Madsen, Søren R. N.

Fra: Schou, Lone
Sendt: 15. juni 2010 11:51
Til: cf@kommunekemi.dk
Cc: Madsen, Søren R. N.; Hermansen, Dorte; Rasmussen, Anne-Marie; Schneider, Annette
Emne: VS: Orica application

Vedhæftede filer: Australien endelige afgørelse underskrevet ENG.pdf

Kære Carsten Fich

Til orientering sendes Miljøstyrelsens accept af de australske myndigheders forhåndsanmodning. Du skal være opmærksom på at dette ikke er den endelige accept til anmeldelserne, som nu vil blive behandlet i henhold til kravene i EU's forordning om overførelse af affald.

Med venlig hilsen

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Til: 'Hall, Damien'
Cc: Reville, Barry; Rothenfluh, Daniel; Madsen, Søren R. N.
Emne: Orica application

Dear Damien and Barry,

Attached you will find the Danish Environmental Protection Agency's consent to the Australian state's duly reasoned request for processing export notifications of HCB waste for incineration at Kommunekemi A/S.

Yours sincerely

Australien endelige afgørelse ...

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MILJØMINISTERIET

Miljøstyrelsen

Soil & Waste
J.nr. MST-719-00021
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The Danish Environmental Protection Agency's consent to the Australian state's duly reasoned request for processing export notifications of HCB waste for incineration at Kommunekemi A/S.

1. The Australian Duly Reasoned Request

On 24 November 2008 the Australian Department of the Environment, Water, Heritage and the Arts (DEWHA) submitted a Duly Reasoned Request (DRR) for processing export notifications of a total of 6,100 tonnes of HCB waste, distributed on the following three notifications: AUH 082037T, AUH 086637O and AUH 086937R. If the notifications are consented to, the three shipments of waste for Kommunekemi A/S will take place over a period of twelve months.

2. The Danish EPA's decision

On the basis of information regarding the scope and character of the HCB waste and the prospects of treating the waste in Australia, the Danish EPA considers that Australia does not possess and could not reasonably acquire the technological capacity and the facilities necessary to dispose of the HCB waste.

The Danish EPA has further considered that:

- the import of this waste will not be in conflict with national legislation relating to environmental protection, public order, public safety or health protection, and the import will not be in conflict with the principles of proximity, priority for recovery and self-sufficiency in Danish waste legislation and administration,

- the import of waste will not be in conflict with Danish obligations resulting from international conventions, including Article 4 section 1 of the Basel Convention,

- the import will not be in conflict with Danish waste management plans, since the treatment of the Australian HCB-waste at Kommunekemi A/S will be in full accordance with legally binding environmental protection standards and applying the best available techniques.

Consequently the Danish EPA consents to DEWHA's Duly Reasoned Request and will, as a consequence, begin processing the notifications of the export of HCB waste in accordance with Regulation (EC) No 1013/2006

of the European Parliament and of the Council of 14 June 2006 on shipments of waste.

There will, during the processing of the notifications, be made more stringent requirement for the transport of the HCB Waste. Such requirement will include that the ship, that is specially chartered for the transport has to be a double-hulled, so that in case of accident, the risk of the ship going down is minimize.

There will, also be made requirement of, that the containers containing barrels with HCB waste, has to be fitted with, tracking devices, so they can be salvages quickly and effectively in the event of an accident.

3. Case background

In the period between 1963 and 1991 the Australian industrial company Orica Australia Pty[1] manufactured a significant amount of chlorinated solvents at a plant in Botany Industrial Park, South Wales (NSW). One consequence of Orica's manufacture of chlorinated solvents was the creation of the by-product hexachlorobenzene (HCB). In 1991 manufacturing at the plant in Botany Industrial Park ceased, and the facility became a storage area where Orica currently store and handle (i.e., repackage) the HCB waste until a disposal solution can be found.

