

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

	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

	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
--------	--------	---------	---------	---------	---------	---------	---------	---------

Year 17 Year 18 Year 19 Year 20

WACC Calculation

Risk Free Rate	1.75%	
Corporate Interest Rate	7.00%	
Equity market return	10.00%	
Company Beta	4	
Corporate Tax Rate	25%	
Debt:Equity Split	Debt 35%	Equity 65%
Cost of Debt	5.25%	
Cost of Equity	34.75%	
WACC	24.43%	

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%

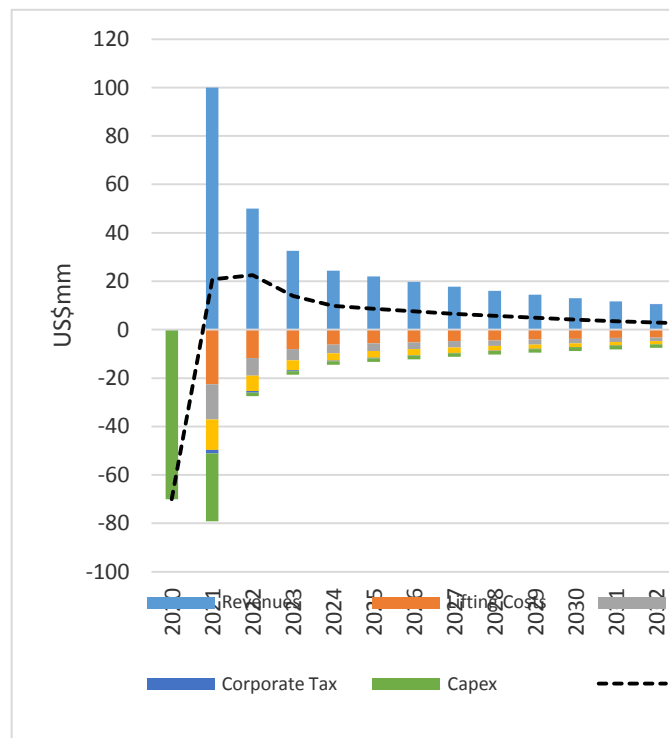
	2022	2023	2024	2025	2026	2027
Revenues	0	100	50	33	24	22
Operating Costs	0	-23	-12	-8	-6	-6
Transport Costs	0	-15	-7	-5	-4	-3
Operating Taxes	0	-13	-6	-4	-3	-3
EBITDA	0	50	25	16	12	10
Depreciation <i>Straight Line (0) or Unit of Prod (1)</i>	0 1	-43	-21	-14	-10	-9
EBIT	0	7	3	2	1	1
Tax on EBIT <i>Corporate Tax Rate</i>	0 20%	-1	-1	0	0	0
Post tax cashflow	0	49	24	15	11	10
CAPEX	-70	-28	-2	-2	-2	-2
Free Cashflow (FCF)	-70	21	23	14	10	9
Cumulative FCF	-70	-49	-27	-13	-3	6
Discount Rate	24.4%					
Discount Factor	1.24	1.55	1.93	2.40	2.98	3.71
Discounted Cashflow (DCF)	-56	13	12	6	3	2
NPV (\$mm)	-14					
IRR (%)	13.3%					
Payback (years)	0	When does cumulative cashflow turn positive				
Excel Calculation	-\$14					

Breakeven Gas Price \$4.00 *After Goal Seek Function in Data:What If*

Alternative NPV (terminal value)						
FCF for 10 years	-56	21	23	14	10	9

Terminal Value						
Implied FCF	-56	21	23	14	10	9
Implied DCF	-45	13	12	6	3	2
NPV	3					
Plus Cash	0					
Less Debt	0					
Total NPV	3					
IRR	27%					
<i>EBITDA Multiple</i>	20					

	2020	2021	2022	2023	2024	2025
Revenues	0	100	50	33	24	22
Lifting Costs	0	-23	-12	-8	-6	-6
Transport	0	-15	-7	-5	-4	-3
Operating Taxes	0	-13	-6	-4	-3	-3
Corporate Tax	0	-1	-1	0	0	0
Capex	-70	-28	-2	-2	-2	-2
Free Cashflow	-70	21	23	14	10	9



Base
High
Upside
Low
Downside

Results
NPV -14 US\$mm
IRR 13% %

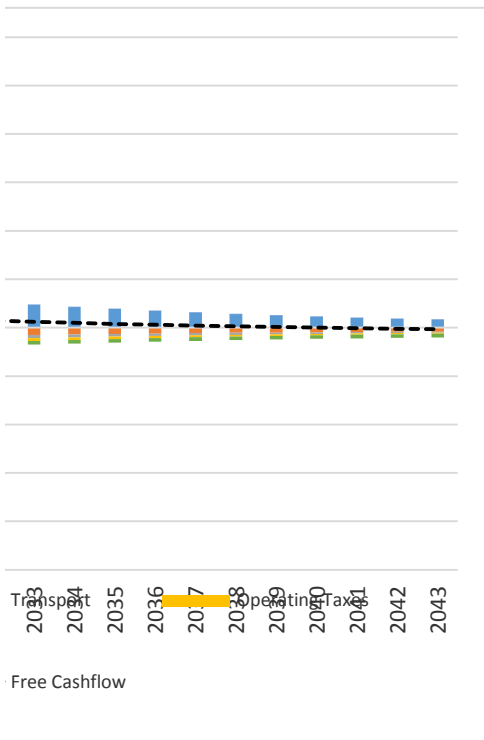
2028	2029	2030	2031	2032	2033	2034	2035	2036
20	18	16	14	13	12	10	9	8
-5	-5	-4	-4	-4	-3	-3	-3	-3
-3	-3	-2	-2	-2	-2	-2	-1	-1
-2	-2	-2	-2	-2	-1	-1	-1	-1
9	8	7	6	6	5	4	4	3
-8	-8	-7	-6	-6	-5	-4	-4	-4
1	1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
9	8	7	6	6	5	4	4	3
-2	-2	-2	-2	-2	-2	-2	-2	-2
8	7	6	5	4	4	3	2	2
13	20	25	30	35	38	41	43	45
4.62	5.74	7.15	8.89	11.07	13.77	17.13	21.32	26.52
2	1	1	1	0	0	0	0	0

