FOREWORD BY CHAIRMAN, SINGAPORE PACKAGING AGREEMENT GOVERNING BOARD

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It did not seem too long ago when we first started discussions on how we, as an industry, could work with the government to reduce packaging waste, which makes up about one-third of household waste. We embarked on the Singapore Packaging Agreement journey in early 2006, and since then, I have seen it evolve, from its conceptualisation, to development and its eventual implementation in July 2007.

The Agreement provides a unique platform for all parties in the packaging supply chain to work together to find practical means to reduce waste. The programme promotes continuous learning and improvement, and encourages companies to share their experiences and best practices, so that the learning curve is shortened for all, and the industry, as a whole, can benefit and improve.

Within the first year of the Agreement, a number of our signatories demonstrated their commitment early and found ways to reduce packaging usage, effectively averting as much as 850 tons/year of packaging waste.

In the second year of the Agreement, we have seen more signatories put in efforts to review their packaging designs and business processes to see how packaging resources can be optimised. Over the past year, there have also been several drivers to spur companies to undertake projects to reduce waste. Internally, we see more companies assuming greater product stewardship of their packaging as a form of corporate social responsibility, while the weaker market conditions provided an added impetus for companies to find innovative ways to avoid cost increases through reducing waste.

This booklet documents the initiatives adopted by the signatories to reduce packaging and packaging waste. Many of the measures taken do not just improve the companies’ environmental performance, but also their bottomline. The 12 signatories featured in this booklet will receive the 3R Packaging Awards, in recognition of their efforts to reduce packaging waste.

I congratulate the recipients of this year’s Awards. It is my sincere wish that the signatories will make further progress towards the achievement of the Singapore Packaging Agreement objectives over the next three years, and we look forward to more companies joining us so that our collective efforts to reach the goals of the agreement can be further enhanced.

Mr Albert Lim
Chairman, Singapore Packaging Agreement Governing Board
INTRODUCTION

The Singapore Packaging Agreement is a voluntary commitment by the industry, government and NGO sectors to work together over a period of 5 years to reduce packaging waste in Singapore. The Agreement is non-prescriptive to provide greater flexibility for cost-effective solutions to be adopted to reduce packaging waste.

The Singapore Packaging Agreement Governing Board, which comprises senior representatives from industry, government and NGOs, oversees and drives the implementation of the Agreement. The members of the Governing Board are listed in the Annex.

The Singapore Packaging Agreement has grown from strength to strength since its inception. From the 32 organisations that came together to sign the landmark Agreement on 5 June 2007, the number of signatories has increased to a total of 82 by the end of June 2009.

The signatories have also made commendable progress in reducing packaging waste since the signing of the Agreement. Many have implemented changes to their packaging and processes to reduce waste at source. Some have even embarked on other environmental initiatives such as setting up systems to reuse or recycle waste, or conducting educational activities and programmes to raise awareness on waste minimisation and resource conservation.

The 3R Packaging Awards have been developed to give recognition to signatories who have made outstanding achievements and contributions towards the goals of the Singapore Packaging Agreement. Two award categories - Distinction and Merit Awards - are presented. This booklet features the achievements of the 12 signatories who will receive Distinction and Merit Awards in the second Packaging Awards Ceremony on 26 Sep 2009.
BACKGROUND

F&N Coca-Cola (S) Private Limited is a bottling entity fully owned by The Coca-Cola Company since 1999. Its main business includes the manufacturing, sale and distribution of a total beverage portfolio including refreshment brands such as Coca-Cola and Sprite and still beverages like Heaven and Earth tea and Minute Maid juices.

The Coca-Cola Company has a quality system that it adheres to, from processing to packaging to pouring. For The Coca-Cola Company, quality is more than just something that can be tasted, seen, measured or managed.

MEASURES TAKEN TO REDUCE PACKAGING WASTE

F&N Coca-Cola implemented several measures to reduce PET packaging waste in the first quarter of 2009, in conjunction with the upgrading of the PET line. In the previous year, the weight of the 500 ml and 1.5 litre PET bottles was reduced by 2 g each to 27.5 g and 46 g, respectively. This year, the weight of the 500 ml bottles was further reduced from 27.5 g to 25.0 g while the weight of the 1.5 litre PET bottles was lightened from 46 g to 44 g.
Changes were also made in the production line so that the PET bottles would have a shorter neck closure. By introducing shorter neck closures, an additional weight reduction of between 1.25 g and 1.32 g was achieved for each bottle.

