

Running on Empty Coming to Terms with UK Gas Dependence

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Executive Summary

We face an uncertain energy future, but one thing is for sure: we will be more dependent on gas in the next decade, and more of that gas will be imported. A low-carbon economy, once created, promises to reduce our dependence upon fossil fuel exporting countries as well as cutting our carbon emissions. However, between here and that promised land lies a decade of difficult choices. This is a reality which is still not being properly addressed by policymakers. We must come to terms with the implications of gas dependence, and the price we might have to pay to deal with it.

With old coal-fired and nuclear plants closing down in the latter half of the next decade before sufficient new nuclear, renewable or coal plants with carbon capture and storage can be built, we will be relying on gas to keep the lights on. This “energy crunch” in generation capacity will stretch our resilience – and our faith in liberalised markets – to the limit. It also raises serious questions about the price we will have to pay for our security – and whether we will have to sacrifice climate goals for energy security.

A reliance on gas entails its own challenges. Decades of abundant gas from the UK Continental Shelf have bequeathed Britain with a legacy of gas dependency in our power generation sector, as well as in domestic heating. North Sea gas reserves have peaked and are dwindling at 3-7% per year; the UK has now switched from being a net exporter to relying on European and global markets for energy supplies. In the 1970s nearly 50% of the UK’s energy was imported, exposing us to OPEC’s ability to manipulate energy supplies. This is not a good precedent, although thankfully gas does not yet have an equivalent cartel.

UK energy policy has long been set in the context of secure and abundant domestic supplies. It is time to reassess it for the new challenges we face, both in decarbonising our economy and securing energy supplies. The risk of severe price shocks is once again a real threat to the British economy and government must deliver a coherent strategy to head it off. The potential damage to the British economy from energy insecurity is enormous, while the proposed approach in this paper would cost very little to implement.

In the long term, the measures we need are well known and need little repetition here: maximising energy efficiency, delivering diverse sources of renewable power in a cost-efficient way, setting the frameworks for CCS and new nuclear, accelerating investment in the grid, and incentivising investment in low-carbon generation.

In this paper, we look at the coming decade, and see worrying signs of complacency. Whether we like it or not, the UK will be more dependent on (increasingly imported) gas. This implies the need for an energy dimension in British foreign policy, based on a rational assessment of our national security priorities.

Several policy responses are available, and used in a co-ordinated manner they can alleviate the problem. Improved European regulation would be ideal – the EU currently has sufficient storage capacity, import contracts and infrastructure to deal with any supply disruption if the Commission could open up the market more. However, we cannot rely on this: British governments have been humoured and ignored for decades on energy market liberalisation and there seems little prospect of a radical improvement any time soon.

The British Government should therefore act in our national interest. The Foreign and Commonwealth Office (FCO) is uniquely placed to build strong international strategic partnerships which will help energy companies agree Liquefied Natural Gas (LNG) supply contracts with exporters. It must improve its knowledge of LNG sources, which are essential for making up the difference between demand in the UK and available supply from pipelines and the North Sea. At present, the UK only buys 4% of global LNG production on a divertible basis. With demand for energy rising and other governments willing to intervene, the UK is in a weak position.

It is clear from the recent history of this issue that leadership is required at senior ministerial level. Ensuring that the FCO and the Department for Energy and Climate Change (DECC) work alongside each other on a common strategy is essential for ensuring resilient and secure energy supplies. The energy dimension of foreign policy must be based on a realistic energy strategy – not wishful thinking on delivery of renewables. The challenge of energy security is not insurmountable but it requires determined, strategic leadership from government.

- **The FCO should have energy security as a strategic priority, protecting British national interests.** Leadership at Ministerial level has worked in bringing climate change up the agenda of the FCO. By making energy security a strategic priority and maintaining a consistent focus, relations with key exporters can be developed to deliver. The FCO's network and capabilities give it a unique ability to advance this agenda. FCO and DECC ministers can have a positive impact through high-level engagement.
- **A senior figure within the FCO – either ministerial or senior civil servant – should be tasked with overseeing energy security.** If energy security is made a strategic priority it needs a leader within the FCO who can ensure that it is not neglected. Embedding the importance of energy security throughout the FCO is vital and needs a senior leadership figure.
- **The FCO should expand its expertise in energy using secondments and external hiring.** Government-to-government relations are critical in securing supplies, especially where energy companies are effectively a branch of the state. To enable successful business-to-business negotiations, the FCO needs to be actively pursuing energy diplomacy with key states. The FCO's long tradition of secondments to major companies including Shell and BP should be expanded: it should incorporate the big six energy companies to ensure a high level of understanding of the issues, in particular around LNG.

- **The British Government must support the EU Security of Supply Directive and shape it in Britain's national interest.** Liberalising access to storage will improve resilience across Europe without needing any new infrastructure by making better use of existing storage. We should push for full publication of European storage use, as already exists in the UK.
- **The European Commission should "name and shame" countries which have excess storage capacity but do not open it to others.** This would prevent member states and individual companies hoarding and under-utilising gas storage facilities, which makes Europe less resilient to external shocks and increases prices through inefficiencies.

1. The situation

The UK faces two energy challenges simultaneously: first, the rapid shift from being self sufficient in gas to being a net importer, and second, managing the transition away from fossil fuel dependence towards a low-carbon economy. To this could be added a third, related challenge: how to attract sufficient global capital to double our rate of electricity asset investment.

