



# 3R Technology for Eco-friendly Products - In the Context of Economic Competitive Advantage in International Business

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Asian Productivity Organization



Regional 3R Forum  
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# About the APO

- Asian Productivity Organization was established on 11 May 1961
- Its mission is to contribute to sustainable socioeconomic development of Asia and the Pacific through enhancing productivity
- 20 member economies

## Roles of APO

- ✓ A think tank
- ✓ A catalyst
- ✓ A regional adviser
- ✓ An institution builder
- ✓ A clearinghouse for productivity information





## APO's Green Productivity Embeds 3Rs

- ✓ A strategy to enhance productivity and simultaneously reduce the negative impacts on the environment
- ✓ Appropriate productivity and environmental management tools and techniques such as 3Rs are applied in order to reduce the environmental impact of an organization's activities, products, and services.



- ✓ Reduce Environmental impact
- ✓ Ensure profitability
- ✓ Enhance quality of life



## APO's Activities to Promote 3Rs

- ✓ Workshop on Green Productivity & 3Rs in Thailand
- ✓ Seminars on 3Rs in Thailand and Japan
- ✓ Green Productivity Advisory Committee
- ✓ Annual Eco-products International Fair since 2004
- ✓ Eco-products Directory published since 2004





# What is 3Rs Technology?

## Waste Perspective

- Reduce Waste
- Reuse Waste
- Recycle Waste

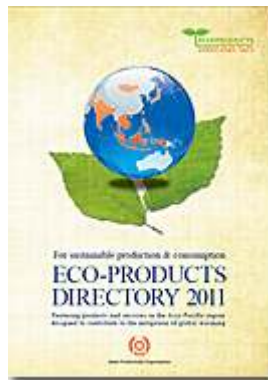
## Product Perspective

- Reduce toxic substances in products/Reduced consumption of resources
- Reusable products/Reused raw materials
- Recyclable products/Recyclable components



## 3Rs & Eco-products

Eco-products are defined as products that comply with environmental regulations and/or are environment-friendly, reflecting manufacturer's efforts to take care for the environment.





## 3Rs & Eco-products

**How the eco-products reflect certain 3R related initiatives !**

Waste Reduction



Resource Saving



Recyclability/Reusability/  
Refillability



Using Recycled Materials



Chemical Substance Reduction





# Waste Reduction

- Helps reduce the final disposal volumes by changing products, manufacturing processes, and packaging. This includes waste weight/volume reduction within the circulation system

The screenshot displays two web pages side-by-side in a browser window. The left page is for the 'Life U121 Eco Notebook' by BenQ Corporation. It features an 'Environmental performance' section with bullet points: 'Complying with internationally recognized eco-standards EPEAT and Energy Star', 'Draws 40% less power than the previous generation model, courtesy of Intel's least power-consuming processor, the Atom™, and the mercury-free, low-energy LED screen', and '90% of the mechanical elements and 100% of the packaging materials are also recyclable or reusable'. It also includes a 'Product performance' section and a circular 'LC Stage' diagram with icons for Global warming, Water, Energy saving, and Recycle. The right page is for 'eco-friendly Rubber Track "ECO-TRACK"'. It features an 'Environmental performance' section describing the durability of the rubber track, a 'Product performance' section with bullet points: 'improvement silently', 'less vibration in driving', 'lightweight', 'low damage the road surface', and 'shorter hours of maintenance'. It also includes a circular 'LC Stage' diagram with icons for Water, Resource, End-of-life, Design, Production, Transport, and Use/repair. Both pages include contact information for their respective companies.

**Life U121 Eco Notebook**

**Environmental performance**

- Complying with internationally recognized eco-standards EPEAT and Energy Star.
- Draws 40% less power than the previous generation model, courtesy of Intel's least power-consuming processor, the Atom™, and the mercury-free, low-energy LED screen.
- 90% of the mechanical elements and 100% of the packaging materials are also recyclable or reusable.