Since 1999 Orica has, in cooperation with DEWHA, reviewed the possibilities of disposing of the HCB waste in an environmentally sound manner. The review has included the option and consequences of destroying the waste at facilities in Australia, either at existing facilities or at new facilities established for the purpose of destroying the HCB waste.

On the basis of this review process it was concluded in 2005 that the existing Australian facilities for the destruction of hazardous waste were unfeasible and that establishing the necessary destruction capacity would involve unreasonable environmental and resource consequences. In 2006 Orica therefore applied to DEWHA for permission to export the HCB waste to Germany for incineration at a high temperature incineration (HTI) facility. On this basis DEWHA submitted a Duly Reasoned Request for processing the export notification to the German environmental authorities. That DRR was turned down, however, as the German authorities considered that the Australian authorities had not reasonably substantiated that Australia did not possess and could not reasonably acquire the capacity necessary to dispose of the HCB waste in an environmentally sound manner.

In 2008 Orica again applied to the Australian authorities for permission to export the HCB waste; this time for incineration at Kommunekemi's facility in Nyborg, Denmark. On this occasion DEWHA commissioned an independent report assessing Australia's capability to treat the waste in Australia. On the basis of this report DEWHA has submitted a DRR for processing three notifications of export of HCB waste to the Danish EPA.

[1] Formerly ICI Australia.

3.1. The HCB waste

Storing of Orica's HCB waste is problematic, as it is highly corrosive, which necessitates constant repackaging every five years for safety reasons. This repackaging results in an increase of ten percent of HCB waste over a five-year period, as the packaging is contaminated with HCB, and thus must be destroyed in the same way as the original HCB waste.

The HCB waste has a highly variable physical form, ranging from liquid with particulate matter up to 6 mm in size, partially polymerised solids, reaction residues and pure HCB in crystalline form which cannot be easily dissolved. There are also many other materials from the packaging which has been contaminated during storage.

3.2. The HCB waste stockpile

The total Orica HCB waste stockpile is approximately 16,000 tonnes, comprised of approximately 60,000 drums and several large concrete storage tanks. The stockpile is located in a Sydney suburb, in close proximity to residential housing, office space, Sydney's International Airport and Botany harbour.

3.3. Disposal of HCB waste in Australia

For the DRR to Denmark DEWHA asked a group of independent experts to prepare a review that would assess the degree to which the technologies for destruction of hazardous waste, already existing in Australia, would be feasible for treatment of the HCB waste stockpile.

3.3.1. The SIA report

The report was prepared in March 2008 by the independent consulting firm Sustainable Infrastructure Australia Pty Ltd (SIA). The report "Orica Hexachlorobenzene waste stockpile – independent assessment report" reviews seven different technologies on their suitability to destroy the HCB waste:

1. GeoMelt
2. Hydrodec
3. GPCR [Gas Phase Chemical Reduction]
4. BCD [Base-Catalyzed Decomposition]
5. HTI [High Temperature Incineration]
6. Ausmelt
7. Plascon

The technologies are assessed on six criteria to determine whether they would be suitable for destroying Orica's HCB waste. Those criteria are:

1. **Proven Nature of Technology:**
   This refers to whether the technology is commercially proven to treat any hazardous waste, not necessarily HCB. Technical, environmental and commercial risks could prolong the development of any facility. For this reason, any unproven technology would entail significant risks.

2. **Scale and Time to treat the stockpile:**
   This refers to whether the technologies assessed are capable of treating the volume of the Orica HCB waste stockpile within the time frame determined as part of the over-all assessment (that is, five years).

3. **Pre-Treatment and Front-End Waste handling:**
   Considering the heterogeneous and hazardous characteristic of the Orica HCB waste stockpile, pre-treatment and front end waste handlings are vital steps for the safe and successful operation of any potential process. Therefore, the difficulties with respect to the time required to develop a pre-treatment facility have also been evaluated.

