

## 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
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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	3	
Corporate Tax Rate	25%	
Debt:Equity Split	Debt 35%	Equity 65%
Cost of Debt	5.25%	
Cost of Equity	26.50%	
WACC	19.06%	

## 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%

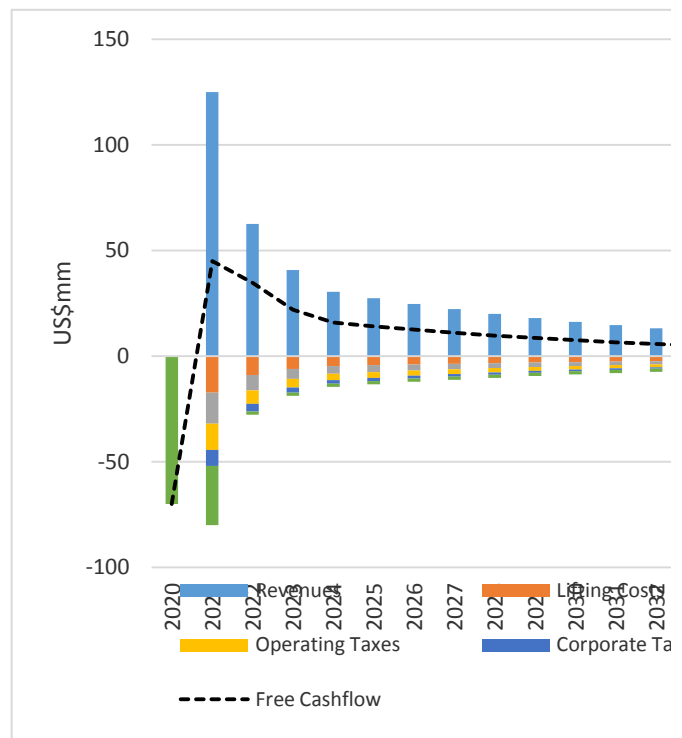
	2022	2023	2024	2025	2026	2027
Revenues	0	125	63	41	30	27
Operating Costs	0	-17	-9	-6	-5	-4
Transport Costs	0	-15	-7	-5	-4	-3
Operating Taxes	0	-13	-6	-4	-3	-3
EBITDA	0	81	40	26	19	17
Depreciation <i>Straight Line (0) or Unit of Prod (1)</i>	0 1	-43	-21	-14	-10	-9
EBIT	0	38	18	12	9	8
Tax on EBIT <i>Corporate Tax Rate</i>	0 20%	-8	-4	-2	-2	-2
Post tax cashflow	0	73	36	23	17	16
CAPEX	-70	-28	-2	-2	-2	-2
Free Cashflow (FCF)	-70	45	35	22	16	14
Cumulative FCF	-70	-25	10	32	47	61
Discount Rate	19.1%					
Discount Factor	1.19	1.42	1.69	2.01	2.39	2.85
Discounted Cashflow (DCF)	-59	32	21	11	7	5
NPV (\$mm)	30					
IRR (%)	39.1%					
Payback (years)	0	When does cumulative cashflow turn positive				
Excel Calculation	\$30					

Alternative NPV (terminal value)

FCF for 10 years	-59	45	35	22	16	14
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Terminal Value						
Implied FCF	-59	45	35	22	16	14
Implied DCF	-49	32	21	11	7	5
NPV	58					
Plus Cash	0					
Less Debt	0					
Total NPV	58					
IRR	53%					
<i>EBITDA Multiple</i>	20					

	2020	2021	2022	2023	2024	2025
Revenues	0	125	63	41	30	27
Lifting Costs	0	-17	-9	-6	-5	-4
Transport	0	-15	-7	-5	-4	-3
Operating Taxes	0	-13	-6	-4	-3	-3
Corporate Tax	0	-8	-4	-2	-2	-2
Capex	-70	-28	-2	-2	-2	-2
Free Cashflow	-70	45	35	22	16	14



Base  
High  
Upside  
Low  
Downside

**Results**  
NPV 30 US\$mm  
IRR 39% %

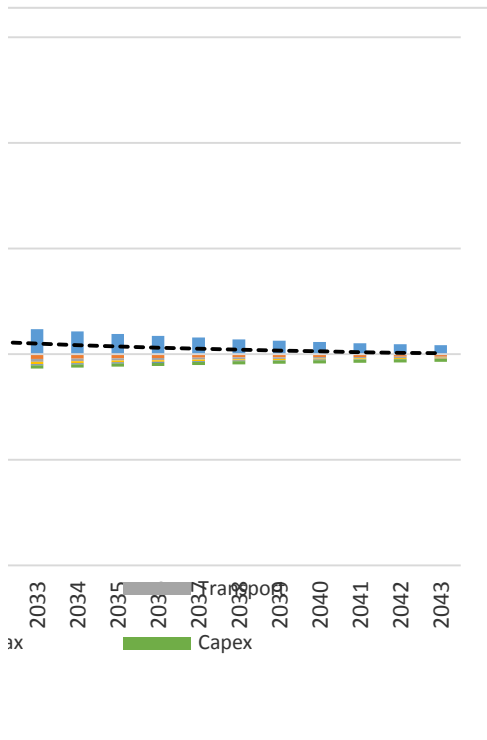
2028	2029	2030	2031	2032	2033	2034	2035	2036
25	22	20	18	16	15	13	12	11
-4	-4	-3	-3	-3	-3	-2	-2	-2
-3	-3	-2	-2	-2	-2	-2	-1	-1
-2	-2	-2	-2	-2	-1	-1	-1	-1
15	14	12	11	10	9	8	7	6
-8	-8	-7	-6	-6	-5	-4	-4	-4
7	6	5	5	4	4	3	3	3
-1	-1	-1	-1	-1	-1	-1	-1	-1
14	12	11	10	9	8	7	6	6
-2	-2	-2	-2	-2	-2	-2	-2	-2
12	11	10	9	7	7	6	5	4
74	85	95	103	111	117	123	128	132
3.39	4.04	4.81	5.72	6.82	8.12	9.66	11.50	13.70
4	3	2	1	1	1	1	0	0

