



Department  
of Energy &  
Climate Change

# Review of the Refining and Fuel Import Sectors in the UK

9 April 2014

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# Ministerial Foreword

Refineries and oil importers have played a key role in the energy security of the UK for decades, supplying the oil products that are vital to our economy and our way of life. They also provide thousands of skilled jobs in the UK and contribute over £2 billion a year to UK gross domestic product. Through a mix of domestic refining and imports the UK continues to have a secure supply of oil products, while a competitive industry and well developed infrastructure have ensured UK consumers have benefited from globally competitive fuel prices.



As we progress toward a low carbon economy in the UK oil products will continue to be crucial to the economy and consumers. Oil demand will reduce in the coming decades, but by 2030 the UK is still expected to consume some 50 million tonnes of oil products per year, compared with 61 million tonnes today. It is clear then that there is an important role for both refiners and importers to play for many years to come.

The refining sector faces a challenging future. In 1975 there were 19 refineries in the UK; today there are 7. There remains over-capacity of refineries in Europe and competition from countries outside the EU, putting further pressure on the sector. Given this difficult environment, exemplified by the closure of Coryton refinery in June 2012, the government launched this review of the refining and imports sector in the UK to assess the challenges it faces set within the wider context of future fuel supply resilience in the UK.

The UK government believes that a mix of domestic refining and imports is good for energy resilience, good for the economy and good for jobs, and wants to see both continuing to operate in the market. We must be prepared for further changes to the size and shape of the UK market, but by working together industry and government can ensure that the refining and imports sectors work effectively and continue to deliver fuel resilience to the UK. This review sets out the first steps to achieving this.

A handwritten signature in black ink that reads "Michael Fallon". The signature is written in a cursive style with a horizontal line underneath the name.

**The Rt. Hon. Michael Fallon MP**  
**Minister of State for Energy**

# Executive Summary

One of the government's key priorities is to ensure a secure and resilient oil supply at affordable prices, and to support investment and jobs as we transition to a low carbon economy. Refiners and importers in the UK play a critical role in supplying these oil products that are vital to our economy and way of life. UK fuel supplies are robust and government recognises the importance of maintaining a viable midstream<sup>1</sup> oil sector to deliver them, but the refining sector faces significant challenges. Many changes to the sector over recent decades, and in the wider global market, have resulted in the closure of several refineries in the EU, including within the UK. There has been a steady transition from domestic production to importing to meet UK demand. In light of this, the Department of Energy and Climate Change (DECC), working with other departments and agencies, has reviewed the refining and imports sector in the UK to assess whether further steps are needed to maintain secure and resilient fuel supplies.

## The refining and imports sectors in the UK and the global market

Downstream oil infrastructure in the UK is extensive, with seven refineries, thirty-one coastal supply terminals, fourteen inland terminals and a range of other supply assets all working to supply the UK with oil products. Demand for these products in the UK is, and will continue to be, substantial. In 2012, our demand for oil products totalled 61 million tonnes and it is forecast that annual demand will be 50 million tonnes by 2030. UK refining met 61% of this demand in 2012, with imports supplying the remaining 39%<sup>2</sup>.

Demand for middle-distillates, in particular diesel and aviation fuel, has steadily increased in the UK. In 2012, 35% of overall demand was for diesel, while aviation fuel accounted for 18%. In 2030, it is forecast that diesel will account for 42% and aviation fuel 28% of demand. On the other hand, the proportion of demand met by petrol is forecast to decrease from 22% in 2012 to 16% in 2030. Most refineries in the UK were largely set up to produce light (e.g. petrol) and heavy distillates (e.g. fuel oil), meaning that there is now a supply-demand imbalance with refiners unable to produce enough diesel and aviation fuel to meet demand. Importers have stepped up here to ensure the UK has the supply it needs; in 2012, 44% of diesel and 64% of aviation fuel demand was met by imports.

As is set out in more detail in Chapter 2 of this review, the global market in which these companies operate presents substantial challenges resulting in an uncertain future for refineries in the European Union. Over-capacity in the EU has already led to several refinery closures over recent years and the issue remains today. Extraction of light tight oil in the USA and the subsequent increased utilisation of refining capacity has resulted in the loss of a traditional export market for EU refineries, while emerging economies are investing substantially in their own refining capacity.

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<sup>1</sup> For this review the term 'Midstream' is used to refer to those companies supplying fuel into the UK market, in particular refiners and importers. These operate within the wider downstream oil sector, which incorporates these midstream companies and those involved in managing oil in the UK and distributing fuel to UK consumers (e.g. haulage firms, storage companies, filling stations, etc.).

<sup>2</sup> Approximately 20% of imports are supplied by UK refiners who import oil product into the UK as well as refine it.

While investment in UK import capacity has been strong, the challenging global context means that there is, and will continue to be, downward pressure on refinery margins in the EU. The supply-demand imbalance for many UK refineries exacerbates this pressure, while substantial regulatory requirements on the sector can reduce the capacity for refiners to invest in transformative projects to improve competitiveness.

## Call for Evidence

In May 2013, DECC issued a Call for Evidence on the role of the UK refining and fuel import sectors. In general there was agreement from respondents that a mix of both refiners and importers was good for UK resilience, although the exact balance could be debated. Many argued that legislative burdens and the associated costs of compliance are one of the greatest challenges facing the sector. This is partly because it reduces the capital available to invest in margin improvement projects, and impacts on global competitiveness. Concerns were raised that refiners and importers in the UK were not operating on a level playing field, with refiners pointing out the differences in how duty payment and compulsory oil stocking obligations were applied to refiners and non-refiners. Access to inland pipelines was a concern, as well as the limited incentives to invest in new storage capacity in the UK.

In July 2013, Parliament's Energy and Climate Change Committee published a report on UK oil refining, setting out that in its view having both domestic production and imports is important to energy security, and that the government should ensure that both sectors can operate on a level playing field in the UK. The committee suggested that the government should identify ways to incentivise investment in UK refining and set out its long-term intentions for the sector to give industry confidence.

## Assessing the sector, its challenges and its future

DECC assessed the midstream supply chain against three broad criteria; resilience, economic, and social and environmental impact. 'Resilience' considered whether there is sufficient capacity in the supply system to meet demand, allowing for fuel to be provided to UK consumers at a globally competitive price. 'Economic' looked toward the contribution refineries and importers make to the UK economy. 'Social and environmental' focussed on the jobs and skills that the sectors provide and considered the environmental and health and safety regulatory framework that the sectors operate within. The fuel supply sector, as currently structured in the UK, performs well against these criteria. Refiners have access to crude markets and provide a source of product within the UK itself, while importers help mitigate the supply-demand imbalance for diesel and aviation fuel and are able to provide a rapid and flexible response to supply disruptions. Wholesale UK road fuel costs are among the lowest in Europe demonstrating the efficiency of the supply chain.

The midstream sector contributes around £2.3bn to gross domestic product and approximately £366m in tax revenue. Around 30,000 jobs in the UK are provided by the sector, with the vast majority of these in refining. The sector operates within a regulatory framework designed to protect the environment and human health and mitigate major accident hazards.

The issues raised by industry and identified in this review, such as the cost of regulation, infrastructure access and competitiveness both within the UK and globally, all place downward

pressure on margins. These global commercial factors will continue to affect the refining market in the UK and the EU more broadly, and further closures across the continent are likely in future. While there is scope for further rationalisation of UK production capacity to take place without damaging supplies to consumers, if this trend continues over time the UK market risks a less diverse range of supply sources and a less flexible sector in the face of future supply disruptions.

This does not mean that the current balance between refiners and importers must be preserved to maintain fuel resilience; the market will continue to drive changes in the supply sector. Government, however, recognises the benefit of ensuring that a mix of domestic refining and imports remains viable in the UK, so far as market conditions allow.

## Policy options and next steps

The conclusion that resilience and security of supply is supported by retaining a mix of domestic refining and imported product is consistent with the government's energy security of supply strategy which recognises the benefits of supply diversity. Existing government policies seek to address some of the investment challenges faced by industry and concerns around energy costs and regulatory burden. In Budget 2014, the Chancellor announced further relief to businesses to mitigate any competitive disadvantage they face during the shift to a low carbon economy.

While market forces will decide what supply configuration and balance prevails in the longer-term, the review has considered what further steps are appropriate for the government to take. As a result, DECC has developed a package of actions which taken together could help improve the operating environment for the refining and import sectors. These actions are across three themes; a partnership approach with industry, addressing market distortions and regulatory burden.

Key to the partnership approach will be the establishment of a new joint government and industry Midstream Oil Task Force. This will provide a strategic and collaborative way for government and industry to work together and to deliver the actions from this review. The task force will be independently chaired and draw its members from across the midstream oil sector.

The government will ask the task force to address whether the use of inland pipelines could be improved by the development of a voluntary code of practice on third party access; concerns were raised by industry about this through the Call for Evidence. The midstream oil sector will work together to identify opportunities for making regulation smarter in order to reduce the impact that the regulatory framework has on the sector. This exercise will be undertaken in collaboration with government and regulators. Related to this, the European Commission is currently carrying out an EU Fitness Check assessing the impact of EU legislation on the refining sector. The UK has called on the Commission to bring forward the timetable for the Fitness Check and will continue to press this and work with the Commission to ensure the process delivers clear and decisive actions to remove unnecessary burdens.

The government is working to ensure that the UK approach to compulsory oil stocking obligations is efficient and fair for obligated companies in the UK downstream sector, while maintaining our ability to respond effectively to a global supply shortage. Alongside this review government has published its response to its consultation on the future management of oil stocking in the UK, including announcing that it supports the establishment of an industry owned and operated Central Stocking Entity, to help obligated companies manage their obligations more effectively and efficiently.

In addition, the government will continue to consider measures to support fuel supply resilience. This further work will include considering the means to address other market distortions and analysing the case for supporting infrastructure development to build more resilience, and evaluating the oil stocking levels on UK companies to ensure they continue to be applied fairly and appropriately. DECC has commissioned independent analysis on this that will look at the levels of obligation placed on refiners and non-refiners in the UK to inform its assessment of the allocation of these across the UK supply chain.



# 1. Introduction

## What government consulted on

1.1. There has been significant change in the structure of the refining and imports sectors in the UK over recent decades, with the number of refineries in the UK reducing, importers achieving a greater share of the UK market and a rebalancing of demand toward middle distillates. In recent years the UK has seen a further two refineries close, with Teesside in 2009 and Coryton in 2012.

1.2. Considering these closures, but also the wider challenges facing the sector and the importance of a secure and resilient oil supply for the UK, DECC undertook this review working with departments and agencies across government. The review was designed to assess the respective contribution that domestic production and imports make to resilient fuel supplies, the benefits to the economy and society and to meeting our environmental aims. It also sought to better understand the global context and challenges facing the midstream sector. Given the closures of refineries, the review has had a particular focus on the refining sector in the UK, but importantly has also considered the midstream sector more broadly, including careful consideration of the role of the imports sector and the benefits that can bring.

