



**2010 Oil & Gas UK  
Activity Survey**

# The 2010 Oil & Gas UK Activity Survey

## 1. Summary of Survey Findings

The Oil & Gas UK 2010 Activity Survey reports on our industry's activity on the UK Continental Shelf (UKCS) over the previous year and looks forward to expected activity over this and the next four to five years. The Survey is based on the latest data supplied by all the leading exploration and production companies operating in the UK. This provides a uniquely well informed insight into the opportunities and potential of this essential sector of the UK's economy. The key results can be summarised as follows:

### In 2009 our industry:

- Produced on average 2.48 million barrels of oil and gas per day (6% less than 2008);
- Invested £4.7 billion of capital expenditure (£4.8 billion in 2008);
- Spent £6.6 billion in operating costs (5% less than 2008);
- Drilled a total of 130 development wells (22% fewer than 2008);
- Spent £1 billion drilling 65 exploration and appraisal wells (40% less wells than in 2008);
- Discovered a further 300 - 400 million barrels of oil and gas (provisional figures);
- Sought approval to develop 6 new fields (12 in 2008) and 3 incremental projects (10 in 2008);
- Paid £7 billion in production taxes, (equal to 20% of total UK corporation taxes);
- Supported employment of around 450,000 people across the UK (~45% of them in Scotland).

### Looking forward to this year and beyond ....

#### Oil and Gas Reserves

- Remaining proven reserves have fallen to 5.25 billion barrels of oil and gas (from 6.1 billion in 2008), reflecting the decline in investment over recent years;
- In contrast, probable and possible reserves, which can only be secured by new investment, are estimated to be 5.9 billion boe, a 2.3 billion boe increase on the previous year's survey;
- The total proven, probable and possible reserves reported to us in our members' plans therefore now stand at 11.1 billion barrels;
- Of these reserves, 9.9 billion boe are in the Proven or Probable categories and have a 50% or greater chance of being recovered and 1.25 billion boe have a less than 50% chance of being recovered;
- Additions are in all areas of the UKCS but with the greatest increase in the areas west of Shetland and in the central North Sea.

#### Potential Field Developments

- 73 probable or possible new field developments have been reported compared to 56 a year ago;
- Together these fields include 3.3 billion barrels of potentially recoverable reserves with the nine largest fields accounting for 50% of the investment and reserves;
- Half of all fields being considered for development are 20 million barrels or less in size;

- The fields new to this year's survey are on average 20% more expensive on a cost per barrel basis as operators pursue ever more technically and commercially demanding opportunities;
- If a capital development cost cut-off of £10/boe is applied then only around half of these 3.3 billion boe of reserves would be sufficiently attractive to develop, demonstrating the challenge facing the UKCS.

### **Incremental Development in and around existing fields**

- There are plans for the potential recovery of 2.6 billion barrels in more than 160 projects;
- These projects are typically small in size with three quarters being between one and ten million barrels.

### **Decommissioning**

- Estimated future decommissioning costs for existing and new developments have risen to £26 billion (£ 22.6 billion in 2008).

### **Production**

- The production decline rate is likely to remain at 6% in 2010. This reflects the slowdown in capital investment since 2006 and will continue to accelerate if investment is not sustained;
- However, if investment can be sustained above £5 billion per year, the UKCS could still be delivering 1.5 million barrels of oil and gas per day in 2020, enough to satisfy half of total UK demand. This is of strategic importance to the UK economy. The Government forecasts that the UK will still rely on oil and gas for 70% of its energy needs in 2020.

### **Capital Investment**

- Investment could rise above £5 billion in 2010 as activity picks up;
- Current plans could result in investment of £25 billion over the next five years;
- Delivering all sanctioned projects, potential new fields and incremental developments identified in the survey will require capital expenditure of up to £60 billion.

### **Operating Costs**

- Total spend to operate the UKCS is expected to remain flat at £6.5 billion in 2010;
- Operating expenditure on existing assets (excluding tariffs) is expected to be around 4-5% lower over the next few years than expected a year ago. However overall operating expenditure is expected to remain fairly flat as new production is brought on stream;
- Looking at the UKCS as a whole, unit operating costs per boe will rise by 5% in 2010 unless further action is taken to reduce costs and / or improve efficiency.

### **Exploration & Appraisal (E&A) Activity**

- Around 43 E&A wells are currently forecast to be drilled in 2010 with a further 25 wells also being considered. The total of 68 forecast and being considered compares with an actual figure of 65 in 2009.

### **Changes to the Fiscal Regime**

- A New Field Allowance was introduced in Budget 2009 aimed at promoting investment in a targeted range of fields including small fields, certain High Pressure High Temperature fields, Heavy Oil and west of Shetland gas.

## 2. Foreword

Whilst the UK seems to be emerging from the worst of the recession, it is increasingly apparent that we need to have a better balanced economy and must look to industry, technology and manufacturing to provide the stimulus for long-term growth. The UK oil and gas industry is uniquely positioned to contribute to this effort.

In 2010 it is expected that this high technology industry will provide more than 20% of total corporation tax and will be, yet again, the largest industrial investor in the UK economy. The UK will produce around 900 million barrels of oil and gas, providing an essential element of our energy security. It is a very significant “value adding” industry and supports the employment of 450,000 people across the UK, 44 percent of them in Scotland. Indigenous production of oil and gas coupled with exports of oilfield goods and services provide essential support for the UK’s balance of trade.

### **2009 was a difficult year for the UKCS**

The last year has been a remarkably challenging one for the UK economy as it faced the full impact of the global recession. This was manifested in our own industry by plunging oil and gas prices and made worse by the turmoil in the finance markets. In such a business environment it was anticipated that our industry too would be badly affected

Undoubtedly, the whole industry, exploration and production companies, their contractors and the wider supply chain have been impacted by the global downturn. However as the year went on the oil price began to recover and financial markets calmed down, helping to offer a more positive outlook. That said, it is clear that the drilling, well services and marine / subsea sectors of the supply chain have suffered a significant adverse effect on their businesses. This is reflected in the Oil & Gas UK Index which provides a quarterly measure of market confidence. The first three quarters of 2009 saw market confidence declining in these sectors in particular. It was only in Q4 last year that we began to see a more positive outlook spreading across all the major parts of the industry.

### **We need to make the UK the first choice for international investment**

We believe there are up to 25 billion barrels remaining to be produced from the UKCS. The 2010 survey underlines the significant challenges we face to secure current production and yet also offers a tantalising glimpse of the future opportunity. Proven reserves within existing fields and sanctioned investments declined to 5.25 billion barrels at the start of this year. This is a direct consequence of the slowdown in investment over recent years. It is essential we find the means to reverse this trend. However the survey also identifies a 60 percent increase in potential investment opportunities of the companies compared to last year’s survey. These new projects will require capital investment of £50 billion, half of which will need to be invested within the next five years.

So we see a significant decline in the reserves in the “proven” category but a larger volume of reserves than that coming into the “probable and possible” category. This is concerning. We really need to see a steady increase in both of these categories. Our future also relies on sustained high rates of exploration and appraisal activity to replenish existing production which is not consistent with the 40 percent fall in exploration drilling activity seen in 2009.

This is a high technology industry and companies have developed and continue to deploy the best and most advanced technology to unlock the UK’s oil and gas resources. However even that is not proving enough as witnessed by the production decline and falling

investment seen over recent years. Things are made no easier by the fall in commodity gas prices which have halved over the last year. Securing all these investments will demand action from industry and Government to produce an effective cost reduction programme looking at lightening the burden of development and operating costs, production taxes and UK and EU regulatory compliance. In this regard, it is apparent that the tax burden must continue to be reduced if we are to maximise recovery from the UKCS.

### **Extending the life of existing infrastructure is critical to the future of the UKCS**

Above all it is essential that we extend the productive life of existing fields and infrastructure, which are needed to reach the untapped reserves of the UKCS. Yet the survey shows mature fields, particularly those subject to Petroleum Revenue Tax, are struggling to secure additional investment which would prolong their productive life. Coupled with this, there is continuing uncertainty on whether future Governments will meet its commitment regarding decommissioning tax relief.

This is a very serious and costly problem for the industry, and one where the Government can provide a simple solution. Unless this issue is resolved soon, we risk seeing the pace of decommissioning accelerate. If that happens we will fail to deliver the 11 billion barrels of oil and gas offered in this survey and never recover the full 25 billion barrels. This will needlessly threaten our security of supply and damage the future of our supply chain with a consequent loss of technology and highly skilled jobs in the UK economy.

