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## Economic Bulletin

# **DETERIORATING ENERGY SECURITY: WHY MPs SHOULD SAVE FRACKING**



- Domestic production of primary fuels has fallen by 31% since 2009.
- Net energy import dependency has reached 49%.
- By 2020, up to 70% of the natural gas used in the UK could be imported.
- Fracking for shale gas can be a powerful way to increase energy security.

### **1. INTRODUCTION**

An amendment to the Infrastructure Bill introduced today would effectively ban fracking on environmental grounds. If this amendment is passed it would reduce energy security and would be a disgraceful failure duty by MPs who are supposed to defend Britain's economic well-being.

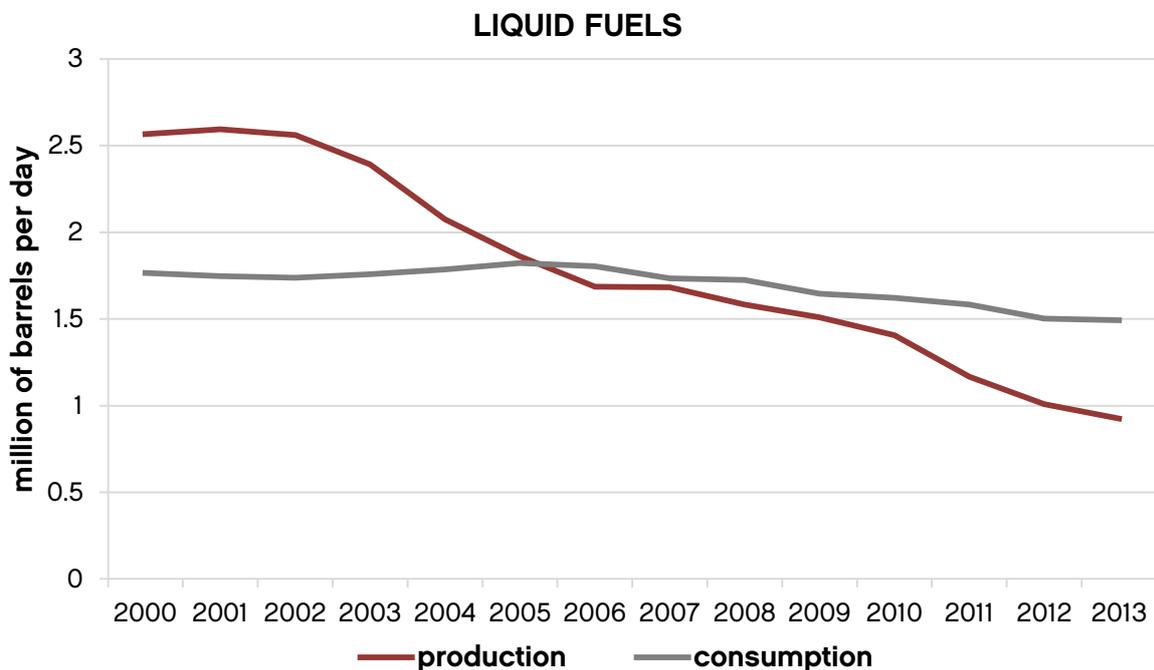
The UK's domestic production of primary fuels fell by 31% between 2009 and 2013 and the trend appears to have continued in 2014. In the third quarter of last year, the UK's total energy production fell by 4.6% compared to the year before; this was mainly due to a fall in



oil production. According to the Department of Energy and Climate Change (DECC), the UK's net energy import dependency has now climbed to 48.7%. This is of particular concern because this rise in energy import dependency reflects almost entirely a fall in primary energy supply rather than an increase in imports. The free trade of energy is of course desirable but it is also clear that the health of the British economy is increasingly vulnerable to disruptions in energy supplies abroad. The UK must embrace new domestic energy production, including through fracking, if it is to boost security of energy supplies.

## 2. OIL

The Wood Review estimates that Britain has extracted around 42 billion barrels of oil so far from the North Sea and that a further 12 to 24 billion could potentially be extracted. The Government estimates that the UK's total proven and probable oil reserves amounts to 746 million tonnes. According to DECC in 2013 the UK produced 0.9 million barrels of oil per day and consumed 1.49 million. Data from the US Energy Information Administration (EIA) demonstrates the decline in liquid fuel production in the UK between 2000 and 2013 as well as the continued decline after changes in the tax regime in 2011. Domestic oil production has fallen from 74.7 million tonnes in 2009 to 44.5 million in 2013. The third quarter of 2014 saw a particularly sharp slowdown of 11% compared to the year before.