The above measures will cut plastic (PET) usage by a total of 203 tons per year, without compromising on the integrity of the packaging or the quality of the product, as confirmed by tests conducted by the company’s global quality laboratory. A significant annual savings of over $200,000 can also be expected, as a result of these changes.

OTHER ENVIRONMENTAL INITIATIVES

- The sales and vending teams of F&N Coca-Cola retrieve all used cardboard carton trays and plastic shrink film after refilling vending machines. The used packaging materials are returned to F&N Coca-Cola’s bottling plant where they are segregated according to material type and sent for recycling.

- F&N Coca-Cola has tripled the number of recycling bins for aluminum cans, paper and PET bottles in the plant to collect defective packaging for recycling, to make it easier for the workers to recycle.

- F&N Coca-Cola has been working with third party vendors to recover used tea leaves, which constitutes about 20% of total general waste generated in the plant, for recycling.

- The recyclable logo was incorporated on all products in aluminum cans and PET bottles to remind consumers that the package can be recycled, and to reflect F&N Coca-Cola’s commitment to and support for minimising packaging waste.
BACKGROUND

Incorporated in 1912, Nestlé Singapore Pte Ltd manufactures products such as Protomalt® malt extract, MILO® powder and soya sauce powder & liquid for both local and export markets. Besides manufacturing, Nestlé also carries a number of brands under the product groups of food consisting of prepared dishes and cooking aids, beverages, confectionery, milk, and pet-care products, etc.

As one of the pioneer companies that signed the Singapore Packaging Agreement in June 2007, Nestlé is committed to reducing the environmental impact of packaging without jeopardizing the safety, quality or consumer acceptance of its products.

MEASURES TAKEN TO REDUCE PACKAGING WASTE

Following the success in reducing the thickness of their local 1.5kg (now 1.4kg) pack size MILO tin can in 2007, Nestlé explored the opportunity to reduce the thickness of the local MILO tin cans for the 1.25kg and 1.65kg pack sizes. Nestlé found that the thickness of the 1.25kg and 1.65kg-sized MILO tin cans could be reduced from 0.25mm to 0.22mm and yet, not lose their compression strength when number of beads on the tin cans is increased from 6 beads to 9 beads. When full conversion to the thinner tin cans is achieved for the 1.25kg and 1.65kg MILO pack sizes, it is expected that tin material usage would be cut by 15 tons/year.
Nestlé Singapore not only packs MILO in tin cans, but also in soft packs to cater to different customers’ preferences. Another measure that Nestlé undertook to cut waste was to reduce the dimensions of the corrugated carton boxes used to pack the local MILO 900g and 1kg-sized soft packs. The carton boxes were reduced from 480mm x 370mm x 190mm to 470mm x 350mm x 190mm. By implementing this measure, the total amount of paper used for these carton boxes would be reduced by more than 20 tons per year.

The packaging material used for Nestlé’s MILO soft packs is flexible plastic laminate. Previously, more than 6% of laminate would be wasted during production. Nestlé then set out to study how it could minimise the material loss. After 1 - 2 months of work, including modifying the soft pack production line and improving the efficiency of operations, Nestlé was able to bring laminate losses down to between 1% and 2%, meaning that about 20 tons of laminate wastage would be avoided annually.

OTHER ENVIRONMENTAL INITIATIVES

- Nestlé uses recycled paper cartons for all MILO products. With 100% recyclable natural wood fiber and the use of natural starch for the binders and adhesive, these cartons are recyclable, easily replaceable and non-toxic.

- Nestlé conducted an in-house SHRED IT programme (from 2008 to April 2009) where all their paper documents were recycled into a variety of useful paper products. The total amount of paper saved through this programme would be equivalent to saving 15 trees.

