

**October 2021**



## **Tip of the iceberg: The future of fossil fuel extraction**

This report explores how the UK government supports fossil fuel extraction at home and abroad. It reveals the 40 new UK oil, gas and coal extraction projects that are in the pipeline for approval in the next few years.

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*This report was written by Friends of the Earth England, Wales and Northern Ireland and the New Economics Foundation. Uplift contributed to the research on offshore oil and gas projects in the UK.*

## Summary

In the run up to the UN climate talks in Glasgow, the UK government has come under increasing pressure to rule out several highly controversial, proposed fossil fuel extraction projects in the UK, including the offshore Cambo oil field in the North Sea; an oil project in Surrey; and a coal mine in Cumbria.

We estimate that the combined emissions of these three projects would be 296 million tonnes of CO<sub>2</sub> equivalent, which is more than four times higher than the total annual emissions of all cars in the UK.<sup>1</sup>

And these three projects are just the tip of the iceberg. Beneath them, lie many more prospective coal, oil and gas developments that will sink the UK's climate efforts unless the government rapidly changes direction.

Fossil fuel companies plan to launch at least 40 new coal, oil and gas extraction projects in the UK in the next few years, based on new analysis in this report. If these projects are approved, the combined greenhouse gas emissions would be 1.3 billion tonnes of CO<sub>2</sub> equivalent, which is almost three times the yearly greenhouse gas emissions for the entire UK.<sup>2</sup>

The pipeline of 40 potential new UK fossil fuel extraction projects includes:

- 30 offshore oil and gas projects seeking or expected to seek approval between now and 2025.
- 7 onshore oil and gas projects.
- 3 coal mines.?

All 40 projects would contravene the International Energy Agency's (IEA's) landmark report earlier this year, which said unequivocally that if the world is to stay within the 1.5°C limit, no new coal

extraction projects and “no new oil and natural gas fields are required beyond those that have already been approved for development”<sup>3</sup> Fatih Birol, the IEA’s executive director said, “if governments are serious about the climate crisis, there can be no new investments in oil, gas and coal, from now”<sup>4</sup> As host of COP26, the UK requested the IEA report as a key input in advance of the international climate summit in November<sup>5</sup> and the report was welcomed by COP26 President Alok Sharma<sup>6</sup> It is therefore vital that the government follows its recommendation to rule out new fossil fuel extraction projects.

Another crucial part of the UK’s relationship with fossil fuels is the government’s funding of fossil fuels abroad. This includes \$1.15 billion it recently pledged in export finance to support an offshore liquefied natural gas (LNG) project in Mozambique. We estimate that this could emit 3.3 - 4.5 billion tonnes of CO<sub>2</sub> equivalent over the project’s lifecycle, more than the combined annual greenhouse gas emissions of all 27 EU countries<sup>7</sup> Friends of the Earth is legally challenging the UK government’s decision to back the Mozambique LNG project, and the case goes to court on 7 December 2021.

A recent scientific study published in *Nature* found that the vast majority of fossil fuels need to remain in the ground to limit the global temperature rise to 1.5 degrees<sup>8</sup> In an interview with Friends of the Earth, the academics called for an end to new UK fossil fuel extraction projects. They also urged the UK government to recognise the end-use emissions associated with fossil fuel extraction projects (often referred to as scope 3 emissions), not just the emissions associated with extraction that are generally reported by fossil fuel companies.

The government plans to introduce a ‘climate compatibility checkpoint’ to test future oil and gas licensing rounds against wider climate objectives as part of its North Sea Transition Deal. However, as the IEA and academic studies have demonstrated, *all* new oil or gas projects would be incompatible with globally agreed climate objectives.

There is no mechanism to ensure that increased production in the UK would displace production abroad, so new fossil fuel extraction projects represent an additional supply to the global market, driving up global consumption of fossil fuels. New projects lock in fossil fuel use for decades, hindering the transition to a renewable energy system. Many of the planned extraction projects in this report would keep producing fossil fuels until 2050 and beyond, including the Cambo oil field<sup>9</sup>

This report explores how the UK continues to support fossil fuel extraction in four key areas: offshore oil and gas, onshore oil and gas, coal, and government funding of fossil fuels abroad. It also includes detailed case studies for four of the most controversial fossil fuel extraction projects in the pipeline.

In the run-up to COP26, the government is busy talking up its own climate credentials while asking other countries to improve theirs. If the government wants to achieve its climate goals and be taken seriously as a climate leader, it must immediately end support for new fossil fuel extraction projects, both at home and abroad.

*Estimated lifecycle emissions for potential coal and offshore oil and gas projects in the UK, million tonnes of CO<sub>2</sub> equivalent (MtCO<sub>2</sub>e).*

## The climate impact of new fossil fuel extraction projects

In 2015, parties to the Paris Agreement agreed to hold the global temperature rise to well below 2°C and to pursue efforts to limit it to no more than 1.5°C above pre-industrial levels. The UK government's overarching aim for COP26 is to "keep 1.5 alive". This target becomes harder to reach with each new fossil fuel project that's approved.

One recent study found that in order to have a 50% chance of staying within the 1.5°C limit, 58% of oil reserves, 59% of gas and 89% of coal are unextractable between now and 2050.<sup>10</sup> In an interview with Friends of the Earth, the authors of the study said production of oil, fossil methane gas (typically called 'natural gas') and coal in the UK needs to rapidly decline to limit global temperature heating to 1.5 degrees. They argued that the UK should "immediately halt any new extraction projects" and phase out production from existing projects.

Despite these warnings, countries like the UK continue to exploit and export their fossil fuel resources, contributing to climate breakdown and undermining the global effort to achieve the Paris Agreement's goals. Governments and industries addicted to digging up more fossil fuels often make unsubstantiated assertions that their resources will displace existing products and reduce the reliance on imports. In reality, new fossil fuel projects increase the overall global supply of fossil fuels, driving down prices and driving up consumption.

