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Overview

IBM Australia is a leading supplier of information technology (IT) hardware, software and services; business consulting services; business transformation outsourcing; and IT financing. With deep industry knowledge, business insight and superior technology and applications, our focus is on helping our clients of all sizes to succeed through innovation.

IBM has been operating in Australia since 1932 and employs approximately 10,000 workers; 1,000 of which are engaged in export-related work. In 2005 IBM Australia generated revenues of AU$3.5 billion, including exports worth more than $600 million to the Australian economy.

IBM’s focus on innovation through collaboration extends beyond the business community, and impacts society as a whole. Supporting the communities in which we live and work is a core belief and is important to both our employees and clients. At IBM, we aim to use our technology and innovation to make a positive difference to the community, both as an organisation and as individuals.

We are committed to environmental leadership in all of our business activities, from our operations to the way we design our products and use technology. Our efforts in this regard improve the efficient use of our natural resources, reduce costs and help create a healthy workplace for our employees and clients, and help to protect the environment that sustains us all.

Background

Environmental packaging initiatives and commitment

IBM Australia voluntarily joined the National Packaging Covenant in 2000. Our Packaging Stewardship Action Plan for 2001 – 2004 was accepted by the National Packaging Covenant Council in June 2002. In 2005, IBM chose to extend its plan for the interim period of the Covenant to 30 June 2005. IBM Australia signed up to the second National Packaging Covenant Agreement in October 2005 and joined the National Packaging Covenant Industry Association and is contributing to the transitional industry funding arrangements. This Action Plan is submitted in accordance with Covenant Mark II.

Product protective packaging is a significant environmental aspect and as a result, a program has been established as part of the IBM Worldwide Environmental Management System in Australia. This global Product Stewardship program is designed to address the environmental impacts of packaging from cradle to grave. In Australia the company is actively investigating, developing and delivering initiatives to help sustain the environment by reducing the impact product protective packaging has on the environment.

Scope and Public Reporting

The Plan covers the period Jan 2006 to Dec 2010. This Plan has been prepared to help drive packaging stewardship initiatives in Australia for the company. Also, this Plan is consistent with, and will report on, IBM’s global activities associated with product protective packaging.

Table 1 outlines the environmental requirements for product protective packaging. Table 3 lists the actions that will be delivered in Australia over the life of the Plan.

An annual progress report will be submitted to the National Packaging Covenant Council (NPCC) based on a calendar year which is consistent with the reporting period of the company. The annual progress report will be incorporated into the Corporate Responsibility (CR) Report for Australia. An environmental section is included in the CR Report. Packaging is included and will become a specific reporting metric. The CR Report will be submitted to the NPCC to meet our public reporting requirement. IBM will also participate annually in reporting relevant metrics in the Industry Data Aggregation System (IDAS).
A Global Product Stewardship Program and product protective packaging

IBM has a long-standing global Product Stewardship Program focusing on product energy efficiency, the use of materials with recycled content, and products that can be recycled and disposed of safely. IBM’s stringent design standards prohibit the use of certain hazardous materials in products such as asbestos, polychlorinated biphenyls, and ozone depleting substances. They also restrict the use of potentially hazardous metals such as lead, chromium, cadmium, and mercury in non-critical applications such as plastic housings, paints and packaging. IBM also no longer specifies PVC plastics for product housings, mechanical parts or product protective packaging. IBM’s reduction of hazardous materials is pursued in partnership with suppliers and in conjunction with the evaluation and identification of suitable replacements that are environmentally preferable.

The IBM Engineering Specification (ES) 46G3772: Baseline Environmental Requirements for Materials, Parts and Products for IBM Logo Hardware Products establishes baseline environmental requirements for all materials, parts and products that comprise an IBM logo hardware product. IBM also maintains environmental and related requirements in other specifications, contracts or procurement documents. For packaging the key documentation is listed in Table 1 and are available publicly on the IBM Global Procurement Internet Web site.

Suppliers of materials, parts, and products for IBM logo hardware must provide information to verify the compliance of their products to IBM’s environmental requirements. The Product Content Declaration for IBM Suppliers is provided for suppliers to use to document the environmental data necessary to establish compliance of procured materials, parts and products to IBM Engineering Specification 46G3772. There is a similar supplier packaging environmental compliance questionnaire.

IBM’s voluntary Product Environmental Attributes Declaration forms for servers are designed to provide the client key environmental information to help make a well informed purchasing decision. The form combines and summarises the details of the above compliance reports and other relevant product information maintained by IBM on product and packaging. These documents are listed in Table 1 and available publicly on the Internet.

Global elimination of hazardous materials and waste protective product packaging

To minimize the waste associated with product protective packaging, IBM developed its Packaging Guidelines in 1990. Updated periodically, these guidelines prohibit the use of ozone-depleting chemicals, heavy metals, polybrominated biphenyl, and polybrominated biphenyl oxides. The guidelines also provide direction to minimize toxic elements in packaging materials; identify methods, processes, and design strategies to drive source reduction; and promote the use of packaging materials that are reusable, recyclable, or contain high amounts of recycled content.

For over 10 years, IBM has prohibited the use of polyvinyl chloride (PVC) and the use of free-flowing cushioning materials (such as “plastic peanuts”) in IBM packaging. It has also prohibited the use of permanently commingled (dissimilar materials inseparable without tools) except in cases in which they are part of reusable packaging designs or technically required for product quality, such as in static-shielding bags.

Key elements of IBM’s Packaging Guidelines have been embedded in various engineering specifications and procurement documents as outline previously, which extend their reach beyond IBM to include its integrated supply chain.

IBM has also worked closely with the United States of America Environment Protection Agency (U.S. EPA) on the development of the Packaging section in the new EPEAT (Electronic Products Environmental Assessment Tool) criteria. EPEAT is an Internet based tool for evaluating the environmental performance of electronic products throughout their life cycle.
Internally, the company is developing new online tools to collect information on product packaging and facilitate packaging compliance and independent verification for products built by IBM and other equipment manufacturers. A Web enabled Packaging Suppliers Environmental Compliance form has been deployed and the majority of relevant suppliers are registered. Global Procurement is in the process of certification to compliance with the IBM packaging specifications. Certification is to be completed in 2007, 80% expected to be done by the end of 2006.

In addition, IBM has partnered with industry peers and the University of California—Santa Barbara Bren School to develop a common packaging guideline for the electronics industry. Titled “Environmentally Responsible Packaging: A Guideline and Certification Program for the Electronics Industry,” the initiative includes a common educational package and certification program to assist with specification for packaging materials selection and use. By collaborating with industry peers on a common guideline, we will help manufacturers and parts suppliers worldwide avoid wasteful inconsistencies in the IT industry.