- Nestlé recycles all its used inkjet and laserjet cartridges.
BACKGROUND
Tetra Pak began providing carton-packed beverages to Singaporean consumers from as early as 1958. Tetra Pak was then represented in the region through its sales offices. Since 2007, Tetra Pak (Malaysia) Sdn Bhd has been managing the commercial operations for the Malaysia, Singapore and the Philippines markets.

Tetra Pak’s current largest packaging material plant in the world is situated in Singapore. The production facilities of Tetra Pak Jurong were completed and inaugurated in 1982. Tetra Pak adopts world-class manufacturing philosophy and through innovations ensures that packaging materials produced on-site for packing of food and beverages meet the highest quality, food safety and environmental standards.

MEASURES TAKEN TO REDUCE PACKAGING WASTE
The beverage carton packaging material manufactured at the Jurong plant is made up of six protective layers consisting of paperboard, polyethylene plastic (PE) and aluminium foil materials. In the production process, excess PE used in laminating the carton packaging is trimmed off at the edges. This PE trim was previously compacted into bales, sold to a waste trader and subsequently sent overseas for recycling.

In January 2009, Tetra Pak started on a continuous improvement project and invested in new equipment so that the PE trim could be recovered for reuse in the packaging production process. With the new equipment in place, statistically, Tetra Pak found that it could reduce the net amount of PE resources consumed, and reduce plastic waste by about 380 tons/year. This has also significantly reduced the need for transportation of the PE waste, translating to operating cost savings for the company. Moreover, this initiative of recovering PE trim for reuse within the plant has contributed positively to the reduction of carbon footprint for the operations.

 Recovering PE Trim for Reuse
OTHER ENVIRONMENTAL INITIATIVES

- Tetra Pak is progressively replacing wooden pallets with plastic pallets for the export of packaging materials. Plastic pallets are stronger, more durable and resistant to pest infestation, compared to wooden pallets.

- Tetra Pak organised a beverage carton recycling programme for schools, aimed at promoting environmental awareness, as well as instilling the habits of recycling in schools. As part of the programme, a beverage carton recycling competition was organised. Tetra Pak sponsored an educational trip to the paper mill and the Forest Research Institute of Malaysia, for students and teachers of the winning schools in this competition. During the visit to the paper mill, they learnt how beverage cartons were being recycled and made into paperboard.

- Tetra Pak has actively supported and participated in numerous events to educate consumers on recycling of used beverage cartons. Tetra Pak participated in events such as the NEA’s annual Recycling Day, the International Solid Waste Association (ISWA) Congress 2008, the “Green Innovations, Our Future Together” Symposium at Suntec City, and the Sustainable Packaging Seminar at Singapore Polytechnic. During these events, beverage carton recycling was highlighted and the sustainable model of beverage carton recycling was also shared. Tetra Pak believes that these continuous efforts will generate greater awareness on recycling of beverage cartons.
BACKGROUND

Listed on the Singapore Exchange, Asia Pacific Breweries Limited (APB) is one of the key players in the beer industry. A joint venture between the Fraser and Neave Group of companies and Heineken NV of Holland, APB was established as Malayan Breweries Limited (MBL) in 1931. It went on to open its first brewery in Singapore and launched the award-winning Tiger Beer a year later.

To more accurately reflect the growing regionalization of its business interests, MBL was renamed Asia Pacific Breweries Limited in 1990. Today, APB oversees a portfolio of over 40 beer brands and brand variants, including Tiger Beer, Heineken, Anchor, Baron's, Archipelago and ABC Extra Stout. The group operates an extensive global marketing network, which spreads across 60 countries and is currently supported by breweries in countries including Singapore, Cambodia, China, India, Laos, Malaysia, Mongolia, New Zealand, Papua New Guinea, Sri Lanka, Thailand and Vietnam.