New fossil fuel infrastructure would 'lock-in' continued fossil fuel production for decades, hampering the transition to a renewable energy system. Fossil fuel infrastructure projects include fossil fuel extraction, as well as pipelines, oil refineries, liquefied natural gas plants, roads, airport expansions, and facilities to produce hydrogen from fossil gas rather than renewable energy. Many of the fossil fuel extraction projects in the pipeline would continue producing fossil fuels up until 2050 and beyond, undermining the government's climate targets.

The 2021 United Nations Production Gap Report found that the fossil fuel production governments are currently planning would exceed levels consistent with 1.5°C and 2°C pathways by 110% and 45%, respectively.<sup>11</sup> The principle of "common but differentiated responsibilities", reflected in the Paris Agreement, expects wealthy countries like the UK to make more ambitious climate commitments than poorer countries. Phasing out national fossil fuel exploitation at a rate faster than the global average is crucial to this.

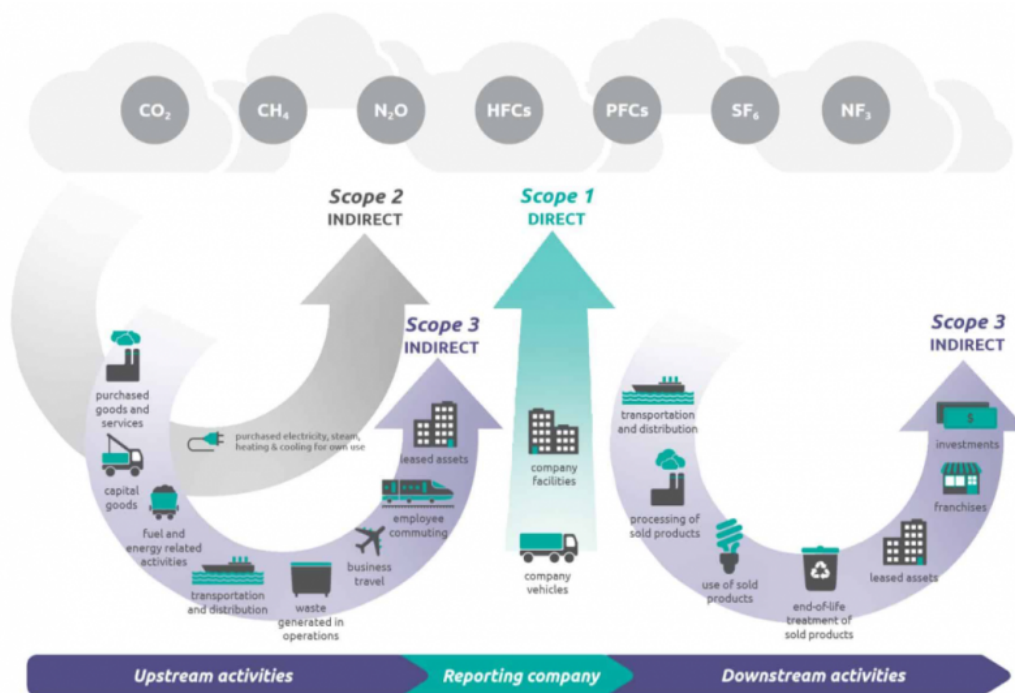
The UK's Climate Change Committee (CCC) has made clear that our fossil fuel consumption must decline sharply: its Balanced Net Zero Pathway sees oil consumption reducing 47% by 2035 and

77% by 2050 while unabated gas combustion must fall 65% by 2035 and 99% by 2050.<sup>12</sup> While the government and oil and gas industry often quote the CCC's view that "some oil and gas will continue to be used", the CCC's Sixth Carbon Budget also notes that "lower production costs internationally may favour imports of these fuels over domestic production."<sup>13</sup>

The Chair of the CCC, Lord Deben, recently said "the justification for any new oil and gas exploration or production has to be very strong indeed, and I cannot say that I have seen that so far."<sup>14</sup> He also pointed out that allowing new projects sets an example to the rest of the world that they are acceptable, a caution which is particularly relevant as the UK prepares to host COP26.

The fossil fuel extraction projects identified in this report have all failed to properly account for the emissions from the end-use of their product, whether it is burned in power stations, home boilers, internal combustion engines, steel plants or made into other products. Fossil fuel companies routinely argue that these emissions, often described as 'scope 3', are out of their control and irrelevant when assessing the environmental impact of a development. Instead, if they provide quantified estimates at all, they focus on the scope 1 and 2 emissions from their own activities and facilities.

While extracting fossil fuels can be extremely emissions-intensive, focusing on production alone distracts from the much larger emissions that occur downstream. These should obviously be of paramount importance to fossil fuel companies assessing their impact. As the Greenhouse Gas Protocol states, "Scope 3 emissions can represent the largest source of emissions for companies and present the most significant opportunities to influence GHG reductions."<sup>15</sup>



Source: GHG Protocol

Scope 1 covers direct emissions (company facilities and company vehicles), Scope 2 covers indirect emissions (purchased electricity, steam, heating and cooling for own use). Scope 3 Indirect (upstream) covers purchased goods and services, capital goods, fuel and energy, transportation and distribution, waste, business travel, employee commuting, and leased assets. Scope 3 Indirect (downstream) covers transportation and distribution, processing of sold products, use of sold products, end-of-life treatment of sold products, leased assets, franchises, and investments.

Unfortunately, planning authorities are accepting developers' claims that the contribution to climate breakdown of the resources they are exploiting is nothing to do with the development itself. This faulty argument has now been partly approved by the High Court, in the case of Horse Hill, and if upheld could set a dangerous precedent for future developments.

