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ARROW submission on Health and Community impacts and the Perception of Risk

by

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Public Concern and Health Risk Assessment:

1. In their response to the Scoping study the Health Protection Agency (now Public Health England 'PHE') commented¹:

"There is evidence that, in some cases, perception of risk may have a greater impact on health than the hazard itself. A 2009 report, jointly published by Liverpool John Moores University and the HPA, examined health risk perception and environmental problems using a number of case studies. As a point to consider, the report suggested: "Estimation of community anxiety and stress should be included as part of every risk or impact assessment of proposed plans that involve a potential environmental hazard. This is true even when the physical health risks may be negligible.""

2. The HPA therefore supported the inclusion of this information within EIAs as "good practice".

3. The applicant confirmed:

"The perceptions of the impacts of hazardous waste management facilities on human health frequently give rise to concerns. The reasons for any perceptions of adverse impacts will be assessed together with the evidence regarding the perceived concerns. An assessment will be prepared in which are presented the methodology and conclusions of the health risk assessment".

4. This is subsequently addressed only in the most superficial manner the Environmental Statement² which says:

"local residents and other third parties may have concerns regarding perceived harm as a result of the development proposals

....

Although concerns were raised by members of the public with respect to perceived effects of the operation of the current landfill site there is no evidence that the day to day activities at the site currently give rise to significant impacts."

¹ Appendix ESH page 21

² ES §7.4.9.1

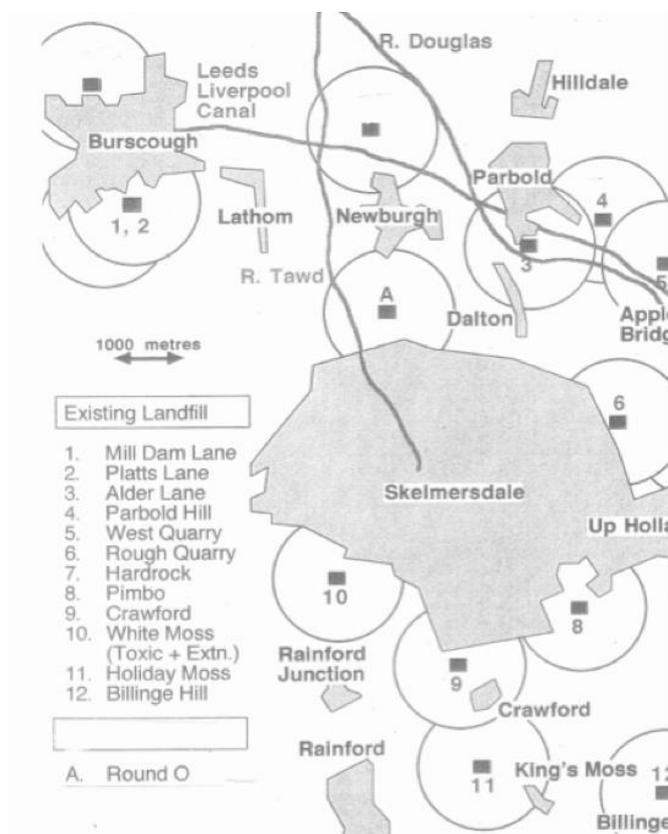
5. This is an inadequate response to the comments from PHE and fails to properly consider this important aspect of health impacts associated with the proposed extension.

The Evidence of Public Concern:

6. Over 3,000 objections covering a wide range of objections have been submitted in response to this application. This level of local response has only ever been generated by this hazardous waste landfill site.
7. The majority of the objections relate to concerns about health, odour and sustainability including:
8. Compounding issues in relation to the concern of the public include:
- The cumulative impacts of landfill on Skelmersdale.
 - The vulnerability of the communities adjacent to the proposed extension
9. These issues are considered below.

Cumulative Impacts:

10. Skelmersdale is surrounded by 13 landfill sites within a 3 mile radius- The cumulative effect of a high level of landfilling needs to be taken in account.
11. There are 2 active landfill sites close to Skelmersdale and at least 11 closed sites within 5 km.



12. These landfill sites will continue to pollute the surrounding soil, air and water for hundreds of years after closure. It is now nearly twenty years since this was officially recognized and the Government publically accepted that all landfills leak. Waste Management Paper 26B, published in 1995, pointed out: "It is now recognized that this [total containment and isolation of wastes] is unattainable". The report went on to say that "it may be more responsible to design for controlled release than to attempt indefinite containment". The consequences of this acceptance should have been profound and ought to have led to a fundamental change in landfill practice. Particular care should have been taken in the choice of location of landfill sites with those below the water table (like Whitemoss) being automatically discounted and pre-treatment of waste to reduce the long-term leaching and pollution potential should have been mandated. Sadly the implications have been widely ignored and landfills like Whitemoss have continued to operate in locations where long-term pollution impacts are inevitable. Incredibly wastes which exceed the Landfill Directive's leaching limits by upto 3 times are still allowed to be dumped in these unsuitable sites.
13. The aftercare of sites at the end of their operational life is often poor or non-existent and containment systems rapidly degrade and stop functioning. The area in an around Skelmersdale has a far greater concentration of waste sites than other areas. As a result residents of Skelmersdale have taken far more than their fair share of other people's rubbish and the risks that accompany such sites.

