

Response to EPA HCB Questions of 14 March [SEC=UNCLASSIFIED]

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Sendt: 25. marts 2009 06:42
Til: Schou, Lone
Cc: Hall, Damien; Madsen, Søren R. N.; Jakobsen, Dorte Skjøtt
Emne: Response to EPA HCB Questions of 14 March [SEC=UNCLASSIFIED]

Vedhæftede filer: Response to Danish EPA 240309 final.doc

Dear Lone

Please find attached our answers to your questions of 14 March.

In summary, the ToxFree HTI is located at Port Headland, a remote part of Western Australia, about 1600 kilometres from the nearest large city which could generate sufficient municipal waste. About 160,000 tonnes of this waste would need to be transported each year to Port Headland if the ToxFree HTI were used to destroy the Orica HCB waste. The ToxFree HTI is very small and would require major expansion and modification, as well as relicensing to deal with the Orica HCB waste. This is explained in the SIA report (see the photographs also).

Given these difficulties, if an Australian HTI were the only solution to dealing with the Orica HCB waste, one probably would build a new, large scale HTI on the east coast of Australia closer to the Orica HCB waste and sources of municipal waste. The difficulties associated with building a new HTI and sourcing the municipal waste are described in the SIA report. Considering only the purely technical issues, SIA estimated that it would take six years and probably more until a suitable facility could be commissioned. Of course, in the real world it could take much longer, with some European examples taking twenty years. As we have discussed previously, once the Orica HCB waste was destroyed, the facility would not have sufficient hazardous waste for continued operation and probably would be dismantled. Additional issues are discussed in the SIA report (Section 4.6).

More detail is provided in the Attachment.

As always, please let me know if further information is needed.

Best regards

Barry

<<Response to Danish EPA 240309 final.doc>>

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RESPONSES TO QUESTIONS OF 13 MARCH 2009 FROM THE DANISH EPA

Question 1:

The Danish Society for Nature Conservation has expressed wish in following the case and in particular information we have received in connection with the processes in the SIA report. In that respect we would like to send the information in the mail of Barry dated 11th March. Is that acceptable for you?

Response:

Yes, it is acceptable that the information contained in my response of 11 March 2009 be provided to the Danish Society for Nature Conservation.

Question 2:

In my phone call at 24th of February I asked Damien some questions with regard to land filling – To make sure that I got it right I would appreciate if it was possible to answer that question in writing as well – I apologise for the trouble in that connection.

Response:

Landfill is the main means of disposal of waste in Australia and it has been since the introduction in the early 20th century of public health legislation that required local governments to manage household waste.

Australia has a relatively small population relative to its large land area (Australia has 15.5 people per square kilometre whilst Europe has 347 people per square kilometre), so any solid waste that is not recycled typically is disposed to controlled landfills rather than incinerated or otherwise destroyed.

Australia does not use HTIs for the disposal of solid waste, such as household or commercial waste. Consequently, from a commercial or environmental perspective, there has been little incentive to develop HTIs except for small-scale, facilities to deal with special purpose wastes such as the Tox Free facility.

Given these circumstances, there is no obvious facility in Australia which might be capable of destroying the Orica HCB waste stockpile in an environmentally suitable manner.

Further, and as mentioned in the Duly Reasoned Request and the SIA report:

“Australia does not have a track record of HTI use in treating large scale volumes of high chlorine content waste such as HCB. The report considers that it would take a minimum of six years and most likely more to develop a suitable HTI in Australia capable of dealing with the Orica waste depending on the scale of the facility, the location and the permitting requirements. This timeframe does not take into account any possible public opposition to the process”

SIA also stated in its report:

“If ToxFree were to treat the Orica HCB stockpile, the facility would need to be expanded by 10 times its current capacity, operate at increased temperatures and have considerable improvements made to its emissions controls in order to achieve required standards. There would be a requirement under State law for ToxFree to undertake a full Environmental Impact Statement (EIS) process for a newly

developed industrial scale facility. This process would take considerable time and face significant technical and permitting hurdles”.

As referenced in previous correspondence there are landfills and adequate small scale treatment facilities in Australia to treat most of the hazardous wastes currently being produced. If a HTI facility were built sufficiently large to treat the Orica HCB waste stockpile in a reasonable timeframe, there would not be sufficient hazardous waste generated in Australia subsequently to sustain the HTI once the Orica HCB stockpile was destroyed. It is probable that the HTI would then need to be dismantled.

Question 3:

Will it be possible to sort out fractions which can be used for co-incineration at a HTI plant or at a Tox Free plant from some of the waste Australian today land fills? And if possible will that fraction be big enough to satisfy the demand for co-incineration to incinerate the HCB stockpile?

Response:

Before dealing with the amount of co incineration material needed, it is important to note that State, Territory and local governments are responsible for waste management in Australia, including landfills. The Commonwealth government does not regulate the management of landfills in Australia. Therefore, to enable low chlorine content waste to be diverted from landfill to a HTI for co-incineration with the Orica HCB waste, agreement would be needed with the relevant State, Territory and local governments to implement appropriate changes to regulations to allow the diversion and the incineration. Since Australia's approach to the disposal of most solid waste is to recycle or send it to landfill, the process of diverting from landfill will be complex and require some time to achieve without a guarantee of success.

