Making the most of the UKCS
Cultural shift key to maximising economic recovery of oil and gas

Contents

About this report
The report is based on in-depth interviews with 23 senior oil and gas executives and investors from 18 organisations. The series of interviews were held between June and October 2014.

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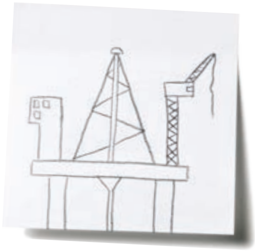
Executive summary



The UK Continental Shelf (UKCS) has provided the UK with substantial energy and income for decades. Although production levels have been declining since 2000, it remains a highly valuable asset. Another 15 billion barrels of oil equivalent could be extracted, worth about $1.3 trillion, assuming a $90 per barrel oil price.

But this prize will not be delivered unless the industry, the new regulator and HM Treasury adapt to match the challenges of the basin today.

Time for change

The UK government has recognised the need for change and commissioned Sir Ian Wood to write the *UKCS Maximising Recovery Review*, published in February 2014, which provides a wide-ranging set of recommendations.

But are the Wood Review's recommendations the right ones? Will they be sufficient to maximise economic recovery of UK resources? And what are the implications for the industry?

Deloitte conducted in-depth interviews with 23 senior oil and gas executives and investors from 18 organisations to understand their views.

Uncertainty deters action

Support for the Wood Review's main recommendations is unanimous: the need for the new regulator, the Oil and Gas Authority, and fiscal reform are undisputed. But much remains unclear, deterring investment and decisive action in the industry, and many are sceptical that real change will be achieved.

What the industry, the Oil and Gas Authority and HM Treasury need to do

Behaviours and leadership need to evolve. Whilst sustaining the high health, safety and environmental standards the industry has achieved, work patterns and behaviours suited to a bespoke, high production environment need to be challenged both in industry and government.

- A **new style of organisation and leadership** is needed that focuses on cost-efficient solutions that deliver asset integrity and high production efficiency in this late-life environment.

- A **strong regulator** is needed with a clear vision and priorities, and the ability to encourage, incentivise or enforce new ways of working in the UKCS.

- More **drilling** is key. Deloitte's Petroleum Services Group estimates that current drilling activity levels need to double to more than 90 wells drilled annually over the next 20 years. Regulatory and fiscal incentives, perhaps emulating the Norwegian model, are needed to stimulate exploration and appraisal drilling activity.

- **Access to key infrastructure** must be ensured. Creating a fiscal and regulatory environment where key infrastructure will be maintained and access to it is facilitated will be crucial.

- A **fit-for-purpose fiscal regime** is needed. The fiscal regime must be simplified and predictable to restore investor confidence in the UKCS, incorporating the flexibility required to meet the needs of the diverse basin.

- **Closer collaboration** between companies, the Oil and Gas Authority and HM Treasury is vital for maximising economic recovery in the UKCS. It is crucial for controlling costs, managing risks and increasing operational effectiveness. Collaboration is needed across the value chain from exploration to decommissioning, in a range of ways including new business models, sharing of equipment, and co-development of capabilities and learning.

While the changes required may not come as a surprise, achieving these changes will not be easy and efforts must not compromise safety. Time is critical to avoid decommissioning of key infrastructure. Although it will take time to establish the new regulator, the industry and government must not wait to push forward with these changes and maximise the benefits of the UKCS for all.

1. It is getting harder – all change please!

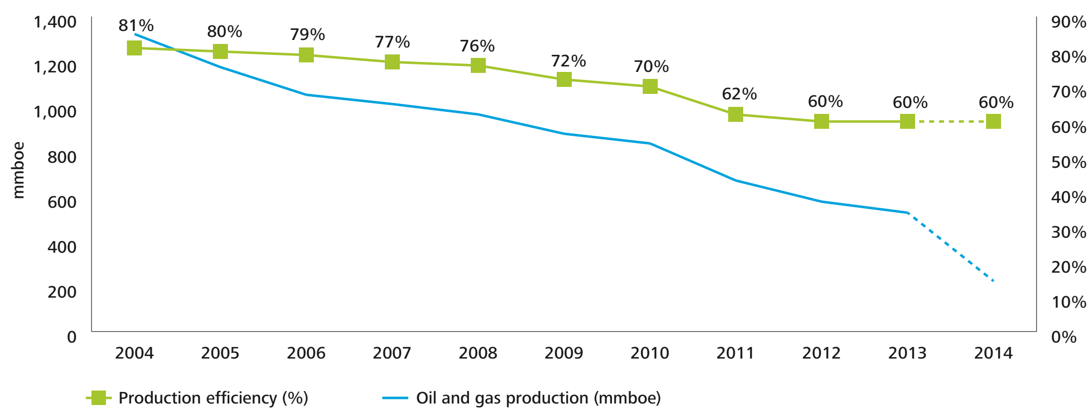
Challenges in the UKCS

The UKCS is one the world's most established offshore basins. It has been a significant contributor to UK energy security: indigenous oil and gas production accounted for over 70 per cent of the UK's primary fuel in 2013.[1] It is also a provider of substantial income for HM Treasury, with oil and gas production adding £30 billion to the balance of payments in 2013.[2] The UKCS has supported thousands of jobs across the country for over five decades, and in 2013 it provided employment for some 450,000 people.[3]

However, doing business in the UKCS has become more difficult in recent years as deteriorating asset performance demonstrates.

Rapid production decline – While it is expected that oil and gas production will fall as reservoirs gradually deplete, the rate of UKCS production decline has taken many by surprise: oil and gas production has fallen 38 per cent in the last three years. Production efficiency is a key driver of decline, as shown in Figure 1, falling from around 81 per cent to 60 per cent between 2004 and 2013.

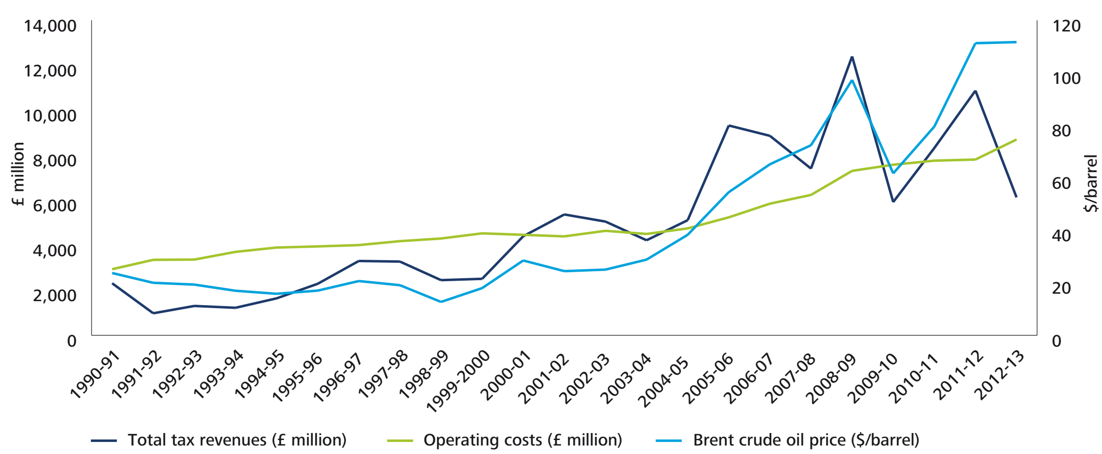
Figure 1. Production efficiency and UKCS oil and gas production