The vulnerability of the local community

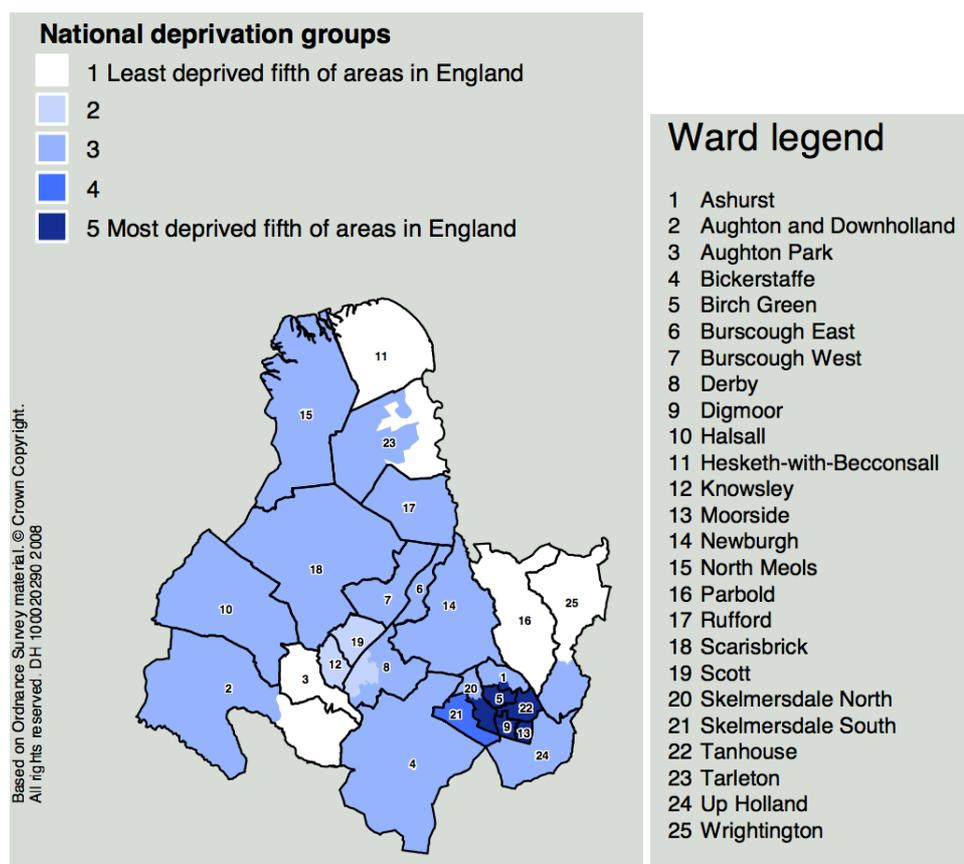
14. Numerous studies show that low income and ethnic minority communities are chosen more frequently for waste sites and US Civil Rights activists have called the disproportionate dumping of polluting industries and in these communities 'Environmental Racism'. The host communities being labeled 'toxic sacrifice zones'. 'Environmental racism' has often been linked to the exclusion of minority groups from decision-making or regulatory bodies in their communities.
15. Research by Friends of the Earth³ on breaking the link between pollution and poverty showed, for example, that:
 - c. 66% of carcinogenic emissions were in the most deprived 10% of wards
 - c. 82% of carcinogenic emissions were in the most deprived 20% of wards; whilst only
 - c. 8% of carcinogenic emissions were in the least deprived 50% of wards; and that50 % of operating municipal waste incinerators in England were located in the most deprived 10 per cent of wards.
16. Environmental inequalities arise, says DEFRA "*where specific communities,*

³ http://www.foe.co.uk/resource/reports/pollution_poverty_report.pdf

such as the most deprived, experience a poorer environmental quality”.

Understanding and tackling such inequalities is important in the context of sustainable development, where socio-economic issues need to be considered alongside environmental ones, and in view of the emerging agenda on social justice in the UK⁴

17. There is no doubt that parts of Skelmersdale affected by this proposal are low income communities. The Government’s 2010 Index of Multiple Deprivation reveals three Lower Super Output Areas (LSOAs) in Skelmersdale ranked in the lowest 1000 nationally out of a total of 32,482 LSOAs. One LSOA in Digmoor ward is ranked the 283rd most deprived while another in Moorside being ranked 541st. Five of the LSOAs in the wards Tanhouse, Moorside and Digmoor which are downwind of Whitemoss are in the lowest decile nationally while Tanhouse and Moorside are two of the ten most deprived wards in Lancashire. These communities are already exposed to high levels of pollutants from the adjacent motorway as well as the historic and continuing exposure to emissions from multiple landfill sites. Existing health problems include low birth weights and shorter life expectancy. The most deprived communities are well known to be those most vulnerable to other threats to health.



