

Time Value of Money

Money

| | 2019 | 2020 | 2021 | 2022 | 2023 |
|--------------------------|------|------|------|------|------|
| US\$ in wallet | 500 | 500 | 500 | 500 | 500 |
| US\$ in bank | 500 | 525 | 551 | 579 | 608 |
| Inflation | | 4% | 4% | 4% | 4% |
| Interest Rate | | 5% | 5% | 5% | 5% |
| Cumulative Interest Rate | | 1.05 | 1.10 | 1.16 | 1.22 |

Cost of printer ink

| | 2019 | 2020 | 2021 | 2022 | 2023 |
|----------------|------|------|------|------|------|
| US\$ flat | 5 | 5 | 5 | 5 | 5 |
| US\$ inflation | | 5.20 | 5.41 | 5.62 | 5.85 |
| US\$ | | | | | |

Amount of printer ink

| | 2019 | 2020 | 2021 | 2022 | 2023 |
|------------------------------------|---------|-------|-------|-------|-------|
| US\$ no inflation | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| US after inflation | #DIV/0! | 96.2 | 92.5 | 88.9 | 85.5 |
| US\$ after inflation with interest | #DIV/0! | 101.0 | 101.9 | 102.9 | 103.9 |

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

| | | | | | |
|----------------|-------|-----|-----|-----|-----|
| | 100.0 | | | | |
| Chocolate Bars | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 |

US\$ Real (2018)

Money Available

Cost of Choc Bar

| | | | | | |
|------|------|------|------|------|------|
| 2024 | 2025 | 2026 | 2027 | 2028 | 2029 |
| 500 | 500 | 500 | 500 | 500 | |
| 638 | 670 | 704 | 739 | 776 | |
| 4% | 4% | 4% | 4% | 4% | 4% |
| 5% | 5% | 5% | 5% | 5% | 5% |
| 1.28 | 1.34 | 1.41 | 1.48 | 1.55 | 1.63 |

| | | | | | |
|------|------|------|------|------|------|
| 2024 | 2025 | 2026 | 2027 | 2028 | 2029 |
| 5 | 5 | 5 | 5 | 5 | |
| 6.08 | 6.33 | 6.58 | 6.84 | | |

| | | | | | |
|-------|-------|-------|-------|------|------|
| 2024 | 2025 | 2026 | 2027 | 2028 | 2029 |
| 100.0 | 100.0 | 100.0 | 100.0 | | |
| 82.2 | 79.0 | 76.0 | 73.1 | | |
| 104.9 | 105.9 | 106.9 | 108.0 | | |

| | | | | | |
|------|------|------|------|------|------|
| 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

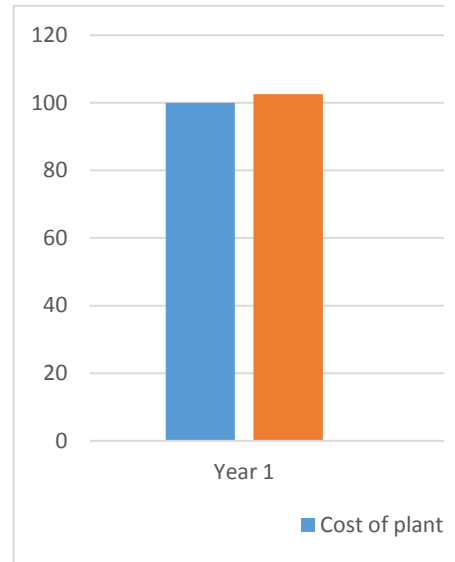
| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|-------------------|--------|--------|--------|--------|--------|
| Real | 100 | 100 | 100 | 100 | 100 |
| Nominal | 102.5 | 105.1 | 107.7 | 110.4 | 113.1 |
| Inflation | 2.5% | 2.5% | 2.5% | 2.5% | 2.5% |
| Capex US\$2020 | 500 | | | | |
| Nominal | 539 | | | | |

Oil Price

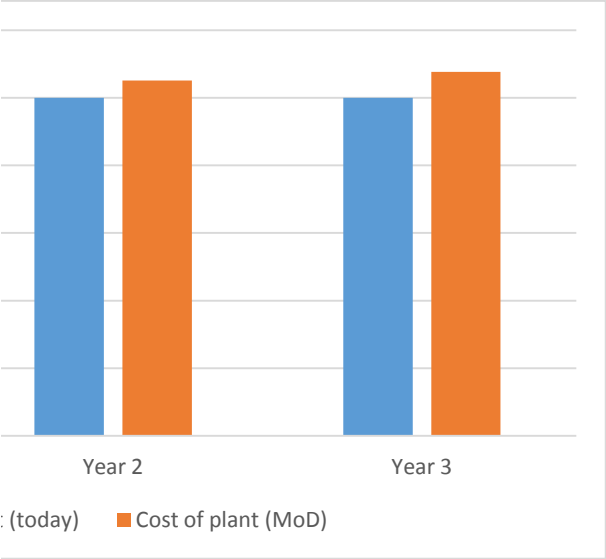
| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 |
|-----------|--------|--------|--------|--------|--------|--------|--------|
| Real | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| Nominal | 30.6 | 31.21 | 31.84 | 32.47 | 33.12 | 33.78 | 34.46 |
| Inflation | 2% | 2% | 2% | 2% | 2% | 2% | 2% |

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

| Year 8 | Year 9 | Year 10 |
|--------|--------|---------|
| 30 | 30 | 30 |
| 35.15 | 35.85 | 36.57 |
| 2% | 2% | 2% |



| Year 1 | Year 2 | Year 3 | Total |
|--------|--------|--------|-------|
| 100 | 100 | 100 | 300 |
| 103 | 105 | 108 | 315 |



Example Discounted Cashflow

Example 1

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|-------------------------|--------|--------|--------|--------|--------|--------|
| Cashflow | | | | | | |
| Discount Factor | | | | | | |
| Discounted Cashflow | | | | | | |
| NPV (Net Present Value) | | | | | | |
| Discount Rate | | | | | | |
| Excel Calculation | | | | | | |
| IRR | #NUM! | | | | | |

Example 2

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|---------------------|--------|--------|--------|--------|--------|--------|
| Capital Cost | -200 | -200 | -200 | | | |
| Revenue | | | | 100 | 100 | 100 |
| Operating Cost | | | | -20 | -20 | -20 |
| Net Cashflow | -200 | -200 | -200 | 80 | 80 | 80 |
| Discount Factor | 1.08 | 1.16 | 1.24 | 1.34 | 1.44 | 1.54 |
| Discounted Cashflow | -186.0 | -173.1 | -161.0 | 59.9 | 55.7 | 51.8 |
| NPV | 87.4 | | | | | |
| Discount Rate | 7.5% | | | | | |
| IRR | 9.6% | | | | | |

IRR

Internal Rate of Return

Excel Calculation

87.4

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|---------------------------|--------|--------|--------|--------|--------|--------|
| Cumulative Cashflow | -200 | -400 | -600 | -520 | -440 | -360 |
| Disc Cum Cashflow | -186.0 | -359.1 | -520.1 | -460.2 | -404.5 | -352.6 |
| Payback period | 11 | | | | | |
| Discounted payback period | 16 | | | | | |

Year 7 Year 8 Year 9 Year 10

| Year 7 | Year 8 | Year 9 | Year 10 | Year 11 | Year 12 | Year 13 | Year 14 | Year 15 |
|--------|--------|--------|---------|---------|---------|---------|---------|---------|
| 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 |
| 1.66 | 1.78 | 1.92 | 2.06 | 2.22 | 2.38 | 2.56 | 2.75 | 2.96 |
| 48.2 | 44.9 | 41.7 | 38.8 | 36.1 | 33.6 | 31.2 | 29.1 | 27.0 |

| Year 7 | Year 8 | Year 9 | Year 10 | Year 11 | Year 12 | Year 13 | Year 14 | Year 15 |
|--------|--------|--------|---------|---------|---------|---------|---------|---------|
| -280 | -200 | -120 | -40 | 40 | 120 | 200 | 280 | 360 |
| -304.4 | -259.6 | -217.8 | -179.0 | -142.9 | -109.3 | -78.1 | -49.0 | -22.0 |

| Year 16 | Year 17 | Year 18 | Year 19 | Year 20 |
|---------|---------|---------|---------|---------|
| 100 | 100 | 100 | 100 | 100 |
| -20 | -20 | -20 | -20 | -20 |
| 80 | 80 | 80 | 80 | 80 |
| 3.18 | 3.42 | 3.68 | 3.95 | 4.25 |
| 25.2 | 23.4 | 21.8 | 20.2 | 18.8 |

| Year 16 | Year 17 | Year 18 | Year 19 | Year 20 |
|---------|---------|---------|---------|---------|
| 440 | 520 | 600 | 680 | 760 |
| 3.2 | 26.6 | 48.3 | 68.6 | 87.4 |