**Product performance**

Featuring a 16:9 display, supreme battery performance, and an HDD/SSD-supported hard drive, the 11.6" BenQ Joybook Lite U121 Eco makes one true steal of a deal! It's just what you're lookin' for with a little more time, space, fun - and even style! With the BenQ Joybook Lite U121 Eco, you get to enjoy much more than you've bargained for!

**BenQ Corporation**

No.16, Jihu Rd., Neihu Dist., Taipei, Taiwan, Republic of China  
Tel: +886-2-27279899 Fax: +886-2-26562438  
URL: <http://www.benq.com/>

**eco-friendly Rubber Track "ECO-TRACK"**

**Environmental performance**

Bridgestone manufactures developed high durability rubber under hard environment. The durability rubber enabled to protect steel codes more, prolong use phase, and improve comfortability and strong grip. In addition, Bridgestone has more technologies: anti-rust steel code, prevention to flow off (high-stiff design) or crack (pro-edge). The eco-friendly rubber track "ECO-TRACK" is made by these technology and got much durability. "ECO-TRACK" will contribute to cost down and reduce waste by the durability.

**Product performance**

- improvement silently
- less vibration in driving.
- lightweight
- low damage the road surface
- shorter hours of maintenance

**Bridgestone Corporation**

1-8-8, Yaezu, Chuo-ku, Tokyo, 103-0028, Japan  
Tel: +81-3-5202-8203 Fax: +81-3-5202-8710  
URL: <http://www.bridgestone.co.jp/english/index.html>





# Resource Saving

- Helps reduce the consumption of resources, such as mineral, forest, and water resources. This includes resource saving by reuse and recycling.

The screenshot displays two web pages from the APO website. The left page, titled "Revolutionary Systems-Concept Packaging", describes the RSCP (Revolutionary Systems-Concept Packaging) as a nail-free, lightweight packaging made from OSB material. It highlights environmental performance through three key areas: **REDUCE** (using 20% to 80% less timber), **REUSE** (in-built collapsible features), and **RECYCLE** (easy recycling into chipboards). The right page, titled "Beer in 206-diameter SuperEnd next-generation lightweight-end cans", focuses on environmental performance by reducing the weight and surface area of beer cans. It mentions that Asahi Breweries, Ltd. introduced these cans in 2007, which saves approximately 1,200 tons of aluminum annually and reduces CO<sub>2</sub> emissions by about 9,000 tons per annum. Both pages include diagrams illustrating the LC Stage (Life Cycle) and icons representing environmental benefits like water, material, and energy saving.



# Resource saving

- Helps reduce the consumption of resources, such as mineral, forest, and water resources. This includes resource saving by reuse and recycling as well as resource saving in products and the manufacturing process

**EM-2-003 Polymers recycled fibers**

### 100% Polyester Recycle Fiber (Raw White Filament)

**Environmental performance**

TOPGREEN™ which is made of used PET bottle, is a recycled fiber. It's manufacturing process as follow: collect used pet bottles, after multiple process of sorting, cleaning, crushing, de-polymerization, re-polymerization, melting, spinning to recycled fiber.

Waste Resource Recycled material Recycle

Material Design Production Waste/Reuse

Resource End-of-life Transport Use/repair

**LC Stage**

**Far Eastern New Century Corporation**

308, Yu Tang Sec. Wen Shai Road, J.Li, Wen Shai Li, Hsinchu Hsinshu /Taiwan / R.O.C, 306, Republic of China  
Tel:03-5862511 Fax:03-5862511  
E-mail: fnc@fnc.com

**synthetic fiber**

### Crafts from Banana Fiber

**Environmental performance**

Fiber extracted from Banana sheath is bio-degradable as well have long life. Banana fiber is extracted from the waste part of banana tree. It gives employment to opportunity for the poor.

Resource Waste Recyclable Degradable

**Product performance**

Crafts made from Banana fiber is soft in nature. Any kind of craft materials could be made from Banana Fiber. Even sarees are incorporating Banana fiber which give cool effect to the body.