## 3. NATURAL GAS

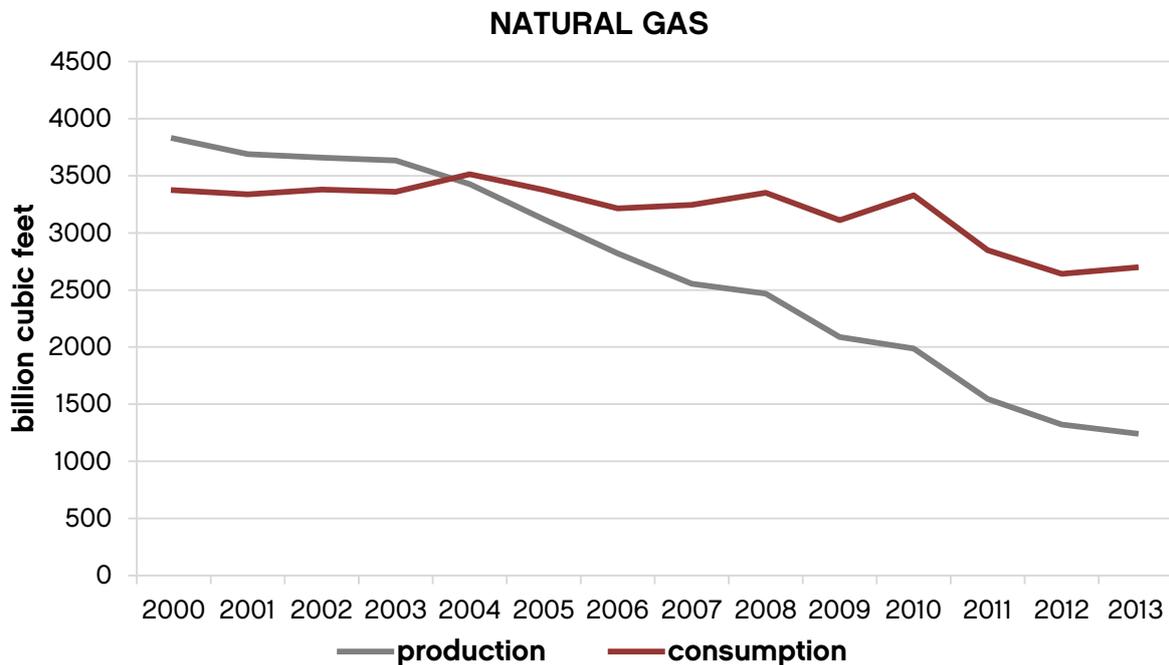
The Oil and Gas journal estimates that the UK's proven natural gas reserves were as high as 8.6 trillion cubic feet. According to DECC, in 2013 the UK produced 1.24 trillion cubic feet of natural gas and consumed 2.7 trillion. Data from the EIA shows the decline in natural gas production between 2000 and 2013 which seems mainly due to the fact that the discovery of new reserves and new production has not kept pace with the maturation of existing

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fields. According to DECC in the Natural gas imports and exports review in 2013 the majority of imported natural gas came from Norway (58%), Qatar (19%), the Netherlands (16%) and Belgium (7%).

Of particular concern is that Britain's gas import dependency is rising significantly. By 2020 it is estimated that 70% of the natural gas which is used in the UK could be imported. Domestic production of natural gas has fallen by almost 40% from the equivalent of 59.7 million tonnes of oil in 2009 to 36.5 million in 2013.



