

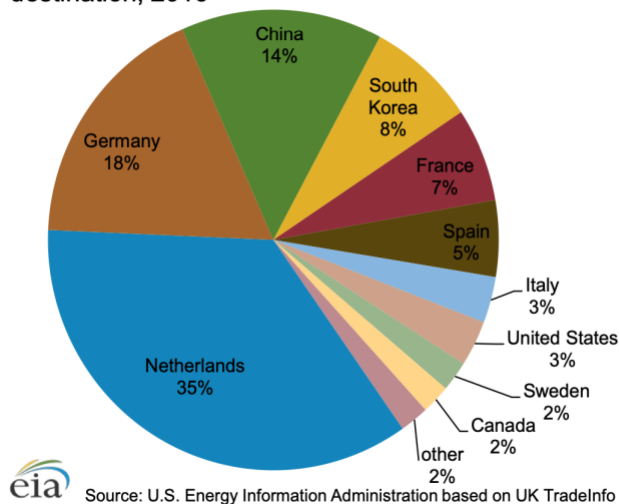
Is the oil industry dying in the UK?

(and should they let it?)

Introduction

UK is one of the main producers of oil in the Europe, supplying Germany, Netherlands and even China ¹. In 2016 the UK was exporting 600,000 barrels per day. To put that in perspective, the country is 20th by crude oil export in the world. The second largest exporter, Russia, produces 5,225,000 barrels per day.

Figure 6. United Kingdom crude oil and condensate exports by destination, 2016



¹ https://www.eia.gov/international/content/analysis/countries_long/United_Kingdom/uk.pdf

Yet, the UK oil industry has been in decline since 2000. The Economist argues that most of the surface oil reserves are exhausted. The oil companies invest little into exploration². Moreover, the government control of the oil industry is tough and the taxes are high³. In my essay I research these arguments using raw data sources and Rystad projections data to understand are there any perspectives for the industry in terms of production and need for the future?

Argument 1 "The country has a lack of new and easy to explore oil reserves."

In the economics literature it is argued that there are plenty of energy reserves. As the number of available reserves solely depends on the technological advances in drilling. The better technologies you have the more oil you will be able to extract. The upper limit to that is very high. So as long as the drilling technologies keep in pace with the consumption, we will be fine.

The problem is that there are many places where there is a lot of oil and we need simple drills to extract it. So why do we need to invest in technology when we can move the drilling to the new and new places? It was the case of British Petroleum: while expanding in geography, - for example in Rumaila (Iraq) - the company at the same time sold more mature British oil fields. What companies care about is the marginal cost of oil, the price that they need to pay for an additional barrel extracted from the ground. This relationship is linear: the more oil is produced in the field; the more is the cost of the next barrel of oil. In the case of the UK, large producers decided that the marginal costs are too high and started selling assets and expanding in regions with lower marginal costs.

The country had big reserves of cheap to extract oil. The high production from 1970 till 2000 increased marginal costs of every next barrel of oil. In this case new technologies hadn't kept up with the speed of exhaustion of oil reserves. BP now extracts most oil far from home, and it has sold a lot of assets in the UK to the small companies.

Oil reserves are not a good measure of the industry's future. The measure we should care about is how cheap it is to extract oil. In other words, the marginal cost of every new barrel. The UK has very high marginal costs. It is a clear disadvantage to the future of the oil sector. The sector is dying because of high marginal costs and

² "Investment in exploration, which once rose and fell with the oil price, is at rock bottom"