1.3. DECC issued a Call for Evidence in May 2013 to seek views on the state of the market now, the potential challenges and what steps could be taken to address or mitigate these. The Energy and Climate Change Committee (ECC) instigated its own inquiry, and published a report, *Energy and Climate Change Committee - UK Oil Refining Third Report of Session 2013-14 - Volume 1*, in July 2013, having collected written and oral evidence from a range of stakeholders and setting out several recommendations for the government to consider.<sup>3</sup> In September 2013, DECC submitted a formal response.<sup>4</sup>

1.4. The evidence collected here has been supplemented by internal DECC statistics to develop a detailed assessment of the sector. This has also been informed by consideration of existing research in this area, such as the work by the International Energy Agency on their Model of Short-term Energy Security (MOSES) methodology<sup>5</sup> and the study by Purvin & Gertz (the 'PGI report') commissioned by the UK Petroleum Industry Association (UKPIA) on the role and future of the UK refining sector.<sup>6</sup>

1.5. Alongside this DECC has worked with PricewaterhouseCoopers (PWC) to gain a fuller picture of the commercial drivers of the refining sector, to strengthen government understanding of

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<sup>3</sup> Energy and Climate Change Committee, *UK Oil Refining Third Report of Session 2013-14 - Volume 1*, 2013, <http://www.publications.parliament.uk/pa/cm201314/cmselect/cmenergy/340/340.pdf>

<sup>4</sup> Government Response to Energy and Climate Change Committee, *UK Oil Refining Third Report of Session 2013-14 - Volume 1*, 2013, <http://www.publications.parliament.uk/pa/cm201314/cmselect/cmenergy/718/718.pdf>

<sup>5</sup> International Energy Agency, *The IEA Model of Short-term Energy Security*, 2011, [http://www.iea.org/publications/freepublications/publication/moses\\_paper.pdf](http://www.iea.org/publications/freepublications/publication/moses_paper.pdf)

<sup>6</sup> Purvin & Gertz, *The role and future of the UK refining sector in the supply of petroleum products and its value to the UK economy*, 2013, <http://www.ukpia.com/files/pdf/therolefutureoftheukrefiningsector.pdf>

challenges facing the sector and the factors influencing investment decisions in order to validate DECC analysis here.

## Stakeholder Engagement

1.6. The government has engaged with stakeholders throughout the process through the Call for Evidence, the Downstream Oil Industry Forum and in one-to-one meetings. The government held a series of roundtables with industry trade associations and their members.

## Structure of this document

1.7. This document has the following main sections:

- Chapter 2 presents an overview of the sector, including the supply and demand of oil products for the UK, the existing infrastructure and the commercial environment.
- Chapter 3 summarises the responses to the Call for Evidence.
- Chapter 4 contains the assessment of the midstream oil sector and the challenges it faces.
- Chapter 5 then sets out how the current policy approach supports the midstream sector but identifies further action that the government will take forward in collaboration with the sector.

## 2. Overview of the refining and import sectors in the UK

DECC has conducted a detailed review of the refining and import sectors in the UK; this chapter sets out some of the key findings. In particular it provides an overview of downstream oil infrastructure in the UK and supply and demand for fuels now and in the future. This chapter also sets out in more detail the current global context and the commercial environment in which the sectors, particularly refineries, operate.

### Sector overview

#### Supply chain and infrastructure

2.1. The downstream oil sector in the UK comprises over 200 companies involved in the supply, distribution and marketing of oil products, including petrol, diesel, aviation fuel, heating oil and liquid petroleum gas. The supply of fuels into the UK is primarily provided by refiners and importers. Refiners convert crude oil into finished oil products for the UK market and for export, as well as importing some finished products. There are various business models for importers, but primarily there are wholesalers, who bring in finished product for the UK market, and blenders, who combine this with an ability to blend feedstocks on-site to prepare finished oil products for UK consumers. For the purposes of this review these companies involved in the supply – rather than the distribution of fuel around the UK – have been collectively described as ‘midstream.’

2.2. The UK has an extensive midstream oil infrastructure network and is currently supplied with fuel from seven refineries, thirty-one coastal supply terminals, fourteen inland terminals, and a range of other supply assets. Refinery capacity in the UK remains substantial, ranking 3<sup>rd</sup> in the EU.<sup>7</sup> However this has changed significantly over time. Many of the refineries in the UK came on-stream in the late 1950s and early 1960s, reflecting the post-war demand for petroleum products as the economy recovered, road transport expanded and car ownership increased. In 1975 there were 19 refineries in the UK but there has been a reduction since then, with the most recent closure being Coryton in 2012.

2.3. Across the UK there are approximately 4,800km of pipelines, moving 30 million tonnes of petrol, diesel and aviation fuel across the UK.<sup>8</sup> These pipelines cover both short (e.g. refinery to neighbouring terminal) and long distances (e.g. jetty or refinery to inland terminal).

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<sup>7</sup> United Kingdom Petroleum Industry Association estimate.

<sup>8</sup> United Kingdom Petroleum Industry Association, *Statistical Review 2013*, 2013, <http://www.ukpia.com/files/pdf/statsreview2013.pdf>

2.4. The government estimates that there is storage capacity in the UK for approximately 5 million tonnes of crude and 12.5 million tonnes of oil products.<sup>9</sup>

In addition the UK is served by several delivery routes by rail and good road transport links. Approximately 150 million litres of fuel is delivered per day by road.<sup>10</sup>

2.5. Crude oil production, refining and distribution and marketing business segments operate largely independently of each other, even if they are within the same company. As such the supply chain involves a wide range of interdependent players, which work collectively to provide oil products to the UK market reliably. Figure 1 provides an outline of the key components of the supply chain and how they interact with one another to deliver fuel.

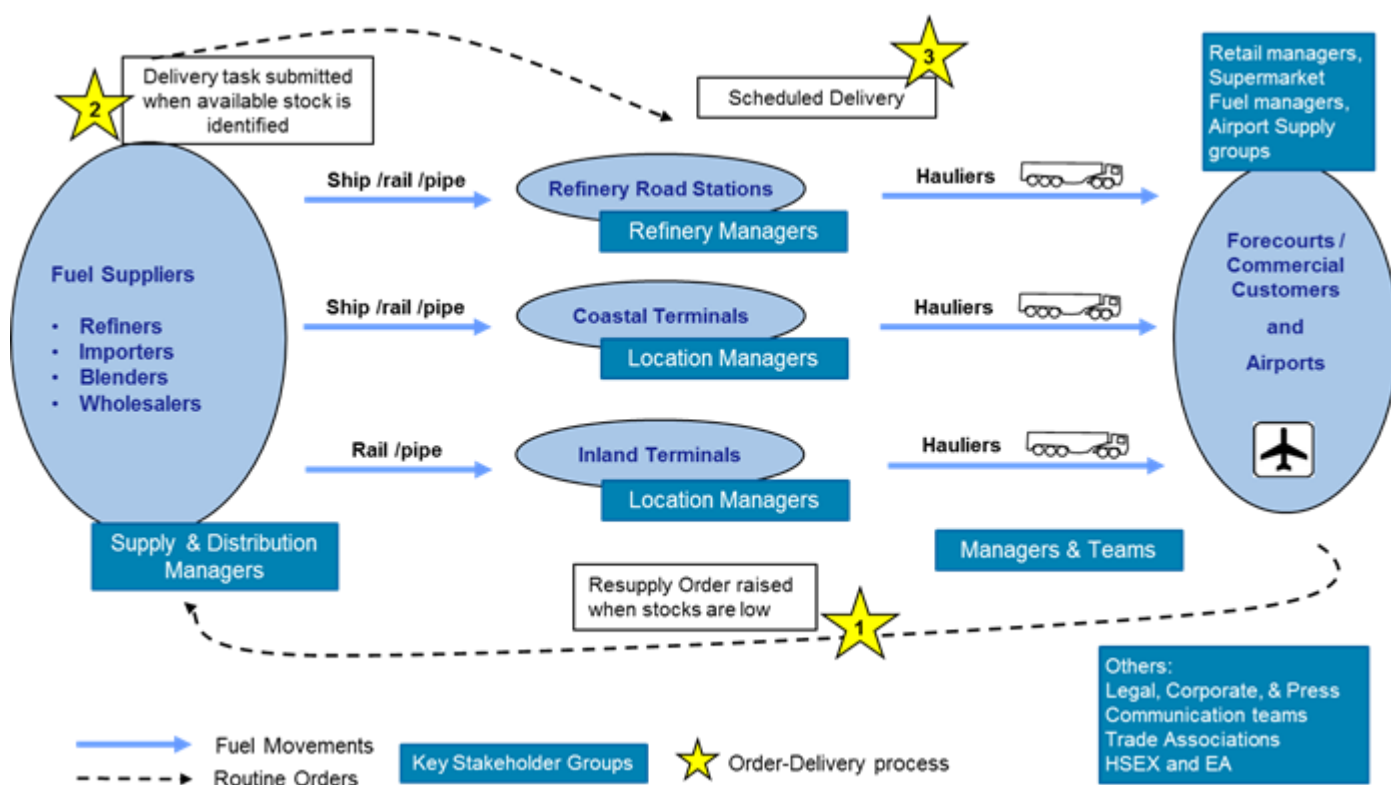


Figure 1: The UK oil supply channels

## Demand

2.6. In 2012 demand for oil products in the UK totalled 61 million tonnes.<sup>11</sup> The large majority of this went to the transport sector, accounting for 75% of total demand. In 2012, 35% of the total oil demand was for diesel, 22% for petrol and 18% for aviation fuel. Demand for middle distillates such as diesel and aviation fuel has grown steadily over the past 20 years, while demand for petrol has reduced since a peak in 1990, in part due to more motorists switching to diesel vehicles. This,

<sup>9</sup> Internal statistical analysis, DECC

<sup>10</sup> Internal statistical analysis, DECC

<sup>11</sup> Department of Energy and Climate Change, *Digest of United Kingdom Energy Statistics, Chapter 3, Petroleum*, 2013, [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/65772/DUKES\\_2013\\_Chapter\\_3.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/65772/DUKES_2013_Chapter_3.pdf)

along with increases in fuel efficiency more generally, has seen a 16% reduction in the energy intensity of road passenger transport<sup>12</sup> in the UK between 1970 and 2011.<sup>13</sup> Whilst in the longer term demand for oil in the UK is likely to decrease as the UK moves toward a low carbon economy, our forecasts indicate that total energy demand in 2030 will still be 50 million tonnes, equating to a crude oil demand of 56 million tonnes. This is equivalent, approximately, to the output of six medium sized refineries per year. Demand for transport fuels is likely to remain substantial to 2030 and beyond, with demand for middle distillates expected to continue to outstrip petrol. Of the total demand in 2030, an estimated 42% will be for diesel and 28% aviation fuel, while 16% will be for petrol. It is also important to note that other fuels are expected to still be in demand in 2030. Heating oil will make up a similar proportion of total demand in 2030 as in 2012, with approximately 2 million tonnes expected to be required in the UK in 2030.

2.7. At the same time, government is working to increase efficient energy use, including for transport such as the promotion of electric vehicles or alternative fuels, aiding their development and the ease with which they can be brought to market. We will need to keep in mind the potential of low-carbon fuel production in the UK. Last year the Government announced £25 million of capital funding to enable the construction of demonstration-scale waste to fuel and other advanced biofuel plants in the UK. This will underpin significant private sector investment to give the industry the boost it needs to develop this innovative, low-carbon market. More widely Government is also considering what more might need to be done to ensure that the UK can employ its world-class science and engineering expertise to become a global leader in the emerging advanced biofuels industry.