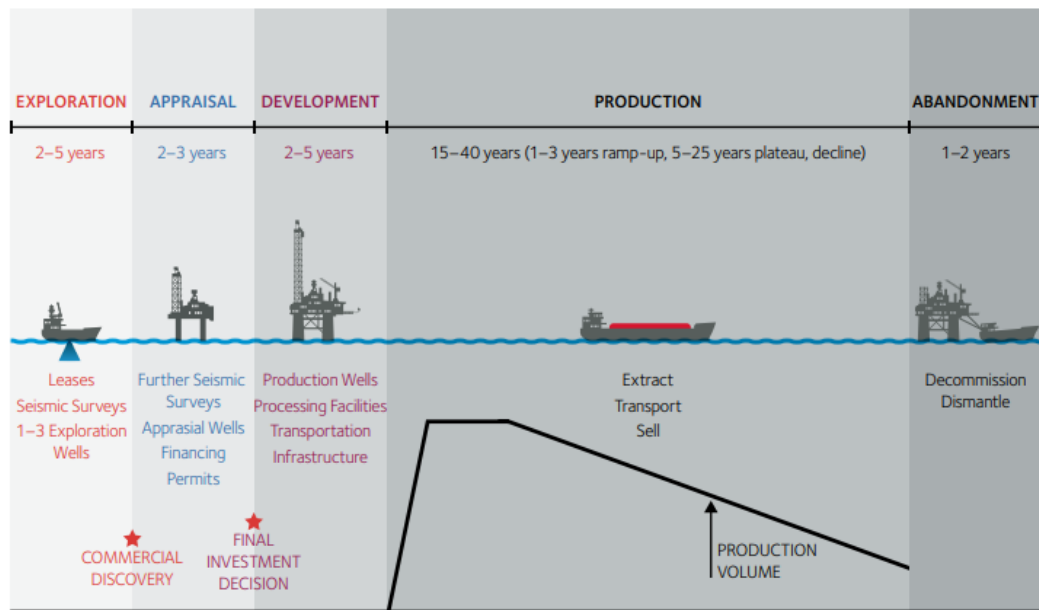
## Offshore oil and gas

Despite the UK's net-zero target, government policy regarding North Sea oil and gas is to exploit every last profitable drop. The principle of "maximum economic recovery" of offshore resources is enshrined in law, yet it contradicts efforts to phase out our reliance on fossil fuels.

Since signing the Paris Agreement, the UK Government has spent £4 billion propping up the oil and gas industry, including tax reliefs for decommissioning oil and gas infrastructure, according to an analysis of HMRC data by Paid to Pollute.<sup>16</sup> In an upcoming legal challenge against the Oil and Gas Authority (OGA) and the Business Secretary, Paid to Pollute argues that by not including the significant tax breaks that oil and gas companies receive in its definition of "economic recoverability", the OGA's new strategy to maximise economic recovery of offshore oil and gas is unlawful and will endanger the UK's climate targets.

We found 30 offshore projects that have either applied for development consent or are forecast to do so by 2025.<sup>17</sup> If these all go ahead, their combined lifecycle emissions could amount to over one billion tonnes of CO<sub>2</sub>e, which is double the yearly emissions for the entire UK. That just covers the project phases that could be approved between now and 2025; emissions from the full projects would be much larger. As of the publication date of this report, none of the 30 projects have received development consent and have not had a final investment decision. That means all of them would not be compatible with limiting the global temperature rise to 1.5 degrees, according to the IEA's criteria.

The infographic below illustrates the stages of offshore oil and gas production.



Source: Oil Change International

## The North Sea Transition Deal

The UK government maintains that continued oil and gas exploitation is compatible with its climate commitments. It has refused to follow the recent example of other countries, such as Denmark and Spain, in ending exploration. Instead, the North Sea Transition Deal commits the offshore oil and gas industry to reducing production emissions by 50% by 2030.<sup>18</sup> This is significantly less than the 68% cut the CCC recommended for the same period.

In any case, production emissions are dwarfed by the emissions from actually burning oil and gas: even if production emissions were halved, overall emissions would only fall by about 7%. The government plans to introduce a 'climate compatibility checkpoint' by the end of 2021 to test future licensing rounds against wider climate objectives. As the IEA and academic studies have made clear, any new oil or gas project would be incompatible with globally agreed climate objectives.

Proponents of continued fossil fuel exploration often argue that technologies like carbon capture and storage (CCS) will mitigate future emissions. The North Sea Transition Deal commits to investing in CCS to reduce production emissions. However, CCS remains unproven at scale, expensive and hugely controversial, and should not be used as a justification for continued fossil fuel production. As the CCC notes, "the deployment of CCS has made relatively little progress in the UK and internationally, repeatedly falling behind roadmaps and stated intentions"<sup>19</sup> We cannot depend on it to reliably capture future emissions when there are effective and proven ways to reduce our emissions *now*. The Deal is not the urgent plan we need to transition away from oil and gas but



rather another lifeline to the industry. Instead, the government should be investing in renewable energy and supporting a just transition for offshore workers.



Pixabay

## Case Study: Cambo

**Lifespan:** 25 years

**Total greenhouse gas emissions:** 75 million tonnes of CO<sub>2</sub>e, equivalent to the annual emissions of 18 coal-fired power plants.

Cambo is one of the UK government's first tests since the IEA's unequivocal statement that new oil and gas developments were neither necessary nor consistent with the 1.5°C scenario. Siccar Point Energy and oil giant Shell hold an exploratory licence, have built appraisal wells and have applied for development consent. However, they have not yet received approval for development and have not made a final investment decision, so the government should reject Cambo based on the IEA's criteria. The UK government has acknowledged it has the power to stop the Cambo development "in the public interest"<sup>20</sup>

The full Cambo field, 80 miles west of Shetland, contains an estimated 314 million barrels of recoverable oil<sup>21</sup>. The current application is for Phase 1, which aims to extract up to 170 million

barrels over 25 years. When used, this would result in approximately 72 million tonnes of CO<sub>2</sub> equivalent, as much as the annual emissions from 18 coal-fired power plants<sup>22</sup>

Cambo's environmental statement (ES) says it will emit approximately 3.5 million tonnes of CO<sub>2</sub> equivalent over its lifetime. These broadly correspond to its scope 1 emissions, including its use of fuel and flaring activities. This is a significant number, but it is dwarfed by the scope 3 emissions from transporting, processing, distributing and – most significantly – actually using the oil it produces. Shell and Siccar Point have failed to assess either its scope 3 or downstream emissions or their contribution to the negative impacts of climate breakdown in the UK and around the world.