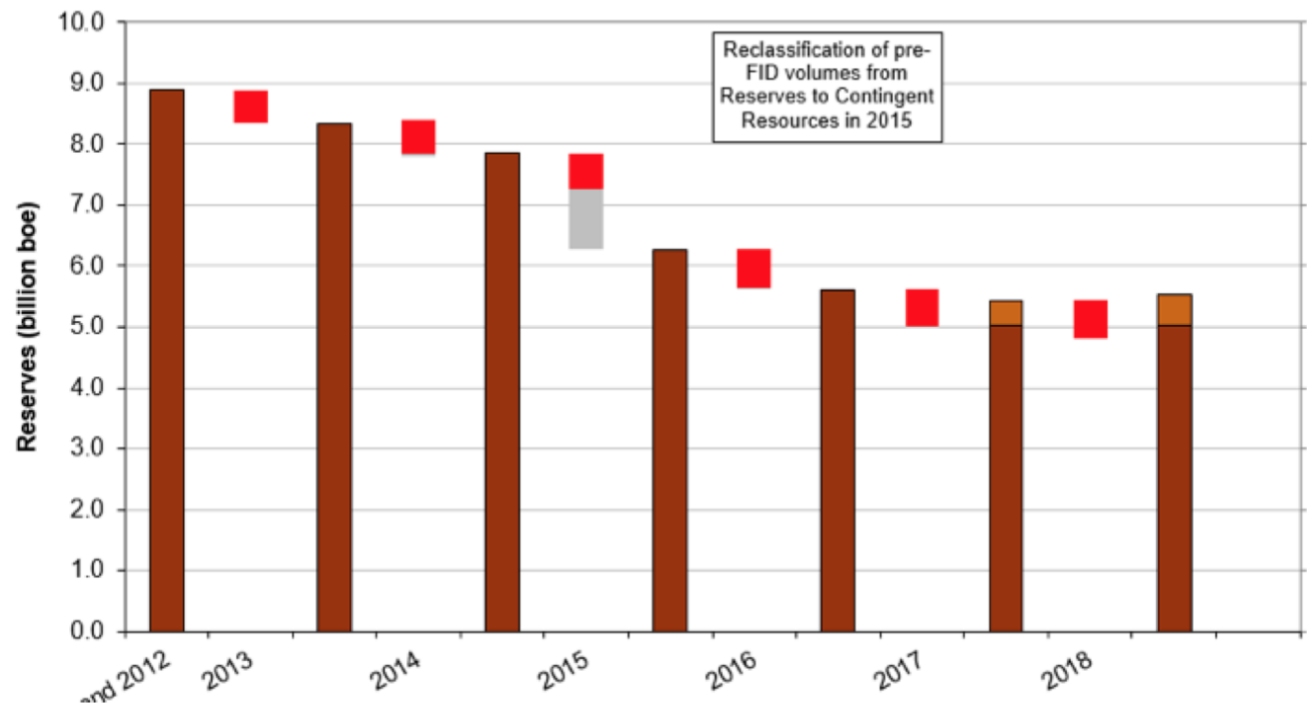
<https://www.economist.com/britain/2014/03/01/running-on-fumes>

³ The Labour government increased corporation tax for oil firms in 2002 and 2006; in 2011 the coalition raised it again, crushing investment. Westminster has churned through 14 energy ministers in 17 years.

<https://www.economist.com/britain/2014/03/01/running-on-fumes>

a lot of opportunities around the world. At the end of 2015 UK government estimated the reserves to be around 5-20 billion barrels of oil, depending on the accounting ⁴. It is enough for 17-30 years of production.

Figure 5: 2P reserves and production 2013 to 2018



Argument 2 Decline in production

The UK production plummeted since 2000. The reason as described above is the maturity of oil fields. Using the data from UK Oil agency I constructed data on annual oil production ⁵. The trend seems to be irreversible as nothing substantially changed in the last 20 years. The only way to reverse the trend is investments to pump up production. It doesn't seem to be the case from the latest reports⁶. Even the high oil prices 2006-2014 ⁷ didn't push the investments up.