Gas Price 5

12 11 10 9 7

					175
12	11	10	9	7	175
4	3	2	1	1	22

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





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

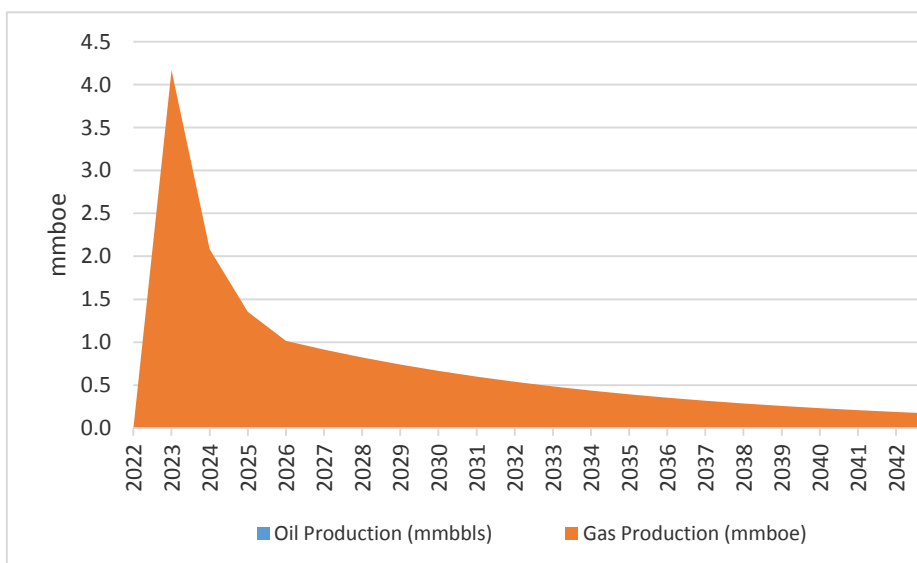


**Production**

	<b>Oil</b>		<b>Gas</b>	
	mmbbls	kbpd	Bcf	mmcf/d
Resources	0		1000	
Recovery Factor	0%		10%	
Reserves	0		100	
Start date	5 years after first capex		5 years after first capex	
				Peak as % Reserves
Peak Production (mmbbls)	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
<b>Total oil produced to 2040</b>	<b>0.0</b>					
Barrels per day		0	0	0	0	0
Gas Production	0.00	25.00	12.50	8.13	6.09	5.48
<b>Total gas produced to 2040</b>	<b>99.2</b>					

	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

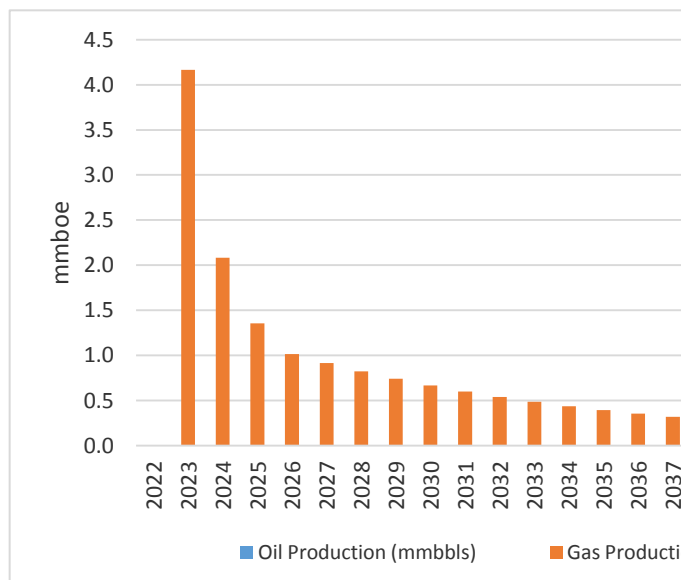
Peak as %  
Reserves

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

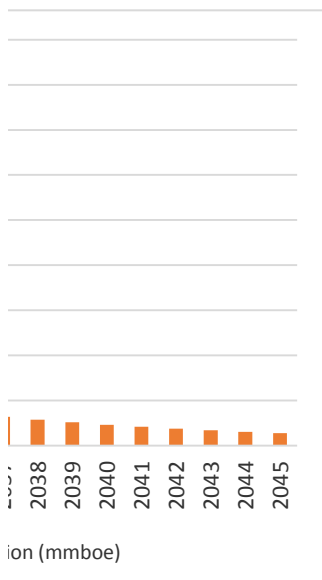
2028	2029	2030	2031	2032	2033	2034	2035	2036
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.8	0.7	0.7	0.6	0.5	0.5	0.4	0.4	0.4
0.8	0.7	0.7	0.6	0.5	0.5	0.4	0.4	0.4





