

## **The Waste partnership has provided some more 'reassurance' about their plans.....**

Recently the waste partnership posted material on its website, intended to answer some of the concerns raised about its waste management plans. It's interesting to see that many of the points they discussed were specifically directed at Ennesettle!

Once again, many of the points that they raise are unsubstantiated, merely repeating claimed reassurances. It's easy to say 'evidence suggests', but exactly what is the evidence and where has it come from?

Perhaps the most striking claim is the categorical statement that Energy from Waste facilities are totally safe. Brave indeed. Although no one would contest that they are subject to Environmental Agency controls and standards have increased in recent years, serious – and growing – concern is expressed from many quarters about this. The UKWIN databank discusses this at length - see <http://ukwin.org.uk/knowledge-bank/incineration/health-issues-connected-with-incinerators/filters-particulates-and-deaths-from-emissions-to-air/>

and a paper in The Ecologist magazine by Pat Thomas in September 2007 also raises concerns over safety. Perhaps the most significant comment though is the report from the British Society for Ecological Medicine by Drs Thompson and Anthony published in June 2008; this expresses strong concerns – *“With each publication the hazards of incineration are becoming more obvious and more difficult to ignore.”*

Many of the concerns expressed link to the production of ultrafine particulates; this is clearly shared by EU authorities since new regulations are calling for stricter monitoring of these invisible particles. Currently only PM10 particles are assessed; the new guidelines require specific examination of particulate matter 2.5 micron diameter (PM2.5) and less, which behave very differently in our bodies. At present these are not considered at all. These particles aren't just produced by incinerators – for instance traffic and fires are also sources – but why would we want to release any more into the air we breathe and the food we eat?

The significant point in relation to health considerations must be that in the past we have believed that the old incinerators were safe, asbestos wasn't a problem and even that cigarettes were good for you, but today we know better. The problem is that it takes many years for effects to show in such cases, so to claim categorically that the waste incineration is safe is, at best, simplistic.

There is also a claim that we don't need to be concerned over the possible impacts of fog-linked pollution retention in the Tamar Valley - a suggestion that, in relation to problems of fume retention in temperature inversion conditions, the temperature of the exhaust gases could be sufficient to provide a thermal uplift and carry the gases

through the inversion layer. This effect does exist, and there are even formulae to predict the extent of an uplift effect -but until the exact specification is available, the calculations are done and the results verified, whether it could be enough to deal with the specific conditions of the Ernesettle area remains hypothetical.

Nevertheless the problems of valley temperature inversions are well discussed – see for example ‘Fundamentals of Air Pollution’ by Daniel Vallero, published last year.

There is, however, a further aspect to the atmospheric story that remains to be looked at - the effect of the sea breezes. These arise at water/land junctions as a result of differential heating in otherwise still wind conditions; in still air daytime conditions, air over the land warms and rises, drawing in cooler air from over adjoining waters. As the land cools at night the wind direction reverses so that any pollutants are carried to and fro. But there is still more to it as air masses rise rapidly at the warm air/cool air interface and sets up a counterflow so that the air mass recirculates over land adjoining water. The effect is well documented - including impacts on air quality (eg Sea Breezes and Local winds produced by John Simpson in 1994). Research work at the University of Plymouth has reported that these sea breezes operate over the Tamar Estuary and Plymouth Sound about 25 times a year and are difficult to model because of the complexities of the site. This recirculation can last for several days at a time. In this case there is no thermal uplift effect that can be considered - the effect extends to a height of over 1000 metres.

The Partnership also claim that EfW is clean, with an insignificant impact on air quality. The term EfW can cover a range of treatment options, with varying atmospheric effect; but some interesting figures published by the National Atmospheric Emissions Inventory (<http://www.naei.org.uk/emissions>) for average releases for existing municipal waste incinerators suggest a different story (see below) – it all depends what we choose to consider insignificant for a year on year release! We can't destroy materials – just transfer them to a different form; it would seem more logical to extract them in a form we can use instead.

<b>Pollutant</b>	<b>Average release over year per megatonne waste burnt</b>
Black smoke	218 tonnes
Carbon dioxide (as Carbon)	75 kilotonnes
Methane	2.9 kilotonnes
Carbon monoxide	101 tonnes
Nitrogen oxides	877 tonnes
Sulphur dioxide	27.6 tonnes
Chromium	230 kilograms
Arsenic	23.1 kilograms
Cadmium	11.9 kilograms
Copper	52.4 kilograms
Hydrochloric acid	28.4 tonnes
Mercury	24.9 kilograms

Nickel	98.3 kilograms
Lead	137 kilograms
Zinc	127 kilograms
Ammonia	26 tonnes
Benzene	1.94 tonnes
PM10	9.10 tonnes
Naphthalene	25 kilograms
Dioxins	0.139g

The Partnership also makes reference to the requirement for a Continuous Emission Monitoring system to ensure pollution limits are maintained; but it should be acknowledged that while Annex III of Directive 2000/76/CE does specify that nitrogen oxides, carbon monoxide, total dust, total organic carbon, hydrogen chloride and sulphur dioxide must be continuously measured, for other air pollutants “Operators should take at least two measurements per year of heavy metals, dioxins and furans, dioxin-like PCBs and PAHs but there should be one measurement at least every three months” and annual figures are only estimated from this.

