

28th July 2016

Q&A

| Background | | |
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| 1. | What is HCB? | <p>HCB (hexachlorobenzene) is a crystalline solid waste by-product. Internationally, it is known and classified as a priority Persistent Organic Pollutant (POP). The physical composition of HCB waste makes it particularly challenging to destroy.</p> <p>HCB has relatively low acute toxicity but prolonged exposure can impact health. HCB may accumulate in an organism (especially with prolonged or frequent exposure), does not easily break down in the environment and is a possible human carcinogen.</p> <p>HCB is a hazard to human health if it is ingested, or possibly from direct contact with damaged skin. Contact should be avoided.</p> <p>HCB was produced as a waste by-product in Orica's former solvent and plastic manufacturing plants at Botany Industrial Park (BIP) in Australia between 1963 and 1991.</p> |
| 2. | Why does the waste need to be destroyed? | <p>HCB is classified as a priority Persistent Organic Pollutant (POP). The Stockholm Convention lists twenty two POPs, including HCB, that could pose risks to human health and the environment.</p> <p>It is internationally acknowledged that HCB waste should be destroyed, rather than stockpiled. The Basel Convention regulates the transport of hazardous waste and Stockholm Convention aims for the elimination of all Persistent Organic Pollutants (POPs). Australia is a signatory to both Conventions.</p> <p>Orica has been actively seeking a safe destruction solution for the HCB waste for three decades.</p> |
| | Orica's proposal | |
| 3. | What does Orica's proposal involve? | <p>Orica is proposing to export 135 tonnes (in an initial shipment) of the HCB waste currently stockpiled at the BIP to Finland for safe and permanent destruction by Ekokem at a licensed HTI facility.</p> <p>Orica is committed to destroying HCB waste in a responsible and environmentally sound manner. Ekokem is a leading Nordic company offering recycling, recovery and final disposal solutions as well as soil remediation and environmental construction services for its customers. Ekokem has imported similar waste from chemical weapon precursor chemicals from Syria in recent years and has treated many pesticides which are chemically similar to HCB.</p> <p>It is expected that once the initial shipment is destroyed further applications would be made to destroy the remainder of the Orica HCB stockpile at the Ekokem facility.</p> |

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| | | <p>Orica is confident that, in partnership with Ekokem, it has developed a plan that will ensure the safe transportation and destruction of the HCB stockpiled at Botany.</p> |
| 4. | <p>Why does the waste need to be exported?</p> | <p>The export of the waste for destruction is consistent with international conventions. This will be verified by the environmental authorities in Australia and Finland considering the application for the export and import of the waste.</p> <p>The only commercially developed and proven technology for the destruction of Orica's HCB waste is High Temperature Incineration (HTI).</p> <p>There are many HTI plants operating in Europe and North America specialised in the disposal of this waste stream. In Australia there is no similar HTI facility and no proposals to build a HTI plant that would be capable of destroying the HCB.</p> <p>Australian industry does not generate waste which requires a high temperature incinerator to destroy. It makes no environmental sense to build an incinerator for only a small amount of waste and then demolish it, when it can be safely destroyed in the Finnish plant with world class technology, operating experience and an exemplary environmental record.</p> <p>Ekokem operates several similar plants in the Nordic countries and treats almost 260,000 tonnes of hazardous waste each year in Finland alone through different methods. The volume of the hazardous waste incinerated in the Riihimäki plant annually is over 50,000 tonnes.</p> <p>By destroying this waste, the world will have one (albeit small) environmental risk eliminated.</p> <p>Orica recognises that a safe treatment solution needs to be identified and that it is unsatisfactory to leave it to future generations to find a solution to destroying the HCB waste.</p> |
| 5. | <p>Is it safe to transport the waste to Finland?</p> | <p>Yes, Orica and Ekokem have undertaken a comprehensive risk analysis and taken all necessary steps to ensure safe passage and destruction of the HCB waste.</p> <p>Orica has decided to apply to send the waste to Ekokem after a careful analysis of its capabilities and expertise.</p> <p>All the waste has been packed in UN approved packaging and shipment will comply with the International Maritime Dangerous Goods regulations.</p> <p>The waste is packed in plastic lined steel drums, the drums are wrapped in plastic and stored in steel shipping containers. The waste will be stored below deck during sea transport. It is improbable that all the protective layers would fail during transit.</p> <p>The proposed shipment of the HCB waste to Ekokem's HTI will be conducted in compliance with Australia's international treaty obligations regarding the transportation and destruction of hazardous industrial waste.</p> |
| 6. | <p>What approvals are required to export the HCB waste?</p> | <p>Approvals will be required under the Basel Convention. In Australia compliance is regulated by the <i>Hazardous Waste (Regulation of Exports</i></p> |