### **Some of the recent changes to the fiscal regime have been constructive**

Over the last twelve months we have seen some helpful developments in the tax regime aimed at promoting investment in some of the most difficult oil and gas fields across the UKCS. The introduction of the new Field Allowance in the Budget and its subsequent extensions in the PBR and at the beginning of this year were a welcome acknowledgement from the Government that a marginal reduction in tax rate can create a win-win outcome, driving up investment and production and increasing overall tax returns to the Exchequer. The precise effect of these measures will take time to work through the system. The next step should be to extend this allowance to investment in existing fields which face a similar cost and technical challenge and also to oil fields west of Shetland. The tax burden must continue to be progressively reduced if we are to maximise recovery from the UKCS.

### **The UKCS needs to attract and retain the UK's oil and gas supply chain**

This industry will rely ever more on the capabilities of its supply chain if it is to deliver the full potential of the UKCS. Industry needs to work collaboratively both across the sector and with Government at national, regional and local level to develop new technologies, improve working practices and efficiencies and drive down costs. This will help to enhance the UK supply chain's comparative advantage in the global market place and ensure that the industry's critical suppliers retain a presence here.

Get it right and the UK will still be a significant oil and gas province in 2020, matched by a thriving supply chain with a global reach. Get it wrong and the UK's oil and gas production will diminish rapidly by 2020, with a significant loss of high-tech jobs, declining tax revenues, and increasing energy imports with attendant serious risks to the security of energy supply. The ingredients are in place for a successful outcome, the challenge is to ensure that an appropriate investment climate is developed and sustained to support this outcome.

Malcolm Webb, Chief Executive

### 3. Introduction

Each year, Oil & Gas UK surveys exploration and development activity on the UK continental shelf (UKCS) jointly with DECC. Most of the data were collected as recently as November and December 2009. These were then used to provide a forecast of potential exploration and appraisal drilling activity over the next two years and investment and new developments likely to occur over the next three to five years.

The surveys encompass the plans of the Trade Association's member companies who operate oil and gas fields on the UKCS and includes the activities of non-operators, promote licensees and other explorers, covering over 70 companies in all. It also considers the wider supply chain, many of whom are also members of Oil & Gas UK.

Oil & Gas UK is provided with exploration plans, production profiles, capital expenditure, operating costs, tariffs and decommissioning costs. Projects are categorised by probability of development within the next five years on the following basis:

- "Probable" activities: have a probability of greater than 50% of proceeding
- "Possible" activities: have a probability of 50% or less of proceeding

The survey reflects production from:-

- "Sanctioned investments": fields which are already in production or have already received investment approval
- "Incremental developments": which covers further development of existing producing fields, otherwise known as "Brownfield" developments
- "New field developments": which are new fields, often tied back to existing infrastructure.

The following summarises the analysis carried out by Oil & Gas UK; further details will be provided in our Economic Report to be published in July 2010.

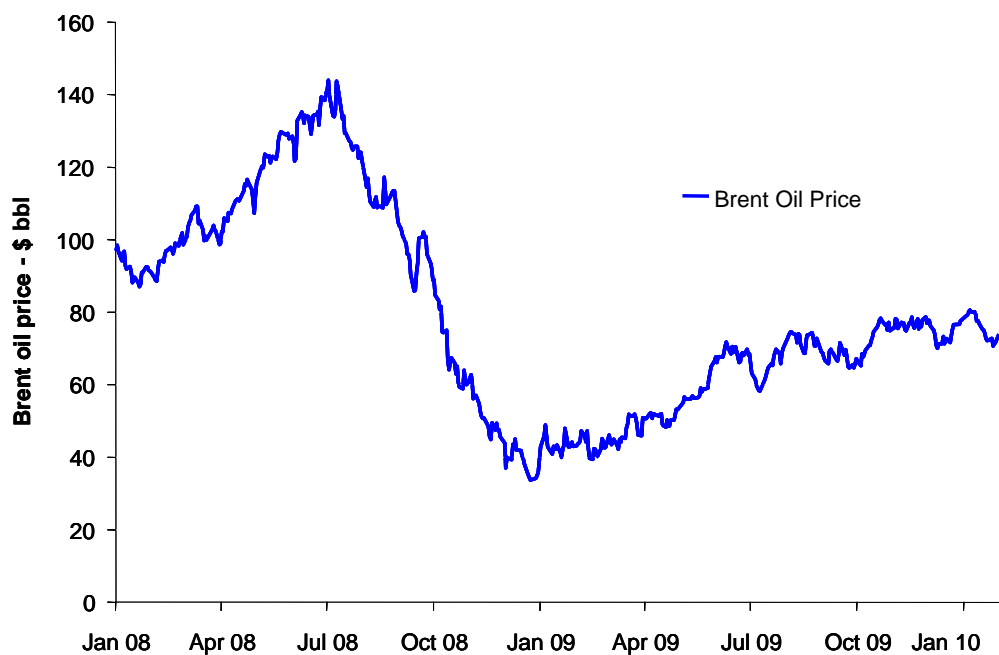
It should be noted that, as in previous years, Oil & Gas UK has slipped the data for new projects, reflecting the probability and uncertainty of proceeding with the investment. This approach effectively smoothes short term peaks in activity yet retains a coherent projection of overall reserves and likely investment activity.

#### 4. Oil and Gas Prices

At the start of last year the UK's oil and gas industry faced an uncertain outlook after the dramatic swings in crude prices seen in 2008 when the Brent oil price had fallen to the low \$30's per barrel in December 2008 after peaking above \$145/bbl<sup>1</sup> that year. As it was the price slowly began to recover and rose from \$40/bbl in January to \$65-70/bbl by June 2009 and has since typically traded in a \$70-80/bbl range. A number of factors are thought to have driven the price back up in the first half of 2009 including a gradual normalisation in the credit markets and greater stability in the global economy.

Brent crude has averaged at \$72/bbl since June 2009 within a fairly narrow +/- \$10 band. Over the whole of 2009, prices averaged \$62/bbl compared with \$97/bbl in 2008.

Figure 1: Daily Brent Oil Price 2008 – 2010



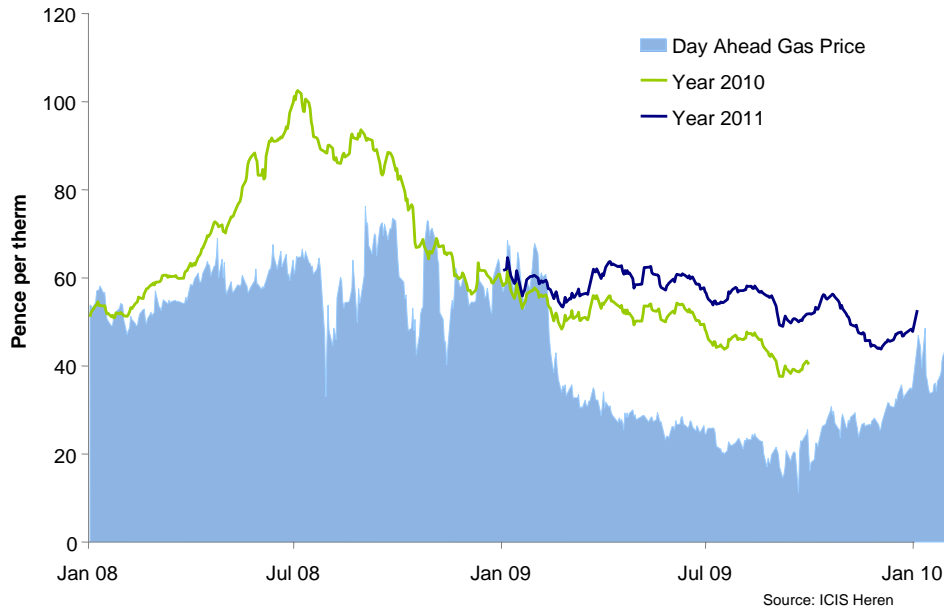
Source: EIA,

The UK gas market has if anything shown much bigger swings than the oil market over the last two years. For much of 2008, the UK day-ahead gas price had been relatively flat and not shown the more usual summer / winter swing. However by mid-February of 2009, gas prices began to fall rapidly and halved within the month to around 30 p/th. They continued to fall thereafter to a low point of 17 p/th in August 2009. As a consequence, the annual day-ahead gas price for 2009 averaged 30p/th compared with 58p/th in 2008.

The forward market does not indicate a near-term recovery in gas price. Forward prices for calendar year 2010 suggest prices will average below 40 p/th over this year. Annual prices for calendar year 2011 have fallen over the last 12 months from 60 p/th and are now sitting in the low 40s of p/th.

