



By email

Our ref: 16/12/jb/487

4 February 2015

Dear

Re: **Shale gas extraction**

Thank you for your email dated 22 January 2015 in which you ask about the public health impacts of shale gas extraction. Your email has been handled as a request for information under the Environmental Information Regulations. I can confirm that Public Health England (PHE) does hold the information you have requested.

You asked for information on:

1. *The level of radon is considered 'safe' for human health*

A review of health risks from radon was published in 2009 by the United Kingdom (UK) Advisory Group on Ionising Radiation (AGIR). This review concluded that long term exposure to radon increases lung cancer risk and that the risk appears to vary linearly with radon concentration. This is consistent with other international studies including those undertaken by the World Health Organisation (WHO) and the International Agency for Research on Cancer (IARC). Consistent with the general approach to exposure to ionising radiation, even low levels of exposure are judged to present a small risk. A copy of the AGIR's review report is available from: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/335102/RCE-11_for_website.pdf.

In the UK, the principal guideline for acting to reduce radon exposures in the home is the Action Level that is set at 200 Bq m⁻³. This guideline is applied to estimates of the annual average concentration in a home, which should be derived from an appropriate radon measurement. This guideline level is within the range advised by international bodies including WHO and the International Commission on Radiological Protection.

The amount of radon is measured in becquerels per cubic metre of air (Bq m⁻³). The average level in UK homes is 20 Bq m⁻³. For levels below the Target level of 100 Bq m⁻³, the individual risk remains relatively low and not a cause for concern. However, the risk increases as the radon level increases.

The health risk from radon is considered to be proportional to the level of long term exposure, with no safe or unsafe threshold. To reflect this, PHE advises that homes

with radon levels above the Action Level (200 Bq m⁻³) should be remediated, preferably to below the Target Level.

More information on radon levels for householders, employers and health professionals is available from: <http://www.ukradon.org>.

2. *Whether the 'safe' level has been reviewed over the last 10 years, and if they were, what the previous 'safe' levels were*

The UK radon Action Level was last reviewed in 2010 and the level, 200 Bq m⁻³, was retained in advice that was published by the Health Protection Agency (HPA) (now part of PHE). For a copy of HPA's advice please see:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/335000/RCE-15_for_website.pdf.

At that time, HPA also introduced a Target Level of 100 Bq m⁻³ for use in ensuring that action taken to reduce high radon levels should achieve significant rather than marginal reductions and to encourage householders who are at greater individual health risk from radon exposure, especially smokers and ex-smokers, to take action on high radon if their home is above this level.

3. *The regulations and recommendations PHE have in place to ensure radon will be within the 'safe' levels at prospective fracking sites*

PHE does not regulate radon exposure. Radon exposure at prospective fracking sites would be the responsibility of the company managing the site under established general and radiation-specific health and safety legislation.

In addition to the health and safety legislation noted above, PHE recommended, in its review of the potential public health impact of shale gas, that further monitoring and assessment should be made of radon arising from shale gas activities to provide an evidence base. A copy of this review is available from:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/332837/PHE-CRCE-009_3-7-14.pdf.

If you have any queries regarding the information that has been supplied to you, please refer your query to me in writing in the first instance. If you remain dissatisfied you can request an internal review. Under Regulation 11 of the EIR you have the right to make representations to PHE in respect of this response. Requests for internal reviews should be submitted within 40 working days of the date of receipt of the response to your original request and should be addressed to foi@phe.gov.uk.

Please note that you have the right to an independent review by the Information Commissioner's Office if a complaint cannot be resolved through the PHE complaints procedure. The Information Commissioner's Office can be contacted by writing to Information Commissioner's Office, Wycliffe House, Water Lane, Wilmslow, Cheshire SK9 5AF.

Yours sincerely

Freedom of Information Officer