Gas Price 4

8 7 6 5 4

					101
8	7	6	5	4	101
2	1	1	1	0	7

2026	2027	2028	2029	2030	2031	2032	2033	2034
20	18	16	14	13	12	10	9	8
-5	-5	-4	-4	-4	-3	-3	-3	-3
-3	-3	-2	-2	-2	-2	-2	-1	-1
-2	-2	-2	-2	-2	-1	-1	-1	-1
0	0	0	0	0	0	0	0	0
-2	-2	-2	-2	-2	-2	-2	-2	-2
8	7	6	5	4	4	3	2	2



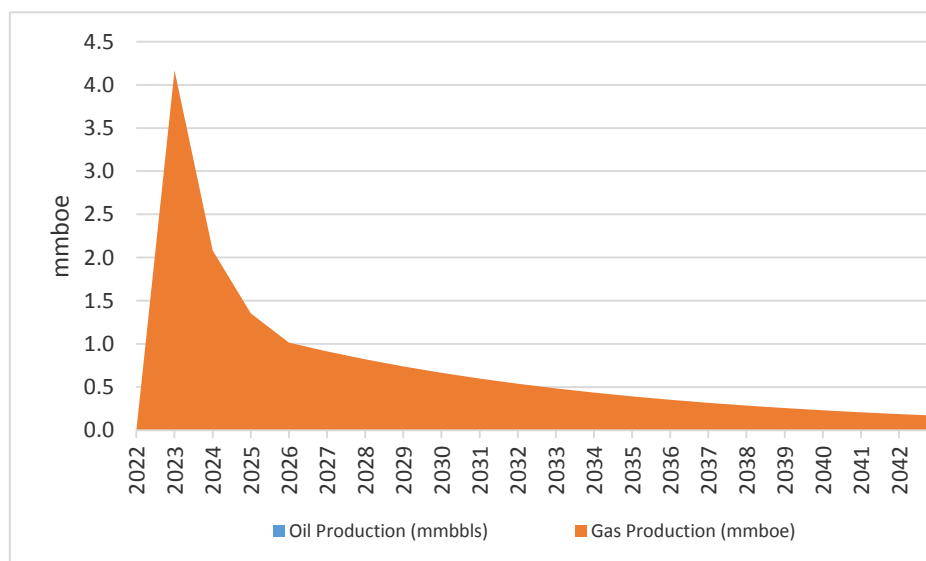
2035	2036	2037	2038	2039	2040	2041	2042	2043
8	7	6	6	5	5	4	4	3
-3	-2	-2	-2	-2	-2	-2	-2	-2
-1	-1	-1	-1	-1	-1	-1	-1	0
-1	-1	-1	-1	-1	-1	-1	0	0
0	0	0	0	0	0	0	0	0
-2	-2	-2	-2	-2	-2	-2	-2	-2
2	1	1	1	0	0	0	0	-1

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
Time to Peak (yrs)	0			1
Length of Peak (yrs)	0			1
Decline rate (%) Yrs 2,3,4,5+	0%			50%
				68
				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

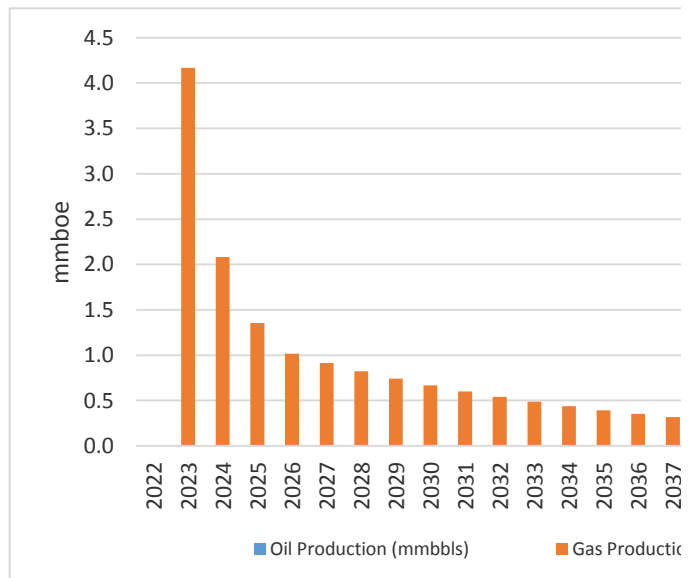
Peak as %
Reserves

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>4.0</i>	<i>4.0</i>	<i>4.0</i>	<i>4.0</i>	<i>4.0</i>	<i>4.0</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	100	50	33	24	22
Export Revenue	0	0	0	0	0	0
Total Gas Revenue	0	100	50	33	24	22
Total Revenues	0	100	50	33	24	22
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	-14					
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	4.0	4.0	4.0	4.0	4.0	4.0
Scenario 2	4.6	4.6	4.6	4.6	4.6	4.6
Scenario 3	5.2	5.2	5.2	5.2	5.2	5.2
Scenario 4	3.4	3.4	3.4	3.4	3.4	3.4
Scenario 5	2.8	2.8	2.8	2.8	2.8	2.8

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

4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8

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

4.0

0.0

1

0

3

0

3

3

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

4.0
4.6
5.2
3.4
2.8

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
Wells	17			6 16.7
Capex per well	10.0			
Capex per bbl	10.20		1.7	
Total capex	170			
% up to first prod	75%	128		
% first oil to peak	0%	0		
Maintenance capex	25%	43		

	First Capex		First gas				
	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

