

# Financial analysis- for royal dutch shell

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Royal Dutch Shell, Plc. (NYSE: RDS. A) Table of Contents Executive Summary3 Introduction4 Financial Ratio Analysis5 Liquidity6 Asset Management7 Debt Management8 Profitability10 Market Value12 Cash Flow and Growth Analysis14 Capital Structure Estimation16 Weighted Average Cost of Capital17 Cost of Debt17 Cost of Equity - CAPM18 Cost of Equity - DCF19 Cost of Equity - BYPRP19 WACC20 Project Cash Flow Estimation21 Capital Budgeting Analysis23 Sensitivity Analysis24 Scenario Analysis27 Conclusion28 References29 Appendix30

Executive Summary This report analyzes Royal Dutch Shell Plc. (RDS. A on NYSE) financial status, history, market space, and growth opportunities. Royal Dutch Shell Plc. (Shell) is one of the world's largest corporations with annual revenue of \$470 billion for fiscal year 2011. When analyzing a company it is vital to ensure all aspects of the firm's financial standing are stable, this is essential to guarantee its ability to take upon new major projects, such as the one being proposed at this time and evaluated in this report.

This report intends to evaluate the possibility of Shell undertaking a project that requires a total initial investment of \$580 million in fixed assets as well as operation expenses of \$38 million, for a total of \$618 million in startup costs. This report illustrates Shell's financial standing through, ratio analysis, cash flow analysis, and detailed capital budgeting analysis to help calculate Shell's capacity to accept the proposed project. The life of the project will be eight years and expected to have a growth rate of 8.5%.

The Net Present Value of the project is approximately \$284 million and is expected to pay for itself in approximately 4.74 years according to <https://assignbuster.com/financial-analysis-for-royal-dutch-shell/>

discounted payback calculations (detailed in report). Introduction Royal Dutch Shell plc operates as an oil, gas and energy company that explores for and extracts hydrocarbons worldwide. Royal Dutch Shell also converts natural gas to liquids to provide cleaner-burning fuels; markets and trades natural gas; extracts bitumen from mined oil sands and convert it to synthetic crude oil; and generates electricity from wind energy.

In addition, it converts crude oil into a range of refined products, including gasoline, diesel, heating oil, aviation fuel, marine fuel, lubricants, bitumen, sulphur, and liquefied petroleum gas (LPG); and produces and sells petrochemicals for industrial use. The company holds interests in approximately 30 refineries; 1, 500 storage tanks and 150 distribution facilities; and fuels retail network of approximately 43, 000 service stations under the Shell brand name. Royal Dutch Shell plc also markets its products under the Shell V-Power and Shell FuelSaver brand names.

In addition, the company offers lubricants for use in passenger cars, trucks, and coaches, as well as for industrial machinery in manufacturing, mining, power generation, agriculture, and construction industries. Royal Dutch Shell plc sells fuels, specialty products, and services to commercial customers; offers fuel for approximately 7, 000 aircraft every day at 800 airports in 30 countries; offers liquefied petroleum gas and related services to retail, commercial, and industrial customers for cooking, heating, lighting, and transport applications; provides transport, industrial, and heating fuels; and supplies approximately 11, 000 tones of itumen products. Royal Dutch Shell plc is headquartered in The Hague, Netherlands and employs roughly 23, 000 people worldwide. (Royal Dutch Shell, 2012). Financial Ratio Analysis

The following table illustrates Royal Dutch Shell's financial ratios analysis and will assist in the understanding of the current and (estimated) future status of the organization. The ratios will allow for a general interpretation of the firm's strength and ability to take on outside projects. The table exemplifies the liquidity, asset management, debt management, profitability, and market value standpoint of the firm.

Examining Royal Dutch Shell's financial ratios presents a positive outlook for the company, in comparison to the industry average Shell is performing exceptionally well. Royal Dutch Shell, Plc. (NYSE: RDS. A) Financial Ratios|

Liquidity Ratios	12/31/2011	12/31/2010	12/31/2009	12/31/2008	12/31/2007	Average	Industry	Comments
Quick Ratio	0.85	0.8	0.79	0.9	0.84	0.84	1.1	Healthy
Current Ratio	1.17	1.12	1.14	1.1	1.15	1.136	1.5	Healthy
Asset Management								
Inventory Turnover	13.	10.84	9.77	15.56	10.84	12.12	14.9	OK
Fixed Assets Turnover	3.29	2.76	2.34	4.28	3.51	3.24	1.3	Healthy
Total Asset Turnover	1.45	1.23	0.99	1.66	1.41	1.35	0.6	Healthy
Debt Management								
Debt Ratio	17.90%	22.80%	20.20%	15.30%	12.60%	17.76%	51.98%	Healthy
Net Fixed Debt Ratio	15.10%	18.70%	18.30%	9.70%	8.90%	14.14%	27.38%	Healthy
Debt to Equity Ratio	21.70%	29.61%	25.36%	18.06%	14.37%	21.82%	42.69%	Healthy

Profitability Ratios	12/31/2011	12/31/2010	12/31/2009	12/31/2008	12/31/2007	Average	Industry	Comments
Net Profit Margin on Sales	6.							

