The Impact of Shale Gas on Energy Markets

Written evidence submitted by Ben Eve and Phil Harding of Saltford Environment Group as a community focused contribution to answer, in part, the Energy & Climate Change Select Committee's questions: **"**Should the UK consider setting up a wealth fund with the tax revenue from shale gas?" and "What are the effects on investment in lower-carbon energy technologies?"

ONSHORE GAS – A COMMUNITY PERSPECTIVE

1. UK Methane Ltd submitted a planning application to Bath & North East Somerset Council on 27 September 2012 (reference 12/04304/FUL) to "drill and test the permeability of the coal and associated strata at land on the south east side of Hick's Gate, Durley Hill, Keynsham". The prospect of test drilling and coal bed methane (CBM) extraction in that part of North East Somerset has raised very real and growing concerns in the local community over the whole issue of shale gas and CBM. This evidence is submitted in response to that concern so that the Energy & Climate Change Select Committee has an appreciation of the need for community engagement over the exploitation of onshore gas reserves.

2. Any reasonable and impartial observer of the debate over the viability of onshore gas would agree that that full risk assessments, robust regulation and safeguards are required before onshore gas developments can be allowed to proceed. When calculating the true economic cost of onshore gas, the underwriting costs associated with any clearing up of subsequent contamination in the short to long term must be taken into account.

3. There are several specific concerns for communities that affect the economic case for onshore gas that we feel need to be addressed and these are set out below.

COMMUNITY ENGAGEMENT

4. Community engagement is necessary to ensure views are properly taken into account by those giving planning consent on major developments that have such long term consequences such as shale gas and CBM. Decision makers at a local and national level have a 'duty of care' towards the short and long term well-being of the communities affected by such developments.

5. Local communities will naturally be suspicious and lack trust in health, safety and environmental claims made by oil and gas companies arriving in their area to exploit the community's fossil fuel "assets". Providing independent and impartial advice to allow a well-informed discussion within the community is thus an important aspect of this engagement.

RISK MANAGEMENT & LEGACY

6. The environmental risks are greater than the gas industry is prepared to admit. Sooner or later all gas wells leak and the industry's own figures apparently show that, worldwide, 6% of linings fail and start leaking immediately and 50%, i.e. 1 in 2 (!), leak within 30 years. Whilst it may be possible that failure rates might be lower in CBM wells than other gas wells, nevertheless, to quote from Schlumberger, "a high percentage of wells in the US, Canada and other locations around the world show signs of gas leakage long after completion".[1]

7. Such a legacy would be disastrous for local communities and their natural environments including water supplies and agricultural land if widespread onshore gas drilling was to proceed. This is why the proposed drilling for CBM at Hick's Gate is causing such consternation to many in the local community.

8. There is a clear need and obligation to underwrite all short, medium AND long term risks, i.e. including after the gas company has left the site, so that the community/tax payer is not saddled with huge clear-up costs. This also affects the true economic cost of onshore gas; it is not as cheap as claimed by its proponents who have a vested interest in exploiting onshore gas regardless of the environmental, social and economic impact on local communities.

SUSTAINABLE ENERGY ECONOMICS

(i) Learning from past mistakes

9. The need for a sustainable long term approach for how the UK develops its energy system is well understood by energy policy makers. Our energy system needs to be low carbon, renewable, safe, secure and affordable. To achieve this the UK needs to ensure that **if** a windfall asset like onshore gas is to be safely exploited, after all the properly regulated safeguards are in place, that windfall should not be squandered, as has been the case with North Sea oil and gas revenues, but should be used to finance the creation of renewable energy plant within the local authority area supplying the onshore gas.

10. The wasted opportunity arising from the way the UK has squandered North Sea oil and gas is clear and worth considering again when looking at the future use of fossil fuels like onshore gas.

11. North Sea oil and gas has provided the UK with self-sufficiency in oil and gas but those resources are now depleting. The UK was self-sufficient in oil from 1980 to 2010 and was a net exporter of gas between 1997 and 2004. The UK's oil production currently meets over two thirds of our inland requirements. UK gas production has been decreasing since 2,000 and in 2011 was down a fifth on 2010. Imports of Liquefied Natural Gas (LNG) accounted for almost half of the UK's gas requirements in 2011.[2]

12. The UK might have used a significant proportion of the proceeds from the windfall provided by the North Sea to invest in sustainable renewable energy systems for when our oil and gas resources become significantly depleted and also for other public investment in the nation's infrastructure such as our rail and water network thereby providing higher levels of employment and supporting our manufacturing industry. But we failed to do so and are now paying the price of our short-sighted approach to the exploitation of our own energy resources.

13. The UK should now be meeting our energy needs with the highest proportion of renewable energy sources in Europe and have the most modern and efficient rail and water systems with all the economic, social and environmental benefits that would follow.

