

# PUBLIC PERCEPTION OF SHALE GAS EXTRACTION IN THE UK: HOW PEOPLE'S VIEWS ARE CHANGING

Sarah O'Hara,\* Mat Humphrey, Rusi Jaspal, Brigitte Nerlich and  
Marianna Poberezhskaya

University of Nottingham

\*Sarah.O'Hara@nottingham.ac.uk

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***Author Affiliations:***

Professor Sarah O’Hara, School of Geography, University of Nottingham

Professor Brigitte Nerlich, School of Sociology and Social Policy, University of Nottingham

Dr Mathew Humphrey, School of Politics and International Relations, University of Nottingham

Dr Rusi Jaspal, Division of Psychology, School of Applied Social Sciences, De Montfort University  
Leicester

Ms Marianna Poberezhskaya, School of Politics and International Relations, University of Nottingham

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## ***Introduction***

Global energy consumption is forecast to increase at an average annual rate of 1.6 % over the next two decades with total consumption rising from 504.7 to 769.8 quads between 2008 and 2035, according to EIA figures.<sup>1</sup> Notwithstanding the significant concerns about our continued dependence on fossil fuels and their impacts on the environment, they will provide much of the World's energy for the foreseeable future. It is anticipated, however, that there will be a shift in the relative balance of the fossil fuel mix with natural gas usage increasing significantly and according to a recent report by the IEA<sup>2</sup>, the rapid development of 'unconventional' natural gas resources, most notably shale gas, could herald a 'golden age for gas' with demand surpassing that for coal by 2030, and by 2035 natural gas could account for 25% of all global energy use.

The emergence of shale gas on the energy landscape has been nothing short of astounding. In the space of a few years it has gone from being a little known and little used energy resource to one that has been heralded by some as a game changer not only capable of bridging the looming gap between supply and demand but also serving as a lynchpin in the transition to a low carbon economy.<sup>3</sup> In the US, for example, the speed at which shale gas has been developed and brought to market has been spectacular. Whereas, as recently as 2000, it accounted for less than 1% of all US natural gas production, by 2011 this had risen to 20% with current forecasts suggesting that by 2035 shale gas could account for almost 50% of the country's natural gas production<sup>4</sup> and, in the process, help the US to shift from being a net importer to a net exporter of gas.<sup>5</sup>

But while much has been made about the potential positives of shale gas, its rapid rise has not been without controversies with significant concerns being voiced about the manner in which it is both mined and used. Arguments now rage about the potential environmental impacts of shale gas. Grass roots activists argue that the technique of hydraulic fracturing or 'fracking' to extract shale gas not only pollutes ground and surface waters, but is endangering human and animal health. The occurrences of earthquakes in areas that are being fracked have also been a cause of considerable alarm. Moreover, there are concerns that while natural gas produces only half of the GHG emissions of coal<sup>6</sup>, the emergence of this 'new' energy source will derail efforts to increase renewables and have a negative impact on GHG emissions and thus future climate. The furore around shale gas explorations that emerged in the US in the late 2000s has prompted a rising swell of local environmental opposition in other parts of the globe where the potential for shale gas production is being explored.

In the UK developments are at a relatively early stage, but shale gas, and in particular its method of extraction (fracking) has received significant media coverage (Fig. 1) with a growing number of

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<sup>1</sup> <http://www.eia.gov/>

<sup>2</sup> [http://www.iea.org/weo/docs/weo2011/WEO2011\\_GoldenAgeofGasReport.pdf](http://www.iea.org/weo/docs/weo2011/WEO2011_GoldenAgeofGasReport.pdf)