Material Design Production Waste/Reuse

Resource End-of-life Transport Use/repair

**LC Stage**

**Mother Theresa Development Research Institute**

No.4/3B, Freeman Street, Kottapattu, Golden Rock Post, Ponnalaipatti, Trichy, 620004, India  
Tel: +91-431-2491671  
E-mail: mtdr2000@gmail.com



# Recyclability/reusability

- Raw materials can be recovered, processed, and recycled for reuse. Alternatively, they can be recycled efficiently by using design that are easily disassembled. Reusable and refillable designs may be used in packaging and products.

EP-4-007 Office supplies/furniture clipboards

## CLIP BOARD

**Environmental performance**

Our CLIP BOARD is made of recycled materials. The ratio between raw materials and recycled ones is 60 : 40.

**Elite Information Industry**  
101, Seogwang Techno Town, 247-1, Eunhang-dong, Sihung-si, Gyeonggi-do, Korea  
E-mail: [Market@elite.co.kr](mailto:Market@elite.co.kr)

lunch box

## L'earth wheat composite lunch box

**Environmental performance**

Made of wheat by-products which is an abundant and renewable source. It does not compete with food supply or require extra resources. High content of recycled and certified food-safe plastic adds their value in the lowering of greenhouse emissions and retention of global warming. Less toxic gases are being emitted when incinerated.

Product can also be made eco-biodegradable, thus helping to reduce landfill. Eco-biodegradable leaves no harmful residues and byproducts, and less to degradation is phylogenetically.

**Awards and Contributions for wheat-composite material**

1. Singapore Green Label Certified
2. 2007-Jensike Power Green Innovation Award Winner 2010
3. 2010 Sustainable Packaging Centre 2010-2012

With L'earth, it is simple, reusable, and sustainable packaging in eco-conscious and modern lifestyle.

**Product performance**

Food safe and non toxic: FDA/SGS Certified  
Microwave and dishwasher safe  
Withstand temperature: -30 to 100 deg celsius  
Durable and sturdy  
Lightweight  
Reusable

**L'earth S Pte Ltd**  
21 Toh Guan Road East, Toh Guan Centre, Singapore 608009, Singapore  
Fax: +6565154557  
E-mail: [marketing@myearth.sg](mailto:marketing@myearth.sg)  
URL: <http://www.myearth.sg>



# Using Recycled Materials

- Recyclable materials are recovered and recycled materials are used in the manufacturing process, either entirely or in high volumes.

The screenshot shows a web browser with two tabs open, both pointing to <http://www.apd-tokyo.org/>. The left page is titled "binders" and features a green header: "A recycled inorganic material manufactured from fly ash (coal ash) and paper sludge ash". It includes sections for "Environmental performance" and "Product performance", a circular "LC Stage" diagram, and a photograph of a product bag labeled "Alfa Green". The right page is titled "Aluminum Beverage Cans made from Used Beverage Cans" and includes an "Environmental performance" section, a circular "LC Stage" diagram, and a photograph of two beverage cans. The browser's taskbar at the bottom shows various application icons and the system clock.

**binders**

**A recycled inorganic material manufactured from fly ash (coal ash) and paper sludge ash**

**Environmental performance**

Construction costs are reduced and the construction period is shortened thanks to the omission of the conventional foundation work involved in afforestation. This reduces CO<sub>2</sub> emissions from the construction machines used in foundation work.

**Product performance**

Alpha Green stabilizer for slope afforestation is a recycled inorganic material produced primarily from fly ash (coal ash) and paper sludge ash, unlike the conventional cementing material (paste) made of synthetic polymeric resin. It contains minerals (such as magnesium, which promotes plant growth) and brings variety of secondary effects such as enabling the active utilization of inorganic basic vegetation materials, improved water permeability of vegetation bases, promotion of organic matter decomposition, and mitigation of aluminum-related damage.