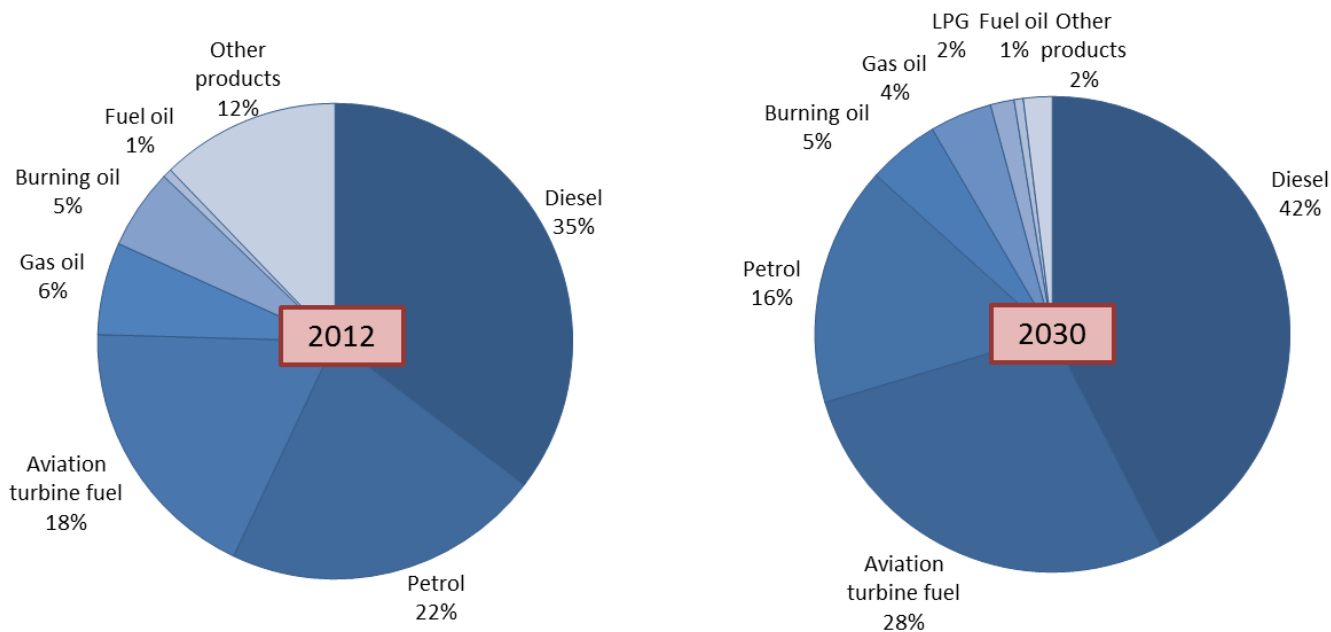


Figure 2: UK oil demand by fuel type in 2012 and 2030<sup>14</sup>

<sup>12</sup> 'Energy Intensity' here referring to fuel consumption per passenger kilometre

<sup>13</sup> Department of Energy and Climate Change, *Energy Consumption in the UK, Chapter 2, Transport energy consumption in the UK between 1970 and 2012*, 2013,

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/238795/chapter\\_2\\_transport\\_factsheet.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/238795/chapter_2_transport_factsheet.pdf)

<sup>14</sup> Department of Energy and Climate Change, *Digest of United Kingdom Energy Statistics, Chapter 3, Petroleum*, 2013, [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/65772/DUKES\\_2013\\_Chapter\\_3.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/65772/DUKES_2013_Chapter_3.pdf).

## Supply

2.8. In the past the UK has benefited from significant indigenous oil resources, but UK Continental Shelf production is decreasing at a rate of 7% a year. Whilst government is working to maximise the outputs from the UK continental shelf, the UK has been a net importer of oil since 2005. Crude oil is traded on a global market and not all oil from the UK Continental Shelf goes to supply the UK, with 80% being exported. UK refineries source their crude from the global market, not just from the UK continental shelf. In 2012, approximately 13% of crude oil supply to UK refineries came from the UK continental shelf.

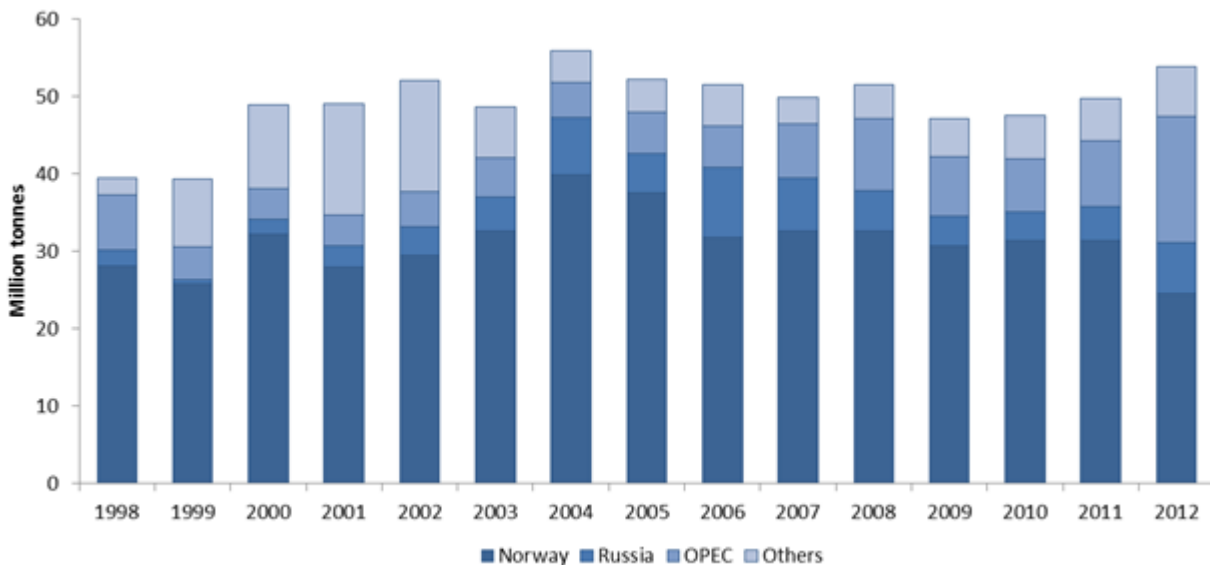


Figure 3: Source of oil imports to the Imports to the UK<sup>15</sup>

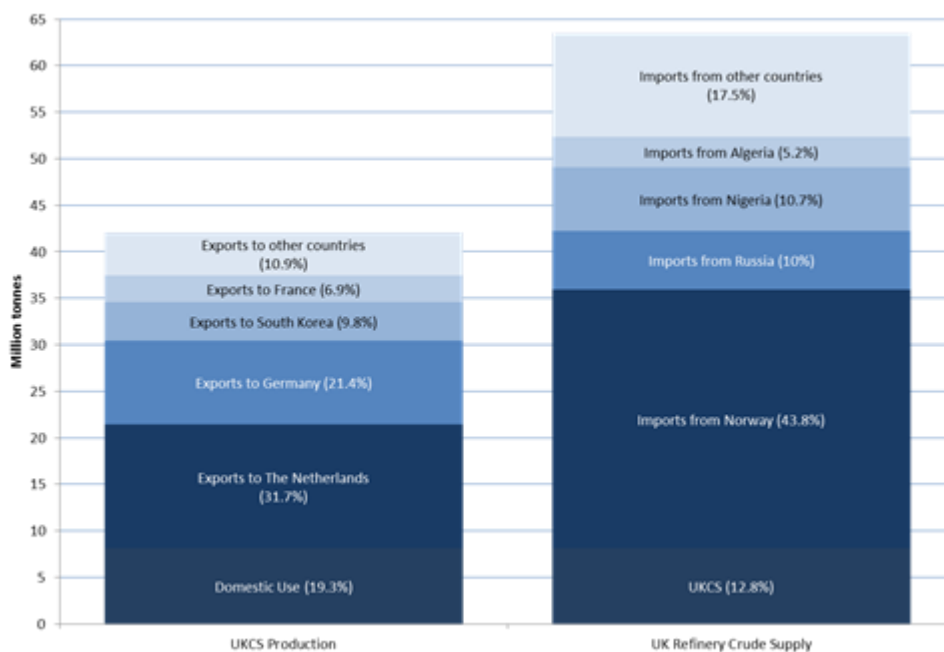
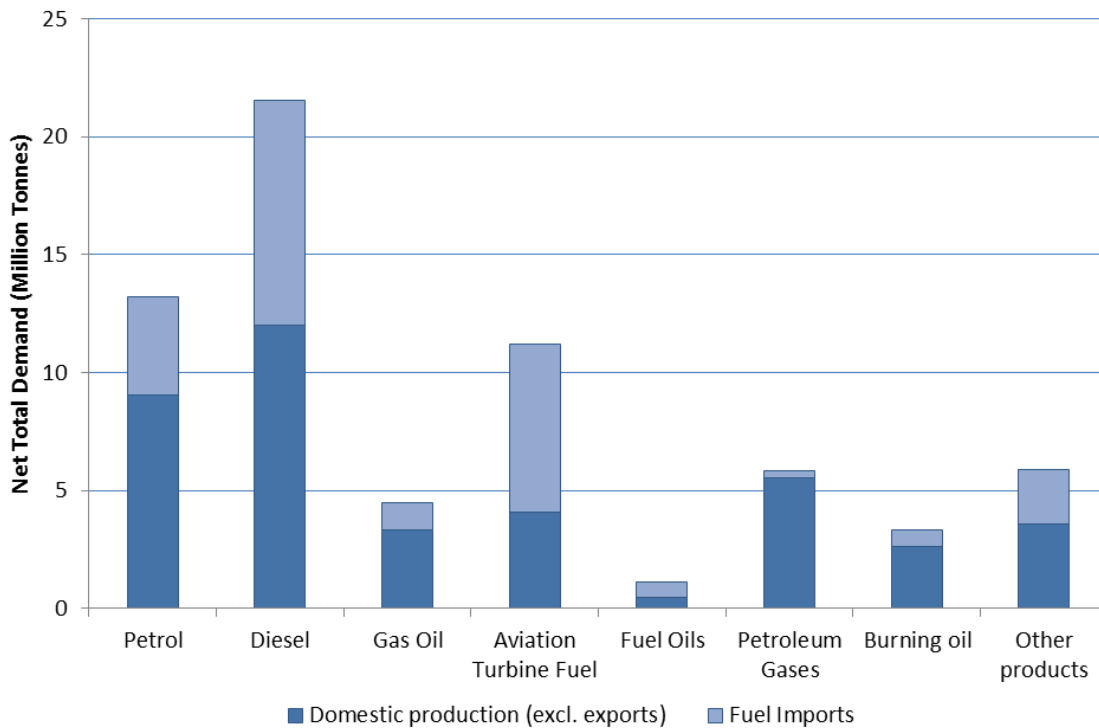


Figure 4: Destination of UK crude oil production domestic use and exports, 2012<sup>16</sup>

<sup>15</sup> Department of Energy and Climate Change, *Digest of United Kingdom Energy Statistics, Chapter 3, 2013*, [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/65772/DUKES\\_2013\\_Chapter\\_3.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/65772/DUKES_2013_Chapter_3.pdf).