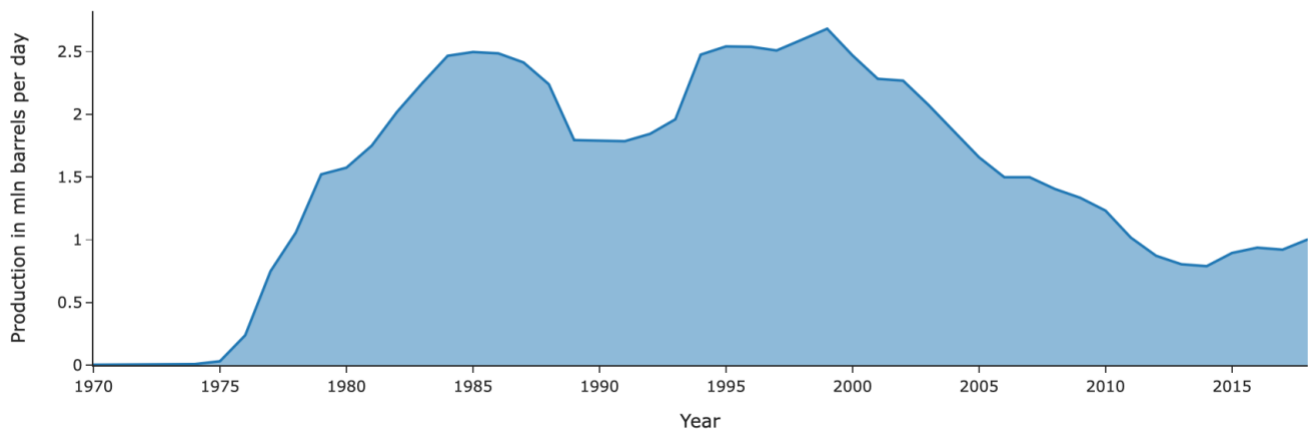
⁴ https://www.ogauthority.co.uk/media/5942/oga_reserves_resources_report_2019_jk.pdf

⁵ <https://www.gov.uk/government/statistical-data-sets/crude-oil-and-petroleum-production-imports-and-exports>

⁶ <https://oilandgasuk.co.uk/wp-content/uploads/2019/09/Economic-Report-2019-OGUK.pdf>

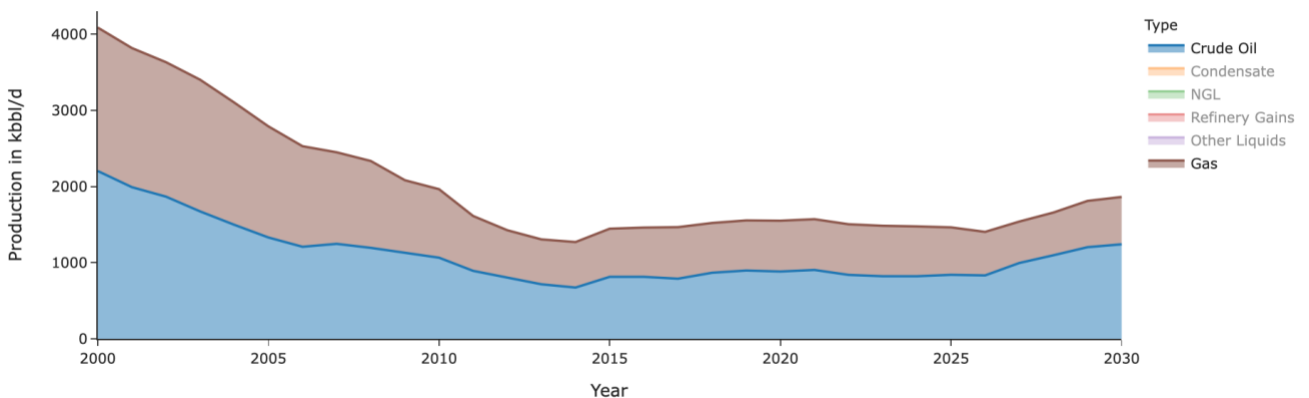
⁷ <https://tradingeconomics.com/commodity/brent-crude-oil>

Production of Crude Oil in the UK in mln barrels per day in the UK



In an attempt to forecast the production of oil we can say that (taking into account the new oil reserves found each year and recurring investments from small firms) the country will produce nearly the same amount of oil (0.8 mln barrels per day) in the future. I would argue that in contrast to the Economist's article⁸ It is a good thing, as the world is rapidly moving to renewable energy, the lack of oil in the future is not a problem. The country is very well diversified in terms of energy supply⁹. Using Rystad data I looked into the forecast of oil production till 2030. The Rystad projections assume that the oil will stay on the same level as in 2018 for the future. (Around 0.8 mln per day.)