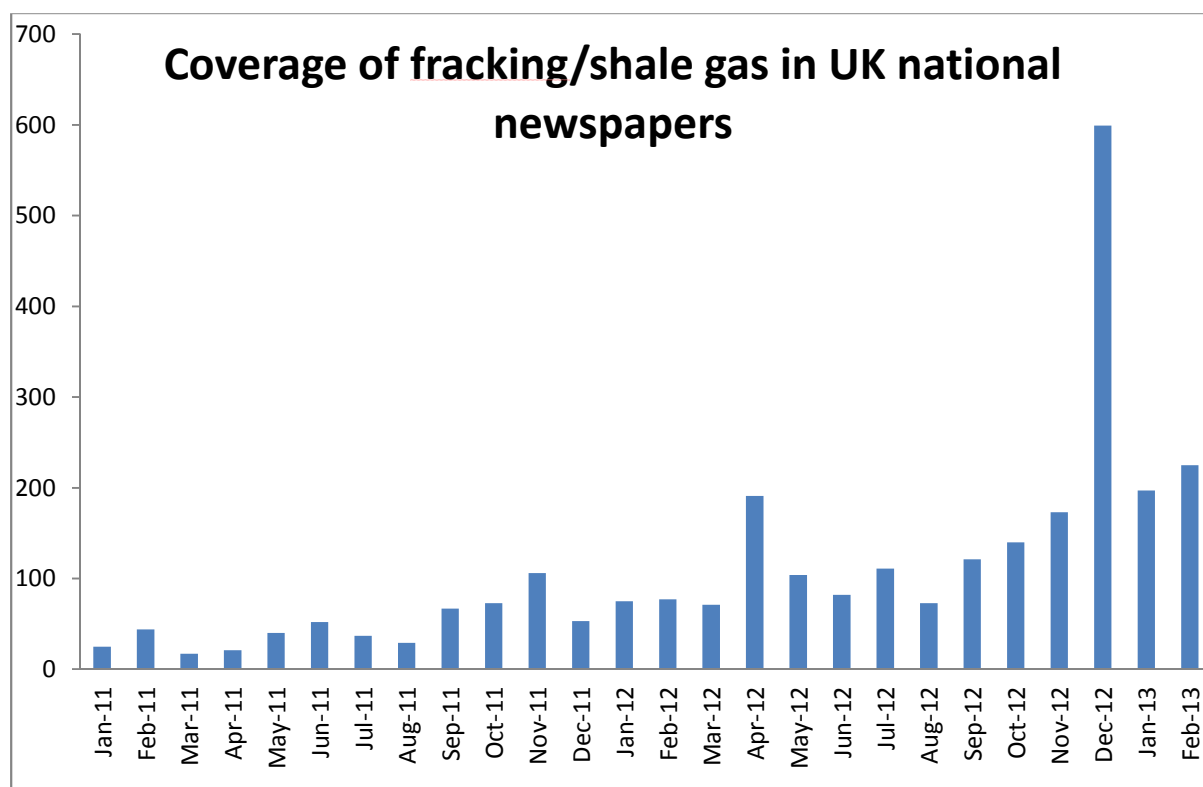
<sup>3</sup> <http://www.greenwisebusiness.co.uk/news/environment-agency-chief-uses-keynote-speech-to-support-fracking-and-nuclear-power-3295.aspx>

<sup>4</sup> [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1635280&http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1635280](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1635280&http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1635280)

<sup>5</sup> [http://www.iea.org/weo/docs/weo2011/WEO2011\\_GoldenAgeofGasReport.pdf](http://www.iea.org/weo/docs/weo2011/WEO2011_GoldenAgeofGasReport.pdf)

<sup>6</sup> [www.epa.gov/cleanrgy/energy-and-you/affect/natural-gas.html](http://www.epa.gov/cleanrgy/energy-and-you/affect/natural-gas.html)

articles in mainstream UK newspapers and numerous reports on news and current affairs programmes (Fig. 1).



**Figure 1. The number of shale gas related articles in UK national papers since January 2011**

Given the level of interest in the subject and as part of an ongoing study to investigate public perceptions of shale gas exploitation in the UK, we have undertaken five national level surveys to assess the level of knowledge and concern about shale gas and its exploitation in the UK (Table 1). The surveys conducted by YouGov were undertaken in March, April, June and 2012, as well as March 2013. Given the considerable interest in this issue we considered it pertinent to publish the broad findings from these surveys.

Date of Survey	# of respondents
18 <sup>th</sup> -20 <sup>th</sup> March 2012	2784
26 <sup>th</sup> -30 <sup>th</sup> April 2012	2791
17 <sup>th</sup> -19 <sup>th</sup> June 2012	2687
13 <sup>th</sup> -14 <sup>th</sup> December 2012	3530
14 <sup>th</sup> -18 <sup>th</sup> March 2013	3697

**Table 1. The dates and number of respondents to the five YouGov surveys**

In the survey we start by asking respondents the following: This is a fossil fuel, found in sedimentary rock normally more than 1000 metres below ground. It is extracted using a technique known as hydraulic fracturing, or 'fracking'. Is this fossil fuel:

- a) Boromic gas
- b) Coal
- c) Xenon gas
- d) Shale gas
- e) Tar-sand oil
- f) Don't know.

