

20 IMPACTS OF SHALE OIL & GAS

WATER USE

A single frack uses 5-10 Olympic size swimming pools of water. The fracking industry removes water from the water cycle and turns clean water into polluted water that must be treated and disposed of. In the U.S., water auctions see farmers bidding against the oil and gas industry for water. The picture shows a tanker filling up from a standpipe in a residential area that already suffers from low water pressure at Banks in Lancashire.



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WATER POLLUTION

Massive volumes of toxic water are returned to the surface. Known as flowback or produced water it is contaminated with chemicals used in the fracking process and materials leached from the shale rock including heavy metals and radioactive elements. Additional pollution of aquifers and surface water is caused by methane migration, leaking wells, spills and accidents. The picture shows tanks of radioactive produced water at Preese Hall in Lancashire.



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FUGITIVE EMISSIONS

Shale Gas extraction inevitably leads to methane being emitted (leaked) directly into the atmosphere. Methane is 100x worse (on 20yr time frame) than carbon dioxide as a greenhouse gas. New research suggests that this makes Shale Gas more polluting than coal.



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AIR POLLUTION

A wide variety of dangerous pollutants, including ozone, aromatic hydrocarbons and silica dust are produced by the drilling and fracking process. The ozone levels in previously pristine areas of the U.S. are now higher than central Los Angeles. Additional air pollution is created by construction work, drill rigs and machinery. There is a growing catalogue of human and animal health impacts associated with this invasive industrial activity. The picture shows emissions from a condensate tank taken with an infrared camera.



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METHANE MIGRATION INTO AQUIFERS

Hydraulic Fracturing is designed to extract methane from shale rock and inevitably disrupts the geology of an area. The gas wells themselves are the most common pathway for methane migration (leakage). This can lead to high levels of methane in streams, aquifers and eventually drinking water. Methane build up in enclosed spaces (such as buildings) results in the threat of explosions.



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LEAKING WELLS

Industry reports show that 6% of gas wells leak immediately and 50% of all gas wells leak within 15 years. Shale gas exploration requires many wells to be drilled (1,000's planned for Lancashire alone). 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.



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SITES & ENCLOSURES

Many wells require many sites which in turn require access roads, foundations, floodlights 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 Preese Hall in Lancashire.



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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 flowback creates acute health risks for workers. The large volumes of sand (silica) used in the fracking process is causing a dramatic rise in cases of silicosis (lung disease) in the US.



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PIPELINES, COMPRESSOR STATIONS & FLARING

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. A sprawling temporary gas infrastructure is needed to connect thousands of sites across the landscape. Flare stacks used to burn off unwanted gasses 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.



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INDUSTRIALISED COUNTRYSIDE

The result of this type of 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.



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CORPORATE PROFIT VS COMMUNITY COST

The more the oil and gas industry invest in drilling and fracking equipment the more drilling and fracking will happen. The impacts and dangers are acute and borne by local communities who find themselves living in a gasfield. 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.



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DAMAGE TO EXISTING INDUSTRIES

Farming and food production, recreation and tourism suffer at all stages of shale gas exploration, appraisal and production. Even when the industry has left the area a legacy of sites, pipelines and wells will remain. An areas reputation, population and land base are exposed to long term damage that exists long after the shale industry has gone.



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TOXIC SUPPORT INDUSTRIES

Fracking requires large volumes of sand and chemicals and produces large volumes of solid drilling waste and liquid flowback that must be treated. Areas that have no drilling are still threatened by accidents, emissions and spills from these toxic support industries. The picture shows a fire at Magnablend (fracturing & drilling fluid manufacturer), Waxahachie, Texas.



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HUMAN & ANIMAL HEALTH IMPACTS

There is a growing body of evidence and peer reviewed science that raises serious questions about the safety of the fracking industry. In Texas, Colorado, Pennsylvania and Queensland people have been exposed to toxic, carcinogenic and hormone-disrupting chemicals via both air and water, with symptoms 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 fracking and drilling operations.



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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.



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HEAVY VEHICLE TRAFFIC

Just bringing water to site requires 1,000 - 4,000 tanker movements per frack. With 10-60 wells per site and 100's of sites planned in Lancashire alone this would require millions of tanker movements. Because the lifetime of each shale well is short (3 - 5 years) this armada of heavy vehicles will roll across the rural and suburban areas as it has done in the U.S..



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ROAD DAMAGE, SUBSIDENCE & EARTHQUAKES

Road damage is an inevitable consequence of shale exploration due to intensive transportation of materials and machinery. Subsidence may occur and the earthquakes caused by the first use of hydraulic fracturing in Lancashire were sufficiently powerful to distort the companies own steel and concrete well which is now unusable. The cost of the road damage caused by fracking traffic have surpassed the tax revenues generated by fracking in most U.S states.



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PROPERTY BLIGHT

Home owners in fracking zones 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, flare stacks), air and water pollution and the resultant health impacts.



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ENERGY DEPENDANCY

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.



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CLIMATE CRISIS

Shale Gas and Oil 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 death toll already stands at 450,000 annually.



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