14. Instead, and taking energy as the example, in 2011 a mere 3.8% of our total energy consumption came from renewable sources which also accounted for 9.4% of electricity generated[2]. As a comparison with our European partners, in 2009 renewable energy sources represented 3% of our energy requirement compared to Norway 42.4%, France 7.5%, Germany 8.5%, and an EU 27 average of 9%.[3]

15. Can we learn from the missed opportunity of North Sea oil and gas and avoid making the same mistake again as the UK starts to look more actively at extracting onshore gas? Or will we continue with the short-term approach that has handicapped national policy making in the UK?

(ii) Is onshore gas really such a clean option in the longer term?

16. Estimates on the amount of economically recoverable onshore gas reserves in the UK vary widely from less than 10 years to several decades of UK gas requirements; the longer estimates tend to be from the gas industry itself. The higher estimates can raise false hopes of a long lasting 'cheap' supply of gas and thus lead to bad decision making. Even if onshore gas can help delay the energy gap caused by a lack of adequate investment in renewable and other low carbon energy sources, concerns over health and environmental risks remain, quite apart from the need to move towards a low carbon economy.

17. Furthermore onshore gas is seen by some as an opportunity for lower energy prices over the next few decades, a response to the UK's own potential energy gap in the 2010s/2020s, and to help overcome high energy prices as worldwide demand for oil and gas exceeds supply.

18. However, others, and especially those communities facing gas exploration and extraction within their own local area, raise concerns over the potential contamination of soils, rivers and groundwater from the extraction methods deployed that could be extremely difficult to rectify.

19. The important need to radically reduce our dependence on carbon based fossil fuels as these contribute to climate change through greenhouse gas emissions (principally CO2 and methane) should not be overlooked in a new 'dash for gas'. The UK has an obligation to meet its international commitments to reduce these emissions and set an example for other countries to follow.

20. Natural gas including unconventional gas is the cleanest of the carbon based fuels (gas, oil and coal) in terms of CO2 emissions from combustion. However, CO2 and methane emissions arising from the extraction practices deployed (e.g. hydraulic fracturing for shale gas) need to be taken into account also. The relative cleanliness of unconventional onshore gas is not entirely clear cut.

(iii) The two key requirements

21. Taking a pragmatic approach to onshore gas production and assuming that gas extraction can be done safely, there are **two key requirements** that need to be met for this to go ahead as a sustainable path to better energy security and a low carbon economy for the UK.

22. **The first requirement** concerns the environmental health of the local community and its economy. The extraction of onshore gas should only be undertaken with full and proper safeguards in place so that:

> **(a)** the gas will be extracted safely without harming the local environment, or turning natural landscapes that are so important for food production, biodiversity, tourism and leisure into industrial landscapes. It would be for the gas exploration/production company to fully satisfy (i) regulators that its methods were safe and (ii) the local planning authority that any disruption to local roads and environments would be kept to acceptable levels;
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> **(b)** guarantees are provided by HM Government that all exploration and extraction activities will be strongly regulated by the Environment Agency and Health & Safety Executive to safeguard against contamination of soils, rivers, and groundwater aquifers etc as well as the safe operation of the associated plant and machinery; and

(c) HM Government requires all risks of water and land contamination to be fully underwritten by the gas production company so that any damage is fully rectified should a pollution incident occur.

23. **The second requirement** is that an agreed proportion of the revenue generated by the commercial production of onshore gas is invested in the local community, whose gas reserves are being exploited. This investment should be in renewable energy locally, or in the same local authority area where local conditions are unsuitable, so that we start to displace CO2 from other dirtier fuels and when the gas runs out the local economy and the UK will have sustainable energy resources in place.

CONCLUSION

24. It cannot be fair or reasonable to expect local communities to take all the risks and disruption from the extraction and use of onshore gas with little or no benefit whilst failing to adequately address the increasingly urgent need to replace fossil fuels with renewables. The true economic cost of onshore gas therefore needs to include future clean-up costs AND the costs of its replacement with renewable energy so that eventually the carbon emissions from the use of the gas and the continued use of fossil fuels are completely offset.

25. In woodland management new trees are planted to replace those cut down for timber. We need to apply this basic principle of sustainability and create new renewable energy resources from fossil fuels to replace those fossil fuels consumed within the economy. **Therefore we recommend that a wealth fund or similar fiscal measure** should be used to fund renewable energy from any future use of onshore gas so that onshore gas brings forward rather than hinders investment in renewable low-carbon technologies.

26. The question that needs to be answered **AFTER** local environmental and safety concerns have been fully allayed with robust safeguards and guarantees in place is this:

> **Do we have the foresight to use unconventional gas both safely and to finance renewables as part of our transition to a modern low carbon economy that is significantly less dependent on carbon based fossil fuels? Otherwise, when the gas runs out, what then?** [4]

27. It is recommended that any responsible planning authority giving planning permission for the exploration and extraction of onshore gas should only do so by insisting on these two key requirements being met:

(i) **safe exploration & extraction with robust regulation whilst the risks to the local environment & health must be underwritten to allow for full rectification should pollution problems arise;** and

(ii) **investment in renewables** within the local authority area.

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