**Alfa Green, Ltd**

89-1-207 Yamashita-cho, Naka-ku, Yokohama-city, Kanagawa-Pref, 231-0223, Japan

**Aluminum Beverage Cans made from Used Beverage Cans**

**Environmental performance**

The aluminum beverage can is made up of a can body and a can end. Aluminum beverage cans produced by Universal Can Corporation (hereinafter called "UNICAN") include UBCs (used beverage cans), which account for over 50% of the total weight of aluminum can bodies. (Certified according to "EPD" Environmental Labels Type III). Recycling aluminum from UBCs uses 97% less energy than making new aluminum from bauxite. Usage of more UBCs and less new virgin metal will contribute to saving bauxite and energy and the prevention of global warming.

Mitsubishi Materials Group including UNICAN has established a unique integrated recycling process which consists of retrieving UBCs, pouring recycled aluminum into long ingots and producing can body stocks. This process can help "the Can to Can cycle" function more effectively.

"We obtained "ECO LEAF" certification (310B, 315B, 410B and 250, 350, 500ml sizes).

**Universal Can Corporation**

Nakayuhara Bldg., Kounakui-4-25, Bunkyo-ku, Tokyo, 112-8525, Japan  
Tel: +81-3-3888-7470 Fax: +81-3-3888-7467  
URL: <http://www.unican.co.jp/>



# Chemical Substance Reduction

- This includes the reduction and purification of hazardous substances by recycling and reuse as well as products containing low levels or no hazardous waste.

The screenshot displays two web pages from the APD website, illustrating chemical substance reduction in products. The browser's address bar shows the URL <http://www.apd-eco.com>.

**Left Page: Printing Ink - SOLFREE BLACK**

- Environmental performance:**
  1. The existing product contains 30% of Petroleum Type High Volatility Solvents, which is also known as carcinogen VOCs 30%.
  2. The new product Solfree substitutes the Petroleum Type Solvent with Vegetable Oil VOCs Below 1%.
  3. The existing product contains Petroleum Type Solvent which evaporates after printing however, the Solfree does not contain Petroleum Type Solvent.
  4. FDA Certification from U.S.
  5. ISO 2900 Certification
  6. Special User Agreement
- Product performance:**
  - + Excellent Printing Quality
  - + Excellent Color and Color Reproductivity
  - + No Glow Down or Dry Down from Evaporation of Solvent
    - Excellent Rub Resistance
    - Excellent Transferability (Various Variations of Substrates to be used)
    - Excellent Weatherability

**DAIHAN INK CO.,LTD**  
815, Bakdal-Dong, Manangju, Anyang-City, Kyong g-Do Korea, 430-030, Republic of Korea  
Tel +82-31-487-5437 Fax +82-31-443-8570  
E-mail sean@d-ink.co.kr  
URL www.d-ink.com

**Right Page: Natural Anti-bacterial Paint "Fragrance of Forest"**

- Environmental performance:**

Natural Paint ("Fragrance of Forest") is an environment-friendly paint developed from pure and healthy natural resources, such as wild plants and minerals. Throughout the entire process of producing, painting and disposing, Natural Paint ("Fragrance of Forest") does not radiate harmful substance which could threaten the environment or human health.
- Product performance:**

It emits anion. It is free of bad odor-No need to wait for smell to fade away. It prevents mold and bacteria and absorbs chemical substances. It emits Phytonside. It comes in various color choices and could be used on wallpapers as well as walls. It is highly durable.  
\*Atopy, Bacteria, Mold and Toxin Free.

