# **Royal Norwegian Ministry of Petroleum and Energy**

Valuation of State Direct Financial Interest, 2010

June 2010



Ministry of Petroleum and Energy – Valuation of State Direct Financial Interest 2010				

# **Basis of Report**

This report has been prepared for the Ministry of Petroleum and Energy by Wood Mackenzie Limited. The information upon which this report is based has either been supplied to us by Petoro or the Ministry of Petroleum and Energy, or comes from our own experience, knowledge and databases. The opinions expressed in this report are those of Wood Mackenzie. They have been arrived at following careful consideration and enquiry, but we do not guarantee their fairness, completeness or accuracy. The opinions, as of this date, are subject to change. We do not accept any liability for your reliance upon them.

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### Role of Wood Mackenzie

Wood Mackenzie Limited (Wood Mackenzie) has been appointed by the Ministry of Petroleum and Energy (MPE) to undertake a valuation of the State's Direct Financial Interest (SDFI) portfolio of oil and gas assets.

The principal aim is to quantify the change in value over the two year period from the start of 2008 to the start of 2010. As part of this process Wood Mackenzie has identified changes in value for individual assets and the reasons for those changes.

### **Approach**

Wood Mackenzie has developed its approach in conjunction with the Ministry of Petroleum and Energy.

Petoro has provided Wood Mackenzie with datasets for SDFI assets at two points in time. The opening value, used as the start of 2008 position, in this report was evaluated in the previous report prepared for the MPE by Wood Mackenzie in June 2008. The start dataset for the current valuation was based on the Revised National Budget (RNB) 2008 (generated in late 2007). The end dataset is based on the RNB 2010 (generated in late 2009).

In both cases the RNB data has been reviewed by Petoro and is based on production and cost profile information provided by field operators. Changes to the data between start 2008 and start 2010 may be based upon differences in the operators' expectations from year to year, or changes to field development plans.

The data has been run using the price assumptions from the RNB 2008 and RNB 2010 as described in the methodology section.



# **Summary and Conclusions**

Wood Mackenzie has undertaken a valuation of the SDFI portfolio of oil and gas assets as at the end of 2009 and calculated the change in value over the two year period from the start of 2008. The final value of SDFI portfolio at the start of 2010 is **NKr 865.0 billion** (in start 2010 terms).

The change in value of the SDFI portfolio from the start of 2008 to the start of 2010 ('the valuation period') has been calculated by running valuations using the start and end period datasets, as supplied by Petoro. From this analysis the value of the SDFI portfolio has increased by **NKr 151.1 billion** (in start 2010 terms) during 'the valuation period', but would have decreased by **NKr 155.1 billion** (in start 2010 terms) had price assumptions remained the same as the Revised National Budget 2008 (generated in late 2007). This decrease in value reflects an increase in capital costs, due partly to market conditions, but also to new investment programmes on a number of significant developments.

Excluding the strong impact during 'the valuation period' of increased forward price assumptions, a number of different factors have impacted the value. The most important one relates to the changed cost assumptions for individual assets. Investment decisions made by field operators at for the RNB 2010 are a reflection of the current oil price environment and certain decisions may not have been made if commodity prices had remained constant over 'the valuation period'. In addition, increased activity levels on the Norwegian Continental Shelf (NCS) have led to inflationary pressure on all aspects of the supply industry, resulting in increased exploration, development and operating costs.



### Valuations

### **Summary - Value Change Comparisons**

In undertaking our valuation we have initially valued the datasets to show the value of the start 2008 dataset at 1 January 2008 and the start 2010 dataset at 1 January 2010. The opening value for the start year position is sourced from the equivalent report prepared for the Ministry of Petroleum and Energy in June 2008. The oil prices used in this valuation are summarised in table 4.

To ensure comparability of the value of the datasets, we have made the following adjustments as described below and shown in table 1. The three parts are: Part 1, a calculation of the value change to the difference between the estimated cash flows from the previous year's study and the actual cash flows during 'the valuation period'; Part 2, the value change of the portfolio from start 2008 onwards including the value change due to constant prices and the value change due to increased prices; Part 3, the total value change for the portfolio

All items are stated in 2010 terms unless otherwise stated.

