

November 2012

**Submission to the
Petitions Committee of the
National Assembly for Wales**

in response to

**the Welsh Government's
Response to
the Fracking Petition**



**cyfeillion
y ddaear
cymru
friends of
the earth
cymru**

Summary

1. Friends of the Earth Cymru considers the Welsh Government's response to be deficient and urges the Committee to call for further evidence on this matter.
2. Current planning policy encompasses fracking within a generic minerals planning policy which has been based on the experience of processes for conventional gas extraction. It consequently fails to acknowledge the need for a more cautionary approach to the issues raised by the new processes involved in fracking. The major issues associated with fracking are the current scientific uncertainty as to its impacts; known impacts in relation to climate change; and potential impacts on groundwater. Current policy makes no provision for addressing or considering those issues.
3. Welsh planning policy demands that sound science be used responsibly, which in this context entails a precautionary approach. Policy also demands that fracking be specifically acknowledged as a source of greenhouse gas production (and is a process which therefore runs counter to policy seeking to mitigate climate change). A new policy, or an addendum to Planning Policy Wales (PPW), is the appropriate means of dealing with the specific issues arising from fracking.
4. In view of the urgent need to mitigate climate change, Friends of the Earth Cymru has proposed an additional planning policy that provides for a sound precautionary approach to decision-making:

Planning permission for fracking or shale gas operations (including test drilling and extraction) will not be granted unless

 - a) the planning authority is satisfied that all reasonable scientific doubt that there is any risk of adverse impacts including groundwater contamination has been eliminated*
 - b) the proposal will not compromise the planning authority's duties in relation to climate change mitigation and adaptation; and*
 - c) the proposal is environmentally acceptable, or it can be made so by planning conditions or obligations.*
5. In the short term we recommend the Welsh Government adopt a moratorium on fracking until sufficient information is available to determine with a high degree of certainty the likely impacts of fracking on the environment.
6. In addition, the Environmental Impact Assessment Regulations (England and Wales) 1999 should be amended to include the requirement for a full EIA to be conducted for each fracking application. Fracking operations exempt themselves by ensuring they have a surface operation smaller than the 1 ha limit (ordinarily they are 0.99 ha) that would make them subject to these Regulations.

Welsh planning policy

7. Section 39(2) of the *Planning and Compulsory Purchase Act 2004* makes it a statutory duty to act with the objective of achieving sustainable development. Section 1(1) of the *Climate Change Act 2008* provides that it is the duty of the Secretary of State to ensure that the net UK carbon account for the year 2050 is at least 80% lower than the 1990 baseline¹.

8. Section 1.2.2 of PPW states that:

“The planning system must provide for an adequate and continuous supply of land, available and suitable for development to meet society’s needs. It must do this in a way that pays regard to overall sustainability principles, outcomes and objectives, paying particular attention to climate change as a key sustainability concern”.

9. One of the main outcomes that PPW is intended to deliver under sustainable development is:

“A resilient and sustainable economy for Wales that is able to develop whilst reducing its use of natural resources and reducing its contribution to climate change” (Section 4.1.5).

10. The principles of planning for sustainable development (Section 4.3.1) include:

- “Respect for environmental limits, so that resources are not irrecoverably depleted or the environment irreversibly damaged. This means, for example, mitigating climate change, protecting and enhancing biodiversity, minimising harmful emissions, and promoting sustainable use of natural resources;
- Tackling climate change by reducing the greenhouse gas emissions that cause climate change and ensuring that places are resilient to the consequences of climate change;
- Applying the precautionary principle. Cost-effective measures to prevent possibly serious environmental damage should not be postponed just because of scientific uncertainty about how serious the risk is;
- Using scientific knowledge to aid decision-making, and trying to work out in advance what knowledge will be needed so that appropriate research can be undertaken”.

11. Planning for Climate Change (Section 4.5.2) states:

“The Welsh Government has set out to achieve annual carbon reduction-equivalent emissions reductions of 3 per cent per year from 2011 in areas of devolved competence, which include land use planning”.