32%| 5. 47%| 6. 88%| 3. 32%| 10. 19%| 6. 44%| 6. 50%| Healthy| Basic Earning Power | 16. 12%| 10. 96%| 7. 19%| 18. 00%| 18. 77%| 14. 21%| 6. 80%| Healthy| ROA % (Net)| 9. 26%| 6. 55%| 4. 36%| 9. 50%| 12. 41%| 8. 42%| 10. 15%| Healthy| ROE % (Net)| 19. 47%| 14. 15%| 9. 49%| 20. 86%| 27. 28%| 18. 25%| 14. 24%| Healthy| | | | | | | | Market Value Ratios| 12/31/2011| 12/31/2010| 12/31/2009| 12/31/2008| 12/31/2007| Average| Industry| Comments| Price per Earning Ratio| 7. 4%| 10. 14%| 14. 24%| 6. 06%| 8. 32%| 9. 28%| 7. 86| Healthy| Dividend Yield| 4. 60%| 5. 03%| 5. 52%| 5. 89%| 3. 34%| 4. 88%| 4. 76%| Average| Book Value per Share| \$ 54. 98 | \$ 47. 85 | \$ 45. 05 | \$ 42. 02 | \$ 38. 61 | \$ 45. 70| \$ 46. 43| Average| Earnings per Share| \$ 4. 98 | \$ 3. 28 | \$ 2. 04 | \$ 4. 27 | \$ 5. 00 | \$ 3. 91| \$ 3. 26| Average| Table 1 - Financial Ratio Overview Liquidity Ratios Liquidity Ratios|

12/31/2011| 12/31/2010| 12/31/2009| 12/31/2008| 12/31/2007| Average| Industry| Comments| Quick Ratio| 0. 85| 0. 8| 0. 79| 0. 9| 0. 84| 0. 84| 1. | Healthy| Current Ratio| 1. 17| 1. 12| 1. 14| 1. 1| 1. 15| 1. 136| 1. 5| Healthy|

Figure 1 -RDS. A Liquidity Ratio Trend The current ratio measures a company's ability to pay short-term debts and other current liabilities by comparing current assets to current liabilities. The ratio illustrates a company's ability to remain solvent. Shell's five year current ratio average is 1. 13, . 37 below the industry average, and their quick ratio is . 84, . 26 below the industry average. Shells liquidity ratios are both below the industry average and illustrate their healthy status and continued strength for liquidity.

Asset Management Ratios Asset Management| 12/31/2011| 12/31/2010| 12/31/2009| 12/31/2008| 12/31/2007| Average| Industry| Comments|

Inventory Turnover	13.6	10.84	9.77	15.56	10.84	12.12	14.9	OK
Fixed Assets Turnover	3.29	2.76	2.34	4.28	3.51	3.24	1.3	Healthy
Total Asset Turnover	1.45	1.23	0.99	1.66	1.41	1.35	0.6	Healthy

Figure 2 -RDS. A Asset Management Ratio Trend Asset Management

ratios give an indicator of efficiency (ability to move inventory and generate sales) within a company, particularly ones with tangible goods as compared to its competitors.

You can see from figure 2 that in comparison to the industry average Shell is healthy and efficient in their assets and inventory turnover. Figure 2 reflects a spike in Shells inventory turnover in 2008; however this can also be attributed to the economic downturn in 2008. Even with the spike Shells average is still on par with the industry and exemplifies a healthy asset management turnover.

Debt Management Ratios	Debt Management	Debt Management	Debt Management	Debt Management	Debt Management	Average	Industry	Comments
12/31/2011	12/31/2010	12/31/2009	12/31/2008	12/31/2007	12/31/2006	12/31/2005	12/31/2004	
Debt Ratio	17.90%	22.80%	20.20%	15.0%	12.60%	17.76%	51.98%	Healthy
Net Fixed Debt Ratio	15.10%	18.70%	18.30%	9.70%	8.90%	14.14%	27.38%	Healthy
Debt to Equity Ratio	21.70%	29.61%	25.36%	18.06%	14.37%	21.82%	42.69%	Healthy
Times Interest Earned	41.54	36.49	39.78	33.38	N/A	37.79	25.61	Healthy

Figure 3 -RDS. A Debt Management Ratio Trend Royal Dutch Shell's Debt Management ratios indicate that it has been less aggressive with using debt to finance growth than the majority of its competitors in the Oil & Gas industry.