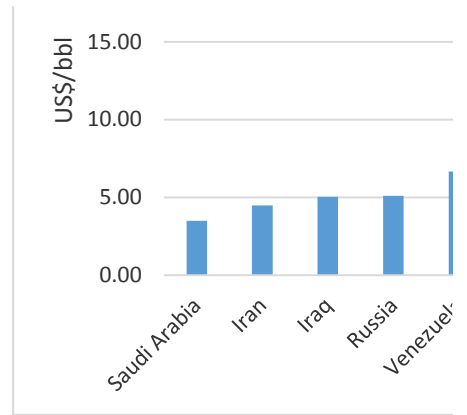
	Cost /bbl	Capex	Reserves	Peak Prod	Peak Prod
	US\$/bbl	US\$mm	mmbbls	kbpd	mmbbls
Kashagan (Kazakhstan)	10.46	136000	13000	1500	547.5
ACG (Azerbaijan)	4.00	20000	5000	620	226.3
Thunderhorse (Gulf of Mexico)	5.00	5000	1000	250	91.25
Novy Port (Russia onshore)	3.25	4500	1385	161	58.64
Ghawar (Saudi)	3.50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

US shale	\$10mm	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

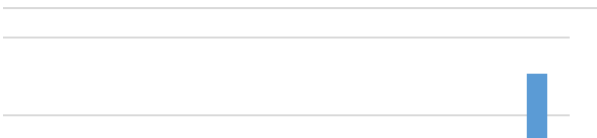
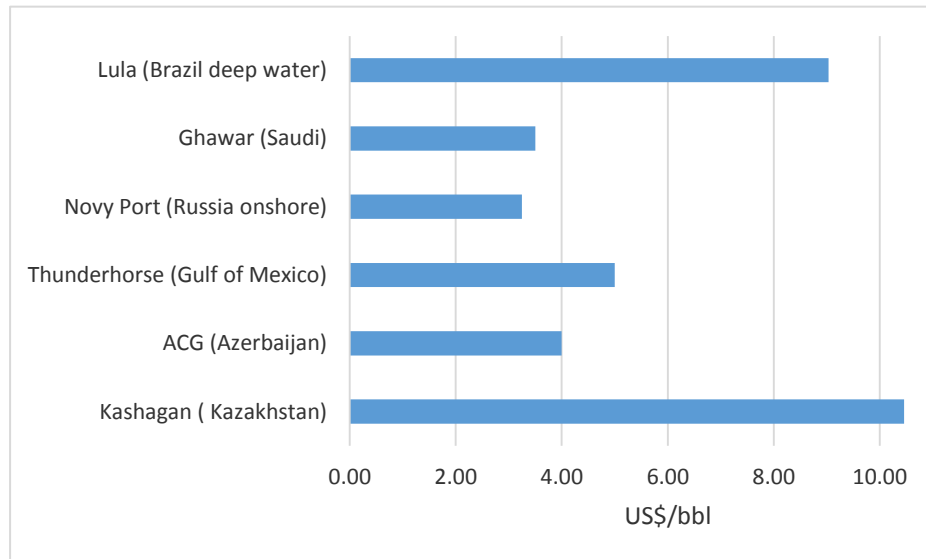


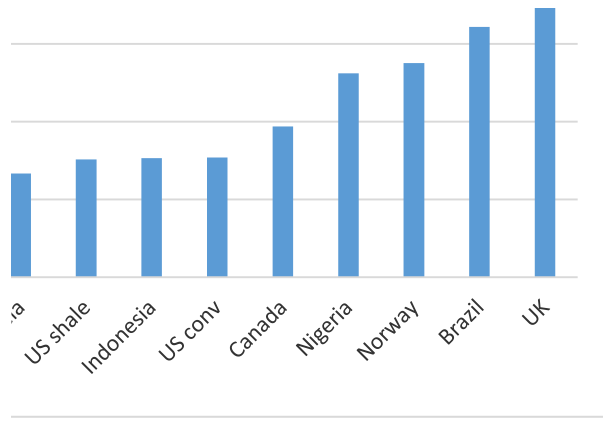
2028	2029	2030	2031	2032	2033	2034	2035	2036
1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5

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

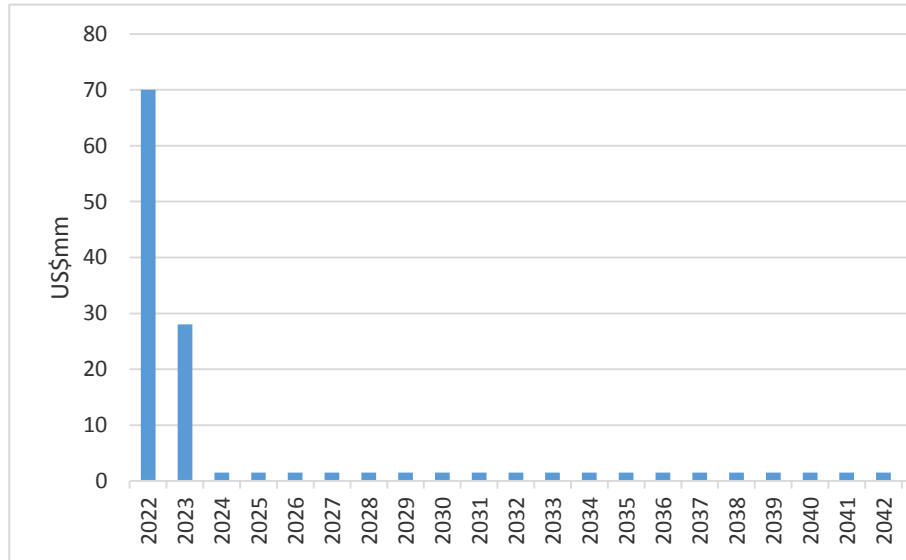
248
88
55
77
136
411





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	6.50 US\$/boe	real					
Total for model	107 US\$mm						
Variable	5.20 US\$/bbl		80%				
Fixed	21 US\$mm		20%				
Years production	23						
	2022	2023	2024	2025	2026	2027	2028
US\$mm	0.0	22.6	11.8	8.0	6.2	5.7	5.2
Total	107						