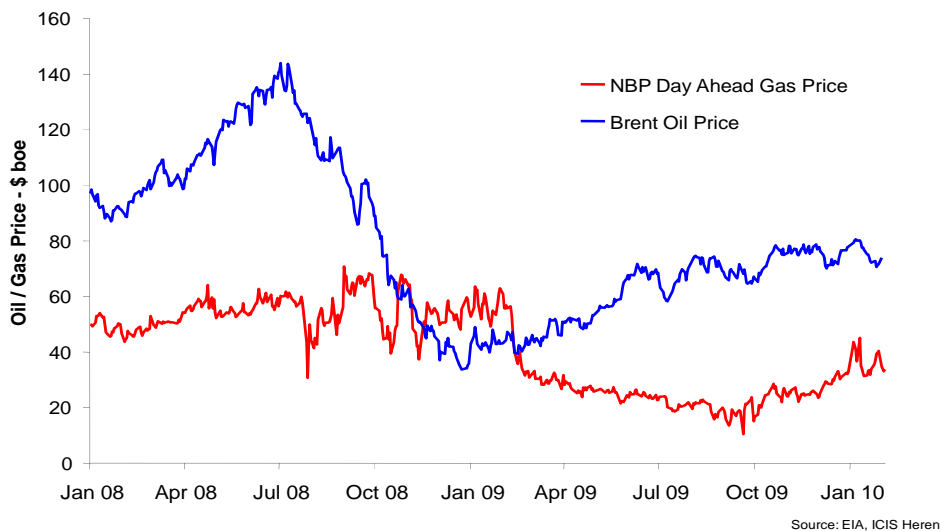
<sup>1</sup> bbl = barrel of oil or oil liquids

Figure 2: NBP Day-ahead and Forward Gas Price 2008 - 2010



Gas prices are currently trading at half that of oil on an equivalent basis and the expectation is that gas prices will remain decoupled from oil price for some time to come. In such a market, many gas developments will remain uncommercial and will not be developed without a radical change to both the cost structure and tax burden they face. This emphasises the challenge the industry faces to maximise the recovery of the UK's remaining gas reserves.

Figure 3: Comparison Brent Oil and NBP Gas Price (\$/boe) 2008 - 2010



## 5. Oil and Gas Reserves

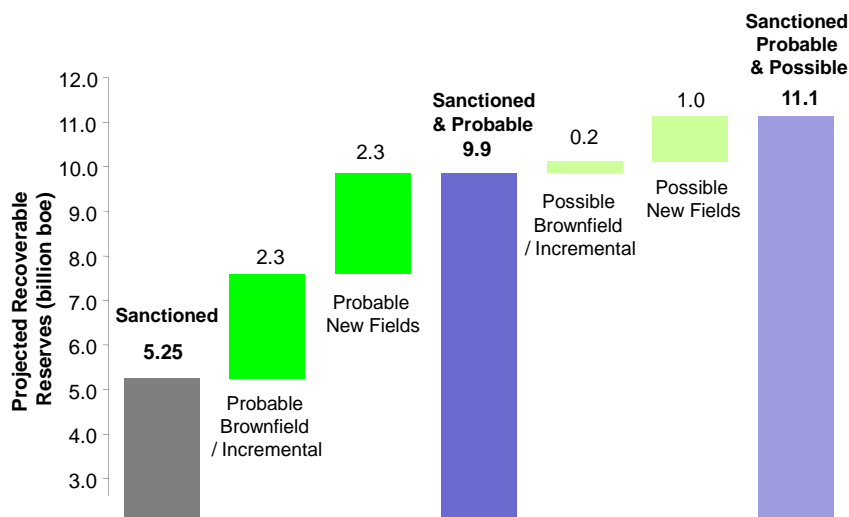
The latest Activity Survey shows that the business plans developed over the latter half of 2009 may lead to the recovery of up to 11.1 billion barrels of oil and gas over the next three decades. This is a 2.3 billion boe<sup>2</sup> increase measured from the beginning of this year, compared with last year's survey.

The survey includes:

- 5.25 billion boe from existing fields and currently sanctioned investments;
- 3.3 billion boe from development of new fields;
- 2.6 billion boe from incremental investment in existing fields (also called brownfield developments).

It should be noted that the 11.1 billion boe covers a range of probabilities of recovery, reflecting both the underlying economics as well as the technical challenges posed by many of these developments. The survey captures proven and probable reserves (greater than 50% probability) which total 9.9 billion boe and possible reserves (less than 50% probability) of 1.2 billion boe.

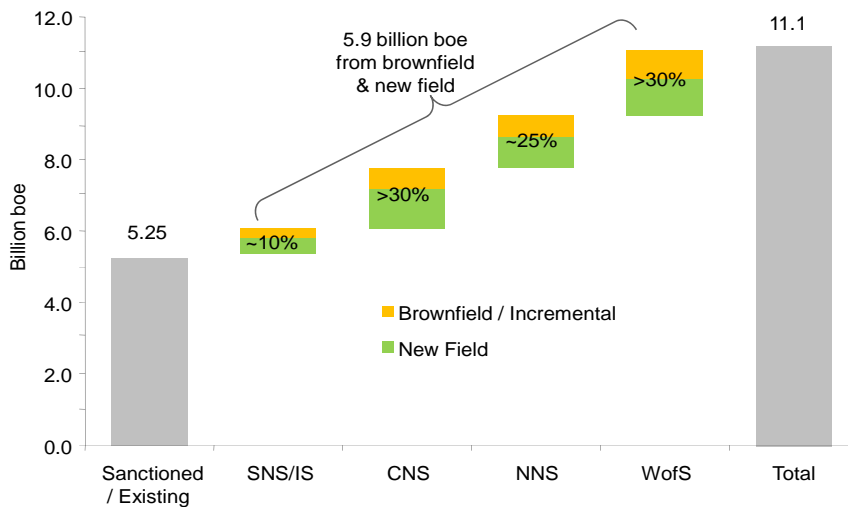
Figure 4: Build-up of Activity Survey 2010 Reserves Base



The survey shows that member companies' plans have the potential to add reserves across the UKCS. More than 30% of the total reserves to be developed are to the west of Shetlands and in the central North Sea with 25% in the northern North Sea and circa 10% in the southern North Sea.

<sup>2</sup> boe – barrels of oil and gas equivalent

Figure 5: Reserves Growth by Region

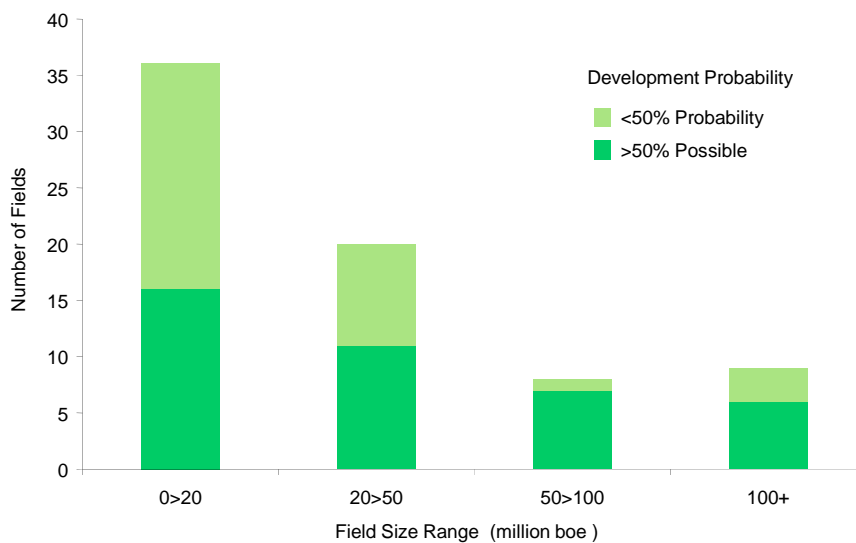


**Potential New Field Developments**

There are 73 potential new field developments in this year’s survey, an increase of 17 over the previous year. These range from fields with less than 5 million boe to those above 100 million boe of recoverable reserves; with more than half of all fields being considered for development are of 20 million barrels or less in size.

The nine largest field developments account for half of the total new field reserves and capital investment. Whilst it cannot be assumed that investment will preferentially go to large new fields, it shows how important it is to see these opportunities developed. The counter point is that 64 fields are needed to deliver the other half of the new field reserves, and may struggle to compete for resources compared with larger developments.

Figure 6: Distribution of New Field Size



**Incremental (Brownfield) Development in and around existing fields**

The survey identifies more than 160 projects which together develop 2.6 billion boe. These projects are typically small; half are less than 6 million boe and another quarter are between 6 and 10 million boe in size.

**Ultimate Recovery**

Oil & Gas UK estimates that there is still somewhere up to 25 billion boe to be recovered from the UKCS over time, of which the results of exploration could ultimately contribute around 5–8.5 billion boe.

It is also estimated that exploration added around 350 million boe of new oil and gas resources during 2009. However these volumes are not reflected in the investment and production forecasts provided in this survey, because further work will be required to mature their development.

