

**EPP3 (S)**

**APPEAL BY ISLAND GAS LTD, PORTSIDE,  
ELLESMERE PORT**

**APPEAL REFERENCE APP/A0665/W/18/3207952**

**SUMMARY PROOF**

**ENVIRONMENTAL SUSTAINABILITY – PUBLIC HEALTH  
IMPACTS OF THE PROPOSED DEVELOPMENT**

**BY**

**Dr PATRICK SAUNDERS FRCP FFPH**



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## **EXPERIENCE**

My name is Dr Patrick Saunders. I am a Consultant in Public Health and Visiting Professor in Public Health at the University of Staffordshire. A registered Public Health Specialist, Faculty of Public Health (FPH) Board member, I was awarded Fellowship of the FPH in 2011.

I have held service, research, teaching and management roles with the WHO, European Union, Health Protection Agency, local government, the NHS and a number of Universities. I retired from the NHS in 2013 as Associate Director of Public Health and maintain active research, teaching and consultancy commitments to a range of bodies including the Royal College of Physicians, Public Health England, the National Institute for Health and Clinical Excellence and the EU Horizon 2020 programme.

My research interest is in the public health impact, especially on reproductive health, of exposure to low levels of chemicals and was awarded a PhD at the University of Birmingham in 2004. I have published papers including a systematic style literature review on the public health impact of Unconventional Oil and Gas Developments in the peer reviewed literature.

## **SUMMARY**

1. The Indices of Deprivation 2015 – Hotspots of Deprivation in Cheshire West and Chester show that two of the wards closest to this proposal, Rossmore and Ellesmere Port Town, include populations that are ranked amongst the 10% most deprived nationally. There is evidence that deprived communities are disproportionately exposed and vulnerable to the effects of exposure to environmental pollution including traffic related impacts on air quality.
2. It is important to acknowledge that this application relates to the test- phase of the process which will inevitably be less intensive and of shorter duration than a fully operational site. However, that does not mean that the public

health impacts of the proposed development are necessarily minimal or of short duration. The seriously deprived populations closest to the proposal will gain nothing from this development but run the risk of adverse health consequences, as set out below. This would conflict with Council Policy SOC5.

3. Despite arguably being the most significant change in energy extraction since the advent of the fossil fuel economy, the published literature on the direct impact of unconventional oil and gas development on the health of local communities is very modest in a scientific context. However there are concerning signals in the literature and a legitimacy to the anxieties of the community which require a precautionary approach. It is also clear that shale gas exploitation will exacerbate climate change with potentially catastrophic public health consequences. On these grounds alone, the risks already outweigh any possible benefits.
4. The proposed development uses, loses and produces toxic chemicals at every stage of its development, operation, decommissioning and abandonment. The question is not whether toxic chemicals will be released; it is rather whether this is a hazard (the inherent danger) or a risk (the likelihood of that danger being realised) to local communities and beyond. In addition, the potential for serious interference with individual and community health and wellbeing through public health impacts (odours, noise, lighting, dust, traffic etc.) is real. Determining the level of that risk not only requires an assessment of the level of exposure, it also requires an assessment of the susceptibility of the exposed population. This is where the evidence is stronger. Poorer people are not only more exposed to environmental pollution, they are more susceptible to the consequences of that exposure.