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





**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
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

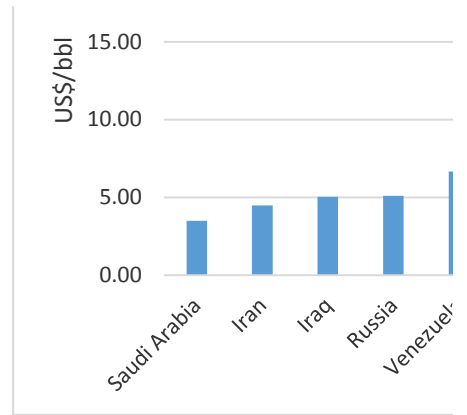
	Cost /bbl	Capex	Reserves	Peak Prod	Peak Prod
	US\$/bbl	US\$mm	mmbbls	kbpd	mmbbls
Kashagan ( Kazakhstan)	10.46	136000	13000	1500	547.5
ACG (Azerbaijan)	4.00	20000	5000	620	226.3
Thunderhorse (Gulf of Mexico)	5.00	5000	1000	250	91.25
Novy Port (Russia onshore)	3.25	4500	1385	161	58.64
Ghawar (Saudi)	3.50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

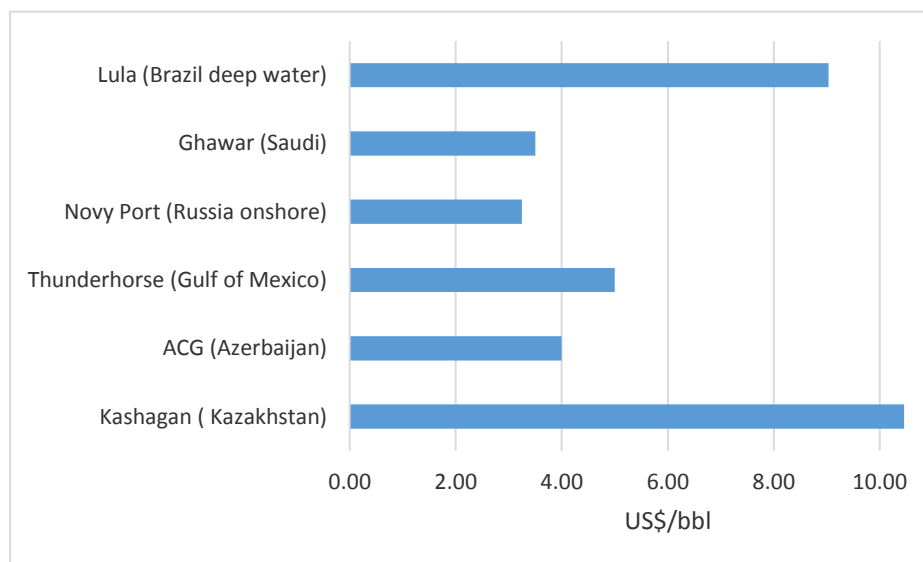


2028	2029	2030	2031	2032	2033	2034	2035	2036
1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5

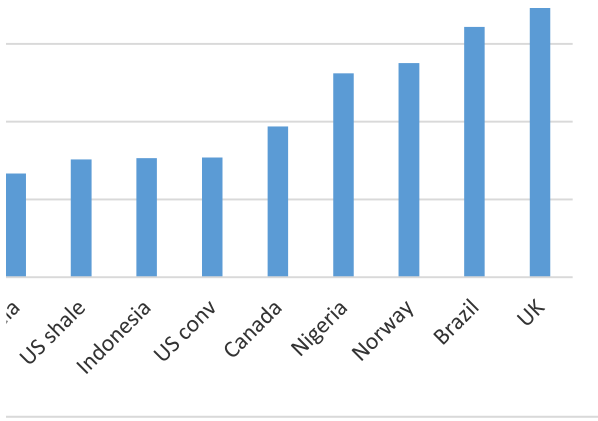
2	2	2	2	2	2	2	2	2
2	2	2	2	2	2	2	2	2
1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1

Capex/  
peak bbl  
US\$/bbl

248  
88  
55  
77  
136  
411

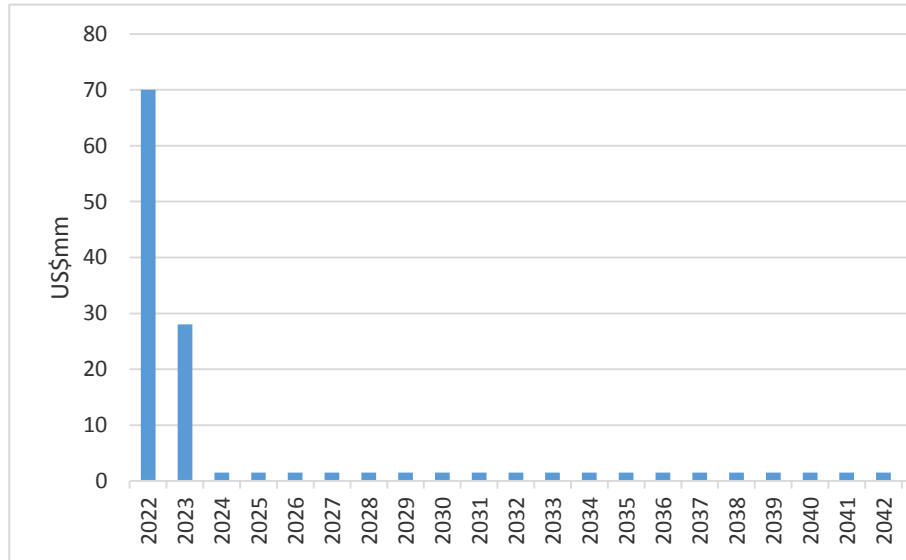






2037	2038	2039	2040	2041	2042	2043	2044	2045
1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5

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	5.00 US\$/boe	real					
Total for model	83 US\$mm						
Variable	4.00 US\$/bbl		80%				
Fixed	17 US\$mm		20%				
Years production	23						
	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>
US\$mm	0.0	17.4	9.1	6.1	4.8	4.4	4.0
Total	83						