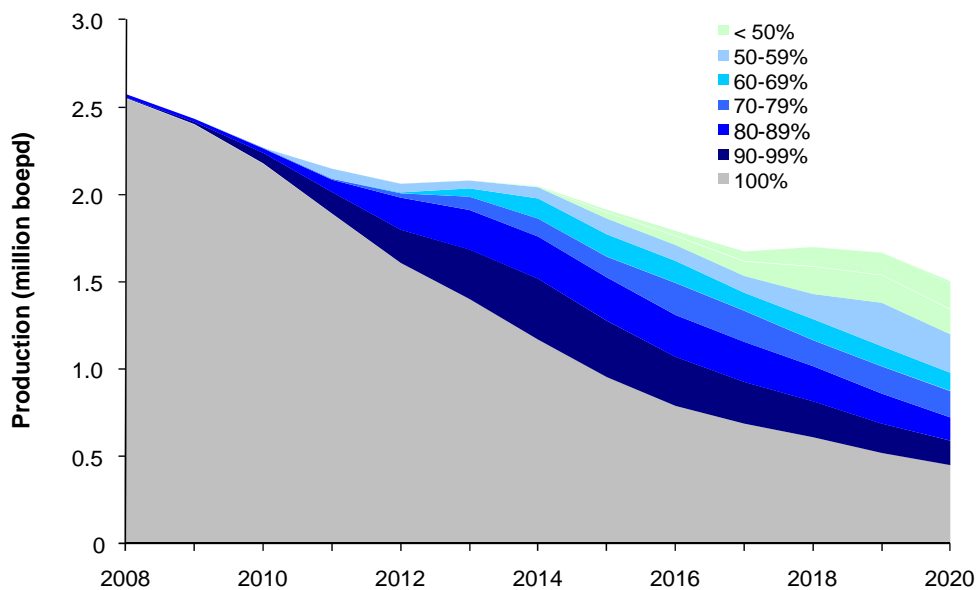
## 6. Production

Total UKCS production was estimated at 2.48 million boepd<sup>3</sup> (~ 0.9 billion boe) in 2009, around 6% lower than in 2008. UK oil production fell around 2% and gas production fell more sharply by about 10%. However demand for gas from the UK market is estimated to have fallen by 5% over 2008/9, and this reduced demand is thought to have been a factor in the decline in UK gas production, as well as increasing competition from imported supplies.

UKCS production is expected to continue to decline at 6% per annum in 2010, which would result in annual production of 2.35 million boepd averaged over the year.

The fall in production is directly related to the amount of investment going into the UKCS. Indeed, the underlying decline rate of the basin (i.e. with no further capital investment) is around 15% per annum. Over recent years we had seen the rate of production decline slow to 4-5% responding to the increasing rate of investment in 2005/6. Since then investment has again begun to fall, dropping by circa £1 billion in real terms by 2008/9 with a consequent impact on production. The survey also shows that without sustained investment, production will fall to half its current rate within five years.

Figure 7: UKCS Oil and Gas Production 2008 – 2020  
(reflecting the probability of new developments)

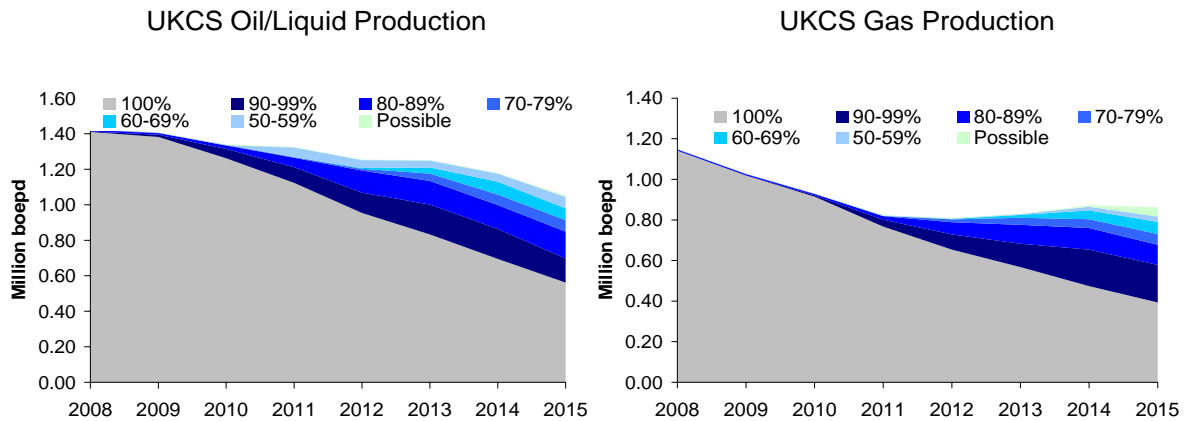


There were only eight new field start-ups in 2009 against 22 new field start-ups in 2008 and 20 in 2007. This reflects the slowdown in activity in 2008/9 where the new fields together brought around 150 million boe of reserves into production; this is less than half the average of the reserves developed over the last four years. In addition it is estimated that brownfield investment brought another 100-150 million boe into production last year.

Over the next two to three years, the greater proportion of new production comes from oil rather than gas. This reflects the very differing economics of the two commodities, and low gas prices, rather than any lack of gas development opportunities.

<sup>3</sup> boepd – barrels of oil and gas equivalent per day

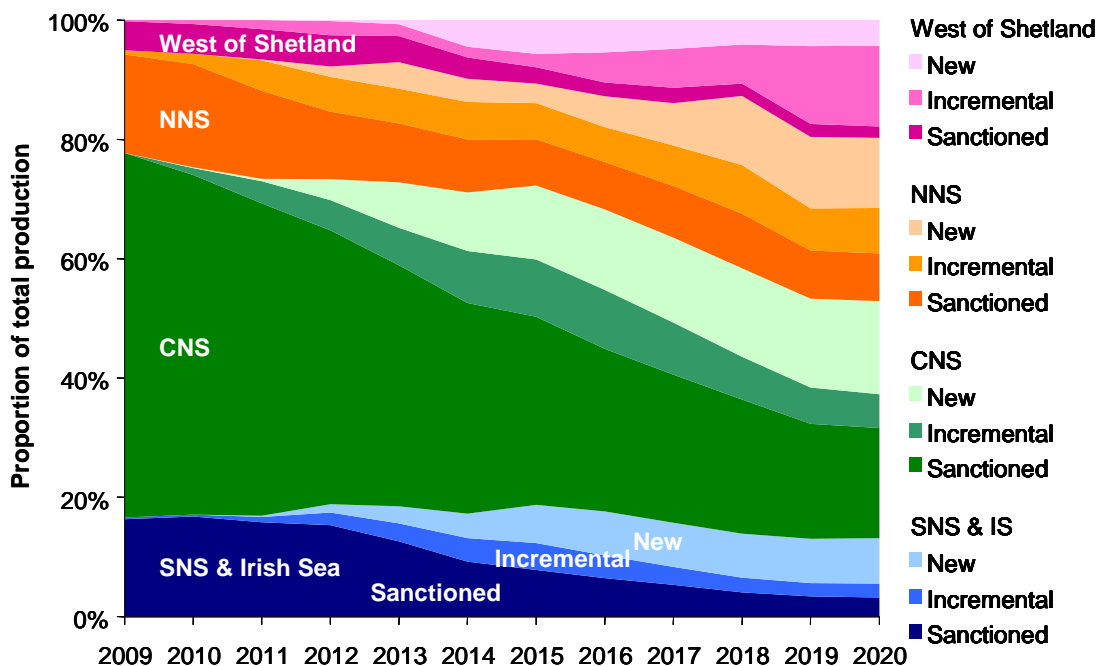
Figure 8: UKCS Oil and Gas Production 2008 – 2015 (assuming sustained investment)



The production outlook to 2020 gives broader measure of the overall potential of the UKCS. If investment can be sustained at £5 billion per year or above in today’s money, then the UKCS is capable of producing around 1.5 million boepd in 2020 from existing development opportunities and has further potential from current exploration activities. Based on DECC’s own projections of future demand, this means that the UK would still meet 50% of its total oil and gas demand from indigenous production in 2020. This demonstrates the essential role that the UKCS continues to play to support security of supply, the value of which is all the more important given that oil and gas will still provide 70% of the UK’s primary energy in 2020.

It is also instructive to see how production may switch across the UKCS over the next decade. The central North Sea currently dominates operations with 60% of total production coming from this area. However, looking forward over the next decade, we can see the potential for the West of Shetland to emerge as a core area for production operations, yet all of the other regions of the North Sea have a productive future.

