	2029	2030	2031
12	11	10	9	8	7	6	6	5
12	11	10	9	8	7	7	6	5



2032	2033	2034	2035	2036	2037	2038	2039	2040
5	4	4	3	3	3	3	2	2
-2	-2	-2	-2	-2	-2	-2	-2	-1
-1	-1	-1	-1	-1	-1	-1	0	0
0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	0	0	0
-3	-2	-2	-2	-2	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-1	-1	-1
0	0	0	0	0	0	0	0	0
2	1	1	1	1	1	1	0	0
-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
0	0	0	0	-1	-1	-1	-1	-1
-20	-20	-21	-21	-22	-23	-23	-25	-26
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
10	9	8	7	6	6	5	5	4
0	0	0	0	0	0	0	0	0
9	9	8	7	6	6	5	5	4
8	7	6	6	5	4	4	4	3

354	361	367	372	377	382	386	389	393
-5	-5	-4	-4	-4	-4	-4	-4	-3
-176	-181	-185	-189	-193	-197	-200	-204	-207
178	180	182	183	184	185	185	186	185
1	1	1	1	1	1	1	1	1
0	0	0	0	0	0	0	0	0
9	9	8	7	6	6	5	5	4
5	4	4	3	3	3	3	2	2
5	4	4	3	3	3	3	2	2
5	4	4	3	3	3	3	2	2
2032	2033	2034	2035	2036	2037	2038	2039	2040
5	4	4	3	3	3	3	2	2
5	4	4	4	3	3	3	2	2

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