#### Part 1

Part 1 calculates the value change between the estimated cash flow items for 2008 and 2009, as calculated in the previous year's study (step A), and the actual cash flows generated over the same period (step B). Taking the difference between the two (step C) we calculate that the decrease in value for the cash flow items is **NKr 29.3 billion**.

#### Part 2

Part 2 begins with the start 2008 dataset value (as described in the previous year's study) in 2008 terms. This figure is inflated into 2010 terms (and discounted to 2010) to give a value of **NKr 988.5 billion** (step D). This is calculated by inflating 2008 values by 3.84% inflation and a 7% discount rate (to 2009) and then by -0.4% inflation and a 7% discount rate (to 2010). We then deduct the estimated cash flows for 2008 and 2009 (step A) from the inflated start 2008 value. This gives us a value of **NKr 684.6 billion** which is the start 2008 value from 2010 onwards (step F). The start 2010 value has been calculated to be **NKr 865.0 billion** (step G). The difference between the two figures of **NKr 180.4 billion** gives the value increase of the future portfolio from start 2010 onwards (step H).

The next stage in part 2 is calculating the extent to which changes in oil and gas price assumptions have impacted on the value change. We have therefore run the start 2010 dataset using start 2008 oil and gas price assumptions, to isolate the impact of changes arising from different oil and gas price assumptions.

Using start 2008 price assumptions, the value of the start 2010 dataset falls from **NKr 865.0 billion** (calculated with 2010 budget prices, step G) to **NKr 529.6 billion** (calculated with 2008 budget prices, step I). By changing the assumptions during the 'valuation period', the value of the portfolio has therefore risen by **NKr 335.4 billion** (step J). To calculate the total value change due to revised prices we must also subtract the value increase in the portfolio including the estimated cash flow items of **NKr 180.4 billion** (step H). Thus the value decrease of the underlying asset base (from start 2010 onwards) excluding the impact of changes to the assumptions is **NKr 155.1 billion** (step K).

The start 2010 dataset value is reconciled by taking the start 2008 value from 2010 onwards (step F), adding the value increase due to revised prices (step J) and finally subtracting the value decrease based on constant prices (step K). This reconciles the start 2010 portfolio value of **NKr 865.0 billion** (step G).

### Part 3

The impact of these adjustments is such that if the 2008 and 2009 actual cash flows and future expectations at the start of 2010 were in line with those predicted at the start of 2008, there would be no change in value. A higher value for the end year dataset than the start year dataset plus the change in cash flow value would show value increase. By contrast a lower value for the end year dataset would show value decrease. As a result of our valuation analysis, a value increase of some **NKr 151.1 billion** has been calculated (step L) which is the summation of the increase in value between the estimated and actual cash flows items and the change in value of the portfolio from 2010 onwards.



Table 1. Reconciliation Between the Start and End Year Valuations of Commercial Assets including the Impact of Oil Price Assumptions on the future portfolio value\*