2.9. In 2012, UK refining met 61% of total domestic demand and the UK relied on imports to supply the remaining 39%<sup>17</sup>. For middle distillates this was higher, with 44% of diesel demand and 64% of aviation fuel demand being met through imports, while only 32% of petrol and 21% of burning oil demand was met through imports. Although the UK produced more petrol than demand in 2012 (see Figure 6), some demand was met through imports with some domestic production being exported. Figure 5 sets out how, after exports, demand for each product was met by domestically produced and imported fuels in 2012.

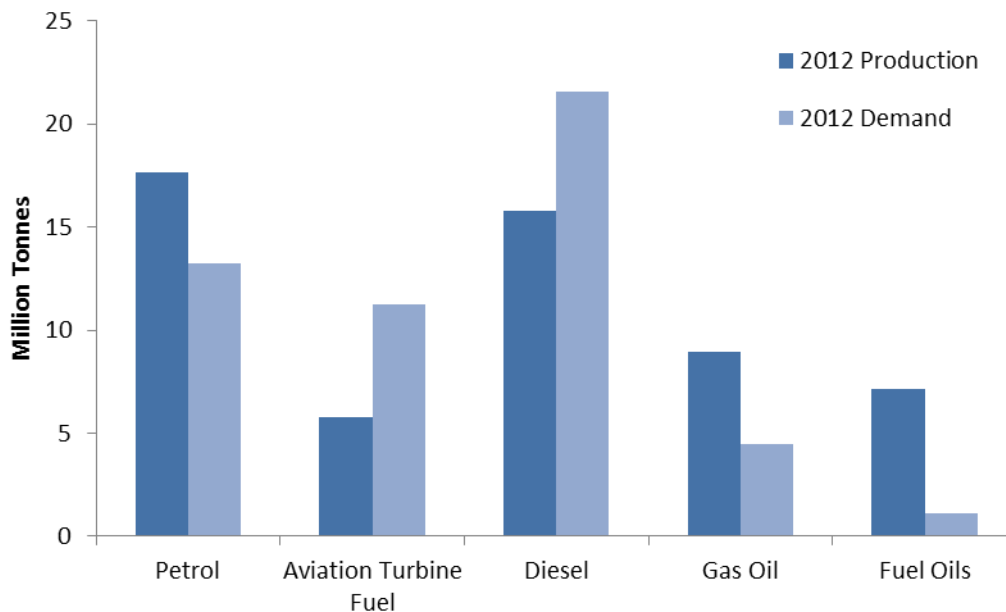


**Figure 5: 2012 UK demand by product and source of supply<sup>18</sup>**

<sup>16</sup> Department of Energy and Climate Change, *Digest of United Kingdom Energy Statistics, Chapter 3, Petroleum*, Internet only tables, 2013, <https://www.gov.uk/government/publications/petroleum-chapter-3-digest-of-united-kingdom-energy-statistics-dukes>

<sup>17</sup> Approximately 20% of imports are supplied by UK refiners who import oil product into the UK as well as refine it.

<sup>18</sup> Department of Energy and Climate Change, *Digest of United Kingdom Energy Statistics, Chapter 3, Petroleum*, 2013, [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/65772/DUKES\\_2013\\_Chapter\\_3.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/65772/DUKES_2013_Chapter_3.pdf).

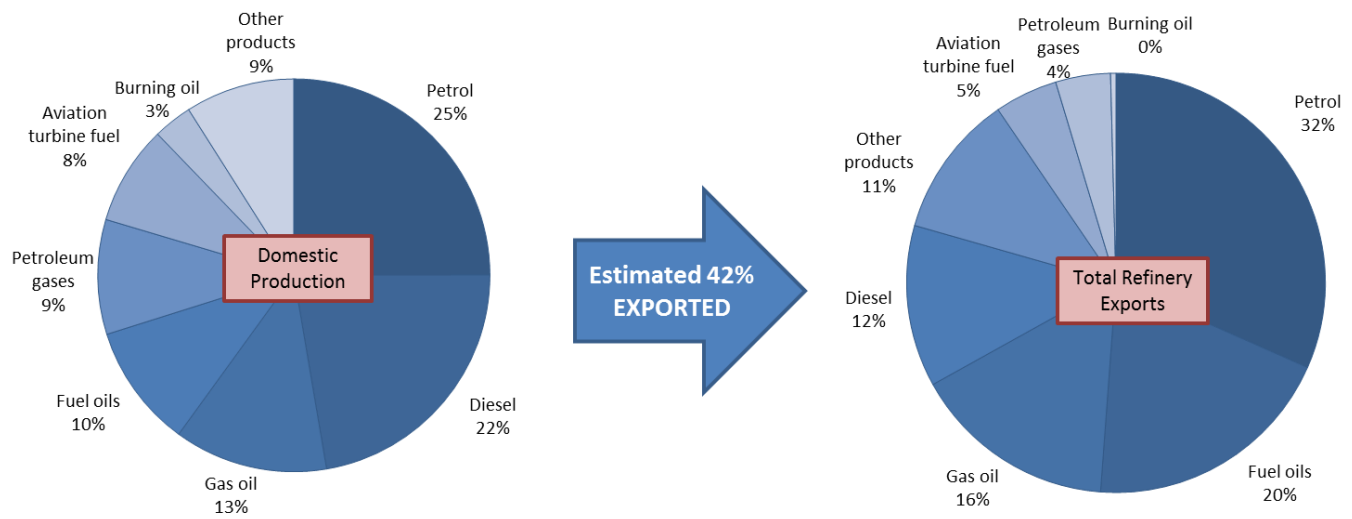


**Figure 6: Total 2012 UK production and demand by product<sup>19</sup>**

2.10. Figure 6 shows the domestic production of oil products in the UK compared with demand. This highlights a key issue affecting the supply of fuel in the UK: domestic refineries, like most of those in Europe, were largely established to produce light and heavy distillates (which were in demand at the time), and so are not set up to meet the level of middle distillate demand required today, or expected to require going forward. In 2012, UK refinery production was 25% petrol, 22% diesel and 8% aviation fuel, with the remaining 44% primarily being other light and heavy distillates. UK refineries are producing more petrol than needed in the UK, but not producing enough diesel or aviation fuel. As Figure 7 shows, approximately 42% of fuel produced by UK refineries in 2012 was exported, of which 32% was petrol and 20% fuel oil.

<sup>19</sup> Department of Energy and Climate Change, *Digest of United Kingdom Energy Statistics, Chapter 3, Petroleum*, 2013, [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/65772/DUKES\\_2013\\_Chapter\\_3.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/65772/DUKES_2013_Chapter_3.pdf).





**Figure 7: 2012 UK refinery production and refinery exports, split by product<sup>20</sup>**

## Global and commercial context<sup>21</sup>

2.11. UK refineries and importers, and those in the EU more broadly, operate in a global oil market and developments in other countries over recent years have had a significant impact on them. There are several reasons for this.

2.12. First of all, there is refining over-capacity in Europe. The challenging economic environment, falling demand and an over-production of light and heavy distillates have led to many closures across Europe, with around 1.7 million barrels a day of refining production being closed since 2007 and even with these changes, further closures across the continent are expected; the IEA's New Policies Scenario labels 3.5 million barrels a days of European refining capacity as 'at risk' by 2020, and 4.5 million barrels a day by 2035.<sup>22</sup>

2.13. Secondly, the development of light tight oil in the USA has precipitated a substantial expansion of the utilisation of domestic refining capacity in North America. This has resulted in a loss of a traditional export market for the surplus petrol produced by UK and EU refineries. Also, significant volumes of product are available to Europe from the US market.

2.14. Thirdly, emerging economies are investing substantially in their own refining capacity, in part to improve energy security but also to capture the value added from oil products. Most growth in global refining capacity comes from non-OECD countries, in particular those in Asia and the Middle East. The regulatory costs that bear on these refineries are generally thought to lower than in the EU sector.

2.15. These global pressures put downward pressure on EU refining margins, reducing their competitiveness. High crude oil prices also put pressure on refinery balance sheets, increasing

<sup>20</sup> Department of Energy and Climate Change, *Digest of United Kingdom Energy Statistics, Chapter 3, Petroleum*, 2013, [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/65772/DUKES\\_2013\\_Chapter\\_3.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/65772/DUKES_2013_Chapter_3.pdf).

<sup>21</sup> DECC worked with PricewaterhouseCoopers to gain a fuller picture of the commercial drivers of the refining sector, to strengthen government understanding of challenges facing the sector and the factors influencing investment decisions in order to validate DECC analysis here.

<sup>22</sup> International Energy Agency, *World Energy Outlook 2013*

their costs through higher working capital costs, while the supply-demand imbalance referred to above and reducing demand more generally also impacts on their profitability. However, within the EU itself the UK refineries face particular challenges. For example, some indications to government from industry are that UK refiners can face higher operating costs than equivalent refineries elsewhere in the EU, which has the potential to impact on competitiveness.

2.16. These factors are likely to mean that going forward margins for European refiners will continue to be under pressure. Return on capital employed is below the cost of capital for several UK refineries and net cash margins are weak. This can limit the availability of investment in transformative refining projects in the UK. Although some investment is possible, given tight margins and significant regulatory costs, refiners state that investment is more likely to be spent on compliance than on improving margins. This said, capital is available for investment in developing UK import capacity, helping UK importers fill any supply gaps that may arise. When refineries close it is possible to replace their supply by converting the facility into an import terminal; however, despite finance being available for this, a smooth transition to an import facility is not assured.

## 3. Call for Evidence

In May 2013 DECC issued a Call for Evidence on the role of UK refining and fuel import sectors in meeting UK demand for refined oil products. Twenty responses were received in total; six from refineries, five from importers, seven from trade associations and two from unions. At the same time the Energy and Climate Change Committee conducted their own review of the sector.

### Introduction

3.1. The Call for Evidence sought input from across the Downstream Oil Sector and from wider stakeholders on a range of issues, including future demand for oil products in the UK and the role of refineries and the fuel import sector in meeting this demand. It also sought input on the challenges facing the sector. In general the responses received were broad and reflected industry views and experience rather than outlining specific evidence.

3.2. There was agreement from respondents to the Call for Evidence that oil will continue to play an important role to 2030 and beyond, and demand in particular for middle distillates was likely to increase. Most respondents noted that a balance between imports and domestic refining was good for resilience in the UK, although there were differences in view about the level of refining required. Many noted too that the refining sector employs large numbers of people in the UK. However, several respondents set out the significant challenges facing the refining sector in the UK; in particular the view that substantial capital and operating expenditure required to comply with regulations placed on the sector make it highly challenging to invest and to compete with refineries outside the EU. Many contributors argued that what the sector needs most is a clear policy framework, a proportionate approach to regulation and the ability to operate on a level playing field.

### Part I: Understanding the UK national requirement for a resilient supply system

**Questions in Part I sought views from respondents on the broader context for the sector, including what demand for oil products was expected to be in the future, along with their views on the capacity, reliability and diversity of the supply routes offered by refiners and importers. All questions can be found at Annex A.**

## Summary of responses

3.3. In general respondents argued that oil will continue to be a major source of energy until 2030, and indeed beyond this. Several reflected upon the forecasts in the PGI report and by the International Energy Agency, predicting that oil would in particular remain important in the transport sector, meeting at least 80% of demand for transport fuel in 2030. A substantial increase in demand for middle distillate fuels was predicted by most respondents, in particular for diesel and aviation fuel, while there would be a significant reduction in the demand for petrol. This reduction was largely expected to be caused by a reduction in demand for cars with petrol engines. It was noted that some sectors have limited options to move away from fossil fuels, such as aviation and maritime transport, with continuing reliance on middle distillate fuels.