Oil and gas does not offer a sustainable future for workers. A recent survey found that four in five offshore oil and gas workers would consider leaving the industry, and a majority of them would be interested in working in renewable energy if they were given the option of retraining<sup>23</sup>. These workers need a just transition that gives them clear pathways into good green jobs.

*Estimated emissions from phase 1 of the ten largest potential offshore oil and gas projects (MtCO<sub>2</sub>)*

## Onshore oil and gas

There are currently about 120 onshore oil and gas sites producing the equivalent of 20,000-25,000 barrels of oil every day<sup>24</sup>. In 2019, the government imposed a moratorium on hydraulic fracturing or 'fracking' in England (moratoria already existed in Wales and Scotland) due to safety concerns. Since then, planning authorities have continued to approve new oil and gas projects as well as extensions of existing sites that fall outside the government's definition of fracking.

### Case study: Horse Hill

**Lifespan:** 20 years

**Total greenhouse gas emissions:** 10.9 million tonnes of CO<sub>2</sub>e

One of the most controversial onshore projects is Horse Hill, where Surrey County Council granted planning permission for four new oil wells in 2019, just months after it had declared a climate emergency. The development could extract up to 26 million barrels of oil over a 20 year period<sup>25</sup>. The developer estimates its emissions at 140,000 tonnes of CO<sub>2</sub>e, but has not estimated those emissions arising from the actual use or burning of its product, which is where the vast majority of emissions occur. It has claimed it is not possible to accurately quantify these emissions at the production stage. However, we have been able to calculate that the oil extracted could result in emissions of 10.9 million tonnes CO<sub>2</sub>e when used<sup>26</sup>.

Friends of the Earth intervened in a legal challenge in the High Court by local resident and campaigner Sarah Finch against the decision for planning consent, arguing that the Council had breached Environmental Impact Assessment obligations by failing to assess the indirect greenhouse gas emissions caused by the oil's end-use and because it failed to properly take into account the 2050 net-zero target. The Council, Horse Hill Developments Limited and the Secretary of State for Housing, Communities and Local Government opposed the case. In December 2020, a High Court judge ruled that the Council had acted lawfully and, in fact, concluded that the Council could not legally have considered these scope 3 emissions in the Environmental Impact Assessment.

Sarah Finch is appealing the judgment, again with Friends of the Earth intervening. The case will be heard in the week commencing 15th November 2021 in the Court of Appeal. The Council, the developer and the newly-named Department of Levelling Up, Housing and Communities (DLUHC) are again defending the project. The new Secretary of State, Michael Gove, has recused himself from the case because Horse Hill is close to his constituency. The involvement of DLUHC is completely at odds with the government's climate commitments.

Friends of the Earth is arguing that case law from other countries demonstrates that end-use emissions from fossil fuel developments can and should be considered. For example, Milieudefensie (Friends of the Earth Netherlands) recently won a case against Shell, in which the Dutch Court endorsed the need for companies to take responsibility for their scope 3 emissions.

The High Court ruling has already set a harmful precedent, with the promoters of other fossil fuel projects such as the Cumbria coal mine citing it in their applications for planning consent. If it is upheld in the Court of Appeal, future decisions regarding fossil fuel developments could likewise ignore the end-use emissions from the resources they are exploiting in the Environmental Impact Assessment, with potentially devastating implications for the climate and nature crises. The government's role in this case, and its support for continued fossil fuel extraction, undermines its ability to ask other countries to take responsibility for their emissions and to transition away from fossil fuels.

### **Other onshore projects in the pipeline**

There are at least seven onshore oil and gas projects at various stages of the planning process in the UK. The available data on emissions of prospective onshore projects is limited because developers only have to submit an Environmental Impact Assessment if they are planning to extract over 500 tonnes of oil or 500,000 cubic metres of gas per day.

A project at Biscathorpe in Lincolnshire hopes to extract almost 4 million barrels of oil which, when used would produce 1.7 million tonnes of CO<sub>2</sub>e. The decision on Biscathorpe is due to take place as world leaders gather for the first day of the COP26 climate talks. An application to drill for oil at Arreton on the Isle of Wight was just unanimously rejected by councillors, against the advice of planning officials.

Similarly, East Yorkshire councillors recently blocked one of the UK's largest onshore oil and gas proposals in recent years at the existing West Newton-A site<sup>27</sup>. Applications to expand West Newton-B and for new sites, West Newton-C and D are expected, with internal company analysis suggesting there could be up to 283 million barrels of oil and 7.5 billion cubic feet of gas across the whole licensed area. If burned, this would emit almost 135 million tonnes of CO<sub>2</sub>e. Applications for three-year exploratory and testing permits have been refused at Dunsfold in Surrey where an appeal is pending and Balcombe in West Sussex, where the company has stated its intention to appeal.

There are also two exploration applications for onshore petroleum licences in Lough Neagh and Fermanagh in Northern Ireland.

## Coal extraction

The UK was once a major producer of coal, mining over 200 million tonnes a year for much of the twentieth century. In 2019, the UK had just 13 working mines producing three million tonnes of coal, mainly for the power sector. From October 2024, coal will be phased out of electricity generation completely, a move which COP26 President Alok Sharma hopes will send "a clear signal to friends around the world that clean power is the way forward."<sup>28</sup> The UK has made the end of coal one of its key diplomatic objectives as COP26 host and co-founder of the Powering Past Coal Alliance, asking other countries to set their own coal phase-out dates.