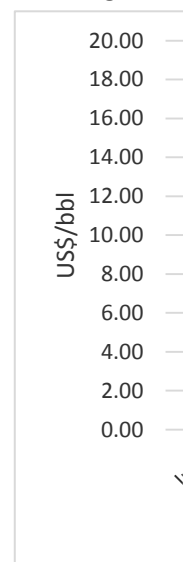
Base Case and Sensitivities

1	6.50
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	3.50 US\$/bbl
Gas	0.58 US\$/mcf

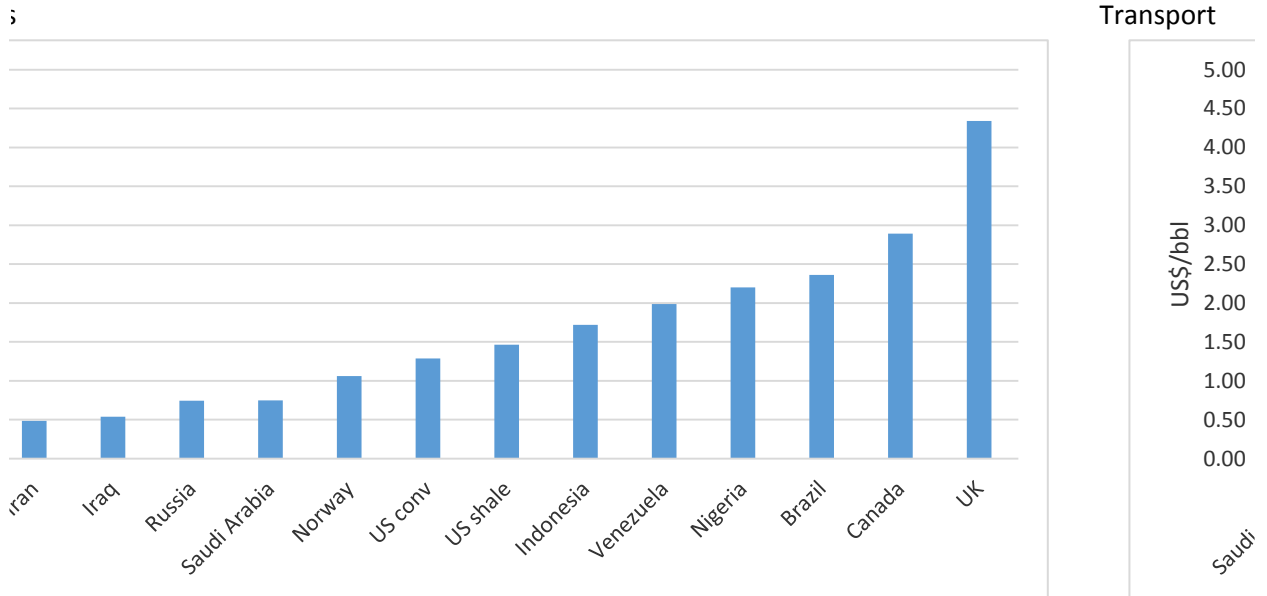
	2022	2023	2024	2025	2026	2027	2028
--	-------------	-------------	-------------	-------------	-------------	-------------	-------------

Oil (US\$mm)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gas (US\$mm)	0.0	14.6	7.3	4.7	3.6	3.2	2.9
Total (US\$mm)	0.0	14.6	7.3	4.7	3.6	3.2	2.9

Base Case and Sensitivities

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

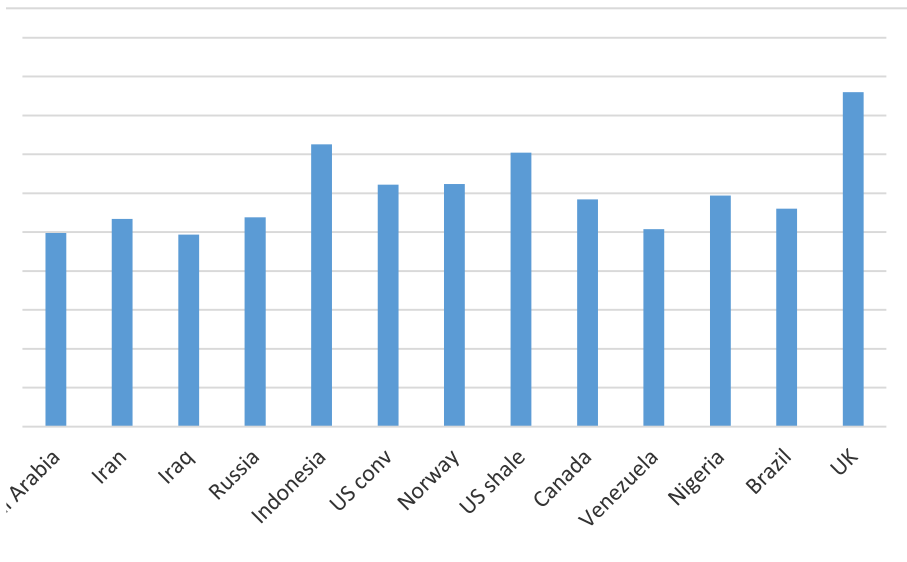
2029 **2030** **2031** **2032** **2033** **2034** **2035** **2036**
 4.8 4.4 4.1 3.7 3.5 3.2 3.0 2.8



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

0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.6	2.3	2.1	1.9	1.7	1.5	1.4	1.2
2.6	2.3	2.1	1.9	1.7	1.5	1.4	1.2

2037 2.6 2038 2.4 2039 2.3 2040 2.1 2041 2.0 2042 1.9 2043 1.8 2044 1.7



2037 2038 2039 2040 2041 2042 2043 2044

0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.1	1.0	0.9	0.8	0.7	0.7	0.6	0.5
1.1	1.0	0.9	0.8	0.7	0.7	0.6	0.5