WACC Calculation

Risk Free Rate 0.00%

Corporate Interest Rate 0.00%

Equity market return 0.00%

Company Beta 0

Corporate Tax Rate 0%

| | Debt | Equity |
|-------------------|------|--------|
| Debt:Equity Split | 0% | 100% |

Cost of Debt 0.00%

Cost of Equity 0.00%

WACC 0.00%

An Example Conventional Oil Field

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

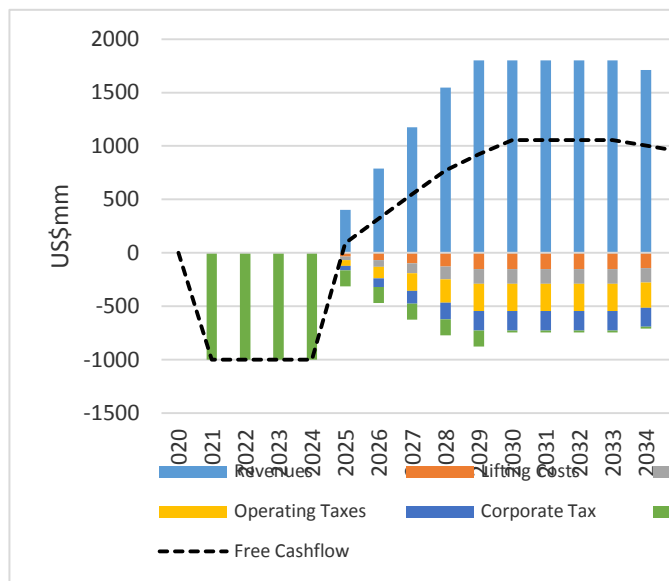
| | 2021 | 2022 | 2022 | 2023 | 2024 | 2025 |
|--|----------|---|-------|-------|-------|-------|
| Revenues | 0 | 0 | 0 | 0 | 0 | 403 |
| Operating Costs | 0 | 0 | 0 | 0 | 0 | -35 |
| Transport Costs | 0 | 0 | 0 | 0 | 0 | -33 |
| Operating Taxes | 0 | 0 | 0 | 0 | 0 | -55 |
| EBITDA (Pre-tax Cashflow) | 0 | 0 | 0 | 0 | 0 | 279 |
| Depreciation <i>Straight Line (0) or Unit of Prod (1)</i> | 0 1 | 0 | 0 | 0 | 0 | -78 |
| EBIT (Pre Tax Profit) | 0 | 0 | 0 | 0 | 0 | 201 |
| Tax on EBIT <i>Corporate Tax Rate</i> | 0 20% | 0 | 0 | 0 | 0 | -40 |
| Post tax cashflow | 0 | 0 | 0 | 0 | 0 | 239 |
| CAPEX | 0 | -1000 | -1000 | -1000 | -1000 | -150 |
| Free Cashflow (FCF) | 0 | -1000 | -1000 | -1000 | -1000 | 89 |
| Cumulative FCF | 0 | -1000 | -2000 | -3000 | -4000 | -3911 |
| Discount Rate | 0.0% | | | | | |
| Discount Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Discounted Cashflow (DCF) | 0 | -1000 | -1000 | -1000 | -1000 | 89 |
| NPV (\$mm) | 10889 | | | | | |
| IRR (%) | 13.2% | | | | | |
| Payback (years) | 11 | When does cumulative cashflow turn positive | | | | |
| Excel Calculation | \$10,889 | | | | | |

Breakeven Oil Price **\$50.00** *After Goal Seek Function in Data:What If*

| | | | | | | |
|----------------------------------|---|-------|-------|-------|-------|----|
| Alternative NPV (terminal value) | | | | | | |
| FCF for 10 years | 0 | -1000 | -1000 | -1000 | -1000 | 89 |

| | | | | | | |
|------------------------|------|-------|-------|-------|-------|----|
| Terminal Value | | | | | | |
| Implied FCF | 0 | -1000 | -1000 | -1000 | -1000 | 89 |
| Implied DCF | 0 | -1000 | -1000 | -1000 | -1000 | 89 |
| NPV | 8520 | | | | | |
| Plus Cash | 0 | | | | | |
| Less Debt | 0 | | | | | |
| Total NPV | 8520 | | | | | |
| IRR | 16% | | | | | |
| <i>EBITDA Multiple</i> | 7 | | | | | |

| | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
|-----------------|------|-------|-------|-------|-------|------|
| Revenues | 0 | 0 | 0 | 0 | 0 | 403 |
| Lifting Costs | 0 | 0 | 0 | 0 | 0 | -35 |
| Transport | 0 | 0 | 0 | 0 | 0 | -33 |
| Operating Taxes | 0 | 0 | 0 | 0 | 0 | -55 |
| Corporate Tax | 0 | 0 | 0 | 0 | 0 | -40 |
| Capex | 0 | -1000 | -1000 | -1000 | -1000 | -150 |
| Free Cashflow | 0 | -1000 | -1000 | -1000 | -1000 | 89 |



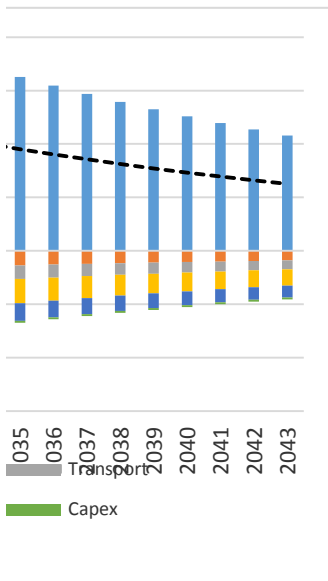
Base
High
Upside
Low
Downside

Results
NPV 10889 US\$mm
IRR 13% %

| 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 |
|-------|-------|-------|-------|------|------|------|------|------|
| 789 | 1175 | 1545 | 1803 | 1803 | 1803 | 1803 | 1803 | 1712 |
| -68 | -100 | -130 | -152 | -152 | -152 | -152 | -152 | -144 |
| -63 | -93 | -120 | -140 | -140 | -140 | -140 | -140 | -133 |
| -109 | -164 | -216 | -252 | -252 | -252 | -252 | -252 | -240 |
| 549 | 819 | 1079 | 1259 | 1259 | 1259 | 1259 | 1259 | 1196 |
| -151 | -223 | -289 | -337 | -337 | -337 | -337 | -337 | -321 |
| 398 | 596 | 790 | 921 | 921 | 921 | 921 | 921 | 875 |
| -80 | -119 | -158 | -184 | -184 | -184 | -184 | -184 | -175 |
| 469 | 700 | 921 | 1074 | 1074 | 1074 | 1074 | 1074 | 1021 |
| -150 | -150 | -150 | -150 | -18 | -18 | -18 | -18 | -18 |
| 319 | 550 | 771 | 924 | 1056 | 1056 | 1056 | 1056 | 1003 |
| -3591 | -3042 | -2271 | -1347 | -290 | 766 | 1822 | 2879 | 3881 |
| 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| 319 | 550 | 771 | 924 | 1056 | 1056 | 1056 | 1056 | 1003 |
| 319 | 550 | 771 | 924 | 1056 | | | | |

| | | | | | |
|-----|-----|-----|-----|------|------|
| | | | | | 8810 |
| 319 | 550 | 771 | 924 | 1056 | 8810 |
| 319 | 550 | 771 | 924 | 1056 | 8810 |

| 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 |
|------|------|------|------|------|------|------|------|------|
| 789 | 1175 | 1545 | 1803 | 1803 | 1803 | 1803 | 1803 | 1712 |
| -68 | -100 | -130 | -152 | -152 | -152 | -152 | -152 | -144 |
| -63 | -93 | -120 | -140 | -140 | -140 | -140 | -140 | -133 |
| -109 | -164 | -216 | -252 | -252 | -252 | -252 | -252 | -240 |
| -80 | -119 | -158 | -184 | -184 | -184 | -184 | -184 | -175 |
| -150 | -150 | -150 | -150 | -18 | -18 | -18 | -18 | -18 |
| 319 | 550 | 771 | 924 | 1056 | 1056 | 1056 | 1056 | 1003 |



| 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 1627 | 1545 | 1468 | 1395 | 1325 | 1259 | 1196 | 1136 | 1079 |
| -137 | -130 | -124 | -117 | -111 | -106 | -101 | -96 | -91 |
| -126 | -120 | -114 | -108 | -103 | -98 | -93 | -88 | -84 |
| -228 | -216 | -205 | -195 | -185 | -176 | -167 | -159 | -151 |
| 1136 | 1079 | 1025 | 974 | 925 | 879 | 835 | 793 | 754 |
| -304 | -289 | -275 | -261 | -248 | -236 | -224 | -213 | -202 |
| 831 | 790 | 750 | 713 | 677 | 643 | 611 | 581 | 552 |
| -166 | -158 | -150 | -143 | -135 | -129 | -122 | -116 | -110 |
| 970 | 921 | 875 | 831 | 790 | 750 | 713 | 677 | 643 |
| -18 | -18 | -18 | -18 | -18 | -18 | -18 | -18 | -18 |
| 952 | 903 | 857 | 813 | 772 | 732 | 695 | 659 | 625 |
| 4833 | 5736 | 6593 | 7406 | 8178 | 8910 | 9605 | 10264 | 10889 |
| 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| 952 | 903 | 857 | 813 | 772 | 732 | 695 | 659 | 625 |

