

NO LAYBROOK LANDFILL - some technical information

Planning permission for a 'non-inert' rotting rubbish landfill tip at Laybrook Brickworks in Thakeham has been lodged with West Sussex County Council (WSCC). The proposed site is near the villages of Thakeham, Ashington, Coolham, Shipley and West Chiltington.

Overview

Hundreds of thousands of tons of rotting, smelly rubbish will be dumped at Laybrook every year for at least 20 years, maybe 50 years or even longer in an area that spans some 120 football pitches. This will affect people directly through increased health problems, traffic, smell, significant increases in greenhouse gas emissions and falling property values, and indirectly through increased taxes to fund the least efficient and most damaging method of disposing of waste. We argue that there is no need for landfill and current and future technologies for managing waste create both electricity and hydrogen which will help reduce our dependence on oil and imported gas. Like many of our European counterparts we should be adopting a policy of zero landfill.

Thakeham Village Action believes that the claims in this document are correct, but is grateful to be informed of any inaccuracies.

Health

In recent years there has been a substantial increase in our knowledge of the health effects associated with landfill. TVA considers the claims of companies involved with landfill that there is no danger to our health are spurious and inaccurate and every effort must be made to prevent landfill being considered an option for waste management anywhere in the country.

All landfill sites release gases - methane, carbon dioxide, carbon monoxide and hydrogen sulphide principally. Landfill is also associated with the release of dioxins. Many of the chemicals released (even when gas flaring takes place) are carcinogenic. To those living close by there is a substantial risk of respiratory diseases such as asthma and chronic bronchitis. Leachate at landfill sites contains toxic compounds such as dioxins and heavy metals. Even if gases are collected to generate power there is still a substantial amount of noxious gases released into the environment.

No study has ever proved that landfill is safe but in recent years there are increasing numbers of studies exhibiting clear links between landfill and human health issues leading to mounting concern within the medical profession.

The following is a synopsis of reports compiled by a consultant gynaecologist Dr James English LRCP & SI MD MRCOG who has spent the last two years reviewing available medical literature on the health risks of landfill.

* In 2008 in Acta Oncologica, Hardell showed an association between exposure to phenoxyacetic acids and chlorophenols and malignant tumors such as sarcoma, lymphoma and non-Hodgkins lymphoma. Carcinogenesis can take up to 30 years to become apparent.

* Dioxins are known to be highly toxic to humans causing chloracne (seen recently in the Ukrainian President Victor Yushchenko after he was allegedly poisoned), carcinogenesis, impairment of developmental, neurological and cognitive development in infants and immunosuppression. They have also been linked to other common disease such as diabetes mellitus, endometriosis, cardiovascular disease and thyroid problems. Dioxins are also believed to be particularly damaging to our hormonal and reproductive systems.

* Studies in 1998 and 2002 showed that for infants born within a 3km radius there was a 33% increase in non-chromosomal defects (i.e. expected with toxins) causing nervous system

dysfunctions such as spina bifida, abdominal wall defects and an increased risk of being born prematurely.

* A study in 2003 showed that pregnant women within a 2km radius of a landfill site had a much greater risk of babies born with a range of major congenital problems.

* In February 2008, Schroeters et al highlighted a link between dioxins and abnormal pubertal development. In 2007 Wigle et al published a major literature review showing very clear links between landfill, landfill chemicals and adverse child health.

* It is suggested that at risk adults have a higher chance of developing thyroid dysfunction if exposed to landfill. It is also believed that it could cause brain defects in children due to its effects on the thyroid system.

* There is also an association between an increased risk of adult onset type 2 diabetes and insulin resistance.

* A study by Porpora et al demonstrated that exposure to the dioxin TCDD is associated with an increased prevalence and severity of endometriosis.

* Leachates (the rainwater filtrate from landfill) includes heavy metals such as lead, arsenic and nickel, organic compounds such as benzenes and toluene. Heavy metals cause kidney and liver damage, blood and bone disorders while the organic compounds can cause cancer, leukemia, liver and central nervous system damage. Liners, if proposed, are very susceptible to penetration by objects contained within the landfill waste and realistically offer very little protection.

With over 900 children attending 4 different primary schools within 2 miles of the site this information is particularly alarming. The risks include foetal death, birth defects, prematurity, clinically overt cognitive, neurological and behavioural abnormalities, childhood cancer, asthma, other respiratory diseases and acute poisoning. The amount of information being collated about the serious health risks associated with landfill is substantially increasing every year. To claim that landfill poses no risk to our health is grossly inaccurate and what is worse is that the unborn, young and elderly are particularly vulnerable.

Traffic

It is estimated that there will be large articulated lorries every three minutes on minor B-class roads and on the main Ashington roundabout. Residents, commuters, farm traffic, horse riders, cyclists and pedestrians will all be endangered. With several blackspots there will inevitably be an increase in serious accidents.

