Questions and answers on Orica's HCB waste and the 2016 application to export the waste to Finland

	Background	
1.	**What is HCB?**	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. 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. HCB is a hazard to human health if it is ingested, or possibly from direct contact with damaged skin. Contact should be avoided. 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.
2.	**Why does the waste need to be destroyed?**	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. 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. Orica has been actively seeking a safe destruction solution for the HCB waste for three decades.
	Orica's proposal	
3.	**What does the new proposal involve?**	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 High Temperature Incineration (HTI) facility. 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. 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. 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.
4.	**Why does the waste need to be exported?**	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.

		The only commercially developed and proven technology for the destruction of Orica's HCB waste is HTI. 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. 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. 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. By destroying this waste, the world will have one (albeit small) environmental risk eliminated. 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.
5.	**Is it safe to transport the waste to Finland?**	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. Orica has decided to apply to send the waste to Ekokem after a careful analysis of its capabilities and expertise. All the waste has been packed in UN approved packaging and shipment will comply with the International Maritime Dangerous Goods regulations. 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. 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.
6.	**What happened to the French export application lodged in 2014 and how is this proposal different to previous proposals to export the waste?**	The French Environment Minister requested that the French authorities refuse the application made in 2014. The rationale for export remains valid and Orica is committed to securing a safe destruction solution for the HCB waste.
7.	**What approvals are required to export the HCB waste?**	Approvals will be required under the Basel Convention. In Australia compliance is regulated by the *Hazardous Waste (Regulation of Exports and Imports) Act 1989,* and the application will require approval by the Federal Minister for Environment. Both Finland and Australia have regulations for international transport and destruction of hazardous wastes, which are based on the Basel Convention.

		Under Basel convention rules, many millions of tonnes of waste are transported between countries each year. In Finland the Finnish Environment Institute (SYKE) is responsible for approval to import and destroy the waste. An export permit for hazardous waste is only valid for one year, and further applications will be required for future shipments.
8.	**Is HTI safe?**	HTI conducted by experts at licensed and regulated facilities, such as that operated by Ekokem, is a safe, regulated and globally accepted solution to the difficult issue of HCB destruction. HTI is the well developed and standard technology for the destruction of hazardous wastes, including POPs. Since the 1990s it has been well regulated and has demonstrated environmentally sound destruction of wastes such as HCB without any risk to human health. Today HTI is recognised as Best Available Technology/ Best Environmental Practice for the destruction of POPs in the Stockholm Convention Guidelines. There are over 35 hazardous waste incinerators operating in Europe with the capacity to destroy altogether 2.5 million tonnes per annum. The Ekokem company has a 35 year operating history in its Riihimäki, Finland facility. It has imported similar waste from chemical weapon precursor chemicals from Syria in recent years and has safely treated many pesticides which are chemically similar to HCB. The HTI plant at Riihimäki has an annual HTI treatment capacity of over 50,000 tonnes per annum.
9.	**How will HCB be treated in the Riihimäki Plant?**	HCB will be treated in Ekokem's normal HTI process in the Riihimäki facility. HCB will be blended with other hazardous waste and processed gradually over a period of some five years. HTI 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. 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.
10.	**When will you receive approval?** **When will shipments start?** **When will the project be completed?**	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. Orica expects the approval process will take some months to complete, and aims for the first shipment to take place in the last quarter of 2016 at the earliest. Final project completion will be determined based on statutory approvals, shipping availability and Ekokem plant capacities.
11.	**How long is it going to take to get rid of the HCB waste stored at BIP?**	The process will take time to complete. Each shipment is expected to take up to 60 days to travel from Australia to Finland. The project with Ekokem is scheduled to be completed over approximately five years. In parallel, Orica is exploring local options for the safe recycling or disposal of lightly contaminated waste such as timber pallets (which forms part of the 15,000 tonne HCB stockpile).