2045

1.6

2045

0.0
0.5
0.5

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 0.5 US\$/mcf

	2022	2023	2024	2025	2026	2027
Export Tax	0	0	0	0	0	0
Royalty	0	12.5	6.3	4.1	3.0	2.7
Total	0	12.5	6.3	4.1	3.0	2.7
Total Operating Taxes	0	12.5	6.3	4.1	3.0	2.7
Total US\$/boe		3.00	3.00	3.00	3.00	3.00

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	170
Years of Production	23
Annual Depreciation (US\$mm)	7.4

	2022	2023	2024	2025	2026	2027
Depreciation	0	7.4	7.4	7.4	7.4	7.4
<i>Production</i>	<i>0</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>
Total	170					

Unit of Production

Total Reserves	17
Total Produced	17
Total Capex	170
Depreciation per barrel	10.29

	2022	2023	2024	2025	2026	2027
Depreciation	0	42.9	21.4	13.9	10.4	9.4
Total	170					

2028	2029	2030	2031	2032	2033	2034	2035	2036
7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4
1	1	1	1	1	1	1	1	1

2028	2029	2030	2031	2032	2033	2034	2035	2036
8.5	7.6	6.9	6.2	5.6	5.0	4.5	4.0	3.6

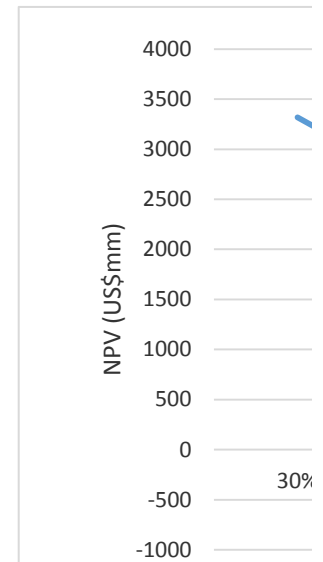
2037	2038	2039	2040	2041	2042	2043	2044	2045
7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4
1	1	1	1	1	1	1	1	1

2037	2038	2039	2040	2041	2042	2043	2044	2045
3.3	3.0	2.7	2.4	2.2	1.9	1.7	1.6	1.4

Sensitivities

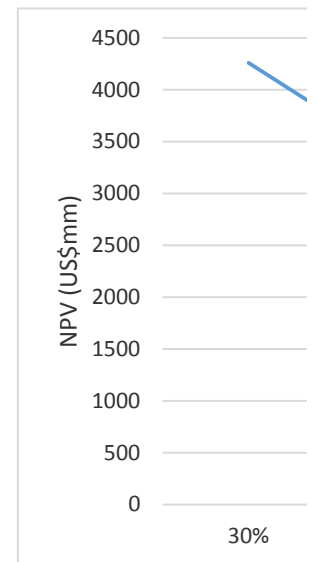
Oil Price

	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

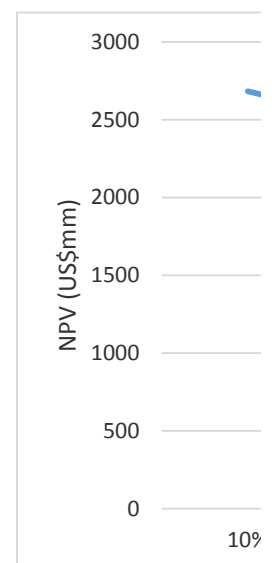
	NPV
30%	1735
15%	1942
0%	2149
-15%	2356
-30%	2563