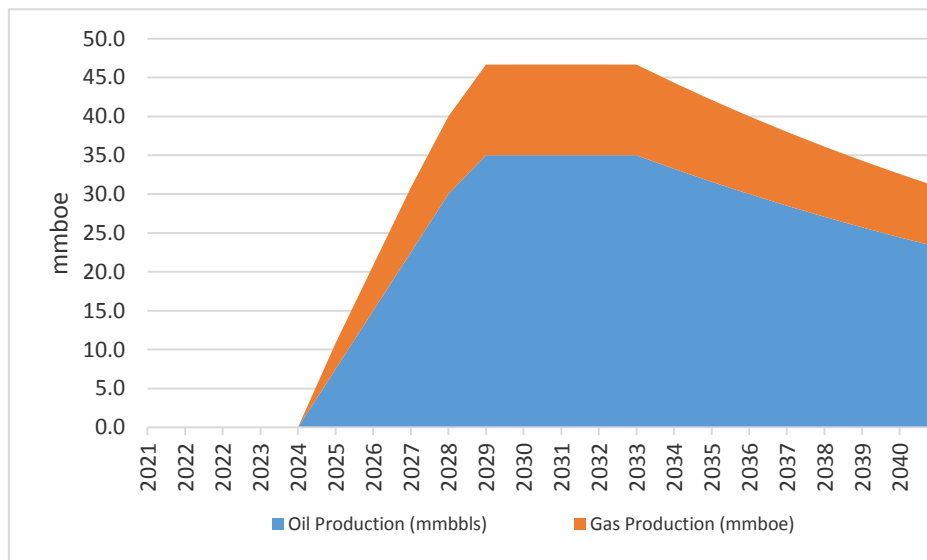
| 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 1627 | 1545 | 1468 | 1395 | 1325 | 1259 | 1196 | 1136 | 1079 |
| -137 | -130 | -124 | -117 | -111 | -106 | -101 | -96 | -91 |
| -126 | -120 | -114 | -108 | -103 | -98 | -93 | -88 | -84 |
| -228 | -216 | -205 | -195 | -185 | -176 | -167 | -159 | -151 |
| -166 | -158 | -150 | -143 | -135 | -129 | -122 | -116 | -110 |
| -18 | -18 | -18 | -18 | -18 | -18 | -18 | -18 | -18 |
| 952 | 903 | 857 | 813 | 772 | 732 | 695 | 659 | 625 |

Production

| | | | |
|---------------------------------|-------------|------|-----------|
| | Oil | | |
| | mmbbls | kbpd | |
| Resources | 0 | | |
| Recovery Factor | 0% | | |
| Reserves | 500 | | |
| Start date | 5 years | | Peak as % |
| | after first | | Reserves |
| | capex | | |
| Peak Production (mmbbls) | 35 | 96 | 7% |
| Time to Peak (yrs) | 5 | | |
| Length of Peak (yrs) | 5 | | |
| Decline rate (%) | 5% | | |

| | | | | | | |
|-----------------------------------|--------------------|-------------|-------------|-------------|-------------|-------------|
| | <i>First capex</i> | | | | | 1st year |
| | 2021 | 2022 | 2022 | 2023 | 2024 | 2025 |
| Oil production | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 7.50 |
| Total oil produced to 2040 | 516.8 | | | | | |
| Barrels per day | | 0 | 0 | 0 | 0 | 20548 |
| Gas Production | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 20.00 |
| Total gas produced to 2040 | 1048.7 | | | | | |

| | | | | | | |
|-------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | 2021 | 2022 | 2022 | 2023 | 2024 | 2025 |
| Oil Production (mmbbls) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 7.5 |
| Gas Production (mmboe) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.3 |
| Total (mmboe) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10.8 |



Production Scenarios

Total Produced

Oil Production Scenarios

| | |
|---|--------|
| 1 | 516.84 |
| 2 | 594.37 |
| 3 | 671.89 |
| 4 | 439.31 |
| 5 | 361.79 |

Gas Production Scenarios

| | |
|---|---------|
| 1 | 1048.68 |
| 2 | 1205.98 |
| 3 | 1363.28 |
| 4 | 891.38 |
| 5 | 734.08 |

Gas
Bcf

1000

5 years
after first
capex

70

5

5

5%

mmcfd

167

667

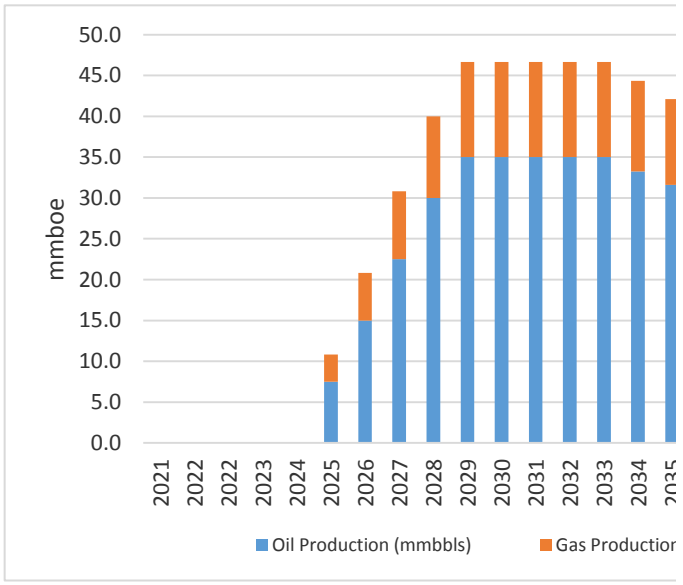
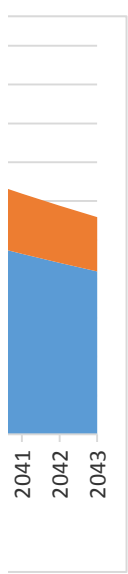
192

Total
mmboe

Peak Oil

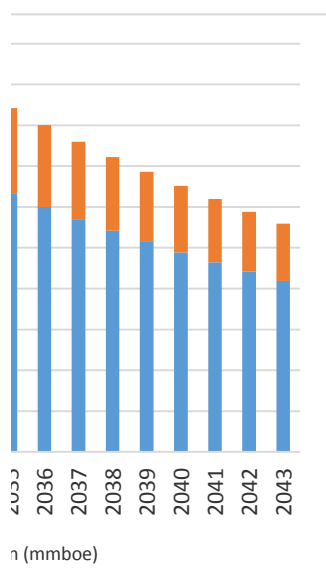
| 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 15.00 | 22.50 | 30.00 | 35.00 | 35.00 | 35.00 | 35.00 | 35.00 | 33.25 |
| 41096 | 61644 | 82192 | 95890 | 95890 | 95890 | 95890 | 95890 | 91096 |
| 35.00 | 50.00 | 60.00 | 70.00 | 70.00 | 70.00 | 70.00 | 70.00 | 66.50 |

| 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 |
|------|------|------|------|------|------|------|------|------|
| 15.0 | 22.5 | 30.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 33.3 |
| 5.8 | 8.3 | 10.0 | 11.7 | 11.7 | 11.7 | 11.7 | 11.7 | 11.1 |
| 20.8 | 30.8 | 40.0 | 46.7 | 46.7 | 46.7 | 46.7 | 46.7 | 44.3 |



| 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 31.59 | 30.01 | 28.51 | 27.08 | 25.73 | 24.44 | 23.22 | 22.06 | 20.96 |
| 86541 | 82214 | 78103 | 74198 | 70488 | 66964 | 63616 | 60435 | 57413 |
| 63.18 | 60.02 | 57.02 | 54.16 | 51.46 | 48.88 | 46.44 | 44.12 | 41.91 |

| 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 |
|------|------|------|------|------|------|------|------|------|
| 31.6 | 30.0 | 28.5 | 27.1 | 25.7 | 24.4 | 23.2 | 22.1 | 21.0 |
| 10.5 | 10.0 | 9.5 | 9.0 | 8.6 | 8.1 | 7.7 | 7.4 | 7.0 |
| 42.1 | 40.0 | 38.0 | 36.1 | 34.3 | 32.6 | 31.0 | 29.4 | 27.9 |