The important word association in this question was the term 'fracking' which is almost always referred to in reports about shale gas. In our March survey a mere 38% of respondents correctly identified shale gas from the list of real and imaginary fossil fuels. Around the same proportion (39%) were 'don't knows', and 17% believed the fossil fuel was 'coal' – the next most popular choice after shale. Recognition rose some 7% to nearly 45% in the April survey which was conducted shortly after the release of the Presse Hall Report, which resulted in significant level of media interest and a flurrie of reports (Fig. 1), but this fell to just over 40% in the June survey (Fig.2). Our December survey, carried out on the 13<sup>th</sup> and 14<sup>th</sup> December during which time it was announced that the Government would end the the moratorium on fracking in the UK (Fig. 1), saw a significant jump in recognition to over 61%, although this has fallen back in our most recent to approximately 52%. The overall trend is an upwards with a greater porportion of the population now aware of this new energy source. In all of our surveys men are much more likely to identify shale gas than women with the level of recognition in our March 2013 survey being approximately 65% and 39% for men and women respectively. In addition the level of recognition in the 18-35 age groups is also lower than those aged 35 or older.

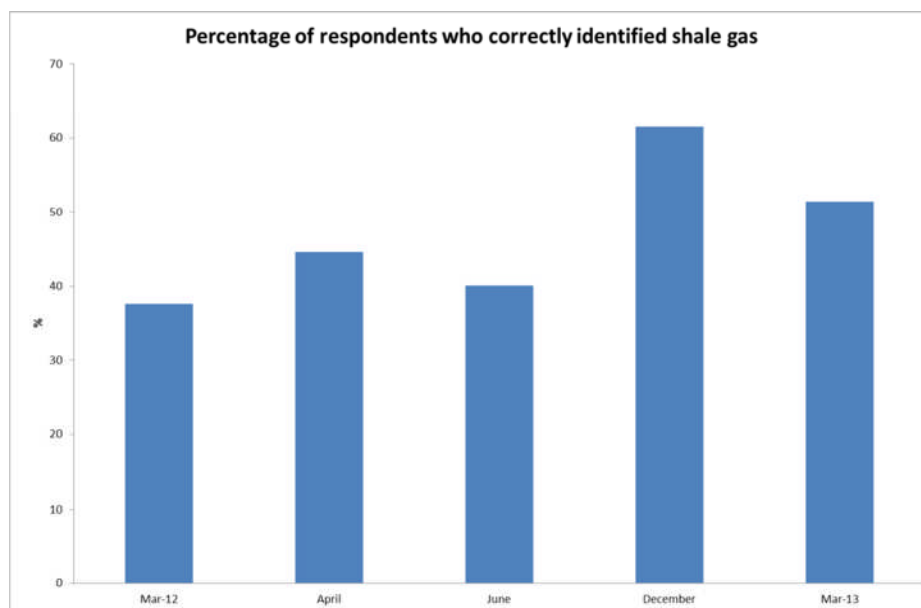
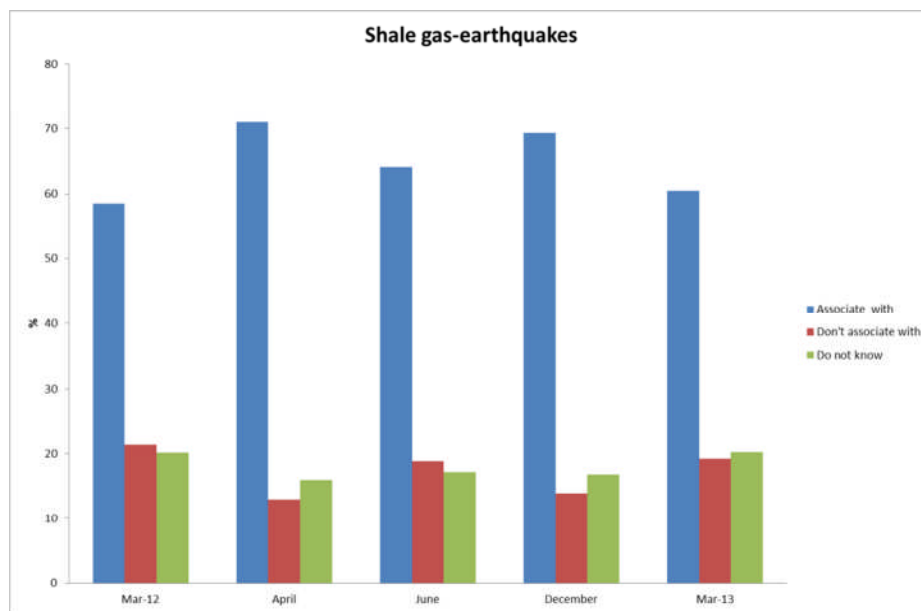


Figure 2. Shale gas recognition in the UK, March 2012 – March 2013.