Sources: Deloitte's Petroleum Services Group (PSG) and Oil & Gas UK

Rising costs and less production leading to lower tax yield – Operating costs have been rising steadily and reached record levels in 2013 (see Figure 2). Higher activity levels that are putting pressure on the supply chain, more stringent safety and environmental regulations, increased talent costs and lower efficiency (higher maintenance costs for ageing assets, inefficient purchasing practices and lack of standardisation) have all contributed to cost inflation. Although crude oil prices have been historically high over the last three years, lower production and rising costs reduced HM Treasury's North Sea income from £11 billion in 2011–12 to £6.1 billion in 2012–13. It declined even further to £4.7 billion in 2013–14.[4]

Figure 2. North Sea tax revenues, operating costs and Brent crude oil price

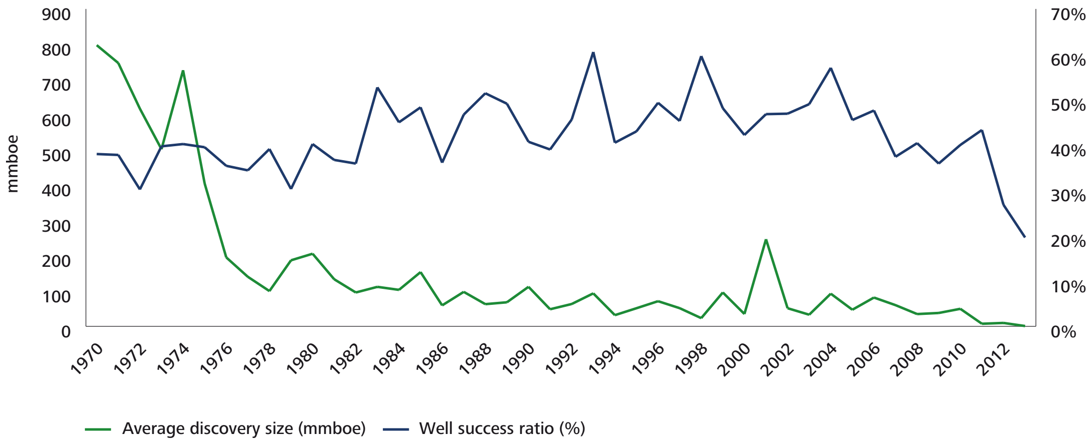


Sources: HM Revenues and Customs and BP Statistical Review of World Energy 2014

Smaller discoveries and less successful drilling – As Figure 3 shows, discoveries in the UK North Sea are getting smaller and exploratory programmes are becoming less successful.

With 'easy oil' in the UKCS shallow waters gone, fields are getting more remote, deeper and technically more challenging. Therefore, it is becoming more difficult to deliver production volumes at an acceptable cost and there are fewer economically attractive investment opportunities.

Figure 3. Average discovery size and average well success ratio

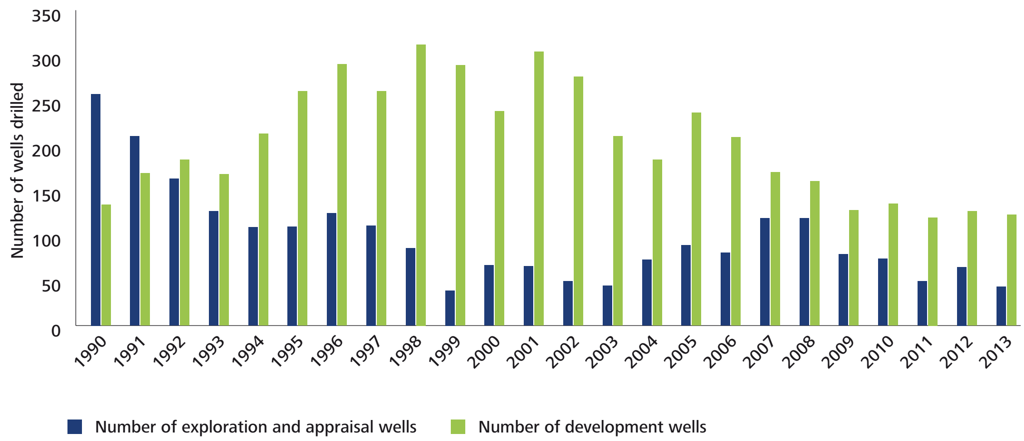


Source: Deloitte's PSG

Note: Data includes discoveries made up to 18 September 2014

Less drilling – As Figure 4 shows, rising costs and riskier exploratory programmes have coincided with less drilling in the UKCS. While the maturity of the basin is a reality, the lack of drilling will inevitably precipitate production decline as the pool of reserves shrinks.

Figure 4. Exploration and appraisal and development drilling



Source: Deloitte's PSG

Fiscal regime not fit for the basin – Interviewees argue strongly that the fiscal regime is not fit for the characteristics of the basin. The level of taxation is high and the fiscal regime is perceived as unpredictable and complex. In the global world of oil and gas, the combination of these factors has a negative impact on the basin's attractiveness to international investment.

Why has so little been done to address these challenges?

Many of the challenges in the UKCS have been well known and documented for at least a decade. The issues have been extensively discussed at conferences, roundtable meetings and in white papers and there have been numerous initiatives to address them. The most extensive programme, PILOT, has outlined many of the solutions yet few of its recommendations have been implemented so far.

Why? Interviewees noted a number of reasons for this.

Lack of incentives or regulations – Due to historically high oil prices over the past decade – with the exception of the fall in the wake of the financial crisis and in the second half of 2014 – companies were making money in the UKCS. They were neither forced nor incentivised to address the challenges outlined above or respond to the PILOT programme's recommendations.

Fragmented basin creating a complex working environment – Getting things done in the UKCS has become more complex, time-consuming and costly. Compared to the original handful of large oil companies, today there are over 60 asset owners and operators in the basin. These vary significantly in terms of profile, size and capability. They are all driven by individual strategic objectives, with large listed companies particularly under pressure to meet shareholder expectations on asset returns. Some companies that were initially focused on the North Sea have developed to become international oil companies and today take decisions from a global portfolio perspective.