Across the board Shell has a lower debt ratio than their competitors; the resultant effect on earnings would be less volatile than related companies.

Across the board Shell has a lower debt ratio than their competitors; the resultant effect on earnings would be less volatile than related companies.

The debt ratio is a solvency ratio that examines how much of a company's assets are made of liabilities. A debt ratio of 20 percent means that 20 percent of the company is liabilities. A high debt ratio can be negative; this indicates the shareholder equity is low and potential solvency issues. A low debt to equity ratio indicates lower risk, because debt holders have less claims on the company's assets. Overall Royal Dutch Shell is in an excellent Debt Management position.

Figure 4 -RDS. A Debt Management Ratio (TIE) Trend Times interest earned or Interest Coverage Ratio is a key metric to determine the credit worthiness of a business. Essentially, the number represents how many times in the last 12 months' EBIT (earnings before interest and taxes) would have covered the past 12 months' interest expenses. Royal Dutch Shell's times interest earned ratio has a four year average of 37.79, which is 12.18 points superior than the industry average which rests at 25.61. This presents Shell in a healthy credit worthiness business. Profitability Ratios

Profitability Ratios	12/31/2011	12/31/2010	12/31/2009	12/31/2008	12/31/2007	Average	Industry	Comments
Net Profit Margin on Sales	6.32%	5.47%	6.88%	3.32%	10.19%	6.44%	6.50%	Healthy
Basic Earning Power Ratio	16.12%	10.96%	7.19%	18.00%	18.77%	14.21%	6.80%	Healthy
ROA % (Net)	9.26%	6.55%	4.36%	9.50%	12.41%	8.42%	10.15%	Healthy
ROE % (Net)	19.47%	14.15%	9.49%	20.86%	27.28%	18.25%	14.24%	Healthy

Figure 5 -RDS. A Profitability Ratio Trend When it comes to profitability, Royal Dutch Shell is on average with its competitors.

Net Profit Margin is the net earnings of a company / sales. This profitability ratio compares the percent of net earnings from a company's sales. Royal Dutch Shell's Net Profit is on par with other companies in the Oil ; Gas industry, which means it has an equal ability spend assets on business operations when compared to its competitors. Basic earning power shows the raw earning power of a firm's assets before taxes and other leverages. This will help the firm understand their return on its assets. Return on Assets or ROA, shows the rate of return (after tax) being earned on all of the firm's assets regardless of financing structure.

It is a measure of how efficiently the company is using all stakeholders' assets to earn returns. Royal Dutch Shell has a five year average of 8. 42%, which is 1. 73% lower than the industry average, however still in the healthy zone. Return on equity or ROE is used to measures the rate of return on themoneyinvested by common stock owners and retained by the company from previous profitable years and shows how well a company uses investment funds to generate growth. Royal Dutch Shell's Return on Equity indicates that it is able to reinvest its earnings more efficiently than the majority of its competitors in the Oil ; Gas industry.

Typically, companies that have higher return on equity values are more attractive to investors and can provide for better growth and profitability.

Market Value Ratios	Market Value Ratios	12/31/2011	12/31/2010	12/31/2009	12/31/2008	12/31/2007	Average	Industry	Comments	Price per Earning Ratio												
7. 64%	10. 14%	14. 24%	6. 06%	8. 32%	9. 28%	7. 86%	Healthy	Dividend Yield	4. 60%	5. 03%	5. 52%	5. 89%	3. 34%	4. 88%	4. 76%	Average	Payout Ratio	5. 46%	4. 76%	8. 41%	3. 62%	2.