Value Component	Value** (NKr billion)	Value** (NKr billion)	Value** (NKr billion)	Steps
Part 1 - Cash Flow Items				
Estimated Cash Flow 2008	167.0			
Estimated Cash Flow 2009	136.9			
Estimated 2008+2009 Cash Flow		303.9		Α
Actual Cash Flow 2008	177.9			
Actual Cash Flow 2009	96.7			
Actual 2008+2009 Cash Flow		274.6		В
Decrease in value between estimated and actual Cas	h Flows		(29.3)	С
Part 2 – Change in Future Value of Portfoli	<u> </u>			
Start 2008 (from previous study) (2008 terms)	834.8			
Start 2008 (from previous study) (2010 terms)	988.5			D
Estimated 2008+2009 Cash Flow	303.9			A
Start 2008 Value from 2010 onwards	000.0	684.6		F
Start 2010 Value		865.0		G
Value increase of the portfolio from 2010 onwards		000.0	180.4	Н
Talue mereace of the persone from 2010 crimarae				
Impact of Oil Price on the future portfolio value				
Start 2010 Value	865.0			G
Start 2010 using start 2008 prices	529.6			1
Value change due to revised prices		(335.4)		J
Value Increase from 2010 onwards		180.4		Н
Value decrease based on constant price assumption	s		(155.1)	K
Reconciled Value Change in the Future Portfolio duri	ng 'the Valuatior	n Period'		
Start 2008 Value from 2010 onwards	684.6			F
Value Increase due to revised prices		335.4		J
Value decrease based on constant price		(155.1)		K
Start 2010 Value			865.0	G
Part 2 Tatal Value Change				
Part 3 – Total Value Change		(05.5)		0
Realised change in value from 2008 and 2009 cash flows	3	(29.3)		С
Value Increase from 2010 onwards	_	180.4	.=	H
Total Portfolio Value Change compared to 1 Jan 2008	3		151.1	L

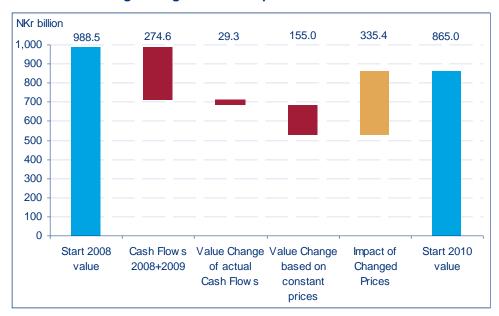
<sup>\*\*</sup>All items are in 2010 terms unless otherwise stated \* Discounted at 7% in real terms.



Totals may not add due to rounding

Chart 1 graphically shows the steps from the start 2008 value to start 2010 value (all in 2010 terms).

Chart 1. Value Change During 'the valuation period'



\*All values are in 2010 terms

### **Key Value Change Drivers**

The Grane development provided the largest increase in value for the SDFI portfolio over the 'valuation period'. The primary reason for the increase in value is an increased estimate in recoverable oil reserves, reflecting progression of the Grane Sør future development. The value of the SDFI portfolio has also benefited from positive contributions by the Varg and Ringhorne Øst developments. At the opposite end of the value change scale, the Troll Oil and Gas, Ormen Lange, and Snøhvit developments have resulted in a significant decrease in overall value, when analysing the portfolio on a constant price basis.

The key reasons for the decrease in value within the portfolio are the impact of a combination of new costs and general inflationary pressures in the cost environment, in conjunction with reserve downgrades at several major assets and a reduction in near term production forecasts.

Several new capital intensive projects were approved for the Troll Oil and Gas development in 2009 which have lead to an increase in near term capital expenditure. These projects are intended to increase oil recovery from the Troll Vest field, whilst ensuring the continuation of gas export capacity from the Troll Øst field, and will include the installation of IOR facilities on the Troll B platform and the laying of a new gas pipeline from the Troll A platform to the Kollsnes terminal. In addition, further modifications will be carried out on the Troll platforms to maintain their integrity and prolong their operational life as the Troll development enters its 15<sup>th</sup> year of production. Increased maintenance expenditure has also had a negative impact on the value of the Gullfaks and Oseberg developments.

Reserve downgrades on several major fields, including Ormen Lange, Heidrun and Oseberg, have also lead to a significant reduction in overall value. Most notably, the reserve estimate for Ormen Lange was reduced by almost 30% following appraisal drilling in 2009. This reduction in reserves, in addition to new capital expenditure for the installation of future compression facilities and other field modifications, has had a major impact on the value of Ormen Lange.

The value of the SDFI portfolio has also been negatively impacted by a reduction in near term production forecasts between the start 2008 and start 2010 datasets. Liquids production forecasts have been impacted by the postponement of several new development projects, as a result of the collapse of the oil price in late 2008, whilst rig accessibility issues have also led to delays in development drilling. Gas production forecasts have also been reduced as suppliers seek to ease the pressure on contract prices, brought about by the current oversupply in the European gas market. The combination of increased capital spend without a corresponding increase in production has resulted in the overall decrease in portfolio value as shown by asset (or asset groupings) in chart 2.