IBM participated in the development of a voluntary Environmental Attributes Declaration Form prepared by European Computer Manufacturer’s Association (ECMA) as a recommendation of Technical Report - TR70. Section 8 covers packaging and Section 9 addresses take back programs. IBM Product Declaration forms are publicly listed on the Internet and listed in Table 1.

A global Master Packaged Product database has been deployed to identify packaging material types and weights by machine type and model. When combined with country sales reports types and weights of packaging imported can be calculated. However, this manual process requires significant resource to complete effectively as there is no interfacing software to combine the two data sources and provide automated analysis and reporting at present. Such software is being developed but is not expected until end 2007, early 2008.

Table 1:
Key IBM packaging engineering specifications for suppliers

<table>
<thead>
<tr>
<th>Supplier Specification Document:</th>
<th>Objectives and Comments:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. IBM Engineering Specification 46G3772: Baseline Environmental Requirements for Materials, Parts and Products for IBM Logo Hardware Products</td>
<td>This IBM Engineering Specification (ES 46G3772) establishes the baseline environmental requirements for all materials, parts and products that comprise an IBM logo hardware product. Other IBM specifications, contracts or procurement documents may contain additional environmental requirements for suppliers. ES 46G3772 contains restrictions on materials in products and on certain chemicals used in manufacturing. It also requires suppliers to disclose information about the content of certain materials in their products. Additionally the specification includes requirements for batteries, marking of plastic parts, and other product labelling requirements. Questions about this specification should be referred to your IBM Procurement representative. Engineering Specification 46G3772 resides at: ibm.com/ibm/environment/products/especs.shtml</td>
</tr>
<tr>
<td>2. Product Content Declaration for IBM Suppliers</td>
<td>This declaration form applies to all materials, parts and products supplied for IBM hardware applications and is used to verify compliance to specific requirements of IBM Engineering Specifications 46G3772. This declaration form resides at: ibm.com/ibm/environment/products/ecpquest.shtml</td>
</tr>
<tr>
<td>3. IBM Supplier packaging environmental compliance form</td>
<td>This form is to be used by all packaging suppliers to affirm compliance to various environmental regulations including heavy metals content and other related items. It is based on the EPEAT criteria (Electronics Packaging Environmental Assessment Tool) which is an industry and EPA (U.S. Environmental Protection Agency) sponsored program as well as compliance to mandatory EU Packaging Directives (94/62/EC). This form resides at: www-03.ibm.com/procurement/proweb.net/ContentDocsByTitle/United+States~Supplier+packaging+environmental+compliance+form?OpenDocument&amp;Parent=Information+for+suppliers</td>
</tr>
<tr>
<td>4. IBM Global logistics packaging forms and processes</td>
<td>IBM has officially deployed three new Web-enabled databases for IBM packaging data collection, including environmental compliance on our Electronic Supply Chain Interlock (ESI) packaging application and supplier quarterly spend data. The new forms for these databases allow inclusion of non-IBM (Lotus Notes) users to access and submit data via the Web. These forms reside at: www-03.ibm.com/procurement/proweb.net/ContentDocsByTitle/United+States~IBM+Global+logistics+packaging+forms+and+processes?OpenDocument&amp;Parent=Information+for+suppliers</td>
</tr>
</tbody>
</table>
5. IBM Packaging Requirements Manual GA21 9261-11b, Packaging and Handling: Supplier & Interplant Requirements, August 2006

This specification defines the minimum general requirements for the preparation and packaging of all parts, subassemblies, products and materials which will be shipped to any worldwide IBM manufacturing, distribution center or customer from either suppliers or other IBM locations. This version, GA21-9261-11(b), applies whenever it or a previous version is referenced in a purchase order. All previous versions are obsolete and should be discarded. This document resides at:
www-03.ibm.com/procurement/proweb.nsf/ContentDocsByTitle/United+States~Information+for+suppliers

6. IBM ES 5897661 June 2004: Recyclable packaging materials, selection and identification

IBM uses a comprehensive waste management system to reduce the impact of our waste materials on the solid waste stream. This integrated system emphasizes source reduction and recycling programs prior to investigating alternatives for disposal. Material recycling strategies will focus upon the use of:
1. Recycled material(s) in our packaging,
2. Other materials which provide a resource for secondary applications (e.g., recyclable materials).

The purpose of the document is:
• To establish parameters for the recycled content to be included in corrugated and plastic packaging.
• To reduce and/or eliminate the use of non-recyclable materials or materials compositions that prevent or hinder the recycling of IBM packaging after use.
• To promote recycling by providing information (in the form of markings) which will increase the likelihood that our packaging materials will be recycled.

This document resides at:
www-03.ibm.com/procurement/proweb.nsf/ContentDocsByTitle/United+States~Information+for+suppliers

7. IBM ES 1041126, November 2000: Expanded packaging materials, prohibited expansion agents

IBM is focussed on sustaining the environment, and ensuring that all products used are environmentally sound. Fully halogenated chlorofluorocarbons (CFCs) and hydrogenated chlorofluorocarbons (HCFCs) are suspected of destroying the earth’s protective stratospheric ozone layer and should not be used in the manufacture of expanded packaging materials (i.e. foam). The purpose is:
1. To specify that chlorofluorocarbons (CFCs) and hydrogenated chlorofluorocarbons (HCFCs) are prohibited during any stage of the expanded foam manufacturing process.
2. To identify the types of foam packaging material that may contain prohibited expansion agents.

This document resides at:
www-03.ibm.com/procurement/proweb.nsf/ContentDocsByTitle/United+States~Information+for+suppliers

8. IBM ES 5897660, August 2006: Packaging materials, restricted heavy metals

This specification establishes packaging and reporting requirements for IBM products, parts and assemblies including those supplied by OEM suppliers. It is largely based on European Union Directive 94/62/EC (Article 11) also described as “the essential requirements” and specifically CEN Technical Report 13695-2 (2004) which addresses heavy metals compliance in packaging materials. Where appropriate, IBM will establish additional requirements consistent with its environmental objectives and policies. The purpose is:

This engineering specification (ES 5897660):
1. Identifies the elements and compounds that are restricted in packaging materials, packaging components and packaging subcomponents, and stipulates their maximum cumulative concentration levels.
2. Details the reporting obligations for compliance with the legal requirements (for example, information regarding participation in consortia and available collection and recycling systems to fund take back and recycling schemes, and other similar requirements).

This document resides at:
www-03.ibm.com/procurement/proweb.nsf/ContentDocsByTitle/United+States~Information+for+suppliers

9. IBM Various wood packaging requirements

These documents reside at:
www-03.ibm.com/procurement/proweb.nsf/ContentDocsByTitle/United+States~Information+for+suppliers

10. IBM wooden packaging: materials selection, treatment and marking requirements, May 2005

This specification provides the requirements for selection, treatment and marking wooden packaging in response to regulatory activities affecting exports of materials capable of harboring destructive pests; in particular non-indigenous insects such as the Asian longhorned beetle and the pinewood nematode.

