***CASE STUDY: A LONG TERM VIEW OF THE UNITED KINGDOM’S NATURAL GAS REQUIREMENTS WITH SPECIAL EMPHASIS ON THE OPPORTUNITIES FOR US LNG SUPPLies***

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## Overview

The UK was one of the early Signatories and Adopters of the Kyoto Protocol - now nearly ten years ago. This was under the Labour Government of Tony Blair (1997-2007) which, surprisingly, had no Secretary of State for Energy, the position having been abolished by John Major (the prior Conservative Prime Minister). However, it was Blair’s successor Gordon Brown (Labour) who established the position of Secretary of State for Energy and Climate Change (October 2008) with Ed Miliband the first holder of the newly defined post.

Ed Miliband is today the Leader of the Labour Party in Opposition to the current (since May 2010) Conservative Prime Minister David Cameron (in Coalition with the Liberal Democrats led by Nick Clegg, Deputy Prime Minister). The position of Secretary of State for Energy and Climate Change was assigned to the Liberal Democrats with Chris Huhne as the first holder, succeeded by Ed Davey as the incumbent.

Despite these changes of government and of Secretaries of State there continues to be wide all-party support for the UK to be in the vanguard of tackling climate change – indeed, the UK has demonstrated a passion in setting itself challenging targets related to emissions – targets which have been the subject of UK legislation in three Energy Acts (2008, 2010, 2013) and a Climate Change Act (2008). This latter act introduced the world’s first long-term legally binding framework to tackle climate change (involving the setting of four Carbon Budgets, so far, which make commitments through 2027).

A key component of this energy transformation process is Electricity Market Reform (EMR) whereby the UK’s future electricity supply is stated to become *secure, low-carbon* and *affordable*. This is accepted by government as “an unprecedented challenge” particularly as it will also apply to demand increases arising from the intended electrification of transport and heating systems. Further, and in line with EU initiatives, the UK has set electricity decarbonisation targets for 2020 and 2050; the UK’s unilateral target for 2050 is for an 80% reduction of GHG emissions from all sources relative to a 1990 baseline.

The question is: How can fossil fuels possibly compete long term in this severe environment?

Firstly, existing coal-fired plants will largely close by the end of 2015 as they will not be able to comply with stringent emissions limits – and any application of CCS at scale and in time appears to be impossible. Then, with new nuclear projects struggling to gain traction, the realities of the total contribution possible from renewables – along with their intermittent nature of supply - it appears to many energy observers that natural gas offers the only viable solution for power generation for the short term and, quite likely, for the much longer term.

UK indigenous supplies of conventional gas (from the North Sea) are dropping rapidly from a peak in 2000 and unconventional gas sources are yet to be realised. However, onshore shale gas exploration has just started, but against strong local public protests. Meanwhile LNG imports (since commencing in 2005) have behaved as a swing supply source in competition with the UK’s established gas pipeline links across the North Sea.

Overall, “gas will continue to play a role right through to 2050” – quote from Ed Davey (9 September 2013) – and many foresee that LNG imports will be a growing component of satisfying this demand.

Furthermore, in this period CCS is expected to mature and be applied to gas-fired power generation thereby satisfying the emissions reductions targets to ensure that gas-fired power generation can be classified as “low carbon”.

## Methods

The author’s own desk research, discussions with independent and industry professionals and participation in numerous energy and climate change conferences, including in London at the Department of Energy and Climate Change, provided the material for development of a comprehensive review of UK energy policy history in order to analyse how realistic current long term energy and climate change policy is likely to be.

Common and consistent themes have been identified from the available sources which give indications for the supply of gas in different sectors and how the application of gas will change going towards 2050. Comparison of data from government sources, advisory and research bodies have been amalgamated to quantify UK gas demand at key dates into the future.

## Results

Natural gas is found to be a key energy requirement for the UK in the near term to 2025 but then to diminish by 2050 if government policy on climate change is delivered 100% as contemplated. The reality of such delivery is very questionable given the mixed success of policy delivery on energy issues in the past. It is not unexpected that policy might change, for example with change of government, even though for the last 10 years all UK governments have taken a strong approach to addressing climate change and pursuing energy objectives to reduce emissions in line with the Kyoto Protocol and with European Union targets.

However, 100% delivery of a very challenging target has to be demonstrated by real action and in a timely manner – some projects and investment decisions have slipped and may jeopardise progress towards the prime UK climate change target of an 80% reduction in GHG emission in 2050 relative to a 1990 base. The introduction of several new nuclear power generation projects has slipped and only 1 is possible to reach FID in the near term. CCS demonstration projects are down to 1 that has to be finally approved and another that is under consultation. Targets for decarbonisation of the energy system at 2030 are not to be set till 2016 leaving investors uncertain as to what projects to pursue. Conversion of home heating and vehicles to electricity has yet to be fully informed to the public and a favourable – or otherwise – reaction accommodated and pursued to delivery.

Gas - established, convenient and cheaper than electricity for consumers will be difficult to displace. Its long term application may be hard to deny despite government ambitions to switch to the “electric future”.

## Conclusions

The UK gas market can be considered as a highly risky place for new entrants. All the signs are that government policy is geared towards a low carbon, all electric future and nuclear plus renewables will be the big energy sources. However, the public are not so convinced about either nuclear or renewables (particularly onshore wind farms) and are not going to be inclined to discard their gas boilers at home for complete new electric heating, cooking and hot water systems.

Separately, new LNG to the UK has a problem of access – unless a supplier wishes to apply to construct a new receiving terminal – which is not out of the question since it and the supplier would enhance security of supply which is a UK government objective. However, the economics of this are questionable given what appears to be an oversupply position of LNG in about 10 years time. The exception to this could be for a fast mover to acquire import rights at the Isle of Grain LNG terminal for a suitable period and be in a position to have a supply cost structure that would make economic sense against the market uncertainties.

Alternatives for market access exist in continental North West Europe (NWE): a large open access LNG receiving terminal at Zeebrugge in Belgium operated by Fluxys and which is a part of the Belgium gas network and actually a hub for the whole of North West Europe with access down to Italy for example and the ability to handle gas from Russia. The terminal is also linked to the Interconnector pipeline to the UK and gives an access thereby to the UK market. In the Netherlands at Rotterdam the GATE LNG receiving terminal is open for business to receive, store and regasify LNG for sale to NWE markets and potentially via the BBL pipeline to the UK.

For a US LNG supplier looking to export to the European market these opportunities might be worth investigating – more so that the UK itself.