87%| 5.02%| 2.67%| Healthy| Book Value per Share| \$ 54.98 | \$ 47.85 | \$ 45.5 | \$ 42.02 | \$ 38.61 | \$ 45.70| \$ 46.43| Average| Earnings per Share| \$ 4.98 | \$ 3.28 | \$ 2.04 | \$ 4.27 | \$ 5.00 | \$ 3.91| \$ 3.26| Average| Figure 6 -RDS. A Market Value Ratio Trend Earnings per share (EPS) is the amount of income that " belongs" to each share of common stock. An important tool for investors, EPS is often used in determining the value of a stock. As noted above, Royal Dutch Shell is on average with other firms in its industry. Book value per share has slowly been on a rise over the past 5 years, from \$38.61 in 2007 up to 54.8 in 2011. Book value is a company's net asset value; a relatively high book value per share in relation to stock price often occurs when a stock is undervalued and might be an attractive buy. Figure 7 -RDS. A Market Value Ratio Trend The price per earnings ratio (PE) is the measure of the share price relative to the annual net income earned by the firm per share. PE ratio shows current investor demand for a company share. A high PE ratio generally indicates increased demand because investors anticipate earnings growth in the future. Royal Dutch Shell has a five year average of 9.8% PE as compared to the industry average of 7.86%; Shell is higher by 1.42%. The dividend yield is the sum of a company's annual dividends per share, divided by the current price per share. When investing in companies an investor should look for a stable and high dividend yield; this can insure an investor a secure a relatively stable cash flow. Royal Dutch Shell's dividend yield is on par with other companies. As indicated by the payout ratio, Royal Dutch Shell's earnings support the dividend payouts more than others in the same industry group. Cash Flow and Growth Analysis

Royal Dutch Shell Cash Flow \$ Million| 2011| 2010| 2009| 2008| 2007| Cash and Cash Equivalents at January 1| \$ 13, 444 | \$ 9, 719 | \$ 15, 188 | \$ 9, 656 | \$ 9, 002 | Net Cash from Operating Activities| \$ 59, 393 | \$ 42, 712 | \$ 30, 731 | \$ 69, 787 | \$ 53, 324 | Net Cash used in Investing Activities| \$ (20, 443)| \$ (21, 972)| \$ (26, 234)| \$ (28, 915)| \$ (14, 570)| Net Cash used in Financing Activities| \$ (18, 131)| \$ (1, 467)| \$ (829)| \$ (9, 394)| \$ (19, 393)| Net (Decrease)/increase, Cash & Cash Equivalents| \$ (2, 152)| \$ 3, 725 | \$ (5, 469)| \$ 5, 532 | \$ 654 | Cash & Cash Equivalents at December 31| \$ 11, 292 | \$ 13, 444 | \$ 9, 719 | \$ 15, 188 | \$ 9, 656 | Figure 8 -RDS. A Cash Flow Trend Information used and interpreted from the Royal Dutch Shell Investors Handbook illustrates that Royal Dutch Shell decreased the amount spent on operations from 2008 to 2009; this can most likely be due to the economic downturn. Conversely, from 2009 to 2011 there has been a steady increase in cash flows for operations.

When evaluating charts in figure 9 and 10 you can see that along with a decrease in cash flows from 2008 - 2009 so did Shell have a decrease in revenues, net income and Earnings per share. From 2009 - 2011 all areas show a steady and healthy growth. Growth Analysis| | | | | Report Date| 12/31/2011| 12/31/2010| 12/31/2009| 12/31/2008| 12/31/2007| Revenue| \$ 470, 171 | \$ 368, 056 | \$ 278, 188 | \$ 458, 361 | \$ 355, 782 | Net income for period| \$ 31, 185 | \$ 20, 474 | \$ 12, 718 | \$ 26, 476 | \$ 31, 926 | Net earnings per share-diluted| \$ 4. 97 | \$ 3. 28 | \$ 2. 04 | \$ 4. 26 | \$ 4. 9 | Total assets| \$ 345, 257 | \$ 322, 560 | \$ 292, 181 | \$ 282, 401 | \$ 269, 470 | Total stockholders' equity| \$ 171, 003 | \$ 149, 780 | \$ 138, 135 | \$ 128, 866 | \$ 125, 968 | Net Cash ; Equivalents Flow| \$ 11, 300 | \$ 13, 400 | \$ 9, 700 | \$

15, 200 | \$ 9, 560 | Figure 9 -RDS. A Growth Analysis Trend Figure 10 -RDS. A Growth Analysis Trend Capital Structure Estimation When performing the Capital Structure Estimation, the assessor can exam how the combination of equity capital and debt capital that a firm uses to finance its assets can have a positive or negative affect on the firm. The capital structure is how a firm finances its overall operations and growth by using different sources of funds. Royal Dutch Shell's use of debt and ommon stock (Royal Dutch Shell does not issue preferred stock) impacts the open market and, as a result, the firm's cost of capital is impacted in both constructive and/or destructive ways. RDS. A Market Value Method / Weights| Debt| \$ 174, 250, 000, 000. 00 | 27. 71%| Equity| \$ 454, 619, 800, 000. 00 | 72. 29%| | | RDS. A Book Value Method / Weights| Debt| \$ 174, 250, 000, 000. 00 | 50. 47%| Equity| \$ 171, 000, 000, 000. 00 | 49. 53%| Figure 11 -RDS. A Capital Structure Estimation By examining the Balance Sheet and the numbers in figure 11 you can see that Royal Dutch Shell, based on market value, has a capital structure of 27. 1% debt and 72. 29% equity in the form of common stock totaling a market capitalization of \$454 billion. When utilizing the book value, the weighing scale becomes 50. 47% debt and 49. 53% equity with a value of \$171 billion. Weighted Average Cost of Capital (WACC) Knowing a firm's weighted average cost of capital is crucial when considering any new projects. A firm's WACC is the overall required return on the firm as a whole and, as such, it is often used internally by company directors to determine the economic feasibility of expansionary opportunities and mergers. Generally speaking, a company's assets are financed by either debt or equity.