Figure 9: UKCS Oil & Gas Production Outlook, Proportioned by Region, 2009 - 2020 (assuming of full development case)



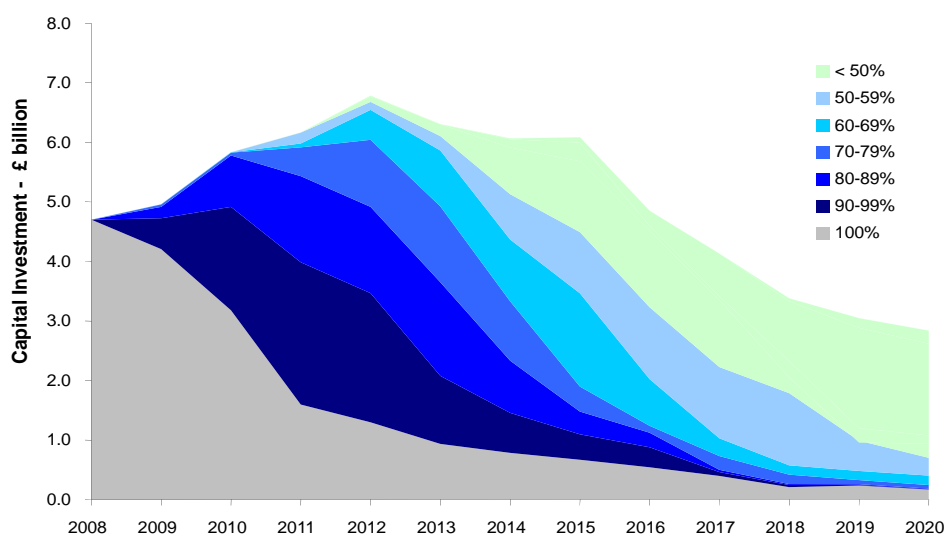
## 7. Investment and Expenditure

### a. Capital Investment

A year ago it was forecast that capital investment would continue to fall, following a trend seen over the preceding three years. As it is, this latest survey reveals investment in 2009 held up better than expected and at circa £ 4.7 billion was similar to that seen in 2008. It appears that this was because i) much of the investment was already committed in the short term and ii) the oil price recovered during the second half of last year drilling and development costs began to fall.

However, the fact that we have reached a short-term floor in investment should not provide too much comfort. The slowdown in investment since 2006 resulted in only eight new fields being brought on-stream last year, compared with 17 the year before. Likewise only six new fields were given development approval in 2009. The slowdown in general development activity becomes all the more stark when the 22% decline in development drilling activity is also accounted for.

Figure 10: UKCS Investment Outlook, 2008 - 2020  
reflecting probability of investment



The latest survey identifies plans to invest up to £60 billion over time, consisting of:-

- i) £10 billion of ongoing sanctioned investments, most of which will be spent in the next three years,
- ii) Potential investments of £32 billion to develop 3.3 billion boe in 73 new fields and,
- iii) Potential investments of £18 billion to develop a further 2.6 billion boe in existing fields (brownfield investment).

These potential investments range from the very likely (probability greater than 90%) through to opportunities with a 10% or lower chance of being developed and also have a wide variation in their economic attractiveness.

Looking at the portfolio as a whole it is anticipated that investment will pick-up in 2010 and rise above £5 billion. Current plans could result in £25 billion of capital investment over the next five years. This projection is highly dependent on investment approval being given to certain large fields, noting that nine of the total of 73 new field developments account for half of the total capital investment and associated reserves.

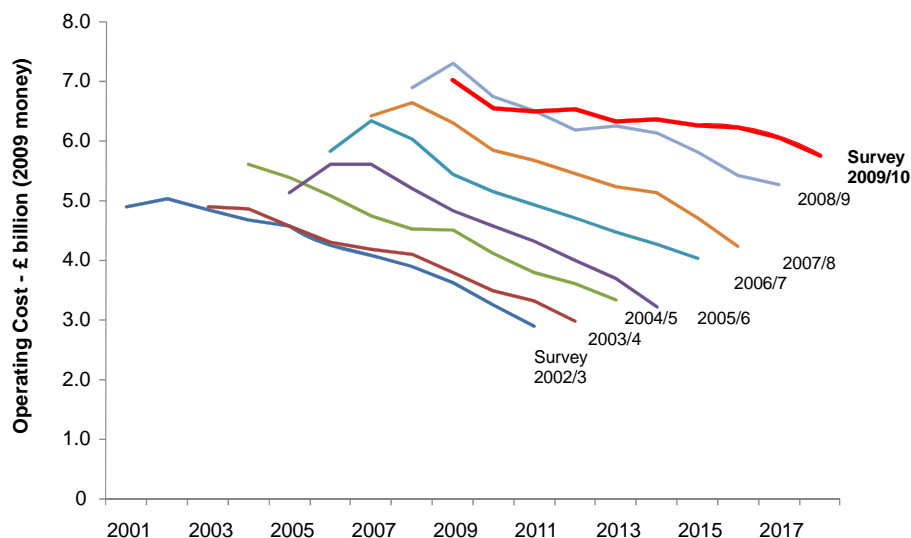
This is a significant increase in the investment outlook compared with last year's survey. The increase comes both from the number of new fields entering this year's survey as well as a slow down in the sanctioning of new investment activity whether in brownfield or new field developments.

It is noted that the 17 field developments new to this year's Survey are on average 20% more expensive on a cost per barrel basis. This demonstrates that operators are having to pursue ever more technically and commercially demanding opportunities across the UKCS. Looking across the whole of the new field portfolio, break-even costs are estimated to be typically \$45-50/boe underlining the high cost nature of the UKCS. If a capital development cost cut-off of £10(\$16)/boe is applied then only around half of these 3.3 billion boe of reserves would secure investment sanction, emphasising the challenge the UKCS faces.

## b. Operating Costs

Over the last five years, this industry has seen the cost of operations rise rapidly to reach £7 billion in 2008. In other circumstances, it would have been expected that this trend would have continued into 2009. However the fall in commodity prices has led to a much stronger focus on costs within many businesses and 2009 offered a marked a change, with total operating expenditure falling by 5% to £6.6 billion. This improvement reflects the efforts that many companies across the industry have taken over the last year to reduce costs and improve operating efficiencies whilst ensuring safety and asset integrity remain the top priorities.

Figure 11: Growth in Operating Costs over the Decade

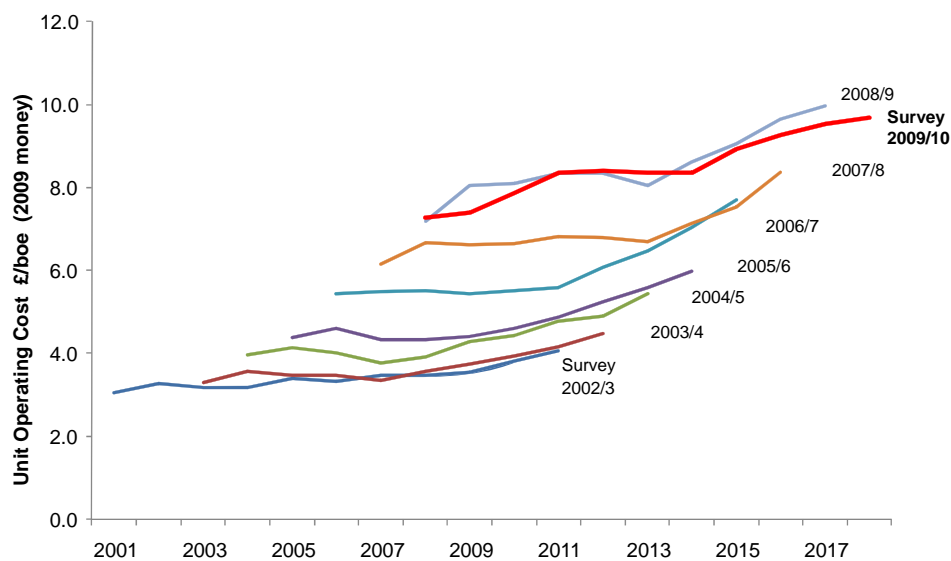


Looking forward, total operating expenditure is expected to follow a fairly flat trend. It is projected to be £6.5 billion in 2010, declining to £6.3 billion by 2015. Whilst the survey shows that, if a 4-5% cost reduction in the operation costs of existing assets is sustained over the next five years, the additional costs of bringing new production on-stream leads to little change in the overall rate of operating expenditure.