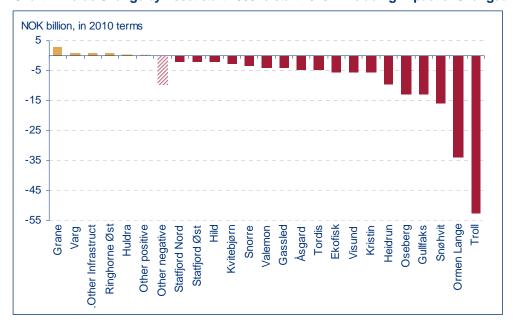


Chart 2. Value Change by Asset start 2008 to start 2010 - Excluding Impact of Changed Price Assumptions\*

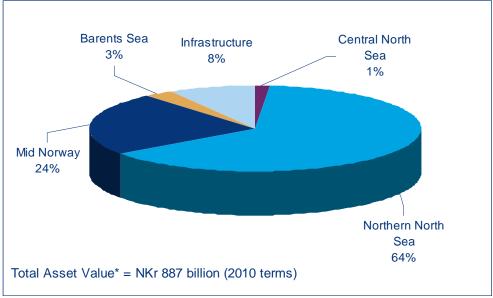
<sup>\*</sup>The 'Other positive' category represents the cumulative value increase for all other assets (not individually identified) that showed a positive value change during the year; the 'Other negative' category reflects the equivalent change for all other assets that showed a negative change in value. Corporate items such as Petoro's budget, insurance provisions and marketing activities have not been included in the chart.



# Portfolio Analysis

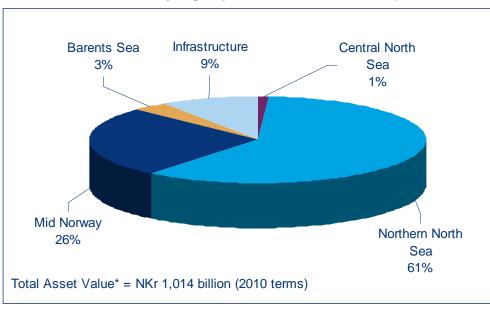
Charts 3 and 4 show the value distribution of the SDFI portfolio by location (excluding insurance, marketing and budget items) on the Norwegian Continental Shelf at the start of 2010 and start of 2008 respectively. Chart 5 shows the split by core asset area.

Chart 3. Value Distribution by Region (Start 2010 value in 2010 terms)



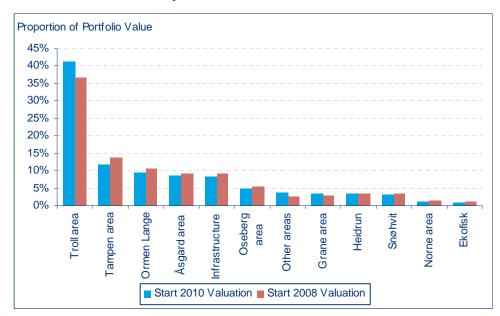
<sup>\*</sup>Asset value only - excludes budget, insurance and marketing items

Chart 4. Value Distribution by Region (Start 2008 value in 2010 terms)