⁴ Pye, S., King, K., & Sturman, J. (2006). *Air quality and social deprivation in the UK: An environmental inequalities analysis AEAT/ENV/R/2170*. AEA for Department of Environment, Food and Rural Affairs http://uk-air.defra.gov.uk/reports/cat09/0701110944_AQinequalitiesFNL_AEAT_0506.pdf

18. The land use planning system has a vital role in helping to rebalance social inequalities but with such a strong bias towards the siting undesirable and polluting land-uses in poor areas – which normally are also disadvantaged in terms of effective involvement with the planning and pollution control regimes, there is clearly much to be done if the policy goal of reducing social inequalities is to be achieved.
19. There is little doubt, however, that the importance of redressing this balance has climbed high on the policy agenda. The Environment Agency commented for example:
- There is increasing recognition of the links between poverty and the environment and that the poorest communities live in the worst environments. Indeed, in his speech on sustainable development in February 2003, the Prime Minister noted that “the environment, not just globally, but locally, in our towns and cities, is overwhelmingly an issue of concern for the poorest citizens in our communities”.*
- This unequal distribution of environmental bads (such as pollution and flooding) and goods (such as access to greenspace) across society highlights the need to bring together environmental, social and economic policy objectives under the banner of ‘environmental justice’ or ‘environmental equality’.*
20. The principles of this new drive towards environmental justice are further expanded in PPS 10 which says that planning authorities should, to the extent appropriate to their responsibilities, prepare and deliver planning strategies that, inter alia, “reflect the concerns and interests of communities”.
21. The policy issues are considered further below in the section on PPS10.

The Case Law Relating to Public Concern:

22. Public concern is capable of being a material concern in planning applications and this is reflected in a body of case law and guidance. The case law shows that there is a wide range of discretion as to the weight which may be attached to public concern and this is considered in more detail below.
23. The modern approach to perception of risk developed from the Royal Society’s 1992 report on risk⁵ where it is described as involving “people’s beliefs, attitudes, judgements and feelings, as well as the wider cultural and social dispositions they adopt towards hazards and their benefits”.
24. Perhaps the most commonly cited case in relation to public concern is *Gateshead*⁶. Glidewell LJ said:
- “... if in the end public concern is not justified, it cannot be conclusive.”
25. This was effectively the position adopted by PPG23 but this has now has

⁵ Royal Society (1992). *Risk: Analysis, perception and management* - Royal Society Study Group. The Royal Society page 89 Quoted in Bickerstaff, K. (2004). Risk perception research: Socio-cultural perspectives on the public experience of air pollution. *Environment International*, 30(6), 827-840

⁶ *Gateshead Metropolitan Borough Council v Secretary of State for the Environment* [1994] 1 PLR 85

been superseded by the National Planning Policy Framework. The issue therefore needs to be interpreted in the light of a more detailed and extensive consideration of the case law.

26. The case law may be briefly summarised as follows:

- Human factors can, and sometimes should, be taken into account in making planning decisions (*Westminster City Council*⁷).
- Health concerns are material considerations and should be considered by the decision maker (*Skelk*⁸).
- Decision-makers must recognise that the public concern is so important that it can – albeit in rare cases – constitute a valid reason for refusing planning permission even if unfounded (*Newport*⁹).
- Emotional responses to a proposed land use are capable of being material (*West Midlands Probation Committee*¹⁰ and *Broadlands District Council*¹¹).
- Decision-makers must attach due weight to the justified concerns (being land considerations) of any companies concerned that if the proposal goes ahead they may be forced to relocate (*Broadlands District Council; Norwich City Council*¹²).
- Perceptions of risk arising from the fear of repetitions of incidents following a previous history of events can be justified even if the level of incidents has reduced (*Smith v FSS & Anor*¹³)

27. *Newport* is perhaps the most important and relevant of these cases and merits more detail at this stage

28. *Newport* related to costs in relation to an appeal where perceived fears had been given sufficient weight to justify the refusal of an application for a waste treatment facility. Staughton LJ considered that the Inspector had properly considered the issue on the costs application, whereas the other two LJs did not. There was, however, no dissent in the Court on what was the issue, and all agreed that a perceived fear by the public can be a reason for refusing planning permission. Gateshead – and whether unjustified public concern can be conclusive – was discussed in some detail and

⁷ *Westminster City Council v Great Portland Estates Plc* [1985] 1 AC 661

⁸ *Skelk v the First Secretary of State and Three Rivers District Council and Orange PCS Ltd* 2003 No CO/2466/2003

⁹ *Newport County Borough Council V Secretary of State for Wales & Anor* [1997] EWCA Civ 189

¹⁰ *West Midlands Probation Committee v SSE and Walsall MBC* (1997) JPL 323

¹¹ *R v. Broadland DC ex parte Dove* [1998] PLCR 119

¹² *Secretary of State for the Environment v Redland Aggregates and Norwich City Council* [1998] Env.L.R D12

¹³ *Smith v First Secretary of State & Anor* [2004] EWHC 2583 (Admin) (29 October 2004)

Staughton LJ said:

"Glidewell LJ is a great authority on planning matters, but in this instance I cannot agree with him."