These documents reside at:
www-03.ibm.com/procurement/proweb.nsf/ContentDocsByTitle/United+States~Information+for+suppliers

11. IBM Voluntary Product Environmental Attributes Declaration Forms for servers

The Declaration Forms reside at:
ibm.com/ibm/environment/products/declare.shtml
**Australian Packaging Stewardship Initiatives and Actions**

Crucial to the effective reduction and future elimination of the negative environmental impacts of waste packaging generated from doing business is the use of an environmental risk management approach and focus of resources where they will potentially have the greatest benefit to society and the business. The resulting solutions will need to be tailored and implemented across IBM's regional integrated supply chain in conjunction with the global product protective packaging initiatives already outlined in the Plan.

IBM is seeking to address potential impacts from:

- product protective packaging generated from IBM brand and third party IT equipment after installation at IBM and client sites, and
- waste packaging generated as a result of IBM procuring commodities to support operations at IBM sites.

Where IBM or a Business Partner has an extended and ongoing relationship with a client they also have a greater opportunity to delivery solutions for dealing with waste product protective packaging.

In 2003, approximately 26% of the weight of IT equipment imported to Australia by IBM was protective packaging. This included desktops, laptops, servers and retail store solutions. Waste packaging generated from installation of this type of computing equipment was considered to present the greatest environmental risk and greatest challenge for recovery, and cost effective and environmentally responsible processing and disposal.

In May 2004, IBM completed the global sale of the personal computing business with Lenovo. IBM no longer manufactures personal computing equipment globally. The only hardware IBM still produces and imports to Australia for possible sale into the small office market is the small x86 Server (x-series server product family).

In 2005, industry sector sales of these servers in these countries represented less than 1% of the total annual sale of personal computing equipment in the region. Further more, less than 1% of these types of servers imported by IBM were destine for the small office and none to the Household according to IDC data (Unpublished PC Tracker Summary Report, IDC, 2006).

The potential negative impact from household disposal of unwanted IBM product protective packaging is considered relatively low in Australia. The majority of IT equipment and associated software and supporting products sold by IBM and its Business Partners in the region are destine for the business, education and government markets.

An environmental assessment of business operations in the region was conducted for the IBM environmental management system. The business activities and associated environmental aspects and impacts were identified. The key business activities in the region are:

- **Product Groups**
- **Software Development**
- **Global Services and Sales**
- **Global Logistics**
- **Asset Recovery Services**
- **Site Operations**.

The key environmental aspects associated with packaging are:

- Disposal of product protective packaging from imported product and scrapping process
- Use of materials and or protective packaging for the refurbishment of product and parts
- Non-hazardous waste generation and disposal from IBM sites
- Waste recycling, that includes packaging, from IBM sites.
Think globally and act locally

The benefits of the global product stewardship program are delivered to clients worldwide, including Australia. The benefits of IBM’s worldwide environmental protective packaging design and logistics initiatives touch our clients, our own operations and ultimately benefit the environment. Table 3 outlines global, regional and local actions being and to be implemented by IBM and its integrated supply chain for addressing the impacts of packaging on the environment.

The preferred suppliers of IBM product and packaging are required to comply with the IBM environmental packaging guidelines and associated engineering specifications listed in Table 1. The Environmental Code of Practice for Packaging developed under the National Packaging Covenant is referenced locally in environmental requirements for the purchase of goods and services. These requirements are due for implementation from the fourth quarter of 2006.

IBM in Australia has developed actions around:

- avoidance of packaging waste by working with key suppliers of locally procured goods and services,
- reduction of packaging waste to landfill by continuing to improve waste recovery and recycling facilities and rollout of employee awareness programs at designated IBM sites,
- working more closely with clients to enhance recovery, reuse and recycling of unwanted product protective packaging generated from significant installations on their sites,
- providing marketing and environmental information to clients on product protective packaging and the potential benefits to them of the IBM global Product Stewardship program.

In particular, IBM in Australia is seeking to address clients’ unwanted packaging generated from significant installations of IT equipment. IBM will work with clients on a case-by-case basis to ensure any significant quantities of unwanted packaging generated from installations and rollouts is disposed of in an environmentally responsible manner.

We are also working with our preferred suppliers for waste disposal and product end-of-life management services in Australia to develop and implement a program for the recovery and recycling of soft plastic packaging waste from clients, as well as from our own operated sites.

The recovered soft plastic packaging materials can be processed and made into plastic fence posts and other similar products that provide an alternative to the use of the wood alternative.

Packaging Materials and Local Initiatives

In 2003/2004, packaging represented on average 26% of the gross weight of IBM IT equipment (including tertiary packaging) imported and sold in Australia. Desktops, laptops, small servers and Retail Store Solutions were included. Computer peripherals and stand-a-lone monitors and screens were not. Based on this data an estimated 728 tonnes of product protective packaging and tertiary packaging was imported to Australia. The key packaging materials were corrugated carton (41%), wood (48%), and soft plastics (<10%), including Expanded Polyethylene (EPE), Expanded Polystyrene (EPS) and Low Density Polyethylene (LDPE). The other plastic materials present in quantities less than 1 percent were Expanded Polypropylene (EPP), High Density Polyethylene (HDPE), Polypropylene (PP) and Polyurethane (PU). Paper was also present in the form of product and packaging labels and instructions.

Key protective packaging materials that potentially can be reused and recycled included paper, corrugated carton, some of the soft plastics, wood ARBO boxes and pallets. Packaging materials that are generally not commercially recyclable or do not have local end use markets, and therefore are disposed of to landfill, include most of the soft plastic packaging listed previously and any chemically treated wood pallets.

Table 2 provides details of the protective packaging for the IBM family of servers. The xSeries server is similar in size to a desktop and has application in the small office market. For the server family, on average, 16% of the product by weight is protective packaging and consisting of the following materials, Corrugated Cardboard, Expanded Polystyrene, Expanded Polyethylene, Low Density Polyethylene, Polypropylene. Wood pallets and ARBO crates used to provide bulk shipment solutions (i.e. tertiary packaging) are reused and recycling at the local warehouse and reused by IBM’s logistics and transport suppliers, where feasible. A reverse logistics process is in place to return the wooden ARBO crates.
Table 2: IBM server family and composition of product protective packaging