Corporate Tax Rate

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

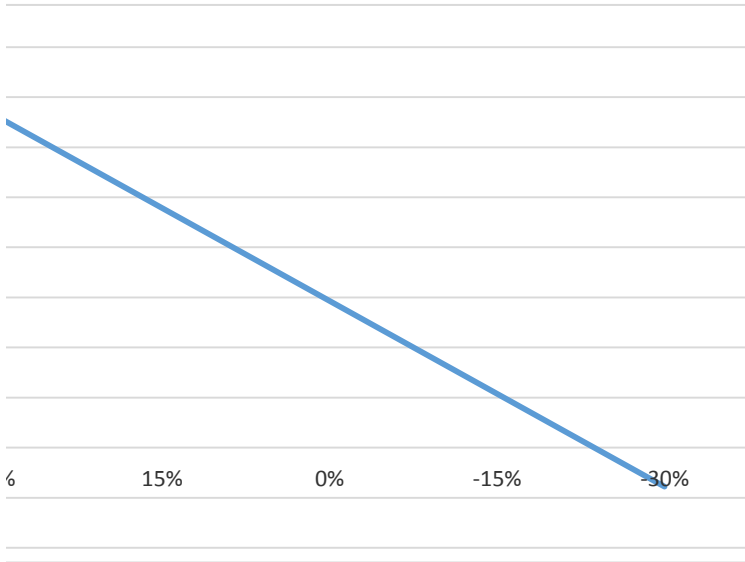
Discount Rate

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

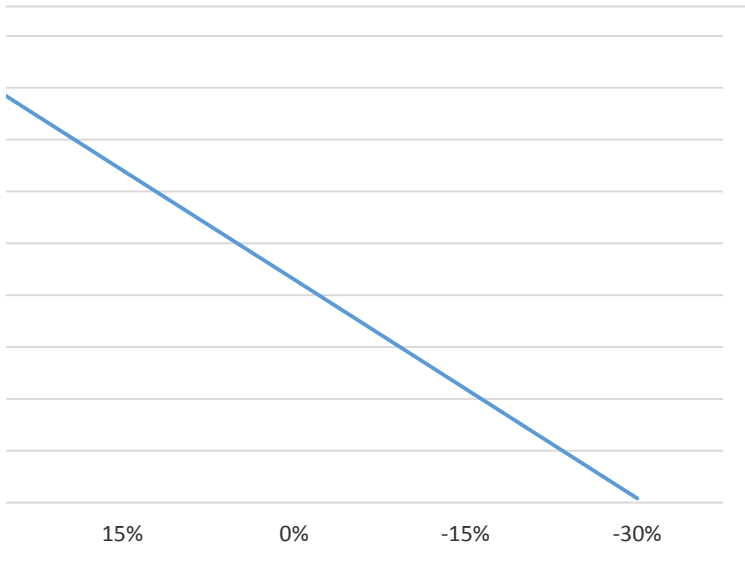


Summary

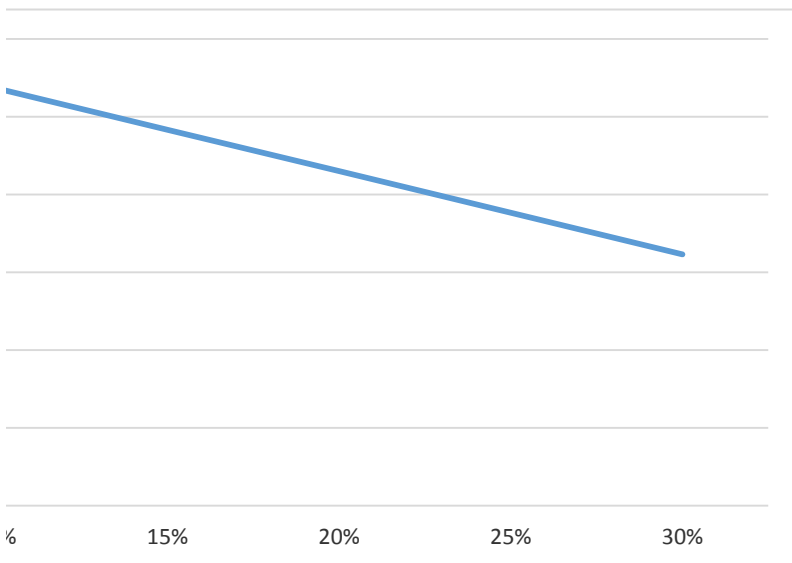
	Oil Price	Production Capex	Opex	Corp Tax	Disc. Rate	
Downside	-388	40	1012	1735	1615	-154
Low	539	1094	1580	1942	1882	496
Base	1465	2149	2149	2149	2149	2149
High	2392	3203	2717	2356	2415	2932
Upside	3318	4257	3285	2563	2682	5152