29. Other relevant passages from Newport are:

- Hutchison LJ: *"I accept Mr Howell's submission that the only sensible construction of the material words is that the Inspector, and therefore the Secretary of State who adopted his reasoning, was approaching the question whether the council had behaved unreasonably on the basis that the genuine fears on the part of the public, unless objectively justified, could never amount to a valid ground for refusal. That was in my judgement a material error of law."*
- Aldous LJ: *"However, perceived fears of the public are a planning factor which can amount (perhaps rarely) to a good reason for refusal of planning permission. It is therefore in my view "another planning reason" within paragraph 9 of Circular 14/85. That being the law, the Inspector should have considered whether the council acted unreasonably so that it was not necessary for the case to come before the Secretary of State. In so doing, he should have accepted that the perceived fears, even though they were not soundly based upon scientific or logical fact, were a relevant planning consideration and then gone on to decide whether, upon the facts of the particular case, they were of so little weight as to result in the conclusion that refusal by the council was unreasonable."*
- Staughton LJ: *"... I would say that local fears which are not, in fact, justified can rank as part of the human factor and could be given direct effect as an exceptional or special circumstance."*

30. The 'human factor' mentioned by Staughton LJ in the final bullet relates to Lord Scarman in Westminster City Council when he said:

"It would be inhuman pedantry to exclude from the control of our environment the human factor. The human factor is always present of course indirectly as the background to the consideration of the character of land use. It can, however, and sometimes should, be given direct effect as an exceptional or special circumstance."

31. In essence, therefore, it was held that perceived fears of the public can amount to a good reason for refusing planning permission although this may be 'rare' (Aldous LJ) or in 'exceptional or special circumstances' (Staughton LJ). Those perceived fears do not necessarily need to be objective, justified or soundly based upon scientific or logical fact.

Planning Guidance and Public Concern

32. Planning Policy Statement 23: Planning and Pollution Control (PPS23) included more commentary than Planning Policy Statement 10: Planning for Sustainable Waste Management Planning (PPS10) on the case law relating to the perception of risks.

33. PPS23 has, however, now been superseded by the NPPF and so is no longer relevant to the determination of this appeal. Therefore only the

extant guidance in PPS10 is considered below.

Planning Policy Statement 10:

34. PPS10 was updated in March 2011 and replaces *Planning Policy Guidance 10: Planning and Waste Management* (PPG10) published in 1999 and an earlier edition of PPS10 published on 21 July 2005. PPS10 remains current guidance as it was not superseded by the March 2012 National Planning Policy Framework (NPPF)¹⁴.

35. PPS 10 says that planning authorities should, to the extent appropriate to their responsibilities, prepare and deliver planning strategies that, inter alia, “reflect the concerns and interests of communities”.

36. The most relevant sections of PPS 10 are those relating to planning and pollution control, local environmental impacts and health (paragraphs 27 to 31).

37. It is suggested at Para 28 that:

Para 28: Waste planning and pollution control authorities should work closely to ensure integrated and timely decisions under the complementary regimes. This can be assisted by applicants preparing and submitting planning and pollution control applications in parallel.

38. Unfortunately the applicant submitted the pollution control application at a late stage and it is not yet even ‘duly made’ so it is hardly running in parallel with the planning application. This resulted in less information about the pollution control issues being available at this stage (and the promise by WML to submit a copy of the Environmental Permit application at the preliminary meeting has not yet materialised). This increases the difficulties the public faced in assessing the application thus the levels of public concern.

39. In particular it is noted that PPS 10 says:

Para 27: ...The planning system controls the development and use of land in the public interest and should focus on whether development is an acceptable use of the land, and the impacts of those uses on the development and use of land. Waste planning authorities should work on the assumption that the relevant pollution control regime will be properly applied and enforced.

40. In relation to the local environmental impacts PPS 10 says:

Para 29: In considering planning applications for waste management facilities waste planning authorities should consider the likely impact on the local environment and on amenity (see Annex E).

41. Notwithstanding this PPS 10 advises:

¹⁴ Footnote 5 of the NPPF states “The Waste Planning Policy Statement will remain in place until the National Waste Management Plan is published.” The National Waste Management Plan was published in December 2013 but still says “Both current planning policy in Planning Policy Statement 10, and its proposed update, contain planning policies which should be taken into account by local authorities”

Para 30: Modern, appropriately located, well-run and well-regulated, waste management facilities operated in line with current pollution control techniques and standards should pose little risk to human health. The detailed consideration of a waste management process and the implications, if any, for human health is the responsibility of the pollution control authorities. However, planning operates in the public interest to ensure that the location of proposed development is acceptable and health can be material to such decisions.

42. The guidance goes on to suggest that:

Para 31: Where concerns about health are raised, waste planning authorities should avoid carrying out their own detailed assessment of epidemiological and other health studies. Rather, they should ensure, through drawing from Government advice and research and consultation with the relevant health authorities and agencies, that they have advice on the implications for health, if any, and when determining planning applications consider the locational implications of such advice. In turn, the relevant health authorities and agencies will require sufficient understanding of the proposed waste management process to provide considered advice. A concurrent process and a transparent relationship between the planning and pollution control regimes will help facilitate this.