However, the gaps in the UK's own policy have embarrassed the government on the world stage. The phase-out applies only to unabated coal power generation, allowing for continued mining and use of coal for heating and, more significantly, industrial uses such as producing coke for steel-making, which is 29% more carbon-intensive than for coal for generating electricity. In this context, there are currently at least three potential new coal mines which, if approved, could emit 317 million tonnes of CO<sub>2</sub>e.

### Case study: Whitehaven

**Lifespan:** 27 years

**Total greenhouse gas emissions:** 210 million tonnes of CO<sub>2</sub>e, double the annual emissions of the UK's entire energy sector

In October 2020, Cumbria County Council provisionally approved West Cumbria Mining (WCM)'s plan for a coking coal mine in Whitehaven, which would be the UK's first new deep coal mine for 30 years. The government did not initially intervene but following widespread domestic and international condemnation, then-Communities Secretary Robert Jenrick "called in" the proposal, triggering a public inquiry. Following the inquiry and the planning inspector's recommendation, the government will make a final decision in early 2022. The IEA has made clear that no new coal mines, including for coking coal, are needed.

Over 27 years, the mine is expected to produce 64 million tonnes of coal. When used, this would emit over 200 million tonnes of CO<sub>2</sub>e, undermining the UK's pleas for other governments to phase out coal.<sup>29</sup> Including the extraction emissions, the total lifecycle emissions of the coal mine would be 210 million tonnes of CO<sub>2</sub>e, double the annual emissions of the UK's entire energy sector.

The mine has been widely criticised domestically and internationally, with climate scientist James Hansen warning the Prime Minister its approval would lead to "ignominy and humiliation" for the UK.<sup>30</sup>

### **A "net-zero" coal mine?**

According to WCM, the proposed coal mine in Whitehaven, which is called Woodhouse Colliery, will be the world's first "net-zero" underground coal mine. WCM's figures suggest that, in its "likely unmitigated" scenario, its scope 1 emissions could be over 7 million tonnes of CO<sub>2</sub>, while its scope 2 emissions could be 150,000 tonnes and scope 3 emissions (which do not include emissions from the end-use of the coal) 900,000 tonnes.<sup>31</sup> WCM says it will avoid and reduce these emissions by using renewable energy and methane capture, and that it will use carbon offsets for any residual emissions. Offsets should not be used to justify new emissions. As the CCC says, "all UK emissions must be tackled, without reliance on offsets from elsewhere"<sup>32</sup> Furthermore, the Gold Standard Foundation, the offsetting organisation that WCM had planned to use, has said it is strongly against further fossil fuel extraction, adding that "a new coal mine in 2021 is an activity that must be avoided in the context of the climate emergency."<sup>33</sup>

A further, glaring problem with the net-zero claim is that it only applies to the construction and operation of the mine and not the emissions from burning the coal. WCM actually claims that it will contribute to the UK's climate objectives by substituting the coking coal we currently import and saving transport emissions. The cuts from not shipping coal from the US are a tiny fraction – about 1.8% – of the emissions from burning the coal. If US imports are replaced, US mines will sell their coal elsewhere. There is no evidence that a new source of coking coal will displace existing coal production: in fact, the basic logic of supply and demand says that increasing the supply will drive down prices and increase the quantity consumed, ultimately adding to global emissions when the coal is burned.

## **Coal for steel**

WCM says coking coal is still needed for making steel. The steel industry produces 7-9% of global carbon emissions, so it is a vital sector to decarbonise. The CCC has said that steelmaking in the UK could be made without the use of unabated coking coal by 2035, only halfway through the mine's proposed lifetime. WCM plans to export 87% of its coal, principally to Europe and Turkey, but the public inquiry has heard that it could be sent anywhere in the world.

Increasing the supply of coking coal would delay the transition to green steelmaking using renewable hydrogen. There are already several pilot projects showing that steel can be made with hydrogen, reducing emissions by 90%, suggesting that WCM may not have a market in mainland Europe for long. But countries with less stringent climate targets are less likely to invest in this technology and will rely on coking coal while there is a steady supply.

## **Jobs**

Finally, supporters of the mine point to the 500 jobs it will create. WCM says that 80% of these will be local, although there is no way of guaranteeing this and it is not clear that the local workforce has the required skills. Communities in West Cumbria and many other parts of the UK remember the unjust transition that went with the closure of the coal pits. The government now has an opportunity to ensure a just transition for workers by creating the long-term, secure, green jobs of the future, rather than locking them into an industry of the past.

## **Other UK coal projects**

While the controversy around the West Cumbria mine rumbles on, another proposed coking coal mine is waiting in the wings on the England-Scotland border near Longtown, Cumbria. Lochinvar has a licence from the Coal Authority but has not yet applied for planning permission. Lochinvar aims to produce 34 million tonnes of coal over 26 years, which would produce over 100 million tonnes of CO<sub>2</sub> equivalent when burned<sup>34</sup>. Analysis commissioned by the company says the total coking coal resource at Lochinvar is 111 million tonnes while exploration targets of up to 64 and 142 million tonnes have been identified for adjacent sites at Lochinvar North and South.

[35](#)

In Wales, where planning is devolved, there are still a handful of working opencast coal mines and one currently waiting for approval: Glan Lash is a small mine in Carmarthenshire planning to extract 110,000 tonnes of coal.[36](#)

## Funding fossil fuels abroad

The UK has a long history of supporting the fossil fuel industry not just at home but overseas too. Much of this support has come from the UK's official export credit agency, UK Export Finance (UKEF), which underwrites loans and insurance for export deals to boost UK business. Since signing the Paris Agreement in 2015, the UK has invested over £568 million of aid money and £3.3 billion of export credits in fossil fuel projects.[37](#) Between 2013 and 2018, 96% of UKEF's support for the energy sector went to fossil fuels.[38](#)

In December 2020, under increasing pressure, the government announced it would stop funding new fossil fuel projects overseas.[39](#) But loopholes remain, with the announcement not ruling out support for coal for non-thermal uses and leaving room to continue support for other fossil fuels in exceptional cases. Also, other government-funded institutions, such as the CDC Group and the Private Infrastructure Development Group, are not covered by the government's commitment. Crucially, the new policy does not require the UK to divest from projects it has already pledged to support, including an enormous Mozambique gas project.