3.4. The large majority of respondents argued that a diversity of supply routes, through refineries and importers, was beneficial to resilience of the UK to fuel supply disruptions. However, there were different views on the extent to which alternative supply routes ensured resilience. Responses from refiners largely indicated that they could enhance downstream oil resilience by providing additional flexibility in responding to supply disruptions, for example through access to diverse supplies of crude oil and immediate access to blending components to adjust any finished product that does not meet the correct specification. It was also noted that their jetty and storage assets meant that a refiner could act as an importer of finished products. Importers and suppliers on the other hand argued that they could provide greater resilience as they can respond to changing demand for fuels, with UK refineries currently unable to meet UK product demand without substantial new investment in future. One importer questioned too whether refinery jetties and storage facilities, primarily set up for large crude oil deliveries, may have difficulties if they were required to import substantial quantities of finished product on a regular basis. It was posited by some respondents that greater import dependence would require the use of longer supply chains which creates additional sources of disruption risk. In addition, some contributors stated that the UK should avoid becoming reliant on a restricted selection of countries for its supply and that it should maintain its own capacity to refine.

3.5. Respondents took this chance to set out key contextual factors to consider with regards the sector. Refiners in particular set out the regulatory context in which the sector exists, noting that it was highly expensive to operate within current regulations, limiting additional investment. They also argued that there was not a level playing field with importers, for example with differentiated levels of obligation on refiners and importers for the amount of emergency stocks they are required to hold. Access to infrastructure was another factor raised, in particular access to pipelines and storage. There were some concerns too about port access, with no ports regulator in place. Respondents from the ports sector felt that they would be able to continue to respond to increased demand for product import and storage capacity by expanding their business over time. Some respondents questioned, however, whether increased shipping movements associated with additional imports could have implications for jetty capacity, as well as congestion of navigable waterways.

3.6. More broadly, it was also noted by some respondents that several other industries in the UK were currently reliant upon products from UK refineries. For example the chemicals sector often has physical pipeline connections to refineries or is co-located with them; there was therefore a concern that sourcing through imports instead could be more costly or bring with it additional risk.

## Part II: Existing downstream oil industry infrastructure and its contribution

**Questions in Part II sought more detail on the UK downstream oil sector, with a view in particular to its contribution to resilience and the economy. Views were sought on what disruption events were considered likely, which supply routes offered most resilience, and what was an appropriate balance of domestic refining and imports. Questions also looked toward the economic and social benefits of the UK refining and imports sector. Finally views were sought on the key challenges and costs impacting on the sector.**

### Summary of responses

3.7. Respondents identified both international and domestic short-term disruption events that could potentially affect the UK. At the international level, it was noted that imports – both of crude and finished product – can be adversely affected by a range of natural, operational and geopolitical factors. At the domestic level, the main issues identified were industrial action impacting on the downstream oil sector, and also the impact of cold winters on local supply infrastructure. The aviation sector raised particular concerns about infrastructure for aviation fuel; good pipelines were needed to meet the significant volumes of fuel required that could not be delivered by road and rail, and to mitigate any risk of contamination of high specification aviation fuel. It was noted too that consumer buying patterns could have an impact, for example an increase in heating oil demand during the winter.

3.8. The range of potential disruption events was seen by several respondents to support the case for diversity of supply routes and supply sources for oil product. Similarly to views set out in part one; most contributors argued that resilience and security of supply would be best met by a mix of both refineries and import terminals. Such an approach would help increase sources of supply, and mitigate any additional risks of longer supply chains, such as a more limited range of suppliers or possible risks of product contamination. This being said, some respondents set out that this diversity of supply needed to be backed up by an overall increase in UK refined product storage capacity and suitable pipeline access, to ensure that demand could continue to be met. However, as set out above, different parts of the supply chain had varied views on why their approach to supplying oil products to the UK offered the most resilience.

3.9. In terms of what the mix between refiners and importers should be, many contributors pointed to the International Energy Agency's 'Model of Short-term Energy Security' (MOSES)<sup>23</sup>, which set out a benchmark of high risk as being refining cover of less than 55%. It was also noted that for certain fuels, the UK is already past this, importing 64% of its jet kerosene. Refiners pointed to the PGI report which advised that refining cover in the UK should be at least 65%. However, one respondent set out that the best split would be determined by a market that provides the right incentives to invest. This said many respondents agreed that UK resilience would be better served by having domestic refining capacity. It was also noted that there was a wider impact with any loss of a refinery, being that associated industries could be impacted by the closure. Chemicals businesses are often closely linked with a refinery and if that refinery were to close there could be an impact on the viability of the chemicals business.

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<sup>23</sup> [http://www.iea.org/publications/freepublications/publication/moses\\_paper.pdf](http://www.iea.org/publications/freepublications/publication/moses_paper.pdf)

3.10. With regards to the impact on consumers, some respondents noted that the oil market is global, so a supply disruption anywhere in the world could impact on the price of crude and therefore have an impact on consumers. However, it was noted by some respondents that this could be more pronounced with imports of finished product, and that if the UK was more reliant on imports (if it lost domestic refining capacity) this could expose the UK more to external pricing factors. It was noted, therefore, that having a mix of refiners and importers increased competition which is good for consumers. One importer noted that they felt their sector had helped lower fuel costs in the UK, benefitting the consumer.

3.11. Some respondents felt that non-EU refineries may not be subject to such stringent environmental regulations as their UK or EU counterparts, which from an emissions perspective meant it was unlikely there would be any net environmental benefit to losing UK refining operations, with other refiners elsewhere increasing production.

3.12. In terms of the direct and indirect economic and social benefits that are derived from the downstream sector in the UK, refiners again pointed to the PGI report, which estimates a contribution to GDP of up to £2.3bn, while across the entire downstream sector £36bn was collected in duty and VAT on fuels in 2011.

3.13. In response to the question of what factors posed the greatest challenges to UK refining, refiners in particular cited legislative burdens and associated compliance costs as being the greatest challenges. This disadvantaged them in comparison to less regulated refineries outside the EU. Pointing to the PGI report, they noted the estimate that in the period 2013-2030, refineries would need £11.4bn of capital and operating expenditure just to meet UK and EU legislative measures. Refiners also pointed to their view that the UK midstream sector was not operating on a level playing field, with differences in how regulation applied to refiners and importers being a concern (in particular, differences in how the compulsory stock obligation is applied - with refiners holding more emergency stocks than importers). Refiners also raised concerns that current duty arrangements for the coastal movement of bulk oil products disadvantaged them relative to EU refiners placing product into the UK market.

3.14. Importers did support some of these arguments, some noting that the costs of ensuring compliance with regulatory standards were a significant challenge. More broadly, nearly all contributors set out that refineries are facing the challenges of flat demand for oil products, and low refining margins, alongside the legislative burdens. Other challenges suggested by respondents included the fragmentation of the market over time and privatisation, and there was limited access to funding for independent refineries. In summary, the outlook for refining in the UK was considered extremely challenging.

3.15. Importers on the other hand noted that the main challenge facing them in relation to resilience was the lack of access to import infrastructure in the UK. Importers and terminal operators stated that there were few incentives to invest in new storage capacity in the UK, and for existing capacity in particular the increased legislative burdens and associated compliance costs of containment policy following the Buncefield incident in 2005 was of particular concern. Another concern raised was about pipeline access, and access to inland terminals; this was with regards to some pipelines only being accessible to the operating companies, limiting the viability of other operators in the area. Some noted that land ownership in the UK can also make it very difficult for investors to acquire way leave consents for new pipeline developments. Increased port infrastructure was noted by some as something where investment could be challenging given legislative barriers.

## Part III: Future development of the UK Downstream Oil Industry

**Part III looked ahead, seeking views from respondents on how they felt the downstream oil sector would evolve over the next 20-30 years and what were the risks and challenges facing the sector, in particular refiners and importers.**

### Summary of responses

3.16. Many respondents agreed that regulatory burdens and increased competition from other global regions, coupled with increased demand for imports of middle distillates, could test UK resilience. Refiners argued that UK refineries would be competitive if there was a more level playing field across the EU and the rest of the world on legislative compliance. Refiners felt that if these challenges were not met, then the risks were that there would be losses in investment, employment and skills in the refining sector. This could lead then to a loss of security of supply of oil products if relying solely on imports. Importers felt however that a diverse range of suppliers and facilities could be more resilient than consolidated operations and that they were flexible enough to be able to respond to future demand, in particular increased need for middle distillates.

3.17. Refiners pointed to the PGI report as well about the cost of regulations on them. PGI concluded that over 2013- 2030 an additional £11.4 billion of capital and operating costs would be required to comply with the cost of legislation, which translates into an average annual cost increase of 1.85 \$/barrel from 2013 to 2030.

3.18. Industries that are currently dependent on domestic refineries, such as chemicals sector, set out that core refining capacity in the UK was considered critical to meeting their demands for feedstocks, as it was argued it would be difficult to cover this just through imports. Other external factors raised by respondents with regards to the competitiveness of refiners were that energy and staff costs were higher when compared with non-EU refineries.

## Part IV: Other potential steps to address the UK downstream oil future requirements

**Part IV looked at what respondents felt was needed to address the challenges identified in earlier questions, including steps they felt the government needed to take.**

### Summary of responses

3.19. There were varied opinions from respondents about infrastructure. Some, both refiners and importers, cited the need for better access to infrastructure at the national and regional level, such as pipelines and storage facilities. However, others felt that the UK was already well served with good infrastructure and pipeline access.

3.20. A wide range of respondents called for a clear policy framework in the UK that should include a proportionate approach to implementing legislation and that should ensure that a level playing field was in place for the downstream oil sector. There were also calls to re-examine when duty is paid and business rates for the sector. Respondents also set out that the government should consider investment in UK pipeline infrastructure. The establishment of a central stocking entity to manage compulsory oil stocking obligations was also called for by both refiners and importers, similarly to the responses to DECC's consultation on this, along with reconsideration of the differentiated levels of obligation on refiners and importers.

## The Parliamentary Select Committee

3.21. The Energy and Climate Change Committee (ECC) published its report Energy and Climate Change Committee - UK Oil Refining Third Report of Session 2013-14 - Volume 1 in July 2013, having collected written and oral evidence from a range of stakeholders.<sup>24</sup> The ECC Committee set out its view that a mix of domestically refined products and imports are important to energy security, and also that the UK refining industry provides jobs and tax revenue for the economy. It also recommended that DECC's strategic objective should be to ensure a level playing field between domestic refiners and importers, as well as identify appropriate actions to incentivise investment in the domestic refining industry. The Committee noted that there was a mismatch between demand for product in the UK and UK refinery supply, in particular with regards to production of diesel. It considered that although setting an exact figure for the mix of domestic refining and imports might not be helpful, government should set out its long-term intentions to give industry confidence. More specifically the ECC Committee set out that DECC's review of the sector should consider the longer-term trends in fuel demand in domestic and export markets, calculate the additional capacity needed for refiners to meet increasing diesel demand, consider the legislative burdens on the sector and consider the potential implications for ancillary industries.

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<sup>24</sup> The ECC recommendations can be found at <http://www.publications.parliament.uk/pa/cm201314/cmselect/cmenergy/340/340.pdf>.