Domestic Oil Price

| | | | | | | |
|------------|------|------|------|------|------|------|
| Base Case | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| Scenario 2 | 28.8 | 28.8 | 28.8 | 28.8 | 28.8 | 28.8 |
| Scenario 3 | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 |
| Scenario 4 | 21.3 | 21.3 | 21.3 | 21.3 | 21.3 | 21.3 |
| Scenario 5 | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 |

Domestic Gas Price

| | | | | | | |
|------------|-----|-----|-----|-----|-----|-----|
| Base Case | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| Scenario 2 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 |
| Scenario 3 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 |
| Scenario 4 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 |
| Scenario 5 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 |

Export Gas Price

| | | | | | | |
|------------|-----|-----|-----|-----|-----|-----|
| Base Case | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 |
| Scenario 2 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 |
| Scenario 3 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 |
| Scenario 4 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 |
| Scenario 5 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 |

Slope 13%

Oil and Gas Price Comparison

| | | | | | | |
|------------------------|--------|----------------------------|--------------------------------|-------|-------|-------|
| Oil | Barrel | | | | | |
| Gas | mcf | <i>thousand cubic feet</i> | | | | |
| 1 barrel = | | 6 mcf | <i>energy equivalent basis</i> | | | |
| Oil Price | 10 | 20 | 30 | 40 | 50 | 60 |
| Gas Price (equivalent) | 1.67 | 3.33 | 5.00 | 6.67 | 8.33 | 10.00 |
| Slope | 16.7% | 16.7% | 16.7% | 16.7% | 16.7% | 16.7% |

Competitive gas price

| | | | | | | |
|-----------|-------|------|------|------|------|------|
| Oil Price | 50 | 50 | 50 | 50 | 50 | 50 |
| Slope | 16.7% | 15% | 14% | 13% | 12% | 11% |
| Gas Price | 8.34 | 7.50 | 7.00 | 6.50 | 6.00 | 5.50 |
| Discount | 0% | -10% | -16% | -22% | -28% | -34% |

| | | | | | | | | |
|------|------|------|------|------|------|------|------|------|
| 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| 28.8 | 28.8 | 28.8 | 28.8 | 28.8 | 28.8 | 28.8 | 28.8 | 28.8 |
| 32.5 | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 |
| 21.3 | 21.3 | 21.3 | 21.3 | 21.3 | 21.3 | 21.3 | 21.3 | 21.3 |
| 17.5 | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 |

| | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 |
| 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 |
| 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 |
| 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 |

| | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 |
| 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 |
| 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 |
| 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 |
| 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 |

| | |
|-------|-------|
| 70 | 80 |
| 11.67 | 13.33 |
| 16.7% | 16.7% |

| | | | | | | | |
|------|------|------|------|------|------|------|------|
| 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| 28.8 | 28.8 | 28.8 | 28.8 | 28.8 | 28.8 | 28.8 | 28.8 |
| 32.5 | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 |
| 21.3 | 21.3 | 21.3 | 21.3 | 21.3 | 21.3 | 21.3 | 21.3 |
| 17.5 | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 |

| | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|
| 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 |
| 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 |
| 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 |
| 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 |

| | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|
| 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 |
| 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 |
| 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 |
| 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 |
| 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 |

2043

21.0

4.2

16.8

25

50

105

838

943

41.9

3.3

6.5

42

0

136

0

136

1079

21.0

24.1 15%

27.2 30%

17.8 -15%

14.7 -30%

41.9

48.2 15%

54.5 30%

35.6 -15%

29.3 -30%

50.0

57.5

65.0

42.5

35.0

25.0
28.8
32.5
21.3
17.5

3.3
3.7
4.2
2.8
2.3

6.5
7.5
8.5
5.5
4.6

Capital Expenditure

| | | |
|---------------------|------|------|
| Reserves | 667 | |
| Capex per bbl | 7.50 | |
| Total capex | 5000 | |
| % before first oil | 80% | 4000 |
| % first oil to peak | 15% | 750 |
| Maintenance capex | 5% | 250 |

| | First Capex | | | First Oil | | |
|-------------------|-------------|------|------|-----------|------|------|
| | 2021 | 2022 | 2022 | 2023 | 2024 | 2025 |
| US\$mm | 0 | 1000 | 1000 | 1000 | 1000 | 150 |
| Before first oil | 4000 | | | | | |
| First oil to peak | 750 | | | | | |
| Maintenance | 252 | | | | | |
| Total | 5002 | | | | | |

Sensitivities

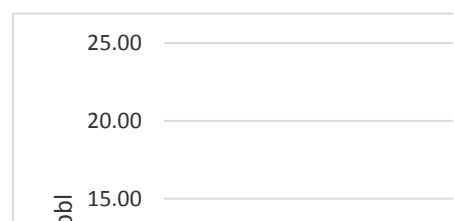
| | | | | | | |
|------|---|------|------|------|------|-----|
| 2 | 0 | 1150 | 1150 | 1150 | 1150 | 173 |
| 3 | 0 | 1300 | 1300 | 1300 | 1300 | 195 |
| 4 | 0 | 850 | 850 | 850 | 850 | 128 |
| 5 | 0 | 700 | 700 | 700 | 700 | 105 |
| 15% | | | | | | |
| 30% | | | | | | |
| -15% | | | | | | |
| -30% | | | | | | |

Field Comparisons

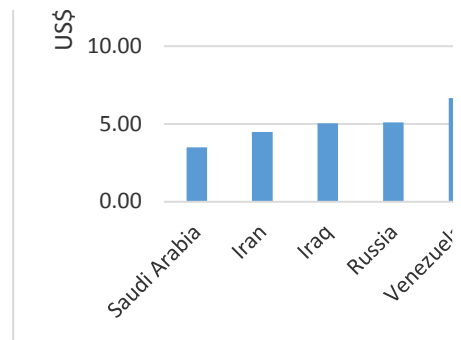
| | Cost /bbl | Capex | Reserves | Peak Prod | Peak Prod |
|-------------------------------|-----------|--------|----------|-----------|-----------|
| | US\$/bbl | US\$mm | mmbbls | kbpd | mmbbls |
| Kashagan (Kazakhstan) | 10.46 | 136000 | 13000 | 1500 | 547.5 |
| ACG (Azerbaijan) | 4.00 | 20000 | 5000 | 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 |

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 |

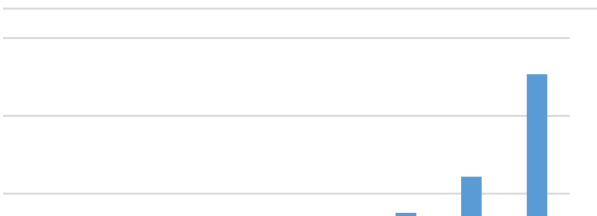
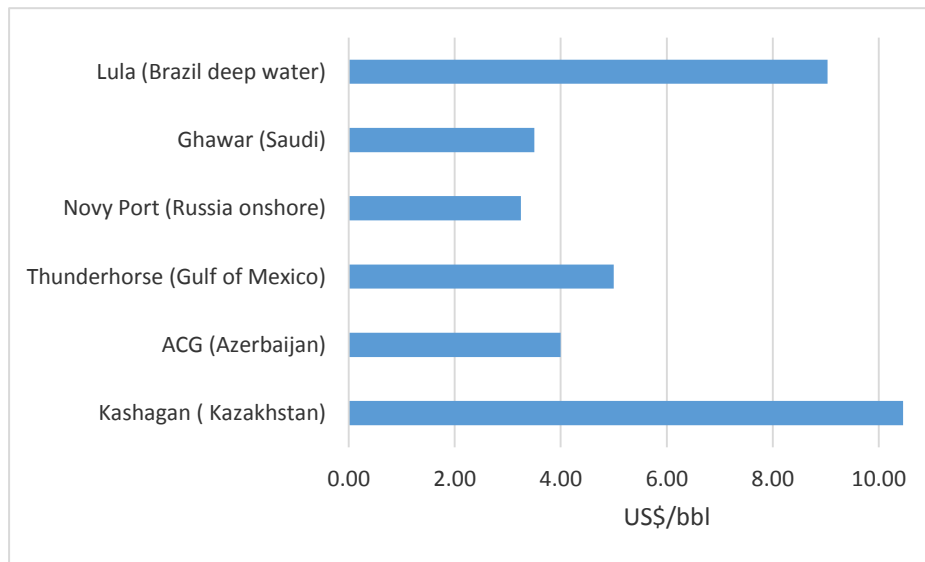