WACC is the average of the costs of these sources of financing, each of which is weighted by its respective use in the given situation. The weighted average can show how much interest the company has to pay for every dollar it finances. This section of the report will determine Royal Dutch Shell's weighted average cost of capital. In determining the firm's factor cost of common equity, the average of three methods will be utilized; Capital Asset Pricing Model (CAPM), Discounted Cash Flow (DCF), and bond-yield-plus-risk-premium (BYPRP). Calculating the cost of debt (after tax) is figured by using the corporate tax rate and the cost of debt ( $K_d$ ) which will be based on Royal Dutch Shell's bond rating. Cost of Debt

Royal Dutch Shell's after-tax cost of debt is calculated at 2.30%. The calculation was determined using Shells corporate AA 10 year bond rating market value. RDS. A Cost of Debt | RDS. A 10 year Bond Rating | AA | | Cost of Debt | 2.43% | | Risk Free Rate | 1.62% | | After Tax Cost of Debt | 2.30% |  $K_d(1-T)$  | Corporate Tax Rate | 41.85% | | Figure 12 -RDS. A Cost of Debt Cost of Equity - CAPM Capital Asset Pricing Model (CAPM) is a model that describes the relationship between risk and expected return and that is used in the pricing of risky securities. The general idea behind CAPM is that investors need to be compensated; this is calculated by the CAPM.

The time value of money is represented by the risk-free ( $r_f$ ) rate in the formula and compensates the investors for placing money in investments over a period of time. The other half of the formula represents risk; this is calculated by taking a risk measure (beta) that compares the returns of the asset to the market over a period of time and to the market premium ( $R_m - r_f$ ) or Market risk premium (MRP). Figure 13 illustrates the outcome of the

calculations and that Royal Dutch Shell's CAPM is 10.01%. RDS. A Cost of Equity CAPM Formulated by:  $R_s = R_f + \beta_a * MRP$  | | | Risk Free Rate (Rf) | 1.62% | Yahoo Finance U. S. Treasury Bond Rate | Market Risk Premium or (Rm-rf) | 6.50% | Current Rate November, 2012 | Beta ( $\beta_a$ ) | 1.29% | E-Trade Financial | CAPM of RDS. A | 10.01% | | Cost of Debt ( $K_d$ ) | 2.43% | |

After Tax Cost of Debt | 2.30% | | Figure 13 -RDS. A Cost of Equity Cost of Equity - DCF The Discounted Cash Flow or DCF method uses future free cash flow projections and discounts them to arrive at a present value, which is used to evaluate the potential for investment. Figure 14 illustrates a breakdown of how the discounted cash flow is calculated. The growth rate (g) is the average of three outside estimations. After the calculation is computed, the cost of equity is equal to 11.83%. RDS. A Cost of Equity DCF Formulated:  $R_s = (D_1/P_0) + g$  so  $D_1 = D_0(1+g)$  so  $((D_0(1+g)/P_0) + g)$  | |  $R_s = ((3.42(1+6.42\%)/67.02) + 6.42\%)$  | | Average | E-Trade | Yahoo | Y-Charts | Growth Rate (g) | 6.42% | 6.80% | 6.12% | 6.35% | Dividend ( $D_0$ ) | 3.42 | Y-Charts | Stock Price ( $P_0$ ) | 67.02 | Current Rate November 2012 |  $R_s = 11.83\%$  | Figure 14 -RDS. A Cost of Equity Cost of Equity - BYPRP Bond yield plus risk premium method is used to calculate cost of common equity for a firm. Figure 15 shows the calculation, the after tax cost of debt plus bond risk premium rate; which calculates to a cost of equity equal to 8.80%. RDS. A Cost of Equity BYPRP |  $R_s = BY + MRP$  | | RDS. A After Tax Cost of Debt (BY) | 2.30% | Shell Investors Handbook | Bond Market Risk Premium (MRP) | 6.50% | Current Rate November, 2012 | |  $R_s = 8.80\%$  |