MEASURES TAKEN TO REDUCE PACKAGING WASTE

In the past year, APB replaced the use of one-way paper cartons with returnable plastic containers for packing multi-packs (cardboard cartons of canned Tiger Beer) for local distribution. This move would help to avert paper-packaging waste by about 1.6 tons each year. The process of replacing the one-way paper cartons with returnable plastic containers took six months to complete. During this time, storage and handling issues were taken into consideration to ensure the success of this project. APB is also currently in the process of testing the feasibility of light-weighting its Heineken pint and Tiger pint glass bottles meant for export markets.
BACKGROUND

Boncafé International Pte Ltd was founded in 1962 and has been producing premium gourmet coffee since then. Its coffee, in roasted beans and ground form, is distributed all over South East Asia, Sri Lanka, Myanmar, the Maldives, the Philippines, Korea and Japan. As business grew with increasing demand in gourmet beverages, Boncafé saw a 33% increase in usage of packaging material over the past 10 years.

Boncafé has adopted a green approach in its manufacturing process since the start of 2007. Becoming one of the signatories in the Singapore Packaging Agreement has further motivated the company to constantly look out for ways to reduce, reuse and recycle waste.

MEASURES TAKEN TO REDUCE PACKAGING WASTE

In July 2008, Boncafé reduced the thickness of the polyethylene (PE) material used to pack instant coffee for coffee vending machines. The thickness of the packaging material was reduced by 28% from 140 to 100 microns, resulting in a reduction in material usage by about 0.22 tons per year. The company did not only save packaging resources - it also benefited from an estimated cost savings of 7.6%.

OTHER ENVIRONMENTAL INITIATIVES

- Wherever possible, corrugated carton boxes continue to be reused and placed back on the shelves with packed coffee products. When these carton boxes become damaged or torn and are rendered unusable, they are then deposited into a crate and are eventually sent for recycling.

- Since wooden pallets from most export suppliers are non-returnable, they are retained and often reused for export of coffee products.

New Packaging with 100 Microns Thickness
BACKGROUND

Hock Lian Huat Foodstuff Industry is a family-owned business manufacturing traditional Chinese foodstuffs such as "Ngoh Hiang" (five-spice meat roll), "Hae Biah" (prawn crackers), Chinese sausage, and seafood rolls. Today, Hock Lian Huat is the oldest running pioneer and leading supplier of Ngoh Hiang in Singapore.

MEASURES TAKEN TO REDUCE PACKAGING WASTE

Hock Lian Huat packs its products in transparent plastic bags for distribution to hawker stalls. Since Jan 2009, Hock Lian Huat has been experimenting with the use of plastic bags of different sizes and thickness to see how they can reduce the amount of plastic packaging material used. They found that they could reduce the size and thickness of more than 90% of the plastic bags that they had been using, without compromising on the quality of the food supply.

By switching to the use of smaller-sized and thinner plastic bags, Hock Lian Huat expects to avoid 1.4 tons of packaging waste and save over $4,000 on plastic bags each year.

OTHER ENVIRONMENTAL INITIATIVES

- Used plastic bottles are collected and sent for recycling.
- Hock Lian Huat educates their employees on energy and water conservation by reminding them to switch off electrical supplies when not in use and to reduce the amount of water used every day.
- By seeking their customers’ help to use fewer plastic bags during purchase, Hock Lian Huat aims to cut down on their plastic bag consumption.
BACKGROUND

Kentucky Fried Chicken (KFC) was founded by Colonel Harland Sanders, the gentleman who perfected the secret blend of 11 herbs and spices and the basic cooking technique that give rise to the famous Original Recipe Fried Chicken. Through the years, KFC has developed into a household name among its consumers locally and globally. It offers a wide range of products that covers chicken-on-the-bone, burgers, snackables, salads, toasted and breakfast items and many more.

KFC Singapore opened its first restaurant in 1977. It now has 76 restaurants all over the island.

MEASURES TAKEN TO REDUCE PACKAGING WASTE

As a quick service restaurant, most of KFC’s disposable packaging materials are made of paper and plastic. Since 2007, when it became a signatory of the Singapore Packaging Agreement, the Supply Chain Management team regularly reviews the range of packaging and explores opportunities to reduce the amount of materials used.

From its internal review, KFC has reduced the thickness of its Zinger Box to pack the Zinger products. The material used for the Zinger Box (a foodboard box) has been reduced in thickness from 240 gsm to 210 gsm since July 2008. This move would help save about 5 tons of paper material used per year as well as reduce packaging cost.