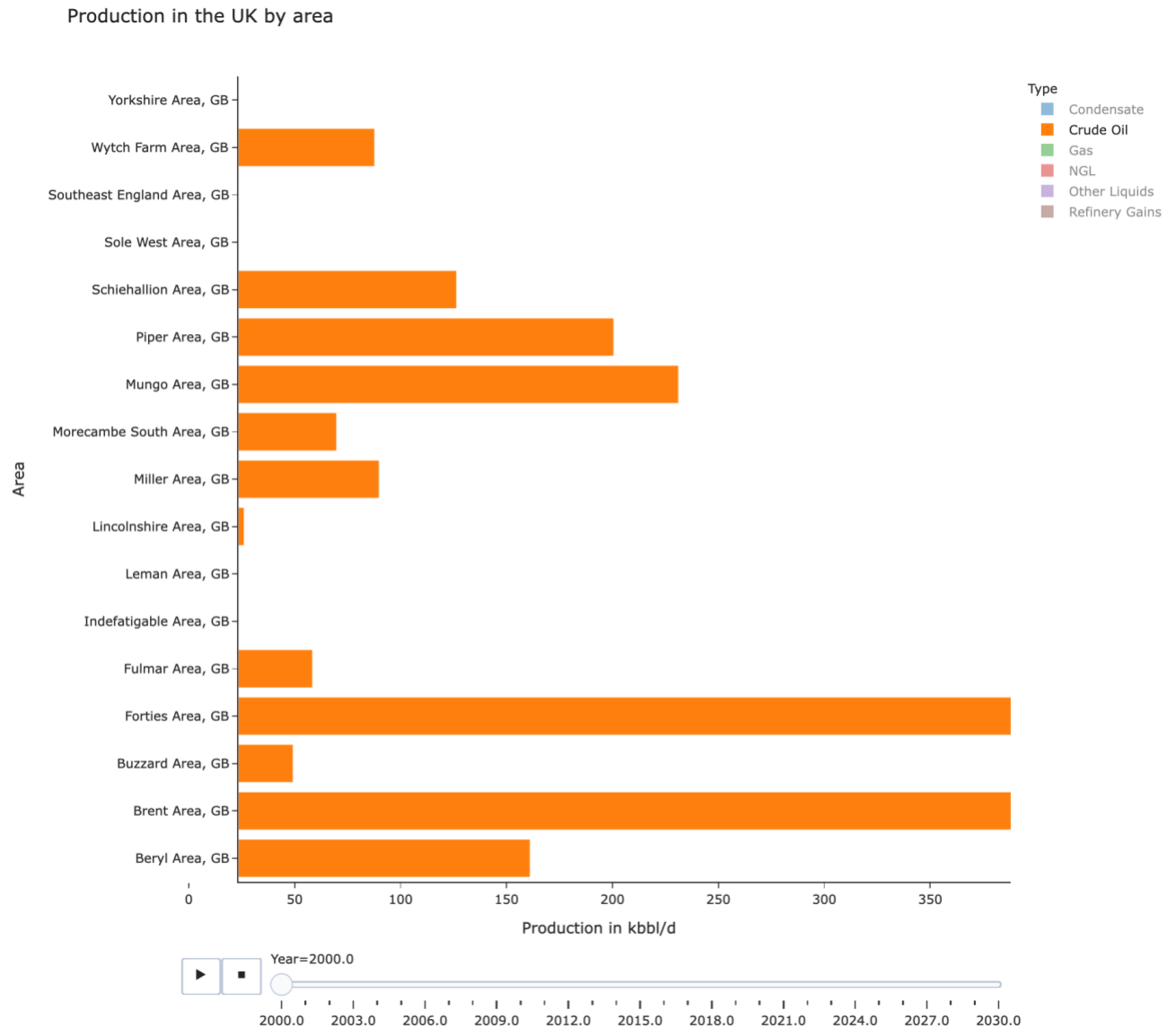
Production of resources in the UK



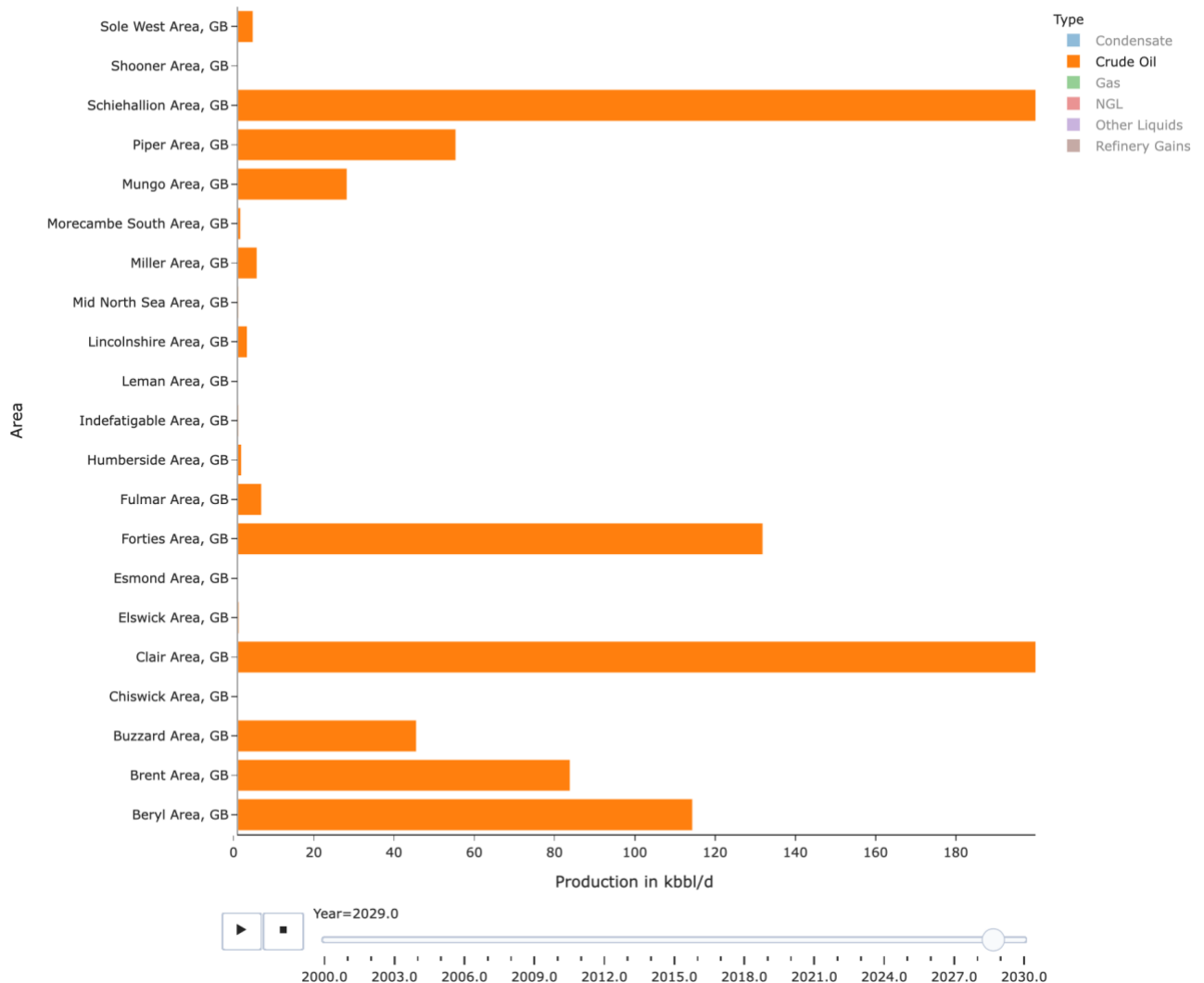
⁸ <https://www.economist.com/britain/2014/03/01/running-on-fumes>

⁹ https://www.eia.gov/international/content/analysis/countries_long/United_Kingdom/uk.pdf figure 12

Let us look at the main producing areas and changes in them. In 2000 Forties Brent and Mungo were the main oil producing regions. In 2018 the Buzzard area became one of the main producers. Forties and Schiehallion and Clair area will be the main providers of oil for Britain.