43. This advice presents several difficulties in this case. The footnote reference in PPS 10 is to a 2004 review by Envirosearch but this review is old and explicitly relates only to municipal and similar wastes. The most recent review by the HPA/PHE was in 2011 and contains a large number of obvious errors and omissions as described in the ARROW submission on health and the Environment Agency accepts that they have no expertise in relation to health impacts. The difficulty is compounded by the fact that the most recent and comprehensive systematic review of the literature on the health effects of landfill (Mattiello et al. 2013) confirms that “it is reasonable to conclude that the risk of congenital anomalies is likely to be real” as described in the ARROW submission on health. When local residents see such conclusions confirmed in the peer reviewed scientific literature it could reasonably be considered irrational for them not to be anxious and concerned about proposals.

44. To summarise, therefore, there is no doubt that where the perception of harm is genuinely held it can be a material consideration: the weight to be attached to it is for the decision-maker. It is useful at this point to consider how other Inspectors and, where relevant, the Secretary of State have weighted the perception of risk in practice.

The consideration of Perception of Risk at Waste Inquiries:

45. While ‘perception of risk’ may have been more commonly raised at inquiries for mobile phone masts there have been a number of waste planning inquiries at which the concerns of the public have been addressed and, in some cases, given significant weight. These include

- i The planning Appeal decision relating to the reclamation of ‘Round ‘O’ Quarry’ with domestic waste in February 1999. The Inspector refused

the appeal by UK Waste Management Ltd based on the cumulative effect of a number of negative factors, but a decisive consideration was the possible consequence for human health and the manner in which such a consequence was perceived by local residents. The Inspector concluded that fears of a health risk constituted a cogent objection to the project. The ground survived a subsequent High Court challenge. Judge Rich said: *“Mr Drabble submits that the perception of fear must have been at least the chief additional negative factor to absent of need, converting a “cogent objection” into a compelling reason for resisting the proposal.” I accept this, but the conclusion that the Inspector fell into error does not follow...there is no doubt (i) that such concern is a material consideration, and (ii) the weight to be attached to material considerations is for the decision maker.The Inspector weighed it in the balance and it is not for the Court to interfere with his assessment of the weight to be given to it, along with other negative considerations”*.

- ii At Portsmouth the Inspector and Secretary of State accepted the inspector’s conclusions on public perception of harm to human health which were that *“there is some justification¹⁵”* for that perception. However this was not considered sufficient, in that case, to overcome the presumption in favour of the development plan which specifically provided for a municipal waste incinerator at that site.
- iii The Inspector at Kidderminster in determining an appeal for an ‘integrated waste management facility including a 165,000 tpa incinerator, concluded: *“I am satisfied that the concerns of the public are genuine and are not simply the outcome of an orchestrated campaign: very many people in this area have a very real fear of what they see as the unknown health effects of the incinerator. The public perception of risk is a negative factor of some significance to place in the scales of the decision making process”*. He added *“Moreover, in this case where a development about which there are concerns is also very much in the public view, this would be likely to serve as a constant reminder and focus those concerns”*. Although the public view in that case came largely from the scale of the buildings and the stack there is no doubt that this proposal would also be very much in the mind of the concerned local residents – not least through repeated odours from the site.
- iv In his decision letter¹⁶ recommending dismissal of an appeal for a landraise site at Lamberhurst Farm in Kent the Inspector wrote: *“the fear it has generated in the local population and medical practitioners serving the area cumulatively represent a strong objection to the Lamberhurst Farm proposal”*. In supporting the conclusions of the Inspector the Secretary

¹⁵ para 12.173 of the Inspectors decision letter

¹⁶ Inspectors recommendation Letter (undated) Kent County Council Appeal by Cleanaway Ltd APP/W2200/A/97/281832/281833

of State said¹⁷: "He also agrees with the Inspector that the public perception and fear of health risks is a factor which must be taken into account."

- v The Inspector's report to the Secretary of State following an appeal by Gent Fairhead at Rivenhall, Essex¹⁸ said:

13.93 Despite the results of the assessments undertaken by the applicants, many local residents remain concerned about the potential health risk of emissions from the eRCF. Local residents' fears about the harmful effects on health of such a facility are capable of being a material consideration, notwithstanding that there may be no objective evidence to support such a fear. By itself, unfounded fear would rarely be a reason to justify withholding planning permission. Nevertheless, it seems to me that the anxiety caused by the potential risk of pollutants, even though the physical health risks may be negligible, could have an impact on the well being and the living conditions of local residents.

And concluded:

13.95 In conclusion, I am satisfied that the plant could be operated without causing any material harm to human health, and that this matter would be adequately dealt with by the Environmental Permitting regime. Despite this, the concern of local residents regarding the risk to health, albeit unfounded, would remain as a detrimental impact of the development. Nevertheless, these fears would be ameliorated to some extent by the proposed arrangements for the results of monitoring of emissions to be provided to the Site Liaison Committee.