**HANKOOK SHINHWHA CO.,LTD**  
101-7, Yangbeol-rd, Opo-eup, Gwangju-si, Gyeonggi-do, 464-896, Republic of Korea  
Tel 82-31-766-2983 Fax 82-31-795-6  
E-mail wco17comp@hanmail.net  
URL www.hankookshinwha.com



# Recycling of plastics from used home appliances

**Refrigerator with Plasmacluster**

**Environmental performance**

- (1) Aside from the high performance compressor and the application of the "wide loop" inverter control, high efficiency heating cycle and heat retaining fan, built the basis to the high energy saving specification.
- (2) Recycled plastic made using closed-loop material recycling technology\* is used for parts.
- (3) R660a Refrigerant specification
- (4) Complies to RoHS (excludes ant. PWB made of lead free solder, and eliminating specific brominated flame retardants)

\*Recycling technology that repeatedly recovers waste from used consumer electronics and makes it in part of new consumer electronics for the Japanese market.

**Product performance**

- (1) The new "Plasmacluster" deodorization and inactivation of germs system\* strongly deodorizes the compartment and inactivate the airborne molds and adhering germs.
- (2) "Fresh & Care" vegetable room which applies the high humidity sealed construction enables vegetables to retain moisture up to two times. On the upper side, Plasmacluster technology enables inactivation of the adhering germs in approximately one day.
- (3) The combination of the LED lights and the application of light guide panel offers a bright compartment throughout.
- (4) Unique ice mode function offers the making of very transparent ice.

**Sharp Corporation**

22-22 Nagaike-cho, Abeno-ku, Osaka, 545-8622, Japan  
Tel +81-6-6625-0438 Fax +81-6-6625-0153  
E-mail [eco-info@sharp.co.jp](mailto:eco-info@sharp.co.jp)  
URL <http://sharp-world.com/>  
URL <http://sharp-world.com/corporate/eco/>

**Energy- and Material-saving Refrigerator "MR-E50R"**

**Environmental performance**

- Material / Resource saving >>>  
Refrigerator parts are produced with the self-recirculated recycling of plastic (polypropylene, polyethylene) from end-of-life refrigerators at recycling plants.
- Energy saving >>>  
Hybrid defrost heater is equipped on coolers and the pre-frost formation coolers are loaded to catch moisture and to prevent the cooling-air trunks being clogged with frost. This pre-frost formation system cuts defrost time and saves energy.
- Toxicity / Chemical substances reduction >>>  
Excludes substances defined in the EU RoHS directive, Japanese Industrial Standards (JIS) or J-Moss.

**Product performance**

The Spinning Shelves, which are installed on the top of the shelves in the refrigerator and can be rotated while putting foods on them, and the Moving Shelves, whose heights can be changed, expand the usability and storage spaces. The Organizer Eco functions, including the Space Fit Control function for ideal operation according to each frame, the Eco Mode function to control energy saving and the Eco Monitor to show the condition of operation, are adopted on this refrigerator.

**Mitsubishi Electric Corporation**

3-7-3, Manuouchi Chiyoda-ku, Tokyo, 100-8310, Japan  
Tel +81-3-3218-9024 Fax +81-3-3218-2465  
E-mail [eco.eco@jp.MitsubishiElectric.co.jp](mailto:eco.eco@jp.MitsubishiElectric.co.jp)  
URL <http://global.mitsubishielectric.com/index.html>  
URL <http://global.mitsubishielectric.com/company/ea/en/ww/en/mer/products/index.html>  
URL <http://global.mitsubishielectric.com/company/ea/en/ww/en/mer/products/eco.html>



# Recycled pulp for packaging material (80 % recycled paper)

http://www.apo-tokyo.org/ecop APO and Eco-products... apo-tokyo.org

## Household Air Conditioners

**Environmental performance**  
Energy Saving and Low Noise.

The coating materials used by the product not contain mercury, mercury compounds or mixed with dyestuff containing lead, cadmium, hexavalent chromium and their oxides. The products not have any organic solvent residue.

The product and its manufacturing process not contain or use substances controlled by the Montreal Protocol.

Corrugated carton used for packaging be made from recycled pulp with at least 80% recycled paper content. The packaging material not be made with CFC blowing agent.