Operators are more dependent on each other and on oilfield services companies for infrastructure and operations than ever before. This complex web of interdependencies means that even simple decisions can be difficult to make or execute.

Consequently, some of the recommendations of the PILOT programme, for example on regional collaboration, appear too complicated to achieve without strong incentives.

Business culture and behaviours – Many of the current leaders and company workforces operating in the UKCS 'grew up' and spent their professional careers in the basin. They have successfully explored the UKCS, built the infrastructure and have produced two-thirds of the known resources in the basin. In this time, there has been more focus on technical excellence than on cost-effective engineering solutions.

Companies in the UKCS have also developed ways of working with each other, their headquarters, the supply chain and the government. International organisations make investment and operational decisions on a global level. They have different expectations regarding the timescales for return on investment, different levels of access to capital, and different capacity and appetite for risk. Equally, both HM Treasury and the regulator have developed means of interacting with and managing companies in the basin. HM Treasury has been managing the basin as a 'fiscal asset' rather than an 'economic asset'. As the Wood Review also noted, the regulator adopted a 'light touch' approach in the UKCS.

However, the basin's deteriorating performance suggests that such behaviours are no longer effective in the current environment.

Uncertainties – New tax announcements, such as the Supplementary Charge Tax (SCT), three Secretaries of State for Energy and Climate Change and five energy ministers since 2008, have created a sense of insecurity in the UKCS.

Although the Scottish referendum has been decided, it remains to be seen what increased Scottish devolution will mean for the oil and gas sector. The industry will also be affected by the results of the oil and gas fiscal regime review announced in the Autumn Statement in early December 2014, the general elections in the spring of 2015 and the establishment of the Oil and Gas Authority (OGA) in 2016.

Until the details of these events become clearer, companies have adopted a 'wait and see' strategy. They are, reasonably, harvesting cash flows and operating their current business rather than making longer-term strategic decisions and approving potentially crucial investment into asset integrity or upgrade. Many assets will also remain on the market until there is more clarity.

The long-term expectations of crude oil prices drive economic activity in the UKCS. While the long-term outlook for falling prices has a major impact on the level of capital investment, short-term shocks can still cause project start-up delays and affect the recovery of resources.

So why the need for radical and urgent change?

The UKCS is a fantastic economic asset that has already provided some 42 billion barrels oil equivalent (boe) and still contains significant reserves. Estimates of how much is left differ widely, although according to Sir Ian Wood's latest figures, somewhere between 14 and 15.5 billion boe can still be produced.[5] At an average oil price of $90 per barrel, this could be worth more than $1.3 trillion in revenue for the sector in the years to come. The UKCS is also considered a centre of excellence that increasingly exports its skills and products worldwide.

While the industry is exceptionally busy at the moment and there are many individual success stories, the basin's overall performance is deteriorating and many expect future investment to decrease. Time is also running out as much of the key infrastructure was built decades ago and is coming to the end of its useful economic life.

Therefore, the industry and the government have two options. They can carry on without any major change and face the prospect of a precipitous downward spiral of declining performance and weakening economics. This increases the risk of the industry not being able to deliver 'the prize' before key infrastructure is decommissioned. Or, the industry and government can work together to take radical and urgent actions, which could have a major impact on reducing the pace of the basin's decline and the value recovered from it.

Actions need to focus on three specific areas:

- maximise potential volumes – through sufficient investment into drilling, discovering, appraising and developing while using the most effective technology
- recover economically – with high production efficiency, sharing infrastructure and using cost-effective technology
- decommission effectively and at low cost – using cost-effective technology, specialist skill sets and collaboration around asset hubs.

All this has to happen while maintaining high health, safety and environmental standards.

It is clear that the profile of the basin is changing and interested parties need to adapt. How well they adapt to this new profile will determine the value they can recover from their existing and future assets.

Industry executives Deloitte interviewed argue that the business culture needs to change. Working patterns need to shift and entrenched behaviours should be challenged. With the era of 'easy' exploration and production coming to an end, a new style of leadership needs to be adopted focusing on the individual asset's characteristics, and collaborating to cut costs and deliver better value.

As the operating environment becomes more difficult, the natural response from some companies is to sell non-core assets or prioritise projects with higher returns elsewhere in the world which they perceive as more attractive than the UKCS. Those who choose to work in the UKCS will also need to adapt their corporate model to the basin's late-life environment. Some companies are taking steps in this direction by focusing on individual asset performance, shifting their capability profile and operating approach, and reducing overheads. But this is not happening quickly enough.

The government relies on the industry to deliver production and tax revenues. Therefore, the new regulator, the OGA, and HM Treasury will need to create an environment (regulatory and fiscal) where companies are given incentives to succeed.

2. Is MER UK the answer?

Reactions to the Wood Review

Considering the mounting challenges and the urgent need for change and action, are the recommendations of the Wood Review the right ones for the UKCS? Will they be sufficient to achieve the radical shift required to address the basin's challenges? And, what are the implications for the industry?

Overall: yes! Interviewees unanimously believe that the recommendations are the right ones. Many noted that the document is clear, well-written and balanced. It is also rather "difficult to disagree with" and "there is huge common sense in the report".

But little detail... Some believe that this is because there is a marked lack of detail of how the recommendations will be implemented: "It stops short of saying how it will work in practice". This makes it difficult to judge how effective the recommendations will be.

And scepticism…as to whether the recommendations will be sufficient to achieve radical change. Interviewees repeatedly noted that the basin's challenges have been known for a decade and that many of the recommendations have been suggested before. If the recommendations serve the companies' interests, why have they not been implemented earlier? What will be different this time?

Therefore, many executives have treated the Wood Review with a great deal of scepticism. One respondent said, "At the moment it's just a great ambition", adding that "it looks good on paper but putting it into action will be difficult", while another remarked that "the publication of the report won't make any difference".

Interviewees were also concerned about the time it will take for the government to establish the regulatory framework and for the industry to understand the implications. One commented: "potentially nothing radical will happen for another three years until the OGA and the fiscal review take effect". Although the government has responded to the Wood Review as rapidly as parliamentary procedures allowed, the OGA will still only be fully operational in 2016.

Reactions to the new regulator

The recommendation for the creation of a new, strong arm's length regulator, the OGA, has received substantial support from companies operating in the basin – even if calling for a more powerful regulator may seem to be an odd request. There is a widespread recognition that the current regulator is too thinly stretched to be effective.

Interviewees argue that the OGA requires a clear vision that needs to be rapidly articulated and implemented.