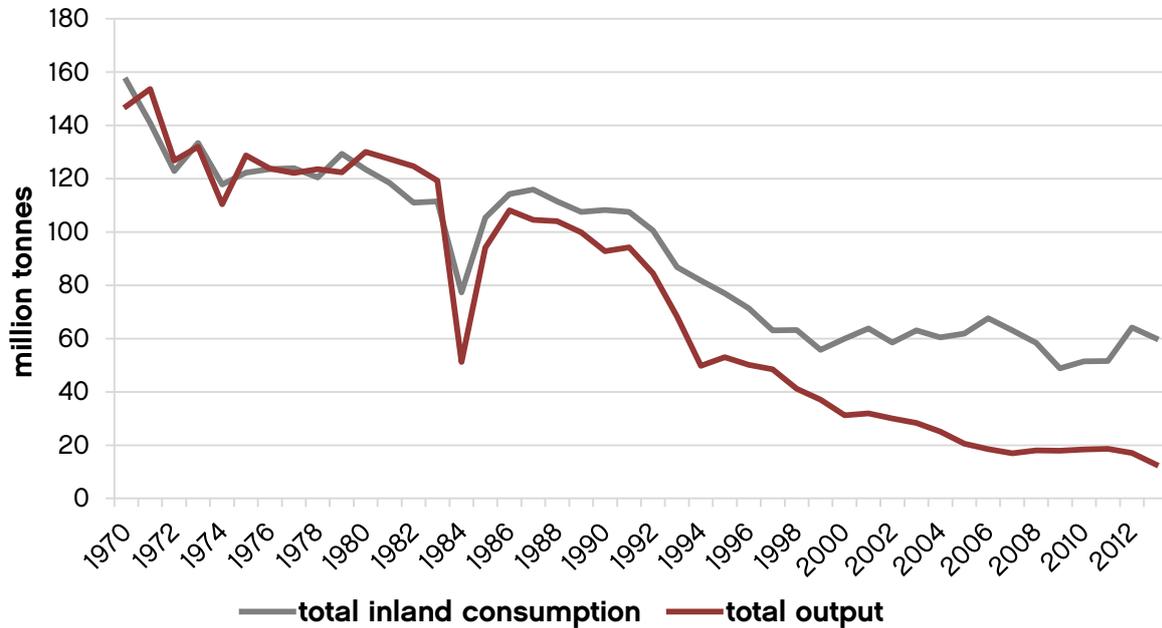
#### 4. COAL

The United Kingdom's possible, probable and proven deep coal reserves are estimated to be 2.3 billion tonnes and the surface coal reserves were 852 million tonnes. Coal mining in the UK is coming to an end, with production in 2013 falling by a quarter to a paltry 8 million tonnes. Overall the total consumption of coal was 60.1 million tonnes in 2013. DECC reports that Russia was the source of 40% of total coal imports in the third quarter of 2014.

In the richer parts of the developed world coal has become unfashionable for environmental reasons. However this does not change the fact that coal remains one of the main fuels in the UK's electricity generation; more than 20% of electricity generation has coal as its source.



## COAL



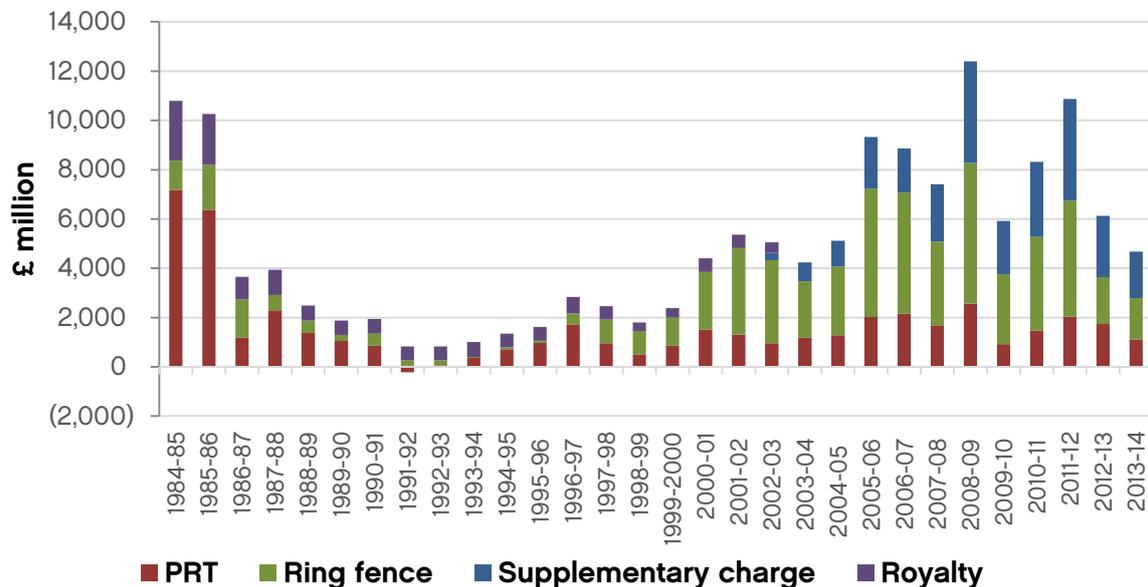
### 5. NORTH SEA FISCAL REGIME

The fiscal regime for the exploration and production of oil and gas is complicated and burdensome. According to DECC in 2013 the tax revenue from the oil and gas sectors accounted for about 15% of UK corporate tax receipts. DECC reports that in 2012-2013 tax revenues from UK oil and gas production dropped by around 45% to £6.1 billion and then fell again in 2013-14 by around 25% to £4.7 billion.