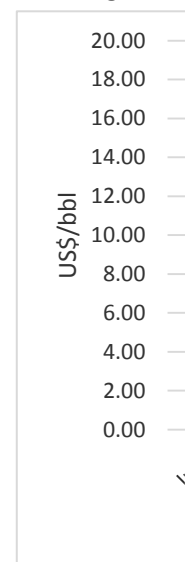
## Base Case and Sensitivities

1	5.00
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

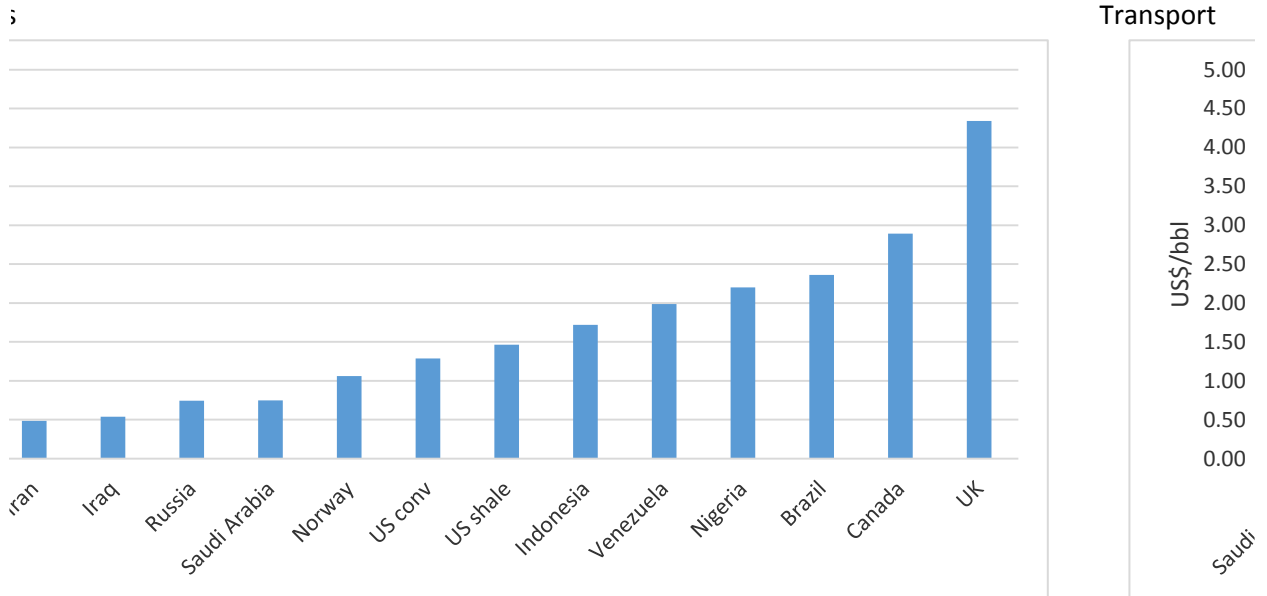
	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>
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Oil (US\$mm)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gas (US\$mm)	0.0	14.6	7.3	4.7	3.6	3.2	2.9
Total (US\$mm)	0.0	14.6	7.3	4.7	3.6	3.2	2.9

**Base Case and Sensitivities**

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

**2029**      **2030**      **2031**      **2032**      **2033**      **2034**      **2035**      **2036**  
 3.7      3.4      3.1      2.9      2.7      2.5      2.3      2.1

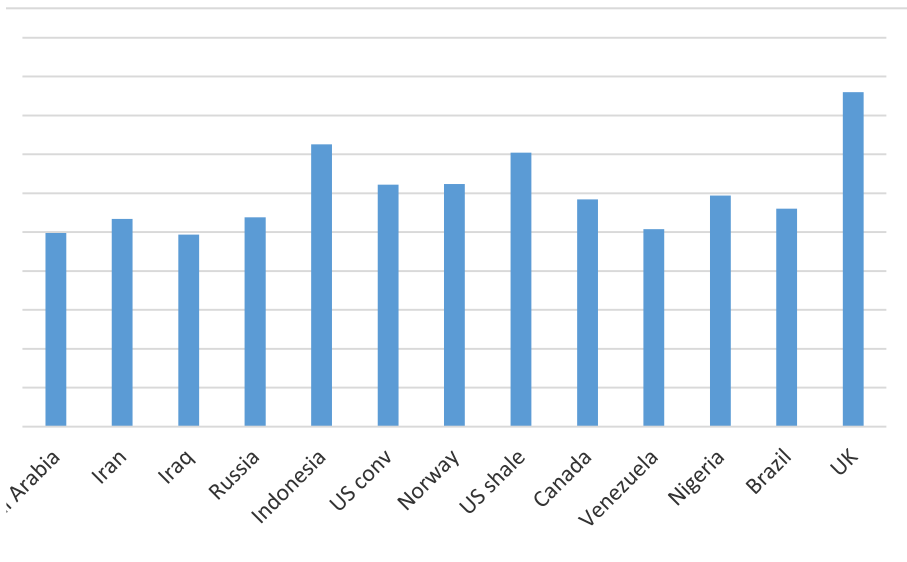


**2029**      **2030**      **2031**      **2032**      **2033**      **2034**      **2035**      **2036**

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 2.0      2038 1.9      2039 1.8      2040 1.6      2041 1.6      2042 1.5      2043 1.4      2044 1.3



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

1.3

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  
Iran  
Iraq  
Russia  
Indonesia  
US conv  
Norway  
US shale  
Canada  
Venezuela  
Nigeria

0  
0  
0.91  
8.44  
1.55  
5.03  
0.19  
6.42  
2.48  
10.48  
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					

