

IN THE MATTER OF CHESHIRE WEST AND CHESTER BOROUGH COUNCIL

PLANNING APPEALS IN RELATION TO ELLESMERE PORT WELLSITE (ISLAND GAS LIMITED)

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SUPPLEMENTARY STATEMENT OF CASE

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1. In paragraph 10.12 of the Appellant's Statement of Case it is admitted that the proposed development does inevitably have a carbon change impact but it is stated that, "the duration of the development is extremely short term (circa 18 weeks from start to finish) and the associated greenhouse gas emissions resulting from it would be minimal." In the same paragraph it is stated that the proposed development, "mitigates the effects of climate change by providing a net benefit from a carbon change perspective when considered against the reasonable alternatives that will need to come forward irrespective of any advances that have or could be made in renewable energy regeneration."
2. In appendix 2 of the Appellant's Statement of Case the proposed development is appraised against STRAT 1. Appendix 2 is a Planning Policy Appraisal and the Appellant's consideration of STRAT 1 is dealt with at 2.2.10 – 2.2.23. At paragraph 2.2.11 it is stated that the Appellant is unclear as to the basis of the reason for refusal and in the ensuing paragraphs it considers, "the possible alternatives as to the meaning of the reason for refusal." It seems to the Council that this is an attempt to obfuscate the issues before the Inspector.
3. The reason for refusal is, "fail to mitigate and adapt to the effects of climate change and fail to make the best use of opportunities for renewable energy use and generation." Clearly, this reason requires an explanation from the Appellant as to the steps it has taken to mitigate and adapt to the effects of climate change.
4. The second limb of the reason for refusal relates to making provision for the best use of the opportunities for renewable energy use and generation at both the exploration and

production stage. At paragraph 2.2.12 of appendix 2 of the Appellant's Statement of Case the Appellant questions whether the reason for refusal is to the effect that the development should be powered by renewable energy technologies and gives the example of erecting a wind turbine or solar array in order to power any plant and machinery required. The answer given is that if this was the intention of the reason for refusal, "it would not have been a practicable option given the very short duration of the development proposed and the need for reliable and consistent energy." The conclusion on this is stated to be simple, namely that the "use of onsite renewable energy sources would simply be not feasible or appropriate."

5. Various other alternative interpretations of the reason for refusal are given under the consideration of STRAT 1 but what really is the issue is whether the Appellant is proposing to employ the appropriate mitigation techniques for shale gas exploration.
6. In March 2016 the Committee on Climate Change ("the CCC") published a document entitled, "Onshore Petroleum; the Compatibility of UK Onshore Petroleum with Meeting the UK's Carbon Budgets". This was presented to Parliament pursuant to section 49 of the Infrastructure Act 2015. What was made abundantly clear in that report was that the potential for shale gas exploitation in the UK was subject to considerable uncertainty (see foreword by Lord Deben – the Chairman of the Committee). At the time of that report in March 2016 it was noted that not a single production well had yet been drilled and the situation at the time of the Council's Statement of Case, has not moved on much further.
7. Cuadrilla has recently commenced drilling at its site at Preston, New Road, Lancashire. It had to suspend drilling after it was reported (see *The Times*, 27 October 2018) that,

"The 0.76-magnitude tremor detected by the British Geological Survey was the largest of 17 tiny quakes to have been recorded in the vicinity of the company's site near Blackpool since it resumed operations last week after a seven-year hiatus.

Under the "traffic light" system, the company must stop fracking for 18 hours after a tremor with a magnitude of more

than 0.5, although those below 1.5 cannot be felt at the surface.”

8. Professor Stuart Haszeldine, a professor of geology at the University of Edinburgh, said “what mattered was not whether the quakes could be felt but the possibility of damage to the bore-hole and “the potential to create gas pathways from the shale towards larger faults, towards shallower aquifers, and to the surface””. The earthquake effect, albeit described as “minor” is, therefore, significant in terms of limiting the flow of gas to the surface including at the exploration stage.
9. The sensitivity and fragility of the process is one that requires, “a range of technologies and techniques to limit methane emissions including liquid unloading mitigation technologies” (see page 7 of the March 2016 CCC report). It is interesting that in the same report it is noted that, “IGas recently decided to cancel plans for further exploration in Cheshire” (see page 17).
10. Oil and gas wells are developed over four main stages; exploration, well development, production and well decommissioning and abandonment. As the March 2016 report stresses, “greenhouse gas emissions occur at each of these stages” (see page 46). There are four categories of emissions;
  - a. Fugitive emissions which include both vented emissions and unintentional leaks. Vented emissions result from planned releases as a result of maintenance operations and safety concerns. Unintentional methane leaks include those from valves and pipe joints, compressors, well heads and accidental releases above and below ground from the well through to injection in the grid or before being put to use.
  - b. Combustion emissions that occur from onsite burning of fossil fuels. These emissions come from engines such as those used for drilling and hydraulic fracturing as well as any flaring of gas.
  - c. Indirect emissions that result from transporting materials and waste to and from the site.