<sup>\*</sup>Asset value only - excludes budget, insurance and marketing items

## Chart 5. Value Distribution by Core Area

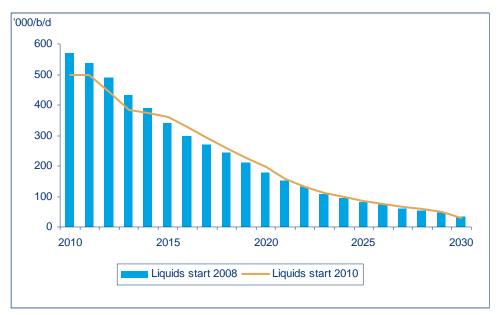


# Comparison of Production Profiles for Start vs. End Year Datasets

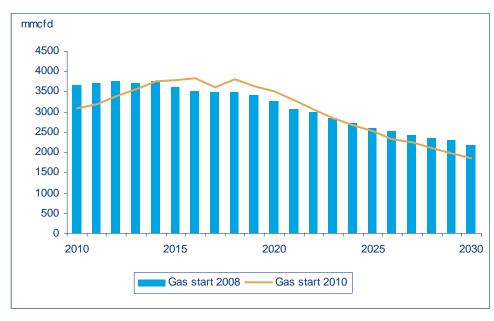
The start 2010 liquids production profile for the near term is significantly lower than the start 2008 profile until 2014, reflecting the deferral of new project sanction decisions in the wake of the oil price collapse during the second half of 2008. This is also illustrated beyond 2014, as production comes onstream from those new developments which have been delayed. In addition, development drilling has been hampered by rig accessibility issues, brought about in part by higher levels of exploration activity. However, overall liquid production maintains a steady decline, reflecting the maturity of a number of the larger oil producing fields within the SDFI portfolio. Mitigating this decline will depend on the success of enhanced oil recovery projects which will require high levels of investment.

The start 2010 gas production profile reflects lower output from Troll, and to a lesser extent, Ormen Lange. The current oversupply in the European gas market is likely to have lead to a revision of operator production forecasts in the near term, in an attempt to ease the pressure on existing gas supply contracts. Charts 6 and 7 show the future liquid and gas production profiles for the start and end year datasets.

### **Chart 6. Liquids Production**



### **Chart 7. Gas Production**

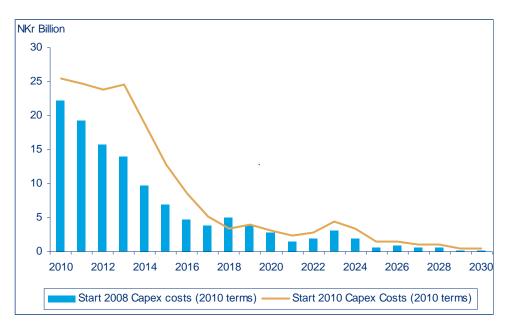


# Comparison of Cost Profiles for Start vs. End Period Datasets

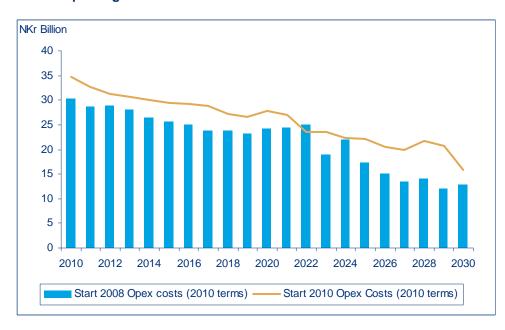
The capital investment profile in chart 8 shows a significant increase in near to medium term expenditure primarily based on continuing cost inflation experienced within the oil and gas sector during 2008 and 2009. However, the increase also reflects new development projects and a substantial increase in capital expenditure for investing in and maintaining ageing facilities. Several existing fields are expected to see significant investment in new drilling, accommodation and increased recovery facilities in an attempt to prolong their operational life.

Chart 9 shows that despite cost inflation for new developments and infrastructure investment, operators have strived to maintain daily running costs. Due to regulation of most tariff costs, which account for a substantial portion of total operating costs, the impact of cost inflation on operating costs has been lessened further. Abandonment costs have been included in the operating cost profile, which reflects a deferral in decommissioning activity for the period from 2020 to 2024. This has resulted from significant capital investments to prolong the life of existing facilities.

### **Chart 8. Capital Investment**



#### **Chart 9. Operating Costs**



# **Benchmarking of Future Production Profile**

In chart 10 we benchmark the forward entitlement production profile and reserves/production (R/P) ratio of the SDFI portfolio against a peer group consisting of the global portfolios of the main Norwegian player Statoil and the major international players ExxonMobil, Shell, BP, Total, ConocoPhillips and Chevron. The production profiles are based on output from each company's current portfolio of commercial fields and do not take account of likely additional production from discoveries that are categorised as technical discoveries or from yet to find reserves.