12. Friends of the Earth Cymru has serious concerns that as a result of areas outwith devolved competence being specifically excluded from the 3% greenhouse gas emissions reduction target, due consideration to reducing greenhouse gas emissions resulting from shale gas/fracking

¹ In order to achieve this, the Committee on Climate Change has recommended a 60% cut by 2030, with average emissions in the power sector falling to 50gCO₂e/kWh by that date. In May 2011 the Government accepted the Committee’s recommendation for the level of the 4th budget - a limit of 1950 MtCO₂e over the years 2023-2027, amounting to an emissions cut of 50% on 1990. The Government has accepted that the aim should be to deliver this through domestic action, though the use of credits has not been ruled out.

operations will not be subject to the same rigour in testing for the precautionary principle, nor for assessing the climate change impacts.

13. Furthermore, while PPW includes an extensive section (12.8) entitled “Renewable and low carbon energy”, there is no equivalent section explaining planning policy on fossil fuel energy developments.
14. No Minerals Technical Advice Note for shale gas or unconventional gas exists. Thus the only specific minerals planning policy in relation to “all substances in, on or under land” that applies is Minerals Planning Policy Wales (MPPW)², published in 2000.
15. This policy document pre-dates commercial fracking anywhere in the world. Thus there is no policy specifically covering unconventional gas extraction in Wales. No mention is made at any point in this document of climate change. It is worth quoting the entirety of the document as it extends to onshore oil and gas extraction (excluding coal bed methane) in order to demonstrate the paucity of consideration given over to this matter:

“Where oil and gas operations can be carried out in an environmentally acceptable way and consistent with the principles of sustainable development, there is no case in land use planning terms for placing more restrictions on the development than are necessary to ensure the protection of the environment. Development plans should indicate those areas where oil and gas operations are likely to be acceptable in principle subject to development control criteria being met in a particular case, as well as those areas where operations are unlikely to be acceptable. Policies should distinguish clearly between the three stages of exploration, appraisal and development.

Mineral planning authorities should establish with the Department of Trade and Industry the areas which are licensed, and identify any environmental and other constraints on production and processing in those areas. The industry has an important role to play in making available to authorities information on their forward plans and the extent of known resources. The licence system brought into effect in 1995 introduced a single licence, the Petroleum Exploration and Development Licence (PEDL) covering exploration, appraisal and developmental activity. Activities under such licences must be carried out in accordance with the requirements for planning permission”.

16. Friends of the Earth Cymru would like to highlight that no mention is made of the precautionary principle, of climate change nor of pollution, other than “ensure protection of the environment”. This term is non-specific and open to wide interpretation by planning officials, committees and inspectors.
17. PPW (section 13) also notes:

“LDPs should establish land-use planning policies which contribute to minimising and managing environmental risks and pollution. They should formulate policies relating to flood risk and climate change, contaminated and unstable land, air and water quality, noise and light pollution”.

² National Assembly for Wales, December 2000, [Minerals planning policy Wales](#)

This suggests that Local Planning Authorities' Development Plans may not currently include land use policies relating to climate change, leaving local authorities vulnerable to fracking applications that could pre-date new plans with an explicit reference to mitigating climate change.

The precautionary principle

18. The precautionary principle is a principle at the heart of environmental law to which the UK Government has committed since the UK signed the *Rio Declaration on Environment and Development* in 1992. This states (at Principle 15) that:

“where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation”.

19. Article 191(2) of the Treaty on the Functioning of the European Union declares that EU policy on the environment “shall be based on the precautionary principle”.

20. The precautionary principle is now one element of the requirement in the PPW to use sound science responsibly. The Interdepartmental Liaison Group on Risk Assessment (ILGRA), in its 2002 paper *The Precautionary Principle: Policy and Application*, made a number of important points including noting that the precautionary principle should be invoked when:

- There is good reason to believe that harmful effects may occur to human, animal or plant health, or to the environment; and
- The level of scientific uncertainty about the consequences or likelihood of the risk is such that best available scientific advice cannot assess the risk with sufficient confidence to inform decision-making³.