Series:

- SAP-C408V / SAP-E408V3
- SAP-C458V / SAP-E458V3
- SAP-C508V / SAP-E508V3
- SAP-C568V / SAP-E568V3
- SAX-MBC19KB / SAX-E9KB+SAX-E12KB

**SANYO ELECTRIC (TAIWAN) CO., LTD.**

10F., NO.266, SONGJIANG RD., ZHONGSHAN DIST., TAIPEI CITY 10437,  
TAIWAN (R.O.C.), Republic of China  
Tel +886-2-2521-0251 Fax +886-2-2901-2113  
URL <http://www.sanyo.com.tw/>

Chemical substances High quality Energy saving

Material Design  
Resource Production  
End-of-life Transport  
Use/repair

LC Stage

Product // Home electric appliances/lighting





# Recycling of wood from used whisky barrels (100 %)

http://www.apo-tokyo.org/ecop APO and Eco-products... apo-tokyo.org Understanding of eco-...

EP-1-069 Home electric appliances/lighting speaker

## High-Fidelity and eco-friendly loudspeaker with cabinets made from used whiskey barrels

**Environmental performance**

The cabinets of the "Pure Malt Speaker" series are made from used whiskey barrels (virgin white oak) that produce rich sounds. Pioneer promotes the 3Rs (Reduce, Reuse, Recycle) aggressively, by not using new wood, preventing forest destruction, and preserving bio-diversity. Oak trees grow for 100 years before serving as whiskey casks for another 50 to 70 years. After that, the wood is recycled into speaker cabinets that produce warm, rich sounds for many more years.

By using heat from natural spas, energy is saved during the wood processing from barrels; efforts in using lower VOC (Volatile Organic Compounds) in adhesives and paint are used; and pulp molded material is adopted as shock absorbing material for packaging. Pioneer's original efforts to reduce harmful chemical substances through stricter in-house standards than those of the RoHS Directive are also implemented.

A portion of the revenues from product sales is donated to the Green Fund of the National Land Afforestation Promotion Organization as a contribution to government-led promotion of afforestation.

**PIONEER CORPORATION**

1-1 Shin-ogura, Saiwai-ku, Kawasaki-shi, Kanagawa 212-0031, Japan  
Tel +81-44-580-3211  
URL <http://pioneer.jp/>

Resource Chemical substances Recyclable High quality

Material Design Production Transport Use/repair End-of-life

LC Stage







# Reuse of machine parts (up to 91% by weight)

http://www.apo-tokyo.org/ecop APO and Eco-products... apo-tokyo.org APO ECO-PRODUCTS ...

EP-3-006 OA/IT equipment  
multifunctional copy machines/printers

## IR 6570N

**Environmental performance**

- (1) The used machines collected from the customers are disassembled and remanufactured. Only the parts complying with the remanufacturing quality standards are selected and cleaned. An average 91% of parts are reused by weight with Canon's original recycling technology for cleaning the exterior parts. The high rate of reused parts reduces environmental burden (converted to CO<sub>2</sub> emissions) up to the manufacturing stage.
- (2) Canon's original IH fixing technology is equipped, which achieves great reduction of energy consumption.

\* This product is manufactured by CANON INC. and is sold by Canon Marketing Japan Inc. The party to the Eco Mark utilization contract for this product is Canon Marketing Japan Inc.

**Product performance**

- (1) 65ppm
- (2) Standard LIPS LX is incorporated which shortens data processing time and improves printing performance

**Canon Inc.**

30-2, Shimomaruko 3-chome, Ohta-ku, Tokyo, 146-8501, Japan  
Tel +81-3-3758-2111 Fax +81-3-3758-8225  
URL <http://www.canon.com/environment/>

Global warming Resource Energy saving Recycled materials

Material Design Production Transport Use/repair

Resource End-of-life

LC Stage



Eco-product // OA/IT equipment

1  
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EN 4:33 PM 9/24/2011



# Remanufactured Cartridge

Browser tabs: <http://www.apo-tokyo.org/ecop>, APO and Eco-products..., apo-tokyo.org, APO ECO-PRODUCTS ...