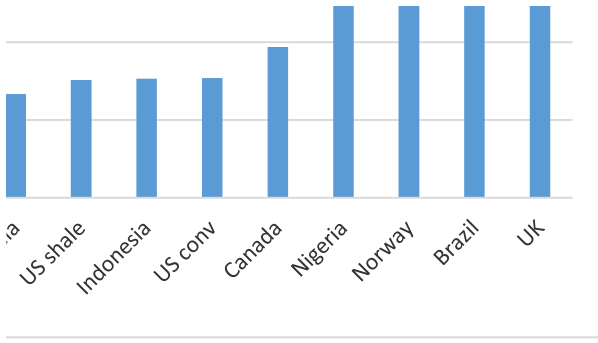
| | Peak Oil | | | | | | | | |
|--|----------|------|------|------|------|------|------|------|------|
| | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 |
| | 150 | 150 | 150 | 150 | 18 | 18 | 18 | 18 | 18 |

| | | | | | | | | |
|-----|-----|-----|-----|----|----|----|----|----|
| 173 | 173 | 173 | 173 | 21 | 21 | 21 | 21 | 21 |
| 195 | 195 | 195 | 195 | 23 | 23 | 23 | 23 | 23 |
| 128 | 128 | 128 | 128 | 15 | 15 | 15 | 15 | 15 |
| 105 | 105 | 105 | 105 | 13 | 13 | 13 | 13 | 13 |

Capex/
peak bbl
US\$/bbl

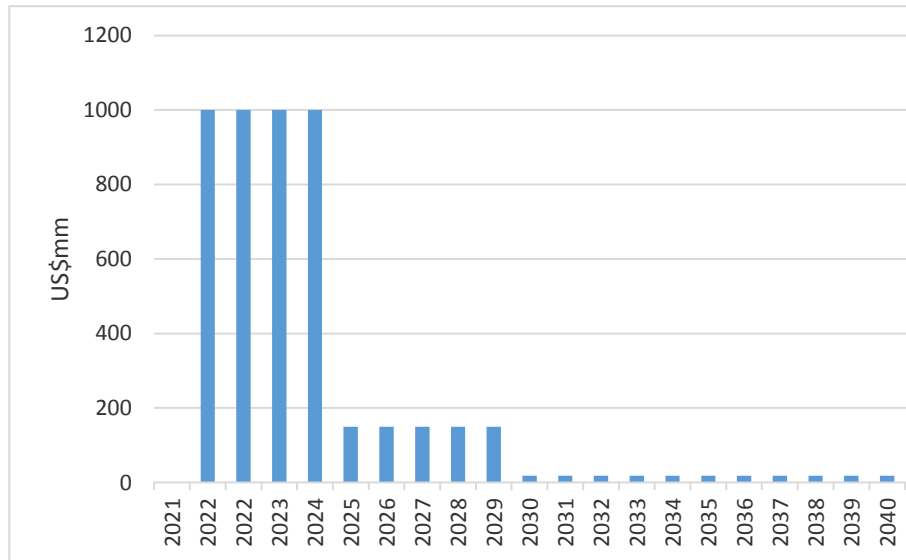
248
88
55
77
136
411





| | | | | | | | | |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 |
| 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 |

| | | | | | | | | |
|----|----|----|----|----|----|----|----|----|
| 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 |
| 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 |
| 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 |





Operating Costs

Lifting Costs 3.25 US\$/boe real
 Total for model 2248 US\$mm

| | 2021 | 2022 | 2022 | 2023 | 2024 | 2025 | 2026 |
|--------|------|------|------|------|------|------|------|
| US\$mm | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 35.2 | 67.7 |
| Total | 2248 | | | | | | |

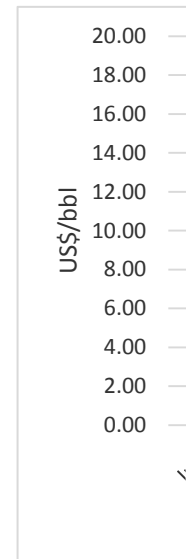
Base Case and Sensitivities

| | |
|---|------|
| 1 | 3.25 |
| 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

| | 2021 | 2022 | 2022 | 2023 | 2024 | 2025 | 2026 |
|--------------|------|------|------|------|------|------|------|
| Oil (US\$mm) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 22.5 | 45.0 |
| Gas (US\$mm) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10.0 | 17.5 |

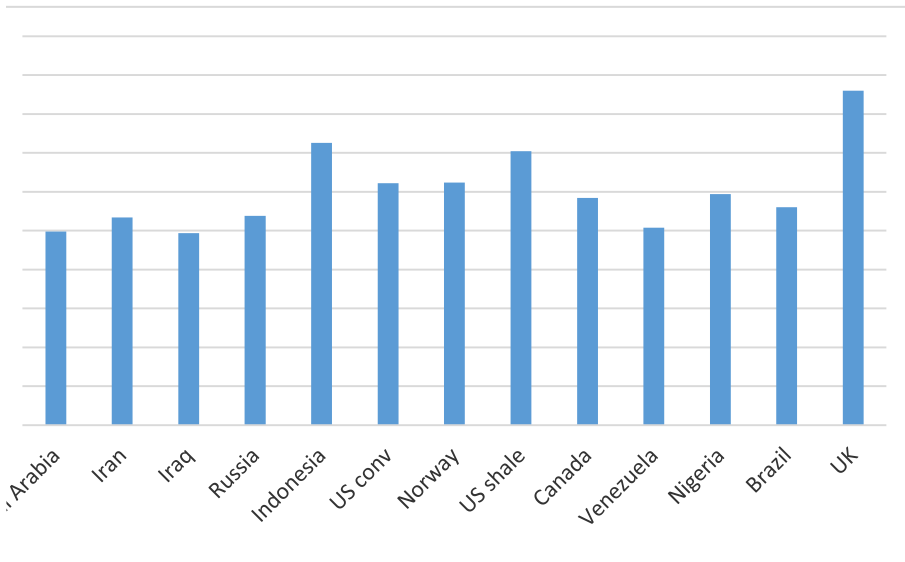
| | | | | | | | |
|----------------|-----|-----|-----|-----|-----|------|------|
| Total (US\$mm) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 32.5 | 62.5 |
|----------------|-----|-----|-----|-----|-----|------|------|

Base Case and Sensitivities

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

92.5 120.0 140.0 140.0 140.0 140.0 140.0 133.0

| 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 |
|-------|-------|-------|-------|-------|-------|-------|------|
| 136.9 | 130.0 | 123.5 | 117.4 | 111.5 | 105.9 | 100.6 | 95.6 |



| 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 |
|------|------|------|------|------|------|------|------|
| 94.8 | 90.0 | 85.5 | 81.2 | 77.2 | 73.3 | 69.7 | 66.2 |
| 31.6 | 30.0 | 28.5 | 27.1 | 25.7 | 24.4 | 23.2 | 22.1 |

126.4

120.0

114.0

108.3

102.9

97.8

92.9

88.2

2043

90.8

2043

62.9

21.0

Operating Taxes

Oil Tax

Export Tax Sliding of export barrels
Royalty 1.0% of oil revenues
Other taxes 0.5% of total revenues

Export Oil Price 50 50 50 50 50 50

| | 2021 | 2022 | 2022 | 2023 | 2024 | 2025 |
|------------|------|------|------|------|------|------|
| Export Tax | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 45.0 |
| Royalty | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.4 |
| Other | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 |
| Total | 0 | 0 | 0 | 0 | 0 | 50.4 |

Export Tax

Cut-off point 20 US\$/bbl
Tax 25% above cut-off point

Export Tax (\$/bbl) 7.5 7.5 7.5 7.5 7.5 7.5

Gas Tax

Export Tax 20% export revenues
Royalty 0.25 US\$/mcf

| | 2021 | 2022 | 2022 | 2023 | 2024 | 2025 |
|------------|------|------|------|------|------|------|
| Export Tax | 0 | 0 | 0 | 0 | 0 | 0 |
| Royalty | 0 | 0 | 0 | 0 | 0 | 5 |
| Total | 0 | 0 | 0 | 0 | 0 | 5 |