At the same time, there is a concern that the regulator may try to do too much, which could lead to it losing focus and momentum. The OGA is yet to formulate its own strategy and liaise with a wide range of stakeholders in the basin including companies, investors, HM Treasury and other government departments. All this is happening at a time of great uncertainty for companies operating in the basin. Organisations face the impact of the fiscal review, some tax changes such as the bare boat charter rules, the general election in 2015 and the implementation of the European Commission's Offshore Directive, all of which will require their attention as well as that of the government's.[6] How further devolved powers in Scotland could affect the industry is also uncertain.

The OGA's potential rests on the calibre of its staff to devise and implement its strategy quickly and efficiently. If the new organisation is not capable of attracting personnel with appropriate skills and fresh approach in sufficient numbers, its potential will be severely impaired.

Interviewees are also concerned that the OGA will only be fully operational in 2016. While the Interim Advisory Panel is set in place, and although it can ensure that progress is made, progress may be limited until the new regulatory body is fully established.

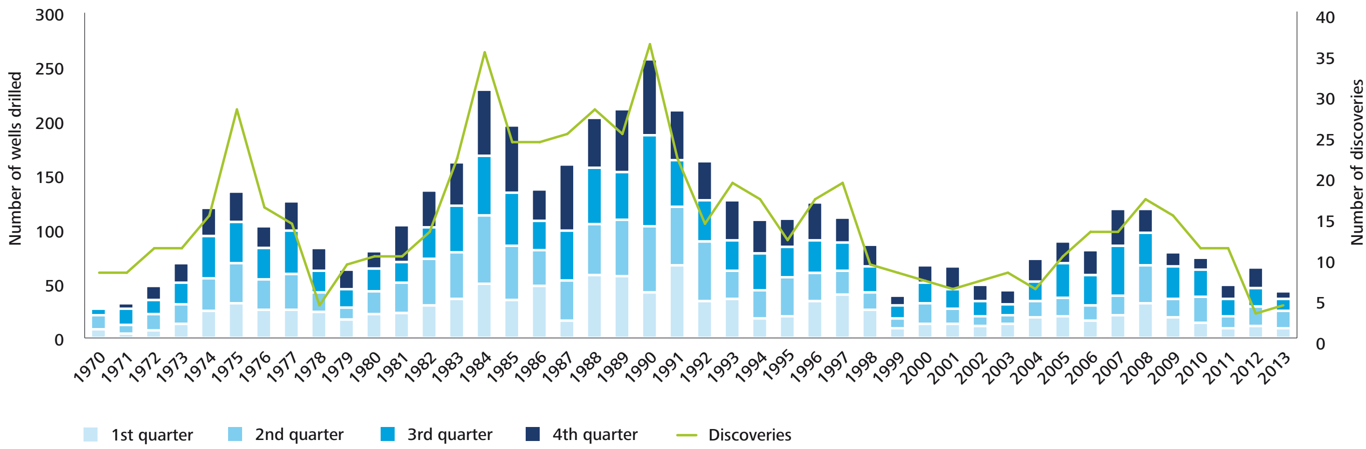
Reactions to sector strategies: Exploration strategy

What is the issue? Exploration and appraisal (E&A) drilling in the UKCS has been on a downward trend over the past five years, as shown in Figure 5. According to Deloitte PSG data, 47 E&A wells were drilled in 2013 compared to 119 in 2008. Lower levels of E&A drilling inevitably lead to fewer discoveries and, consequently, the shrinking of the UKCS total reserves pool.

E&A drilling activity in the UKCS needs to be transformed for maximising economic recovery in the UKCS (MER UK) to succeed. Without drastic steps to reverse the decline in E&A activity within the timeframe of the existing infrastructure, there is a risk that the industry will not be able to deliver the estimated 15 billion boe efficiently. This is likely to lead to significant loss of value.

To deliver the 15 billion boe production, Deloitte's PSG argues that current drilling activity levels need to double to more than 90 wells drilled per year over the next 20 years.

Figure 5. Strong correlation between E&A wells drilled and discoveries made



Source: Deloitte's PSG

What does the Wood Review recommend?
Exploration is clearly a top priority for the Wood Review. Not only is exploration the first of the six sector strategies, but it also has the highest number of action points for stakeholders in the UKCS.

The Wood Review's recommendations for Exploration Strategy focus on a number of areas:

Fiscal – the Wood Review acknowledges that the current fiscal framework fails to provide incentives for companies to explore, especially in less prospective and technically more challenging areas. The Wood Review also notes that attracting funding to E&A is difficult, particularly for smaller companies that lack production income to offset exploration costs.

Regional approach and new plays – the OGA should facilitate the development of exploration plans on a regional basis. There is also a need to evaluate new plays and ensure that these are explored and developed. In addition, exploration should be prioritised around critical hubs.

Data – the OGA should facilitate or, if necessary, sponsor seismic shoots of new plays. The Wood Review supports the establishment of online, updateable digital geological maps. It suggests that the regulator facilitates the sharing of information within current portfolios, particularly around mature hubs. The Review notes the importance of the timely release of well and seismic data by licensees and suggests that management of licence data is brought within the asset leadership process and that obligations and regulations for data management are clarified and simplified. In addition, it recommends that already existing petroleum-related geoscience information in the UK is better utilised.

Rigs – the Wood Review acknowledged that companies' restricted access to rigs due to their high costs and availability is an important issue.

Licensing – the OGA should explore why successful recent licensing rounds have not translated into more seismic and drilling activity. In addition, it also recommends the review of existing and new licences to reflect the requirements of MER UK.

Reactions to the Exploration Strategy

Many interviewees noted that drawing up the Exploration Strategy is critical for the future of the UKCS and should be prioritised by the OGA. One executive commented that "the basin needs a big discovery to get enthusiasm back".

However, most interviewees were pessimistic about E&A activity in the UKCS because it is very risky and expensive. "Nowadays you only get one shot and it's a very expensive shot. We can talk about more seismic and better-shared data, and better collaboration around regionally-based models but they won't create breakthroughs."

Executives suggested that risks and costs could be controlled by three means:

- financial incentives – cash back on wells drilled
- partial government funding of smaller companies' E&A activities, particularly in new plays and technically challenging areas – similar to the model in the Netherlands
- collaboration for rig sharing and the supply chain – although this has had limited impact in the past.

Interviewees fully agreed that good quality, easily accessible seismic data in sufficient quantities will be crucial for increasing E&A drilling in the UKCS. Therefore, the OGA should facilitate the sharing of existing seismic data and consider participating in seismic data acquisition, in particular in new plays or areas that are currently underdeveloped. This would not only provide more consistent knowledge of the basin but would also allow the OGA to prioritise its efforts on parts of the UKCS that would better support MER UK.

However, some remain sceptical about the potential for change. For example one executive noted, "We have been talking about this for eight years. Why has nothing changed?"