## Remanufactured Cartridge

### Environmental performance

In recent years, the growth of new technology has helped to develop innumerable new toner cartridge that has been rushed into the market enormously. However, they result in large amount of waste that would damage to the earth. It is a big environmental trouble.

Green Device understands the harms and damages caused by waste pollution; she has developed the high quality remanufactured toner cartridges to reduce the waste by produce. From product development to manufacturing, Green Device's design not only focuses on satisfying customers but also cares seriously to make a good use of the resulting waste material and to avoid causing damage to the environments.

### Product performance

Taiwan Green Device Co., Ltd. established in 1999, is a publicly traded company of 70+ employees in remanufacturing toner cartridge, and of four office (Taipei, Taichong, Tainan, Chai-I) in Taiwan. Green Device has been the largest remanufactured toner cartridge factory in Taiwan.

She not only marketing in Taiwan, she has developed products for US, Canada Market, and has adopted a SOP management style as well as its quality control and after-sale support.

Green Device aims to be the best remanufactured toner cartridge manufacturer in the world. To achieve this goal, Green Device provides not only high quality products, but also superior after-sale support.

Green Device's promise to her customer: Green Device's products reduce costs with high quality while protecting the environments.

- Global warming
- Waste
- Recyclable
- Recycled materials

## Taiwan Green Device Co., Ltd.

No. 108, Sec. 2, Chang-An Rd., Luzhu, 33843 Taoyuan, Taiwan R.O.C.,  
33843, Republic of China  
Tel +886-3-353-0954 Fax +886-3-353-0964  
E-mail [service@greendevic.com.tw](mailto:service@greendevic.com.tw)  
URL <http://www.greendevic.com.tw>

Taskbar: Internet Explorer, File Explorer, Windows Media Center, PowerPoint, Adobe Reader, Google Chrome. System tray: EN, 4:44 PM, 9/24/2011.



# Total Number of Listings



Type of items	2004	2005	2006	2008	2009	2010	2011
Eco-materials	199	80	71	70	73	103	101
Eco-components	134	39	39	73	83	118	105
Eco-products	421	432	453	526	604	688	557
Eco-services	N/A	16	28	56	44	91	55
<b>Total</b>	<b>754</b>	<b>567</b>	<b>591</b>	<b>725</b>	<b>804</b>	<b>1,000</b>	<b>818</b>



## Regional Representation in 2011

Members	# of listed items	# of listed enterprises
India	11	7
Indonesia	1	1
Japan	554	93
Malaysia	19	8
Pakistan	4	1
Philippines	10	7
Republic of China	63	17
Republic of Korea	85	20
Singapore	21	4
Thailand	50	12
Total	818	170



## Economic Competitive Advantage of Eco-products using 3Rs Technologies

- Resource efficient
- Reduce burden on environment; lessen waste handling and treatment costs, lower/eliminate reclamation costs
- Reduce carbon foot print
- Open new source of raw materials
- Enhance sustainability of business & community and bring them closer
- Drive innovation, make products greener and different, provide X factor
- In line with Green Growth



**Thank you!**

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**ADDITIONAL SLIDES**



## GP Advisory Committee (GPAC)

- ✓ Launched in 2003 by APO, as an advisory board for GP programs such as EPIF, Eco-products Directory
- ✓ Members from over 60 Japanese corporations, academics and specialists with a long experience in undertaking environmental measures and/or developing world-class environmental technology







# Eco-products International Fair (EPIF)



10-12 February 2011  
Pragati Maidan, New Delhi

Presentation to  
H.E. Mr. Anand Sharma,  
Indian Minister of Commerce  
and Industry by  
Professor Ryoichi Yamamoto