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| | | <p><i>and Imports) Act 1989</i>, and the application will require approval by the Federal Minister for Environment.</p> <p>Both Finland and Australia have regulations for international transport and destruction of hazardous wastes, which are based on the Basel Convention.</p> <p>Under Basel convent rules, many millions of tonnes of waste are transported between countries each year.</p> <p>In Finland the Finnish Environment Institute (SYKE) is responsible for approval to import and destroy the waste.</p> <p>An export permit for hazardous waste granted in Australia is only valid for one year, and further applications will be required for future shipments.</p> |
| 7. | <p>When will Orica receive approval?</p> <p>When will shipments start?</p> <p>When will the project be completed?</p> | <p>Orica is currently in the process of seeking regulatory approval for one shipment. We are providing all of the necessary information to all of the relevant authorities.</p> <p>Orica expects the approval process will take some months to complete, and aims for the first shipments to take place in the last quarter of 2016 at the earliest.</p> <p>Final project completion will be determined based on statutory approvals, shipping availability and Ekokem plant capacities.</p> |
| Transport, storage and treatment | | |
| 8. | <p>What is the track record of the shipping company?</p> | <p>We will use a shipping company with a good record of handling all cargo including hazardous goods and waste, and which operates under required international certifications and standards.</p> <p>The ship will be compliant with relevant codes of the International Maritime Association including ISTCW (the International Convention on Standards of Training Certification and Watch Keeping), ISM (International Safety Management) and ISPS (International Ship and Port Facility Security Code).</p> |
| 9. | <p>What is the shipping transport route?</p> | <p>The shipments will travel from Port Botany, Sydney to Finland to the Port of Hamina in Finland without any transit port. (The actual route will depend on the shipping dates).</p> |
| 10. | <p>How will land transport occur in Finland?</p> | <p>In Finland, the HCB will be transported by road for the approximately 200 km distance from the Port of Hamina to the HTI plant at Riihimäki.</p> <p>Ekokem has good transport and emergency response plans in place for the transport of all waste to its facilities. The transport will be ADR classified with specific guidance for moving hazardous goods.</p> <p>ADR (formally, the European Agreement concerning the International Carriage of Dangerous Goods by Road) is a 1957 United Nations treaty that governs transnational transport of hazardous materials. "ADR" is derived from the French name for the treaty: <i>Accord européen relatif au transport international des marchandises Dangereuses par Route</i>.</p> |

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| 11. | What risks are related to storing and transporting HCB in Finland? | HCB will be stored in Hamina port for short periods of time (a maximum of few weeks) in a secure area with 24/7 surveillance. The road transport will be made with ADR classified trucks with HCB safely packaged in a maritime container. As HCB is not actively reactive or water soluble (in addition to being carefully packaged), even in the event of a road accident it could be easily contained and would not cause specific risk to the environment or human health. The storage at Riihimäki plant will follow Ekokem's normal strict safety policies. |
| 12. | How will HCB be treated in Riihimäki? | <p>HCB will be treated in Ekokem's normal high temperature incineration process in the Riihimäki facility. HCB will be blended with other hazardous waste and processed gradually over a period of some five years.</p> <p>High temperature incineration refers to a process where the waste is destroyed at a temperature of 1,200–1,400 degrees centigrade, and it is a well-established and proven technology to treat the most demanding hazardous wastes. As an outcome of the incineration, Ekokem produces electricity to national grid and heat to the local district heating network.</p> <p>The flue gases are treated in Ekokem's specialised flue gas cleaning system to eliminate harm to the environment or human health. No changes in Ekokem's environmental permits or emission limits will be required for this project. The ash resulting from incineration will be deposited in a dedicated hazardous waste landfill according to Ekokem's normal practices.</p> |
| Ekokem's stakeholders | | |
| 13. | What engagement has Ekokem undertaken with residents in the Riihimäki area about treating HCB waste from Australia? | Ekokem has a long history of safe operations and has successfully treated international waste of this kind before. We routinely connect with a wide range of community and government stakeholders and are sharing information about the planned treatment of Orica's HCB waste with the local community in the Riihimäki area via emails and newsletters and, as is the practice every year, are planning an open day at the Riihimäki facility this autumn. |
| 14. | Why does Finland need to get involved in this issue? | Ekokem has internationally recognised and superior technological expertise. It can take part in solving environmental issues and make good business out of this. This will be a great example of exporting Finnish cleantech knowledge. |