### c. Unit Operating Costs

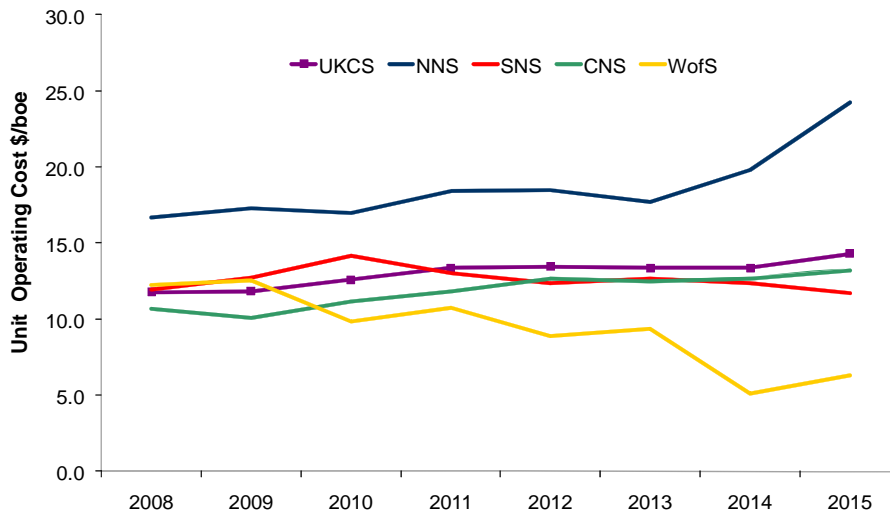
Operating costs per barrel (boe) averaged at around £7.4/boe (\$12/boe) in 2009 and are expected to rise to around £8/boe (\$13/boe) in 2010. Even if total operating costs are held flat, the cost of producing a barrel of oil or gas will rise as production declines. Without sustained investment to bring new production on-stream, unit costs would rapidly rise by about 15% per annum, rendering the basin uncommercial in a few years time. As it is the survey demonstrates that capital investment of £25 billion over the next five years will be required to keep the increase in unit operating costs under control.

Figure 12: Growth in Unit Operating Costs over Decade  
(£/boe - 2009 money)



Unit operating costs vary significantly field by field; however, when averages are considered by region, unit operating costs are fairly consistent. Currently the northern North Sea is about 30% more expensive than the UKCS as a whole, reflecting the maturity of the assets and declining production in that region.

Figure 13: Unit Operating Costs by Region (assuming sustained investment case)

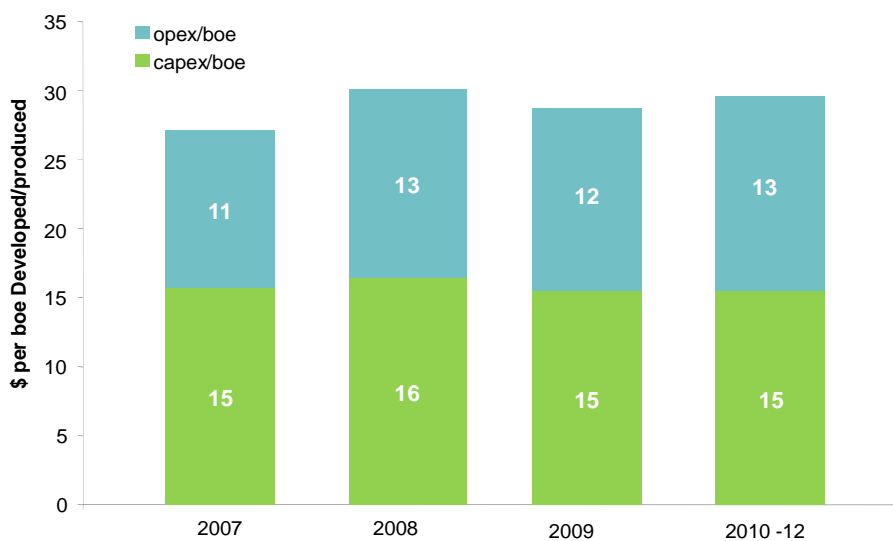


**d. Unit Technical Costs**

Capital development costs for new fields average £10/boe (\$16/boe) and incremental (brown field) developments average £7/boe (\$11/boe) across the whole portfolio of opportunities. When near term opportunities over the next two to three years are considered, it is seen that development costs are about 5-10% lower than was expected a year ago and average around £9.3/boe (\$15/boe). Development costs for many of the potential new field developments entering the survey for the first time this year are seen to be above £11/boe (\$18/boe).

The overall cost of developing and producing a barrel of oil or gas equivalent (unit technical cost) appear to be similar to those seen in last year’s survey at around \$29/boe. It should be noted that the quoted unit technical costs exclude the costs of investment finance, exploration and appraisal drilling and general onshore expenses for the venture.

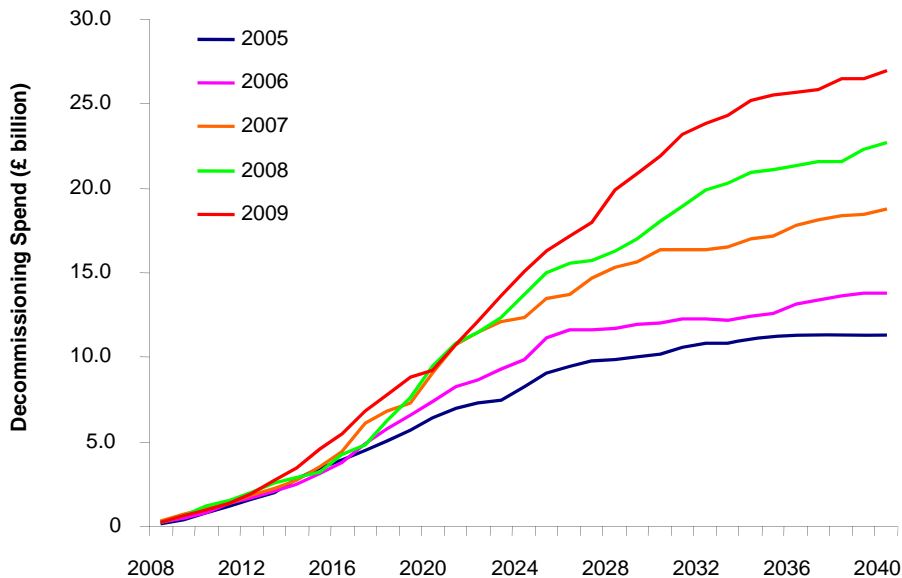
Figure 14: Unit Technical Costs - \$/boe, 2007 - 12



## e. Decommissioning

Whilst most areas of costs are under control and have not moved significantly in the past 12 months, it is seen that total decommissioning expenditure across the UKCS has risen by about 18% and is expected to reach £26 billion by 2040.

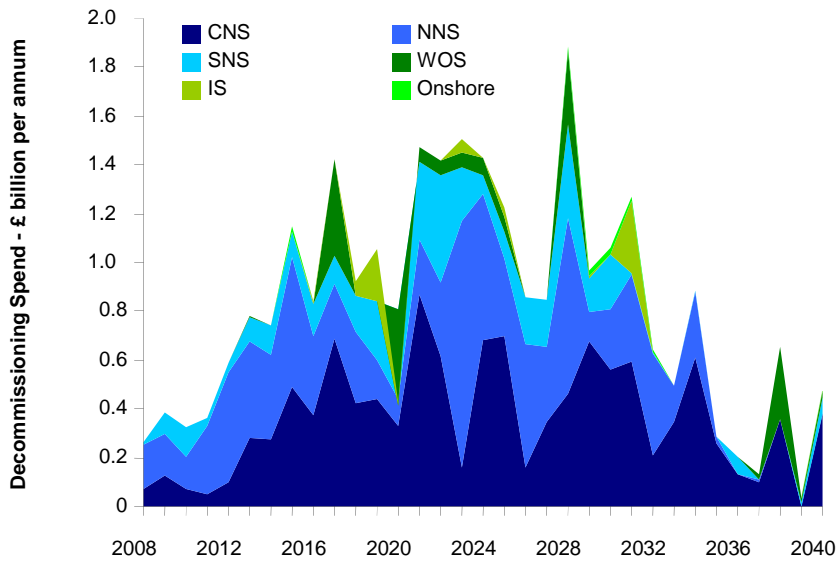
Figure 15: UKCS Projected Cumulative Decommissioning Costs, 2008-2040



Over recent years, technical innovations and increased recovery techniques have meant decommissioning dates have receded as the life of existing infrastructure is extended through the exploitation of surrounding reserves. However, this is the first time for many years that we see little, if any, movement in decommissioning dates; indeed when looking at the next decade, some field decommissioning dates appear to be earlier than previously anticipated. It is increasingly apparent that fiscal uncertainty on access to decommissioning relief combined with cost inflation, the imposition of EU Emissions Trading Scheme Phase III and high tax rates on new investment are threatening to result in premature cessation of production for many assets. We sit in the middle of a window of opportunity which will determine the future of the UKCS. If we will fail to capitalise on this opportunity we will permanently damage our ability to maximise investment and reserves recovery from the UKCS.

