

1 February 2009

Daniel Wimberley  
Deputy of St. Mary  
St. Mary  
Jersey

Daniel,

**Re: Environmental Impact Statement “Energy from Waste and Bulky Waste Facilities”**

I am writing with regard to your recent request to assess the underpinning science of the Environmental Impact Statement (EIS) “Energy from Waste and Bulky Waste Facilities” of January 2007, prepared by Babtie Fichtner Limited for the States of Jersey. Here I summarize my comments and concerns, which I also have submitted in writing to the Scrutiny Office, States Greffe.

An Environmental Impact Assessment (EIA) can be defined as “a systematic process to identify, predict and evaluate the environmental effects of proposed actions and projects.”<sup>ii</sup> Long term objectives of EIA are to:

- avoid irreversible changes and serious damage to the environment;
- safeguard valuable resources, natural areas and ecosystem components;
- enhance the social aspects of proposals; and
- protect human health and safety.<sup>iii</sup>

The Babtie Fichtner Environmental Impact Statement, EIS, explicitly excludes relevant and highly significant topics, omits significant environmental effects and interprets some relevant environmental risk without any supporting scientific data and evidence. May I respectfully draw attention to the following examples:

- Babtie Fichtner commissioned Ambios Environmental Consultants to carry out a baseline ecological assessment of land at the La Collette reclamation site<sup>iv</sup>. The report<sup>v</sup> does not include any survey or scientific data on the RAMSAR site and did not assess any risk of the proposed project on the RAMSAR site. Yet, the report claims on page 6 “*There will be no impact on the adjacent RAMSAR site.*” This conclusion is not substantiated by any data or evidence.
- The EIS assesses air quality solely with respect to risk to humans<sup>vi</sup>. It is a well established fact that levels of toxicity of chemicals is not identical for all organism and varies greatly<sup>vii</sup>. Bio-accumulation of pollutants through the food chain is well documented and can cause disease<sup>viii</sup>. What might pose no risk for humans might be highly toxic to other organisms and vice versa. Thus, the conclusions for human health may or may not be extrapolated for the

RAMSAR site. I am not a toxicologist and rely on expert opinion. However, the EIS does not provide such expertise as it did not provide data. It did not provide evidence that there is NO rise to noticeable impacts on the ecology of an adjacent marine system.

- The EIS only addresses water pollution risk and does not include airborne pollution<sup>x</sup>. With regard to cooling water<sup>x</sup>, it states: “*It is therefore expected that any impact on coastal habitat would continue as currently i.e. extremely localised and of minor significance*” (Chapter 1.4.4). However, the EIS fails to present data substantiating the statement of minor significance. It mentions a previous assessment but without citing data or evidence the report contains the word “cooling” 21 times yet no underpinning data). Thus, the Babbie Fichtner EIS did not conduct an independent impact assessment on this issue.
- The EIS acknowledges that the current system of burning electrical equipment in Jersey results in excessively high burdens of heavy metals<sup>xi</sup>. Yet, the report fails to address whether the proposed project will efficiently deal with the problem by deferring to the project proponent and assuming everything will be all right. “*The project proponent is currently tackling this problem by expanding the separation of electronic and electrical items. Once this is done, it should be possible to greatly increase the re-use of the bottom ash*” (Chapter 7.8.1). Note, it states “it should be possible to greatly increase” and not that it is possible and it does not define what “greatly” means. In other words, no environmental risk assessment was conducted. Of course, environmental sciences are always based on a residual level of uncertainty. A proper scientific approach would thus have been to conduct a sensitivity analysis (i.e. evaluate both, the the best-case scenario that the EIS implies and the worst-case scenario if the developer fails to solve the problem) and then to evaluate the likelihood for these scenarios based on published experience. Unfortunately, the EIS has not done that.
- The EIS fails to qualify and quantify some potential risk to the RAMSAR site throughout. For example, the disposal of hazardous waste just lists the procedure (lining and sealing of pits with a plastic membranes<sup>xii</sup>) without any further information on associated risk. This is especially important as materials designed to contain waste can deteriorate over time and might pose significant risk in the future except if mitigated. However, whether this is the case or not can not be assessed as the EIS does not give data. The EIS also does not consider accidents that might lead to leakage through the plastic membranes. Without assessing the risk, no mitigation can be put in place. In other words, no assessment of the long-term environmental risk was conducted for the procedure.
- A recent paper analysing the level and quality of the emissions assessments of 61 waste incinerator environmental statements (ESs) in the UK concludes “*that the ES has not always provided interested stakeholders with the best available information upon which to determine the tolerability of the health risks posed by waste incinerator emissions.*”<sup>xiii</sup> The EIS does not report experience on environmental impact of incinerators in the UK or elsewhere (Chapter 19.3), despite that ample literature has been published and is in the public domain<sup>xiv</sup>. Whilst such references are not expected in the non-technical part of an EIS, it is surprising that the technical part of this EIS is void of such references.

These examples highlight what I regard as significant shortcomings of the Babbie Fichtner EIS with regard to the RAMSAR site. Thus, two main long term objectives of any EIA might not be

fulfilled, namely:

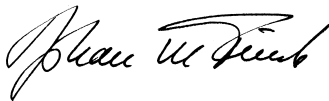
- to avoid irreversible changes and serious damage to the environment, and
- to safeguard valuable resources, natural areas and ecosystem components.