# Eco-products International Fair (EPIF)



Office equipment;  
Stationery, office supply;  
Automobiles, transportation  
systems and components;  
Household equipment;  
Buildings and building  
materials;  
Containers, packaging;  
Electrical appliances;  
Energy generation,  
transmission and distribution  
systems;  
Environmentally friendly  
materials and components;  
Clothing;  
Household goods



# APO Eco-products Directory (EPD)

- ✓ First edition published in 2004
- ✓ Envisioned as a publication version of a regional platform for eco-friendly products in the Asia-Pacific region, in line with the annual Eco-products International Fair (EPIF)





# Page Layout



The screenshot shows a product page for the Epson Endeavor ST150E. The page is annotated with ten numbered callouts:

- ① Product ID number: EP-3-016
- ② Title (product name and features): Endeavor ST150E — Eco-friendly desktop PC that achieved high performance
- ③ Product description (environmental performance and product performance):
  - ⑦ Categories: PC/IT equipment, personal computers
  - ⑧ Environmental labels and other information: Energy Star, EPEAT, GreenScreen, and other eco-certifications.
- ④ Company information: EPSON DIRECT CORPORATION
- ⑤ Sales area: Available in Japan
- ⑥ Common product name: Desktop computer "Endeavor ST150E"
- ⑨ Product photo: A photograph of the Endeavor ST150E desktop computer system.
- ⑩ Photo description: Desktop computer "Endeavor ST150E"

- ① Product ID number
- ② Title (product name and features)
- ③ Product description (environmental performance and product performance)
- ④ Company information
- ⑤ Sales area
- ⑥ Common product name
- ⑦ Categories
- ⑧ Environmental labels and other information
- ⑨ Product photo
- ⑩ Photo description



# The APO Eco-products Database (EPDb)



<http://apo-ecoproducts.com/>



- ✓ Launched in October 2010
- ✓ Currently updated with data from EPD2011
- ✓ Equipped with a search mechanism to view all listings based on designated categories, keywords, countries/regions, etc



## 3Rs Technologies

- Recycling of plastics from used consumer electronics/end-of-life devices in refrigerator, air conditioners, automatic washer/dryers, vacuum cleaners (Sharp, Mitsubishi, Hitachi – Japan)
- Recycled pulp (80 % recycled paper) for corrugated carton used for packaging (Sanyo Electric -Taiwan)
- Recycled paper used for operation manuals (Sharp – Japan)
- Recycled paper used for operation manuals (Sharp, Japan)
- Use recycled material parts (GM-Thailand)
- Use recycled plastics for cases etc (Toshiba-Japan)



## 3Rs Technologies

- Biomass plastic with more than 25 % plant-derived constituents used for operation buttons, exterior plastic parts (Canon-Japan)
- Use of recycled plastic for internal printer parts (Seiko Epson – Japan)
- Use of recycled materials in Konica copy machines (Inter Far East Engineering- Thailand)
- Use of recycled materials in Aficio copy machines (Ricoh-Thailand)



## 3Rs Technologies

- Use of recycled plastic for the duster tray in printer (Toshiba- Japan)
- Recycled plastic used in parts of the PC body (Fujitsu – Japan)
- PC made of maximum 25 % recycling material and 80 % recycling paper is used along with soy ink for all carton printing (BenQ- Taiwan)
- 90 % of the mechanical elements and 100 % of the packaging materials for Eco Notebook are recyclable/reusable (BenQ-Taiwan)
- The monitors (PC) are made 100 % recyclable (BenQ- Taiwan)
- All major plastic parts for future recycling in Projector (BenQ - Taiwan)





## 3Rs Technologies

- The materials used in most plastic parts of office chair are labeled to facilitate separation and recycling, use of polypropylene from recovered battery cases (Itoki Corporation- Japan)
- 60 % of resin made with reclaimed materials and most resin parts are labeled to facilitate separation and recycling (Itoki Corporation – Japan)
- More than 60 % plastic recycling rate in chairs (Fursys-Seoul)
- More than 80 % plastic recycling in stand alone panels for office (Fursys- Seoul)