- d. Land use change emissions which include the Co2 released when land is converted from one use to another as well as any emissions relating to land remediation during decommissioning.

11. At paragraph 49 of the March 2016 report it is stated that;

“Exploration emissions are generally small, relating to transporting the seismic equipment and drilling the exploration well. Small volumes of gas may be generated during the development of the well, most of which is likely, at a minimum, to be burned in a flare. There is, however, little information available on emissions associated with exploration. Most studies analysing the GHG emissions from exploiting onshore petroleum either ignore this phase or assume the emissions are negligible. It should not be taken as a given that emissions from exploration will be low, especially for any extended well tests. Appropriate mitigation techniques should be employed where practical.”

12. This paragraph of the report is particularly apposite to this case in that there is no mention in the Appellant’s Statement of Case of any mitigation techniques that will be employed. The Appellant appears to be operating on the simple basis that because the initial exploration is limited to a “very short duration” (see paragraph 2.2.12 of Appendix 2 of the Appellant’s Statement of Case) that these mitigation techniques are not adopted because they are “not practicable.” The Council sees no reason why that should be the case especially in circumstances where the proposal includes the prospect of extended well tests going beyond the initial phase of exploration.

13. The proposed development is dealt with at paragraphs 3.2 to 3.4 of the Appellant’s Statement of Case. At paragraph 3.2 it is stated that, “the Appellant proposes to re-enter EP-1 (the existing well) in order to carry out flow testing to determine whether commercial hydrocarbon production can be established from the Pentre Chert Formation.” In the same paragraph it is stated that no drilling, no deepening of EP-1 nor any hydraulic fracturing is

proposed. The proposed development, “seeks only to flow test the well together with associated preparatory works necessary to enable such testing.”

14. The preparatory works include mobilisation, well completion and drill stem test, extended well test, well suspension, demobilisation of the well test equipment and restoration (see paragraph 3.3 of the Appellant’s Statement of Case). It is to be noted that the Appellant states at paragraph 3.3, “the planning conditions proposed by the Appellant include a condition that would require this restoration scheme to be implemented (as per the extant permission) following the cessation of the production test phase and abandonment of the well.” Significant by their absence in the consideration of the proposed development at section 3 of the Appellant’s statement of Case are any abatement or mitigation measures.
15. In the March 2016 report, as has been noted above, it is emphasised that it should not be taken as a given that emissions from exploration will be low, especially for any extended well tests. The Appellant seems to have made that assumption. That is of some concern to the authority. Mobilisation, well completion and the drill stem test and the extended well test are all activities which have the prospect of GHG emissions.
16. The pre-production / well development emissions result from site preparation, transporting the equipment and construction materials to the site. Well completion, as stated at page 49 of the March 2016 report, involves flow back over a period of three to ten days during which some of the fluids return to the surface mixed with increasing volumes of gas. The report states that in the US the gas mixed in with the flow back fluid has predominantly been vented to the atmosphere. The volume of gas produced during completion is linked to the pressure of the well and the initial flow rate, both of which are indirectly linked to the estimated ultimate recovery (EUR) of the well.
17. In the Statement of Case at paragraph 3.2.2 it is stated that. “the well completion involves the installation of downhole equipment into the well in order to allow hydrocarbons to flow from the Pentre Chart Formation into the well, using standard oilfield practices intended to obtain a greater understanding of the formation properties and to determine whether the formations are capable of producing commercial quantities of hydrocarbons.” Apart from characterising the process as one using standard oilfield practices, no explanation is given as to what precautionary measures will be adopted to ensure that the fluids which return to

the surface mixed with increasing volumes of gas are kept to a minimum. This is particularly important because, as the March 2016 report points out, emissions from this stage have been disputed partly due to the use of modelled rather than measured emissions.