Oil Price

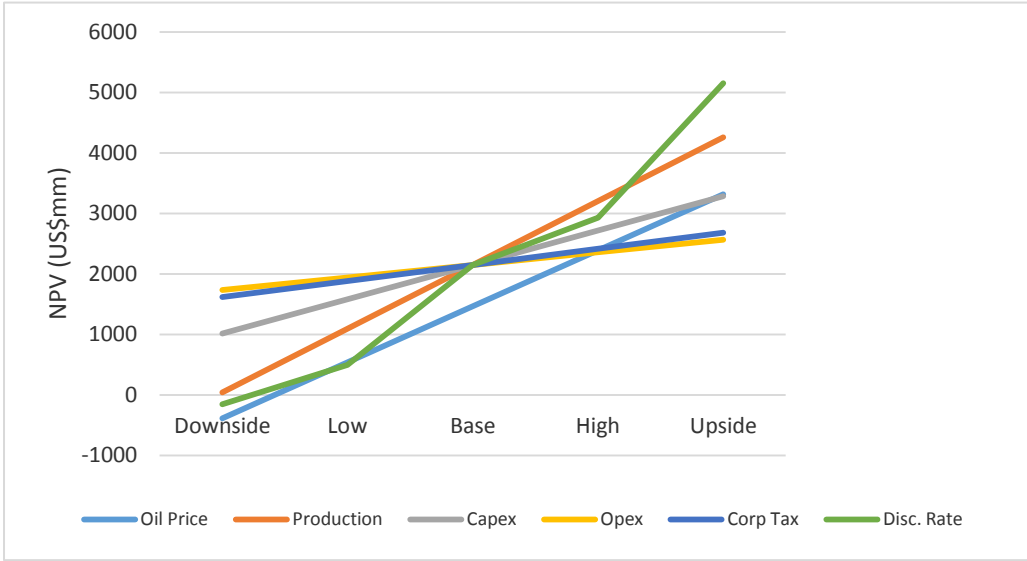


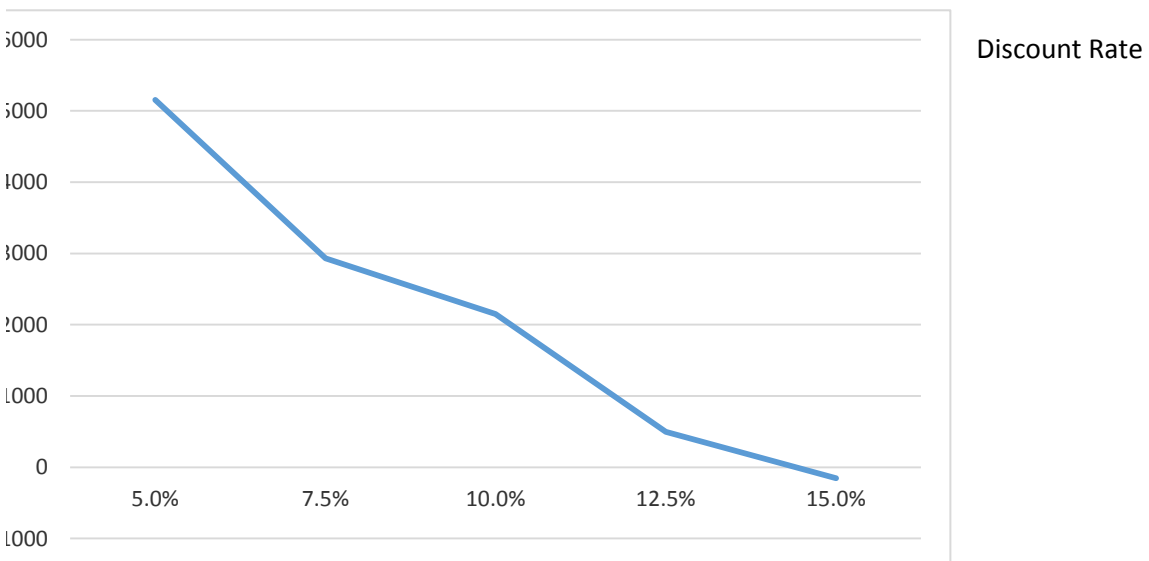
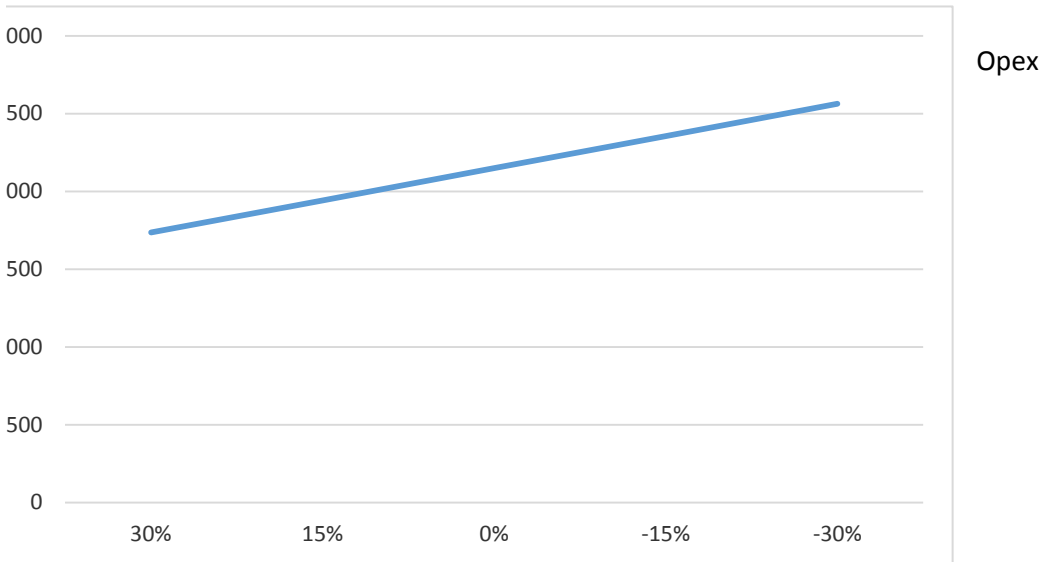
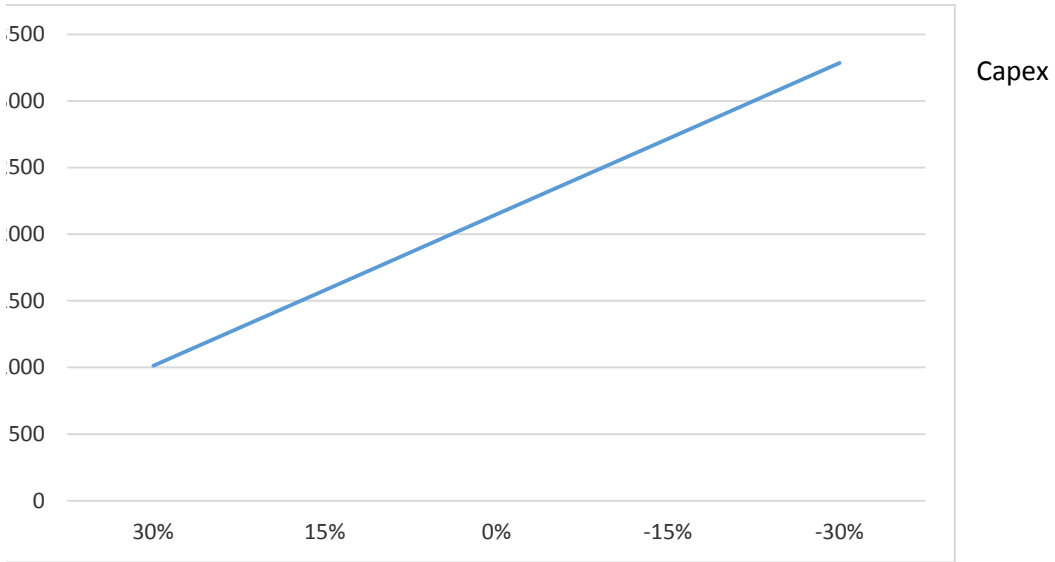
Production



Tax Rate







Exploration Well Analysis

Chance of Success	0%
Cost of Well	0 US\$mm
NPV of Success	-14
Dry Hole	0.0
Successful Well	0
EMV	0

PSA Regime

	2017	2018	2019	2020	2021	2022
Company Revenues	0	50	25	16	12	11
Operating Costs	0	-23	-12	-8	-6	-6
Transport Costs	0	-15	-7	-5	-4	-3
Operating Taxes	0	0	0	0	0	0
EBITDA	0	12	6	3	2	2
Depreciation	0	-42.8627	-21.4313	-13.9304	-10.4478	-9.40299
EBIT	0	-31	-16	-11	-8	-7
Tax on EBIT <i>Corporate Tax Rate</i>	0 20%	6.109342	3.148077	2.111634	1.630428	1.486067
Post tax cashflow	0	18	9	5	4	3
CAPEX	-70	-28	-1.5	-1.5	-1.5	-1.5
Free Cashflow (FCF)	-70	-10	7	4	2	2
Cumulative FCF	-70	-80	-72	-68	-66	-64
Discount Rate	10%					
Discount Factor	1.10	1.21	1.33	1.46	1.61	1.77
Discounted Cashflow (DCF)	-64	-8	6	3	2	1
NPV (\$mm)	-61					
IRR (%)	#NUM!					

