Ukraine conflict and impacts on UK energy

What does conflict in Ukraine mean for UK energy?

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The Russia-Ukraine conflict is a humanitarian crisis on a scale not seen in Europe since WWII. Energy (oil and gas specifically) is one of Russia's most powerful leverage tools when influencing Europe, as it supplies much of the continent's oil and gas. This briefing will explain how the conflict is shining a light on how the UK interacts with Russia on energy issues, and the potential solutions to likely increasing energy costs.

Key points:

- Despite not importing much Russian gas directly, a drop in global supply – Russia is the second largest gas producer (17% of global output in 2020) – will affect the international gas markets that impact the UK.
- As a result, bills in the UK (and likely globally) will soar because of conflict in Ukraine, potentially up to £3,000 in October 2022, (a £600 increase from previously expected levels). However, some doubt that bills will get this high as there are still significant data gaps needed to forecast future bill levels.
- Cheap renewables will help to cushion electricity price rises, though while the UK is still reliant on gas for electricity generation and home heating, we are vulnerable to gas price volatility.
- Energy efficiency is an obvious near term step, as it could reduce the UK's total gas demand by 7-8% and imports by 15% while delivering bill savings to households.
- Re-opening fracking and new North Sea oil and gas drilling would take the best part of a decade, and there is no guarantee the gas would stay in the UK as it is likely that oil and gas companies will still sell to the highest bidder.

The UK is not significantly dependent on Russian oil and gas, but will be impacted by price surges

The UK gets just 5-6% of its gas imports from Russia (via LNG tankers, rather than pipelines), which is equal to 3-4% of UK consumption. However, we are tied to international gas markets that are all impacted by a drop in global supply, which has been the case as Russia has withheld resources over the last 18 months. This means that while UK supplies of gas might not be directly affected, the price we pay for our gas will be.

The Prime Minister confirmed that the UK, along with allies, will "collectively cease the dependence on Russian oil and gas that for too long has given Putin his grip on western politics". This means ending imports from Russia, so we will either have to reduce our gas demand, or it will have to be replaced by gas from another source, likely at a higher price.

It is likely that our imports of Liquified Natural Gas (LNG), usually shipped from producing nations, will increase in response to moving away from Russian gas. However, there will likely be competition with other nations for LNG, as was the case in 2021 (particularly with Asia), again increasing costs.

In a package of sanctions against Russia, Germany halted the approval process of the controversial Nord Stream 2 gas pipeline, that was due to link Russia to Germany via the Baltic Sea (and avoiding Ukraine). This was seen as a major step in pausing Russian influence in Europe.

Countries across Europe have been united in viewing an increase in the use of renewable energy as one of the solutions to reliance on Russian gas, which is important for both energy security and economic reasons (as a sanction

against Russia, and to limit the amount of costly gas needed by increasing renewable output).

It is likely that UK energy bills will go up as a result of gas price volatility

The energy price cap in the UK is rising from £1,277 now to £1,971 in April 2022. This is in response to surging gas prices, which quintupled in 2021 – gas accounted for at least £500 of the bill increase.

It was predicted that, again to reflect high global gas prices, the price cap will be raised again to £2,400 in October 2022. However, the Ukraine conflict has escalated estimates to around £3,000 in October 2022, with gas driving the vast majority of the increase. By this time, all of the UK's 28 million homes are likely to have their bills limited by the price cap, as fixed price deals will come to an end and this will be the cheapest deal on the market.

However, electricity prices will rise less than gas, as they are cushioned by renewables

Gas is still used to generate 40% of the UK's electricity, but it usually sets the price for all generators, so increases in gas prices also drives increases in electricity prices. These costs are passed down to consumers via bills, about six months later through the next price cap .

However, increasing amounts of cheaper renewables in the UK, like offshore wind and solar, have cushioned electricity price increases so that gas bills have risen 97% between April 2021 and April 2022, whereas electricity prices have

risen just 54% over the same period. This is expected to be the case if gas prices rise further as a result of conflict in Ukraine.

Due to the current high cost of gas, analysis has shown that running a low carbon heating system like an electric heat pump will be cheaper than operating a gas boiler from April. This is likely to be even more so if gas prices remain high into 2023, as they are predicted to. The UK Government has set a target to install 600,000 heat pumps per year by 2028.

Deploying near term measures such as insulation in homes, which reduce gas demand, will help limit bill increases for the long term

Energy efficiency, through measures like cavity wall and lost insulation, reduces the gas demand of a home by limiting the amount of time a gas boiler needs to be on. This means that households use less energy and so save money on bills.

Therefore, alongside heat pumps and increasing the amount of renewables in the system, energy efficiency is widely viewed as one of the immediate term actions that can be taken to reduce gas demand of the UK.

For example, upgrading a home from Energy Performance Certificate (EPC) band D, which is the average rating in the UK, to EPC band C, the Government's target band for 2035, on average reduces heat demand of a home by 20%.

If all homes that were band D were upgraded to band C,

the UK's total gas demand would be cut by 7%, and net imports by 15%. This impact would be larger than the effect of opening six new oil and gas fields in the North Sea (as the Government is rumoured to be doing). Also, most gas fields would take a few years to start production (and so are not a remedy to the current crisis), and their output would decline after a few years (whereas insulation gives a permanent reduction in imports).

There is an existing energy efficiency industry in the UK, and installers spread all over the country. This means it is highly likely that a widespread roll out of energy efficiency would be much quicker than getting new North Sea oil and gas fields up and running, or fracking underway.

Polling has shown 8 in 10 people in the UK are more keen to improve home energy efficiency than they were 6 months ago

Re-opening fracking and North Sea oil and gas would not help with gas supply or prices, and the public remain unconvinced

Re-investing in fossil fuels or starting onshore fracking would not solve the current gas crisis, nor solve the problems of prices and security of supply in the longer-term. For example, it is estimated that it would take six years or more to get any fracked gas out of the ground.

Gas from UK sources is subject to the international market so external factors (e.g. high global demand or conflict in Ukraine) would still cause UK customers to pay higher prices.

The gas is also owned by the company that extracts it. Therefore they can sell where they please, likely to the highest bidder, and there is no guarantee that it would stay in the UK. Data actually shows exports from the UK doubled Sept-November 2021 compared to 2020 in response to high prices, a trend which was also seen again in December when exports doubled compared to previous years.

In order to ensure any extracted gas stays in the UK, the government would have to introduce regulations or incentives; essentially nationalising the gas industry or restricting trade. This could increase costs further and deter investors, and is likely to take a very long time to pass politically and to implement, if it is possible at all.

UK oil and gas exploration is becoming uneconomical, evidenced by Shell's recent decision to pull out of the proposed Cambo oil and gas field citing economics.

Fracking for shale gas would not be economical: Comparisons with the US shale gas 'boom' are not like-for-like. The UK's geology means that 75% shale bearing area is inaccessible and costs would be much higher, plus the US operates in a smaller, less internationally reliant market.

Fracking is unpopular with the British public with just 14% holding a favourable view of fracking. In contrast, two-thirds support the government target of 100% clean electricity by 2035.

Polling has shown just 9% think North Sea gas could help with the long term gas crisis, and only 8% think fracking

would help.

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