During the past twenty years, the domestic energy market has been significantly liberalised, delivering greater efficiency, greater diversity of supply and the lowest average prices in Europe.¹ It also contributed to reducing the UK's carbon emissions as coal fired generation was replaced by gas. However, as we argued in *Credible Energy Policy*, the policy framework built in the 1980s in a time of surplus and over-provided infrastructure is no longer fit for purpose.²

Figure 1. The UK's exports and imports of gas (GWh equivalent)³

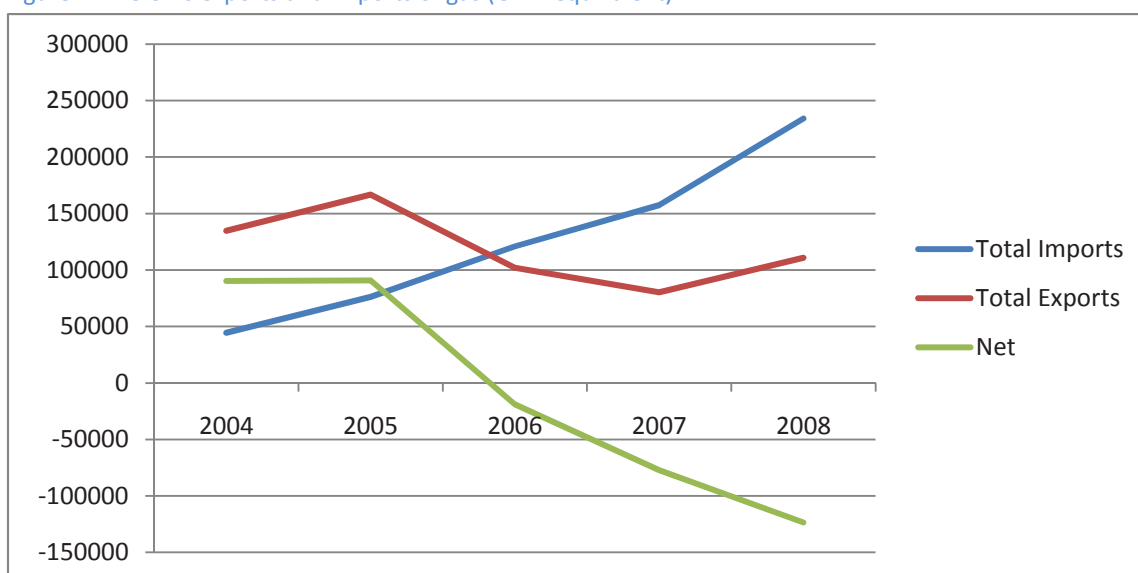
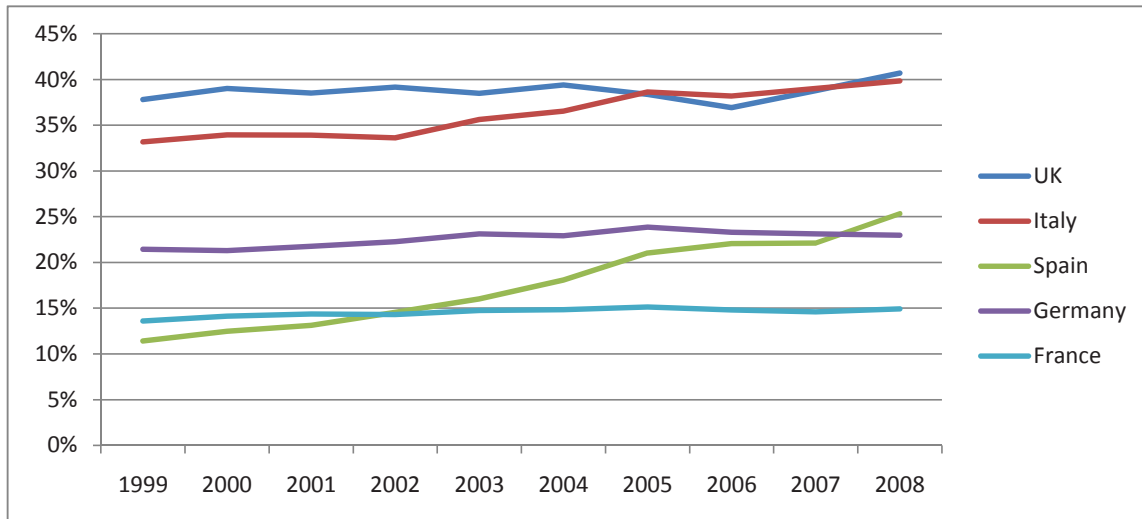


Figure 1 shows how rapidly the UK has become a net importer of gas, and highlights a worrying trend of further dependency. National Grid predict that 69% of gas will be imported by 2018/19, up from 46% in 2010/11, which is an enormous shift in a short space of time.⁴

Gas is of vital importance to British energy security because we use so much of it, both as a domestic and industrial fuel, as well as for electricity generation. The UK consumes much more natural gas per unit of GDP output than Germany, France, Spain and even Italy. This is because natural gas makes up a higher proportion of our primary energy supply than any of these countries (Figure 2).

Figure 2. Natural Gas as a percentage of primary energy supply⁵



The “Dash for Gas” in the 1990s saw new gas-fired electricity generation rapidly replace coal power plants, following the earlier displacement of coal by gas as the principal fuel for home heating. As the energy industry was privatised and opened up most new entrants built Combined Cycle Gas Turbines (CCGTs), largely on the grounds of cost-effectiveness.

This was not without its benefits to the UK. As well as low prices for consumers, the relatively lower carbon intensity of gas compared to coal allowed the UK to exceed its Kyoto targets, with greenhouse gas emissions expected to be about 23% below 1990 levels by 2010 – well below the target of 12.5% set out under the Kyoto agreement.⁶ However, North Sea supplies have peaked and are now declining at 3-7% per year,⁷ and in the short term, our reliance on gas is only likely to increase, turning this solution into a new problem.

As the 1960s nuclear plants and 1970s coal plants are decommissioned, CCGTs are the only off-the-shelf technology capable of being built in time. In effect, for the next decade of energy policy, technology choice is driving fuel, rather than the other way around.