- 46. In the decision relating to an appeal for an incinerator at Sinfin Lane, Derby (Ref APP/C1055/A/10/ 2124772), weight was given by the Inspector to the fears of local residents. Although subsequently overturned this was not on the perception of risk ground and the comments on this remain valid¹⁹. This was considered in a more recent appeal²⁰ "in an area where air quality standards were already poor. It was the

¹⁷ Secretary of State's Decision Letter (30 August 2001) Kent County Council Appeal by Cleanaway Ltd APP/W2200/A/97/281832/281833

¹⁸ Planning Inspectorate (2009). *Report to the secretary of state for communities and local government by M P Hill BSc MSc CEng MICE FGS date: 22 December 2009 TOWN AND COUNTRY PLANNING ACT 1990 ESSEX COUNTY COUNCIL APPLICATION by GENT FAIRHEAD & CO. LIMITED inquiry held on 29 September 2009 Rivenhall Airfield, Essex C5 9DF. File ref(s): APP/Z1585/V/09/2104804*

¹⁹ Derby City Council had rejected the application from its own waste contractor, Resource Recovery Solutions (RRS), in 2010, and its decision was subsequently upheld at appeal. The case was put back in front of an inspector again in June this year, after RRS successfully overturned the original appeal verdict at the High Court.

In allowing the second appeal the inspector Alan Robinson gave different weight to the issue saying: "The fact that local concerns and anxieties seem to me to have been based on perception rather than substantive or proven evidence mean that they cannot outweigh the benefits I have identified nor the fact that the proposal complies with the development plan".

cumulative effect of the proposal and the existing air quality which led to the Inspector giving weight to fear in this case” [CLG, 2012]

47. The Inspector’s Decision from an appeal relating to the erection of an energy from waste gasification plant at Green Lane, Eccles, Salford²¹ also addressed this issue. The Inspector wrote:

Many local residents raised concerns about the effects of the proposals on air quality, and were concerned about possible plant failure or accidents. These fears are not irrational, or without foundation. There is evidence that the local population has relatively poor health profiles. The NO₂ limit was breached in 2010, although the most recent data shows a substantial downturn in NO₂ levels, which has not been fully explained. There is considerable concern about incineration and health, and I have had regard to the briefing by Friends of the Earth, and the report by Greenpeace British Society for Ecological Medicine. Many representations made submissions along these lines.

And concluded:

69. Fear and apprehension about the consequences of the proposed development for the health of local residents are material considerations in these appeals. I have given these concerns some weight. However, it seems to me that these fears do not properly reflect the levels of control which would be imposed by the pollution control regime. This limits the weight that should be given to health fears in determining these appeals.

48. It is clear, therefore, that Inspectors have given significant weight to the perception of risk in cases where justified by local circumstances. It is therefore now appropriate to consider the objective assessment of public concern and perception in the light of the facts of this appeal.

Consideration of Risk:

49. When considering the risks it is helpful to bear in mind the quantitative approach to perceived risk assessment developed by Starr and Whipple²². This was based on the assumption that society achieves, by trial and error, a reasonable balance between risk and benefit. They drew the following conclusions:

- i the acceptability of risk is roughly proportional to the real and perceived benefits;
- ii voluntary risks are some 1000 times more acceptable than are involuntary risks;

²⁰ CLG (2012). TOWN AND COUNTRY PLANNING ACT 1990 (SECTION 78) APPEAL BY MR N BASTON (BIOGEN POWER LTD) APPLICATION REF: 09/01258/FULWME TWINWOODS BUSINESS PARK, THURLEIGH ROAD, MILTON ERNEST, BEDS Including the decision letter of Inspector, Elizabeth Hill BSc(Hons) BPhil MRTPI. Secretary of State for Communities and Local Government .

²¹ PINS Ref; APP/U4230/A/11/2162103

²² Starr, C. & Whipple, C. (1980). Risks of risk decisions. Science, 208(4448), 1114-1119.

- iii the tolerable level of risk is inversely related to the number of involved persons.
50. The risks in this case are involuntary and thus likely to be intrinsically less acceptable. This is not mitigated by perceived benefits as any local benefits are small and are limited mainly to a small number of jobs. Furthermore there is widespread scepticism about the overall environmental benefits of the plant as the proposed use of waste seems increasingly unrealistic as discussed in the first section relating to the NPPF.
51. The area around the site, and particularly down-wind is densely populated and risks in this case potentially affect a very large number of people. Although in many cases, particularly those at some distance from the site, any effects on health are likely to be small the integrated total impacts can still be significant.
52. Starr and Whipple also proposed that risk perception is not directly related to damage level and probability of occurrence, but increases when the likelihood of occurrence is relatively low and the magnitude of potential damage is high. This is now well established and widely accepted. The perceived damages in this case include shortening of lives and cancer and thus can certainly be considered to be 'high magnitude' risks. The concerns, and the weight that can be given to them, are exacerbated by the very poor current air quality and the lack of progress towards achieving legal standards.

Characteristics of Processes Associated with Perceptions of Risk

53. It is relevant to consider the specific local concerns that relate to incineration and air pollution which exacerbate the perceptions of risk based on the local factors.
54. DEFRA has indicated the characteristics of a development known to increase the perceived unacceptability of the associated risks. These are:
- i **Unfamiliarity:** The risks are unfamiliar (e.g. emissions with obscure names, dioxins, PAH, endocrine disrupters etc.).
 - ii **Control:** The risks are imposed and cannot be controlled by individuals;
 - iii **Proximity in time:** The risks may not be immediately apparent to local residents, and may be delayed – such as cancer.
 - iv **Proximity in space:** The risks are focused around the individual facility, whereas any benefit of the facility is shared across society as a whole.
 - v **Scale:** The health and environmental risks of waste management have been subject to very public controversy and contradictory information from pressure groups and industrial sources;
 - vi **Dread factor:** Implied risk of dread disease or deaths (e.g. cancer, birth defects); The risks arise from man-made facilities and

materials in the waste; Some of the risks affect children and future generations.