<table>
<thead>
<tr>
<th>IBM Machine</th>
<th>Machine Weight (kg)</th>
<th>Protective Packaging Material</th>
<th>Weight of packaging without/(with) Tertiary packaging (kg) *</th>
<th>Total weight of packaged product without/(with) Tertiary packaging (kg) *</th>
<th>Percentage packaging to product by weight without/(with) Tertiary packaging (%) *</th>
</tr>
</thead>
<tbody>
<tr>
<td>xSeries 200 – model 8478</td>
<td>19.5</td>
<td>Corrugated Cardboard (2.3kg), EPS (0.304kg), LDPE (0.132kg) &amp; Wood (2.998kg).</td>
<td>2.736 (5.734)</td>
<td>22.236 (25.234)</td>
<td>12% (23%)</td>
</tr>
<tr>
<td>xSeries 220 – model 8654</td>
<td>15.9</td>
<td>Corrugated Cardboard (2.341kg), EPS (0.304kg), LDPE (0.132kg) &amp; Wood (2.998kg).</td>
<td>2.777 (5.775)</td>
<td>18.677 (21.675)</td>
<td>15% (27%)</td>
</tr>
<tr>
<td>xSeries 230 – model 8658-61Y and xSeries 240 – model 8664-81Y</td>
<td>37.5</td>
<td>Corrugated Cardboard (4.446kg), PP (0.520kg), LDPE (0.470kg) &amp; Wood (5kg).</td>
<td>5.436 (10.436)</td>
<td>42.936 (47.936)</td>
<td>13% (22%)</td>
</tr>
<tr>
<td>iSeries 9406 – model 270 with feature code 7104</td>
<td>52.7 - 80.0</td>
<td>Corrugated Cardboard (17.604kg), EPE (1.210kg), LDPE (0.179kg), Paper (0.009kg) &amp; Wood (6.3kg).</td>
<td>19.002 (25.302)</td>
<td>99.002 (105.302)</td>
<td>19% (24%)</td>
</tr>
<tr>
<td>iSeries 9406 – model 820</td>
<td>96.0</td>
<td>Corrugated Cardboard (17.898kg), EPE (0.830kg), LDPE (0.189kg), Paper (0.013kg) &amp; Wood (6.3kg).</td>
<td>18.92 (25.22)</td>
<td>114.92 (121.22)</td>
<td>16% (21%)</td>
</tr>
<tr>
<td>pSeries 7025 – model 620</td>
<td>70.0 – 95.0</td>
<td>Corrugated Cardboard (13.4kg), EPE (1.12kg), LDPE (0.18kg), Paper (0.052kg) &amp; Wood (6.3kg).</td>
<td>14.752 (21.052)</td>
<td>109.752 (116.052)</td>
<td>13% (18%)</td>
</tr>
<tr>
<td>pSeries 7026 – model M80 &amp; 6H1</td>
<td>126</td>
<td>Corrugated Cardboard (9.10kg), EPE (2.06kg), LDPE (0.07kg) &amp; Wood (10.4kg).</td>
<td>11.23 (21.63)</td>
<td>137.23 (147.63)</td>
<td>8% (15%)</td>
</tr>
<tr>
<td>pSeries – model 620 &amp; S85</td>
<td>400</td>
<td>Corrugated Cardboard (17.8kg), EPE (1.528kg), LDPE (0.4kg), EPS (0.06), Paper (2.2kg) &amp; Wood (53.7kg) &amp; Metal (0.5kg).</td>
<td>21.988 (76.188)</td>
<td>421.988 (476.188)</td>
<td>5% (16%)</td>
</tr>
<tr>
<td>zSeries 2064 – model -M &amp; -J</td>
<td>1,350</td>
<td>Composite Foam glued to Corrugated Cardboard (1kg), EPE (4kg), LDPE (0.4kg), EPS (0.06), HDPE (2.2kg), PU cushion (0.544kg) &amp; Wood (289g) &amp; Metal (7kg).</td>
<td>5.544 (301.544)</td>
<td>1,355.544 (1,651.544)</td>
<td>&lt;1% (18%)</td>
</tr>
</tbody>
</table>

Key: * = Tertiary packaging includes wood portion of pallet or crate and metal associated with the ARBO box.
Dealing with product protective packaging waste generated at client sites

Generally the majority by weight of waste protective packaging materials generated from installations on client sites lend themselves to being recycled, particularly the corrugated cardboard. The wood pallets can be reused by the transport companies and the ARBO crates are recovered and returned to IBM for reuse. Generally only the soft plastics are sent to landfill. For large installations, soft plastics become a disposal challenge and go to landfill. IBM is investigating take back solutions for these types of situation where large volumes of waste plastic packaging become a problem. Clients are becoming increasing interested in end-of-life and product and packaging take back services. IBM will continue to work directly with clients to negotiate suitable solutions on a case by case basis. Table 3 sets out the actions that will be delivered for the Product Group and Global Services and Sales business.

Dealing with product protective packaging waste generated at preferred supplier sites

Supplier operations for global logistic services in Australia include a national warehouse located in Sydney. The parts storage and logistics team reuse a significant portion of the packaging materials received at the warehouse for the parts reutilisation business. With the advent of direct shipping from the global manufacturing site to the client, the amount of packaging materials available for reuse is decreasing. It stands to reason that more waste product protective packaging is being dealt with by the customer and disposed at IBM operated data centres and other key sites. The Global Logistics team has also had a reverse logistics process in place for return of ARBO boxes, which are used to ship mainframe server equipment to clients. The used ARBO boxes are used for the storage and shipment of other equipment.

Supplier operations for the refurbishment of used IT equipment and used parts is located in Sydney. Used packaging generated from this process is reused and recycled, where feasible. The supplier will begin providing IBM monthly waste disposal reports in the forth quarter of 2006. Options are being investigated to recover and recycle soft plastics packaging waste generated from these operations and currently going to landfill.

Dealing with non-hazardous solid waste at IBM sites

Australia

IBM has established a global recycling target for non-hazardous waste of 67% by weight.

In 2005, IBM Australia was able to recycle almost 50% by weight of the non-hazardous waste it generated from the eight key sites, an increase of 4% on 2004. IBM believes this improvement stems from continual improvement of site recycling facilities. The four best performing sites for recycling of non-hazardous waste where the East Botany national warehouse (59%); St Leonards data centre (58%); West Pennant Hills site (59%) and the Baulkham Hills data centre (41%). The St Leonards data centre achieved a significant recycling rate as a result of bulk toner bottle recycling and cardboard recycling facilities established to accommodate the printing and mailing operation located on site.

In 2005, total quantity of non-hazardous waste generation from the eight key sites fell by 2% to 1,162.5 tonnes on 2004. Non-hazardous solid waste made up the majority at 1,044.6 tonnes, with non-hazardous liquid waste making up 117.9 tones. In 2005, non-hazardous solid waste disposed to landfill fell by 8% to 583 tonnes on 2004, helping to further divert waste from landfill.

In addition to these initiatives, the company is implementing waste avoidance strategies to reduce the amount of waste being generated and being sent to landfill. Avoidance initiatives include raising employee awareness; introducing software to turn highly paper dependent processes into electronic processing and approval systems; and defaulting networked printers to double-sided printing. IBM is also working locally to modify purchasing practice and positively influence the local supply chain to help to minimise waste packaging.