Reactions to sector strategies: Asset Stewardship Strategy

What is the issue? According to Oil & Gas UK, 2013 production has declined 8 per cent compared to 2012 to 1.43 million boe per day.[7] Production efficiency decreased from an average of 81 per cent to 60 per cent over the past decade. While both figures are expected to improve slightly in 2014, the trends are clear. In many cases this is the result of previous under-investment in assets.

At the same time, operating costs reached record levels in 2013. Total operating expenditure in the basin stood at £8.9 billion in 2013.[8] Oil & Gas UK expects this figure to increase to £9.6 billion in 2014 reflecting growing spending on asset integrity, maintenance, production efficiency and general productivity improvements. Average unit operating costs (UOC) have now reached £17/boe and the number of fields with £30 UOC has doubled in 2013.[9]

Declining production efficiency has led to less production and lower company margins.

What does the Wood Review recommend?

The Wood Review's Asset Stewardship Strategy requires operators to develop, maintain and operate their assets and infrastructure efficiently and effectively. Therefore, companies should be held to account if they fail to meet the asset stewardship requirement for the fields under their licences with consideration to adjacent resources in accordance with the principles of MER UK.

To achieve this:

- the OGA should set clear performance expectations, particularly on production efficiency and recovery efficiency, and reinforce them with appropriate sanctions
- operators should be obliged to provide asset performance data on a timely basis.

Reactions to the Asset Stewardship Strategy

Interviewees strongly believe that radical change can only be achieved if assets are owned by the right companies – organisations that are best placed to develop efficient and effective operations in this late-life environment.

Interviewees argue that these companies will display the characteristics that are most suitable for the current UKCS environment. Such characteristics include having an operating model appropriate for the basin, strong and commercially focused leadership, being effective and purposeful collaborators and open to challenges and changes. These characteristics should deliver better results for the basin in terms of production efficiency, asset integrity and margins. [The characteristics will be examined in detail in the Implications section.]

Many companies in the UKCS do not demonstrate these characteristics, which will necessitate a cultural shift or a change in corporate behaviour. This would most likely affect organisations that manage their assets on a portfolio rather than on an individual basis. Some companies are already realigning their organisations and include operators specialising in end-of-life assets or those who recognise the need to adapt their corporate model to get best value from late-life assets.

The OGA will need to have a considered approach in helping to facilitate this shift. Interviewees argue that its actions could include:

- setting clear criteria for asset performance expectations
- awarding licences based on these new criteria
- increasing asset performance auditing
- facilitating asset performance data sharing to enable better quality decisions for asset transfers
- taking necessary steps for ownership or operatorship change.

Reactions to sector strategies: Regional Development Strategy

What is the issue? There is too much focus on individual asset performance in the basin. To be able to deliver MER UK, the focus needs to shift from company-operated individual assets to managing the basin around asset clusters. This would require more sharing and making joint decisions around groups of assets between organisations in the UKCS.

What does the Wood Review recommend?
The Wood Review recommends that resources are developed on a regional, rather than individual field basis. This should be achieved by closer collaboration between operators and the OGA as well as other operators in adjacent areas throughout the whole lifecycle of the field and the cluster surrounding it.

For this the Wood Review recommends that the OGA develops Regional Plans in collaboration with industry for every area and play across the UKCS. Previous work done as part of the Rejuvenation projects under PILOT will be particularly helpful.

Reactions to the Regional Development Strategy

Organisations fully agree with the principles of the Regional Development Strategy. They felt it made sense to develop resources on a regional rather than individual asset basis. They also acknowledged the progress under the PILOT rejuvenation programmes in the Central and Northern North Sea.

Interviewees accept that in a mature environment such as the UKCS there is a need for increased collaboration. One executive added that it is helpful to set collaboration as a priority, something that should form the basis of doing business in the basin. Others noted that collaboration around clusters can share costs and change the context of investment decisions.

Many interviewees felt that the environment for collaboration has become more challenging. In earlier times there were fewer companies, mostly International Oil Companies (IOCs), and they had more similar characteristics. There was also a much larger prize to be shared to motivate collaboration, and higher confidence that companies would be able to recover their investment.

While interviewees believe that collaboration is a good idea, making it work in practice is more difficult in a more complex environment where rewards are much less certain. Many interviewees shared considerable scepticism around the likelihood of achieving regional collaboration in the basin in current times.

Achieving collaboration will also be difficult if the pace, and technical and financial capabilities of the parties are very different. Reaching an outcome where there are multiple stakeholders is always more complex and challenging.

How to make collaboration work?

- Leadership focused on making collaboration work: finding the right partners to collaborate; driving lawyers to agree to the terms and conditions to move contracts along; driving the company's finance function to negotiate and agree on tariffs efficiently

- The OGA having the right and sufficient capabilities for creating the environment for better collaboration in the basin

- New fiscal incentives encouraging collaboration. Interviewees welcomed the idea of a cluster allowance, which in its current proposed form includes the requirement for an element of uHPHT, and wait to see how it will work in practice.

Reactions to sector strategies: Infrastructure Strategy

What is the issue? Access to key infrastructure may be limited for a number of reasons including the owners' lack of incentives to facilitate access, or because of the threat of decommissioning of assets where the owner no longer has a commercial interest in continuing to invest, maintain and operate them. This can result in fields being 'stranded' or the need for more costly solutions, such as Floating Production Storage and Offloading units.

What does the Wood Review recommend?

The Infrastructure Strategy is aimed at prolonging the life of key assets to "facilitate the processing, transportation and export of the UK's offshore oil and gas resources, and that investment in key infrastructure is achieved" on a regional basis. To this end, stewardship of infrastructure should be included with the existing asset stewardship process.

In addition, the Infrastructure Strategy's four action points call on the OGA to:

- work with the industry and HM Treasury to create the right economic environment for prolonging the life of infrastructure and promote investment in key infrastructure
- work with HM Treasury to incentivise infrastructure owners to offer more competitive tariffs for third party access
- use its legal powers to resolve disputes
- consider the development of new infrastructure business models.

Reactions to the Infrastructure Strategy

Senior executives agree that from MER UK's perspective it makes good commercial sense to prolong the life of existing assets as it is more cost effective to use existing assets than to build new ones.

Third party access to critical infrastructure has been difficult in the past. One executive argued that infrastructure owners are generally reluctant to share infrastructure because of the potential operational and legal risks. Infrastructure owners are also concerned that allowing a third party to use their pipelines and infrastructure could limit their own use and their future growth. Infrastructure owners are not financially incentivised as income from infrastructure is taxed similarly to petroleum revenues.

What is the solution?

- Midstream infrastructure should be free from conflict of interest in the area: infrastructure should be owned and operated by an independent entity, public or commercial, similar to the National Grid. This could facilitate investment into upgrading and extending the life of the infrastructure and remove some of the barriers for third parties to access hub infrastructure
- Alternatively, infrastructure owners should be fiscally incentivised to facilitate access to critical infrastructure
- The OGA should have legal powers and enough staff with negotiating skillset to facilitate the early and efficient resolution of disputes for access to infrastructure.