The SDFI's future production profile demonstrates a very similar trend to that of Statoil, albeit at a lower level. However, in the medium term we forecast that the underlying decline from Statoil's legacy oil assets will cause overall production to fall primarily from its Norwegian portfolio. This slower decline of the SDFI production profile (49% compared to Statoil's 54%, from 2010 to 2025) reflects the SDFI's interests in long-life gas projects such as Troll, Ormen Lange and Snøhvit. However, when compared to the major oil companies, we would expect this picture of longevity for the SDFI's production stream to be slowly eroded over time, given the maturing nature of the single continental shelf to which the portfolio is exposed.

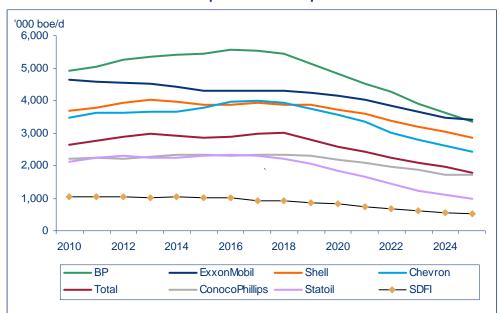


Chart 10. Future Production - Comparison with Companies' Global Profiles



<sup>\*</sup> Source Wood Mackenzie CAT product Q2 2010, SDFI data refers to start 2010 dataset

# **Key Industry Trends in 2009**

In this section we reflect on the key trends that have been observed on the upstream oil and gas industry during 2009 and early 2010.

#### **Global Themes**

Following the turbulent events of 2008, when prices peaked at \$145/bbl barrel before falling to \$35/bbl by the end of the year, 2009 showed the first signs of recovery from the global economic slowdown. A contraction in global GDP growth rates lead to a reduction in world oil demand of 1.7 million barrels per day, the largest decrease in demand since 1982. In reaction to lower demand, OPEC members reduced their output to support prices, and by the end of 2009 oil prices had recovered to around \$75/bbl. A link between the oil price and equity markets emerged in early 2010, with concerns over the Eurozone crisis in May resulting in a reduction in oil prices. However, for the second half of 2010 a recovery in oil demand is expected to result in a tightening of the supply/demand balance. Wood Mackenzie forecasts an average Brent price of \$80.90/bbl in 2010.

The economic slowdown has also had a negative effect on global gas demand. Combined with the dramatic increase in gas availability from unconventional sources in North America, and a wave of new LNG supply, reduced gas demand has driven down spot prices for gas around the world. Lower prices for uncontracted gas have in turn created pressure on existing oil-indexed gas contracts, shifting the balance of power from suppliers to buyers. In Europe, where spot gas prices had traditionally tracked contract prices, a delinkage between uncontracted and oil-indexed prices occurred, forcing suppliers to choose between holding back supplies to support prices or maintaining output at the risk of eroding value. More recently, a number of suppliers have chosen to renegotiate existing contracts to increase the level of spot price indexation or reduce buyer offtake obligations. European gas demand is expected to recover sufficiently by 2015 to eliminate the current delinkage between spot gas prices and oil-indexed contract prices.

The downwards pressure on commodity prices in 2009 was accompanied by a reduction in capital expenditure, as the economic consequences of the banking crisis became apparent. As global energy demand began to recede, five years of spending growth ground to a halt and companies sought to defer uncommitted expenditure and avoid building new production capacity. In Europe overall upstream capital expenditure fell by around 20% in 2009. The reduction in capital expenditure curtailed the massive cost inflation experienced in the upstream industry in recent years, as a reduction in exploration and development activity eased constraints in rig markets and the supply industry. Chart 11 shows the trend of development cost for future developments in Norway. However, with a measured recovery in upstream spending expected by 2011, cost inflation will again become a key issue for the exploration and production industry.