21. The precautionary principle finds specific expression through international instruments to which the UK is a signatory including the Water Framework Directive and the Habitats Directive. The Water Framework Directive applies strict standards and controls in relation in particular to groundwater. Its approach to groundwater has been summarised as follows⁴:

“The case of groundwater is somewhat different. The presumption in relation to groundwater should broadly be that it should not be polluted at all. For this reason, setting chemical quality standards may not be the best approach, as it gives the impression of an allowed level of pollution to which Member States can fill up. A very few such standards have been established at European level for particular issues (nitrates, pesticides and biocides), and these must always be adhered to. But for general protection, we have taken another approach. It is essentially a precautionary one. It comprises a prohibition on direct discharges to groundwater, and (to cover indirect discharges) a requirement to monitor groundwater bodies so as to detect changes in chemical composition, and to reverse any anthropogenically induced upward pollution trend. Taken together, these should ensure the protection of groundwater from all contamination, according to the principle of minimum anthropogenic impact”.

³ The Interdepartmental Liaison Group on Risk Assessment (ILGRA), in its 2002 paper *The Precautionary Principle: Policy and Application*

⁴ http://ec.europa.eu/environment/water/water-framework/info/intro_en.htm

Evidence relating to climate change impacts

22. A recent Friends of the Earth Europe report⁵ (*Unconventional and unwanted: the case against shale gas*, September 2012, p10) sums up the situation as follows:

- “Some studies have suggested that between 3.6 and 7.9 per cent of the total gas output of a shale gas well is lost through fugitive methane emissions⁶. This would mean that “compared to coal, the footprint of shale gas is at least 20 per cent greater and perhaps more than twice as great on the 20-year horizon”⁷.
- In February 2012, one study that monitored emissions in air samples from a natural gas field near Denver found that about four per cent of the gas was lost to the atmosphere⁸, suggesting climate impacts have been underestimated⁹.
- According to the US National Academy of Sciences, “Given limited current evidence, it is likely that leakage at individual natural gas well sites is high enough, when combined with leakage from downstream operations, to make the total leakage exceed the 3.2 per cent threshold beyond which gas becomes at least comparably worse for the climate than coal for at least some period of time”¹⁰.

23. The report ‘Climate impact of potential shale gas production in the EU’ (published September 2012) written by AEA Technology for DG CLIMA at the European Commission concluded:

“Drawing upon these studies, and their underlying data sources, a hypothetical analysis has been carried out of the potential lifecycle GHG emissions that may arise from shale gas exploitation within Europe. In our base case, which does not represent a preferred scenario, we have estimated the GHG emissions per unit of electricity generated from shale gas to be around 4% to 8% higher than for electricity generated by conventional pipeline gas from within Europe. These additional emissions arise in the pre-combustion stage, predominantly in the well completion phase when the fracturing fluid is brought back to the surface together with released methane. If emissions from well completion are mitigated, through flaring or capture, and utilised then this difference is reduced to 1% to 5%. This finding is broadly in line with those of other U.S. studies which found that generation from shale gas had emissions about 2% to 3% higher than conventional pipeline gas generation.” (page iv).

⁵ Friends of the Earth Europe, September 2012, [Unconventional and unwanted: The case against shale gas](#)

⁶ Details about these climate figures can be found in the most recent US peer-reviewed science, Howarth et al, “Methane Emissions from Natural Gas Systems”, Background Paper Prepared for the National Climate Assessment, February 2012 (<http://www.eeb.cornell.edu/howarth/Howarth%20et%20al.%20--%20National%20Climate%20Assessment.pdf>)

Shindell et al “Simultaneously Mitigating Near-Term Climate Change and Improving Human Health and Food Security”, *Science* 335, 183 (2012)

Alvarez, R. Pacala, S. Winebrake, J. and al, “Greater Focus Needed on Methane Leakage from Natural Gas Infrastructure”, 13/02/2012 (<http://www.pnas.org/content/early/2012/04/02/1202407109.full.pdf+html>)

⁷ Howarth, R. Ingraffea, A. Santoro, R. “Methane and the Greenhouse Gas Footprint of Natural Gas from Shale Formations”, March 2011 (<http://www.sustainablefuture.cornell.edu/news/attachments/Howarth-EtAl-2011.pdf>)

⁸ <http://thinkprogress.org/climate/2012/02/08/421588/high-methane-emissions-measured-over-gas-field-offset-climate-benefits-of-natural-gasquot/>

⁹ <http://www.nature.com/news/air-sampling-reveals-high-emissions-from-gas-field-1.9982>

¹⁰ Alvarez et al ‘Greater focus needed on methane leakage from natural gas infrastructure’ <http://www.pnas.org/content/early/2012/04/02/1202407109.full.pdf+html>

Given the varying results depending on the technology used, the authors conclude:

“In fact, for some pipeline sources emissions from shale gas may exceed emissions from importing conventional gas.” (page iv).