Production in the UK by area



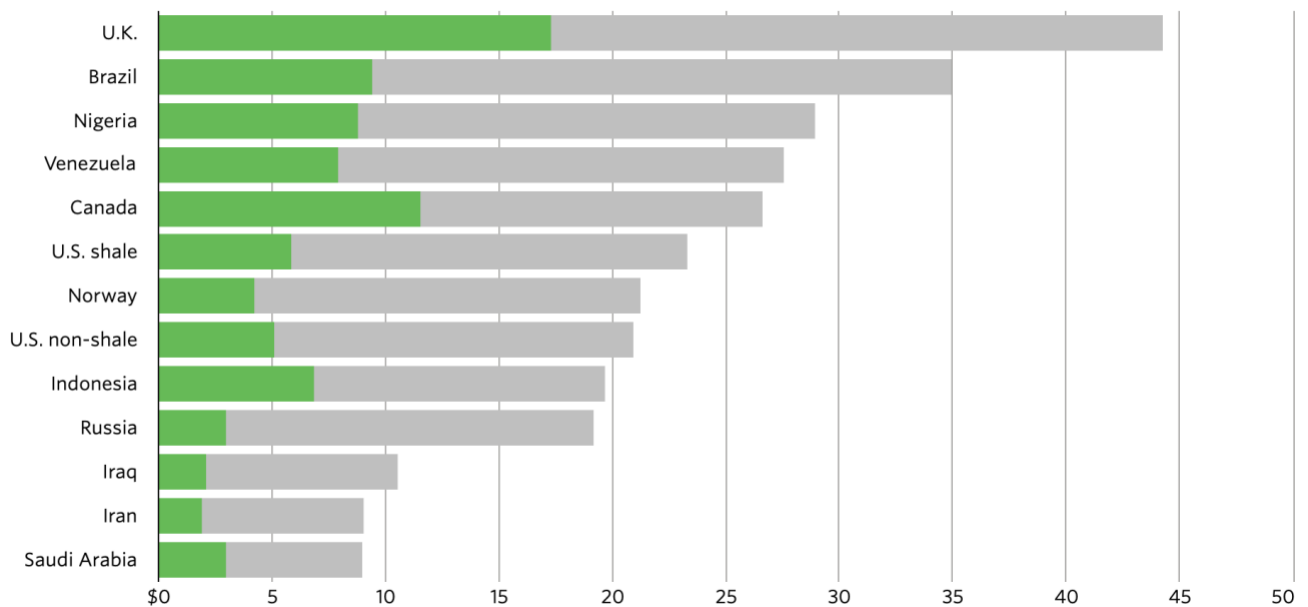
It is hard to say whether Rystad overestimates the future oil production in Britain. We should expect lower demand for oil due to net-zero government policies all over the world. Lower demand for oil will drive prices down and the suppliers from the UK couldn't compete at these price levels with Saudi Arabia. It is already the case due to COVID-19. The price declined at unprecedented levels, and this crisis is profound for the sector, most oil supply from the UK is already unprofitable. It foreshadows the future lack of the demand. As it pointed out in the Economist's article "For years the oil industry has faced the possibility that demand might fall, as governments moved to limit climate change. That threatened to heap chaos on oil producers, as capital dried up and companies battled for their share of a dwindling market".¹⁰

¹⁰ <https://www.economist.com/leaders/2020/04/18/the-future-of-the-oil-industry>

Argument 3 High labor costs / Covid 19 crisis

The UK has uncompetitive costs for production. High labor costs and ineffective management system “pure inefficiency, such as needlessly high standards and complexity” says Dan Cole of McKinsey (<https://www.economist.com/business/2015/05/28/offshore-fog>). Britain couldn't compete with Norway even years ago. According to Wall Street Journal analysis the costs per barrel are highest in the UK ¹¹.