<b>2028</b>	<b>2029</b>	<b>2030</b>	<b>2031</b>	<b>2032</b>	<b>2033</b>	<b>2034</b>	<b>2035</b>	<b>2036</b>
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

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

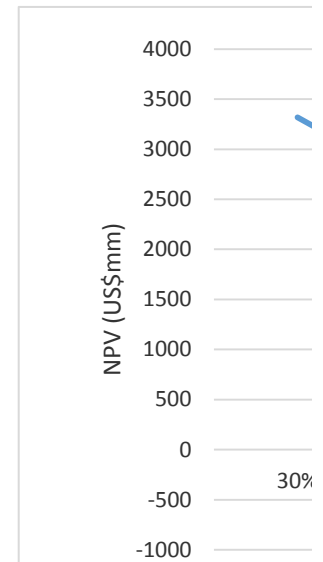
<b>2037</b>	<b>2038</b>	<b>2039</b>	<b>2040</b>	<b>2041</b>	<b>2042</b>	<b>2043</b>	<b>2044</b>	<b>2045</b>
7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4
1	1	1	1	1	1	1	1	1

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

## Sensitivities

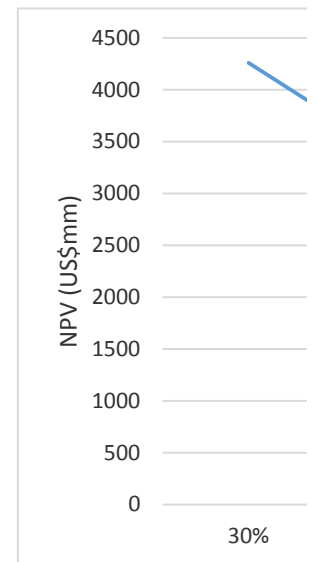
### Oil Price

	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

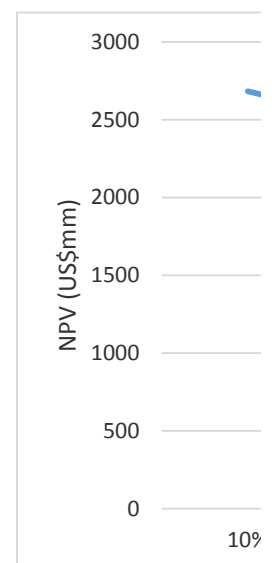
	NPV
30%	1735
15%	1942
0%	2149
-15%	2356
-30%	2563

