

20 IMPACTS OF COAL BED METHANE



FRACK-OFF.ORG

PRODUCED WATER

To release methane from coal seams the groundwater trapping the gas must be continually pumped out. The water contains a cocktail of chemicals including carcinogenic hydrocarbons such as benzene, toluene, ethyl-benzene and heavy metals such as arsenic, cadmium, mercury and lead. In Australia up to 40% of coal bed methane wells are hydraulically fractured to increase the flow of water and gas.



FRACK-OFF.ORG

WASTE WATER DISPOSAL

Millions of litres of produced water has to be disposed of from each well. Over time this represents a massive volume of water and toxic material released into rivers, estuaries and the sea. In most cases the industry claims that the water does not require treatment or detailed monitoring. The picture shows a "designated outfall" taking untreated water from a CBM site at Airth in Scotland into the Firth of Forth.



FRACK-OFF.ORG

LOWERING THE WATER TABLE

Continuous removal of water from coal seams depletes ground water and may eventually lower farmers boreholes and surface water flows (streams and rivers). It can also change the flow of groundwater drawing fresh water into the coal seams. Lowering the water table has allowed methane and other gases to be released into streams and aquifers in Australia.



FRACK-OFF.ORG

AIR POLLUTION & FLARING

Large quantities of methane, hydrogen sulphide, nitrogen oxides (Nox) and other pollutants are emitted from site equipment, diesel generators and trucks. Noise pollution and further emissions of methane and airborne pollutants occur as the gas is processed and pressurised in sprawling temporary infrastructure. Flare stacks burn off unwanted gasses and cause noise and light pollution and more toxic emissions.



FRACK-OFF.ORG

METHANE MIGRATION INTO AQUIFERS

The Coal Bed Methane (CBM) process along with hydraulic fracturing releases methane from coal seams. The gas wells themselves are the most common pathway for methane migration (leakage) but once released, methane can also migrate through the overlying geology. This can lead to high levels of methane in streams, aquifers and eventually drinking water. Methane is 100x than carbon dioxide as a greenhouse gas. Picture shows the Condamine river in Queensland bubbling with gas.



FRACK-OFF.ORG

LEAKING WELLS

6% of gas wells leak immediately and 50% of all gas wells leak within 15 years. CBM exploration requires thousands of wells to be drilled. These wells can never be removed or recycled, the steel and concrete structures plunged deep into the geology decay slowly over time. All gas wells will leak eventually.

SITES & ENCLOSURE

Many wells require many sites which in turn require access roads, foundations, floodlights, CCTV and enclosures. This pattern of development divides countryside, threatens rights of way and damages and slowly destroys the natural beauty and diversity of an area. The picture shows a site at Airth near Falkirk, Scotland.



FRACK-OFF.ORG

DANGEROUS WORK ENVIRONMENTS

The jobs created by the fracking industry are small in number for the size of the investment. Local job creation is short term, unskilled and in high risk areas/occupations. These workers are at increased risk of industrial disease and accidents. Exposure to chemicals and produced water creates acute health risks for workers.



FRACK-OFF.ORG

PIPELINES, COMPRESSOR STATIONS & FLARING

A sprawling temporary gas infrastructure is needed to connect thousands of sites across the landscape. The pipelines used for transporting gas and waste create the additional danger of leaks and explosions.

Pipeline construction cuts scars across the countryside and blights surrounding areas with planning restrictions. Flare stacks burn off unwanted gasses on every site and cause noise/light pollution and toxic emissions. Noise pollution and further emissions of methane and airborne pollutants occur as the gas is processed and pressurised.



FRACK-OFF.ORG

INDUSTRIALISED COUNTRYSIDE

The result of this type of dispersed industrial development on the countryside is catastrophic. Wildlife corridors are disrupted. Edge effects created by the cutting up of habitats into smaller and smaller pieces threaten biodiversity and the release and distribution of toxic compounds adds to the cumulative impact.



FRACK-OFF.ORG

CORPORATE PROFIT VS COMMUNITY COST

If this industry is allowed to get a foot in the door in the UK the number of communities under threat will increase massively. The impacts and dangers are acute and borne by local communities who find themselves living in gasfields. The rewards go to an elite of shareholders, directors and investors. Stopping this industry in the UK will send a clear message to other countries that the impacts and dangers are unacceptable.



FRACK-OFF.ORG

DAMAGE TO EXISTING INDUSTRIES

Farming and food production, recreation and tourism suffer at all stages of coal bed methane exploration, appraisal and production. An areas reputation and land base are exposed to long term dangers that exist long after the industry has gone.



FRACK-OFF.ORG

MORE COAL EXTRACTION

Coal is the dirtiest of the fossil fuels and 70% of UK coal is considered un-mineable. Companies are already speculating that once coal seams are de-watered and degassed the coal can be extracted using other techniques. Open cast mining or burning the coal underground (Underground Coal Gasification) will increase the use of coal and have devastating impacts for future generations.



FRACK-OFF.ORG

HUMAN & ANIMAL HEALTH IMPACTS

Wherever fracking is happening, including Texas, Colorado, Pennsylvania and Queensland, people are getting sick as a result of the toxic, carcinogenic and hormone-disrupting chemicals they are exposed to via both air and water. With symptoms ranging from headaches and breathing difficulties to neurological impairment and cancer. Animals and crops have been killed in Alberta, North Dakota, New Mexico, California and Pennsylvania as a result of exposure to chemicals from CBM, fracking and drilling operations.



FRACK-OFF.ORG

BUBBLE & BUST

Many areas of the country bear the scars of previous industrial development. Extractive industries destroy long term sustainable jobs and create unsustainable bubbles and busts. Any short term gains from this destructive industry will be far outweighed by medium and long term losses.



FRACK-OFF.ORG

HEAVY VEHICLE TRAFFIC

Removing liquid and solid waste requires many tanker/truck movements for each site. This is in addition to construction vehicles and drilling and fracking equipment when the site is commissioned. Because the lifetime of each CBM well is short (2-5 years) this armada of heavy vehicles will roll across the countryside.



FRACK-OFF.ORG

ROAD DAMAGE, SUBSIDENCE & EARTHQUAKES

Road damage is an inevitable consequence of CBM exploration due to intensive transportation of materials and machinery. Subsidence and earthquakes may be caused by the process and are quite common in conventional coal mining. The cost of the road damage caused by fracking traffic have surpassed the tax revenues generated by fracking in most U.S states.



FRACK-OFF.ORG

PROPERTY BLIGHT

Home owners in CBM extraction areas can find themselves trapped in a house they can not sell, re-mortgage, insure or develop. An area already suffering from a decline in existing industries is further impacted by industrialisation (sites & pipelines), air and water pollution and the resultant health impacts.



FRACK-OFF.ORG

ENERGY DEPENDENCY

The current economic system is addicted to cheap and abundant fossil fuels. Investment in increasingly dirty and dangerous fossil fuel extraction and a new wave of extreme industrialisation undermines any attempt to reduce energy consumption or become self sufficient. Fracking will not reduce or set people free from their energy bills. It is a direct threat to investment in insulation, localisation, energy saving, energy efficiency and renewable energy technologies. It perpetuates our dependence on finite resources and sabotages the life chances of future generations.



FRACK-OFF.ORG

CLIMATE CHANGE

CBM will not replace other fossil fuels, it will be burned in addition to the oil, coal and gas that has already been discovered. By developing these new energy extraction techniques we are expanding global reserves of hydrocarbons and increasing emissions. The chemistry of the atmosphere is changing and due to drought, flood and starvation the global death toll already stands at 450,000 annually.



FRACK-OFF.ORG