This increase in gas reliance was entirely foreseeable and results from decisions made on other technologies by policymakers. For example, the 2003 Energy White Paper was strongly against nuclear and prevented the timely replacement of plants facing decommission. Years of dither and delay now risk causing a very real supply gap for the UK.

Meanwhile, “business as usual” and more aggressively low-carbon scenarios for new electricity generation both foresee an increase of gas in the UK’s fuel mix in the coming decade.⁸ Whatever assumptions are made about delivery of new generating capacity, before the 2020s a sharp increase in gas consumption is inevitable because of the long timescale for replacing generating plant.

The Large Combustion Plant Directive

Under the European Large Combustion Plant Directive (LCPD), nine of the UK's older coal- and oil-fired plants, representing 15% of UK power supply, will close by the end of 2015 – or as early as 2013 if they burn through their quota of operating hours faster than expected. The LCPD requires coal plants to massively reduce their emissions of sulphur dioxide and oxides of nitrogen. Retrofitting Flue Gas Desulphurisation equipment is worthwhile on newer, more efficient plants (e.g. Drax) but not on older ones. The proposed Industrial Emissions Directive (IED) threatens early closure for further plants which will have complied with the LCPD.

Almost simultaneously, many of the UK's nuclear power stations will be pensioned off – by 2016, 6 out of the UK's 10 nuclear power stations are due to close. Their replacements will not start to come on line before 2018 at the earliest. This assumes a massive streamlining of the planning process.

This brings the UK to a position unfamiliar in recent history: that of being dependent for energy supplies on global and regional markets. In the early 1970s net imports of energy peaked at nearly 50% of UK consumption, but those imports declined rapidly as the UK continental shelf was exploited.⁹ Import dependence does not necessarily equate to energy insecurity: Japan, for example, imports 40% of the world supplies of LNG, but it does so successfully based on a supportive policy framework. Since the 1980s, UK energy policy has been made in the context of North Sea oil and gas being plentiful and reliable; the new reality is much less benign.

Liberal markets in a statist world

A further complication for the UK is the relationship between our liberalised energy markets and the much more statist approach of other EU members and especially of energy exporting countries. While theoretically, there should be no problem in having a liberalised energy market and securing sufficient supplies, the fact that most energy producing states have gas companies closely linked to the government leads to a challenge. The British government no longer directly controls the energy sector in the UK, rightly preferring a well-regulated competitive market. Given that some European gas companies are owned to a significant degree by their governments (for example ENI is 30% owned by the Italian government, while GDF Suez is 35.6% owned by the French government) the hands-off approach of the British government could be considered a competitive disadvantage.

Because the UK has a liberalised market but the rest of Europe does not, British consumers face much more volatile prices than they would if the EU was wholly liberalised, with cheaper energy on average but much bigger spikes when supply is tight. In evidence to MPs, Centrica described this as the UK "suffer[ing] from being the gas bank of Northwest Europe."¹⁰ This is a direct result of a market structure which was designed for very different circumstances. Markets can continue to deliver lower prices for consumers than alternative models. The question now, though, is how do we get the supply into our market? This is why the challenge to the UK of energy security is different from other European countries and why a well thought through strategy is essential.

If infrastructure and market regulation were the only elements of the problem, solutions would be fairly simple. However, the political situation is not helpful. Russia's dominance of gas supply to much of Europe gives it significant leverage which it has been prepared to use for political ends. Splits in approaches to Russia among member states have left the EU unable to speak with one voice or to develop robust policies to protect supplies. Without appropriate policy decisions, as the UK becomes more reliant on imports from the rest of the EU the indirect effects of likely disputes in Eastern Europe will become more and more pronounced.

The challenge facing the UK is therefore significant but not insurmountable. Ensuring security of supply to a liberalised market in a world of national champions requires careful design of both regulation and diplomatic strategy. The government must find its role in building international relationships and creating space for any company delivering supplies to the UK to compete on level terms with the national champions of other countries.

Pipelines, Storage and Interconnectors

The North Sea's decline not only causes problems for Britain but will also limit the extent to which the UK can rely on its most historically reliable importer of gas, Norway. Norwegian reserves are also in decline, which means the UK cannot expect to make up the whole of our supply gap with Norwegian gas. The decline of North Sea reserves will, in the long-term, tilt European markets to other suppliers, namely Russia and Algeria, neither of which is at present an established supplier to the UK. Neither, it must be said, are they particularly attractive as principal energy supplier in comparison to Norway. Because there are long term contracts for Norwegian gas with much of the rest of Europe, the UK is seen by the Norwegians as "not a priority" customer, although in practice the risk is one of price spikes rather than physical supply.¹¹

Of the 300 billion cubic metres (bcm) per year of natural gas imported into the EU 130 bcm (40%) is currently imported through pipelines from the former Soviet Union. Norway and Algeria are the other major suppliers, together supplying around 40%, with the rest made up of lots of smaller sources.¹² There are several ongoing projects to deliver new pipelines from Russia and the former Soviet Union, most notably Nabucco, which would take gas from Central Asia via Turkey, and its main rival South Stream, which would transit through Russia but not Ukraine. The controversial Nord Stream pipeline, which bypasses much of Eastern Europe, would also have profound effects on energy security at a European level by isolating many newer EU member states. As the UK becomes more dependent on imports these networks will become much more important for British energy security.

Before the decline of North Sea gas supplies there was little need for storage or interconnectors as extraction rates from the North Sea could be varied to suit demand. Now that the UK is exposed to more volatile global markets, storage and interconnection are vital. What is striking is that the UK's liberalised energy market has delivered the new infrastructure we need, but has not seen significant flows of LNG imported. In the past few years, 24 companies from 11 countries have built supply infrastructure in the UK (interconnectors, LNG terminals etc) with a greater capacity than the North Sea's annual production.