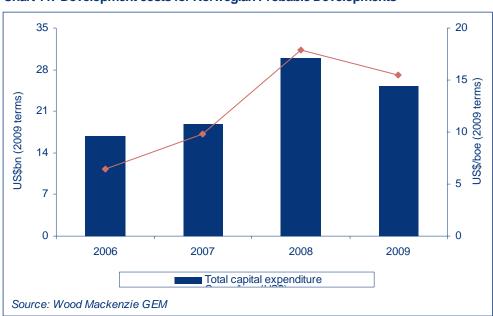


Chart 11. Development costs for Norwegian Probable Developments

#### **North West Europe Themes**

Following the collapse of the oil price in the second half of 2008, 2009 brought differing fortunes for the countries in North West Europe. Exploration activity continued to be a major theme, but presented a sharp contrast between the UK and Norwegian sectors. In the UK, difficult economic conditions had a severe impact on the level of drilling activity, with only 76 E&A wells spudded in 2009 compared to 120 in 2008. However, activity in Norway reached an all time high of 74 completed E&A wells. Norway's success attracting new players during the 2000s, the dominant role of Statoil and fiscal exploration incentives all contributed to the unprecedented activity levels. Elsewhere in North West Europe, E&A activity remained relatively flat with 35 E&A wells completed. Fourteen of these were drilled in The Netherlands, five in Denmark and 11 in Germany.

Although activity levels in the UK were down, the exploration success rate increased from 30% in 2008 to 47% in 2009. A total of 315 mmboe was discovered, an increase of 70 mmboe on 2008. In Norway, the success rate decreased slightly to 54%, whereas a total of 1,150 mmboe was discovered. The discovery rate across the rest of the region was 41%, an increase from 31% in 2008. The value of the North Sea's extensive infrastructure network continued to be highlighted by a number of near field discoveries. However, significant discoveries in the deepwater regions of the Norwegian Sea and West of Shetlands hinted at the remaining potential of these frontier areas.

Oil production in both UK and Norway decreased by 5% between 2008 and 2009, to 1.3 mmbbl/d and 2.3 mmbbl/d respectively. UK gas production also fell by 16% to around 5.9 bcf/d, but gas output in Norway rose by 4% to around 10 bcf/d. Production in the rest of the region decreased, in particular due to lower offtake from the massive Groningen gas field in The Netherlands. Supplier concern over oversupply in Europe, and its potential impact on gas contract prices, is expected to impact on European gas production in the near term.

New development decisions suffered in 2009 as a result of lower oil prices, with only two new field development plans submitted and approved in Norway during the year. This was far below expectations at the start of the year. Six new projects were brought onstream, with overall capital expenditure (excluding E&A, onshore development, transportation and pipelines) increasing slightly to NKr 104 billion. In the UK, only six new development approvals were awarded, half the number in 2008; and only eight fields commenced production, the lowest number since 2000.

Overall, 2009 was a slow year for M&A activity in North West Europe. The financial crisis, combined with low oil prices in the first half of the year made funding difficult to obtain for smaller companies, making survival a priority. In the UK, Oilexco was the highest profile victim of the economic environment, entering administration when it became unable to meet its funding commitments, whilst Bow Valley Energy and Oranje Nassau were acquired at for substantial discounts to Wood Mackenzie's valuations. Deal activity regained momentum in the second half of the year as the oil price recovered and the gap between buyers' and sellers' expectations narrowed considerably. The biggest deal of the year in the UK was Centrica's hostile takeover of Venture Petroleum, whilst in Norway, Hess' acquisition of Shell's stake in the Valhall and Hod fields was the most significant. Corporate activity in the rest of North West Europe was limited to The Netherlands and Ireland, where a total of seven deals were completed.



# Methodology and Assumptions

The SDFI portfolio has been valued by Wood Mackenzie based on the methodology outlined below and in accordance with assumptions which are also set out in this section.

#### Standard Valuation Methodology

Wood Mackenzie's standard methodology for valuing oil and gas assets is designed to determine the price that would be paid by a willing buyer of assets in an open market transaction.