## 4. Assessing the midstream sector and its challenges

This chapter sets out an assessment of the current refining and imports sectors in the UK against resilience, economic, social and environmental criteria. It identifies the benefits the midstream sector brings to the UK, how far the existing policy framework can deliver fuel UK supply resilience and the challenges to this.

### Assessment of the current refining and imports sector in the UK

4.1. As part of the review, the government has completed a detailed assessment of the UK fuels supply market against three broad criteria: fuel supply resilience, economic, and social and environmental impacts.

#### Resilience

4.2. In assessing the sector from a resilience perspective the review has considered whether there is capacity in the system to deliver the necessary volume of fuel, through a diverse set of supply sources and reliable infrastructure. It has considered the resilience of the midstream oil sector here both in normal conditions and in the event of a domestic or global disruption to oil supply. This should ensure that fuel is available at a globally competitive price. Government has considered a range of factors, several of which read-across to indicators set out by the International Energy Agency in their Model of Short-Term Energy Security (MOSES).

4.3. These include consideration of:

- The flexibility of refining infrastructure to meet different demand slates, the diversity of import suppliers and the number of domestic refineries.
- The deficit of various fuels (i.e. the difference between domestic supply and demand), namely diesel, aviation fuel and petrol, as well as the effective stocks and storage available.
- Overall import capacity, reliability of infrastructure assets, speed of response and future optionality of the sector.

4.4. In order to assess the current system the review has taken a broad view of the sector, starting from the basis that in terms of total oil supply UK refiners have the capacity to produce enough to meet demand; in 2012 refiners produced 69 million tonnes of oil products, with demand being 61 million tonnes.

4.5. In practice, as set out above, UK fuel production does not match demand at the individual product level, in particular for aviation fuel, demonstrating that refineries in the UK are not particularly flexible in their ability to meet changing demand slates. There are, however,

additional ways to mitigate supply disruptions available to aircraft compared with road transport, for example the ability to refuel from other airports, although there are costs and limits to this.

4.6. As set out in the government's security of supply strategy<sup>25</sup>, our energy security will come from having a diverse and flexible energy system. A mix of refining and imports allows for this diversity of supply sources, and provides a system able to maintain fuel supply both in business as usual and when there are disruptions to supply. A mix of domestic and global suppliers, brought about by having domestic refining capacity and a strong import infrastructure helps diversify risk and source of supply, helping ensure resilience to supply disruptions and maintaining security of supply. Refiners and importers both bring their own benefits to UK fuel supply resilience.

4.7. Refiners are able to import both crude and finished product. In severe global supply disruptions it is expected that the product markets would always tighten, regardless of whether supply of crude or finished product has been disrupted. Therefore access to crude, including from the UK Continental Shelf, assuming that the crude market remains liquid, provides an additional layer of resilience to supply disruptions, unavailable to the UK if there is no domestic refining capacity. A refiner's additional ability to act as an import terminal does help increase its flexibility in the event of a supply disruption. A further benefit of domestic refineries is that sourcing product in the UK means that supply chains are shorter which is good from a resilience perspective as longer, more complex, supply chains are at greater risk of breaking down. We also know that in a supply disruption, refineries tend to favour local markets over international ones. Refineries also typically have greater on-site storage, meaning that more stocks of oil are held in the UK if needed quickly.

4.8. Importers on the other hand are able to provide a more rapid response to supply disruptions, operating with lower capital requirements. They have proven themselves a flexible resource in the past, able to rapidly move supply around the country, and increase deliveries as required. They have flexible jetty capacity and relatively (to refineries) simple operations meaning that they can focus entirely on import capacity if needed in a supply disruption. They typically have a wide range of supply sources as well. Different import models also widen the range of products that can be imported and made use of; while the 'importer-wholesale' model sees just finished product (e.g. diesel, aviation fuel) imported, the 'importer-blender' model can see additional feedstocks be imported as well and blended on-site.

4.9. There are individual challenges for both though which are mitigated by the other to ensure that the UK has a secure supply of fuel. In both normal conditions and in a supply disruption, importers are needed to fill the UK demand for middle distillates. On the other hand, in a supply disruption potentially affecting the availability of finished oil products, refiners give access to crude markets and potential for shorter supply chains helping to maintain a resilient system.

4.10. There is also currently a good level of storage and stocks in the UK, although as has been noted in response to the Call for Evidence this capacity is likely to tighten in future. The network has shown that in its current form with a mix of refiners and importers it can respond reasonably swiftly to supply disruptions.

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<sup>25</sup> <https://www.gov.uk/government/publications/energy-security-strategy>

## Economic

4.11. The extent to which the UK midstream oil sector can provide economic benefit is also an important consideration. A range of economic criteria have been used to evaluate the contribution the sector makes to the economy. These include contributions to gross domestic product, income tax, national insurance, corporation tax, excise duty and VAT. The ability of the sector to provide relatively low cost fuels to consumers has also been taken into account

4.12. The sector contributes annually around £2.3bn to gross domestic product, around £200m in income tax and national insurance, £166m in corporation tax and around £36bn in excise duty and VAT.<sup>26</sup> Furthermore, the competitive nature of the industry and developed infrastructure ensures that consumers are able to benefit from relatively low cost fuels (before tax). As oil products play an integral role in today's economy an efficient and sufficiently flexible midstream oil sector is likely to bring additional second order benefits to the UK.

## Social and environmental

4.13. On the social side the review has looked at direct and indirect jobs, as well as skills development and broader social investment. The analysis also reflected on spills containment and environmental stewardship. Against social criteria the UK's midstream oil sector performs well, providing around 9,000 direct jobs and approximately 21,000 additional indirect jobs.<sup>27</sup> However, similarly to our assessment of the economic benefits of the sector, these high figures are primarily attributable to the refining sector. In general an importer only employs around 10% of the workforce of a refiner. The jobs in the midstream sector are generally highly skilled.

4.14. UK refiners and importers operate within the context of a regulatory framework designed to protect human health and the environment and refiners play their role in delivering reductions in carbon dioxide through participating in climate change policies such as the EU Emissions Trading System (EU ETS). In terms of major accident hazard regulation, the UK and EU midstream sector operates within a robust regime which means that accident hazards are well managed.

## Challenges

4.15. The UK fuel supply market is changing. As discussed above refineries face downward pressure on their margins and over time many have closed.

4.16. As Chapter 3 set out, many in the industry consider that a key challenge is the significant costs of meeting the environmental protection and major accident hazard regulations applied to the sector. They argued that the UK and EU sector faces higher regulatory costs relative to some refineries outside of the EU, and also that a significant proportion of available capital for refiners is spent on regulatory compliance rather than margin improvement projects. Concerns were also raised about differences in the application of policy or enforcement of regulations between sectors, for example with the application of the compulsory oil stocking obligations. In the main, industry expressed general – but not evidenced in detail - concerns about gold-plating of EU Regulation.

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<sup>26</sup> Taken from the PGI report: The role and future of the UK refining sector in the supply of petroleum products and its value to the UK economy, 2013, <http://www.ukpia.com/files/pdf/therolefutureoftheukrefiningsector.pdf>

<sup>27</sup> This is an estimated figure. The PGI report showed 26,443 direct and indirect jobs through the refining sector. Based on importers typically employing around 10% of the workforce required by a refinery, and rounding up to the nearest 10,000, we have reached the 30,000 figure.

4.17. Regulation of the sector is very important to our wider environmental and climate change goals, as we move toward a low carbon economy and to ensure that potential accident hazards are mitigated and managed. Government recognises, however, that where businesses face a higher cost of regulation than their rest-of-world counterparts that this can impact on competitiveness.

4.18. Government is committed to reducing the impact of regulation on businesses. It wants to ensure that regulation is fair and effective and strikes the right balance between delivery of wider environmental and social goals and the burden in places on businesses. In the next chapter we outline what action has already been taken and proposals for industry to continue working with government to identify opportunities to reduce the impact of the regulatory framework through smarter regulation.

4.19. Refiners have also raised concerns that the point at which duty is charged for coastal movements of bulk oil products reduces their competitiveness with overseas refineries. If a UK refinery is delivering to a UK import terminal by ship it pays duty when product leaves the refinery, rather than when it crosses the point at the import terminal where duty is paid on imports. Refiners suggest that this puts them at a competitive disadvantage with overseas refiners, partly as the duty on the product from a UK refinery has to be paid earlier, but also because it has to be paid on shipping losses due for example to product evaporation<sup>28</sup>.

4.20. Inland pipelines are currently both privately and publicly owned, although the government is considering options for the sale of the Government Pipeline and Storage System. There are practical constraints which affect how they are used and product schedules and use of biofuels needs to be considered to avoid product contamination; an issue that is especially a concern for aviation fuel. There are concerns about third party access to pipelines. Reasons quoted by the industry are a lack of transparency on pricing and carrying capacity as well as suitable access to ingress or egress points<sup>29</sup>. Concerns were raised about storage capacity in the UK, and it was noted too that international oil stocking obligations may increase in future and there was a degree of uncertainty around demand for storage capacity, both of which could make the storage capacity market tighter. This was an issue also reflected in our consultation on the future management of the compulsory oil stocking obligation in the UK.

## The future of the refining and import sectors

4.21. It is a government priority to ensure that the UK midstream oil sector is resilient and secure in the future, allowing for fuels to be supplied to UK consumers – even in the event of supply disruptions – at an affordable and globally-competitive price. Government also want to see a sector that supports the economy through value creation and contributes to society whilst also ensuring sufficient protections to environment, human health and safety are in place. However, it is important to be realistic about the global context – EU over-capacity and developments in non-

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<sup>28</sup> Some fuel is lost when shipping, for example as vapour. Duty on the product from a UK refinery is on the amount that is put onto the ship itself, whereas duty on product from an overseas refinery is on the quantity of fuel that is taken off the ship. Therefore when acquiring fuel from a UK refinery a UK importer may have to pay duty on fuel they do not receive.

<sup>29</sup> Whereas the pipeline may be owned by a joint venture, the ingress and egress points to that pipeline may be owned separately.

EU countries does mean that some further closures of refineries in Europe are likely. Government recognises that it is not feasible or necessary to rely wholly on domestic production to meet UK fuel demand. At the same time, relying entirely on imported product reduces the diversity and potentially the security of UK supply, and the loss of refining also risks short term disruption in regions that are particularly dependent on individual UK refineries, until the market can readjust.

4.22. Looking to the future, given current overcapacity in product supply there is scope for further rationalisation in the UK without impacting on supply security. However if the contribution of domestic fuel sources falls significantly compared to present levels, this reduction in diversity could mean that the resilience of the UK to future supply disruptions, nationally or regionally, is less certain in the short or potentially longer terms.

4.23. Government recognises, therefore, the benefits of ensuring that refining and imports business sectors are able to operate successfully in the UK, whilst also recognising that ultimately market forces will decide what supply configuration prevails in the future.

## 5. Policy action and next steps

Government recognises that diversity of supply sources is good for resilience. This chapter sets out how the current policy framework supports the midstream sector and then presents the additional actions that government, in collaboration with the sector, is proposing to take forward as a result of the review.

### Current approach

5.1. The review concludes that that resilience and security of supply is supported by retaining a mix of domestic refining and imported product. This is consistent with the government's energy security of supply strategy which recognises the benefits of supply diversity. Existing government policies seek to address some of the investment challenges faced by industry, concerns around energy costs and regulatory burden. Policies relevant to the midstream sector are outlined below.