24. Moreover, arguments relating to *relative* carbon intensity miss the point about urgent absolute decarbonisation.
25. The view of the Department of Energy and Climate Change is partly set out in their written evidence to the Energy and Climate Change Select Committee inquiry into ‘The impact of shale gas on energy markets’¹¹. In this, DECC quotes the International Energy Agency (IEA) conclusion in its 2011 report ‘Are we entering a Golden Age of Gas?’¹² that emissions from shale gas extraction are higher than those for conventional gas extraction:

“The IEA estimates that, provided methane emissions from shale wells are minimised by using appropriate technology, shale gas will have well-to-burner emissions that are 3.5% to 12% higher than the equivalent for conventional gas.” (page 64)

26. The IEA’s 2011 report ‘Are we entering a Golden Age of Gas?’ contained a GAS scenario in which, by 2035, global demand for gas increases by over 50% from today’s levels; and to help meet this, unconventional gas production more than triples to 2035, representing a third of total gas production by that date. IEA concluded:

“this emissions trajectory is consistent with stabilising the atmospheric concentration of greenhouse gases at around 650ppm, resulting in an average global temperature rise of over 3.5°C.”(page 8)

This is clearly well above the 2°C maximum rise that the UK and other developed countries have said we must keep to. IEA has admitted:

“we are not saying that it will be a golden age for humanity - we are saying it will be a golden age for gas”¹³.

27. In its 2011 report ‘Shale gas: An updated assessment of environmental and climate change impacts’¹⁴ the Tyndall Centre for Climate Change Research published calculations looking at the impact on climate change of burning the known global resources of shale gas. This concluded:

“the CO₂ emissions from burning shale gas are estimated to occupy a substantial proportion, over a quarter, of a budget associated with a better than 50:50 chance of avoiding 2°C warming”. (page 69)

The authors add that this figure is likely to be a conservative estimate as firstly, it only calculates carbon dioxide emissions from combustion (and so does not include for example the impact of

¹¹ <http://www.publications.parliament.uk/pa/cm201213/cmselect/cmenergy/writev/isg/m01.htm>

¹² http://www.worldenergyoutlook.org/media/weowebiste/2011/WEO2011_GoldenAgeofGasReport.pdf

¹³ <http://www.bbc.co.uk/news/science-environment-18236535>

¹⁴ http://www.tyndall.ac.uk/sites/default/files/coop_shale_gas_report_update_v3.10.pdf

fugitive methane emissions); and secondly it uses estimates of global shale gas reserves from the US Energy Information Administration which do not include figures for Russia and Central Asia, the Middle East, South East Asia and Central Africa (page 68).

28. In the same report, the authors assess the potential impact of shale gas on meeting the UK's legally-binding climate change targets. They conclude that emissions from using the UK's potential shale gas reserves could represent up to 14.5% of the total UK greenhouse gas budget for the period 2010 to 2050 (page 67). Again, this only includes carbon dioxide emissions from combustion, and so does not include the impact of fugitive methane emissions.

29. Professor Kevin Anderson of the Tyndall Centre, in evidence to a House of Commons Committee Inquiry into shale gas¹⁵, noted that "there simply is not the emission space available in the timeframe that we have to utilize shale gas".

30. The potential for UK shale gas is underpinning Government plans to build more gas-fired electricity generation. Friends of the Earth analysis of Government figures, reported in *The Observer* on 4 November 2012 'Huge scale of UK's 'dash for gas' revealed'¹⁶, shows that in the last year the Government has quadrupled the amount of electricity it expects to be generated from gas in 2030. According to the Committee for Climate Change (Letter to Ed Davey, 12 Sept)

"extensive use of unabated gas-fired capacity ... in 2030 and beyond would be incompatible with meeting legislated carbon budgets"¹⁷.