Since the value of the SDFI portfolio is calculated on a pre-tax basis, the valuation is not intended to reflect the price that could be achieved in the marketplace, as any buyers would be subject to Norwegian upstream taxation. The values we have calculated in this report are simply those which are arrived at using a mechanistic approach based upon field data provided by Petoro and economic assumptions provided by the MPE and Wood Mackenzie.

#### **Commercial Fields, Pipelines and Onshore Assets**

The SDFI portfolio contains interests in a number of 'commercial fields' – defined by Wood Mackenzie as being those in production, under development or where government consent for the development is likely within the next 2-3 years. It also has an interest in a number of offshore pipelines which transport produced oil and gas to the market and in several onshore industrial projects directly related to its upstream activities.

The principal methodology used by Wood Mackenzie to value the commercial fields, pipelines and onshore projects within the SDFI portfolio has been to construct a cash flow analysis for each field, pipeline and onshore project.

The cash flows have been run on the oil (and gas) price scenario relevant at the start or end dataset and discounted using a 7% discount rate in real terms to derive a net present value ('NPV') for each asset.

#### **Valuation Prices**

The valuation of the assets has been undertaken with the following oil/NGL/gas price scenarios (as suggested by the MPE):

- one case, which is that used in the 2008 Revised National Budget submission (spring 2008) and which is relevant to the valuation of the SDFI portfolio as at 1 January 2008 (start year);
- a second case, which is that used in the Revised National Budget submission 2010 (spring 2010) and which is relevant to the valuation of the SDFI portfolio as at 1 January 2010.

These scenarios are outlined in more detail in Table 7.

#### **Data Sources**

Petoro has provided all the field data and the 2008 and 2009 cash flow items that we have used to form our conclusions on the valuation of the assets included in this report. The data consists of, inter alia, production, sales volumes and cost profiles for individual fields and infrastructure projects.

The information is based on Revised National Budget 2010 data as reported in autumn 2009 by the field operators. Petoro has also provided access to its personnel to discuss matters arising from our examination of the data.



**Upstream - Key Assumptions** 

#### □ Oil, NGL and Condensate Prices

We have valued the SDFI's oil and gas assets in this report using the following oil/gas/NGL and condensate price assumptions. One of the price series is that used in the 2008 Revised National Budget submissions and the other is 2010 Revised National Budget price series. Condensate prices have been assumed to equal oil prices and NGL prices have been assumed at a discount of 30% to oil prices. The key oil price assumptions are set out in the table 2.

Table 2. Oil Price Assumptions in real (2010) Terms

Prices	2008 Budget	2010 Budget	% Change
Year	Oil Price NKr/bbl	Oil Price NKr/bbl	
2010	370.0	475.0	28%
2011	370.0	475.0	28%
2012	370.0	408.0	10%
2013	250.0	408.0	63%
2014*	230.0	408.0	77%

<sup>\*</sup>Oil prices are flat in real terms thereafter

#### □ Inflation

All the data has been compiled and run in real terms, where nominal information was provided an inflation rate of 2.0% was used to discount items to 2010 terms.

#### □ Discount Date

Future cash flows have been discounted to 1 January 2008 or 1 January 2010 as appropriate.

#### □ Discount/Inflation Rates

The discount rate used for valuing all the assets is 7% per annum in real terms. Inflation rates of 3.84% in 2008 and -0.4% in 2009 were supplied by the MPE.

#### □ Corporate Overheads

A forward estimate of corporate overheads (as provided by the MPE) over and above those applicable to specific assets has been modelled as a separate 'item' within the SDFI portfolio. This comprises three items: Petoro's Budget from the MPE, insurance provisions and costs related to Statoil's marketing of oil and gas.

#### □ Resource Classification

The resource classification attributed to the assets that make up the SDFI portfolio is based on the resource category up to and including RK4F (Resources in the planning phase). Resources in class RK5A (reserves in existing discoveries) are not included in the main valuation section.