### Case Study: Mozambique LNG Project

**Lifespan:** 37 years

**Total greenhouse gas lifecycle emissions:** between 3.3 and 4.5 billion tonnes of CO<sub>2</sub>e equivalent, more than the combined annual emissions of all 27 EU member states.[40](#)

In 2020, just months before the government announced it would end fossil fuel finance abroad, UKEF pledged \$1.15 billion USD to support an offshore Liquefied Natural Gas (LNG) project in Mozambique, one of its largest ever fossil fuel financial packages. The UK is one of several international investors in the project led by Total, which is part of a wider development of natural gas extraction in the Cabo Delgado region. Friends of the Earth is legally challenging the UK government's decision to back the Mozambique LNG project on the basis that it was incorrectly decided to be consistent with the UK's and Mozambique's commitments under the Paris Agreement, and because UKEF and the Treasury failed to undertake the essential analysis to properly determine Paris alignment (including assessment of scope 3 emissions). The case goes to court on the 7th of December 2021.

## The impact on climate and nature

In 2010, a natural gas reserve equivalent to a 12 billion barrel oil field was discovered off the coast of Mozambique. The Mozambique LNG project will involve drilling for gas on the seabed, transporting the gas to an onshore station where it is turned into liquid form and then shipped around the world before being turned back into gas. The liquefaction and regasification processes are incredibly energy intensive, so LNG has an even greater impact on the climate than gas drilling alone.

The project's own numbers suggest that it could contribute 6-10% of Mozambique's total greenhouse gas emissions up to 2028.<sup>41</sup> That is just from the emissions from extracting and processing the LNG, which will produce an estimated 13 million tonnes of CO<sub>2</sub> per year once operating at full capacity. Over 37 years, that's a total of nearly half a billion tonnes of CO<sub>2</sub> from operational emissions alone. The project has not accounted for the emissions from the end use of the gas itself, which could amount to 77-110 MtCO<sub>2</sub>e per year.<sup>42</sup> This could emit between 3.3 and 4.5 billion tonnes of CO<sub>2</sub>e equivalent over the project's lifecycle, which is equivalent to the combined annual emissions of all 27 EU member countries or the entire African continent, respectively.<sup>43</sup>

Total argues that "the emissions from the consumption of LNG sold by the project are not included as this is outside the control of the company and the demand for LNG would have been met by an alternative supplier, meaning that it does not add additional emissions into the atmosphere"<sup>44</sup> This ignores the fact that exploiting a new resource inevitably adds to global supply, which drives down price and consequently drives up the quantity consumed. The IEA has said many of the liquefaction facilities being built are not needed and are unlikely to recover their invested capital, potentially stranding \$75 billion.<sup>45</sup> This amount could have provided three-quarters of the investment needed for every African country to meet their renewable energy targets by 2030.<sup>46</sup> Opening new gas fields undermines global emissions targets and locks poor countries like Mozambique into polluting infrastructure for decades to come.

Mozambique is considered one of the most climate vulnerable countries in Africa, ranking tenth in the world in terms of countries where children are most at risk from the impacts of climate change.<sup>47</sup>

The LNG projects will also sit on the Cabo Delgado coastline, as well as neighbouring UNESCO biosphere Quirimbas Archipelago. The projects risk polluting and causing irreversible damage to these important nature sites.

## Conflict and human rights abuses

The Mozambique LNG project will not only be catastrophic for the climate, but it is already having a devastating toll on human rights in the region. Local people in Cabo Delgado have been caught between several opposing groups drawn to the area by the money and activity surrounding the discovery of natural gas.



There is evidence of energy companies paying the government to deploy soldiers to protect their interests and consequent reports of human rights abuses by the army and mercenaries from outside Mozambique<sup>48</sup>. Impoverished local people, many of whom have lost their land and livelihoods to make way for the LNG projects,<sup>49</sup> are now prime recruitment targets for the ongoing armed insurgency.

## List of potential fossil fuel extraction projects

The following table includes projects that have either already applied for planning permission/approval or are forecast to by 2025. This includes two projects that have been refused but are pending appeal. We have not included Horse Hill, which would add another 11 million tonnes of CO<sub>2</sub>e to the total below, as this has already been approved (subject to legal challenge).

For offshore oil and gas, Uplift compiled a list of projects and their estimated reserves by million barrels of oil equivalent forecast by Rystad Energy to be approved between 2021 and 2025. Some of these, including Cambo, have already submitted Environmental Statements which contain information on the project's likely reserves and operational emissions. For others, we have estimated emissions using an available proxy<sup>50</sup>. We based our list of onshore projects on information compiled by website Drillordrop as well as further research<sup>51</sup>. We used company data on emissions where available and a proxy to calculate the end-use emissions. Proxies do not cover the full range of upstream and downstream activities so the actual emissions are likely to be higher.

*Source: list of offshore projects and estimated reserves from Rystad Energy*

*\*Resources are shown in million barrels of oil equivalent (Mmboe) for oil and gas and million tonnes (Mt) for coal.*

## Recommendations

To “keep 1.5 degrees alive” – the UK government’s overarching aim for COP26 – countries around the world must urgently reduce both the supply of and demand for fossil fuels. If the UK government is serious about doing its fair share to address the climate crisis, it must cut emissions at source by ending its support for fossil fuel extraction.

We urge the UK government to:

**1.** Rule out all new fossil fuel extraction projects that have not yet received development consent, as recommended by the IEA. This involves:

- Rejecting applications for development consent, including the Cambo oil field and the proposed coal mine in Cumbria.
- Cancelling all future licensing rounds and revoking undeveloped licences.
- Specifying that additional fossil fuel extraction infrastructure is not needed by changing the relevant energy National Policy Statements.
- Setting a policy of not granting planning permission for new fossil fuel extraction by changing the National Planning Policy Framework or issuing a new Written Ministerial Statement.