31. Shale gas advocates claim that its use has cut emissions in the US by replacing coal, and that we could replicate this in the UK. However analysis by Greenpeace in their report 'How the IEA and Harvard got it wrong on impact of shale on US emissions' (September 2012)¹⁸ finds that renewables played a greater role than gas in emissions reductions in the US in recent years.

32. Analysis by the Tyndall Centre in 'Has US shale gas reduced CO2 emissions?' (October 2012)¹⁹ shows that even if the US is using less coal because of more shale gas, millions of tonnes of unused coal are being exported to Europe and Asia, meaning the overall emissions benefits are overstated. The report finds that

"more than half of the emissions avoided in the US power sector may have been exported as coal. In total, this export is equivalent to 340 MtCO2 emissions elsewhere in the world, i.e. 52% of the 650 MtCO2 of potential emissions avoided within the US" (page 2).

¹⁵ House of Commons, 10 May 2011, [Energy and Climate Change Committee: Shale gas](#)

¹⁶ <http://www.guardian.co.uk/environment/2012/nov/03/uk-dash-gas>

¹⁷ <http://www.theccc.org.uk/news/latest-news/1215-ccc-writes-to-ed-davey-over-government-stance-on-unabated-gas-fired-generation>

¹⁸ <http://www.greenpeace.org.uk/newsdesk/energy/investigations/how-iea-and-harvard-got-it-wrong-impact-shale-us-emissions>

¹⁹ http://tyndall.ac.uk/sites/default/files/broderick_and_anderson_2012_impact_of_shale_gas_on_us_energy_and_emissions.pdf

33. An additional problem with shale gas is not just its own direct climate impact, but also the potential negative impact on investment in renewables. Professor Paul Stevens of Chatham House sums this up in the report 'The Shale Gas Revolution: Developments and Changes' (2012)²⁰:

"There is a growing fear that shale gas may substitute not for coal as many originally hoped, but for renewables" (page 1).

34. PriceWaterhouseCoopers issue a similar warning at the global scale in their 'PwC Low Carbon Economy Index' (5 November 2012), warning that while shale gas may 'buy some time',

"it reduces the incentive for investment in lower carbon technologies such as nuclear and renewables, and could lock in emerging economies with high energy demand to a dependence on fossil fuels"²¹.

35. Researchers from the Massachusetts Institute of Technology, reported in 'The influence of shale gas on US energy and environmental policy'²², modelled different scenarios for the development of US energy policy. They found that the use of shale gas suppresses the development of renewables. In one scenario a renewable fuel mandate is imposed and when shale gas is used, use of renewables does not go above the 25 percent minimum standard set in the scenario but when shale is removed from the market, renewables gain more ground. They conclude:

"in treating the shale as a "bridge" to a low carbon future there are risks to the development of technologies, like [carbon] capture and storage, needed to complete the task" (page 1)

36. The Committee on Climate Change has expressed its concerns about the impact of a 'dash for gas' on the development of renewable energy in a letter to Ed Davey²³:

"The apparent ambivalence of the Government about whether it is trying to build a low-carbon or a gas-based power system weakens the signal provided by carbon budgets to investors... damaging prospects for required low-carbon investments. This has been made clear to us in our extensive discussions with the energy and supply chain companies who it is hoped will fund the very significant investments needed in power generation over the next two decades, and who have suggested to us that the sector investment climate is currently very poor".

37. The context for the development of shale gas reserves in the UK in relation to climate change is that the Climate Change Act and the Committee on Climate Change have set out how the UK needs to meet its budgets. The purpose of the Act is for the UK to play its part in preventing dangerous climate change – and to do this it is cumulative emissions from now to 2050 that matter, not simply the end point in 2050. As part of this budget setting process, the CCC have set budgets to 2027 (which the Government has accepted) so that the UK makes a 60% cut on 1990 levels by 2030. The

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http://www.chathamhouse.org/sites/default/files/public/Research/Energy,%20Environment%20and%20Development/bp0812_stevens.pdf