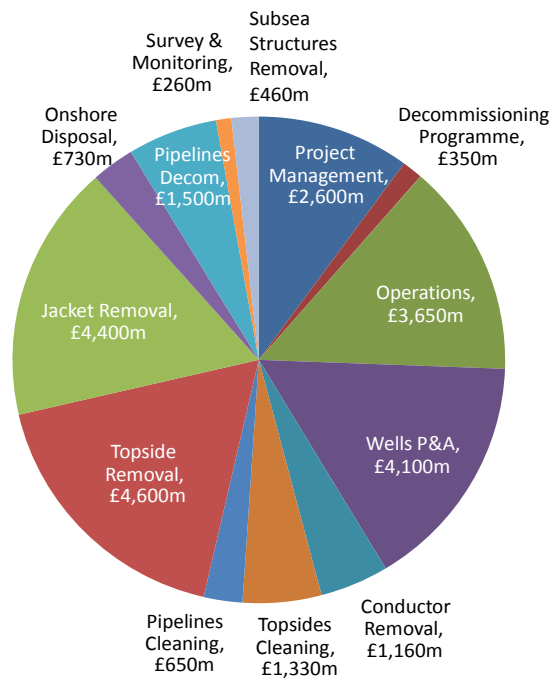
Decommissioning expenditure Sea varies considerably by region, driven by the varying complexity of decommissioning projects. Large platforms with substantial sub-structures will require more work to remove them than subsea and floating equipment. Consequently, the central and northern North Sea have considerably higher costs per installation, making up 44% (£11.7billion) and 34% (£8.8billion) of total UKCS spend respectively, compared with the southern North Sea at 15% (£3.9billion) which has shallow water and milder conditions.

Figure 16: UKCS Decommissioning Spend By Region, 2008 -2040



Decommissioning will gradually emerge to be a significant business opportunity in its own right. A diverse range of sectors and businesses are involved in a decommissioning programme with the most significant spend in the UKCS being on jacket and topside removal (18% and 17% respectively), wells plugging and abandonment (P&A) (16%) and operations (14%). The total market for jacket and topsides removal is valued at £9 billion and onshore disposal at £730 million in today's money. With around 470 installations to be decommissioned there is substantial opportunity for the UK's own supply chain to address this market.

Figure 17: UKCS Decommissioning Spend by Sector (2009 money)



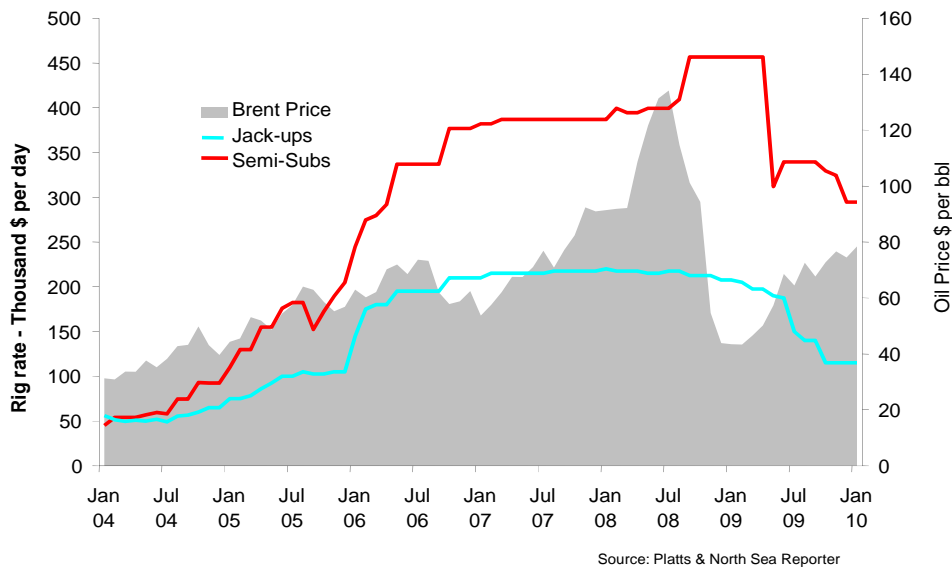
## 8. Drilling / Exploration and Appraisal (E&A) Activity

There have been significant reductions in rig day rates which have almost halved over the last 18 months, for new contracts. Where semi-submersible drilling rig day rates averaged \$400,000 - \$450,000 per day in 2008, they have now fallen to around \$250,000 per day in the first quarter of 2010. Likewise jack-up drilling rig day rates have fallen from \$200,000 - \$225,000 per day to around \$100,000 - \$150,000 per day in the same period. There are signs now that rig-rates have stabilised, though some short term leases have been reported below these rates.

However, it should be remembered that during the years 2006-8 drilling rigs were being contracted ahead at high rates and often for several years. Therefore, many of those contracts will still be in operation and so actual costs will not have fallen by as much as the rates for new contracts would indicate. The figure below reflects new contracts.

It should be noted that whilst platform based drilling has faced similar commercial pressures, it still remains a fraction of the cost of drilling using a semi-submersible or jack-up rig.

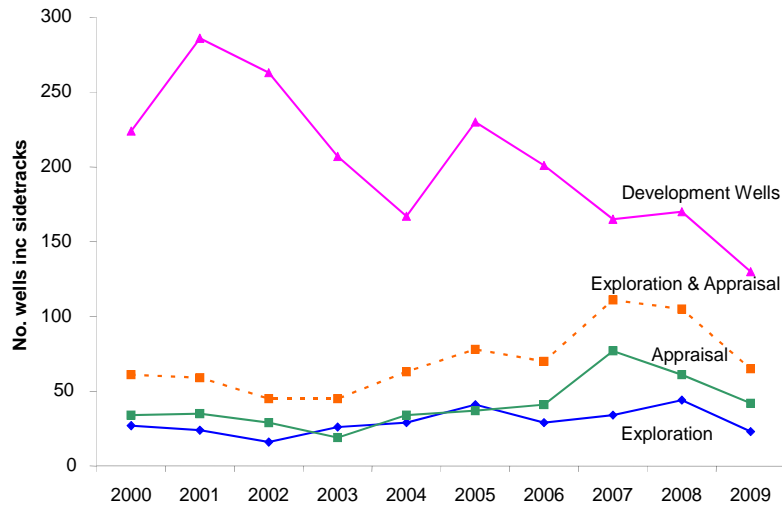
Figure 18: Typical North Sea Rig Rates, 2004 – 2010  
(excludes platform based drilling)



## Development Drilling

A total of 130 development wells (including side tracks) were drilled in 2009, a 22% reduction on 2008 and approximately half the number delivered ten years ago. This long term decline in development drilling activity needs to be addressed as it is having a direct impact on the productive capacity of the UKCS. It is uncertain at this point when or indeed whether development drilling will pick up in 2010 and activity will be closely monitored.

Figure 19: UKCS Drilling Activity, 2000 - 2009

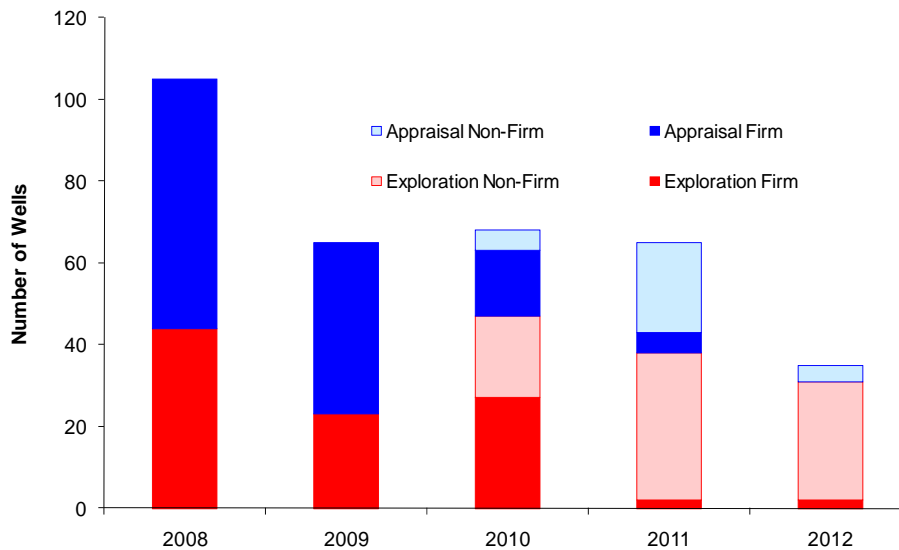


## Exploration and Appraisal (E&A) Activity

Overall, E&A drilling was about 40% lower in 2009 than in 2008, with the largest reduction seen in exploration activity where only 23 wells were drilled compared with 57 in 2008; likewise appraisal activity fell from 52 wells to 43 wells in 2009. This fall in activity reflects the fall in oil and gas price seen in 2008 but was made worse by the collapse in the equity markets which further reduced access to exploration funding. Total expenditure on E&A was £1 billion in 2009 compared with £1.3 billion in 2008.