## Evidence of Unequal Environmental Impact on Public Health

5. Poor communities experience multiple environmental, health and social stressors simultaneously. The closest wards to the proposal are Rossmore, Ellesmere Port Town and Netherpool. In these wards the proportion of the populations in the most deprived quintile of deprivation nationally are 100%, c. 85% and c. 55% respectively. Standardised mortality ratios in these wards are 53%, 42% and 24% higher than England respectively.
6. The most researched area in terms of exposure is air pollution. There is a strong social gradient in concentrations of two of the most important contemporary air pollutants, oxides of nitrogen (NO<sub>x</sub>) and fine particulate matter (PM), for example. There is a very clear relationship between deprivation and living in wards exceeding the national air quality standard annual average limit values for NO<sub>2</sub>. Furthermore, there is evidence that deprivation exacerbates the effects of exposure. A European review reported that poorer communities were more vulnerable to the effects of PM<sub>10</sub> exposure, including morbidity and mortality. This is especially important as there is no safe level of exposure to fine PM meaning that any exposure will have an impact at a population level.
7. The proposed development will increase traffic and associated emissions including NO<sub>2</sub> and PM. Over all phases of the application this amounts to 2316 movements over 104 working days. 392 of these will be Heavy Goods Vehicles (HGV). The flaring of 'waste' gas as proposed is also a potential source of air pollutants including NO<sub>2</sub>, H<sub>2</sub>S, SO<sub>2</sub>, PM, Benzene Toluene Ethylbenzene Xylene (BTEX) and Polyaromatic Hydrocarbons (PAH). Given that some of these pollutants, for example Benzene and PM, are non-threshold, i.e. there is no safe level of exposure, any increase in levels of damaging pollutants to this community, no matter how small, should be avoided as the evidence shows this is a community that is highly susceptible to the adverse impacts.

## **Consequences of Other Stressors**

8. In addition to poor air quality, deprived communities such as those in Rossmore and Ellesmere Port wards are also simultaneously exposed to other environmental and social stressors including unemployment, poorer quality housing and restricted access to environmental assets and a healthy diet. These factors not only impact health and wellbeing directly but, in some cases, magnify the harmful effects of air quality impacts.
9. There is also evidence that individuals and communities experience adverse psychosocial effects during the planning stage of shale gas extraction in the face of local opposition as Dr Anna Szolucha has described in her evidence. This research found communities experienced a form of 'collective trauma' including an increased sense of powerlessness, fear, betrayal, guilt, anger, stress, and anxiety, as well as sleep disturbances, experiences she has also found in communities proximal to this application.
10. As set out in the evidence of Dr Szolucha, the local community has genuine concerns about the proposed development and is already suffering stress and fatigue as a result. Part of this comes from a feeling of powerlessness within the process and that their democratic will, as voiced by the Council's planning committee – locally accountable democratically elected representatives – will be overturned.

## **Evidence of Climate Change Impacts on Public Health**

11. The final product of the proposed development, methane, is a powerful greenhouse gas. As the climate change witness, Professor Kevin Anderson, demonstrates, there is considerable evidence that leakage rates from extraction and distribution are much higher than the industry or the regulator have estimated.

12. The Intergovernmental Panel on Climate Change's new synthesis of more than 6,000 recent scientific papers has highlighted the scale of the public health and environmental dangers posed by global warming including extreme weather events, rising sea levels, destruction of coral reefs, loss of biodiversity, ocean acidification and deoxygenation, and extreme heat. Crucially, climate change is a "threat multiplier" that exacerbates and intensifies poverty, food insecurity, water stress, forced migration, and conflict between states and communities.

## **Conclusion**

13. There is good evidence that deprived communities are disproportionately vulnerable to the effects of exposure to environmental impacts of development. The evidence is currently insufficient to rule out direct local adverse health impacts associated with this proposed development. While this application relates to the test-phase of the process it is important to recognise that the uncertainties inherent in the air quality modelling together with the reality that some emissions will be non-threshold, and the plausibility of associated negative public health impacts it would be imprudent to assume no local health or well-being impact.
14. The Appellant seeks to rely on benefits associated with energy security and maintaining the supply of gas. These benefits do not arise from a short exploration project. They will only arguably arise if the project discovers an exploitable shale gas reserve and shale gas production occurs. I am aware that the planning process focuses on exploration by itself. But if the Appellant is permitted to rely on the benefits of exploiting a shale gas reserve for production, then the harmful impacts of production must also be taken into account. A UK unconventional oil and gas industry will undoubtedly contribute to global warming increasing the potential of harm to communities which will derive little, or no, benefit from that industry.

**Dr Patrick Saunders**

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