12.	**What happens if the proposal is not approved?**	Orica is confident that the Finnish export application meets all regulatory requirements and is the best solution to safely and permanently destroy the HCB stockpile.
13.	**Why can't the HCB waste be treated in Australia?**	There is no suitable existing process for HCB treatment in Australia, nor has there been over the decades that the stockpile has been stored at Botany. Orica is committed to destroying HCB waste in a responsible and environmentally sound manner. Orica has a track record of safely treating its legacy waste in Australia, but in this case a domestic solution does not exist. Having conducted an exhaustive examination of possible alternatives, the current proposal is the only available option to deal with the stockpile in the foreseeable future. In Australia, there is no facility capable of treating the HCB waste, nor the prospect of a suitable facility being available in Australia in the foreseeable future. A life cycle assessment has been conducted by an international consultancy company GHD and it concludes that the construction of a purpose built HTI at a hypothetical location in regional New South Wales, Australia and the treatment of HCB waste in this facility would have a greater environmental impact in most of the assessed impact categories than exporting the HCB waste to the existing Ekokem HTI facility in Riihimäki, Finland. In this hypothetical situation of constructing a HTI in Australia, a significant question would be how to gain the necessary experience of operating the plant with no other waste in Australia requiring HTI treatment. Orica's application to process the HCB in Finland is compliant with Australia's international treaty obligations under the Basel and Stockholm Conventions. The Basel Convention regulates the transboundary movement of waste. This means that under appropriate circumstances, such as in cases where there is no existing facility in a country, waste can be exported to appropriate facilities for treatment. The Stockholm Convention aims for the elimination of all POPs. Orica's proposal is the best available option to achieve the safe and permanent disposal of the HCB stockpile.
14.	**Why doesn't Orica build a HTI plant in Australia to treat the waste?**	Australia does not generate a large volume of POPs waste similar to HCB and it does not make environmental sense to build a treatment plant to destroy a one-off stockpile that would only require a few years' of operation. To build a plant in Australia to destroy the HCB, and then demolish is not a good use of resources (as concluded by the life cycle assessment conducted by GHD noted above). In addition, HCB normally needs to be diluted with suitable non-chlorinated waste to approximately a factor of 1 to 10. There isn't the additional waste in Australia to achieve this. Orica has conducted a number of comprehensive reviews of options and has been in contact with potential treatment plants in Australia, and none currently have the proven capability to treat Orica's HCB waste. Suitable plants, such as Ekokem, with a long operating history and expertise, and a proven environmental record, represent a better, environmentally sound solution.
15.	**Is there any other process that can treat the HCB waste?**	Orica will not consider unproven treatment processes or those with a high degree of risk. HTI is the safe and environmentally sound solution for the destruction of material such as HCB.

		This is recognised in the Stockholm Convention's Best Available Technology and Best Environmental Practice Guidelines.
	Transport	
16.	**What is the track record of the shipping company?**	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. 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).
17.	**What is the shipping transport route?**	The shipments will travel from Port Botany, Sydney to the Port of Hamina in Finland. (The actual route will depend on the shipping dates).
18.	**How will you transport the HCB from the Botany Industrial Park to the wharves?**	The waste will be transported 1.5 km by road in Australia (from the Botany Industrial Park to Port Botany). Orica will work closely with NSW EPA, Emergency Services and WorkCover NSW to ensure that the waste is safely transported to Port Botany. An emergency response plan has been prepared for all aspects of the transport, including road transport in Australia. As HCB is a solid and is not reactive, flammable 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.
19.	**How will land transport occur in Finland?**	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. 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. ADR (formally, the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)) is a 1957 United Nations treaty that governs transnational transport of hazardous materials. "ADR" is derived from the French name for the treaty: Accord européen relatif au transport international des marchandises Dangereuses par Route).
20.	**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 a 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.
	Benefits for Finland	
21.	**What benefits does this project offer to Finland?**	This is an excellent case for Finland to show its capabilities in clean technology, get a showcase in clean technology export and to contribute responsibly to solving an international environmental issue. Treatment of hazardous waste is one of Ekokem's core businesses and offering its specialised services to customers also in a global

		perspective contributes to maintaining and further developing its capabilities in its industry.
	Community	
22.	**What engagement with the Botany community have you undertaken to date?**	For many, many years Orica has shared information and sought feedback about each of its remediation projects at Botany with local community members through platforms including newsletters, site tours and community meetings. The Orica Botany Liaison Committee (OBLC) is the current community group with interest in the HCB waste and Orica will share information about this application with that committee. Orica shares the view of community members on this committee that a safe permanent solution to the HCB issue is required. Orica will continue to work closely with the OBLC and the Botany and surrounding community and all of our stakeholders to ensure they remain up to date with HCB export plans and progress and to ensure that we can respond to feedback and questions.
23.	**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. Ekokem routinely connects with a wide range of community and government stakeholders and is 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, is planning an open day at the HTI facility.
	Orica's Remediation Record	
24.	**What is Orica's record on rectifying environmental legacy problems?**	Orica has a good track record of remediation and solving environmental legacy issues in order to restore land to beneficial use. In recent years Orica has remediated sites at Seneca (North America), Gullaug (Norway), Villawood (NSW) and Yarraville (Vic). At Botany we have completed remediation of soil in a carpark encapsulation, the Southlands area and the former mercury cell plant; and we are also continuing to successfully treat contaminated groundwater. Remediation is continuing at a number of sites. At Botany HCB is the last remaining significant legacy issue to address.