Individuals who identified shale gas were then asked a series of questions, including whether they associated shale gas with earthquakes, water contamination, being a clean fuel and being a cheap fuel. Figures 4-7 show the UK level results for these questions for each of the five surveys.

### ***Shale gas and earthquakes***

The possible link between fracking for shale gas and small earthquakes has triggered considerable concern and is viewed by some as a potentially dangerous and damaging impact of shale gas exploration. Two small earthquakes in April and May 2011 in the Blackpool area (2.3 and 1.5 respectively on the Richter Scale) close to where Cuadrilla Resources were fracking for shale gas were widely reported in the media and led to the suspension of fracking at the site pending further investigation. The release of the Preese Hall report and an acknowledgement by Cuadrilla that their activities were the likely trigger for the earth tremors was also widely reported. It is thus not surprising that the vast majority of people who identified shale gas also considered it to be associated with earthquakes, with this figure rising significantly from 58% to 71% between March and April. Although this figure dropped to 64% in June it has remained well over 60% since (Fig 3).



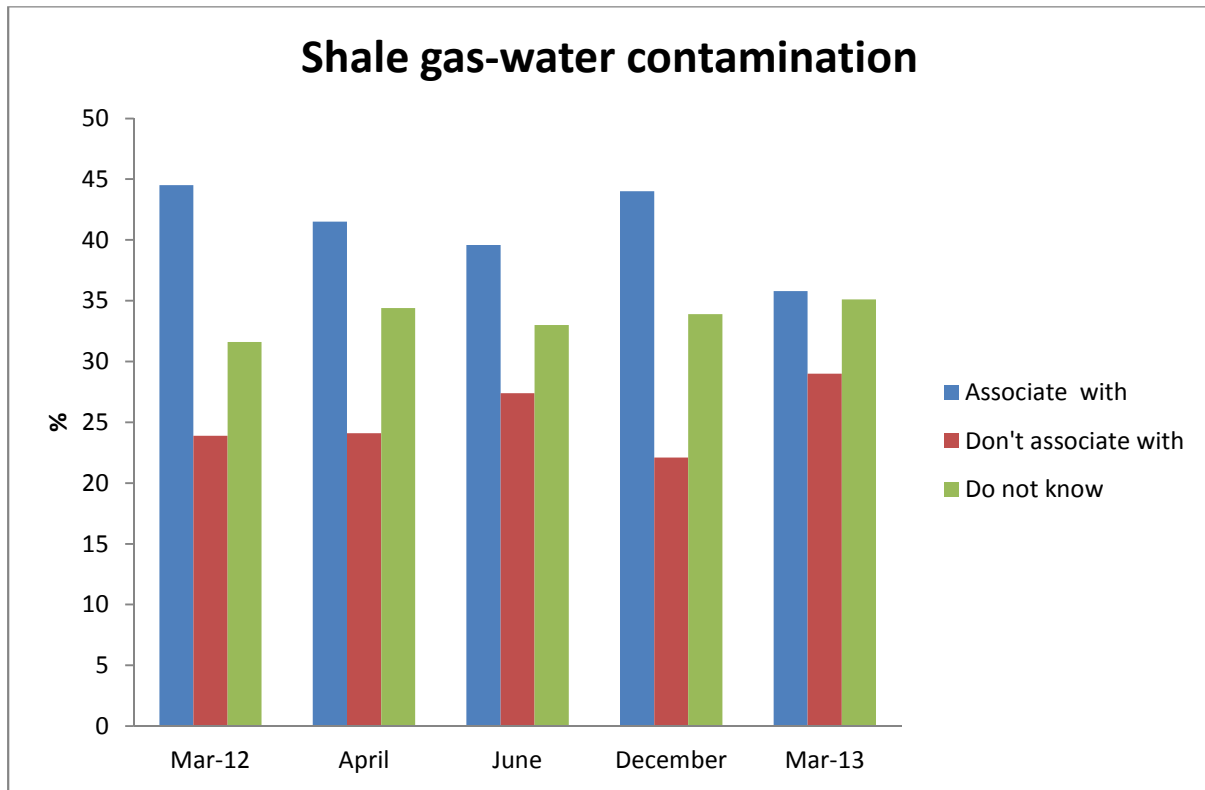
**Figure 3. The association between shale gas and earthquakes in the UK - March 2012-March 2013**