With the successful switch to the 210 gsm board for the Zinger Box, the KFC team tested the use of this thinner board for the turnover sleeve for dessert pies as well, in July 2008. When this proved feasible, KFC proceeded to switch from the 240 gsm board to the thinner 210 gsm board for the turnover sleeve. This helps to save above 300 kg of paper material annually.

KFC’s usage of the Dinner box, which is used to pack chicken parts for delivery orders, had increased with the growth of the delivery business. Corrugated board material is used for the Dinner box as it can retain the temperature of the product and maintain the robustness of the box even when it is moist with condensation.

After conducting several tests, the KFC team found that it was able to reduce the dimensions of the Dinner box from 255mm x 170mm x 71mm to 205mm x 170mm x 71mm and thus reduce the usage of corrugated board material by 3 tons per annum.

KFC estimates that the above changes would result in a total annual savings of 8.3 tons in paper material usage for the three initiatives taken.

Before: 25.5cm(Wide)  
After: 20.5cm(Wide)  
Packaging with Reduced Thickness of 210 gsm
BACKGROUND

Microwave Packaging designs and manufactures F&B containers that are made from paperboard. The range of products includes boxes, cups and soup bowls.

MEASURES TAKEN TO REDUCE PACKAGING WASTE

As a member of the Packaging Council of Singapore (PCS), Microwave Packaging has been committed to minimizing material usage and waste, without compromising on quality and functionality of its products.

With this mission in mind, the Microwave Packaging re-designed its paper boxes for takeaway food, so that it would use less paper material. Firstly, the thickness of the paper boxes was reduced from 358 gsm to 325 gsm. Secondly, Microwave Packaging changed the way the box was cut so that 8% less paper material would be used to construct a box of the same size.

About 20% of the company’s clients have switched to the redesigned packaging. If all its customers were to use the thinner and lighter paper box, Microwave Packaging estimates that up to 108 tons/year of paper resources could potentially be saved.
BACKGROUND
Incorporated in 1973, Singapore Food Industries Limited (SFI) is now one of the largest food companies in Singapore. It has operations in almost every sector of the food industry, from raw material supply, food manufacturing and processing to food distribution and food catering.

SFI manufactures a range of Meals-Ready-to-Eat (MRE). These MREs are packed in 4-ply aluminum pouches.

MEASURES TAKEN TO REDUCE PACKAGING WASTE
SFI conducted shelf-life studies using microbiological and sensory evaluation methods to determine the possibility of reducing the overall thickness of the MRE pouches. With satisfactory results obtained from these studies, the overall thickness of the aluminum packaging was reduced and this change also led to a 5% drop in weight of the packaging. As a result of this change, it is estimated that 1.4 tons of aluminum packaging waste will be avoided annually.

Pallets made with a more durable plastic were introduced to lower the replacement rate of plastic pallets. The new plastic pallets are now used for a longer period of time before replacement, resulting in a reduction of 2.4 tons of plastic pallet waste annually.

OTHER ENVIRONMENTAL INITIATIVES
- A collaboration with SFI’s recycling partners has also ensured that 12 tons of soiled carton boxes are recycled annually.

- SFI reuses clean carton boxes to hold products internally before shipment. This resource reuse programme reduces the annual consumption of new carton boxes by 23 tons.

- As far as possible, used envelopes and paper are reused within the company.

- Through internal awareness drives, employees are also encouraged to participate in in-house recycling programmes.
BACKGROUND

Sunfresh entered the fruit juice business in 1981, producing, merchandising and trading blended fruit juices across the Asia Pacific region. Through the years, the company has increased its processing capacity to cater to the growth of consumers with a preference for premium fresh fruit juice. Its success is mainly due to its competence and excellence from sourcing of raw materials to processing and marketing.

Besides fruit juices, Sunfresh also produces drinking water in sealed plastic cups for local and overseas markets.

MEASURES TAKEN TO REDUCE PACKAGING WASTE

In line with its firm commitment to the Singapore Packaging Agreement, Sunfresh has undertaken measures to make a positive impact on the environment.

