

NET ZERO OR BUST

Bob Ward discusses navigating the Global Energy Crisis from Wytch Farm to the North Sea



Farm gate to flooded field in Dorset

The conflict in the Middle East could have long-lasting consequences for Dorset, not just the price and security of energy supplies but also for its impacts from climate change. The disruption to supplies of oil and natural gas increased the prices of petrol and diesel at the pump and exerted upward pressure on bills for electricity and central heating. It has led some to suggest that the UK should be seeking to increase its supplies of oil and gas from domestic sources, including the North Sea.

However, this would likely make it more difficult to stop the growing impacts of climate change on Dorset, including heavier rainfall, more intense heatwaves, and rising sea levels.

Dorset actually hosts one of the largest onshore oil fields in western Europe at Wytch Farm. Production started in 1979 and peaked in 1997. Although its daily output has subsequently declined by nearly 90 per cent, it is currently expected to continue until 2037.

However, most of the UK's production of oil and

natural gas occurs offshore on the UK's continental shelf, particularly beneath the North Sea. Commercial production of natural gas in the UK North Sea began in 1966, and oil production started in 1975. However, peak production of both occurred more than 25 years ago, and supplies have been in long-term decline as most of the reserves that are economically viable to extract have already been tapped. As a result, the UK has been a net importer of natural gas since 2003. We export some of our gas to Europe, particularly Ireland, and import gas by pipeline, mainly from Norway, and obtain some through shipments of liquefied natural gas, mostly from the United States but also from Qatar and other countries. Most of the oil produced by the UK is also exported because of a lack of refineries, requiring us to import the majority of our petrol and diesel.

Obviously, the use of petrol, diesel and natural gas creates emissions of carbon dioxide that drive climate change, but the process of extracting and

transporting them also results in emissions. For instance, the production of a unit of natural gas from the UK North Sea results in almost four times more emissions than the equivalent amount of gas delivered by pipeline from Norway.

However, domestically produced natural gas results in emissions that are almost three times lower than those required to extract natural gas in the United States, liquefy it and transport it by ship to the UK before re-gasifying it. Extracting and transporting oil and gas can be even more damaging for the climate if it allows the escape into the atmosphere of methane, a greenhouse gas that has an even stronger warming effect than carbon dioxide.

But these figures should all be viewed in the context of what we have to do to stop climate change.

Most of the impacts in Dorset and around the world will only stop growing once the world cuts emissions of carbon dioxide and other greenhouse gases to net zero. The UK has committed to reducing its annual emissions to net zero by 2050, which is in line with the international goal to limit global warming to no more than 1.5 degrees Celsius above its pre-industrial level. This would hopefully avoid potentially catastrophic consequences, such as the destabilisation of the polar ice caps in Greenland and West Antarctica, and a consequent rise in global sea levels of several metres.

In order to reach net-zero emissions of greenhouse gases by 2050, the UK will need to drastically cut its consumption of fossil fuels. According to the independent experts at the Climate Change Committee, this could be achieved by electrifying much of the economy, including, for instance, replacing gas boilers with heat pumps, and driving cars and vans that are powered by electricity instead of petrol and diesel.

The electricity will need to be generated through nuclear energy and renewables. Fossil fuels could only be consumed in a net-zero world if the carbon dioxide is captured and stored instead of released into the atmosphere. If we continue to emit any greenhouse gases from the burning of fossil fuels, we will need to compensate by removing the equivalent amount from the atmosphere and storing it permanently, for instance by pumping it underground into disused oil and gas fields in the North Sea.

But we also need to persuade other countries to reach net zero too if we want to stop the impacts of climate change from increasing in Dorset and around the world. This means thinking about how we promote the transition away from fossil fuels to alternative sources of energy.

If we respond to the fossil fuel crisis caused by the conflict in the Middle East by drilling for more

oil and gas in the North Sea, we will signal to other producers that it is fine for them to do so as well.

But the International Energy Agency pointed out in 2021 that the world at that time already had such reserves of oil, gas and coal that, if they were all burned, they would result in carbon dioxide emissions that would cause global temperature to rise by far more than 1.5 degrees Celsius above its pre-industrial level. The Agency pointed out that a scenario for achieving net-zero emissions by 2050 required no new development of coal, oil and natural gas around the world. Hence, new development of oil and gas in the North Sea would be incompatible with the aim of avoiding dangerous climate change.

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And recent figures have shown just how severe our current situation is.

In March, the World Meteorological Organization indicated that the global temperature in 2025 was 1.43 degrees Celsius above the average for 1850 to 1900, and that 2015 to 2025 were the 11 hottest years on record. The Organization also pointed out that carbon dioxide concentrations in the atmosphere are now more than 50 per cent higher than they were before industrialisation started in 17th century.

Figures from the Global Carbon Project, based at the University of Exeter, show that emissions of carbon dioxide from human activities reached a record level of 38.1 billion tonnes last year, largely from the burning of fossil fuels.

Given this dire situation, it would be a mistake to drill for more oil and gas in the North Sea. Not only would it send the wrong signal to other producers, but the volumes of oil and gas we could extract from the remaining fields would be too small to make any significant difference to our prices or energy security.

Instead, we should be speeding up our transition away from fossil fuels and towards domestic sources of clean energy.

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