55. The Department of Health has produced a similar list in the 1997 Guide "Communicating About Risks to Health: Pointers to Good Practice" showing that risks are generally more worrying and less acceptable if perceived:
- i to be involuntary (e.g. exposure to pollution) rather than voluntary (e.g. dangerous sports or smoking);
 - ii as inequitably distributed (some benefit whilst others suffer the consequences);
 - iii as inescapable by taking personal precautions;
 - iv to arise from an unfamiliar or novel source;
 - v to result from man-made rather than natural sources;
 - vi to cause hidden and irreversible damage (e.g. through onset of illness many years after exposure);
 - vii to pose some particular danger to small children or pregnant women or more generally to future generations;
 - viii to threaten a form of death (or illness/injury) arousing particular dread;
 - ix to be poorly understood by science;
 - x as subject to contradictory statements from responsible sources.
 - xi to damage identifiable rather than anonymous victims;
56. All of these perceptions, with the possible exception of the last example, apply to this proposal .
57. Waste treatment and disposal facilities, particularly those entailing combustion, raise strong concerns relevant to each of these characteristics.

Anxiety as a health impacts:

58. Health has been defined in the constitution of the World Health Organisation since 1948 as:
- "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity"*
59. In turn, the World Health Organisation's view of health promotion is underpinned by a number of key principles including:
- i a clear focus on the promotion of positive health, or well-being, alongside the prevention of ill health
 - ii addressing the structural issues such as discrimination, poverty and unemployment, that affect our health and the choices we make, as well as focusing on the knowledge and behaviour of individuals or groups of people.
60. The WHO holistic definition means, of course, that health affects may arise either from exposure to harmful emissions or by anxiety caused by the perception that such exposure would be harmful. This is important because even if that perception was unfounded then there could still be a health impact within the WHO definition. This sits comfortably with the

conclusions of *Newport* discussed above.

61. The WHO definition is the appropriate basis for establishing health impacts and has been accepted as such by the Court of Appeal²³ subject only to the caveat that "*trivial risks to a person's health should be disregarded*"²⁴.
62. Accordingly if any non-trivial risks follow from the concerns associated with the application then the concerns of the public in relation to health impact would be objectively justified. In order to assess the effects of risk perception on health a review of some of the published literature has been undertaken. Some of the salient papers are briefly summarised below.
63. McCarron et al²⁵ compared the self reported health of a group of individuals living in an area contaminated by chromium (chromium group) with a group living in an uncontaminated area (control group). Their study assesses the effects of perception of risk from exposure to chromium on health and they concluded:

Despite the overall negative findings [i.e. that there was no direct risk to health from the chromium], the lower scores in participants who believe that chromium is harmful raises the possibility that knowledge of the history of land use may reduce generic quality of life in the absence of any documented adverse health effects.
64. Roht et al²⁶ raised similar issues. In that study hypochondriasis (health anxiety) scores were associated with symptom reports regardless of location of residence while an individual's opinion about the hazardous site showed a different pattern by area of residence. Respondents living near one of the waste disposal sites who answered "yes" to an opinion question about their beliefs that the site was having an impact on the environment were 2-3 times more likely to report some types of symptoms than residents of the comparison community. In contrast, there was little difference in symptom reports between the exposed and comparison communities for those answering "no" to the opinion question.
65. Shusterman²⁷ reviewed retrospective symptom prevalence data, collected from over 2000 adult respondents living near three different hazardous waste sites, and analysed the data with respect to both self-reported

²³ Manchester v Romano & Anor [2004] EWCA Civ 834 (29 June 2004)

- See Para 69 of the Judgment.

²⁴ Para 75 of the Judgment

²⁵ McCarron, P., I. Harvey, et al. (2000). "Self reported health of people in an area contaminated by chromium waste: interview study." *BMJ* 320(7226): 11-15

²⁶ Roht, L. H., S. W. Vernon, et al. (1985). "Community exposure to hazardous waste disposal sites: assessing reporting bias." *Am J Epidemiol* 122(3): 418-433.

²⁷ Shusterman, D., J. Lipscomb, et al. (1991). "Symptom prevalence and odor-worry interaction near hazardous waste sites." *Environ Health Perspect* 94: 25-30.