Figure 15 -RDS. A Cost of Equity Weighted Average Cost of Capital - WACC The WACC equation is the cost of each capital component multiplied by its

proportional weight. To calculate the WACC we first take the average of the CAPM, DCF and BYPRP methods which is calculated in figure 16. RDS. A Average Cost of Equity | | CAPM | DCF | BYPRP | Average | Royal Dutch Shell | 10. 01% | 11. 83% | 8. 80% | 10. 21% | Figure 16 -RDS. A Average Cost of Equity Royal Dutch Shell has no preferred stock, thus weight of preferred stock ( $W_p$ ) is equal to 0%. Figure 17 breaks down the full calculation of the Weighted Average Cost of Capital calculation and the defined values.

Using the Weight of Equity and Weight of Debt calculated from the Capital Structure Estimation in figure 11 we can conclude that Royal Dutch Shell's WACC is equal to 8. 28%. Royal Dutch Shell Plc WACC | WACC formulated:  $WACC = W_s * R_s + W_d * R_d * (1 - \text{Tax Rate}) + W_p * R_p$ . |  $W_s$  | 72. 29% | | Weight of Equity (Common Stock) |  $W_d$  | 27. 71% | | Weight of Debt |  $W_p$  | 0. 00% | | Weight of Preferred Stock |  $R_d$  | 2. 30% | | After Tax Cost of Debt | Tax rate | 41. 85% | | Corporate Tax Rate |  $R_s$  | 10. 21% | | Cost of Equity (Average) |  $R_p$  | 6. 50% | | Market Risk Premium | WACC | 8. 28% | | Weighted Average Cost of Capital | Figure 18 -RDS. A WACC Project Cash Flow Estimation Royal Dutch Shell has been approached with a proposition for a new project. The project will have a life  $p$  of eight years.

The proposed project requires initial investment of \$580 million to construct building and purchase equipment, and \$38 million for shipping & installation fee for a total of \$618 million is start-up costs. The fixed assets fall in the 7-year MACRS class and has a salvage value of fixed assets at \$17 million. It is expected that the new product will sale 2, 280, 000 units in the first year and has an expected annual growth rate of 8. 5%. The sales price is \$275 per unit and the variable cost is \$205 per unit in the first year, but they should

be adjusted accordingly based on the estimated annualized inflation rate of 2.3%. The required net operating working capital (NOWC) is 11.5% of sales.

A detailed analysis and calculations for the cash flow estimation and depreciation details must be performed to ensure that Royal Dutch Shell can undertake such a project. Initial Inputs and Parameters for the Proposed

Project Start-Up Cost | \$618,000,000 | | | | | Net Operating WC/Sales | 11.5% | Market value of equipment at Year 8 | \$17,000,000 | First year sales (in units) | 2,280,000 | Tax rate | 41.85% | Sales price per unit | \$275.00 | WACC | 8.28% | Variable cost per unit | \$205.00 | Inflation | 2.3% |

Non-variable costs | \$0 | Growth in Sales | 8.5% | Figure 19 -RDS. A

Project Parameters Depreciation and Amortization Schedule Year | 1 | 2 | 3 |

4 | 5 | 6 | 7 | 8 | Total | | | | | | | | Rate | 14.0% | 25.0% | 17.0% | 13.0% |

9.0% | 9.0% | 9.0% | 4.0% | 100% | Cost | \$86,520,000 | \$154,500,000 |

\$105,060,000 | \$80,340,000 | \$55,620,000 | \$55,620,000 | \$55,620,000 |

\$24,720,000 | \$618,000,000 | Total | | | | | | | | \$0 | | Figure 20 -

RDS. A Depreciation Schedule Figure 20 illustrates the depreciation schedule

of eight years, outlined in the project parameters. Project Net Cash Flow

Figure 21 -RDS. A Project Estimated Net Cash Flow Capital Budgeting

Analysis Capital Budgeting Analysis is a process in which a business

determines whether projects or investing in a long-term venture are worth

pursuing. Ideally, businesses should pursue all projects and opportunities

that enhance shareholder value.