Private contractors using the site will not be subject to strict control, increasing the risk of littering, noise and traffic offences.

It is Government policy to manage waste in the areas where it is created. This site is situated nowhere near any of the main population densities in Sussex and as such will involve numerous unnecessary vehicle movements affecting traffic throughout the county. Potentially we could also end up accepting waste from London.

Reduced Quality of Life

Rotting smells, vermin infestation (rats, birds, flies) and noise pollution will all negatively impact on us. In strong winds the odours can travel many miles affecting Thakeham, Ashington, Shipley, Dial Post, Coolham and West Chiltington. A beautiful unspoilt part of Sussex countryside will be damaged for generations to come.

It could contravene the 'Clean Neighbourhood Environment Act 2005'.

Reduced Property Values

Property values will be affected, particularly those within a 2-3 mile radius. Currently devaluations of up to 30% (excluding national value reductions) are anticipated in the immediate environment.

Damaged Tourism and Recreation

Ramblers frequently traverse the area contributing to the local economy.

Anglers use the fishing lakes directly adjacent to the site. Pollution from the landfill and a massive increase in seagulls could cause the death of the fish, ending this local pastime.

There are both public footpaths and bridleways within close proximity of the site.

The rubbish dump will be visible from the proposed South Downs national park, including Chanctonbury Ring, popular with both locals and visitors.

Global Warming

Landfills are the biggest man-made source of methane release in the UK. Methane is at least 20 times more harmful to the atmosphere than carbon dioxide. Even if attempts to capture the methane, at least half - 93,000 tonnes in the UK - escapes into the atmosphere, making the same contribution to global warming as 3.8 million flights to New York (Source: Global Renewables).

Landfill gas consists of 50-60% methane and 35-40% carbon dioxide. It also contains trace elements of other gases such as sulphide and organic substances. Gases pose a threat to the local environment through fires and explosions. It can also kill vegetation on restored sites by displacing air from around plant roots, making the planned restoration an ideal rather than guaranteed reality.

Officials at the European Union have estimated that landfill discharges 700 million tonnes of carbon dioxide and methane into the air.

Landfill generates more greenhouse gases and pollution than any other method of dealing with waste, including incineration.

Damaged Crops and Livestock

Crop yields could be reduced by over 20% in the immediate vicinity .

Local horses, farm animals and pets will all be affected by the noise and vermin which will introduce diseases such as leptospirosis.

Livestock animals are very sensitive to stress and will frequently abort or fall prey to infectious diseases, due to compromised immune systems, causing unnecessary suffering and hardship. They are particularly vulnerable to disease being introduced by vermin.

Harmed Wildlife and Water Courses Polluted

Indigenous wildlife such as deer, badgers, bats, owls and water voles would be harmed. Likewise, in spring and autumn flocks of migrating Canada geese.

Leachates will probably penetrate into the water table. The Lay brook through the site flows into the river Adur - the threat of distant pollution is a very real possibility.

Finance and Taxes

We understand that landfill is becoming the least cost efficient method of disposing of waste. Alternative technologies are cheaper and getting cheaper in the long term, they are less environmentally damaging and they create useful by-products.

The landfill escalator tax (introduced by Government to discourage the use of landfill) increases by an additional £8 per tonne every year so landfill will become prohibitively more expensive as the years go by. In addition, if WSCC continue to use landfill there is every possibility the targets set by EU will not be met in West Sussex which would then incur a fine of £150 for every tonne in excess of the target set by EU.

It has been estimated that landfill will cost some £92 per tonne in 2010, including the landfill tax escalator and by this date could be a lot more expensive than other methods of dealing with waste. By 2015 the cost could probably be as high as £150 per tonne.

If one adds fines for municipal authorities breaching EU targets, this could become £300 per tonne, making landfilling by far the most expensive method of disposing of waste. By not meeting local authority targets it is estimated the total maximum fine could be £7 million in 2013.

No Need to Landfill

UK Government policy is that landfill should be a last resort. One of the main elements of the Government's 'Waste Strategy for England 2007' is to 'incentivise efforts to reduce, re-use, recycle waste and recover energy from waste' and 'reform regulation to drive reduction of waste and diversion from landfill'. The EU Landfill Directive of 1999 recommends landfill as a last resort. WSCC has also stated that 'landfill is no longer considered a sustainable option for waste disposal'.

In research carried out by MORI for WSCC, they found that the majority of residents were "in favour of stopping rotting rubbish in landfill sites and were positive to 'new technologies' to manage this rubbish".