### ***Contamination of drinking water***

There are considerable concerns that the extraction of shale gas could result in the contamination of drinking water sources either by chemicals used in fracking fluids and/or by methane escape as a result of the fracking process itself. Again, the issues and debates around drinking water contamination have been widely reported in the media (often with reference to the controversial film *Gasland*)<sup>7</sup> and a large number of respondents to our surveys associate the two together. This said there appears to be increasing uncertainty on this issue. The proportion of respondents that believe there is an association between fracking and water contamination fell from approximately 45% to

<sup>7</sup> <http://www.gaslandthemovie.com/>

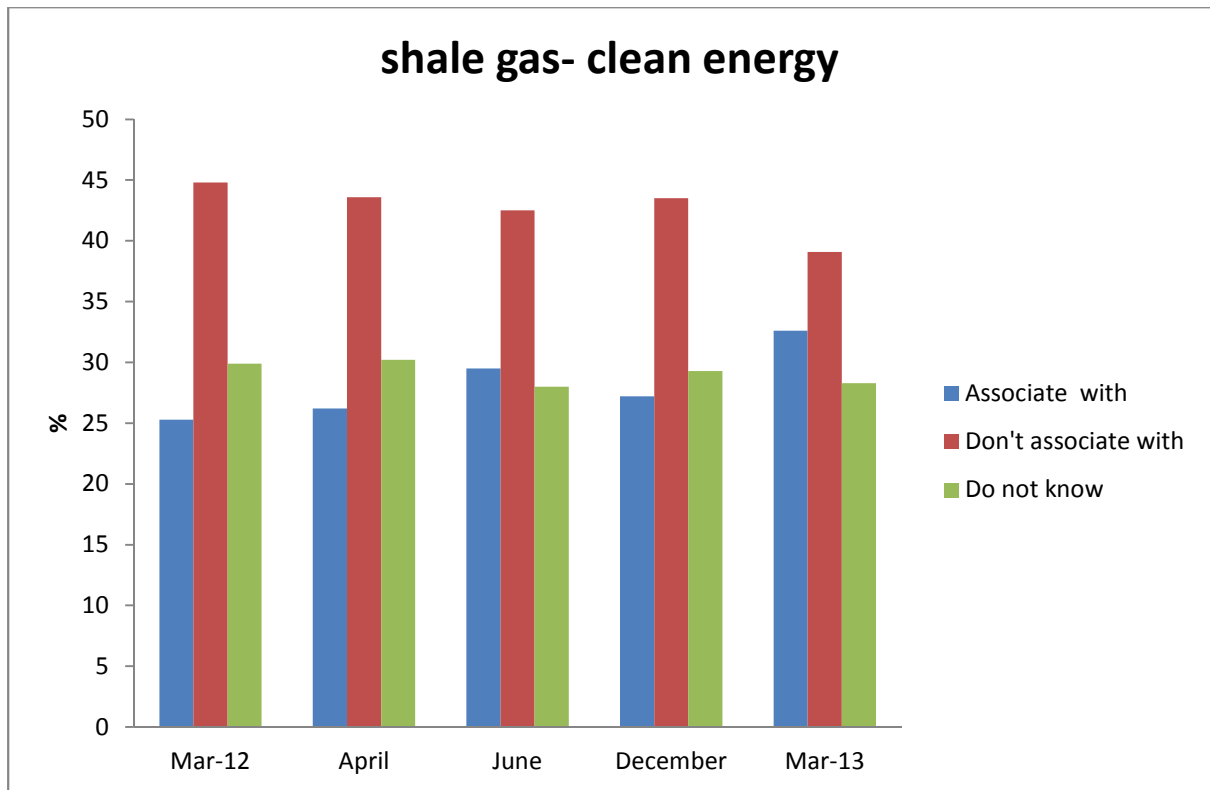
36% over the period March 2012 - March 2013, with the number of people believing that fracking will not result in water contamination rising from just under 24% to 29% over the same period (Fig. 4)



**Figure 4. The association between shale gas and water contamination in the UK - March 2012- March 2013**

***Is shale gas a clean energy?***

A significant proportion of respondents to our survey stated that they do not associate shale gas with being a clean energy resource, but this said the figure has fallen over the last year from approximately 45% to 39%, the biggest drop being seen between December 2013 and March 2013. At the same time there has been a 7% increase in the number of people who now consider shale gas to be a clean form of energy with the differential between those that consider it to be a clean fuel and those that do not narrowing considerably. But once again there remains a large number of people who are unsure with this figure ranging from 28 to 30% over the course of the five surveys (Fig. 5).