Trend in Non-hazardous Waste Disposed to Landfill from IBM Australia Sites from 2000 to 2005

In 2005 IBM Australia operated sites recycled 4% by weights more of our solid materials. Of the recycled waste, office paper (26.1% by weight) and cardboard (13.3% by weight) were the most significant, with office paper capture rising by 15% by weight on 2004. Also recycled were wooden pallets (2.7% by weight), building materials (<1% by weight) and glass and plastic bottles and containers, cartons and aluminium cans; and printer consumables (2.1% by weight).

Materials disposed to landfill included: general trash (39.3% by weight) – a decrease of 9%; media tapes and disks (9.3% by weight); and cafeteria waste (6.4% by weight) – a decrease of 41% on 2004.

Of the 630 tonnes of non-hazardous waste generated and disposed from the six additional sites in 2005, an estimated 71% (478 tonnes) was general trash destined for landfill; 20% (125 tonnes) was office paper that was recycled and 9% (57 tonnes) was associated with other recyclables, such as cardboard (4.7t), mixed materials (50t) collected through a Green Office recycling initiative, and printer consumables (1.8t) collected under the IBM Printer Supplies Return Program.

Of the additional 262.4 tonnes of non-hazardous waste generated from the 43 IBM leased and client sites 77% (203 tonnes) was office paper that was recycled. Other materials recycled included cardboard and toner cartridges. The materials sent to landfill were general trash (18% or 46.6 t) and media taps and CDs (almost 2% or 4.2t).
Green Office Recycling Initiative

In 2005, the property manager, Stocklands, invited IBM Australia to participate in a Green Office Recycling Initiative at its national headquarters in St Leonards. Prior to implementing the recycling program, which started in August 2005, the site’s monthly average recycling rate was 30% of the office waste, which consisted of office paper and printer consumables. This recycling rate increased to an average of 60% in the month of December 2005 when all the materials streams from the site are included. On average over the five month period, 53% of the 107 tonnes of general trash generated at the site were diverted from landfill for recycling.

To build on this success, IBM will establish a pilot Green Office Recycling Initiative at our West Pennant Hills site in early 2006 and also conduct trials at other key sites to help lift our non-hazardous recycling rate.

Trend for Disposal of Non-hazardous Waste from Australian sites from 2000 to 2005

<table>
<thead>
<tr>
<th>Year</th>
<th>(Number of sites) and square meters of building area (m² nla)</th>
<th>Average Quantity of Material Disposed per Square Metre of Net Leased Area (kg/m² nla)</th>
<th>Company Range (kg/m² nla)</th>
<th>Average Quantity of Material Disposed per Full-time Equivalent Employee &amp; Contractor (kg/FTE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>(8) 85,081</td>
<td>15</td>
<td>2 - 24</td>
<td>-</td>
</tr>
<tr>
<td>2001</td>
<td>(8) 85,081</td>
<td>15</td>
<td>4 - 25</td>
<td>-</td>
</tr>
<tr>
<td>2002</td>
<td>(8) 85,081</td>
<td>19</td>
<td>9 - 70</td>
<td>-</td>
</tr>
<tr>
<td>2003</td>
<td>(8) 80,056 *</td>
<td>13</td>
<td>4 - 20</td>
<td>355</td>
</tr>
<tr>
<td>2004</td>
<td>(8) 79,723</td>
<td>15</td>
<td>10 - 37</td>
<td>403</td>
</tr>
<tr>
<td>2005</td>
<td>(8) 79,723 #</td>
<td>15</td>
<td>10 - 39</td>
<td>383</td>
</tr>
</tbody>
</table>

Key: * = The Rosebery warehouse was sold and replaced by the Homebush warehouse; # = the Homebush warehouse was amalgamated with the East Botany warehouse in June 2005 ^ = amended records as was using solid waste rather than total non-hazardous waste records.

In 2005, the average amount of non-hazardous waste disposed of from the eight key leased and operated facilities remained steady at 15 kilograms per square metre of net leased area. On average each FTE generated 383 kilograms of non-hazardous waste, down by 5% on 2004. We believe this reduction is likely due to the great number of employees at these sites electing to work from home, as well as, the impact of employee awareness and implementation of avoidance initiatives at IBM sites.
### Table 3 IBM Actions for Promoting Packaging Stewardship in Australia.