Production costs (■)

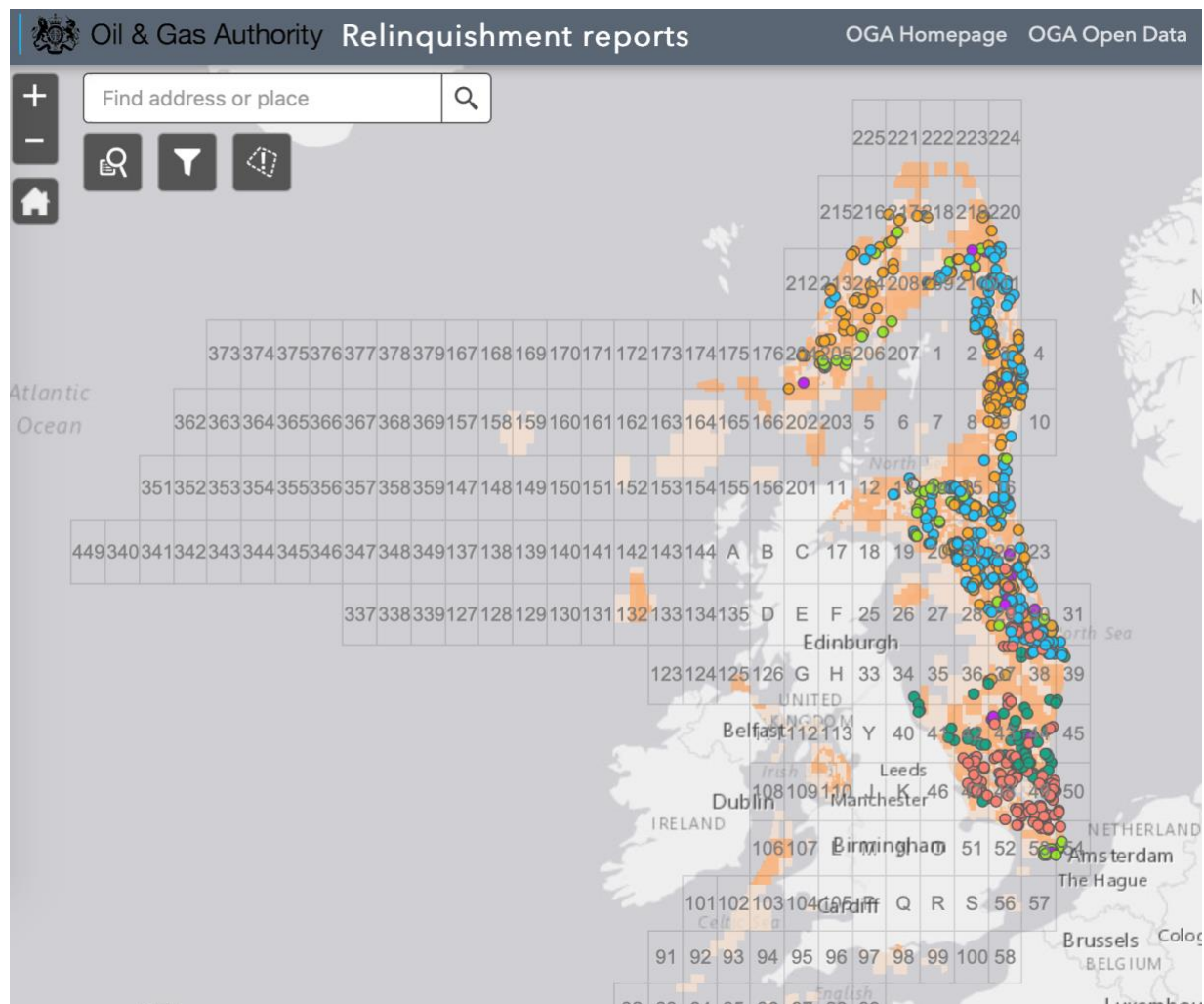


Source: Rystad Energy UCube

Covid-19 crisis is a bad signal for new investments in the UK, the companies shrink down the investment, and the UK is not the country they will be willing to invest in. We also can see a shift to renewable energy in portfolio companies.