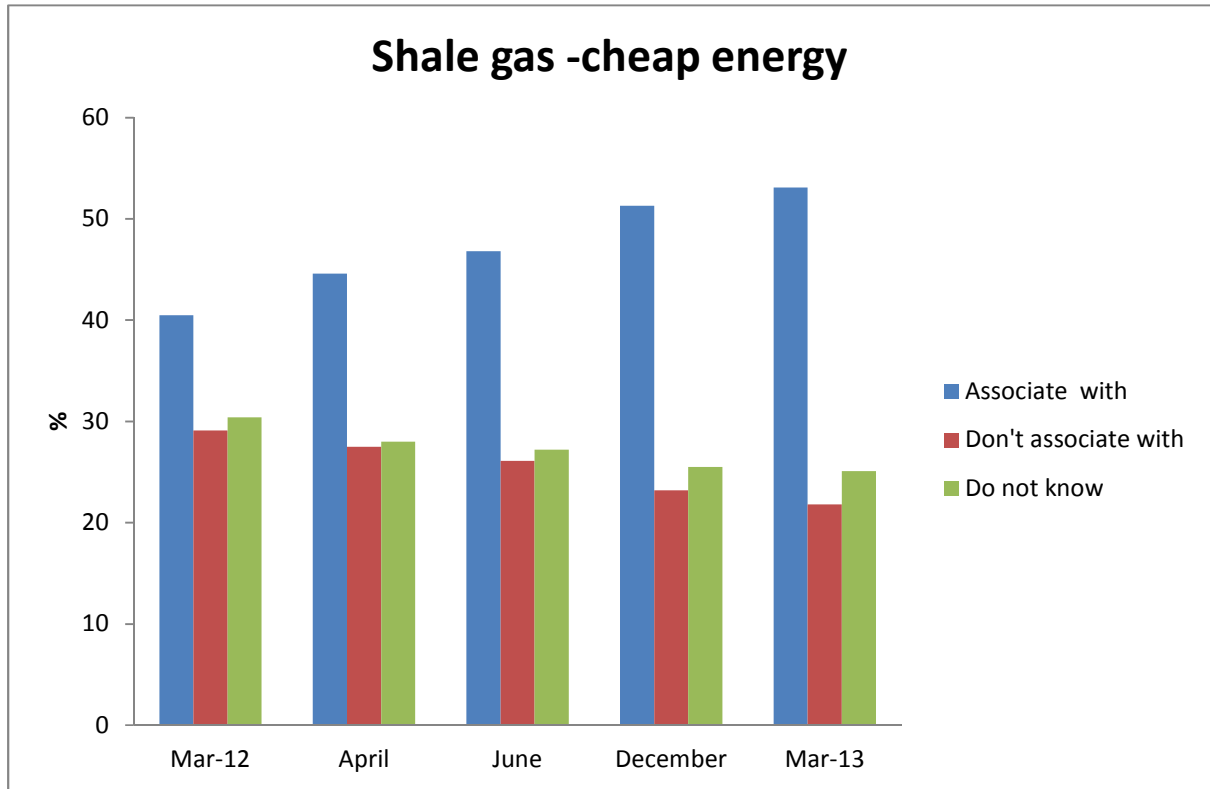


**Figure 5: The association between shale gas and clean energy in the UK UK, March 2012-March 2013.**

***Is shale gas a cheap energy resource?***

An increasing number of respondents able to identify shale gas in our survey consider it to be a cheap form of energy. In March 2012 this figure stood at just over 40% but it has risen slightly with each survey and in March 2013 was over 53%. At the same time there was a decline in the number of don't knows (from 30% to 27%) and in the number of people who do not consider shale gas to be a cheap resource, this figure falling to approximately 21% in March 2013.