#### Infrastructure Investment

5.2. The UK Guarantee Scheme was established to ensure that commercially viable infrastructure projects are not delayed due to constraints in the credit markets. This may be available to support debt raised to make investments in refinery assets of exceptional systemic importance. Each proposal will need to be assessed individually and all guarantees issued must comply with EU state aid rules.

#### Energy Costs

5.3. The government is committed to ensuring that UK based businesses – and manufacturers in particular – are able to remain competitive during the shift to a low carbon economy. That is why the Budget 2014 offers further relief to businesses affected by the rising cost of energy. This includes:

- A package of relief for Energy Intensive Industries (EIIs) whose competitiveness is impacted by climate change policies, through:
  - Compensation from the costs of the Renewables Obligation (RO) and small scale Feed in Tariff (FIT) from 2016/17 until 2019/20.
  - Extending the compensation scheme from indirect costs of the EU Emissions Trading Scheme (ETS) and Carbon Price Floor (CPF) beyond 2015/16 to 2019/20.
- Exempting Good Quality Combined Heat and Power (CHP) generation for on-site use from the Carbon Price Floor from 2015/16.

- A cap on the Carbon Price Support mechanism at £18 per tonne of CO<sub>2</sub> from 2016-17 to 2019-20 – ensuring the difference in the carbon price between the UK and Europe will not go above £18.

5.4. Together with previous announcements, this package means that EIs will be compensated for all government policy designed to support low carbon and renewable investment up until 2019-20, saving the average EI in total around £19 million by 2018-19.

5.5. This action will reduce the impact of policy on the costs of electricity for the refining sector.

## Energy Efficiency Investment

5.6. The UK Green Investment Bank plc. (GIB) was established by the government to accelerate the transition of the UK economy to a greener economy. The Bank is a project investor and has the ability to invest in either the equity or debt within the financing structure of projects that meet its sustainability and green criteria. The £3.8 billion GIB funding is dedicated to investing in UK based projects and Energy Efficiency is a core area of investment for GIB alongside offshore wind and waste to energy.

5.7. GIB typically invests £30 million or more in target projects and has the ability to consider investments of lending with a longer tenor or horizon, as long as these demonstrate a commercial return commensurate with the risk profile. In Energy Efficiency investments, the GIB partners with companies to finance their energy efficiency projects and it involves itself in projects at an appropriate stage to help structure the financing solution on a case by case basis. A focus area for the GIB is energy intensive companies who have identified large capital projects that reduce energy usage or carbon emissions. These companies are typically large industrial players that provide significant employment and are anchor businesses at key industrial sites.

5.8. The refining sector is a high energy usage industry with real opportunities to reduce its carbon emissions and energy usage through capital spend on upgrading of facilities and core processes. The GIB is now commencing active engagement with the sector to work on financing opportunities in capital projects that have an energy efficiency result.

## Regulatory and Policy Framework

5.9. The regulatory and policy framework plays a fundamentally important role in ensuring operations are safe, that the right protection is in place for the environment and society and that industry plays its role in helping the UK to deliver its wider climate change goals. Government wants to strike the right balance between delivering effective and necessary controls and the burden placed on businesses.

5.10. Government has already taken action to simplify and streamline regulation and compliance activity relating to the midstream oil sector. On the application of the Control of Major Accident Hazards (COMAH) regulations, as a result of the 'Focus on Enforcement review' a programme of activity in collaboration with industry is being taken forward to streamline compliance, reduce the overlap between COMAH and the Environmental Permitting Regulations and to focus on poor performers, thereby giving less attention to compliant businesses. Additionally, the industry and regulators have recently published guidelines for carrying out environmental risk assessments on COMAH sites. This is an important step forward so that industry and regulators can now better agree on what risks need to be addressed.

5.11. Following an extensive review process, including the environment theme of the Red Tape Challenge, the government enacted a number of simplifications to energy efficiency and climate change policies in 2013 which have reduced the regulatory burdens on the refining sector. It has consolidated EU ETS regulations into one Statutory Instrument, introduced a small emitters (<25ktCO<sub>2</sub>e a year) opt out and removed criminal sanctions. More significantly for refining, government – as announced by the Chancellor in the Autumn Statement 2012 - has also simplified the CRC Energy Efficiency Scheme (CRC), including reducing the number of fuels against which companies report from 29 to just 2 and removing overlaps with other schemes. This was of particular benefit in that the electricity used in refineries is no longer within the scope of the scheme. The changes to CRC will deliver a 55% reduction in administration costs, saving participants around £275 million up to 2030. The Chancellor made clear that the CRC would be next reviewed in 2016.

5.12. Whilst the action that government is currently taking is helping to address many of the challenges faced, the review has considered what further steps are appropriate to help to incentivise continued investment in fuel resilience.

## Further action - rationale and approach

5.13. It is clear that there is no single solution to address the challenges identified in this review. Rather the review has identified a range of further actions the government can take in a concerted fashion in order to support the health of the sector and the fuel supply resilience it brings. Actions have been developed along the following themes which reflect the issues and concerns raised by industry during the review:

- i. **A partnership approach:** the scale and breadth of market change means that a more strategic way of working is required between government and the midstream oil sector. This means putting in place a more coordinated and formal process for partnership working.
- ii. **Market distortions:** taking action to address market distortions which prevents the UK market being as efficient as possible.
- iii. **Action to support supply resilience:** ensuring current measures are calibrated to support critical national infrastructure and considering whether further incentives to invest in infrastructure would offer value for money;
- iv. **Regulatory framework:** considering what can be done to reduce regulatory burden and create a more level playing field between players in the midstream oil sector.

## Summary of action

5.14. As a result of the review, the government has identified seven actions to take forward in partnership with industry along these themes. The actions, the timetable for delivery and responsibility for delivery are summarised in the following table:



No	Action	Timeframe	Responsibility
<b>A new way of working together</b>			
1	<p>Establish a new joint government and industry Midstream Oil Task Force to drive forward actions from the refining review. The task force will promote a strategic and collaborative dialogue and means of working between government and industry.</p> <p>The task force will be independently chaired and will report into DECC Ministers. DECC will provide the secretariat to the task force</p>	Main task force meetings are likely to be held quarterly with the first meeting to be held in Summer 2014.	HMG
<b>Addressing market distortions</b>			
2	Assess the extent to which access to pipelines is a problem for the sector and could be improved by the development of a voluntary code of practice on third party access or other action and make recommendations on this.	To be taken forward by the task force – Recommendations delivered by end 2014.	Task force
3	Assess the costs, benefits, risks and value for money of action to address other market distortions and promote infrastructure investment.	Recommendations by Autumn 2014	HMG
<b>Cost of regulation and addressing level playing field issues between the sectors</b>			
4	<p>The midstream oil sector will work together to identify opportunities for making regulation smarter in order to reduce the impact that the regulatory framework has on the sector.</p> <p>This exercise will be undertaken in collaboration with government and regulators.</p>	<p>To be taken forward by the task force. Scope, programme of activity and timetable to be agreed by Autumn 2014.</p> <p>Early recommendations by January 2015.</p>	Task Force

5	Assess whether the existing levels of obligation to hold emergency oil stocks placed on companies under the UK's Compulsory Stocking Obligation, is sufficient to ensure the UK remains compliant with its international obligations now and in the future. This will also include consideration of whether the current balance of obligation and costs between refiners and non-refiners remains appropriate.	DECC have commissioned an independent research project on the levels of the CSO obligation to help inform any decision on this by the DECC Secretary of State. The study will be completed in Spring 2014. It is the government's aim that any decision will be announced by the end of 2014.	HMG
6	Establish an industry-owned and operated central stocking entity to manage the UK's Compulsory Stocking Obligation for oil.	Obligated companies to prepare a CSE roadmap in 2014. If the roadmap is agreeable to government, then, subject to parliamentary time being available, the government will seek an appropriate legislative vehicle to take this forward.	HMG
7	Continue to work with the European Commission and other Member States as appropriate to ensure the EU Refining Fitness Check process is completed urgently and that it delivers clear and decisive actions to remove unnecessary burdens.	Immediate and on-going	HMG

## Further action – detail

### A new way of working together

5.15. Government is aware that interaction with the sector can be ad-hoc and tends to be on an issue by issue basis. In order to work together effectively to deliver actions from the review and provide forward looking, stable and consistent policy, a more strategic way of working between government and industry is required.

**Action One:** Establish an independently chaired midstream oil industry and government task force.

The task force will be set up to promote a strategic and collaborative dialogue and means of working between government and Industry. It will take forward and make recommendations on the following actions coming out of the review:

- The midstream oil sector will work together to identify opportunities for making regulation smarter in order to reduce the impact that the regulatory framework has on the sector. This exercise will be undertaken in collaboration with government and regulators.
- Assess whether third party access to pipelines could be improved by the development of a voluntary code of practice on third party access, or other action and make recommendations on this.

5.16. As well as these specific actions it will also look to take work forward on a number of themes, including: regulation and market distortions; improving resilience and management of supply disruptions; and strategic investment and innovation.

5.17. The task force will be chaired by an independent chairperson appointed by DECC and report its findings and recommendations to the Minister of State for Energy.

5.18. Members will be drawn from across the midstream oil industry, with representation from Trade Associations – including the UK Petroleum Industry Association, the Downstream Fuels Association and the Tank Storage Association - and representative member companies. It will also include representatives of relevant government departments and regulators.

5.19. The group is likely to meet quarterly with the first meeting to be held in early summer. It will run for an initial period of two years.

5.20. The task force is intended to be a strategic and collaborative forum between government and industry; it will not have a legal status and will not replace any government function or decision making processes. The task force does not diminish the role of the Downstream Oil Industry Forum (DOIF), which is a useful information sharing forum that exists between government and the whole of the downstream oil supply chain. The DOIF will continue to meet biannually.

## Addressing market distortions

5.21. There are a number of market distortions which prevent fuller exploitation of the UK market by refiners, importers and wholesalers. As outlined earlier concerns were raised by the sector about the availability and reliability of infrastructure, with representatives from all sectors stating that third party access to downstream oil pipeline network could be improved.

5.22. In response to these concerns and in the interest of helping to facilitate access to the market government has decided to take the following work forward:

**Action Two:** Consider whether third party access to pipelines could be improved by the development of a voluntary code of practice on access and make recommendations on this.

5.23. Existing primary regulation (Pipe-lines Act 1962) offers a route to potential users to apply to the Secretary of State where they consider access is being denied. However, this route is untested and should be seen as a last resort. Government wants industry to work together to assess whether third party access to pipelines could be improved and whether a voluntary code of practice is the right mechanism to achieve this. This could be based – as appropriate - on the Upstream code of practice on access<sup>30</sup> which outlines best practice and expected behaviour of those who conduct negotiations for access to infrastructure, as well as providing a more transparent capacity booking and pricing information.

5.24. It is understood that there are a range of factors that will need to be considered and may naturally limit the ability to improve access further, such as carrying capacity, complications around parcelling different product types, contamination, and access to ingress and egress points. There will also be a need for the task force to fully consider competition issues and to involve all interested parties in the assessment and recommendations that it makes.

5.25. The task force will also consider access to other infrastructure as appropriate and make recommendations on this.

**Action Three:** In relation to other potential market distortions, government will do further work to assess benefits, costs and risks.