<table>
<thead>
<tr>
<th>Product Groups</th>
<th>Action</th>
<th>Key Performance Indicator</th>
<th>Annual Target</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Global Initiatives</strong></td>
<td>1. Certify all global suppliers of IBM logo product to IBM’s environmental product protective packaging requirements. See Table 1 for details of the requirements.</td>
<td>IBM has a well established set of global environmental requirements for product protective packaging. These are listed in Table 1. These requirements generally meet or exceed the requirements outlined in The Environmental Code of Practice for Packaging (ECoPP).</td>
<td>1Ai. 80% of suppliers certified as complying with IBM’s environmental product protective packaging requirements by end of 2006. 1Aii. 100% of suppliers certified as complying with IBM’s environmental product protective packaging requirements by end of 2007. 1Aiii. Annual review performance of the certified suppliers against IBM’s environmental product protective packaging requirements.</td>
</tr>
<tr>
<td></td>
<td>2. Conduct periodic reviews and annually report on the percentage of relevant suppliers that have in place and comply with the requirements.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Local and Regional Initiatives</strong></td>
<td>1. Track and report the weight and type of product protective packaging imported annually into the Australian and New Zealand markets.</td>
<td>IBM logo IT equipment is 100% imported. IBM Australia Limited is the registered importer.</td>
<td>In May 2004 the personal computer business was sold to Lenovo. Therefore, 2005 shall be used as the baseline year for reporting packaging imported by IBM to Australia. This data will be reported in October 2006 IDAS for product protective packaging imported to Australia.</td>
</tr>
<tr>
<td></td>
<td>i. Use country sales reports and the IBM Master Packaged Products data base to track the type and total quality of packaging materials.</td>
<td>1A. Report tonnes of product protective packaging by material type imported by IBM. 1B. Report total tonnes of packaged product imported by IBM. 1C. Report the ratio of product to packaging imported by IBM. Report source of packaging, type and weight of materials for the 2006 calendar year.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ii. Wood Arbo boxes and pallets will be reported separately and not reported in the KPIs.</td>
<td>2A. Report on product protective packaging initiatives that promote: use of recycled content materials; efficient use of materials, elimination of toxic substances and hazardous materials; and encourage recycling at end-of-life.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Provide environmental information on the environmental attributes of IBM products, including packaging details, to bid, marketing and sales teams and business partners.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Continue to include environmental information, including for packaging take back, in relevant bid responses.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Software Development</strong></td>
<td>1. Packaging impacts from the software business are minimal. Software is primarily sold to commercial enterprises. The software is installed by qualified service personnel and is generally not sold in product protective packaging through retail stores for purchase by the general consumer.</td>
<td>See Site Operations section for relevant actions.</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Action</td>
<td>Key Performance Indicator</td>
<td>Annual Target</td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>--------------------------</td>
<td>---------------</td>
<td></td>
</tr>
<tr>
<td><strong>Global Services and Sales</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Work directly with clients on a case by case basis to offer packaging take back for large installations of IT equipment. Investigate the need to and feasibility of offering a more formalised service in the form of an IBM ServicePac. (Initial trials have not proven conclusive. Significant challenges exist associated with logistics and administration).</td>
<td>1A. Report local examples of environmental product protective packaging initiatives.</td>
<td>1Ai. Report local progress on key initiatives.</td>
<td></td>
</tr>
<tr>
<td>2. Continue to include environmental requirements, including for packaging take back, in relevant local bid responses.</td>
<td>2A. Type of business sectors requesting environmental packaging requirements from IBM in Australia.</td>
<td>2Ai. Report business sectors active in working with IBM in their supply chains to manage packaging use and disposal.</td>
<td></td>
</tr>
<tr>
<td>3. Develop and introduce specific awareness initiatives for IBM IT equipment installers and maintenance personnel to ensure they are aware and use existing recycling facilities at IBM sites.</td>
<td>3A. Percentage of IBM IT equipment installers and maintenance personnel that have had environmental training.</td>
<td>3Ai. 50% of IBM IT equipment installers and maintenance personnel to have had training delivered by end 2006. 3Aii. 100% of IBM IT equipment installers and maintenance personnel to have had training delivered by end 2007. 3Aiii. Maintain awareness and education on disposal of unwanted packaging for employees that install and maintain IT equipment. Conduct periodic training as required.</td>
<td></td>
</tr>
<tr>
<td><strong>Global Logistics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Continue to report packaging reuse, recycling and disposal to landfill generated from the IBM operation at the national warehouse in Sydney.</td>
<td>1A. Report the weight and percentage of non-hazardous waste disposed to landfill and recycled from the national transportation and logistics operations at the Sydney warehouse. Key material streams to be reported separately include cardboard, soft plastics and wood.</td>
<td>1Ai. Meet or exceed a 67% Annual Non-hazardous Waste Recycling Target.</td>
<td></td>
</tr>
<tr>
<td>2. Investigate, and if feasible, implement a solution for recovery and recycling of soft plastics generated from the national transportation and logistics operations. The product distribution, parts reutilisation and product scrapping processes are centrally located at the national warehouse located in Sydney.</td>
<td></td>
<td>2Ai. Report progress.</td>
<td></td>
</tr>
<tr>
<td><strong>Asset Recovery</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Work with the global product refurbishment supplier, Solectron, to report information on packaging reuse, recycling and disposal to landfill associated with the IBM refurbishment business located in Sydney.</td>
<td>1A. Report waste packaging by type, weight and disposal method. Materials to be reported separately include cardboard, soft plastics and wood.</td>
<td>1Ai. Identify baseline waste packaging disposal rates by type of material and disposal method for Q4 2006. 1Aii. Develop suitable packaging recycling targets in conjunction with the global supplier by end 2006 and report on them from 2007.</td>
<td></td>
</tr>
<tr>
<td>2. Investigate, and if feasible, implement a solution for recovery and recycling of soft plastics generated from the refurbishment operations managed by the global supplier, Solectron.</td>
<td>2A. Report outcome in the IBM Corporate Responsibility Report for Australia.</td>
<td>2Ai. Report progress.</td>
<td></td>
</tr>
<tr>
<td>Action</td>
<td>Key Performance Indicator</td>
<td>Annual Target</td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>--------------------------</td>
<td>---------------</td>
<td></td>
</tr>
<tr>
<td>1. Continue to develop and introduce new employee awareness initiatives to help avoid waste and increase recycling at IBM and client sites in Australia.</td>
<td>1A. Report types of initiatives developed and implemented to help increase employee and contractor awareness on waste avoidance, reuse and recycling, and to encourage the use of recycling facilities at IBM sites.</td>
<td>1Ai. Report examples of initiatives.</td>
<td></td>
</tr>
<tr>
<td>2. Continue to improve and expand recycling facilities at IBM’s 8 leased and operated sites, including expansion of the Green Office Recycling Initiative. Evaluate and analyse disposal trends and focus waste management strategy to help actively avoid, reuse and recycle waste packaging.</td>
<td>2A. Report the weight and percentage of non-hazardous waste recycled from the 8 key leased and operated sites in Australia. 2B. Were feasible, also report separately on packaging waste generated at the 8 key IBM sites, including cardboard, mixed glass and plastic containers and aluminium cans. 2C. Report the weight of non-hazardous waste generated for each square meter of net leased area. 2D. Report the weight of non-hazardous waste generated for each full-time equivalent employee and contractor.</td>
<td>2Ai. 67% Non-hazardous Waste Recycling Target. 2Ci. Tonnes of non-hazardous waste disposed per square meter of net leased area. 2Di. Tonnes of non-hazardous waste disposed per full-time equivalent employee and contractor.</td>
<td></td>
</tr>
<tr>
<td>3. Investigate a solution for the reuse and recycling of soft packaging plastics generated at the 8 key IBM sites in Australia.</td>
<td>3A. Report tonnes of soft plastic packaging being recycled from designated IBM sites. 3B. Report reuse initiatives undertaken by the business.</td>
<td>3Ai. 67% Nonhazardous Waste Recycled from the 8 key IBM sites.</td>
<td></td>
</tr>
</tbody>
</table>

**General Supplier Requirements**

1. IBM’s environmental packaging requirements for designated commodities will continue to be incorporated in key local and regional supplier agreements, where relevant. These requirements promote better design, avoidance, reuse and recycling. The Environmental Code of Practice for Packaging will be referenced where relevant.
2. Ensure compliance with IBM’s environmental packaging requirements by conducting periodic evaluations of the performance of relevant suppliers. The environmental performance review will be incorporated into the standard evaluation process for suppliers.

<table>
<thead>
<tr>
<th>General Supplier Requirements</th>
<th>Key Performance Indicator</th>
<th>Annual Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. IBM’s environmental packaging requirements for designated commodities will continue to be incorporated in key local and regional supplier agreements, where relevant. These requirements promote better design, avoidance, reuse and recycling. The Environmental Code of Practice for Packaging will be referenced where relevant. 2. Ensure compliance with IBM’s environmental packaging requirements by conducting periodic evaluations of the performance of relevant suppliers. The environmental performance review will be incorporated into the standard evaluation process for suppliers.</td>
<td>1A. Periodical review and annually report on the percentage of suppliers that have in place and comply with IBM’s local environmental packaging requirements. The relative importance (by financial spend or and overall consumption) will be reported.</td>
<td>1Ai. Report the percentage of suppliers in all relevant commodities that comply with IBM’s local environmental packaging requirements.</td>
</tr>
</tbody>
</table>

**Reporting Performance Publicly**

1. Submit annual packaging stewardship progress report to the National Packaging Covenant Council. a. Progress reports are to be aligned with the company’s calendar year business reporting period. b. The Progress Report will be incorporated into the IBM Corporate Responsibility (CR) Report covering Australia. 2. IBM will participate in annual reporting of relevant metrics in the Industry Data Aggregation System (IDAS). 1A. Submit the first Progress Report in line with the calendar year and release of the Corporate Responsibility Report covering Australia in June each year. The first report to be released 2007. 2A. Submit relevant metrics in the Industry Data Aggregation System (IDAS) as required in October 2006.