### Corporate Tax Rate

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

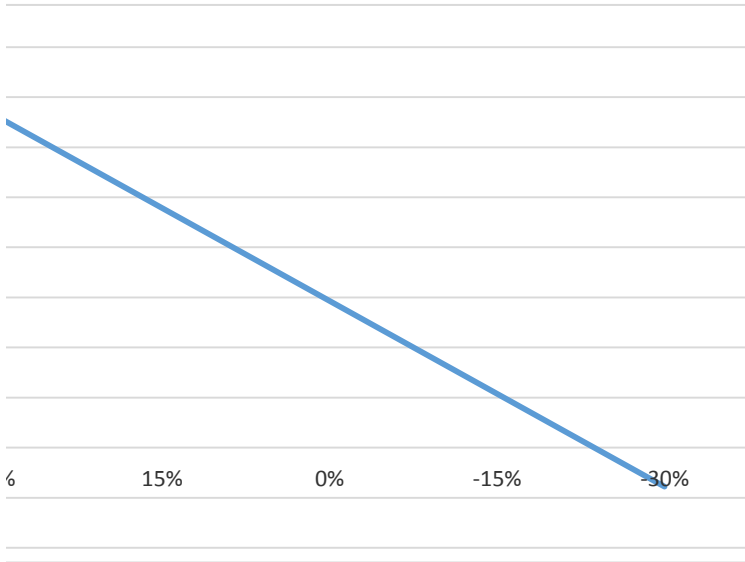
### Discount Rate

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

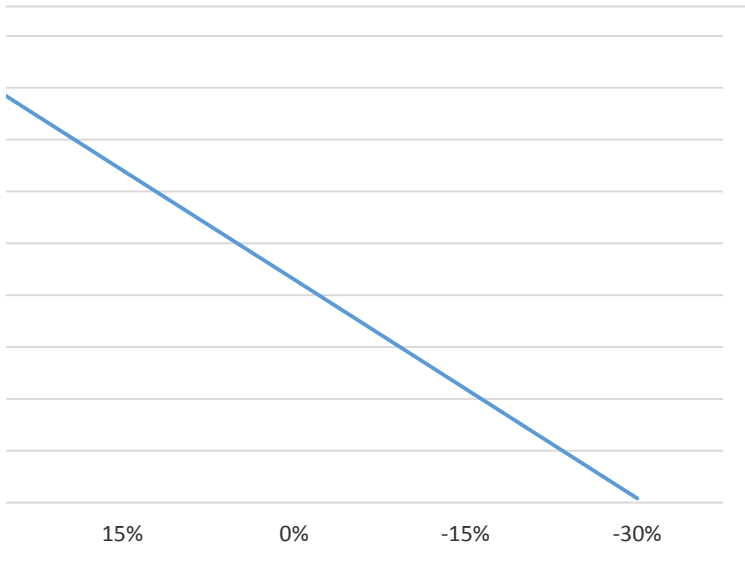


## Summary

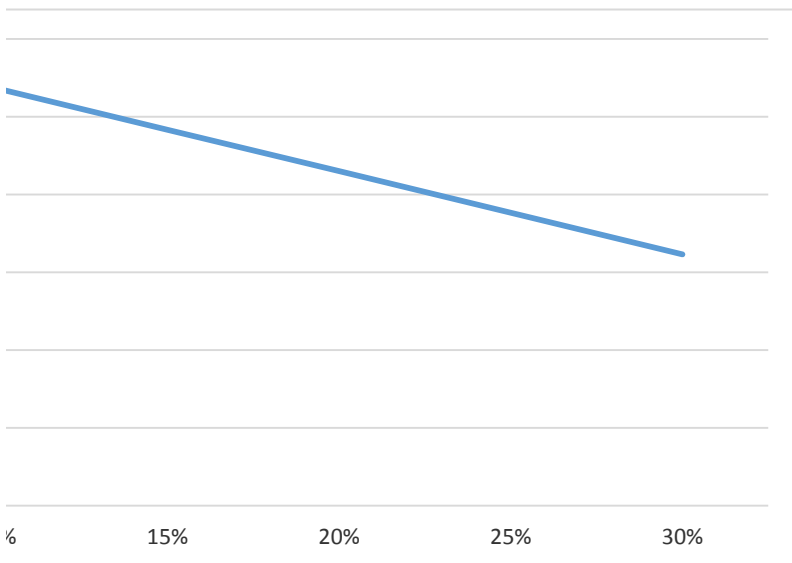
	Oil Price	Production Capex	Opex	Corp Tax	Disc. Rate	
Downside	-388	40	1012	1735	1615	-154
Low	539	1094	1580	1942	1882	496
Base	1465	2149	2149	2149	2149	2149
High	2392	3203	2717	2356	2415	2932
Upside	3318	4257	3285	2563	2682	5152