The tax regime that applies in the exploration and production of the UK's oil and gas has three elements: the Ring Fence Corporation Tax (RFCT), the Supplementary Charge (SC) and the Petroleum Revenue Tax (PRT); until 2002/03 there was also revenue from royalties. The RFCT is the standard corporation tax that applies to all UK companies with the addition of a 'ring fence' and is currently 30%.



## GOVERNMENT REVENUES FROM OIL AND GAS FIELDS FOR THE UK BETWEEN 1984-1985 AND 2013-2014



The RFCT offers the opportunity of a tax free allowance in the first year for all capital expenditure and is designed in such a way to prevent the reduction of taxable profits from other business activities. In 2011 the government introduced a brown field allowance for incremental projects in existing fields and a £3 billion field allowance to support investment in the West of Shetland. Also, the Ring Fence Expenditure Supplement was introduced for companies that do not yet have sufficient taxable income for the RFCT.

In March 2011 the rate of the Supplementary Charge (an addition to the corporation tax) increased from 20% to 32%. The PRT is a field-based tax that charges the profits from the production of oil and gas which were sanctioned before 16 March 1993 and is currently set at 50% after a series of allowances. As the EIA explains, the marginal tax rate for fields that are subject to the PRT has increased to 81% of their profits from 75%, fields that are not subject to the PRT now pay a 62% tax which is up from 50%; qualifying new fields pay 30% of their profits.

The tax regime appears to be ‘chasing’ increases in the oil price and changed three times in 9 years. The 2011 tax increase was considered a short term deficit reduction measure although revenue has in fact fallen alongside production in the last two years. The EIA argues that the higher tax rates have made the UK oil fields less competitive, which were already strained by high operating and decommissioning costs. After the implementation of the new tax regime in 2011, concerns have been raised about the cost of development of several oil and gas fields including Chevron’s project on the Rosebank field and the Statoil project on the Bressay field.



According to an Oil and Gas Activity Survey, the average unit operating costs have risen to £17 per barrel of oil equivalent, while the number of fields with an operating cost greater than £30 per barrel of oil equivalent has doubled in the last year.

Whilst in the Autumn Statement, the Government announced a small cut in the Supplementary Charge from 32% to 30%, a much more radical shake-up of the North Sea oil taxation must be carried out. This is especially the case in the context of falling energy security and the global collapse of oil prices.

## **6. WHY WE MUST FRACK**

DECC data shows that electricity generation in the UK is increasingly reliant on natural gas. In Q3 2013, coal was the source of 33.6% of UK electricity generation and gas contributed 26.6%. Over the period of just one year, there has been a remarkable change. By Q3 2014, coal had fallen to 20.1% and gas had climbed to 38.6%. The share of renewables, nuclear and other energy sources remained similar in 2014 to 2013. As coal production falls, the strain on natural gas will continue to rise. Given that domestic production of natural gas is falling, this must mean that the UK's energy import dependency will rise. It is therefore particularly important that we enable fracking as a tool to secure the UK's supplies of energy.

Fracking is the procedure of drilling deep into the earth before a high-pressure water mixture is directed at the rock in order to release the gas inside. The UK's shale gas reserves are not yet known but according to a British Geological Survey (BGS) that was released in July 2013 the Bowland Shale alone was estimated to have around 1,300 trillion cubic feet of gas. Even if the UK's reserves are not as high as is currently thought, shale gas can still be a tool to help reverse the decline in energy production.

A report from energy consultants Poyry outlines the consequences for import dependency if fracking is banned in the UK. If Lancashire shale gas production is allowed to proceed, gas prices will be between 2% and 4% lower from 2021. Furthermore, by 2030, gas import dependency will reach 58% compared to 79% without any shale gas production. If shale gas is extracted, the result would be a transfer of £3.3 billion a year on the UK's trade balance from debit to credit.

There are of course also important environmental reasons to support fracking. As is made clear in a CPS report, "Why every serious environmentalist should favour fracking" the extraction of shale gas can be used to help fight against the terrible PM2.5 air pollutant from which more than 3 million people die a year. In addition, in a conclusive report, The Royal Society and the Royal Academy of Engineering argue that the "health, safety and environmental risks can be managed effectively".

The development of new energy supplies in the UK is decreasingly related to what happens below the ground and increasingly influenced by the regulatory framework, fiscal

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regime and technological developments above the ground. Setting an energy policy which would effectively ban fracking would condemn Britain to ever higher energy import dependency and damage our reputation as an open economy. The result would be higher prices, lower investment and increased dependence on uncertain supplies including from Russia.

MPs should vote today to save fracking.

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