<table>
<thead>
<tr>
<th>Reporting Performance Publicly</th>
<th>Key Performance Indicator</th>
<th>Annual Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Submit annual packaging stewardship progress report to the National Packaging Covenant Council. a. Progress reports are to be aligned with the company’s calendar year business reporting period. b. The Progress Report will be incorporated into the IBM Corporate Responsibility (CR) Report covering Australia. 2. IBM will participate in annual reporting of relevant metrics in the Industry Data Aggregation System (IDAS).</td>
<td>1A. Submit the first Progress Report in line with the calendar year and release of the Corporate Responsibility Report covering Australia in June each year. The first report to be released 2007. 2A. Submit relevant metrics in the Industry Data Aggregation System (IDAS) as required in October 2006.</td>
<td>1Ai. Report packaging stewardship initiatives and performance against agreed KPIs outlined in this action plan in the IBM Corporate Responsibility Report covering Australia. 2Ai. Report the relevant data from the baseline year of 2005 in the October 2006 Industry Data Aggregation System (IDAS).</td>
</tr>
</tbody>
</table>
Company National Packaging Covenant Coordinator
Environmental Manager, Michael Chanell
IBM Corporate Environmental Affairs
Postal Address: IBM Australia, PO Box 400, Pennant Hills, NSW, 2120
Phone #: (02) 9354 7062 Mobile #: 0411 024 928
e-mail: mchanell@au1.ibm.com

References:
1. IBM Corporate Responsibility and Environmental Reports. Various past local and corporate documents can be accessed at:
2. IBM Corporate Responsibility Report for Australia (2006) resides at:
3. The National Packaging Covenant, Strategic Partnerships in Packaging, A commitment to the Sustainable Manufacture, Use and Recovery of Packaging, 15 July 2005 to 30 June 2010. The document resides at:
   www.deh.gov.au/settlements/waste/covenant/information.html#information
   www.deh.gov.au/settlements/waste/covenant/information.html#information
5. New Zealand Packaging Accord 2004 and related documents. The documents reside at
Appendix 1: Key business activities and environmental aspects applicable to operations in Australia

Appendix 1 presents the key results of an environmental risk assessment undertaken for packaging use and disposal associated with the company’s operations in Australia.

<table>
<thead>
<tr>
<th>Business Activity</th>
<th>Environmental Aspect</th>
<th>Impact from Unwanted Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Groups</td>
<td>Environmental risk considered relatively high</td>
<td></td>
</tr>
<tr>
<td>i. Product design and development (NB: outside Australia)</td>
<td>i. Product energy consumption (direct energy consumption, heating and cooling requirements)</td>
<td>• The global personal computing business owned by IBM was sold to Lenovo in 2004.</td>
</tr>
<tr>
<td>iii. Design customer solutions</td>
<td>iii. Product chemical emissions</td>
<td>• Twenty percent of this equipment was identified as being sold to the Home and small office markets in 2004.</td>
</tr>
<tr>
<td>iv. Purchase material, parts and/or components from suppliers (NB: outside Australia)</td>
<td>iv. Potentially hazardous parts and assemblies (e.g., battery, heavy metals)</td>
<td>• In 2005, IBM small servers (i.e. x86 Server) destined for the small office market in Australia represented less than 1% of total sales to households.</td>
</tr>
<tr>
<td>v. Product protective packaging use and disposal (for shipping) (volume reduction, reusable and/or recycled materials, hazardous materials)</td>
<td>v. Product protective packaging use and disposal (for shipping) (volume reduction, reusable and/or recycled materials, hazardous materials)</td>
<td>• In 2004, IBM shipped over 45,300 units of personal computing equipment into New Zealand (Unpublished PC Tracker Summary Report, IDC, 2006). Almost 6% of this personal computing equipment was identified as being sold to the home and small office sectors in this year.</td>
</tr>
<tr>
<td>vi. Product supplies and/or consumables (e.g., toners, cartridges, paper, storage media, disposal)</td>
<td>vi. Product supplies and/or consumables (e.g., toners, cartridges, paper, storage media, disposal)</td>
<td>• As is the case for Australia less than 0.1% (e.g. 55 units in 2004) of shipments for the x86 server were to the small office sector in New Zealand.</td>
</tr>
<tr>
<td>vii. Product reuse and/or recyclability (design for disassembly, product return, reuse, upgradeability and/or modularity).</td>
<td>vii. Product reuse and/or recyclability (design for disassembly, product return, reuse, upgradeability and/or modularity).</td>
<td>• Impact from disposal of unwanted packaging from households associated with IBM logo product sold in Australia going forward is considered limited.</td>
</tr>
</tbody>
</table>

• In 2004, the majority of IT equipment and associated software and supporting products shipped into Australia by IBM destined for the business, education and government sectors.

• Packaging represented an average 26% of the gross weight of 2003 personal computing equipment sales by IBM in Australia.

• In 2004 the key packaging materials measured as a percentage of the total weight of the packaging imported with the product was: corrugated carton (41%), wood (48%), and soft plastics (<10%), including Expanded Polyethylene (EPE), Expanded Polystyrene (EPS), Low Density Polyethylene (LDPE) and metal (1%).

• Key reused & recycled materials were paper, cardboard and wood ARBO boxes and pallets.