Oil Price

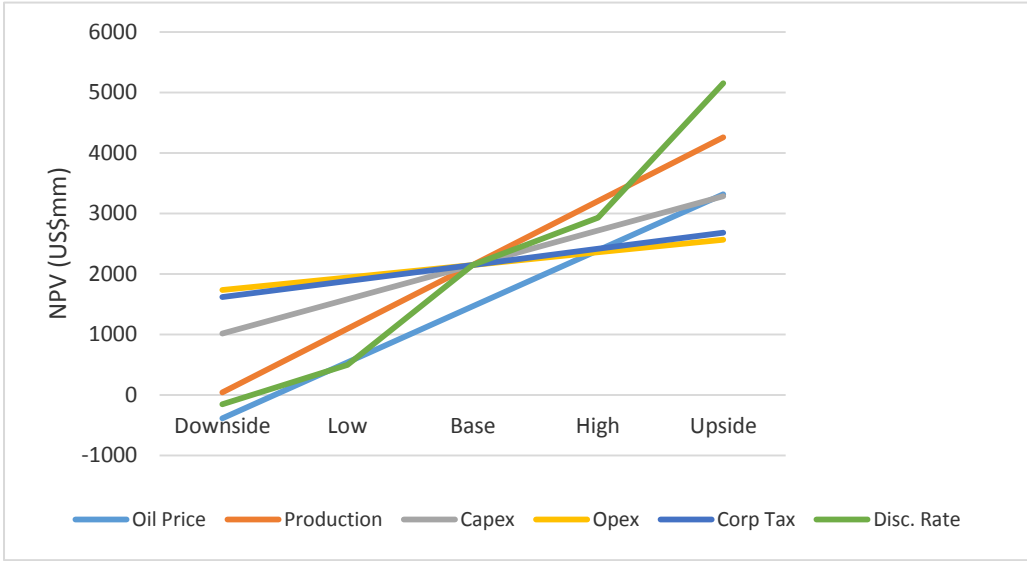


Production

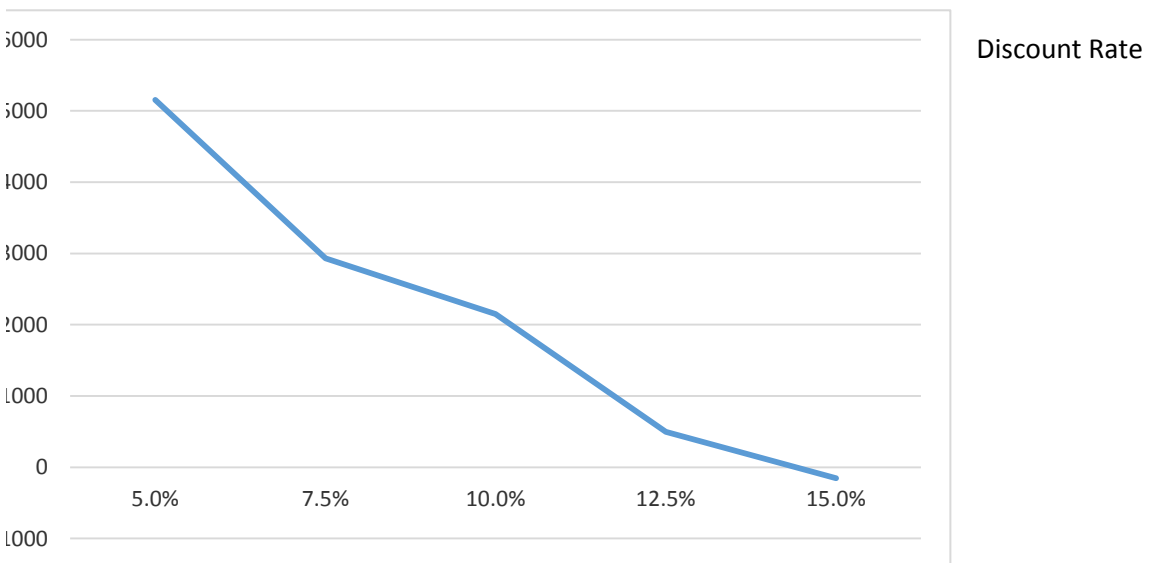
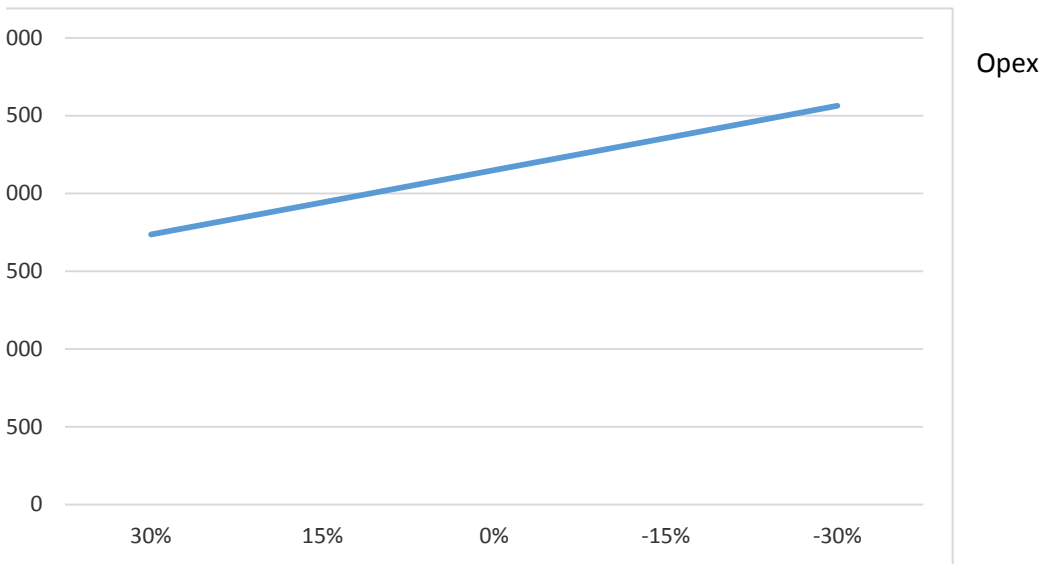
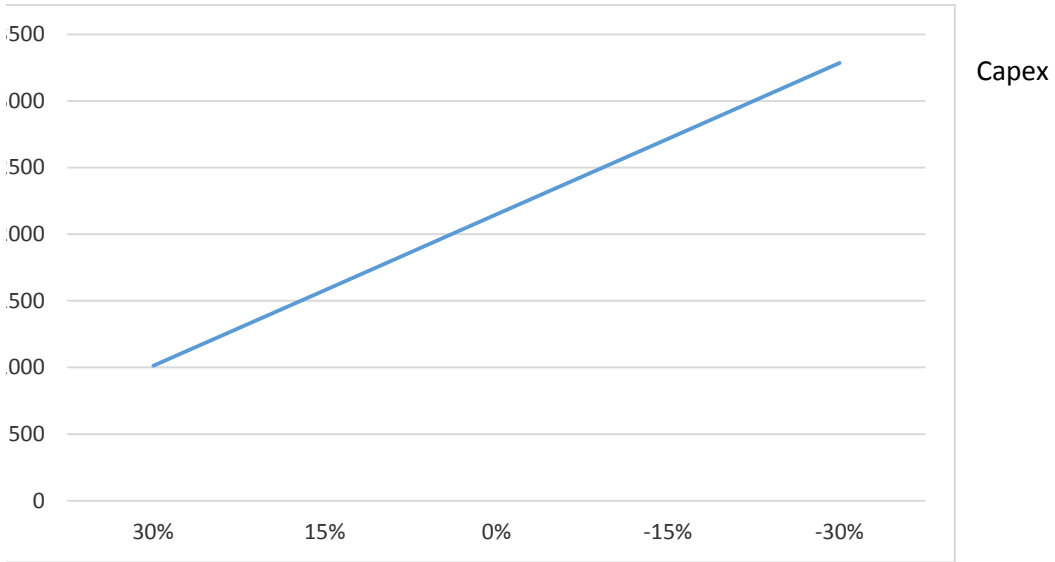


Tax Rate









**Exploration Well Analysis**

Chance of Success	0%
Cost of Well	0 US\$mm
NPV of Success	30
Dry Hole	0.0
Successful Well	0
EMV	0

**PSA Regime**

	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>
Company Revenues	0	62	31	20	15	14
Operating Costs	0	-17	-9	-6	-5	-4
Transport Costs	0	-15	-7	-5	-4	-3
Operating Taxes	0	0	0	0	0	0
EBITDA	0	30	15	9	7	6
Depreciation	0	-42.8627	-21.4313	-13.9304	-10.4478	-9.40299
EBIT	0	-13	-7	-5	-4	-3
Tax on EBIT <i>Corporate Tax Rate</i>	0 20%	2.591232	1.367466	0.939149	0.740287	0.680628
Post tax cashflow	0	32	16	10	7	7
CAPEX	-70	-28	-1.5	-1.5	-1.5	-1.5
Free Cashflow (FCF)	-70	4	14	9	6	5
Cumulative FCF	-70	-66	-51	-42	-36	-31
Discount Rate	10%					
Discount Factor	1.10	1.21	1.33	1.46	1.61	1.77
Discounted Cashflow (DCF)	-64	4	11	6	4	3
NPV (\$mm)	-28					
IRR (%)	-6%					