2. Potential Solutions

In the long term, the solutions are well understood: reducing our dependence on fossil fuels through a combination of energy efficiency, smart grids and low-carbon power sources. However, this paper argues that we need to acknowledge the reality of our greater reliance on gas in the short term and explores the potential that LNG has to meet our growing energy gap. By planning for this challenge we can reduce the overall cost of meeting the energy gap – which if not addressed properly could cause untold economic damage. This in turn leads us to a re-ordering of priorities in our foreign policy.

Actions taken at the European level could benefit UK gas security. The European Commission's Third Package of energy reforms, passed by the European Parliament in 2009, should improve the efficiency of the energy sector and economic competitiveness across Europe. Particularly relevant is a proposed gas security of supply regulation. This would formalise some of the actions taken during the January 2009 gas crisis, placing shared responsibility on member states to help the gas market cope with a crisis. It has the potential to radically improve the efficiency of how Europe as a whole can ensure energy supplies.

Additionally, a more pro-active stance from the British government towards gas exporting countries should help deliver long-term supplies, in particular of LNG, insulating the UK from the risks of supply disruption in Europe.

These approaches are likely to be most effective in combination. Better European market structure would make pipeline imports and storage more cost-effective, while a more active approach from the Foreign and Commonwealth Office (FCO) would make LNG supplies more reliable. Better management of storage across Europe would make the whole continent more resilient at minimal cost.

LNG: Diversity in Supply

The first cargo of LNG was delivered to the UK in 1964, with a shipment arriving at Canvey Island.¹³ While LNG supplies were eventually displaced by North Sea supplies, they are certainly not a new feature of energy supply in the UK. Furthermore, LNG is a major part of the global gas market, supplying countries without indigenous supplies such as Japan, South Korea and Spain.

LNG is an attractive solution for energy supplies over long distances because pipelines are much less viable than shipping. The gas is cooled to -161 degrees Celsius, massively reducing the volume to a scale where it can be loaded onto ships and delivered anywhere in the world.

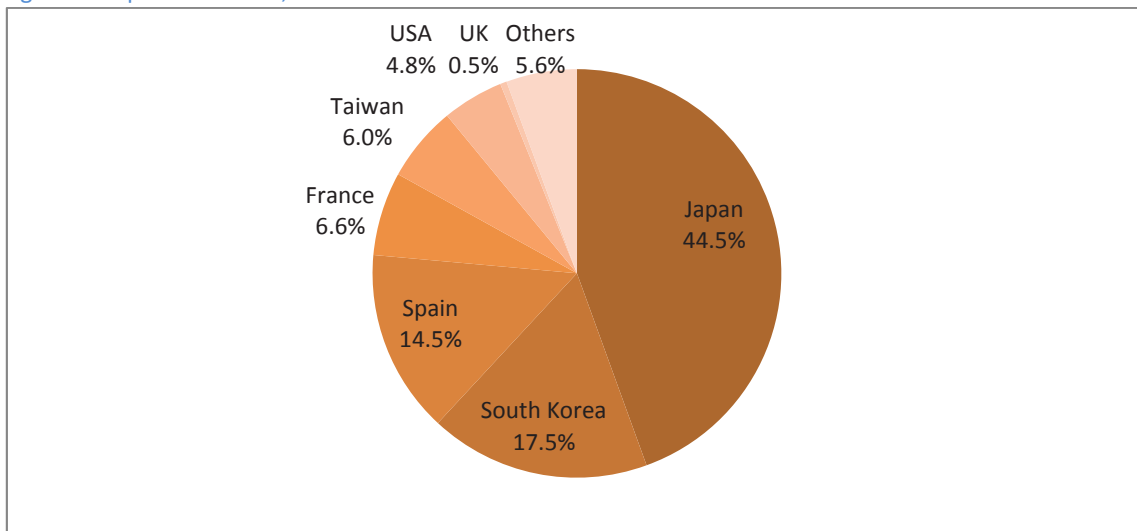
LNG is often promoted as a solution to the UK's reliance on dwindling North Sea imports and potentially unreliable continental supplies. This is reflected in the significant investment in infrastructure around the UK. There will be nearly 40 bcm capacity for LNG imports alone by 2011, compared to less than 100 bcm total demand.¹⁴ Combined with pipelines from Norway and interconnectors with the Netherlands and Belgium, there will be more than enough infrastructure to import adequate supplies.

Beyond Infrastructure: the Global Market in LNG

The nature of the LNG market is significantly different from the spot market in natural gas, largely due to the costs of liquefaction and re-gasification infrastructure, which lead to long-term contracts of the order of 20 years. The UK took only 0.5% of global LNG imports in 2008, with the majority going to Japan, South Korea and Spain.¹⁵ This increased to 4% in 2009, almost all from Qatari sources and partially on the back of the global recession affecting demand elsewhere in the world.¹⁶ Capacity at LNG terminals is being built, but in a tight market the UK may struggle to secure sufficient supplies to actually use it.

The main challenge facing the UK in terms of LNG is one of markets, not infrastructure. The majority of LNG is bought under long-term contracts by Asian economies which lack indigenous supply. European economies seeking to buy in LNG will have to compete with Japan and South Korea as well as Asia's developing economies.¹⁷ Unless companies delivering to the UK are able to secure long-term contracts the UK will receive surpluses as and when they arise rather than enjoying secure and predictable supplies.

Figure 3. Importers of LNG, 2008¹⁸



Even as Middle Eastern LNG exports grow, it is likely that demand from the fast-growing Asian economies will mean that there is little room in LNG markets for new European customers. At present, the UK receives its LNG supplies on a divertible basis, which means that other customers can pay a premium to take them instead. Given the UK's liberalised market in energy, it is not unusual for there not to be a more attractive customer elsewhere, either in Europe or Asia, who is prepared to pay, for example to satisfy mandatory storage obligations.