However, the amount of capital available at any given time for new projects

is limited, capital budgeting analysis will help to determine if a project is

feasible or not. Capital budgeting analysis can include net present value

(NPV), internal rate of return (IRR), modified internal rate of return, profitability index (PI), payback period and discounted payback. In calculating if this project is possible or not we have determined the following budgeting analysis results in figure 22. RDS. A Budgeting Appraisal Results| Net Present Value (NPV)| \$ 284, 606, 920. 00 | Internal Rate of Return (IRR)| 17. 0%| Modified Internal Rate of Return (MIRR)| 13. 1%| Profitability Index (PI)| 1. 41 | Payback (Years)| 4. 74 | Figure 22 -RDS. A Project Analysis Results RDS. A Payback Calculation | 0| 1| 2| 3| 4| 5| 6| 7| 8|

Net Cash Flow| (690, 105, 000)| 121, 087, 715 | 158, 870, 226 | 148, 538, 663 | 149, 691, 454 | 152, 108, 518 | 166, 274, 191 | 181, 997, 451 | 362, 518, 222 | Cumulative CF | (690, 105, 000)| (569, 017, 285)| (410, 147, 060)| (261, 608, 396)| (111, 916, 943)| 40, 191, 576 | 206, 465, 767 | 388, 463, 218 | 750, 981, 440 | Pay Back| | 1. 00 | 1. 00 | 1. 00 | 1. 00 | 0. 74 | 0. 00 | 0. 00 | 0. 00 |

After review of the budgeting analysis results we can conclude that the project should be undertaken. The Profitability Index (PI) is 1. 41, if the PI is greater than 1 than the project should be taken, additionally the net present value is positive, another good sign for accepting the project. The projects Internal Rate of Return (IRR) is 17. 0%, higher than Royal Dutch Shell's WACC which is 8. 8%, this is an optimistic calculation for accepting the project. Finally, payback addresses the projects liquidity, shorter the payback the higher the liquidity and with a current estimation of 4. 74 years, the project is highly recommended. Sensitivity Analysis The Sensitivity Analysis is a modus operandi used to determine how different values of an independent variable will impact a particular dependent variable under a given set of assumptions. Within specific boundaries, the sensitivity analysis



is very useful when attempting to determine the impact the actual outcome of a particular variable will have if it differs from what was previously assumed.

By creating a given set of scenarios as, illustrated in figure 23, the analyst can determine how changes in one variable(s) will impact the target variable. In this particular case the sensitivity analysis will determine how the net present value (NPV) of the proposed project will be affected by the modification of several variables; these variables and the results can be examined in the following figures. The modified variables are sales price, variable costs, units sold, non-variable costs, weighted average cost of capital, corporate tax rate and start-up costs. For the purpose of this analysis the calculations were performed with a 10% and 20% deviation from the base in both a negative and positive trend. RDS. A Project Sensitivity Analysis Calculations Deviation| 1st YEAR UNIT SALES| | % Deviation| WACC| from| Units Sold| NPV| | from| | NPV| Base Case| | \$284, 606, 920| | Base Case| WACC| \$284, 606, 920 | -20%| 1, 824, 000| 144, 446, 239 | | -20%| 6. 6%| 358, 280, 443 | -10%| 2, 052, 000| 214, 526, 580 | | -10%| 7. 5%| 320, 454, 423 | 0%| 2, 280, 000| 284, 606, 920 | | 0%| 8. 3%| 284, 606, 920 | 10%| 2, 508, 000| 354, 687, 261 | | 10%| 9. 1%| 250, 612, 056 | 20%| 2, 736, 000| 424, 767, 602 | | 20%| 9. 9%| 218, 353, 128 | % Deviation| VARIABLE COST| | % Deviation| SALES PRICE| from| Variable| NPV| | from| Sales| NPV| Base Case| Costs| \$284, 606, 920| | Base Case| Price| \$284, 606, 920| -20%| \$164. 00| 723, 298, 488 | | -20%| \$220. 0| (294, 245, 328)| -10%| 184. 50| 503, 952, 704 | | -10%| 247. 50| (4, 819, 204)| 0%| 205. 00| 284, 606, 920 | | 0%| 275. 00| 284, 606, 920 | 10%| 225. 50| 65, 261, 137 | | 10%| 302. 50| 574,