Reactions to sector strategies: Technology Strategy

What is the issue? Existing technology is not deployed to its full potential and the UKCS is slow to invest in developing and adopting new technology.

What does the Wood Review recommend?
The Wood Review outlines opportunities that targeted deployment of technology could unlock. These include:

- better exploration outcomes
- reducing the cost of decommissioning
- improving production efficiency
- Improved Oil Recovery (IOR), Enhanced Oil Recovery (EOR)
- increased potential for small field development, new plays, frontiers and progressively more difficult fields and environments.

The Wood Review's recommendations:

- setting up technology sub-groups to focus on select opportunities
- operators to submit to the regulator their plans on how they are going to use best existing technology and develop new technology as part of the annual stewardship review
- encouraging or, if necessary, incentivising companies to trial and deploy new technology
- examining the use of carbon capture and storage (CCS) and EOR in depleted reservoirs.

Reactions to the Technology Strategy

Technology did not feature highly in the interviews. This could reflect the interviewees' roles or that they do not consider technology a top priority. This area may require further assessment with a more focused interview group.

Companies in general are reluctant to be the first to deploy unfamiliar technology because of the risks. A senior executive put it: "the UK rushes to be second". Shareholders often support this risk aversion and oppose short-term cost increases associated with early adoption of new technologies.

Interviewees argue that the deployment and development of technology should focus on two main objectives: making every step of the oil and gas lifecycle more efficient and giving access to resources that are currently challenging or too costly to reach.

Some companies noted that not only is EOR prohibitively expensive to provide an economically viable solution in the UKCS but there is also no supply chain to offer these techniques at competitive prices.

Therefore, organisations call for fiscal incentives targeted at encouraging companies to take up and develop technologies pertinent to MER UK.

Reactions to sector strategies: Decommissioning Strategy

What is the issue? Decommissioning is a major end-cost for every asset owner in the UKCS. Within the context of the Wood Review, it also acts as a major barrier to asset transfer and, therefore, getting the assets in the right hands.

What does the Wood Review recommend?
The Wood Review's recommendations focus on creating an environment where the field-life of assets is extended with particular focus on assets that are key to production hubs.

The Wood Review suggests a number of action points to facilitate this including:

- establishing a single forum jointly led by the OGA and the industry, responsible for sharing knowledge, cost reduction, promoting innovation and cooperation
- making decommissioning one of the Technology Strategy's priorities
- ensuring that assets are not prematurely decommissioned. When granting the permits for cessation of production and decommissioning, the OGA should consider the impact on adjacent production and infrastructure
- encouraging collaboration between operators and the supply chain for late-life business models
- encouraging the OGA to work with companies to develop new decommissioning models and concepts.

Reactions to the Decommissioning Strategy

Because of the high costs, companies are trying to push decommissioning back as late as their assets' economics will allow them. This is to 'squeeze' a little more out of the assets but companies also hope that new techniques will make decommissioning more cost effective in the meantime. In addition, historically high and relatively stable crude oil prices over the past five years, improved recovery techniques and increased spending on asset integrity helped companies to delay decommissioning. However, if the fall in crude oil prices in 2014 is sustained, this could significantly impact the timing of decommissioning of some assets.

Oilfield services companies see substantial opportunities in the decommissioning market. Many argue that most of the expertise and capabilities already exist within the supply chain. However, more investment needs to be made both in personnel with the right capabilities and experience and in specialised decommissioning equipment to avoid major supply shortages and cost increases. This requires both a solid business case and time to deliver.

Interviewees consider business models, where a part or the whole of the decommissioning liability stays with the original owner, particularly useful. These helped small independents and oilfield services companies, which otherwise would have been barred by the prohibitive decommissioning liability, to invest and operate assets. From a MER UK point of view, this can also be helpful in moving assets to the most appropriate operators.

Interviewees also see an important role for the OGA in decommissioning. The new organisation needs to have capabilities for facilitating negotiations for asset transfers, which are currently prohibited by decommissioning liabilities. Oilfield services companies need more certainty from the OGA to be able to build capabilities. The OGA will also need to encourage the transfer of knowledge learned from earlier projects.

In fiscal terms, executives agreed that Decommissioning Relief Deeds (DRD) have helped. DRDs were announced in the 2013 Budget. They provide certainty on the decommissioning tax treatment and will guarantee tax relief for decommissioning costs incurred in case of a fellow participatory default.

DRDs have contributed to asset sales, life extension of some ageing assets and new investment in the North Sea. Interviewees believe that incentives are needed for collaboration on cluster (rather than individual asset) decommissioning and for development of cost saving techniques for plug and abandonment and topsides removal.

Brent is so far the largest field to be decommissioned. Many hope that this will provide a reference case and set the standards for costs, processes and best practices for other decommissioning projects. However, companies are concerned about how the knowledge gained through the decommissioning of this field will be shared.

Interviewees noted that innovation will be a key for the decommissioning market but it should centre on specific areas:

- companies that focus on decommissioning as this requires specialist knowledge and equipment. As one executive noted: "we need to stop thinking about it as 'unbuilding' – no other industry does that"

- technology innovation to concentrate on making decommissioning cheaper, quicker and exportable. According to Oil & Gas UK's *Decommissioning Insight 2013* data, wells plugging and abandonment and topsides removal represent the largest share of total decommissioning expenditure at 43 per cent and 13 per cent between 2013 and 2022. Focusing on these two categories will help technology innovation have the most impact on costs

- innovative business models for collaboration. There needs to be a focus on area decommissioning, rather than asset decommissioning. New business models for collaboration between operators and supply chain are also needed to facilitate transfer of knowledge across decommissioning projects.

What is missing from the Wood Review?

The detail – Interviewees strongly agree with the recommendations of the Wood Review in principle, but they felt that far more detail is needed on how they will be implemented. Some said that the "devil is in the detail" and until they see it in practice, it will be difficult to judge the Wood Review's effectiveness.

The carrot – Interviewees noted that the Wood Review omits incentives (the carrot) while containing a number of tasks and responsibilities for the industry. It also recommends additional resources and powers (the stick) for the OGA to ensure that companies meet the imposed requirements. Several interviewees argued that the Wood Review could create a more challenging environment through tougher sanctions and conditions, especially around collaboration.

Need for more risk sharing – Both financial and operational. Financially, many of the smaller companies, whose presence is crucial for MER UK, do not have large enough reserves to underwrite financial risk and raise necessary funding for growth. There is a view that the Wood Review should have recommended that the OGA play a more substantial role in supporting sharing risks through new financial models. These could include consortia-based models, where a number of companies, investors or the government underwrite the risks.