**2.** Withdraw support for the proposed oil site in Horse Hill, Surrey, in the legal challenge that is scheduled to be heard in the Court of Appeal on 16 November 2021. The Department for Levelling Up, Housing and Communities is currently an interested party in the case, defending the council's decision to allow the oil development.

**3.** End all financial support for fossil fuels, including tax breaks, in the UK and abroad. This includes withdrawing the \$1.15 billion of UK Export Finance the UK has pledged to support the liquefied natural gas project in Mozambique, and redirecting it to fund sustainable projects in the region.

**4.** Set a timescale for the phase out of production from existing developed fossil fuel extraction projects. To limit global heating to 1.5°C, some early closure of already-producing or under-development fields will be required.

**5.** Repeal the objective of Maximising Economic Recovery of the UK's offshore oil and gas, and replace this with a new strategy that aims towards a fully renewable energy system. This needs to be accompanied by a Just Transition Plan to ensure that workers do not bear the burden of the transition. For information on what a just transition should look like, see the recommendations in the [Sea Change report](#).

**6.** Commit to providing financial and technical assistance to poorer countries to phase out fossil fuel extraction and transition to renewable energy. As a rich country that has benefited enormously from the extraction and use of fossil fuels, the UK has a responsibility to support countries that have fewer resources to fund a just transition.

**7.** Join the Beyond Oil and Gas Alliance, which was founded by Denmark and Costa Rica, as a full member to help accelerate the transition away from oil and gas around the world.

## Notes

- 1 <https://www.nao.org.uk/wp-content/uploads/2021/02/Reducing-Carbon-Emissions-from-cars.pdf>
- 2 <https://www.gov.uk/government/statistics/final-uk-greenhouse-gas-emissions-national-statistics-1990-to-2019>
- 3 [https://iea.blob.core.windows.net/assets/beceb956-0dcf-4d73-89fe-1310e3046d68/NetZeroBy2050-ARoadmapfortheGlobalEnergySector\\_CORR.pdf](https://iea.blob.core.windows.net/assets/beceb956-0dcf-4d73-89fe-1310e3046d68/NetZeroBy2050-ARoadmapfortheGlobalEnergySector_CORR.pdf)
- 4 <https://www.theguardian.com/environment/2021/may/18/no-new-investment-in-fossil-fuels-demands-top-energy-economist>
- 5 <https://www.iea.org/news/energy-and-climate-leaders-from-around-the-world-pledge-clean-energy-action-at-the-iea-cop26-net-zero-summit>
- 6 <https://www.iea.org/news/pathway-to-critical-and-formidable-goal-of-net-zero-emissions-by-2050-is-narrow-but-brings-huge-benefits>
- 7 The Environmental Impact Assessment for the Mozambique LNG projects assumed an operational phase of 37 years (page C20): [https://mzlng.totalenergies.co.mz/sites/g/files/wompnd2311/f/atoms/files/annex\\_c\\_-\\_lng\\_final\\_eia\\_sept\\_2014\\_eng.pdf](https://mzlng.totalenergies.co.mz/sites/g/files/wompnd2311/f/atoms/files/annex_c_-_lng_final_eia_sept_2014_eng.pdf)? The project will produce 30-43 million tonnes of LNG per year, according to Total's website and its Environmental Impact Assessment: <https://mzlng.totalenergies.co.mz/en/about-mozambique-liquefied-natural-gas-project>? We used the BEIS conversion factor for LNG (2555.28kg CO<sub>2</sub>e per tonne) to calculate the annual and lifetime emissions: <https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021>? Annual emissions from the EU 27 in 2018 was 3.3GtCO<sub>2</sub>e. See <https://www.climatewatchdata.org/data-explorer/historical-emissions>.
- 8 See <https://www.nature.com/articles/s41586-021-03821-8>
- 9 <https://www.clientearth.org/latest/latest-updates/news/north-sea-oil-field-development-shows-banks-hypocrisy-over-climate/>
- 10 <https://www.nature.com/articles/s41586-021-03821-8>
- 11 See <https://productiongap.org/2021report/>
- 12 <https://www.theccc.org.uk/publication/letter-advice-to-the-uk-government-on-compatibility-of-onshore-petroleum-with-uk-carbon-budgets/>
- 13 <https://www.theccc.org.uk/wp-content/uploads/2020/12/The-Sixth-Carbon-Budget-The-UKs-path-to-Net-Zero.pdf>
- 14 <https://www.desmog.com/2021/09/10/twisting-words-oil-industry-business-department-climate-change-committee/>
- 15 See <https://ghgprotocol.org/standards/scope-3-standard>
- 16 <https://paidtopollute.org.uk/news/4-billion-to-oil-and-gas/>
- 17 The data on projects, operators and resource estimates is provided by Uplift based on analysis from Rystad Energy. Emissions are calculated by the authors of this report.
- 18 See [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/972520/north-sea-transition-deal\\_A\\_FINAL.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/972520/north-sea-transition-deal_A_FINAL.pdf)
- 19 See <https://www.theccc.org.uk/publication/letter-advice-to-the-uk-government-on-compatibility-of-onshore-petroleum-with-uk-carbon-budgets/>
- 20 See <https://www.thenational.scot/news/19621363.uk-government-u-turns-admits-power-stop-cambo-oil-field/>
- 21 Rystad Energy
- 22 This estimate uses a proxy from the Oil Climate Index for a barrel of crude from the UK Forties field (423 kg/CO<sub>2</sub>e / barrel of crude). <https://oci.carnegieendowment.org/#oil/uk-forties-blend>. The figure for coal-fired power plants comes from the US