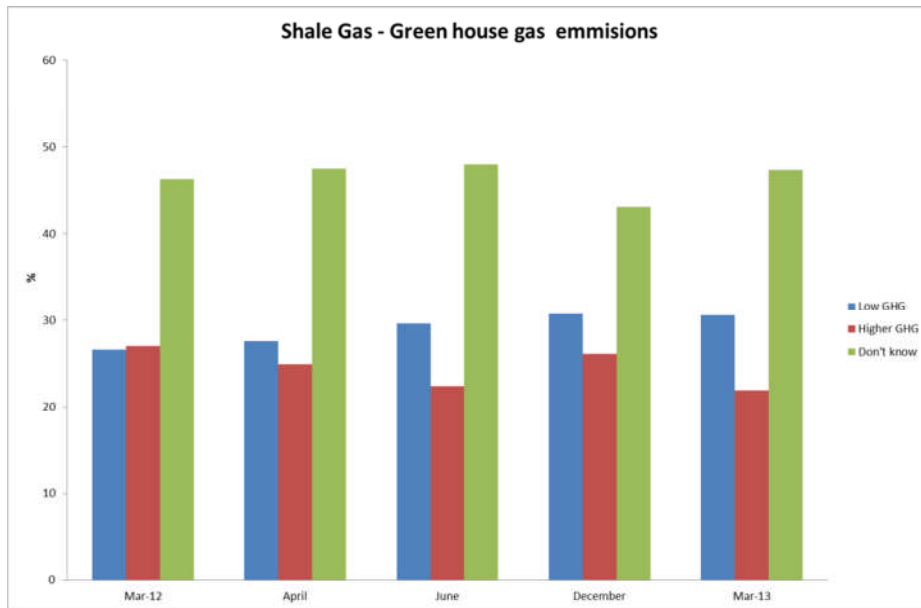




**Figure 6: The association between shale gas and cheap energy in the UK, March 2012-March 2013.**

***Shale gas and greenhouse gas emissions***

The poll respondents were also asked about their views on greenhouse gas emissions (GHG). Significantly, a plurality of respondents stated that they don't know whether shale gas had a positive or negative impact on GHG emissions, with the figure varying between 43% and 48% over the five surveys. But significantly while almost an equal number of respondents in the March 2012 survey stated that shale gas would result in either lower or higher GHG emissions there has been a subtle shift in people's views since then with an increasing proportion of respondents being of the view that shale gas will result in lower GHG emissions (Fig. 7). In our March 2013 survey the number of people who associated shale gas with lower GHG emissions was 31% compared with 22% who thought it would result in higher GHG emissions.



**Figure 7: The association between shale gas and greenhouse gas emissions in the UK, March 2012- March 2013.**

**Should shale gas exploration be allowed in the UK?**

In the June 2012 and the March 2013 surveys we added an additional question asking individuals who had identified shale gas to state whether they thought that extracting natural gas from shale should be allowed. Nearly 53% of all respondents were in favour with a further 20% stating that they did not know. Only 27% of our respondents stated that natural gas should not be extracted from shale. These figures saw a slight shift in our March 2013 with just over 55% agreeing that shale gas extractions should be allowed while the number of people against it had fallen to 24%.

***Summary of the survey results***

Our surveys indicate that the number of people who are aware of shale gas is increasing, but despite the growing level of interest in this energy form and the flurry of media attention in the last couple of years, just over 50% of the people that we surveyed were aware of this energy resource. Although the majority of respondents who are able to identify shale gas associated it with earthquakes, it is clear from our surveys that there is a high level of uncertainty as to the exact implications of its extraction and use on the environment. This said there are clearly shifts in the way people are viewing this energy source, with fewer people being concerned about water contamination, and an increasing number of people seeing it as a clean and more importantly cheap form of energy. Moreover the majority of the people who we surveyed who could identify shale gas believe we should be allowed to extract natural gas from shale deposits in the UK.

On greenhouse gas emissions, there is again a high level of uncertainty, with a clear plurality of ‘don’t knows’ in all five surveys. Amongst those who do state a belief, however, there is clearly a sense that shale gas could help lower GHG emissions. When we first reported the findings of our surveys in June 2012 it was clear that shale gas was an energy source that people had yet to make

their mind up on but it appears that despite concerns about the potential impacts on the environment and concerns that as a fossil fuel, shale gas will add to our GHG emissions, there is a slow but gradual shift in the acceptance of shale gas as a form of energy