Transport arrangements form the focus of several comments put forward by the Partnership and have been a target of discussion since the ‘Tests of Soundness’ examination. At that stage the figures produced by the Partnership were acknowledged by the Inspector to be in need of attention and they remain vague. The latest figures produced in the comments refer to 87 lorries visiting the site each day – a total of 174 vehicle movements a day. This would presumably not account however for the other vehicles that would visit the site linked to staff, deliveries etc. The information sheet for the Quartermaine waste incinerator at Portsmouth, produced in 2008, refers to 236 additional vehicle movements per day – and this for a 165,000 tonne incinerator, compared with the 220,000 tonne installation being considered by the Partnership.

Whatever the number, the concern expressed by local residents isn’t that HGVs could use the roads into the site – we all know that similar vehicles already do! The concern is that an already busy road through a residential area will become even more congested. Only one road into the Ernesettle site is suitable for HGV traffic – the other is small, contorted and suitable only for residential access – and additional traffic would worsen congestion problems and encourage more drivers to use the residential roads through Ernesettle. The situation has been exacerbated by the recent development of a Driving test centre in the immediate vicinity, with a significant increase in learner drivers in the area – impacts of this development have yet to be considered. There is also a further concern linked to access to the A38; the site is in proximity to the Tamar bridge and traffic problems here are not infrequent. Delays on the A38 already have severe consequences for traffic flows throughout the entire Victoria interchange area.

Linked to this is a comment raised by the Partnership in relation to the identification of Ernesettle as a potential site to the extreme west of Plymouth – they say that the

bulk of the waste will come from Plymouth. Although Plymouth may be the largest single producer, the situation is less clear than they suggest. According to the Partnership's own Outline Business Case 2008, the 2006/7 waste arisings were 155,887 tonnes pa from Plymouth, 80,610 tonnes pa from Torbay and 156,511 tonnes pa from South Hams/Teignbridge/West Devon. This means that over 60% of the waste arisings are produced outside – ie to the East –of Plymouth and on this basis the consideration of a site on the extreme west of the City on a Proximity Principle is unsustainable, especially as some of the waste would be travelling in excess of 30 miles – and this is meant to reduce our 'waste miles'? And exactly what are the carbon footprint impacts?

Another topic of discussion in the Partnership's commentary relates to the nature of the Ernesettle site. They acknowledge the adjacent Area of Outstanding Natural Beauty, but don't mention that there are also other SSSI and County Wildlife Protection sites adjacent. They claim that it is an industrial site but this is totally incorrect; while there is some light industrial land in the vicinity, the site itself is a former sports complex and the only building on site is a (locked) sports hall.

Sport England, not surprisingly, are protective of our playing fields and state *"Even where a playing field may be seen as redundant for formal pitch sport, in accordance with PPG 17 it should be assessed for other sport and open space uses prior to being released for another land use"* In fact, PPG17 states *"14. Parks, recreation grounds, playing fields and allotments must not be regarded as 'previously-developed land', as defined in annex C of PPG3"*.

Furthermore the Department for Culture, Media and Sport state *"Under planning guidance, local authorities are required to protect all open space which communities need. There is an expectation that local authorities will not dispose of their playing fields if a needs assessment demonstrates a continuing community demand"*.

In this context it is noteworthy that in the original draft of Plymouth Sport 2020 plan the Ernesettle site was referred to specifically as part of future provision and was only removed after Plymouth City Council had acquired the site – and therefore would be in a position to ensure its sports development directly. It seems a waste complex is more attractive in their eyes. It's interesting that other councils take a more positive view – for instance Croydon Borough Council designates all its playing field areas as Metropolitan Green Belt and Metropolitan Open Land.

On the general topic of selection of sites for incinerators, it's interesting that, although the Partnership chooses to ignore the World Bank guidelines, the World Health Organisation also has guidelines on incinerator site selection –

"Best practices siting has the goal of finding a location for the incinerator that minimizes potential risks to public health and the environment (EPA 1997). This can be achieved by:

- Minimizing ambient air concentrations and deposition of pollutants to soils, foods, and other surfaces, e.g., Open fields or hilltops without trees or tall vegetation are preferable. Siting within

forested areas is not advisable as dispersion will be significantly impaired.

- Valleys, areas near ridges, wooded areas should be avoided as these tend to channel winds and/or plumes tend to impinge on elevated surfaces or downwash under some conditions.
- Minimizing the number of people potentially exposed, e.g., areas near the incinerator should not be populated, e.g., containing housing, athletic fields, markets or other areas where people congregate.
- Areas near the incinerators should not be used for agriculture purposes, e.g., leafy crops, grasses or grains for animals.

Appropriate sizes for buffer surrounding incinerators are based on dispersion modeling ([Section 6.4.5](#)). For typical small-scale units, especially if night time operation may occur, a 500 to 750 m buffer surrounding the facility is advisable to achieve dilution ratios above 1000. During the day, a 250 m buffer should obtain the same dilution ratio. These distances are based on ideal conditions, e.g., relatively flat and unobstructed terrain.”

Its worth pointing out that these guidelines were written for relatively small scale hospital waste incinerators, burning up to perhaps 1000 tonnes/annum! Although the Partnership suggests that the latest technology could supercede such guidelines from WHO and the World Bank, they remain in place.

### **How on earth could Ernesettle even come close to these?**

It must be pointed out, however, that while the Partnership appear to have a strong steer towards waste incineration, both in terms of their outline business plan and subsequent comment, our interests are slightly broader; STIFLE is opposed to any development of this site for strategic waste management. Any of the technologies that might be considered would have substantial impacts on the site remove an essential part of the City's green space provision and restrict future development in the wider area.