Talent – A number of interviewees commented on the shortage of skilled workers and the lack of recommendations in the Review on how the government could address the oil and gas talent issue.

3. Implications: A party of three

Radical changes can only be achieved if all three parties deliver

The success of MER UK depends on the capability and willingness of the three interested parties – the industry, the OGA and HM Treasury – to achieve radical and urgent change. This will bring major implications for all three in terms of their behaviours, objectives, strategies and resources.

Change is always difficult. Therefore, we asked interviewees what their visions for the three parties are.

For industry, the message was clear: radical change can be best achieved if assets are owned by those who have the resources and are able to extract the most value from them. Interviewees told us that these organisations need to be led by individuals who have a leadership style and focus that aligns with the demands of a basin with diminishing resources and fewer opportunities. They will have little option but to collaborate to make money and do what is described as 'good asset stewardship'. For some this will be easier; others will need external stimulus.

It will be up to the OGA and HM Treasury to encourage, incentivise or enforce behavioural change to advance MER UK.

Interviewees believe that a focused, capable regulator with adequate powers, and one that acts as an advocate for the oil and gas industry, has the best chance of succeeding. Some interviewees also foresee instances where regulatory intervention may lead to change in ownership of assets. In addition, the fiscal regime has to be predictable, fit for the environment, simple, and stimulate exploration and appraisal activity for MER UK.

Organisations fully agree with the Wood Review that MER UK cannot be achieved if any party fails to deliver. But, they also argue that collaboration between various government departments is as important as collaboration within the industry.

Figure 6. A party of three: vision for the UKCS stakeholders

Vision for organisations in the UKCS: Assets in the right hands

Interviewees strongly argued that asset ownership is central to maximising recovery of resources. They felt that assets needed to be owned by organisations that are best equipped to exploit commercial opportunities in the UKCS.

A number of interviewees commended the approach that some independents have taken in the basin. They took over the running of late-life assets, invested in upgrading them and improved their production efficiency significantly. In other words, they were actively and profitably doing what the Wood Review describes in broad terms as 'asset stewardship'.

Interviewees suggested that the UKCS could see more operators develop skills in managing late-life assets. These capabilities and business models could be exported to other hydrocarbon basins as they mature. Executives also noted that some companies whose mature assets have become lower priority may exit.

Interviewees also highlighted potential new ownership models focusing on asset clusters rather than individual assets in the UKCS. For instance, in one model a number of investors could join forces in an equity partnership to fund late-life asset acquisitions around clusters. Similarly, services companies could form alliances to serve duty holders of assets or asset clusters.

Interviewees argued that successful organisations are likely to share a number of common characteristics including:

A commercially focused leadership and workforce – Under a new style leadership, successful organisations will focus on the performance of individual UKCS assets. Both the leadership and the workforce will have a deep understanding of the economics of their assets, across the full life-cycle of the asset and the full value chain, and use this knowledge to drive decision-making. They will also focus on continually seeking to improve efficiency and effectiveness.

A commercially focused leadership and workforce will operate in an era where they must collaborate with similar organisations and oilfield services companies. Oilfield services executives clearly identified that operator-supplier relationships vary. Other industries that face efficiency challenges often display high supply chain integration and collaboration.

Operators' operating models fit for the basin – Successful operating models in the UKCS will be sharply focused on the asset's life stage, its characteristics and development opportunities.

Successful operators will have appropriate planning and modelling capabilities. This includes the use of:

- financial models that integrate production profiles, activity and cost assumptions to support decisions that focus on asset value
- planned and predictive management of the workforce and supply chain
- planned, forecasted and managed deviations from field development plans.

They will also have a strong focus on cost control by:

- maximising opportunities arising from collaboration. Inventory, IT systems, supply chain management, maintenance and transport are areas where interviewees identified immediate opportunities for cutting costs through collaboration

- empowering employees to seek opportunities for improved effectiveness and cost reduction through lean and continuous improvement approaches

- standardising, replicating wherever possible and following a manufacturing-style value-engineering approach. One oilfield services executive noted: "The main cost drivers are specifications. We are designing Rolls-Royces instead of Minis. There is so much gold-plating on everything we are doing now". One supply chain executive commented that he could always tell if his products in the factory were destined for the UKCS or Brazil by the degree of standardisation. Standardisation could extend to using industry standards that are readily available rather than developing company-specific ones. This also applies to commercial agreements that are consistently noted as a major cause of project delays. Senior executives argue that using standard equipment is also the most cost effective option.

- using new technologies purposefully – that is for increasing production or reducing costs rather than simply 'nice to have'.

Managers would have more responsibility and accountability to make decisions on a commercial rather than on an engineering-focused basis. This would result in leaner organisational structures: fewer management layers enabling quick decision-making and allowing issues to be resolved efficiently.

Effective and purposeful collaborator – Collaboration underpins all six of the Wood Review's Sector Strategies. Collaboration will be required to revitalise exploration through working together for data sharing and raising capital for drilling. In addition, closer collaboration between owner/operator and the supply chain will be needed to achieve better asset and infrastructure stewardship. Companies and the OGA need to find better ways to work together to ensure that assets are developed on a regional basis rather than in isolation throughout the field's life cycle. Collaboration is also required to facilitate access to infrastructure, address key technology challenges and decommission assets efficiently.

Therefore, company executives will need to have an effective skillset for negotiation to find mutual benefit, influence and diplomacy. Companies which are able to find partners with the right objectives and capabilities quickly and efficiently will prosper.

Open to challenges and changes – Maintaining an open and flexible approach and embracing challenges and change are also characteristics that successful companies in the UKCS will share. There will be many companies, especially independents, whose profile will fit the basin or can be easily adapted to the characteristics of the mature and diverse environment.

Other companies will need a major shift in their corporate culture. Large companies may find it challenging because their workforce grew up with the basin and developed working practices which have not been questioned. The decisions of some companies are driven by strategies set to maximise returns on a global portfolio basis. They are also under strong shareholder pressure to meet performance indicators which could lead to behaviours that are in direct conflict with the MER UK and the remit of the OGA. Some of these companies have been present in the basin for decades and have a well-established workforce and ways of operating. Breaking these patterns will not be easy.

Vision for the regulator: A strong Oil and Gas Authority

The success of MER UK depends on organisations in the UKCS adapting to the mature environment. Therefore, the government needs to identify ways of working better with companies and incentivise the right type of stewardship and corporate behaviours.

Unequivocally, organisations in the UKCS would like to see a strong regulator, an independent, arm's-length body that is able to drive radical change.

This will be achieved if the OGA is:

Focused – The OGA will need to focus on a small number of tasks related to its vision of maximising economic recovery of resources. This will require the body to establish adequate mechanisms early to prioritise its responsibilities.

One of the practical priorities for the OGA could be identifying the most time-critical projects that are crucial for the basin's ability to further MER UK. These have to be included in the regional plans to ensure wider impact.