²¹ <http://press.pwc.com/GLOBAL/News-releases/current-rates-of-decarbonisation-pointing-to-6oc-of-warming/s/47302a6d-efb5-478f-b0e4-19d8801da855>

²² http://globalchange.mit.edu/files/document/MITJSPGC_Reprint_12-1.pdf

²³ <http://hmccc.s3.amazonaws.com/EMR%20letter%20-%20September%2012.pdf>

CCC say this target is the “absolute minimum” compatible with its climate goals (which in themselves are compatible with a 60% chance of exceeding two degrees – a high level of risk to accept for something Government has said it must avoid). Within this the CCC says that decarbonisation of the electricity sector is an essential part of the most cost-effective path. They say this means cutting average emissions from around 500gCO₂e/kWh now, to 50gCO₂e/kWh in 2030. The CCC say that this means that unabated gas should account for no more than 10% of power generation in 2030, compared to over 40% today.

38. Friends of the Earth Cymru believes that this decarbonisation target can be met without the need for new nuclear power. As explained in a Friends of the Earth report ‘A plan for Clean British Energy’²⁴, by 2030 renewables could account for around 2/3 of power generation, over half of this being offshore wind.

Scientific uncertainty about fracking

39. Friends of the Earth Cymru submits that emerging evidence indicates that there is risk of harmful effects to the environment from fracking. In particular, Friends of the Earth Cymru is concerned by well documented risks of groundwater contamination and from greenhouse gas (GHG) emissions.

40. In relation to groundwater contamination²⁵, The British Geological Survey (see attached document “Potential groundwater impact from exploitation of shale gas in the UK” (Stuart, 2012)) concludes that:

“Groundwater may be potentially contaminated by extraction of shale gas both from the constituents of shale gas itself, from the formulation and deep injection of water containing a cocktail of additives used for hydraulic fracturing and from flowback water which may have a high content of saline formation water” (page 19).

The British Geological Survey report goes on to state that:

“There are examples of surface water contamination from releases of fracturing water or flowback water. Documented instances of groundwater contamination from the US are all related to the leakage of methane into groundwater.” (page 20).

41. Concerns in the US where fracking is widespread has led the US Environmental Protection Agency to produce a major study of the environmental and human health impacts which is due to be published in 2014. There is nevertheless already considerable evidence from the US of fracking leading to contaminated water supplies.

42. In relation to GHG emissions, it remains a matter of debate whether fracking is worse than conventional gas because although the emissions caused in using the gas are equivalent, the

²⁴ http://www.foe.co.uk/resource/briefings/plan_cbe_report.pdf

²⁵ European Commission report (August 2012) lists groundwater contamination as one of the ‘high risk’ concerns for the environment and human health from fracking - <http://ec.europa.eu/environment/integration/energy/pdf/fracking%20study.pdf>

production methods themselves contribute considerably to GHG emissions. Different studies have produced divergent results.

43. In a letter to Friends of the Earth, dated 29 October 2012, Secretary of State Ed Davey stated:

“I agree that the climate impact of shale gas is as yet poorly characterised, that more research is needed, and that any reliance on shale gas must not be at the expense of our climate change targets”

44. It is these concerns and uncertainties which lead Friends of the Earth Cymru to remind the Welsh Government of the need to use sound science responsibly and to adopt a precautionary approach to fracking development.

45. Friends of the Earth Cymru is therefore concerned that current planning policy as laid out in PPW and insofar as it relates to the consideration of climate change and the major scientific concerns on fracking. Nor is the broad sweeping application of a single policy to all technologies irrespective of the state of scientific knowledge about their implications (as laid out in Minerals Planning Policy Wales) consistent with national policy.

46. In the light of this uncertainty, Friends of the Earth Cymru calls on the Welsh Government to apply a moratorium on fracking until such time as sufficient information is available to determine with a high degree of certainty the likely impacts of fracking on the environment.