Beyond the Middle East, LNG does have significant potential. The UK is geographically well-placed to receive exports from West Africa in particular, with Nigeria, Equatorial Guinea and Angola all developing significant capacity. Historical links, and membership of the Commonwealth, may also give British companies an edge in securing contracts in some of the newer exporting countries, such as Trinidad and Tobago. Ensuring that

the Foreign and Commonwealth Office is fully engaged in delivering energy security is therefore critical. Developing expertise in LNG, as it has in oil and gas exploration, is a necessary part of this, as is including energy security as a strategic priority.

One potential “get out of jail free” card is presented by recent developments in shale gas. Advances in technology, and more affordable extraction techniques, have potentially opened up abundant supplies of gas within the USA which would have a very significant impact on gas markets over the next decade. The International Energy Agency predicts a global “gas glut” with “far-reaching effects on gas pricing.”¹⁹ Shale gas could have far-reaching ramifications for global energy markets if its potential is fully realised.

If these predictions are borne out, global gas markets can be expected to evolve from a seller’s market to a buyer’s market. This would be welcome news for UK consumers, while being bad news for Russia, Iran and Qatar, who control more than 50% of world gas reserves between them. Existing gas exporters may react to any new supply, potentially tightening supplies of pipeline gas to compensate. Until these developments play out more fully, optimism does not make a sound basis for policy.

LNG’s role in UK Energy Security

The UK already has significant LNG infrastructure, amounting to approximately 30% of peak demand. LNG has the potential to bridge much of the gap in supply as it emerges. However, actually delivering sufficient quantities of LNG in a marketplace dominated by vertically integrated national champions who can pass their higher prices on to their customers presents a challenge. While LNG is more expensive than conventional pipeline gas, if there are insufficient pipeline supplies it is the next cheapest alternative.

The lack of an LNG spot market, where commodities are bought and sold in cash for immediate delivery, also reduces the scope for LNG to act as a stopgap when conventional supplies fall short. Shale gas may well make this much easier if it comes to fruition as predicted, although relying solely on this would be far too risky a strategy. As with storage, the market needs the right incentive structure to prevent the UK from becoming the LNG bank of last resort as it has for pipeline gas. Relationships with supplier countries may well be critical, as will the regulatory environment. This report recommends that the FCO is explicitly tasked with ensuring energy security, using its network to build relationships with LNG-exporting countries. This requires leadership and commitment as well as recognition of the scale of the challenge.

One potential worry is the Gas Exporting Countries Forum – an embryonic “gas OPEC” led by Russia and Iran.²⁰ While this has yet to demonstrate anything like OPEC’s grip on oil supplies, it demonstrates the importance of ensuring diverse and secure supplies for the UK. If the major gas exporters did decide to use their position in the gas market to manipulate prices for political or financial ends the UK’s reliance on gas, especially LNG, could prove to be a major weak spot.

Despite the costs and risk, LNG is the only realistic substitution option for filling in the gap in UK gas imports. Demand should eventually find supply in the absence of severe market disruption, although the price may be eye-watering. This could be mediated by pro-active building of relationships with governments in energy-exporting countries with a view to creating good conditions for energy companies to agree supply contracts. The FCO is very well placed to take a lead on this, and we recommend that it be tasked with doing so.

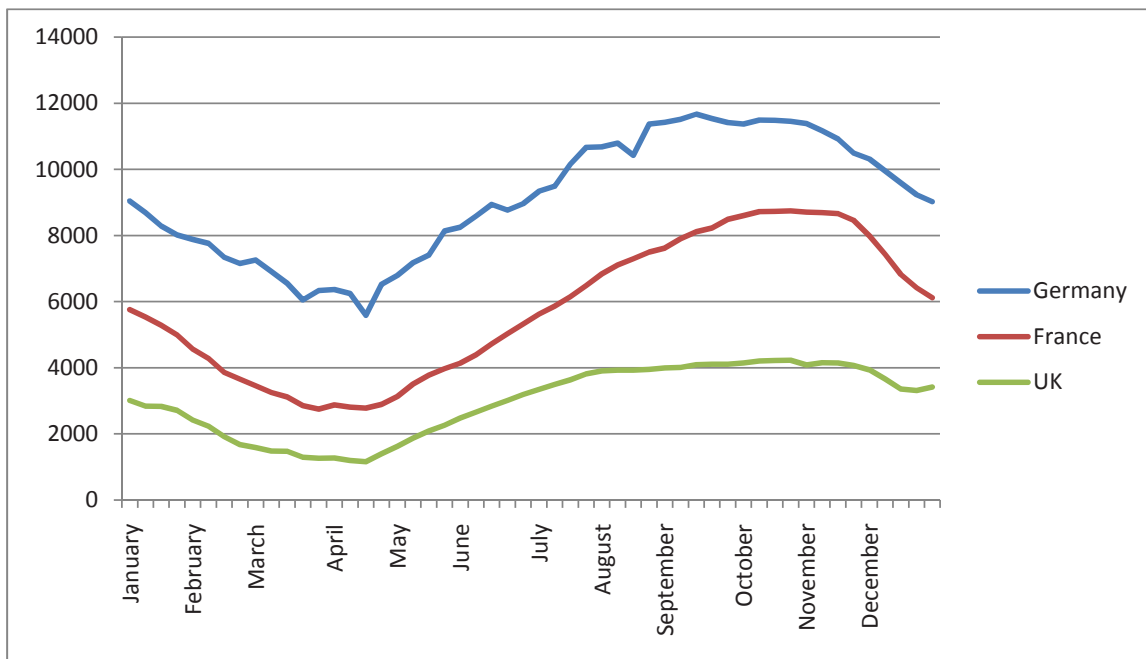
Recommendation

The FCO should have energy security as a strategic priority, protecting British national interests.