¹¹ <http://graphics.wsj.com/oil-barrel-breakdown/>

Map of relinquishment rigs (all dots except blue)¹²

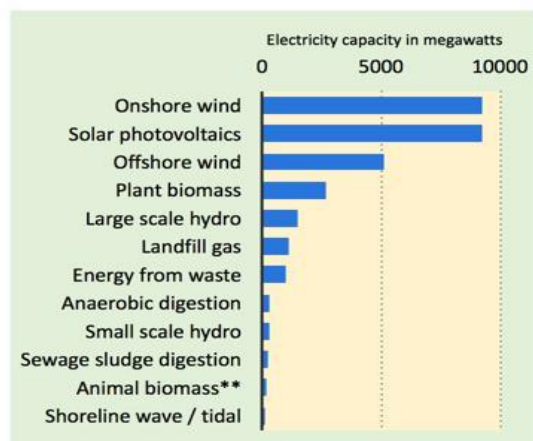


¹²<https://ogauthority.maps.arcgis.com/apps/webappviewer/index.html?id=78083f30591e4e36952cbd5eed803c15>

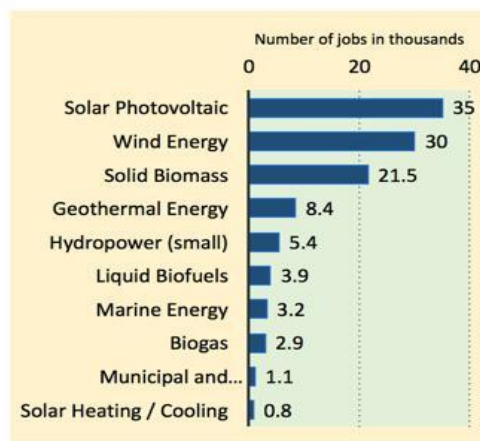
Perspectives

The UK should let the oil sector die, and to subsidize industry workers with new jobs. The UK recognizes the dying state of the oil sector of the economy in the latest reports ¹³. The main reason it is still supported is because it employs a lot of people: in 2018 this number ran up to 200 000. Yet, in 2013 the industry employed two times more.¹⁴ Some tax relief measures didn't help¹⁵. The oil sector is dying in Britain; however, the people need to be taken care of. The workers are skilled and there are three ways for them 1) there is a demand for them in the East 2) demand for workers that will remove old offshore rigs¹⁶ 3) the demand for workers in the renewable energy sector (see the graph below), for example, the trend for offshore floating wind turbines that are similar to offshore rigs. There is also an evidence that the renewable energy with 1 mln dollar of investments employs on average 7,7 people, and fossil fuels only 2,7 ¹⁷. There is no need to bail out oil companies, there is no need in zombie companies.

Renewable electricity capacity in the UK (2015) by source (in megawatts)



Employment in the renewable energy sector in the UK (2016) by technology



¹³ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/175480/bis-13-748-uk-oil-and-gas-industrial-strategy.pdf

¹⁴ <https://www.economist.com/britain/2019/05/09/the-ups-and-downs-of-the-north-seas-professional-divers>

¹⁵ <https://theferret.scot/north-sea-oil-250-billion-tax-break/>

¹⁶ cost of hauling down Britain's entire North Sea infrastructure were around £11 billion; today's figure is £27 billion. around 284 installations in 144 separate fields will need to be dismantled by 2020
<https://www.economist.com/britain/2010/10/07/striking-the-set>

¹⁷ <https://www.sciencedirect.com/science/article/abs/pii/S026499931630709X>