Need for a new policy

47. Friends of the Earth Cymru submits that the issues arising from the untested nature of fracking are specific enough to merit a specific policy. Friends of the Earth Cymru’s concern is particularly with the climate change and water quality implications of fracking. The following policy is proposed:

Planning permission for fracking or shale gas operations (including test drilling and extraction) will not be granted unless

- a) the planning authority is satisfied that all reasonable scientific doubt that there is any risk of adverse impacts including groundwater contamination has been eliminated*
- b) the proposal will not compromise the planning authority’s duties in relation to climate change mitigation and adaptation; and*
- c) the proposal is environmentally acceptable, or it can be made so by planning conditions or obligations.*

The mechanics of the policy

48. The policy suggested by Friends of the Earth Cymru is designed to incorporate the principles of using sound science responsibly as derived from kindred spheres where the precautionary principle is applicable.

49. The application of a precautionary approach has been successfully led by the Habitats Directive. The practices required by that Directive can provide a model or an analogy from which a precautionary policy can draw. Where development likely to have a significant effect on a site protected by the Habitats Directive is anticipated, the approach which is taken is that a developer is required to provide the information necessary to allow a planning authority to undertake an “appropriate assessment”. In *Commission v Spain* [2011] EUECJ C-404/09 at §100 the European Court held:

“An assessment made under Article 6(3) of the Habitats Directive cannot be regarded as appropriate if it contains gaps and lacks complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the works proposed on the SPA concerned (see, to that effect, Case C-304/05 *Commission v Italy* [2007] ECR I-7495, paragraph 69)”.

50. Article 6(3) of the Directive prohibits development until all reasonable scientific doubt as to any adverse effects of a development have been eliminated. In the leading case on the Habitats Directive, [Waddenzee](#) [2005] 2 CMLR 31 the ECJ has specifically held that its interpretation of the Habitats Directive is an application of the precautionary principle (See paragraphs § 43-4).

51. Thus in other spheres where a precautionary approach applies, what is required is that:

- (a) The onus is on the developer to supply the information necessary to make an assessment of the risks and impacts of a proposal- this would include informing the local authority of the most up to date studies of the practice across the globe in the fair and balanced manner to be expected of any expert scientific report.
- (b) In the light of that information the local authority takes a decision on whether to consent to the proposal. Where impacts or risks are uncertain, it should refuse permission. That is the precautionary principle. To do otherwise is to gamble with the environment and to be scientifically irresponsible. There can be no objection to such an approach under Welsh planning law. Indeed the approach commended is consistent with national policy and any less stringent approach would be inconsistent with national policy.

52. Friends of the Earth Cymru’s proposed planning policy requires a sound precautionary approach to decision-making. The amendments proposed by Friends of the Earth Cymru enshrine the Welsh Government’s policy to use sound science responsibly. In adopting such an approach the public can have confidence that decisions are being taken responsibly and concerns about risks to the environment and indeed risks to human health are effectively eliminated.

53. The policy proposed by Friends of the Earth Cymru in this instance falls well short of far more precautionary approaches taken across Europe, for example:

- Fracking is banned in France and Bulgaria.
- There is a moratorium (ie temporary ban) in the Netherlands pending further research into the environmental impacts, with a study due to start next year
- Draft legislation to enforce a two year moratorium in the Czech Republic is working its way through Parliament

- In Austria, plans by oil and gas company OMV to explore possible shale gas reserves in Lower Austria were stalled in summer 2012 following strong opposition, and the subsequent introduction in September 2012 of tougher environmental legislation led OMV to abandon drilling in Austria
- Fracking was stopped in North Rhine-Westphalia in Germany in November 2011, pending a study into the risks involved. The study, published in August 2012, concluded that there were numerous risks and uncertainties, and recommended no further drilling until further investigation. There is also a moratorium in the state of Thuringia.
- Switzerland: in April 2011 the Swiss Canton of Fribourg suspended all licenses for exploration of shale gas for an indefinite period.

The Environmental Impact Assessment (England and Wales) Regulations 1999

54. The Environmental Impact Assessment (England and Wales) Regulations 1999 require an Environmental Impact Assessment (EIA) for certain categories of development. However, currently only activities on sites covering an area of one hectare or more have to be screened to see whether an EIA is needed. Fracking operations have avoided this requirement by having sites covering an area of 0.99 hectares.
55. Friends of the Earth Cymru would like this loophole removed so that all developments that relate to the extraction of gas from subterranean sources are required to undergo an EIA – or as a minimum that they must go through the screening exercise to determine whether or not an EIA should be required.