033, 045 | 20%| 246. 00| (154, 084, 647)| | 20%| 330. 00| 863, 459, 169 | %  
 Deviation| NONVARIABLE COST| | % Deviation| TAX RATE| from| Fixed| NPV| |  
 from| | NPV| Base Case| Costs| \$284, 606, 920| | Base Case| TAX RATE|  
 \$284, 606, 920 | -20%| \$0| 284, 606, 920 | | -20%| 33. 5%| 353, 919, 217 | -  
 10%| 0| 284, 606, 920 | | -10%| 37. 7%| 319, 304, 434 | 0%| 0| 284, 606, 920  
 | | 0%| 41. 8%| 284, 689, 652 | 10%| 0| 284, 606, 920 | | 10%| 46. 0%| 250,  
 074, 869 | 20%| 0| 284, 606, 920 | | 20%| 50. %| 215, 460, 087 | % Deviation|  
 START-UP COSTS| from| | NPV| Base Case| Start-Up Costs | \$284, 606, 920 | -  
 20%| \$ 494, 400, 000. 00 | 368, 892, 485 | -10%| \$ 556, 200, 000. 00 | 326,  
 749, 703 | 0%| \$ 618, 000, 000. 00 | 284, 606, 920 | 10%| \$ 679, 800, 000.  
 00 | 242, 464, 138 | 20%| \$ 741, 600, 000. 00 | 200, 321, 356 | Figure 23 -  
 RDS. A Project Sensitivity Analysis Calculations Royal Dutch Shell Project  
 Sensitivity Analysis Chart Figure 24 -RDS. A Proposed Project Sensitivity  
 Analysis Chart Deviation| NPV at Different Deviations from Base| from| Sales|  
 Variable| | Non-variable| | | | Base Case|

Price| Cost/Unit| Units Sold| Cost| WACC| Tax Rate| Start-Up Costs| -20%|  
 (\$294, 245, 328)| \$723, 298, 488 | \$144, 446, 239 | \$284, 606, 920 | \$358,  
 280, 443 | 353, 919, 217 | 368, 892, 485 | -10%| (4, 819, 204)| 503, 952, 704  
 | 214, 526, 580 | 284, 606, 920 | 320, 454, 423 | 319, 304, 434 | 326, 749,  
 703 | 0%| 284, 606, 920 | 284, 606, 920 | 284, 606, 920 | 284, 606, 920 |  
 284, 606, 920 | 284, 689, 652 | 284, 606, 920 | 10%| 574, 033, 045 | 65, 261,  
 137 | 354, 687, 261 | 284, 606, 920 | 250, 612, 056 | 250, 074, 869 | 242,  
 464, 138 | 20%| 863, 459, 169 | (154, 084, 647)| 424, 767, 602 | 284, 606,  
 920 | 218, 353, 128 | 215, 460, 087 | 200, 321, 356 | | | | | | | | Range| \$1,  
 157, 704, 497 | \$877, 383, 134 | \$280, 321, 363 | \$0 | \$139, 927, 315 | \$138,

459, 130 | \$168, 571, 129 | Figure 25 -RDS. A Proposed Project NPV and Range at Different Deviations from Base Scenario Analysis A scenario analysis is the process of estimating the expected value of a portfolio or project after a given period of time under specific changes in variables of the portfolio's securities or changes in key factors. Commonly, scenario analysis focuses on estimating what a portfolio's value would decrease to if an unfavorable event would occur.

For the proposed project the scenario analysis was conducted assuming a 25% probability for best-case conditions; each of the variables calculated in figure 25 would be 20% better than its base-case value. Conversely, there is a 25% probability of worst-case conditions, with the variables 20% worse than the base; a 50% probability was used for base-case conditions. All figures have been calculated below in figure 26.

Scenario	Probability	Sales Price	Unit Sales	Var Costs	NPV	Squared Deviation times Probability
Best Case	25%	\$330.00	2,736,000	\$164.00	\$1,726,918,338	422505172390830000
Base Case	50%	\$275.00	2,280,000	\$205.00	\$284,606,920	10125137435137500
Worst Case	25%	\$220.00	1,824,000	\$246.00	(\$588,490,656)	257759816231319000
Expected NPV = Sum, Prob. times NPV						\$426,910,381
Standard Deviation						\$830,897,181
Coefficient of Variation = Std Dev / Expected NPV						1.95

Figure 26 -RDS. A Proposed Project Scenario Analysis Conclusion In conclusion, after performing a complete analysis on the feasibility of the proposed project, it is determined that it would be beneficial for Royal Dutch Shell, plc to implement the project. The IRR and MIRR are greater than the WACC of 8.28%, at 17.0% and 13.1%

respectively. It is currently estimated that the project will pay for itself in approximately 4.74 years according to the discounted payback calculations.

The Net present value of the project is positive and the profitability index for the project is 1.41 (greater than 1) it is a positive sign for the project selection. Royal Dutch Shell is currently moving in a positive direction with a healthy financial base. Financial analyses have bestowed Shell with an AA bond rating, which underlines the financial strength of the organization.

Based on all the information listed above, it is with my professional opinion after the evaluation within this report that Royal Dutch Shell takes on the project; with the current and estimated futures of Shell it can only add value to the corporation.

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