**Revenue Calculation**

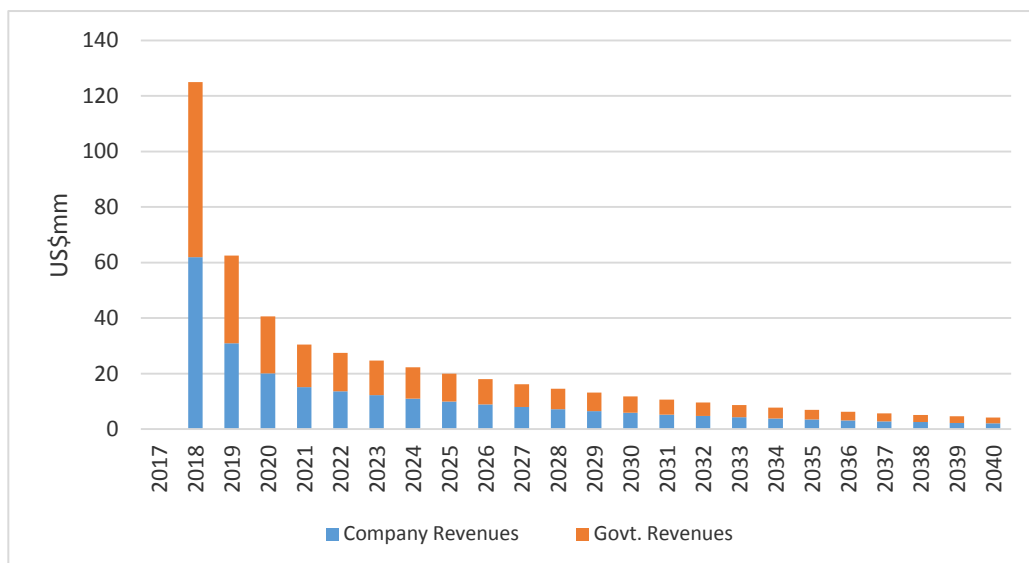
	Company	Govt				
Cost Oil	80%					
Profit Oil	50%	50%				
	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>
Total Revenues	0	125	63	41	30	27
Govt Royalty	0	1	1	0	0	0
Taxable Revenues	0	124	62	40	30	27
	1%					
<b>Cost Oil</b>						
80% of Revenues	0	99	50	32	24	22

Accumulated Cost Oil		99	149	181	205	227
Annual Costs		-60	-18	-12	-10	-9
Accumulated Costs		-60	-78	-90	-100	-109
		39	71	90	105	117
Payback		1	1	1	1	1
<b>Cost Oil to Company</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Profit Oil	0	124	62	40	30	27
<b>Profit Oil</b>						
Company	0	62	31	20	15	14
Govt	0	62	31	20	15	14
<b>Total Company Revenues</b>	<b>0</b>	<b>62</b>	<b>31</b>	<b>20</b>	<b>15</b>	<b>14</b>
	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>
Company Revenues	0	62	31	20	15	14
Govt. Revenues	0	63	32	21	15	14

<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>2030</b>	<b>2031</b>
12	11	10	9	8	7	6	6	5
-4	-4	-3	-3	-3	-3	-2	-2	-2
-3	-3	-2	-2	-2	-2	-2	-1	-1
0	0	0	0	0	0	0	0	0
5	5	4	4	3	3	2	2	2
-8	-8	-7	-6	-6	-5	-4	-4	-4
-3	-3	-3	-2	-2	-2	-2	-2	-2
1	1	1	0	0	0	0	0	0
6	5	5	4	4	3	3	3	2
-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
4	4	3	3	2	2	1	1	1
-27	-23	-20	-17	-15	-13	-12	-11	-10
1.95	2.14	2.36	2.59	2.85	3.14	3.45	3.80	4.18
2	2	1	1	1	1	0	0	0

<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>2030</b>	<b>2031</b>
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
-8	-8	-7	-7	-6	-6	-5	-5	-5
-117	-125	-132	-139	-145	-151	-157	-162	-167
129	138	147	155	161	167	172	176	179
1	1	1	1	1	1	1	1	1
<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
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
<b>12</b>	<b>11</b>	<b>10</b>	<b>9</b>	<b>8</b>	<b>7</b>	<b>6</b>	<b>6</b>	<b>5</b>
<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>2030</b>	<b>2031</b>
12	11	10	9	8	7	6	6	5
12	11	10	9	8	7	7	6	5



<b>2032</b>	<b>2033</b>	<b>2034</b>	<b>2035</b>	<b>2036</b>	<b>2037</b>	<b>2038</b>	<b>2039</b>	<b>2040</b>
5	4	4	3	3	3	3	2	2
-2	-2	-2	-2	-2	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-1	-1	0
0	0	0	0	0	0	0	0	0
2	1	1	1	1	1	1	0	0
-3	-3	-3	-2	-2	-2	-2	-2	-1
-2	-2	-1	-1	-1	-1	-1	-1	-1
0	0	0	0	0	0	0	0	0
2	2	1	1	1	1	1	1	1
-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
0	0	0	0	0	-1	-1	-1	-1
-9	-9	-9	-9	-10	-10	-11	-12	-13
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

<b>2032</b>	<b>2033</b>	<b>2034</b>	<b>2035</b>	<b>2036</b>	<b>2037</b>	<b>2038</b>	<b>2039</b>	<b>2040</b>
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	-4	-4	-4	-4	-4	-3	-3	-3
-171	-176	-180	-184	-188	-191	-195	-198	-201
182	185	187	188	190	190	191	191	191
1	1	1	1	1	1	1	1	1
<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
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
<b>5</b>	<b>4</b>	<b>4</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>2</b>
<b>2032</b>	<b>2033</b>	<b>2034</b>	<b>2035</b>	<b>2036</b>	<b>2037</b>	<b>2038</b>	<b>2039</b>	<b>2040</b>
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
<b>Q1</b>	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