18. A drill stem test (“DST”) provides an initial analysis of the hydrocarbon composition and its flow characteristics within the formation being tested. The detail of this is provided at paragraph 3.2.3 of the Appellant’s Statement of Case which indicates that, “any natural gas will be diverted via temporary pipe work via a shrouded ground flare located for flaring.” Flaring is described in the March 2016 report as a source of combustion emissions and greenhouse gas. In paragraph 3.2.4 of the Statement of Case it is stated that “the DST is expected to last for 14 days within a 28 day operational period . . . and if successful the string will be removed and replaced with a well test string for use during the Extended Well Test.”
19. Part of this process of re-establishing natural flow in the formation involves the use of hydrochloric acid at 15% concentration with water and is applied to the near well bore through the perforations. This is again characterised in the Statement of Case as “standard oilfield practice” and similar to practices used in the rehabilitation of public water supplies and commercial water wells. The Council is concerned that this process is a potential source of fugitive emissions.
20. Paragraph 3.2.5 refers to the removal of the workover rig and associated equipment following a successful DST. This is the only reference in the Statement of Case to the concept of a workover and it seems to the Council that this again illustrates a failure on the part of the Appellant to deal comprehensively with the nature of the development.
21. At page 50 of the March 2016 report it is stated that key emissions come from workovers, liquid unloading leaks and vents. It is clear that the development does involve workovers and liquid unloading which are all sources of greenhouse gas. As has been noted, the existing well has been on the site for some time, hence it appears the need for a workover and other remedial treatment. At page 50 of the report under the heading of “workover” it is stated that this covers a range of tasks such as fixing leaks, descaling the well, cleaning out the perforations or creating new ones and it may require some hydraulic fracturing work. It also refers to liquid unloading in relation to existing wells.

22. It appears that the description of the work referred to in paragraph 3.2.3 of the Appellant's Statement of Case is properly characterised as liquid unloading and again is a source of emissions because liquids begin to accumulate in the well especially when it has not been used. In that situation, as the March 2016 report identifies, the flow of gas might become impeded due to a build up of liquids that accumulate at the bottom of the well. This is another controversial area because the report states, "The flow of gas through the well may become impeded due to a build up of liquids that accumulate at the bottom of the well. . . . The range of measured and estimated emissions from liquids unloading is extremely large, with little understanding for this variation and of how and why these emissions vary across wells in different regions and of various ages" (see SGI (2015), Methane and CO2 emissions from the natural gas supply chain, [www.sustainablegasinstitute.org/publications/white-paper-1](http://www.sustainablegasinstitute.org/publications/white-paper-1) ).
23. The report also refers to pneumatic devices contributing to "14% of gas supply-chain emissions in the US." It is not clear from the Statement of Case whether pneumatic devices are being used in the process of exploration.
24. The extended well test is the same process as for the DST save that the natural gas is diverted to the enclosed ground flare as opposed to the shrouded ground flare. In paragraph 3.2.6 it is stated that this flare will be an 8.2 metre high enclosed ground flare which has an "increased environmental performance for a longer duration EWT." It is surprising that the Statement of Case provides no information as to what the environmental impact of either the DST or the EWT so it is not possible on the information provided to evaluate its effectiveness in preventing fugitive emissions. This is an important omission bearing in mind that the combined DST and EWT are estimated to last operationally for 88 days.
25. The process of well suspension and demobilisation referred to in 3.2.7 and 3.2.8 themselves have risks associated with emissions. No information is provided as to any precautionary or mitigation measures that will be adopted at this stage.
26. The Appellant's Statement of Case makes no reference to the March 2016 Committee on Climate Change report, nor to the MacKay-Stone report published in September 2013 which

is of some concern to the Council. Both at in the application stage and in its Statement of Case the Council would have expected the Appellant to deal with matters relating to the exploration and exploitation of shale gas and its relationship to climate change. This is especially so as the Appellant has known throughout the concern the Council has in relation to that issue (which has become an even more important one in the light of the earlier mentioned recent Government reports).

