



Cover note to final publication of PHE's review of the potential public health impacts of exposures to chemical and radioactive pollutants as a result of the shale gas extraction process

This cover note accompanies the final publication of the [report](#) of Public Health England (PHE) into the risks to the public's health that may arise from the process of shale gas extraction by hydraulic fracturing (fracking).

PHE's conclusion

PHE has reviewed the literature on the potential public health impacts of exposures to chemical and radioactive pollutants as a result of shale gas extraction. We conclude that the currently available evidence indicates that the potential risks to public health in the vicinity of shale gas extraction sites will be low if shale gas extraction is properly run and regulated.

Where potential risks have been identified in the literature, the reported problems are typically a result of operational failure and a poor regulatory environment. Therefore good on-site management and appropriate regulation of all aspects from exploratory drilling, gas capture, use and storage of fracking fluid, and post-operations decommissioning are essential to minimise the risk to the environment and public health.

An interim version of the report was published in 2013 with a request for additional relevant literature. Most responses supported the scientific conclusions of the report though important concerns were raised that regulation of shale gas extraction may not be sufficiently robust and that the use of new techniques in the extraction process means that safety and low risk to the public's health cannot be guaranteed. In considering these concerns, we note that many of the industrial processes involved are not new. We have identified particular concerns including density and location of drilling, the need to ensure bore-hole integrity, transparency about the chemicals used and the importance of environmental monitoring. Overall, however, we do not regard shale gas exploitation as posing a significant regulatory challenge for the protection of local people's health as a result of releases of chemical and radioactive pollutants. The PHE position remains, therefore, that the shale gas extraction process poses a low risk to human health if properly run and regulated.

The importance of monitoring and robust environmental permitting

In order to provide assurance of low risk to the public's health from the shale gas extraction process, PHE's view is that robust environmental regulation is essential. This includes the need to consider local factors, particularly in relation to aspects of the process that involve new technologies such as hydraulic fracturing. PHE is in regular dialogue with the Environment Agency to ensure that the protection of the public's health is appropriately reflected in all aspects of the regulatory process. We will work with regulators to ensure that effective environmental monitoring is undertaken, including base-line monitoring, before any drilling or extraction is commenced.

Local planning and wider issues of health and wellbeing

PHE's report focuses on potential risks to people in the vicinity of shale gas extraction sites as a result of releases of chemical and radioactive pollutants during extraction. It does not consider wider public health and socioeconomic impacts such as increased traffic, impacts on local infrastructure and worker migration. The report refers to the importance of considering such broader issues in local planning applications to determine overall impact on the health and wellbeing of local communities. Such considerations will, for example, weigh the beneficial effects of employment and local economic development, against potential harms from increased traffic density and air pollution, and the impact on the natural environment.

PHE will provide specialist scientific support to local authorities when considering the evidence provided by applicants. We are in discussion with the Local Government Association and Directors of Public Health about an appropriate framework for providing this support.

Shale gas extraction and climate change

A further public health issue relates to the impact of shale gas extraction on climate change. This has been considered by the Chief Scientific Advisor for the Department for Energy and Climate Change (DECC) in a comprehensive report issued in September 2013 which the Government accepted and has committed to research on monitoring and minimising emissions and is requiring shale firms to use best technologies to capture emissions from operations. PHE fully recognises the need for clear strategies to mitigate against and adapt to the potential health impacts of climate change, and we welcome this report from the DECC Chief Scientific Advisor which gives a comprehensive summary of this issue.