Gas Storage in the United Kingdom

The UK has much lower levels of gas storage capacity than other European gas-consuming countries. Now that we are an importer of gas, this matters. The UK's estimated 13 days of storage stand in stark contrast to Germany's 99 days and 122 days in France.²¹ Many gas importing nations use storage to smooth seasonal variation. This ensures that supplies – from pipelines, which pump a constant volume – can meet gas demand, which is seasonal. Additionally, these greater levels of storage undeniably help gas-importing countries hedge against disruptions in supply.²² As well as greater absolute levels of storage, the difference from peak to trough of French and German storage shows much greater capacity for dealing with fluctuation in demand than in the UK.

Figure 4. Gas Storage in Germany, France and the UK²³



UK Government figures forecast an increase in gas storage levels.²⁵ In July 2008, Ofgem told the House of Commons Business and Enterprise Committee that new investment was taking place that could double the UK's storage capacity by 2010, and suggested this implied strong incentives for companies to enter the market.²⁶ This is a view that Ofgem has held since at least April 2006.²⁷ By contrast, the Committee has issued warnings of a lack of urgency in 2002, 2005 and 2008, most recently stating that significant additional storage "is now an issue of national importance."²⁸ Confirming this lack of delivery, in October 2009 the Energy Minister admitted that new storage to come into operation by the end of this year amounts to just 0.06bcm, or approximately five hours' worth, compared to the 4.34bcm already in existence.²⁹

Barriers to Storage

Clearly a problem exists, given these unfulfilled predictions from Government and the regulator of a doubling of storage capacity by 2010. Despite the difficulties of the planning regime, long regarded as the major obstacle, six projects have received planning permission – some over two years ago. It is true that if actually built they could double UK gas storage capacity. But developers have so far held off making the investment to build them. For investors, there are two main concerns: uncertainty over their investment costs and uncertainty over the future flow of income.

Seasonal storage is capital-intensive, not least because facilities have to be stocked with a float of 'cushion gas' in order to operate. Depending on the type of facility, the ratio of cushion gas to extractable gas can be as much as 6:1, making the cost of storage very sensitive to the forward cost of gas. Because UK forward gas markets do not deliver clear long-term price signals investors cannot know at the outset what the price will be when the time comes to buy the cushion gas. This level of uncertainty about forward gas prices, given their huge impact on the cost of storage, is a major deterrent to delivering storage on a commercial basis.

The second uncertainty investors face is over the storage revenues they can expect. Storage prices in the UK are market-based and not guaranteed by any price regulation. Market valuation of seasonal storage is based on the differential between forward gas prices in summer and winter.³⁰ The problem here is that injections of gas in storage necessarily have the effect of reducing this differential: summer prices increase because demand increases on the wholesale market, while the additional available gas should reduce winter prices. After a certain point, storage ceases to be commercially viable.

Ideally, the government would be able to leave storage to private companies. There have been some recent moves to tackle barriers to delivering storage. The Planning Act (2008) should remove planning hurdles while the Energy Act (2008) has set out the licensing regime for offshore storage. The 2009 Budget also reformed the treatment of cushion gas as a capital allowance, which will significantly reduce the costs.

Uncertainty around Government's intentions on strategic storage produces significant uncertainty for investment, in itself presenting a barrier to delivery. Therefore these reforms should be allowed to play out before being changed, so this report does not recommend any further change.

Government's role in energy diplomacy

Many of the challenges facing the UK in energy security come back to its liberalised market and its interaction with less liberal markets elsewhere. This is even more apparent when it comes to relationships between British energy companies and their equivalents in countries such as Russia or Qatar. As the recent history of Russia – Ukraine gas disputes demonstrates, the inter-relationships between national champion energy companies and their governments are a crucial part of energy security.

With six major companies supplying domestic customers and more in the wholesale markets, the British government is not in a position to champion individual companies within the bounds of competition law or simple fairness in as easy a way as, for example, France can with GDF Suez. The key question for the British government is how it can support commercial interests within the framework of a free market. In a world where securing gas supplies is increasingly in Britain's national interest, there is a role for government to be involved in creating the political conditions within which contracts can be negotiated. As long-term LNG markets become more important, this could become a key component of UK energy security.

Government and trade are not total strangers to each other, in particular in the Middle East where Britain has had very strong relationships with many governments. Both the defence and oil industries benefit from a well-functioning relationship with the diplomatic service. Because governments are often directly or indirectly the customer, supplier or partner in these industries, the FCO has historically been involved in facilitating discussion, including at ministerial level.

Increased engagement at governmental level on energy security will create a positive context for the business-to-business relationships without compromising the government's hands-off approach to energy. As long as the FCO does not seek preferential treatment for any individual company, but supports any who wish to import to the UK, the traditional free trade position will not be abandoned.

FCO priorities

The FCO's strategic priorities reflect both its appropriateness to tackling energy security but also the need for leadership. While it does have a priority to "promote UK business" and "promote a low-carbon, high growth global economy" neither of these explicitly tackle energy security.³¹ The tensions between energy security, decarbonisation and affordability place a clear limit on how far energy security can be rolled into the climate change debate, and underlines the importance of addressing it directly. The level of focus on energy security is therefore dependent on the varying interest of ministers in it. In the absence of an overarching strategy, the record here has been patchy.