Recycling initiatives should be improved. Current WSCC targets are inadequate in today's world and while a MRF recycling plant will be opened shortly in Ford, more must be done now. We currently recycle 34% of our waste compared to a national average of 31% proving that as a community we are committed to improving waste management. However West Sussex should aim to recycle 60% of our waste by 2015, as have several UK councils.

Hampshire currently recycles 36% and has reduced its dependence on landfill to 18 % (the lowest in the UK) against a UK average of 58%; Hampshire has done this by favouring the adoption of new technologies, like energy from waste. West Sussex should be following this example rather than adopting the easy option of using Laybrook. Just because we have a hole in the ground does not mean we have to fill it with stinking waste - the excuse that Hampshire has no alternative but to embrace other methods simply isn't good enough!

A pilot 'food only' recycling scheme in Surrey has proved successful. Anaerobic digestion is a particularly cost effective way of managing food waste and this technology is commonly used in other European countries.

Increasing recycling and utilising new technologies significantly reduce the need for landfill. As residents there is much we can do ourselves. Increasing current recycling levels and home composting can greatly help the current waste crisis.

But as individuals there is only so much we can do. Lobbying our councillors and MPs can change currently inadequate policies. WSCC needs to do more as a matter of urgency to divert commercial and industrial waste away from landfill as this would account for the majority of the anticipated waste at Laybrook and it is currently under no control whatsoever.

Energy From Waste: A Wasted Opportunity

Waste is a huge untapped resource. Viewing waste as usable resource and converting this resource to beneficial energy would dramatically alter our current over-reliance on landfilling and dwindling energy resources. Much of the rest of Europe uses the energy in waste - an average of 20-50% amongst some of our more progressive European counterparts.

An energy from waste plant works by taking waste and converting it into usable energy, such as electricity, heating and transport fuels. Such plants can use all types of waste as long as they are combustible and/ or biodegradable including sewage, domestic, commercial and industrial waste.

Energy from waste plants are for waste left over after recycling. Using advanced technologies mean that obtaining energy from waste could help the UK reach its targets of an 80% reduction in carbon dioxide emissions by 2050 and could produce a third of UK electricity from renewable resources by 2020. The main technologies used in energy from waste plants are as follows.

Mechanical Biological Treatment: these processes pre-treat mixed residual wastes and can produce refuse derived fuel (RDF). This RDF can be used as an input for thermal treatment processes such as pyrolysis or gasification and is a potential fuel for industrial processes and co-firing with biomass fuels or coal. This technology can typically take up to 250 kilo tonnes per annum (ktpa) from landfill. This process combined with recycling could reduce carbon dioxide emissions by up to 570 kg per tonne. It is expected that such a plant, in conjunction with an anaerobic digester, will be operational at Brookhurst Wood by 2011 diverting up to 300 ktpa of municipal waste from landfill.

Anaerobic Digestion: most commonly used with liquid and semi-liquid slurries such as human sewage, animal waste and food. It is ideal for small scale productions such as farms and local sewage treatment plants but it can also be used in conjunction with other technologies to divert waste from landfill. Conversion potentials of up to 80% are possible and can generate electricity, heat, biofuel or hydrogen. Digestate can also be spread on local farmland as a soil improver reducing reliance on fertilisers. It could reduce carbon dioxide emissions by at least to 430 kg per tonne.

Pyrolysis involves thermal degradation of mixed residual waste. It is estimated that a typical plant can divert up to 225ktpa of waste and can potentially have a conversion efficiency of up to 30% for electricity and higher for heating. It can produce electricity, heat, biofuel and hydrogen. It can also produce metals and other materials for recycling. The carbon dioxide saving effects are as yet unknown.

Gasification could divert up to 150 ktpa. This relatively new technology could save 524 kg carbon dioxide per tonne.

Plasma arc heating/ gas plasma is a novel thermal treatment technology that converts organic material to hydrogen. It is most suitable for treatment of hazardous wastes, including clinical waste and fly ash from waste combustion processes. This technology heats waste to temperatures between 3,000-10,000 degrees centigrade converting organic waste to hydrogen-rich gas and non-combustibles to an inert, glassy residue. This technology guarantees 90% landfill diversion, the highest of all new technologies, has low emissions and low environmental impact, low carbon footprint, energy efficiencies in excess of 60%, local waste, power and heat solutions with renewable technology exporting well over 50% of electrical power generated.

Combustion (incineration) is highly contentious. It is still safer, in terms of emissions, than landfill. Recent innovative improvements to this technology means the health risks have been minimised. WSCC has given a firm commitment that incineration will not be considered for municipal waste until at least 2015. Energy conversion efficiencies for residual municipal waste of up to 70%. A typical plant could divert 100-500 ktpa from landfill. It is estimated that this technology can lead to savings of 232kg carbon dioxide, again a significant improvement on landfill.