Moreover, the lack of underpinning data does not facilitate a broad understanding of the wider factors underpinning the environmental risks of the proposed project. Thus, it appears unsuitable to award public and professional anxieties an appropriate weight, which is an essential cornerstone for planning<sup>xv</sup>.

It is noteworthy that the Babbie Fichtner is an EIS and not a Strategic Environmental Assessment (SEA)<sup>xvi</sup>. Despite the great benefits EIS can have, it also has significant shortcomings. In particular, a “project EIA also fails to adequately deal with the cumulative or incremental impacts of a number of smaller projects.”<sup>xvii</sup>. Thus, the cumulative impact of the proposed facility was not evaluated in the context of existing facilities.

It is my deepest desire to assist Jersey to make the most informed decision. Such a decision must be based on scientific evidence through which it is possible to balance the complex issues of pros and cons. Please do not hesitate to contact me if you have further inquiries.

Yours sincerely



Stephan M Funk PhD MSc Msc

- i I am writing as the director of Nature Heritage, an environmental consultancy, which I have established recently in Jersey. My credentials are as follows: I am an academic and applied biologist specializing in conservation biology and conservation science. I have published widely more than 50 scientific articles. I hold a degree in biology (PhD and MSc) and in Applied Ecology and Management of Natural Resources (MSc). Academic appointments have included research fellowships, honorary research fellowships (University College of London, UCL, and Cambridge University) and visiting professorships (Chile and Puerto Rico).
- ii Sadler, B., Fuller, K., et al (2002), *UNEP Environmental Impact Assessment Training Resource Manual*, 2<sup>nd</sup> Edition, UNEP, Geneva.
- iii Based on <http://www.iema.net/> and Fuller, K. et al (2004), *Guidelines for Environmental Impact Assessment*, IEMA, Lincoln
- iv Chapter 10.2.2
- v Ambios Environmental Consultants. Baseline Ecological Assessment: Land at La Collette Reclamation Site, Havre Des Pas, Jersey. February 2006
- vi Chapter 1.4 Assessment of Environmental Impacts, 1.4.1 Air Quality – Flue Chimney Emissions, Odour and Traffic )
- vii For example, Table 1 in Scott & Sloman, 2004, *Aquatic Toxicology* 68, 369–392 indicates that LD50 values (toxicant concentration that is lethal to 50% of individuals after specific exposure duration) can vary significantly within and between species (e.g. Diazinon: 839 microgram/l for rainbow trout and 2620 microgram/l for cutthroat trout). Another example is the toxic effect of vanadium for larvae of *Crassostrea gigas*, *Paracentrotus lividus* and *Artemia salina*, all marine invertebrates (Fichet & Miramand, 1998, *Chemosphere*, 37, 1363-1368).
- viii Funk et al, 2001, in *Carnivore Conservation*, 443-483
- ix It states *“The only potential impact on the RAMSAR site would be water pollution risk from the construction and operation of the new facility”* (Chapter 10.3.2). See also Chapter 1.4.4 The South East Coast of Jersey RAMSAR Site
- x *“Cooling water from the boilers would be discharged to sea via the existing outfall to the east of the power station which discharges into the RAMSAR site. The outfall would continue to operate under existing discharge conditions which have been previously assessed as having no significant adverse impact on the marine environment”* (Chapter 4.6.5).
- xi *It is much less common in Europe to burn electrical equipment, which is generally separated in the waste collection process, and either recycled or sent to landfill. However, in Jersey all electrical and electronic waste is shredded and burnt in the existing Energy from Waste facility, providing a high loading of heavy metals.”* (Chapter 7.8.1).
- xii *“The new Energy from Waste facility would also produce flue gas treatment residue, at a rate of about 5% of the input waste. This is classified as a hazardous waste, because the residue contains significant amounts of free lime, which is an irritant. The disposal of the flue gas treatment residue would be to sealed pits at La Collette, as is currently carried out with the fly ash from Bellozanne. The pits will be lined, and when filled, sealed with a plastic membrane.* (Chapter 7.8.1).
- xiii Snary, C. 2002. Health risk assessment for planned waste incinerators: Getting the right science and the science right. *Risk Analysis* 22, 1095-1105.
- xiv Snary (2002), above. Pai, T. Y., Chiou, R. J. and Wen, H. H. 2008. Evaluating impact level of different factors in environmental impact assessment for incinerator plants using GM (1, N) model. *Waste Management* 28, 1915-1922. Morselli, L., Luzi, J., De Robertis, C., Vassura, I., Carrillo, V. and Passarini, F. 2007. Assessment and comparison of the environmental performances of a regional incinerator network. *Waste Management* 27, S85-S91.
- xv Snary, C. 2004. Understanding risk: The planning officers' perspective. *Urban Studies* 41, 33-55.
- xvi EIAs have been applied since the 1960ies. EIA was first introduced into the European Union as a directive in 1985, which was subsequently amended in 1997. In 2001, the European Commission adopted the 'SEA Directive' (2001/42/EC).
- xvii Fuller, K. (2008), What is Strategic Environmental Assessment (SEA)? E-Brief. <http://www.iema.net/sections/readingroom/show/13450/c146>