In May 2008 the Foreign Secretary gave a speech which revealed much about the approach to energy. He argued that "low carbon" was the answer, "not just to climate change but also to energy security."³² While over the long term this is reasonable, it neglects the likelihood that in the short term that very transition will entail a greater reliance on imported gas as well as oversimplifying the tensions between security, affordability and decarbonisation. This report calls for a greater focus on energy security, not as yet another faddish re-organisation of the FCO but as part of a broader reassessment of our national interest.

History urges caution here. The 2003 Energy white Paper declared that “an adequate level of energy security must be satisfied at all times in both the short and longer term” yet precious little appears to have been achieved.³³ There must be a senior figure, either ministerial or a senior civil servant, responsible for keeping a clear focus on the challenge of energy security.

The appointment in October 2008 of Malcolm Wicks MP, a former Energy Minister, as the Prime Minister’s Special Representative on International Energy Issues, illustrates a growing interest in the issue. In his recent report, he argues for a renewed focus on energy-producing states, especially Norway, Qatar and Saudi Arabia.³⁴ Our report recommends going further, making energy security one of the FCO’s strategic priorities in the decade ahead, rather than creating an additional quango which might prove toothless.

This refocusing would have some effect on where the FCO concentrated its resources. Central Asia is unlikely to be a high priority for the FCO except in terms of energy, so putting greater emphasis on energy security would probably mean slight expansion of the British missions in states such as Turkmenistan or Kazakhstan. EU energy security frameworks have already addressed at length relations with countries such as Norway, Algeria or Russia. What the UK lacks is a much wider set of international relationships with gas producers.

The FCO’s rapid capacity-building on climate change stands as something of a model for achieving a successful prioritisation of energy security. Pushed by two successive foreign secretaries promoted from Defra, the FCO has developed significant expertise on climate change, and has increased its climate change team to over 70. It is actively working at promoting understanding of the issue in middle-income countries, especially in business communities. Fewer people would be needed to deal with energy security, who could be drawn from the climate change team, other parts of the FCO’s economic team or even DECC.

Capacity and Leadership

The FCO has extensive knowledge of much of the world, yet energy is not an area it has traditionally led on, with the exception of oil exploration. Getting expertise in place to promote British interests in energy is crucial. At present, the FCO runs secondments to a variety of private sector companies, including BP and Shell, yet none in the period 1997-2009 was to a gas company.³⁵ A programme seconding diplomats to the gas sector, and loaning industry executives the other way, would be a very good way to rapidly increase the pool of expertise within the FCO. This would assist in building the government-to-government relations necessary for British energy companies to secure necessary contracts, in particular for LNG. This recommendation would rapidly build up capacity to deliver on making energy security a strategic priority.

Making use of that expertise is also critical. If energy security were to be made a strategic priority, allowing sufficient embassy staff time in gas producing countries would put British companies at an advantage over other countries hungry for LNG. This is particularly important where LNG production is relatively new and where there are not yet established customers. Overseas missions would also benefit from the experience of industry executives – seconded or recruited into the FCO. France and the USA have already used this tactic to good effect at some of their embassies in the Middle East and Central Asia.

A greater depth of experience and more staff time devoted to energy in overseas missions should enable a further benefit: the promotion of the UK as a strong investment environment for energy projects. Britain's liberalised energy market is a unique asset, but its workings are not widely understood outside the industry. International investors like the transparency and openness of our energy market, and diplomats ought to have sufficient expertise to use these advantages to ensure energy security.

All of this needs sustained leadership from ministers. As the example of the FCO's work on climate change policy demonstrates, sustained focus on an issue can embed it within the diplomatic service. Energy security would be a more focused policy area than climate change, being incredibly important in relations with, for example Qatar and Nigeria, but not at all with many other countries. Developing a cohort of diplomats with good knowledge of the energy industry beyond oil exploration is crucial to delivering the good government-to-government relationships needed to secure long-term contracts.

Recommendations

The FCO should have energy security as a strategic priority, protecting British national interests.

A senior figure within the FCO – either ministerial or senior civil servant – should be tasked with overseeing energy security.

The FCO should expand its expertise in energy using secondments and external hiring.

Improving Interconnection: The Role of Europe

European energy security matters to the UK, even though EU energy security and UK energy security do not necessarily amount to the same thing. Britain has traditionally used its membership of the European Union to lobby for liberalisation of murky energy markets, with limited success. In *Credible Energy Policy*, we argued that for too long Britain has “bleated on about liberalisation and unbundling to the exclusion of almost everything else.”³⁶ Unlike other major importers of gas, we have no “special relationship” with Russia, we have no long-term supply contracts, we have too little storage and we have largely spot-based markets in electricity and gas that are susceptible to price spikes. To continue to be humoured but ignored on European energy policy is now a luxury we can no longer afford.

In his report, Malcolm Wicks illustrates how British and EU energy security interests can diverge:

*The principal danger stems from the increasing integration of our particularly liberal energy market with European gas markets and our increasing import dependence. If we do not have access to the networks and gas supplies in other states on the same basis that they can access ours and gas supplies do not follow price, gas might tend to flow out of the UK to states with less open markets than ours in the event of a crisis or supply shortage.*³⁷

The liberalisation of Europe's gas and electricity markets should certainly remain a goal of British policy. Undoubtedly, freer energy markets would result in greater transparency, more competition and lower prices to the benefit of British and European consumers. However, vested interests and political obstacles remain on that path. The appointment of Günther Oettinger as EU Commissioner for energy may herald a changing position from Germany; more likely it will see a continuation of achingly slow progress on energy liberalisation. While new legislation as part of the European Commission's Third Package of reforms is a welcome step in the right direction, pragmatism dictates that the UK should also work to mitigate the effects of illiberal European energy markets on our security of supply.