27. In the March 2016 report there is at page 52 a section which expressly deals with emission mitigation opportunities and costs. Under the heading of “techniques and technologies” it is stated that there is a large range of available techniques and technologies which can be employed to mitigate fugitive methane. In particular, there is a reference to “reduced emissions completions (REC).”
28. As the report makes clear this is a series of processes that enables the capture of the gas associated with the flow back fluid during the well completion stage and it being put to productive use and as the report identifies REC can reduce the associated emissions from completion by between 90-99%. No mention of this is made in the Appellant’s Statement of Case. The Report also refers to a liquid unloading plunger lift which instead of blowing out the liquids that can accumulate in the well, it is possible to use a plunger lift system which fits into the well bore. This uses the gas pressure in the well to bring the liquids to the surface, while limiting the amount of venting. The plunger lift system has been estimated to reduce emissions from liquid unloading by around 90%.
29. In addition there are Low-flow pneumatic devices, dry seal compressors and vapour recovery units. No reliance is placed on these mitigation measures in the Appellant’s Statement of Case which one would have expected in circumstances where the reason for refusal specifically addresses the need for mitigation measures. Nor is there any mention of an effective leakage detection and repair programme which would mitigate methane emissions and be part of a monitoring system. The importance of taking mitigation measures at every stage in the process cannot be overemphasised and the March 2016 report considered the evidence about the efficacy of various technologies and techniques to limit emissions. At page 55 of the report the Committee for Climate Change observed that the result showed that technologies and techniques to reduce emissions can have a substantial effect on the greenhouse gas footprint.

30. Indeed, it is not only the Climate Change Committee that has addressed the importance of mitigation measures for shale gas development. The UK Onshore Operators Group (UKOOG) has guidelines that operators should plan and then implement controls in order to minimise all emissions.
31. The most recent statement on the relationship between shale gas and climate change is to be found in an inter-Governmental panel on climate change (the IPCC) report dated 6 October 2018. It is a special report on the impacts of global warming of 1.5C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty. That report makes clear that ambitious mitigation actions are indispensable to limit warming. It deals specifically with shale gas development and mirrors earlier policy statements made by the Committee on Climate Change in March 2016. That report had concluded;

“exploitation of shale gas on a significant scale would not be consistent with UK carbon budgets and the 2050 target unless three tests are met. These tests relate to the need to regulate tightly production emission; the need for such shale gas production as does happen to substitute for imported gas and not add to overall gas consumption; and the need to find additional abatement measures to compensate for the emissions attached to production, even under tight regulation” (see page 3 of the statement).

32. It is the Council’s case that the most recent inter-Government statement provides a complete justification for its seeking to require the Appellant to satisfy the Authority that the mitigation measures at both exploration and production stage all comply with the best available techniques and have the effect of reducing the impact of shale gas development on climate change. In that regard, it is the Council’s case that the Appellant has not discharged the burden on it to satisfy the granting of planning permission for the proposed development in the policy context of strengthening the global response to the threat of climate change and sustainable development.

33. The Council is not satisfied that appropriate mitigation techniques have been employed during the exploration phase. In summary, it is the Council's case that the Appellant did not adequately or at all deal with the mitigation techniques that would be employed during the exploration phase and that the burden is on the Appellant to show that mitigation measures are in place and comply with the accepted mitigation techniques referred to in the CCC's Report. These are matters which should have been addressed in the material put before the Council at the time of the application, especially as the Climate Change Committee Report specifically stated at page 49 that there is, "little information available on emissions associated with exploration."
34. The Council accepts that the proposals for exploration should be considered on their own merits "without speculation or hypothetical assumptions in relation to future activities which will require their own consenting and EIA processes." In this case the fact is that on its own merits permission should not be granted for the reasons set out in the Council's Statement of Case. But that is not to say that in a given case the Council could not take into account at the exploration phase matters which although relating to the production stage were also relevant to issues arising at the exploration stage.
35. That would be a situation raising different issues from those considered in *Preston New Road Action Ground v Secretary of State for Communities and Local Government* [2018] EWCA Civ 9. For example, if the facts were that it was shown at the time an application for exploration was made that intrinsically the site was a wholly inappropriate site for shale gas development or that it would be impossible to extract the shale gas either physically or by virtue of its inevitable impact on say adjoining housing or other site specific matters that existed at the time of the application for exploration then they would clearly be material not only to the production stage but to the exploration stage. Another scenario might be that if it was clear at the time of the application for exploration that the proposed development at the production stage would constitute an unacceptable risk to people's safety or wellbeing then that too would be a factor that would be material to the application for exploration.
36. In relation to climate change, if evidence emerged that the proposed development at the production stage had a seriously deleterious effect on climate change and that climate change was a significant threat to the future of the planet then that evidence would not only be relevant at the production stage but to the exploration stage.

37. Attached to this Supplementary Statement of Case is a list of documents referred to.