If diversion from landfill could be achieved in Western Australia for the ToxFree facility, then geographic location must also be considered. The ToxFree HTI facility is located in Port Headland, Western Australia, which is over 1600 kilometres from Perth, the nearest major population catchment with approximately 1 million people. There would not be enough landfill waste in the Port Headland area to enable co-incineration to proceed at ToxFree. Therefore, waste would need to be moved by rail or road transport from Perth requiring appropriate approvals from relevant authorities. There also would be a high financial and environmental cost involved in such long distance movements of waste since the amount of low chlorine waste required each year for co-incineration of the Orica HCB waste would be approximately 160,000 tonnes.

In making this estimate and in scaling up to blend the waste streams, consideration has been given to the energy content of the HCB waste and to its chlorine content. The former dictates the size of the furnace (kiln), the latter influences the extent of the emission control system. Furnace size dictates the volumetric throughput and hence the dilution factor or the waste blending ratio required for incineration of the high energy HCB waste. Most drums in the Orica HCB stockpile are up to 100% HCB with a chlorine content of 75%, which are considerably higher than most other chlorinated wastes. It must be remembered that the ToxFree facility is not treating schedule X substances such as HCB and its license from the Western Australian EPA allows it to treat only 5% halons via the destruction process.

The ToxFree HTI in Port Headland has a rated capacity of 2 tonnes per hour of soil (damp and contaminated with hydrocarbons). Considering the heat capacity of this furnace it could handle about 60 to 90 kg/h of HCB material. That would be approximately 1.5 to 2 tonnes per day. To reduce the chlorine content to less than 5%, the facility would require

approximately 450 tonnes of low heating value, less reactive and lower chlorine content wastes. That equates to approximately 160,000 tonnes of such low chlorine content waste per annum.

At a rate of 2 tonnes/day of HCB waste, the ToxFree facility would take some 30 years to destroy the entire HCB stockpile. This would require approximately 4.8 million tonnes of low chlorine waste to be transported from Perth to Port Headland.

Question 4:

In case enough waste (for co-incineration) are available how long time would it take for the ToxFree plant to incinerate the HCB stockpile without upgrading the facility?

Response:

The Tox Free HTI facility in its current form would not be able to treat the Orica HCB waste without a significant upgrade. Its license allows it to treat only 5% halons via the destruction process and it does not currently treat Schedule X waste. It does not have secure waste storage, nor appropriate handling systems nor appropriate emission controls to deal with high concentration chlorinated wastes such as HCB. Without an upgrade the facility is simply not able to treat the HCB waste.

As all key aspects of the facility would need to be significantly changed it would be more technically and commercially feasible to build a new HTI facility since the scale of the facility is only one aspect to consider. SIA has advised in its report that the time frame to develop, permit, construct and commission a facility, with best practice front end waste handling and a full emission control train at the back end, sufficient to comply with Australian standards, to treat the HCB waste from the Orica Botany site, would take at least six years and most likely more, depending on the scale of the facility and the location, and on the permitting authority. This excludes the time required to treat the waste depending on the proposed scale of such a facility. A timeframe of ten years probably is more realistic. By way of example, the German AGR Unternehmens Gruppe was to commission two new HTIs in December 2008 on their already established Herten site some 16 years after commencing the design stage in 1992.

Were it possible to upgrade the ToxFree facility to a satisfactory standard, it would have, at its current rated capacity of 2 tonnes per hour, a destruction capacity of the HCB in the range of 60 – 90 kg/hr, 1.5 – 2 tonnes/day. On this basis, it would require 30 years to destroy the existing 6,000 tonnes of the Orica HCB stockpile with a co incineration feed of approximately 4.8 million tonnes of low chlorinated waste. This does not take into account the increase in contaminated material over time with corrosion of the packaging material.

Question 5:

And how long time would it take if the facility are upgraded to handle twice of the capacity it's able to handle today?

Response:

It would take approximately 15 years at double capacity of 3 – 4 tonnes/day. Of course, the 4.8 million tonnes of co incineration low chlorinated waste would still need to be supplied from Perth.

To achieve the same sort of destruction rate that European HTI's achieve, the ToxFree facility would need to have approximately 10 times its current capacity. To dispose of the HCB stockpile in 3 years requires a kiln type of incinerator with a capacity of 18 tonnes/day of HCB. The ToxFree facility can only deal with up to 2 tonnes/day if the facility were to be upgraded to deal with the HCB. As stated before, this would require a complete facility upgrade.

Also, in comparison to the long established use of HTI's in Europe, Australia does not have the same track record in HTI use. That means there is a reduced level of expertise and knowledge base for a company like ToxFree to access. This increases the risk of mishandling and accidents in comparison with the well established European HTIs such as the Kommunekemi facility.