Environmental Protection Agency, Greenhouse Gas Equivalencies Calculator

- 23** See <https://foe.scot/press-release/81-offshore-oil-gas-workers-leaving-industry/>
- 24** <https://www.ukoog.org.uk/onshore-extraction/history>
- 25** This is based on the consent for up to 3,500 barrels per day over 20 years.
- 26** We used the downstream emissions from the UK Forties field (423 kg/CO<sub>2</sub>e / barrel of crude) to calculate scope 3 emissions, as the available UK proxy. See <https://oci.carnegieendowment.org/#oil/uk-forties-blend>.
- 27** <https://drillordrop.com/2021/09/30/breaking-councillors-reject-major-expansion-of-west-newton-oil-site/>
- 28** <https://www.gov.uk/government/news/end-to-coal-power-brought-forward-to-october-2024>
- 29** CO<sub>2</sub>e emissions are calculated using the BEIS conversion factor for coking coal (3165.24 kg CO<sub>2</sub>e per tonne)
- 30** [https://uploads.guim.co.uk/2021/02/03/HANSEN-JOHNSON\\_Letter\\_2021.02.03.pdf](https://uploads.guim.co.uk/2021/02/03/HANSEN-JOHNSON_Letter_2021.02.03.pdf)
- 31** See <https://cumbria.gov.uk/elibrary/Content/Internet/538/28159/4444682847.pdf>
- 32** See <https://www.theccc.org.uk/wp-content/uploads/2020/12/The-Sixth-Carbon-Budget-The-UKs-path-to-Net-Zero.pdf>
- 33** See <https://inews.co.uk/news/environment/net-zero-coal-mine-cumbria-gold-standard-condemned-carbon-climate-change-1191140>
- 34** <https://nae.net.au/projects/lochinar/> CO<sub>2</sub>e emissions are calculated using the BEIS conversion factor for coking coal (3165.24 kg CO<sub>2</sub>e per tonne)
- 35** Ibid.
- 36** <https://www.walesonline.co.uk/110000-extra-tonnes-coal-could-16132751>
- 37** [https://www.globaljustice.org.uk/sites/default/files/files/resources/gjn\\_-\\_decarbonising\\_aid\\_final\\_-\\_may\\_2020.pdf](https://www.globaljustice.org.uk/sites/default/files/files/resources/gjn_-_decarbonising_aid_final_-_may_2020.pdf)
- 38** <https://publications.parliament.uk/pa/cm5802/cmselect/cmtrade/126/report.html#heading-0>
- 39** <https://www.gov.uk/government/news/pm-announces-the-uk-will-end-support-for-fossil-fuel-sector-overseas>
- 40** Annual emissions from the EU 27 in 2018 was 3.3GtCO<sub>2</sub>e. See <https://www.climatewatchdata.org/data-explorer/historical-emissions>.
- 41** [https://mzlng.totalenergies.co.mz/sites/g/files/wompnd2311/f/atoms/files/annex\\_c\\_-\\_lng\\_final\\_eia\\_sept\\_2014\\_eng.pdfzzz](https://mzlng.totalenergies.co.mz/sites/g/files/wompnd2311/f/atoms/files/annex_c_-_lng_final_eia_sept_2014_eng.pdfzzz)
- 42** The Environmental Impact Assessment for the Mozambique LNG projects assumed an operational phase of 37 years (page C20): [https://mzlng.totalenergies.co.mz/sites/g/files/wompnd2311/f/atoms/files/annex\\_c\\_-\\_lng\\_final\\_eia\\_sept\\_2014\\_eng.pdf](https://mzlng.totalenergies.co.mz/sites/g/files/wompnd2311/f/atoms/files/annex_c_-_lng_final_eia_sept_2014_eng.pdf) The project will produce 30-43 million tonnes of LNG per year, according to Total's website and its Environmental Impact Assessment: <https://mzlng.totalenergies.co.mz/en/about-mozambique-liquefied-natural-gas-project> We used the BEIS conversion factor for LNG (2555.28kg CO<sub>2</sub>e per tonne) to calculate the annual and lifetime emissions: <https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021>
- 43** Annual emissions from the EU 27 and Africa in 2018 were 3.3 and 4.5 GtCO<sub>2</sub>e. See <https://www.climatewatchdata.org/data-explorer/historical-emissions>.
- 44** [https://mzlng.totalenergies.co.mz/sites/g/files/wompnd2311/f/atoms/files/annex\\_c\\_-\\_lng\\_final\\_eia\\_sept\\_2014\\_eng.pdf](https://mzlng.totalenergies.co.mz/sites/g/files/wompnd2311/f/atoms/files/annex_c_-_lng_final_eia_sept_2014_eng.pdf)
- 45** <https://www.climatechangenews.com/2021/10/13/iea-embracing-1-5c-ambition-leaving-no-excuse-new-fossil-fuel-investment/>
- 46** Ibid.
- 47** <https://www.unicef.org/press-releases/one-billion-children-extremely-high-risk-impacts-climate-crisis-unicef>
- 48** [https://www.foei.org/wp-content/uploads/2020/06/Gas-in-Mozambique\\_Friends-of-the-Earth\\_Executive-Summary\\_English.pdf](https://www.foei.org/wp-content/uploads/2020/06/Gas-in-Mozambique_Friends-of-the-Earth_Executive-Summary_English.pdf)
- 49** <https://mzlng.totalenergies.co.mz/en/sustainability/resettlement/resettlement-plan>
- 50** For oil developments, we used the upstream and midstream emissions for a barrel of crude from the UK Forties field as a proxy (94kg of CO<sub>2</sub>e per barrel of crude). We used the downstream emissions from the same proxy to calculate the scope 3 emissions for all oil developments (423kg of CO<sub>2</sub>e per barrel of crude). These emissions factors are from <https://oci.carnegieendowment.org/#oil/uk-forties-blend>

. For gas projects we used the UK Oil and Gas estimate of 22kg of CO<sub>2</sub>e per barrel of oil equivalent to calculate scope 1 and 2 emissions and the BEIS greenhouse gas emissions conversion factor of 2.03473kg of CO<sub>2</sub>e per cubic metre of natural gas (100% mineral blend).

**51** <https://drillordrop.com/sites/>