Total Operating Taxes 0 0 0 0 0 55

Total US\$/boe

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 | 5000 |
| Years of Production | 19 |
| Annual Depreciation (US\$mm) | 263 |

| | 2021 | 2022 | 2022 | 2023 | 2024 | 2025 |
|-------------------|----------|----------|----------|----------|----------|----------|
| Depreciation | 0 | 0 | 0 | 0 | 0 | 263 |
| <i>Production</i> | <i>0</i> | <i>0</i> | <i>0</i> | <i>0</i> | <i>0</i> | <i>1</i> |
| Total | 5000 | | | | | |

Unit of Production

| | |
|-------------------------|------|
| Total Reserves | 667 |
| Total Produced | 692 |
| Total Capex | 5000 |
| Depreciation per barrel | 7.23 |

| | 2021 | 2022 | 2022 | 2023 | 2024 | 2025 |
|--------------|------|------|------|------|------|------|
| Depreciation | 0 | 0 | 0 | 0 | 0 | 78 |
| Total | 5000 | | | | | |

| 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 263 | 263 | 263 | 263 | 263 | 263 | 263 | 263 | 263 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

| 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 151 | 223 | 289 | 337 | 337 | 337 | 337 | 337 | 321 |

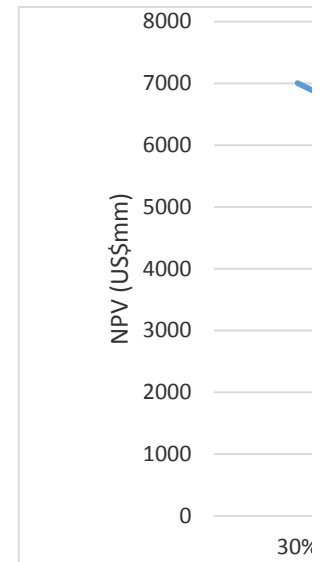
| 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 263 | 263 | 263 | 263 | 263 | 263 | 263 | 263 | 263 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

| 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 304 | 289 | 275 | 261 | 248 | 236 | 224 | 213 | 202 |

Sensitivities

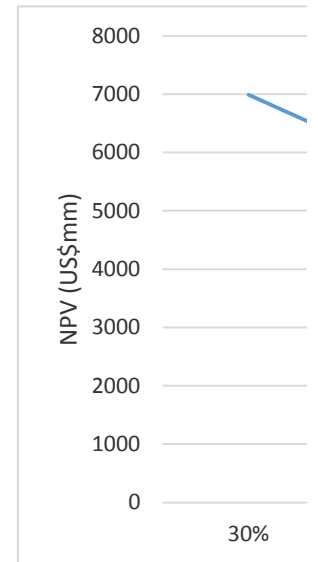
Oil Price

| | NPV |
|------|------|
| 30% | 7005 |
| 15% | 5677 |
| 0% | 4348 |
| -15% | 3020 |
| -30% | 1692 |



Production

| | NPV |
|------|------|
| 30% | 6988 |
| 15% | 5668 |
| 0% | 4349 |
| -15% | 3029 |
| -30% | 1709 |



Capex

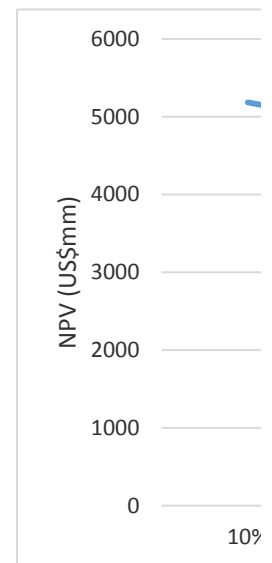
| | NPV |
|------|------|
| 30% | 2855 |
| 15% | 3602 |
| 0% | 4349 |
| -15% | 5095 |
| -30% | 5842 |

Opex

| | NPV |
|------|------|
| 30% | 3783 |
| 15% | 4066 |
| 0% | 4349 |
| -15% | 4632 |
| -30% | 4914 |

Corporate Tax Rate

| | NPV |
|-----|------|
| 10% | 5184 |
| 15% | 4766 |
| 20% | 4349 |
| 25% | 3931 |
| 30% | 3513 |

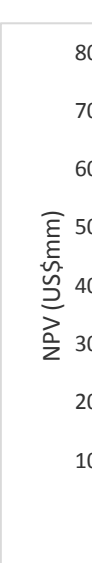
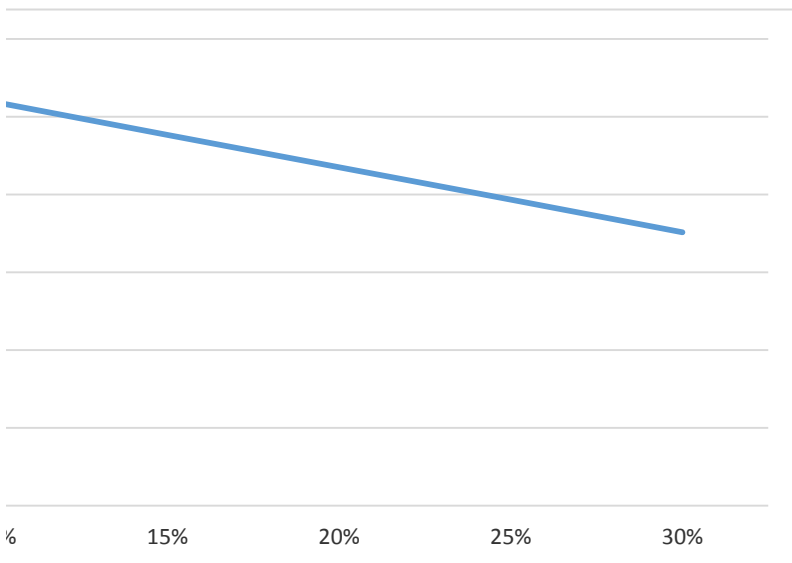
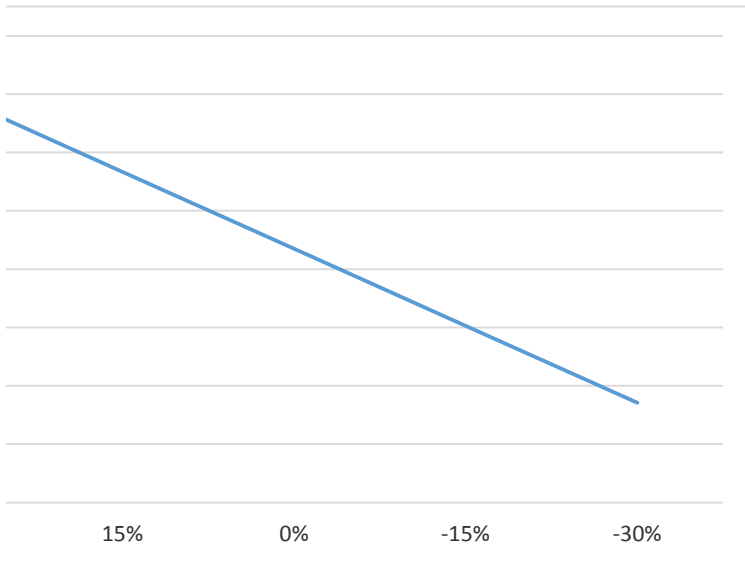
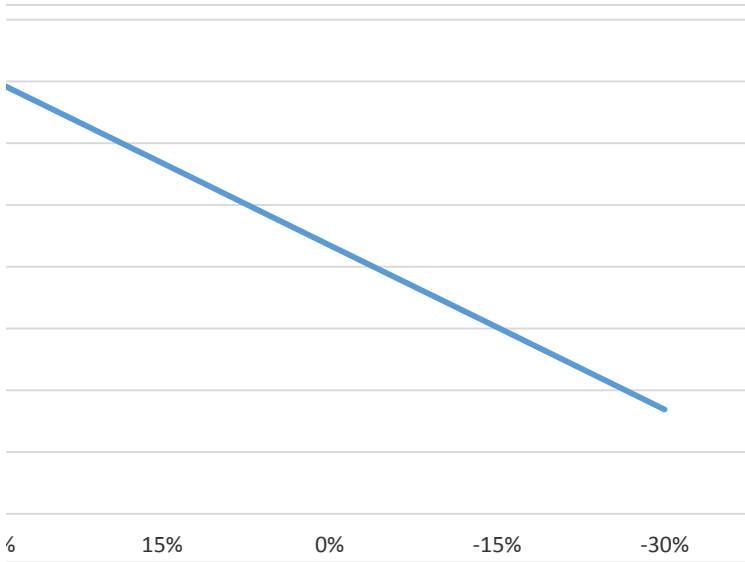