European Legislation

European energy security has two aspects: domestic action to reduce import dependence and cope with crises, and a coordinated external response to gas dependency. Energy security "requires a European response since security in the face of an upstream monopoly is a collective European public good."³⁸

Advancing a process that was started in the late 1990s to open up European electricity and gas markets, the Third Package of European legislation should be regarded as an opportunity to strengthen British energy security on the first of those fronts. The legislation aims to "*separate production and supply from transmission networks, facilitate cross-border trade in energy, improve the effectiveness of national regulators, promote cross-border collaboration and investment, provide greater market transparency on network operation and supply, and increase solidarity among the EU countries.*"³⁹ By unbundling supply monopolies and freeing up the market, much more efficient use of existing infrastructure can be made, improving the resilience of the EU as a whole. Improved access to storage would be enormously useful for the UK in securing gas supplies.

A significant part of the reforms is a new Regulation to safeguard security of gas supply. This formalises some of the responses taken during the January 2009 gas disruption, in particular the reversal of gas flows so that eastern members could be supplied from western storage. It places shared responsibility on EU member states to help the gas market deal with an emergency by making it easier to anticipate, avoid and respond to a serious gas supply disruption. The regulation aims to make all member states more resilient to a gas crisis. It will require member states to analyse their vulnerability should their most important gas supply facility – e.g. a pipeline from Russia – were to be shut off. It will also provide provision for a community emergency to be declared, to make sure that if one member state has their supplies cut off, others will assist it.⁴⁰

At present, most storage in the UK is open to companies from other member states, while the reverse is not true. Enabling use of all member states' storage would enable much better security, especially in a crisis. It would also lower the costs of improving security dramatically, as existing infrastructure could be used much more effectively.

The Regulation on gas security of supply provides an opportunity for the British government to insist on reciprocal access to European storage and networks on a more equal basis. Precious little storage capacity in Continental Europe is openly available to third parties: none in Belgium; 3% in Germany, and only 5% in France.⁴¹

In addition, the British government should insist on full publication of European storage use, as already exists in the UK. A “name and shame” policy by the Commission would prevent member states and individual companies hoarding and under-utilising gas storage facilities. These two measures would make the whole continent much more resilient without needing to build any additional storage.

Recommendations

The British Government must support the EU Security of Supply Directive and shape it in Britain’s national interest.

The European Commission should “name and shame” countries which have excess storage capacity but do not open it to others.

3. Conclusions and Recommendations

Energy security is back on the agenda for the first time in decades. As Britain shifts from being relatively self-sufficient in primary energy supplies to becoming increasingly import-dependent, so “far off countries of which we know little” suddenly matter much more than they once did. At the same time, we have a second transition to manage: from dependence on carbon-based fossil fuels towards low-carbon energy sources. The end goal is attractive: a diverse low-carbon energy supply implies greater security and less exposure to ever more expensive and volatile oil and gas prices. It is also in our interests to act now to mitigate against catastrophic climate change.

When energy security does hit the headlines, it is usually for the wrong reasons. Public hysteria is not necessary. But we do need to rethink our foreign policy, based on a renewed understanding that in the short term, we will be more dependent on gas imports until other forms of supply are in place.

European energy market reform is an important component. The UK must press for full and early implementation of the Third Package of reforms. Greater freedom in European energy markets will benefit consumers through lower prices, and improve our energy security through greater transparency. However, long experience of slow progress suggests that the British government must take some strategic decisions in the British national interest. Energy security is a major threat to the well-being of the UK and this should be reflected in the FCO’s strategic priorities. Developing the FCO’s expertise in energy beyond oil exploration is crucial, and should be a high priority in dealing with gas-exporting nations. In some of these, the diplomatic mission might need to be expanded to include energy experts.

LNG is going to be crucial to replacing North Sea gas even if the European market is reformed effectively. But the nature of the global LNG market puts the UK in an awkward position – long term contracts to fix a short-to-medium term problem involve significant risk, and there is no real spot market for LNG. Ensuring that the infrastructure for LNG is fully utilised requires suppliers to commit to delivering to the UK. If the FCO is successfully focused on delivering energy security, this would become a lot more likely to happen, with government-to-government relationships creating the conditions where British energy companies can compete with national champions of other states.

This requires leadership from the very top of both the FCO and DECC. Working together, the two ministerial teams need to place clear priority on energy security: providing the vision and taking the actions to help us manage the transition towards a low carbon economy.

Recommendations

- **The FCO should have energy security as a strategic priority, protecting British national interests.** Leadership at Ministerial level has worked in bringing climate change up the agenda of the FCO. By making energy security a strategic priority and maintaining a consistent focus relations with key exporters can be developed to deliver. The FCO's network and capabilities give it a unique ability to advance this agenda. FCO and DECC ministers can have a positive impact through high-level engagement.
- **A senior figure within the FCO – either ministerial or senior civil servant – should be tasked with overseeing energy security.** If energy security is made a strategic priority it needs a leader within the FCO who can ensure that it is not neglected. Embedding the importance of energy security throughout the FCO is vital and needs a senior leadership figure.
- **The FCO should expand its expertise in energy using secondments and external hiring.** Government-to-government relations are critical in securing supplies, especially where energy companies are effectively a branch of the state. To enable successful business-to-business negotiations, the FCO needs to be actively pursuing energy diplomacy with key states. The FCO's long tradition of secondments to major companies including Shell and BP should be expanded: it should incorporate the big six energy companies to ensure a high level of understanding of the issues, in particular around LNG.
- **The British Government must support the EU Security of Supply Directive and shape it in Britain's national interest.** Liberalising access to storage will improve resilience across Europe without needing any new infrastructure by making better use of existing storage. We should push for full publication of European storage use, as already exists in the UK.
- **The European Commission should "name and shame" countries which have excess storage capacity but do not open it to others.** This would prevent member states and individual companies hoarding and under-utilising gas storage facilities, which makes Europe less resilient to external shocks and increases prices through inefficiencies.

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