Given the reduction in E&A activity, 2009 saw an increase in the overall commercial success rate with a move to drill the least risky, but perhaps less material, opportunities. As a result the overall commercial success rate is seen to have risen to 60% and it is provisionally estimated that 300-400 million boe were discovered; this compares with 2008 where 400 – 600 million boe are now understood to have been discovered.

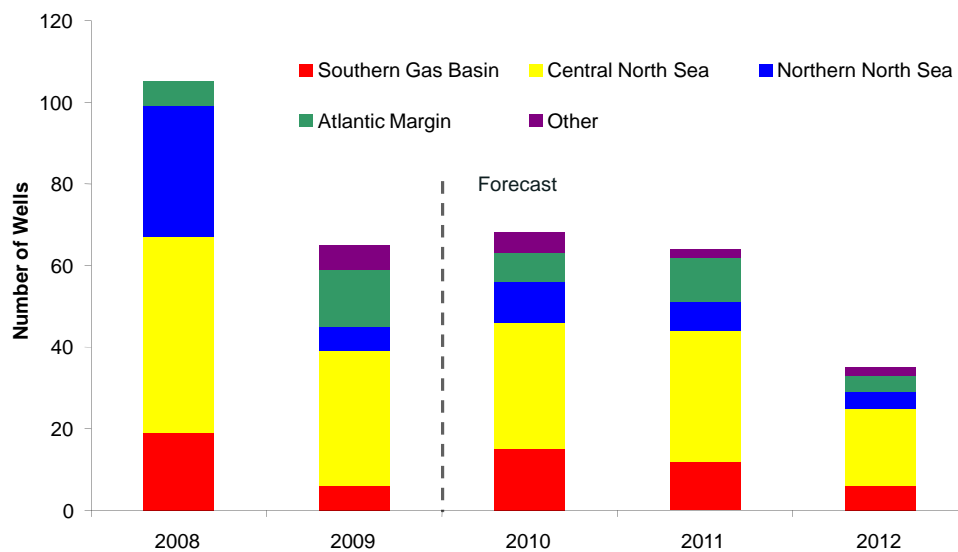
Figure 20: UKCS E&A Activity, 2008 - 2012



The outlook for E&A drilling over the next three years does not anticipate any rapid increase in activity and certainly not back to the 100 plus wells drilled in 2008. At best 2010 will see a similar rate of exploration to that seen in 2009, although only two thirds of the current wells have got firm rig slots. Access to finance (internal and external) and the fundamental economics are the largest barriers to activity; this is even more the case where gas rather than oil is the exploration target.

The central North Sea remains the most popular destination for exploration and appraisal activity, followed by the Atlantic margin to the west of Shetland and the northern and southern North Sea.

Figure 21: E&A drilling Activity by Region (assuming all firm and non-firm wells drilled)



## 9. Developments in the Fiscal Regime

Over the last twelve months we have seen some important changes in the tax regime which are aimed at promoting investment in some of the most difficult oil and gas fields across the UKCS. In particular, a new Field Allowance was introduced in the 2009 Budget which is now specifically targeted at the following categories of fields:

- (i) Small fields less than 25 million boe in size,
- (ii) Certain types of heavy oil fields,
- (iii) Very High Pressure High Temperature fields
- (iv) Gas developments West of Shetland (subsequently announced in January 2010).

Importantly, the introduction of the new field allowance signals that the Government recognises that the heavy tax burden this industry faces is proving an impediment to investment. The impact of the allowance is still to be assessed, but first signs are positive. It may for instance encourage the investment in new gas infrastructure to the west of Shetlands. However, additional measures will be required; the survey shows that many of the oil fields west of Shetland are struggling commercially and may also need to be brought within the reach of the field allowance. It is clear that the tax burden must reduce over time if we are to maximise the economic recovery of the UK's remaining oil and gas resources.

Discussions are ongoing with HM Treasury on a range of issues associated with decommissioning. Here the key issues are uncertainty regarding access to tax relief for decommissioning and the cost of providing for decommissioning on a gross rather than net-of-tax basis. These are increasingly being seen as major impediments to the future development of the UKCS by incumbent investors. New entrants are also deterred from entering the UK market and, when they do so, they find that the current treatment of decommissioning acts as a brake on their growth by placing an additional burden on their financial gearing and locking up capital which could be reinvested in the business. Unless these issues and the consequences of Phase III of the EU ETS are addressed in the near future, there are concerns that the rate of decommissioning will accelerate and infrastructure be removed before all the accessible reserves of oil and gas are recovered.

A number of changes to the chargeable gains regime have been introduced last year, which will help encourage asset trading. No chargeable gains will arise where the proceeds from the disposal of assets are reinvested in the UKCS and similarly where assets are swapped. Reinvestment in exploration and development (including drilling costs) will also be exempt from chargeable gains.

In addition, industry and Government have been addressing a range of fiscal barriers deterring the re-use of platforms and infrastructure for gas and carbon storage, wind power or other applications. The changes announced last year include the removal of any income from change of use activities from the scope of PRT and retaining relief against tax for decommissioning costs for assets which have changed use. A number of outstanding issues are still being discussed.

Other changes during 2009 include the confirmation of access to PRT relief post licence expiry which should provide additional assurance for late life assets and the access to capital allowances for expenditure on cushion gas for gas storage projects which should help the development of new gas storage sites.

## Summary Table of Key Statistics

<i>Money of the day</i>	2007		2008		2009		2010 Forecast
<b>Total production</b>	2.8 mln boe/d		2.64 mln boe/d		2.48 mln boe/d		~2.35 mln boepd
<b>Oil / liquids</b>	1.6 mln boe/d		1.5 mln boe/d		~1.4 mln boe/d		~
<b>Gas</b>	1.2 mln boe/d 188 mln m3/d		1.15 mln boe/d 185 mln m3/d		~1.1 mln boe/d ~175 mln m3/d		~
<b>Total (£bln)</b>	£ 12.4bln		£ 13.1 bln		~£12.3 bln		~ £12.6 - 14.0 bln
<b>Capex</b>	£ 5.3 bln		£ 4.8 bln		~£4.7 bln		~ £5.0 - 6.0 bln
<b>Opex</b>	£ 6.0 bln		£ 7.0 bln		~£ 6.6 bln		~ £6.5 bln
<b>Exporation &amp; Appraisal</b>	£1.1 bln		£1.3 bln		~£1 bln		~ £0.8 - 1.0bln
<b>Unit Technical Cost (\$/boe)</b>	27		29		30		28
<b>Unit Dev't Cost (\$/boe)</b>	15		16		15		15
<b>Unit Operating Cost (\$/boe)</b>	11		13		12		13
<b>Unit Technical Cost (£/boe)</b>	14		16		16		17-18
<b>Unit Dev't Cost (£/boe)</b>	8		9		9		9-10
<b>Unit Operating Cost (£/boe)</b>	6		7		7.4		8
<b>Oil price (avge)</b>	\$ 72.5 per bbl		\$97 per bbl		\$ 62 per bbl		~
<b>Gas price (avge – day-ahead)</b>	30 p/th		58 p/th		30 p/th		~
<b>Effective Oil Price</b>	\$ 56 per bbl		\$ 84 per bbl		\$ 48 per bbl		~
<b>Direct N. Sea tax revenues (Fiscal year)</b>	£ 7.8 billion		£ 12.9 billion		£ 7.0 billion		~ £8.4 bln (FY 2010-11 PBR Dec'09)
<b>Well drilled</b>	incl. sidetracks	excl. sidetracks	incl. sidetracks	excl. sidetracks	incl. sidetracks	excl. sidetracks	27 firm E wells and 16 firm A wells planned in 2010 with possible 25 non-firm wells
Exploration	34	32	57	46	23	22	
Appraisal	77	36	52	37	42	24	
Development	163	84	168	72	130	53	
<b>Total</b>	<b>274</b>	<b>152</b>	<b>277</b>	<b>155</b>	<b>195</b>	<b>99</b>	
<b>New field approvals</b>	15		12		6		~
<b>Incremental projects</b>	6		10		3		~
<b>New field start-ups (Excludes incrementals)</b>	20 (1,000 mln boe)		22 (380 mln boe)		8 (150 mln boe)		~
<b>Exploration Volumes Discovered</b>	~ 300-400 mln boe		~ 400 - 600 mln boe		~ 300 - 400 mln boe		~