Endowed with power – The OGA will need sufficient regulatory powers – 'teeth' – if it is to drive through the necessary cultural, or in extreme cases, operatorship or ownership changes.

Many executives welcomed the recommendation that the OGA attend consortia operating and technical management committee meetings. They believe that this would better inform the regulator about practical issues that organisations face in the basin and could also help influence corporate behaviours, especially in the area of collaboration.

The OGA may find it effective to take symbolic actions early to ensure that it sets the tone and communicates effectively how it expects companies to operate in the basin.

Many think that basing the OGA in Aberdeen, physically closer to many of the companies working in the North Sea, will be helpful. Some commented that every time the energy minister went to Aberdeen he only visited a few companies, and they were mostly oil majors, leaving a large number of companies that are also crucial for the future of the basin feeling ignored.

Capable – The new regulator will not be able to achieve its objectives without having the right expertise in sufficient numbers to manage the transition of the basin.

The OGA will need to have a good understanding of the mature and diverse UKCS operating and business environment. It will need to understand that the profiles of companies have changed profoundly. Therefore, practical requirements will need to reflect the size of the company. One area of expertise that companies repeatedly mentioned was knowledge of decommissioning.

The regulatory body will also require staff that are highly skilled in areas such as diplomacy and influencing. This will be crucial in enabling the OGA to align the interests of individual companies to the interests of the UK as a whole. Due to resource constraints, the Department of Energy and Climate Change (DECC) historically tended to get involved at a point where company negotiations became deadlocked. With more negotiating expertise, the OGA could have the opportunity to get involved at an earlier stage, broker a better outcome for the basin and influence how organisations work with each other.

Many executives also noted the importance of appointing the right leader, someone with deep industry knowledge, connections and a pragmatic approach to symbolise MER UK. These traits will be crucial to ensure the effectiveness and credibility of the entire organisation.

Advocate for the industry – Interviewees also look to the OGA to be its advocate within the government. This is because despite the economic contribution the sector has made to HM Treasury income over past decades, organisations felt that government support depended on the political climate and would be easily withdrawn if issues arose, in particular if they are related to health, safety and the environment. Organisations also expect the OGA to provide more support in addressing talent issues and promoting the sector's economic contribution to the wider UK economy.

Vision for HM Treasury: Supportive fiscal environment

Fiscal policy plays a crucial role in company decisions and corporate behaviour. Therefore, it is vital that the right fiscal framework is adopted, which incentivises organisations to make decisions in line with the principles of MER UK. This will also be crucial for restoring investor confidence in the UKCS.

The Wood Review does not make specific recommendations to HM Treasury but it does acknowledge that fiscal instability has been a significant factor behind the basin's underperformance. Addressing this, while also taking into account the maturity of the basin as well as opportunities in new plays and frontiers, will be key to unlocking the UKCS' potential.

In response to the Wood Review, the Government ran a consultation programme on the UKCS fiscal regime between July and October 2014. At the same time, HM Treasury has emphasised at a number of public events that the oil and gas sector will be seen more as an 'economic asset' rather than a 'fiscal asset'.

Although this paper focuses on the industry's reaction to the Wood Review, many interviewees have also shared their views on the fiscal regime. Their views were similar to the key points contained in the Deloitte report titled *Making the most of the UKCS: The oil and gas fiscal framework: Is it fit for purpose?.*[10]

Fit for the basin's profile – It was universally agreed that UK oil and gas tax rates are high and tax reform needs to address this in light of the basin's remaining economically recoverable resources. In fact, data from the Deloitte report shows that survey respondents would prefer lower overall tax rates to the provision of new tax allowances.

Predictable – A number of executives called for a predictable oil and gas tax regime in the UK. Over the past few years surprise tax announcements, such as the SCT rate rise in 2011, have damaged the sector's confidence in HM Treasury somewhat and were also believed to have caused a drop in UKCS activities. For example, the *Oil & Gas UK's Activity Survey 2014* links the sharp decline in exploration drilling in 2011 to the increase in the SCT rate. Since 2008, three different people have been Secretary of State for Energy and Climate Change and there have been five energy ministers. This could further increase the sense of instability and the perception that energy does not enjoy sufficient government support commensurate with its level of economic contributions to HM Treasury.

Simple – The various field allowances introduced in recent years have brought considerable relief and led to increased investment in the basin. But interviewees also note that it can take a lot of time and effort on the part of the management to obtain field allowances and in certain cases it is not clear whether certain fields will even qualify for allowances. As a result, it can be difficult to price field allowances into investment decisions. Therefore, the fiscal regime must be simplified whilst incorporating the flexibility required to meet the needs of the diverse basin.

Internationally competitive – The perception that the UK has high taxes and that the fiscal regime is unpredictable, unstable and complex are thought to undermine the international attractiveness of the basin. *The oil and gas fiscal framework: Is it fit for purpose?* adds that this view is particularly strong among oil majors and super majors with large international portfolios. UK oil and gas tax regime reforms therefore need to be considered in view of the international competitiveness of the system.

4. Conclusions

The UKCS is a major economic asset with the potential to yield up to $1.3 trillion in revenues over its lifetime. It will continue to play a major role in UK energy security, provide significant tax revenues and support hundreds of thousands of jobs in the future.

But as the basin matures and becomes more complex, the challenges of operating there also mount. How quickly and effectively both the industry and the government address these challenges could make billions of dollars of difference to all parties.

The challenges have been well known for at least a decade and solutions have also been proposed, culminating in the Wood Review. The Government is now making progress in implementing the Wood Review's recommendations, while the organisations operating in the basin work out how they are going to respond.

In our discussions with executives it is clear that for MER UK to succeed there needs to be a cultural shift and a change in the mindset regarding the UKCS. Assets need to be owned or managed by those who are prepared and willing to get the best value of them. The basin needs to be revitalised by a new type of leadership and workforce: by those who are commercially focused and collaborative, who will use appropriate operating models for the asset's life cycle and who are open to challenge and being challenged.

The OGA should also reflect this shift in mindset to advance MER UK. Interviewees want a strong regulator and one that is focused, capable, has appropriate powers and supports the industry. For MER UK to work, the industry need to be stimulated by an appropriate fiscal regime that understands the basin, responds to its needs and incentivises the right type of behaviour.

All three parties need to work closely together for MER UK to succeed. And if they do, the benefits will be substantial.

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Endnotes

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10. http://www.deloitte.com/assets/Dcom-UnitedKingdom/Local%20Assets/Documents/Industries/EIU/uk-e-and-r-making-the-most-of-the-ukcs.pdf This report contains the results of a survey conducted in May and June 2014 with UKCS licence holders and selected major oilfield services companies on the current UK oil and gas tax regime.

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