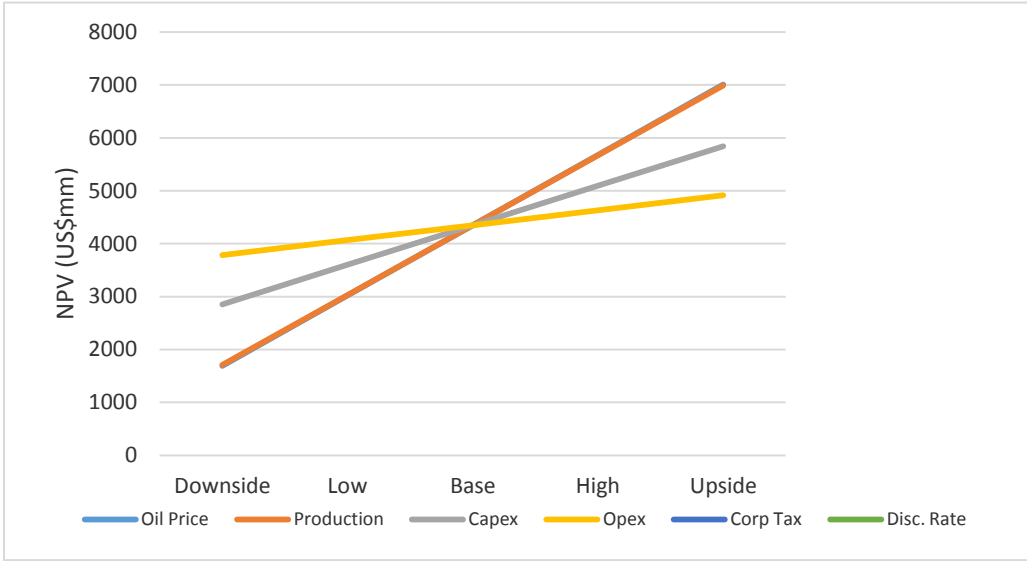
Discount Rate

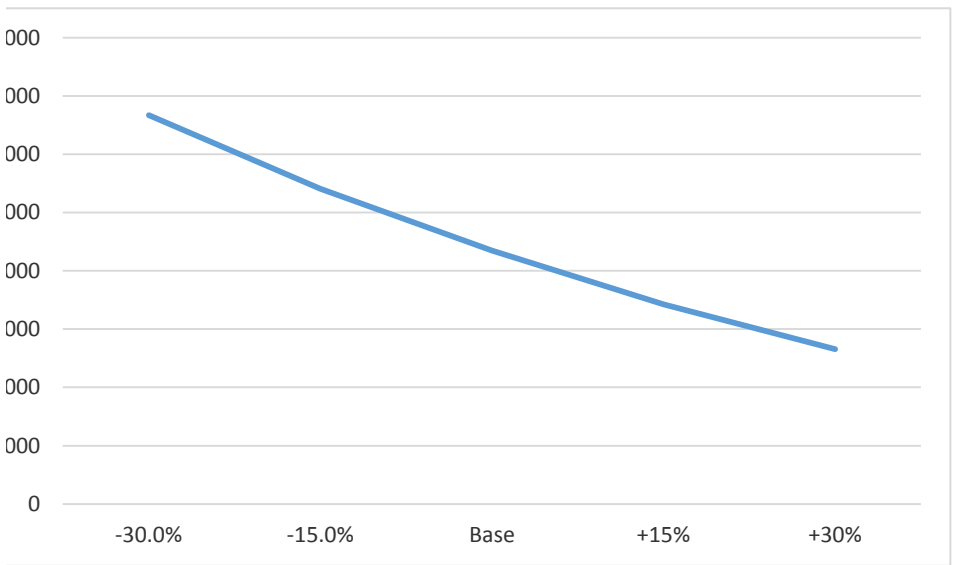
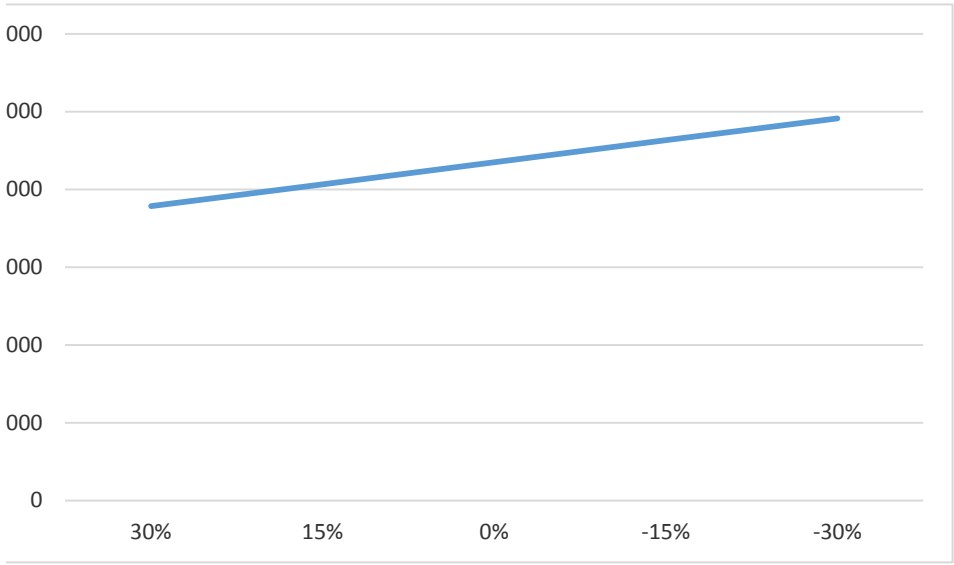
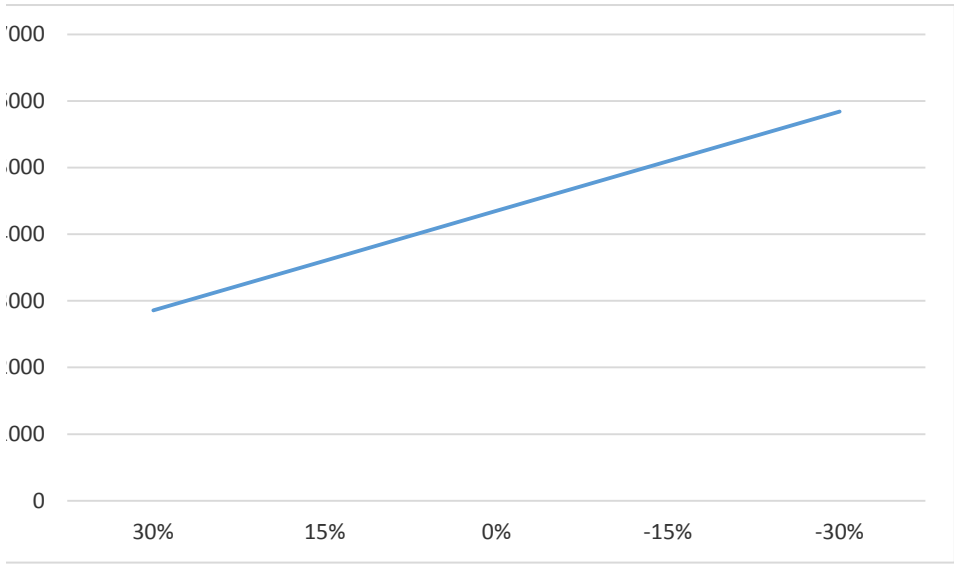
| | NPV |
|--------|------|
| -30.0% | 6668 |
| -15.0% | 5406 |
| Base | 4349 |
| +15% | 3427 |
| +30% | 2654 |

Summary

| | Oil Price | Production Capex | Opex | Corp Tax | Disc. Rate |
|----------|-----------|------------------|------|----------|------------|
| Downside | 1692 | 1709 | 2855 | 3783 | |
| Low | 3020 | 3029 | 3602 | 4066 | |
| Base | 4348 | 4349 | 4349 | 4349 | |
| High | 5677 | 5668 | 5095 | 4632 | |
| Upside | 7005 | 6988 | 5842 | 4914 | |







Exploration Well Analysis

| | |
|-------------------|------------|
| Chance of Success | 10% |
| Cost of Well | 100 US\$mm |
| NPV of Success | 10889 |
| Dry Hole | -90.0 |
| Successful Well | 1079 |
| EMV | 989 |