Revenue Calculation

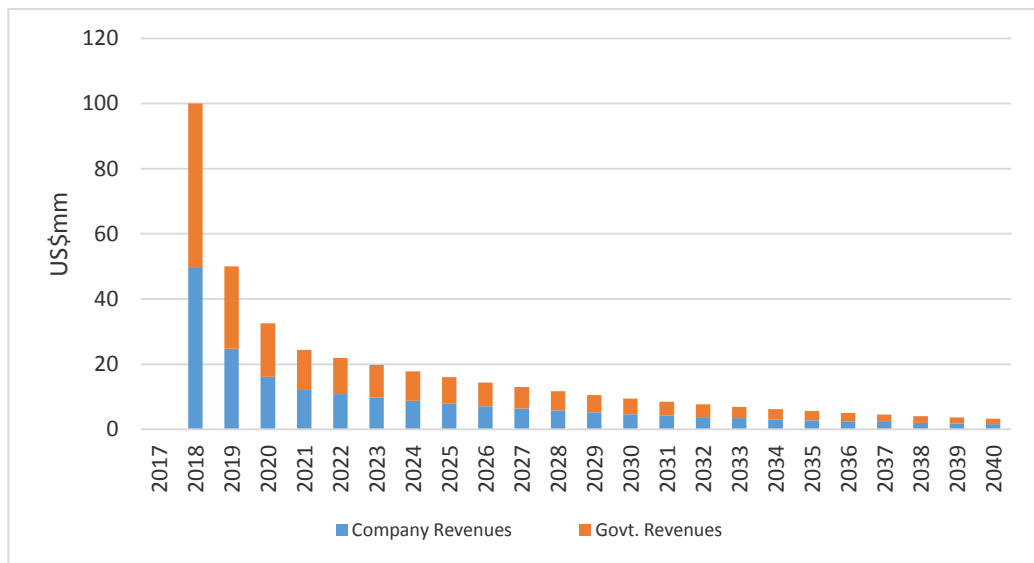
	Company	Govt				
Cost Oil	80%					
Profit Oil	50%	50%				
	2017	2018	2019	2020	2021	2022
Total Revenues	0	100	50	33	24	22
Govt Royalty	0	1	1	0	0	0
Taxable Revenues	0	99	50	32	24	22
	1%					
Cost Oil						
80% of Revenues	0	79	40	26	19	17

Accumulated Cost Oil		79	119	145	164	181
Annual Costs		-65	-21	-14	-11	-10
Accumulated Costs		-65	-86	-100	-111	-122
		14	33	45	53	60
Payback		1	1	1	1	1
Cost Oil to Company	0	0	0	0	0	0
Profit Oil	0	99	50	32	24	22
Profit Oil						
Company	0	50	25	16	12	11
Govt	0	50	25	16	12	11
Total Company Revenues	0	50	25	16	12	11
	2017	2018	2019	2020	2021	2022
Company Revenues	0	50	25	16	12	11
Govt. Revenues	0	51	25	16	12	11

2023	2024	2025	2026	2027	2028	2029	2030	2031
10	9	8	7	6	6	5	5	4
-5	-5	-4	-4	-4	-3	-3	-3	-3
-3	-3	-2	-2	-2	-2	-2	-1	-1
0	0	0	0	0	0	0	0	0
2	1	1	1	1	1	0	0	0
-8	-8	-7	-6	-6	-5	-4	-4	-4
-7	-6	-6	-5	-5	-4	-4	-4	-3
1	1	1	1	1	1	1	1	1
3	3	2	2	2	1	1	1	1
-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
2	1	1	1	0	0	0	0	-1
-62	-61	-60	-60	-60	-60	-60	-60	-61
1.95	2.14	2.36	2.59	2.85	3.14	3.45	3.80	4.18
1	1	0	0	0	0	0	0	0

2023	2024	2025	2026	2027	2028	2029	2030	2031
20	18	16	14	13	12	10	9	8
0	0	0	0	0	0	0	0	0
20	18	16	14	13	12	10	9	8
16	14	13	11	10	9	8	7	7

197	211	224	235	245	254	263	270	277
-10	-9	-8	-8	-7	-7	-6	-6	-6
-131	-140	-148	-156	-163	-170	-176	-182	-187
66	71	75	79	82	85	87	88	90
1	1	1	1	1	1	1	1	1
0	0	0	0	0	0	0	0	0
20	18	16	14	13	12	10	9	8
10	9	8	7	6	6	5	5	4
10	9	8	7	6	6	5	5	4
10	9	8	7	6	6	5	5	4
2023	2024	2025	2026	2027	2028	2029	2030	2031
10	9	8	7	6	6	5	5	4
10	9	8	7	7	6	5	5	4



2032	2033	2034	2035	2036	2037	2038	2039	2040
4	3	3	3	2	2	2	2	2
-3	-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	0	0	0	0	0	0	0	0
-3	-3	-3	-2	-2	-2	-2	-2	-1
-3	-3	-3	-3	-2	-2	-2	-2	-2
1	1	1	1	0	0	0	0	0
1	1	0	0	0	0	0	0	0
-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
-1	-1	-1	-1	-1	-1	-1	-2	-2
-62	-63	-64	-65	-66	-68	-69	-71	-72
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
8	7	6	6	5	5	4	4	3
0	0	0	0	0	0	0	0	0
8	7	6	6	5	4	4	4	3
6	5	5	4	4	4	3	3	3

283	289	293	298	302	305	309	312	314
-5	-5	-5	-4	-4	-4	-4	-4	-4
-193	-198	-202	-207	-211	-215	-219	-223	-226
90	91	91	91	91	90	90	89	88
1	1	1	1	1	1	1	1	1
0	0	0	0	0	0	0	0	0
8	7	6	6	5	4	4	4	3
4	3	3	3	2	2	2	2	2
4	3	3	3	2	2	2	2	2
4	3	3	3	2	2	2	2	2
2032	2033	2034	2035	2036	2037	2038	2039	2040
4	3	3	3	2	2	2	2	2
4	3	3	3	3	2	2	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
----------	----	-------	-------	-------	-------	-------

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