In March 2009, Sunfresh switched from using high-density polyethylene (HDPE) to polyethylene terephthalate (PET) as the packaging material for its products packed in one-litre bottles. By using PET instead of HDPE, the weight of the bottles can be reduced so that a projected plastic material savings of 10.9 tons can be achieved annually.

Similarly, the shift from HDPE to PET was implemented on 250ml bottles. This is estimated to reduce plastic material usage by 0.3 tons annually.

Fruit juices previously packed in paper drink cartons with plastic spout caps are now packed in cartons without the spout caps. This change means that packaging material usage would be reduced by 0.6 tons per annum.

It is estimated that the above measures would help the company save approximately $80,000 a year in material costs.

OTHER ENVIRONMENTAL INITIATIVES

- Reverse Osmosis (RO) is a process used in filtering water for production of drinking water. The rejected water from the RO process is reused as a cooling medium for cooling tunnels (equipment used for the cooling process). It is estimated that over 1,600 cubic metres of water can be saved from the reuse of the reject water for cooling purposes.
BACKGROUND
In 2002, Wyeth Nutritionals (S) Private Limited (Wyeth) opened its manufacturing plant in Singapore. Today, Wyeth provides a wide range of milk formulas for infant and growing children, and adult milk supplements that are available in most supermarkets and retail outlets.

MEASURES TAKEN TO REDUCE PACKAGING WASTE
Wyeth became a signatory of the Singapore Packaging Agreement in 2008. The first project that they undertook to reduce packaging waste was to reduce the thickness of the shipper cartons used to pack their canned products for both local and overseas markets.

An in-house Change Control Process was initiated to evaluate the impact on the supply chain when the thickness of the shipper cartons is reduced from 712 gsm to 512 gsm. This was met with positive results and so Wyeth proceeded to use the thinner shipper cartons from July 2008. Wyeth expects to reduce the usage of paper resources for the shipper cartons by 165 tons/year as a result of the shift to thinner cartons.

OTHER ENVIRONMENTAL INITIATIVES
- Used wooden pallets that are received together with incoming raw materials for the manufacturing process, are sold to a third party biomass cogeneration plant for use as fuel for electricity generation.

- Non-rework powder and sludge from Wyeth's wastewater treatment plant are diverted to an organic waste bio-methanisation and renewable energy plant for electricity generation, instead of being sent for incineration.

- Staff are educated on how they can play their part to protect the environment. Informative leaflets with tips on environmentally-friendly practices are also displayed on company notice boards.
BACKGROUND

YHS (Singapore) Pte Ltd (YHSS) produces and distributes a wide variety of food & beverage products, including the well-known YEO’s beverages.

YEO’s is a brand synonymous with traditional Southeast Asian cuisine and authentic Asian beverages. From being the first to package its Asian drinks in Tetra Brik aseptic containers in the 1960s, YEO’s has become a leading brand in the beverage category today, offering a wide assortment of refreshing Asian drinks.

YHSS also distributes and manages some of the renowned brands in the market such as Evian, Volvic, Red Bull, Gatorade and Allswell. Since 1970, YHSS has been the exclusive bottler for PepsiCo International, with leading international brands of soft drinks like Pepsi, 7-Up, Mirinda, Mug Root Beer, Mountain Dew and Evervess.

MEASURES TAKEN TO REDUCE PACKAGING WASTE

Since signing the Singapore Packaging Agreement in June 2007, YHSS has been finding ways to minimise packaging waste.

YHSS uses about 70 tons of plastic shrink film every year, and decided to examine how it could reduce consumption of this plastic film. This plastic shrink film is used to hold together canned drinks packed in carton boxes.

The company tried reducing the thickness of the plastic shrink film, from 65 microns to 50 microns. Trials were carried out in January 2008 and it was determined that the 50-micron shrink wrap could maintain the same quality of performance as the 65-micron shrink wrap. The company therefore started using the thinner shrink film from February 2008.

By reducing the thickness of the plastic film, it was found that a lower temperature could be used to heat shrink the film. This means that in making the change to thinner plastic film, not only would YHSS cut plastic material usage by 11.2 tons/year, but the company would also reduce energy consumption by 12.5% and reap financial savings from the lower material and energy costs.