PSA Regime

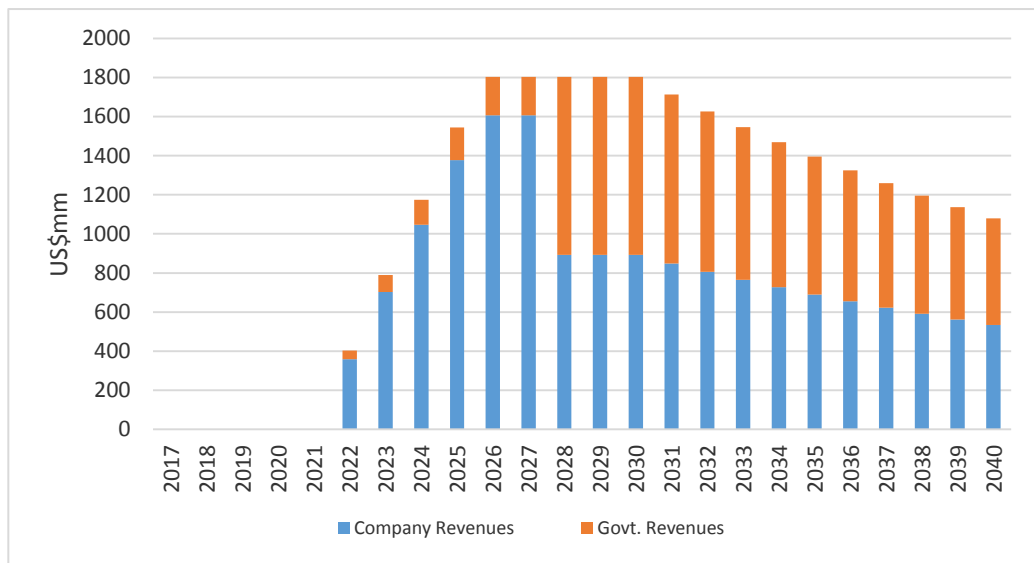
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
|---------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Company Revenues | 0 | 0 | 0 | 0 | 0 | 359 |
| Operating Costs | 0 | 0 | 0 | 0 | 0 | -35 |
| Transport Costs | 0 | 0 | 0 | 0 | 0 | -33 |
| Operating Taxes | 0 | 0 | 0 | 0 | 0 | 0 |
| EBITDA | 0 | 0 | 0 | 0 | 0 | 291 |
| Depreciation | 0 | 0 | 0 | 0 | 0 | -78.3185 |
| EBIT | 0 | 0 | 0 | 0 | 0 | 213 |
| Tax on EBIT | 0 | 0 | 0 | 0 | 0 | -42.5201 |
| <i>Corporate Tax Rate</i> | 20% | | | | | |
| Post tax cashflow | 0 | 0 | 0 | 0 | 0 | 248 |
| CAPEX | 0 | -1000 | -1000 | -1000 | -1000 | -150 |
| Free Cashflow (FCF) | 0 | -1000 | -1000 | -1000 | -1000 | 98 |
| Cumulative FCF | 0 | -1000 | -2000 | -3000 | -4000 | -3902 |
| Discount Rate | 10% | | | | | |
| Discount Factor | 1.10 | 1.21 | 1.33 | 1.46 | 1.61 | 1.77 |
| Discounted Cashflow (DCF) | 0 | -826 | -751 | -683 | -621 | 56 |
| NPV (\$mm) | -145 | | | | | |
| IRR (%) | 9% | | | | | |

Revenue Calculation

| | Company | Govt | | | | |
|------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Cost Oil | 80% | | | | | |
| Profit Oil | 50% | 50% | | | | |
| | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
| Total Revenues | 0 | 0 | 0 | 0 | 0 | 403 |
| Govt Royalty | 0 | 0 | 0 | 0 | 0 | 4 |
| Taxable Revenues | 0 | 0 | 0 | 0 | 0 | 398 |
| | 1% | | | | | |
| Cost Oil | | | | | | |
| 80% of Revenues | 0 | 0 | 0 | 0 | 0 | 319 |

| | | | | | | |
|-------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Accumulated Cost Oil | 0 | 0 | 0 | 0 | 319 | |
| Annual Costs | -1000 | -1000 | -1000 | -1000 | -218 | |
| Accumulated Costs | -1000 | -2000 | -3000 | -4000 | -4218 | |
| Payback | -1000 | -2000 | -3000 | -4000 | -3899 | |
| | 0 | 0 | 0 | 0 | 0 | |
| Cost Oil to Company | 0 | 0 | 0 | 0 | 319 | |
| Profit Oil | 0 | 0 | 0 | 0 | 80 | |
| Profit Oil | | | | | | |
| Company | 0 | 0 | 0 | 0 | 40 | |
| Govt | 0 | 0 | 0 | 0 | 40 | |
| Total Company Revenues | 0 | 0 | 0 | 0 | 359 | |
| | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
| Company Revenues | 0 | 0 | 0 | 0 | 0 | 359 |
| Govt. Revenues | 0 | 0 | 0 | 0 | 0 | 44 |

| | | | | | | | | |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 943 | 1874 | 3098 | 4525 | 5953 | 7380 | 8808 | 10236 | 11592 |
| -280 | -343 | -400 | -442 | -310 | -310 | -310 | -310 | -295 |
| -4498 | -4841 | -5241 | -5682 | -5992 | -6302 | -6611 | -6921 | -7216 |
| -3554 | -2967 | -2143 | -1157 | -39 | 1079 | 2197 | 3315 | 4376 |
| 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 |
| 625 | 931 | 1224 | 1428 | 1428 | 0 | 0 | 0 | 0 |
| 156 | 233 | 306 | 357 | 357 | 1784 | 1784 | 1784 | 1695 |
| 78 | 116 | 153 | 178 | 178 | 892 | 892 | 892 | 848 |
| 78 | 116 | 153 | 178 | 178 | 892 | 892 | 892 | 848 |
| 703 | 1047 | 1377 | 1606 | 1606 | 892 | 892 | 892 | 848 |
| 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 |
| 703 | 1047 | 1377 | 1606 | 1606 | 892 | 892 | 892 | 848 |
| 86 | 128 | 168 | 196 | 196 | 910 | 910 | 910 | 865 |



| 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 805 | 765 | 727 | 690 | 656 | 623 | 592 | 562 | 534 |
| -137 | -130 | -124 | -117 | -111 | -106 | -101 | -96 | -91 |
| -126 | -120 | -114 | -108 | -103 | -98 | -93 | -88 | -84 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 542 | 515 | 489 | 465 | 441 | 419 | 398 | 379 | 360 |
| -304 | -289 | -275 | -261 | -248 | -236 | -224 | -213 | -202 |
| 238 | 226 | 214 | 204 | 193 | 184 | 175 | 166 | 158 |
| -48 | -45 | -43 | -41 | -39 | -37 | -35 | -33 | -32 |
| 495 | 470 | 446 | 424 | 403 | 383 | 364 | 345 | 328 |
| -18 | -18 | -18 | -18 | -18 | -18 | -18 | -18 | -18 |
| 477 | 452 | 428 | 406 | 385 | 365 | 346 | 327 | 310 |
| 2462 | 2914 | 3342 | 3748 | 4133 | 4498 | 4843 | 5171 | 5481 |
| 4.59 | 5.05 | 5.56 | 6.12 | 6.73 | 7.40 | 8.14 | 8.95 | 9.85 |
| 104 | 89 | 77 | 66 | 57 | 49 | 42 | 37 | 31 |

| 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 1627 | 1545 | 1468 | 1395 | 1325 | 1259 | 1196 | 1136 | 1079 |
| 16 | 15 | 15 | 14 | 13 | 13 | 12 | 11 | 11 |
| 1610 | 1530 | 1453 | 1381 | 1312 | 1246 | 1184 | 1125 | 1068 |
| 1288 | 1224 | 1163 | 1105 | 1049 | 997 | 947 | 900 | 855 |

| | | | | | | | | |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 12880 | 14104 | 15267 | 16372 | 17421 | 18418 | 19365 | 20265 | 21119 |
| -281 | -268 | -256 | -244 | -232 | -222 | -211 | -202 | -193 |
| -7497 | -7765 | -8021 | -8265 | -8497 | -8719 | -8930 | -9132 | -9325 |
| 5383 | 6339 | 7246 | 8107 | 8924 | 9699 | 10435 | 11133 | 11795 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1610 | 1530 | 1453 | 1381 | 1312 | 1246 | 1184 | 1125 | 1068 |
| 805 | 765 | 727 | 690 | 656 | 623 | 592 | 562 | 534 |
| 805 | 765 | 727 | 690 | 656 | 623 | 592 | 562 | 534 |
| 805 | 765 | 727 | 690 | 656 | 623 | 592 | 562 | 534 |
| 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 |
| 805 | 765 | 727 | 690 | 656 | 623 | 592 | 562 | 534 |
| 822 | 780 | 741 | 704 | 669 | 636 | 604 | 574 | 545 |

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 |