• Unwanted materials were primarily soft plastics and wood pallets.
### Business Activity: Software Development – Environmental risk from packaging considered relatively low

<table>
<thead>
<tr>
<th>Environmental Aspect</th>
<th>Impact from Unwanted Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>i. Office-type activities</td>
<td>Consumption of packaging materials. The key materials by weight are: corrugated carton and Low Density Polyethylene (LDPE).</td>
</tr>
<tr>
<td>ii. Development activities</td>
<td>- The key impact is the disposal of used packaging from logo and third party product sold to business (e.g. reused, recycled and unwanted). Environmental impact considered limited as business software is generally installed on electronic storage media devices that are reused by qualified System Service Representatives.</td>
</tr>
<tr>
<td></td>
<td>- Key reused &amp; recycled materials are paper and cardboard.</td>
</tr>
<tr>
<td></td>
<td>- Unwanted materials are primarily soft plastics.</td>
</tr>
</tbody>
</table>

### Global Services & Sales – Environmental risk from packaging considered relatively high

<table>
<thead>
<tr>
<th>Environmental Aspect</th>
<th>Impact from Unwanted Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>i. Use of materials, consumables and/or packaging.</td>
<td>1. Consumption of packaging materials. The key materials by weight are: corrugated carton, wood, Expanded Polyethylene (EPE), Expanded Polystyrene (EPS), Low Density Polyethylene (LDPE) and metal.</td>
</tr>
<tr>
<td>ii. Small quantity chemical use from service chemicals and product consumables.</td>
<td>2. The key impact is from disposal of used packaging from logo and third party product and product consumables sold to business (e.g. reused, recycled and unwanted).</td>
</tr>
<tr>
<td>iii. Petroleum storage and emergency generators.</td>
<td>3. Key reused &amp; recycled materials are paper and cardboard.</td>
</tr>
<tr>
<td>iv. Energy consumption.</td>
<td>4. Unwanted materials are primarily soft plastics and wood.</td>
</tr>
<tr>
<td>v. Nonhazardous waste discharges.</td>
<td></td>
</tr>
<tr>
<td>vi. Hazardous waste discharges.</td>
<td></td>
</tr>
<tr>
<td>vii. Product end-of-life management.</td>
<td></td>
</tr>
</tbody>
</table>

### Global Logistics – Environmental risk from packaging consider to be medium

<table>
<thead>
<tr>
<th>Environmental Aspect</th>
<th>Impact from Unwanted Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>i. Hazardous and nonhazardous materials transportation</td>
<td>1. Disposal of waste packaging materials generated from the product scrapping process. The key materials by weight: corrugated carton, wood, Expanded Polyethylene (EPE), Expanded Polystyrene (EPS), Low Density Polyethylene (LDPE) and metal.</td>
</tr>
<tr>
<td>ii. Packaging warehouse operations</td>
<td>2. Key reused &amp; recycled materials are paper, cardboard box, wood ARBO boxes and pallets, Expanded Polyethylene (EPE), and Expanded Polystyrene.</td>
</tr>
<tr>
<td>iv. Product end of life management (see asset recovery service).</td>
<td>3. Unwanted materials sent to landfill are primarily soft packaging plastics.</td>
</tr>
<tr>
<td></td>
<td>4. Depletion of landfill capacity.</td>
</tr>
<tr>
<td></td>
<td>5. Loss of potentially reusable and recyclable materials from poorly designed recovery and recycling programs.</td>
</tr>
<tr>
<td></td>
<td>6. Littering of the environment from poor management of organisations and residential kerbside waste disposal and recycling programs.</td>
</tr>
<tr>
<td></td>
<td>7. Atmospheric warming from Greenhouse gas emissions of methane and other CO2 equivalent gasses associated with the break down of putrescible waste disposed in landfills.</td>
</tr>
<tr>
<td></td>
<td>8. Nuisance noise emissions from waste collection vehicle traffic adversely impacting neighbours during collection.</td>
</tr>
</tbody>
</table>
Business Activity | Environmental Aspect | Impact from Unwanted Packaging
--- | --- | ---
Asset Recovery Services – Environmental risk from packaging considered relatively low
Product end-of-life management:  
i. Supplier selection  
ii. Demanufacturing  
iii. Sorting  
iv. Disassembly  
v. Storage  
vi. Parts recovery, resale and/or recycling  
vii. Parts cleaning  
viii. Interaction with Brokers.
| i. Materials recycling.  
ii. Chemical use (cleaners).  
iii. Energy consumption.  
iv. Nonhazardous waste discharges (plastic, cardboard, metal, wood).  
v. Hazardous waste discharges (lead acid batteries, mercury lamps, cathode ray tubes).  
vi. Water discharges.  
vii. Waste recycling.  
viii. Air emissions.  
ix. Water consumption (washing activities).  
x. Noise. | 1. Consumption of protective packaging materials to protect refurbished IT equipment.  
2. The key impact is from the disposal of used packaging from logo and third party product and product consumables sold to and/or returned from business (e.g. reused, recycled and unwanted).  
3. Key reused & recycled materials are paper and cardboard. The key materials by weight are: corrugated carton, wood ARBO boxes and pallets, Expanded Polyethylene (EPE), Expanded Polystyrene (EPS), and Low Density Polyethylene (LDPE).  
4. Unwanted materials are primarily soft plastics.  
5. Depletion of landfill capacity.  
6. Loss of potentially reusable and recyclable packaging materials due to inefficient recovery facilities.  
7. Litter of the environment caused by poorly designed materials recovery programs.  
8. Atmospheric warming from Greenhouse gas emissions of methane and other CO2 equivalent gases associated with the break down of putrescible waste disposed in landfills.  
Site Operations – Environmental risk from packaging is considered medium
i. Groundwater and/or soil remediation  
ii. Utility operations  
iii. Land use  
iv. Construction and/or demolition  
v. Waste recycling  
vi. Maintenance  
vii. Waste treatment  
viii. Chemical distribution  
ix. Reproduction & graphics  
x. Medical activities  
xi. Nitrogen generation  
xii. Office air conditioners (freon use)  
xiii. Refrigerants in vending machines  
xiv. Hazardous materials transport  
xv. Cafeteria waste and grease traps  
xvi. Product end of life management  
| i. Noise  
ii. Use of materials, consumables and/or packaging  
iii. Chemical use (including on-site storage, distribution, and handling)  
iv. Energy consumption  
v. Nonhazardous waste discharges  
vi. Hazardous and regulated waste discharges (wastewater treatment sludge).  
vii. Waste water discharges  
viii. Stormwater and/or irrigation water discharges  
ix. Waste recycling  
x. Groundwater and soil cleanup  
xi. Air emissions  
xii. Water consumption  
xiii. Unplanned releases  
xiv. Odour  
xv. Medical waste discharges | 1. Disposal of used packaging from IBM logo and third party product and product consumables installed at data centres for clients and internal operations (e.g. reused, recycled and unwanted).  
2. The key materials are: corrugated carton, wood, Expanded Polyethylene (EPE), Expanded Polystyrene (EPS), and Low Density Polyethylene (LDPE) and metal (e.g. reused, recycled and unwanted).  
3. Key reused & recycled materials are paper, cardboard and wood ARBO boxes and pallets.  
4. Unwanted materials are soft plastics.  
5. Depletion of landfill capacity.  
7. Atmospheric warming from Greenhouse gas emissions of methane and other CO2 equivalent gases associated with the breakdown of putrescible waste (e.g. paper & cardboard) disposed in landfills.  
8. Minor risk to the environment posed from the disbursement of packaging litter from poorly maintained company site waste disposal facilities.  
9. Nuisance noise emissions from waste collection vehicle traffic adversely impacting neighbours during collection. This impact is closely managed and the impact is considered negligible.