4. **Process Capability to treat HCB:**
   This refers to whether the technology has been proven to treat HCB waste. If there is no proven capability to treat HCB waste then this would render the technology unfeasible.

5. **Emissions and Residues from the process:**
   Any process that is not in legal compliance regarding emissions and residues is likely to face hurdles in terms of both licensing and commercial risk. Each technology has been assessed on the basis of its likely emissions and residues from the treatment of HCB waste.

6. **Ability to Permit or License Facility:**
   Each technology was assessed to evaluate any major issues with permitting or licensing, which could be a major impediment to the use of the technology as a feasible option.

The conclusion of the SIA report is that there are currently no feasible facilities in Australia for the disposal (destruction) of Orica's HCB waste in an environmentally sound manner. It is also concluded that it is not possible to establish a facility within a reasonable time frame.

3.3.2. Further information

Since receiving the DRR the Danish EPA has been in an ongoing dialogue with the Australian Environmental authorities for the purpose of obtaining the greatest degree of clarity regarding the options and the consequences involved in Australia itself developing or establishing new capacity for the destruction of the HCB waste.

In the course of processing the DRR the Danish EPA has further been contacted by Trevor Bridle, former manager for the Ecologic Gas Phase Chemical Reduction (GPCR) and Markus A Reuter, Chief Executive Technologist for Ausmelt Ltd.

The Danish EPA has further received information from Mariann Lloyd-Smith of the Australian NGO National Toxic Network Inc., which has also formed the basis for its decision. Finally, the Danish EPA has discussed several key

aspects of the case with the Danish Society for Nature Conservation and Greenpeace.

4. The Danish EPA's considerations

4.1. The regulatory basis

4.1.1. The Stockholm Convention

The Stockholm Convention is a global regulation of certain Persistent Organic Pollutants (POP), of which HCB is one.[2] The aim of the Stockholm Convention is to protect nature and human health against persistent organic environmental poisons, as these can accumulate in the ecosystem and be directly detrimental to human health. The Stockholm Convention is implemented in the EU by Regulation (EC) No 850/2004 of the European Parliament and of the Council on Persistent Organic Pollutants – with subsequent amendments.

The Stockholm Convention obligates the parties to eliminate or minimise the direct and indirect production of the environmental poisons, to register stockpiles of the environmental poisons included in the Regulation, and to map waste which contains the substances. The Convention obligates the parties to create implementation plans for how they will fulfil their obligations, including the handling and/or environmentally sound disposal of stockpiles. Where it is expedient the parties are likewise obligated to assist each other in the implementation of the national implementation plans.

The Orica HCB waste stockpile is one of the largest of its kind in the world, and is specifically mentioned in the Australian implementation plan from July 2006.[3] The plan describes the efforts by Orica and the environmental authorities of New South Wales to find suitable options for the destruction of the stockpile.

It appears from the implementation plan that, should it prove infeasible to establish a disposal facility in Australia, Orica will investigate the option of exporting the HCB waste for disposal outside Australia's borders.

4.1.2. The Basel Convention and EU Regulation No 1013/2006 on shipments of waste

The regulation of transboundary movements of hazardous wastes is laid down globally in the Basel convention. The EU has implemented the Basel convention in its Regulation No 1013/2006 on shipments of waste (the Transport Regulation).

The Transport Regulation's Title V regulates imports into the Community from third countries. Article 41,1 state that as a guiding principle imports into the Community of waste destined for disposal shall be prohibited, unless one or more conditions are fulfilled.

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[2] The Stockholm Convention Annex A.

[3] URL: http://chm.pops.int/Portals/0/docs/from_old_website/documents/implementation/nips/submissions/Australia_Final%20NIP-%20July%2006.pdf.