- "*environmental worry*" and frequency of perceiving environmental odours.
66. He observed significant positive relationships between the prevalence of several symptoms (headache, nausea, eye and throat irritation) and both frequency of odour perception and degree of worry. Headaches, for example, showed a prevalence odds ratio of 5.0 comparing respondents who reported noticing environmental odours frequently versus those noticing no such odours and 10.8 comparing those who described themselves as "*very worried*" versus "*not worried*" about environmental conditions in their neighbourhood.
 67. Elimination of respondents who ascribed their environmental worry to illness in themselves or in family members did not materially affect the strength of the observed associations.
 68. In addition to their independent effects, "*odour perception and environmental worry exhibited positive interaction as determinants of symptom prevalence, as evidenced by a prevalence odds ratio of 38.1 comparing headaches among the high worry/frequent-odour group and the no-worry/no-odour group*". In comparison to neighbourhoods with no nearby waste sites, environmental worry has been found to be associated with symptom occurrence as well.
 69. Similarly, following the Camelford incident, where the water supply in North Cornwall was contaminated by aluminium sulphate, David and Wessley²⁸ suggested that the perception of normal and benign physical and mental symptoms may have been heightened by litigation, community action, self appointed experts, consumer opinion polls, media attention etc. This indicates that particular controversy in the process of an application may turn that application into a process which increases the perceived risks.
 70. McCarron²⁹ commented that risk is a social construct, and to reduce concern it is important to introduce more public participation into both risk assessment and risk decision making. "*This makes the decision making process more democratic, improving the relevance and quality of scientific investigation and enhancing the legitimacy and public acceptance of the resulting decisions*".

Repeated extensions of planning permissions to the Whitemoss site makes a mockery of the planning system

71. A key issue in this case has been that the public has not felt engaged in the process of determining what is proposed for the site and they feel that the planning process has not protected them by ensuring that the site operations are completed in accordance with the dates promised in successive planning permissions. This in turn will tend to amplify the concerns and anxieties.

²⁸ David, A. S. and S. C. Wessely (1995). "The legend of Camelford: medical consequences of a water pollution accident." *J Psychosom Res* 39(1): 1-9.

²⁹ McCarron, P., I. Harvey, et al. (2000). "Self reported health of people in an area contaminated by chromium waste: interview study." *BMJ* 320(7226): 11-15.

72. Whitemoss has had 8 successive extensions³⁰ of the original planning permission granted in 1977 ref 08/77/76 most recently in 2011 (ref 08/11/0716) allowing activity until 2018.
73. In 1987 a condition was imposed that “in the interest of local amenities” the site should be completed by 1995! A further extension would quadruple the time allowed in the original permission. The proposed extension will continue the blight created by Whitemoss.
74. These planning extensions have worn down the community and created disillusionment with the planning system. People no longer believe it is effective in protecting them.

³⁰ 1) 1985 ref 08/85/527. 2) 1994 ref 08/94/208. 3) 1996 ref 08/96/993. 4) 2000 ref 08/02/1283. 5) 2002 ref 08/02/1218. 6) 2006 ref 08/06/0918. 7) 2009 ref 08/09/0148 allowing activity to 2013

Conclusions

75. Inequity in the distribution of risks and benefits is an important factor influencing attitudes to risk. It can often result in a particular community having to bear the disadvantages of a facility or development while not gaining the benefits. The community perceives that it will suffer from the consequences of such activities through both environmental degradation and stigmatisation of the locality, which in turn may have broader economic impacts such as reducing the attractiveness of the area to those who would otherwise live or invest in the vicinity. This can also result in the lowering of property prices (which could be taken as a surrogate measure for the perception of risk).
76. The most likely route for any pollution from landfills is via air pollution. The (then) Chief Medical Officer Sir Kenneth Calman observed "*the people most likely to be affected by air pollution are those who are already vulnerable - the frail, and those who are very ill... Air pollution, at the levels usually experienced in the UK, is unlikely to have any short-term effects on healthy individuals.*"
77. Pope³¹ described those at most risk of air pollution as "*the elderly, infants, and persons with chronic cardiopulmonary disease, influenza, or asthma are most susceptible to mortality and serious morbidity effects from short-term acutely elevated exposures*". Others, he said, are susceptible "*to less serious health effects such as transient increases in respiratory symptoms, decreased lung function, or other physiologic changes*".
78. It is very understandable, in the light of the health record of the community and the evidence that this increases their vulnerability to further pollution impacts, that the local residents are deeply concerned about any proposals which may increase the hazards they face. Even a relatively small increase in the pollution burden would have some impact in circumstances where the pollutants are above, or do not have, a safe exposure level. Furthermore any incremental impacts from each additional unit of pollution would be greater in this area than in an area with a more healthy population.
79. This is the basic philosophy of 'environmental justice' which has been a powerful policy tool in other countries, most notably the United States for more than a decade. The new planning framework, as described above, now puts the appropriate level of emphasis on these concerns to allow decision makers to help to correct historic imbalances.
80. In summary:
- i) the proposed site is upwind of some of the most deprived areas in England
 - ii) the local health indicators are poor
 - iii) allowing this extension close to such deprived areas would maximise

³¹ Pope, C. A., 3rd (2000). "Epidemiology of fine particulate air pollution and human health: biologic mechanisms and who's at risk?" *Environ Health Perspect* 108 Suppl 4: 713-723.

any health impacts that arise from it due to the particular vulnerability of those who already suffer ill health.

81. In these circumstances it is entirely reasonable that the residents should be anxious about increased pollution and risks to their health. This concern should be given significant weight.