## Action to support supply resilience

5.26. As outlined earlier the UK Guarantee Scheme may be available to support debt raised to make investments in refinery assets of exceptional systemic importance. Each proposal will need to be assessed individually and all guarantees issued must comply with EU state aid rules.

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<sup>30</sup> <http://www.oilandgasuk.co.uk/cmsfiles/modules/publications/pdfs/ICoP%20revised%202013.pdf>

5.27. In addition to this, government will continue to work to ensure current measures are calibrated to support critical national infrastructure. We are also considering what further incentives to invest in infrastructure resilience could possibly be provided, and whether such incentives would offer value for money. Legal issues, including state-aid, will also need to be considered.

## Regulation

5.28. As set out earlier government has already taken significant action to reduce the burden of regulation. Whilst this represents significant progress, government considers that it is right to look at what more can be done.

**Action Four:** The midstream oil sector will work together to identify opportunities for making regulation smarter in order to reduce the impact that the regulatory framework has on the sector without compromising its aims. This exercise will be undertaken in collaboration with government and regulators.

5.29. The task force will be commissioned specifically to undertake this exercise, the objectives of which are as follows: This will include:

- Identifying and making recommendations for streamlining administrative and compliance processes.
- Identifying where implementation and enforcement of the regulatory framework is disadvantaging the UK sector relative to their EU counterparts and make recommendations on this.
- Identifying and making recommendations for addressing level playing field issues between sectors

5.30. The programme of work proposed by industry will need to be developed with and agreed by government. In light of the timetable proposed, the task force must effectively prioritise and plan its work, taking into account and effectively accommodating the fact that there are limited resources across government and industry.

5.31. It is not the intention of this exercise to make recommendations that would compromise the delivery of environmental, health and safety or other outcomes originally envisaged by the regulatory framework. Any recommendations must clearly demonstrate the cost-benefit case and be evidence based. This will require robust evidence and data.

5.32. Finally, there are a number of existing and proposed better regulation exercises taking place across government, and the task force will need to ensure that it manages dependencies and overlaps effectively and maximises opportunities to deliver shared outcomes. Where appropriate the task force will represent the interest of sector in these exercises.

5.33. Recommendations from the task force will be presented to the Minister of State for Energy.

## Compulsory Oil Stocking (CSO) Policy

5.34. The UK is obligated by the EU and International Energy Agency to hold stocks of oil and refined products to release to the international market in the event of a global supply disruption.

The UK holds 61 days of consumption, and the EU Directive requires that one-third of these stocks are held as finished product of petrol, diesel, and aviation fuel. At present government place obligations on refiners and non-refiners who supply more than 50,000 tonnes of oil product to the UK in a year.

5.35. In April 2013 DECC launched a consultation on whether the UK should establish an industry-owned and operated Central Stocking Entity (CSE), and also sought views on wider possible options for CSO policy in the UK that might improve resilience. In general, responses from industry indicated strong support for the establishment of a CSE, as this would allow obligated companies to better manage the CSO and incentivise development of UK storage capacity, so long as membership of the CSE was mandatory for obligated companies in the UK. In general industry respondents are firmly opposed to anything that would reduce their flexibility in meeting their obligations, particularly where this would increase their costs.

**Action Five:** Government will support the establishment of an industry-owned and operated Compulsory Stocking Entity (CSE) in the UK.

5.36. The consultation response has been published alongside the refining review, which sets out that the government supports the establishment of an industry-owned and operated CSE with mandatory membership for obligated companies in the UK. This would require primary legislation to implement. However, before government can agree to legislate for a CSE, the obligated companies must work together to deliver an acceptable roadmap for the CSE to government. This would in part address the practical considerations for a CSE, such as how it would take on increasing levels of the obligation and how it would ensure compatibility with IEA, EU and UK policy on oil stocking, but it would also need to address areas of concern raised in response to the consultation. In particular it will need to set out how the CSE will be governed in order to ensure that all obligated companies have a voice within the CSE, and that the best interests of the end-consumer are taken into account.

5.37. The consultation response also set out that the government will not make any further changes to CSO policy at this time, such as setting specific requirements on location of stocks, but notes that government will continue to monitor this.

5.38. The roadmap will be for obligated parties to take forward, although government stand ready to assist as required.

**Action Six:** Assess the current CSO levels on companies in the UK, including the differential between refiners and non-refiners.

5.39. There is a 'differential' between the obligation on refiners and importers, which was last reviewed in 2008. The current obligation is set at 67.5 days for refiners and 58 days for non-refiners. The differential is in place to try and ensure a level playing field between obligated parties, but the 9.5 day differential in obligation placed on refineries relative to non-refiners is a point of contention within the midstream sector. Refiners argue this should be reduced or removed to create a level playing field with non-refiners, while non-refiners argue it should be maintained or increased given refiners higher minimum operating requirements for refiners.

5.40. DECC has now engaged independent consultants to provide a research project on the appropriate level for the total obligation on companies in the UK now and in the future, including consideration of the differential. This independent research will help inform a decision by the DECC Secretary of State on whether the level of the obligation on refiners and non-refiners

remains appropriate in order to ensure current and future UK compliance with EU and IEA obligations, and to maintain a fair approach on different companies. The government is aiming for a decision on this to be taken in 2014.

## EU Fitness Checks

5.41. The European Commission is currently carrying out an EU Fitness Check assessing the regulatory burden placed on the sector by the EU. As most of the legislation impacting the refining sector originates from the EU, the UK government welcomes this initiative and has been actively involved in the EU Refining Forum and has lobbied the European Commission to bring forward the timetable for the Fitness Check.

**Action Seven:** The government will continue to work with the European Commission and other Member States as appropriate, to ensure the EU Refining Fitness Check process is completed urgently and that it delivers clear and decisive actions to remove unnecessary burdens.

5.42. The government notes that upcoming decisions on a number of EU Directives may place additional burdens on the sector, and in light of this the Commission may want to consider whether it is appropriate to delay taking any such decisions until the Fitness Check has been completed in September 2014.

## Annex 1 – Call for evidence questions

<b>General</b>	
1.	Please indicate in which capacity you are responding to this questionnaire; for example as a refiner, importer, wholesaler, retailer, a related industry, as a trade body, union or other independent party (indicating all those which apply).
<b>Part I: Understanding the UK national requirement for a resilient supply system</b>	
2.	How do you see the total UK and EU refined product demand changing over the next 20-50 years, and what product mix is likely to be required? What are the factors influencing this?
3.	Refined product is supplied into the UK market by domestic refineries and import terminals. In overall terms, how would you assess both supply routes in terms of capacity, reliability and diversity?
4.	With respect to your answer to the previous question (Q3): Are there any other considerations that need to be taken into account when making an appraisal of the UK refined product supply chain, from a security of supply and resilience perspective?
<b>Part II: Existing Downstream Oil Industry infrastructure and its contribution</b>	
5.	With respect to the different types of refined product; most importantly Diesel, Jet, Petrol and Heating Oil, what are the most likely short-term disruption events that you are concerned about; and which local UK supply envelopes are likely to be affected by these events?
6.	Taking a medium to longer term view, from your perspective which of the supply routes (domestic refineries or import terminals) offers greater resilience to supply disruptions and why?
7.	From the end user perspective, what approximate split between domestically refined product and imported product do you think would be most resilient? And what are the fundamental differences between these two sources of supply which lead you to this conclusion?
8.	If you have stated a view on the balance between imports and domestically refined product, what are the benefits and the risks of the approach you propose in delivering?



	<p>a) Secure supply (with good capacity, reliability, diversity and any other key attributes);</p> <p>b) Resilience to international supply disruptions (such as extreme weather, shipping problems, major accidents, or natural disasters)</p> <p>c) Impact on consumers and product pricing, and</p> <p>d) Environment - in relation local air quality, greenhouse gases and other local environmental considerations</p>
9.	<p>In your view, which geographical regions of the UK would be most affected by a refinery or import terminal closure in terms of:</p> <p>a) Disruption to supply?</p> <p>b) Jobs and skills?</p> <p>c) Adverse impact on associated industries?</p>
10.	<p>What are the direct and indirect economic (for example tax and wealth) and social benefits (for example jobs and skill development opportunities) derived from the areas of the UK downstream sector with which you are familiar?</p>
11.	<p>In the context of an uncompetitive UK Refining base which may not attract necessary investment, what factors pose the greatest challenge, how will they most likely impact the refining sector, and what are the likely consequences for the UK?</p>
12.	<p>In the context of Import infrastructure, what factors pose the greatest challenge to operating companies making investments and what are the likely consequences?</p>
13.	<p>If not covered in your answer to the last questions (Q11 &amp; Q12): what in your view is the impact of current UK and EU regulations and policies on the sector?</p>
14.	<p>What is the cost impact of current and forthcoming Regulations (in terms of Capex and Opex)?</p>
<b>Part III: Future development of the UK Downstream Oil Industry</b>	
15.	<p>How do you see the UK downstream oil sector evolving over the next 20 - 30 years, and what is your rationale for this? And specifically: will the downstream sector develop sufficiently fast enough and in a robust enough fashion to address the future refined product needs out to 2050?</p>
16.	<p>With respect to your answer to the last question (Q15): What are the risks and benefits of the future that you foresee?</p>
17.	<p>In your view (if not already covered in answer to Q11) how successful will the UK Refineries be in responding to future demands, and what are the uncertainties and constraints that will affect their ability to respond successfully?</p>
18.	<p>In your view (if not already covered in answer to Q12) how successful will the UK Import terminals be in responding to future demands, and what are the uncertainties</p>

	<b>and constraints that will affect their ability to respond successfully?</b>
<b>Part IV: Other potential steps to address the UK Downstream Oil future requirements</b>	
<b>19.</b>	<b>At the UK industry-wide level: do any factors restrict access to the UK refined product markets e.g. access to critical infrastructure such as jetties, the rail network or pipelines? If this is the case then:</b>  a) what needs to change?  b) how will your organisation benefit? and,  c) what are the supply security and resilience benefits?
<b>20.</b>	<b>What other external factors (if not already covered in answer to Q11) adversely impact the Refining sector (e.g. structural advantages elsewhere such as lower staff and energy costs) and how significant a role will these play in determining investment decisions?</b>
<b>21.</b>	<b>What other external factors (if not already covered in answer to Q12) adversely impact the refined product Import sector (e.g. structural disadvantage or lack of certainty) and how significant a role will these play in determining investment decisions?</b>
<b>22.</b>	<b>What steps could the UK government take to help create the right conditions to attract continued investment in the UK refining and importing sectors?</b>
<b>23.</b>	<b>Is there anything else not covered in your answers to previous questions that you would like to add?</b>

## Annex 2: Call for evidence respondents

**Airport Operators Association (AOA)**  
**Association of British Ports (ABP)**  
**BP Oil UK Ltd**  
**Chemical Industries Association (CIA)**  
**Downstream Fuel Association (DFA)**  
**Essar Oil (UK) Ltd**  
**Esso Petroleum Company Limited**  
**Greenergy**  
**Oikos Storage Ltd**  
**Petroineos Manufacturing Scotland Ltd**  
**Phillips 66**  
**Shell UK Ltd**  
**Simon Storage**  
**Tank Storage Association (TSA)**  
**Total Lindsay Oil Refining Ltd**  
**Trade Union member**  
**UKLPG**  
**UK Petroleum Industry Association (UKPIA)**  
**Unite**  
**Valero UK Ltd**

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