Article 41,1(a) allows for the import of waste for disposal from third countries provided the import comes from a country which is a Party to the Basel Convention. Such imports presuppose, however, that the provisions in Article 41,4 are fulfilled:

> Article 41, 4: The countries referred to in paragraph 1(a), (b) and (c) shall be required to present a prior duly reasoned request to the competent authority of the Member State of destination on the basis that they do not have and cannot reasonably acquire the technical capacity and the necessary facilities in order to dispose of the waste in an environmentally sound manner.

If the competent authority of the Member State of destination finds it substantiated in the DRR that the country of dispatch does not have the conditions for disposing of the waste itself, the competent authority of the Member State of destination can accept that a notification procedure is initiated according to the provisions of the Regulation.

It is such a Duly Reasoned Request from DEWHA which the Danish EPA has assessed on the following grounds:

4.2. The Danish EPA's assessment of disposal options in Australia

The Danish EPA's assessment is based on the SIA report and its conclusions that:

- There is no facility in Australia currently approved to treat the HCB waste from Orica;
- Using the technologies that do exist in Australia would be associated with significant risk, as none of these technologies has a track record that would suggest that they can be used for treating large scale volumes of high chlorine content waste such as the Orica HCB stockpile;
- None of the established and currently operating facilities in Australia is or could be capable of treating the large quantities of HCB waste within a reasonable timeframe;
- That, due to the small quantities of hazardous wastes produced in Australia, a newly established facility dedicated to destroying the Orica HCB waste would be redundant, and would have to be closed down, as soon as the Orica HCB waste had been destroyed.

4.2.1. Special considerations regarding the feasibility of the Ausmelt technology

The Danish EPA has also been contacted by Markus A Reuter in his capacity of Chief Executive Technologist for Ausmelt Limited, who notified us that the Ausmelt technology is available for treatment of PCB waste in Australia.

As mentioned above, the Ausmelt technology was assessed in the SIA report, in which it is considered over-all unfeasible for the destruction of the HCB waste.

In reference to the report's six criteria, the SIA report considers the Ausmelt technology unfeasible because it cannot treat the waste within the critical timeframe of five years; because the waste cannot be fed directly into the incinerator due to its heterogeneous nature and no pre-treatment technologies currently exist (research and development would be necessary) and because it is considered that it would not be possible to obtain a new permit for the facility for the treatment of large quantities of HCB due to the uncertainties represented by this technology.

The Danish EPA has further forwarded Mr Reuter's letter to the Australian authorities for their comment. They have forwarded a press release from Ausmelt Limited dated 30 September 2008, from which it appears that Ausmelt has stopped activities at the Whyalla facility in Australia, due to the low price on zinc and the high price of coal, combined with numerous on-going problems with the facility's equipment.

It should further be noted that in his letter Mr Reuter refers to the treatment of PCB not HCB. Australia has a number of facilities approved for the treatment of PCB for which a number of different technologies are employed, including the Ausmelt technology.

4.2.2. Special considerations regarding the feasibility of the GPCR technology

The SIA report finds that this technology is not feasible on every assessment criterion except criterion 1: that the technology has been commercially proven in the treatment of hazardous wastes, not necessarily HCB.

The Danish EPA has also been contacted by Trevor Bridle, former manager for the Ecologic Gas Phase Chemical Reduction (GPCR) process and current consultant, who explains that SIA report is incorrect and that the GPCR process is able to treat the HCB waste in question.

The Danish EPA has forwarded this inquiry to the Australian authorities for comment. The consultants behind the SIA report refute Trevor Bridle's account and refer to the fact that their assessment was made on the basis of a specific test of the HCB waste in question at the GPCR facility then existing in Australia. This test was carried out in April 1999 and was observed by Orica as well as several independent engineers. According to DEWHA, the consultants have been engaged in a technical debate with Trevor Bridle without reaching an agreement.

There is further disagreement about how high a chlorine concentration the process can handle, since the chlorine concentration in the DDT and PCB which has earlier been treated with this process was low to medium, while

the Orica HCB is highly concentrated chlorine. This is particularly significant in terms of the technology's ability to perform a total destruction of the HCB.

It should further be mentioned that no GPCR facilities currently exist in Australia.

4.2.3. Special considerations regarding the feasibility of the ToxFree incineration facility

ToxFree is located in Port Headland, an isolated area in Western Australia, 1,600 kilometres from the nearest sizeable city.

This facility, while it has successfully treated PCBs, organochlorine pesticides, is operating under a license that does not require it to monitor dioxin levels, and treatment at the facility would further require:

- That it be expanded by 10 times its current capacity,
- That it operate at increased temperatures and
- That it has considerable improvements made to its emissions controls in order to achieve required standards.
- That the HCB waste be co-fed with 160,000 tonnes of wastes that have a low heating value and low chlorine content.

As with a new High Temperature Incineration facility, this facility would have to be closed down after treating the Orica HCB waste, as the quantities of hazardous wastes required for operation do not exist in the area.

4.2.4. Special considerations regarding the suitability of the GeoMelt technology

A report from September 2005 concludes that the environmental impact of treating the HCB waste using the GeoMelt technology is five to eight times higher than the environmental impact of exporting the waste to a High Temperature Incineration facility in compliance with European standards.[4] The most significant factor was the increased production of greenhouse gasses resulting from the GeoMelt process.

4.2.5. Special considerations regarding the establishment of a new High Temperature Incineration facility

It is evident from both the 2005 report on the Orica HCB stockpile[5] and the SIA report that the establishment of a new High Temperature Incineration (HTI) facility would not be an environmentally sound option, as such a facility

- Would be redundant, and would have to be closed down, once the Orica HCB waste had been destroyed, due to the small quantities of hazardous wastes produced in Australia, or would have to

[4] Orica Australia Pty Ltd. – Environmental Analysis of Local vs. Overseas HCB Waste Management Option.
[5] Orica Australia Pty Ltd. – Environmental Analysis of Local vs. Overseas HCB Waste Management options.

receive hazardous wastes that are currently being treated at smaller dedicated facilities, which would be in conflict with both Federal and State waste planning, entail a significant increase in the transportation of hazardous waste and lead to the closing of existing facilities.

- Would have to receive a significant amount of low energy, low chlorine waste, such as contaminated soil or household wastes, which would involve Australia revising its National waste planning.

4.2.6. Special considerations regarding the possibility of Australia itself treating the least polluted part of the HCB waste in Australia

The Danish EPA has further inquired of the Australian authorities about Australia's capability to treat part of the HCB waste, such as the contaminated packaging waste, using for instance the GeoMelt or Ausmelt technologies.

The Danish EPA has been informed that there is no GeoMelt facility in Australia and, as mentioned earlier, the Ausmelt facility is closed down. Further, it has been pointed out that it is virtually impossible to separate the waste such as to render it appropriate for the specialised processes that are available in Australia.

4.3. The Danish EPA's overall assessment

On the basis of the assessments outlined above, the Danish EPA has concluded that Australia has no facilities suitable for the destruction of the HCB waste.

The establishment of a new facility, or the expansion of an existing facility, for the purpose of destroying the HCB waste would involve very significant use of resources and associated environmental impacts. This environmental impact would be significantly larger than the one associated with exporting the HCB waste to a European High Temperature Incineration facility. This must be considered in the light of the fact that because of the Australian infrastructure and existing waste policies for hazardous as well as non-hazardous waste, such a facility would be redundant and would have to be closed down once it had finished treating the HCB waste.

The Danish EPA thus bases its decision on the ground that *Australia does not possess and could not reasonably acquire the technological capacity and the facilities necessary to dispose of the HCB waste in an environmentally sound manner* and consents to the Australia's Duly Reasoned Request. As a consequence the Agency will initiate the processing of the Australian state's three notifications for the export of a total of 6,100 tonnes of HCB waste for Kommunekemi A/S.

Yours sincerely

Dorte Hermansen
Head of Division – Danish Environmental Protection Agency