

出國報告（出國類別：國際會議）

出席亞洲生產力組織(APO)之「生態產品資料庫研習會」(Workshop on Eco-products Database)

服務機關：行政院環境保護署

姓名職稱：李金靖 簡任技正

派赴國家：印尼

出國期間：100年5月22日至100年5月28日

報告日期：100年7月12日

摘要

- 一、出國計畫名稱：出席亞洲生產力組織(APO)之「生態產品資料庫研習會」
- 二、出國地點：印尼雅加達
- 三、出國人員：李金靖簡任技正
- 四、出國期間：100年5月22日至100年5月28日
- 五、建議與心得：

本次研習會議及參訪行程提供參與國際事務交流機會，藉此了解各國在環保標章推動現況及執行經驗，本次出席「生態產品研習會」心得建議如下：：

(一)建立亞太地區生態產品指南及資料庫之建議如下：

- 1.區域性的生態產品指南及資料庫符合區域整體環境利益，且有助於綠色經濟及綠色產業之發展，確實有必要性。
- 2.我國之生態產品發證分別由本署、內政部及經濟部負責，為了建立國家級統合之資料庫，有必要成立跨部會溝通平台商討資料(訊)整合問題。
- 3.各國生態產品發展程度差異極大(如越南、印度、伊朗、巴基斯坦等國尚未有生態產品制度)，短時間要發展出區域性生態產品資料庫與指南仍有困難。
- 4.APO 應在建立區域性生態產品認證標準(eco-product criteria / standards)及各國相互認證制度上(mutual recognition systems)扮演更積極角色。
- 5.我國大企業應積極將環境保護落實在產品設計與研發上，政府未來在強化與導引產業發展方向上應有更深一層的戰略規劃。

(二)有關我國環保標章與產品碳足跡制度建議部分：

- 1.發展服務業環保標章制度將是未來的重點與方向，日本與韓國之經驗將可供未來環保標章標準制定之參考。
2. APO 目前發行之 2011「生態產品指南」中僅將生態產品分成物質(料)、元件、產品及服務 4 大類可供我國在分類方式之參考。
- 3.因應全球暖化的問題，亞洲國家未來可在 ISO 制定出共同規範後，於產品類別規則(PCR)的發展與建構程序上攜手合作，減少差異性、增加透明度，朝向區域性 CFP 制度之建立。

目 次

壹、	前言	3
貳、	目的	4
參、	出國行程	5
肆、	與會過程	8
一、	亞洲生產力組織簡介	8
二、	我國參與亞洲生產力組織現況	9
三、	生態產品資料庫研習會	9
(一)	概要	9
(二)	生態產品資料庫研習會各日情形	10
四、	發放我國環保標章制度推動成果英文宣導摺頁	18
伍、	心得及建議	19
附 錄 1	APO 生態產品資料庫研習會議程表	21
附 錄 2	APO 生態產品資料庫研習會參加人員及講座名單	26
附 錄 3	APO 生態產品資料庫研習會講座獎議資料	34
附 錄 4	分組討論議題 A：建立亞太地區生態產品共同的界定、條件及分類	132
附 錄 5	分組討論議題 B：朝向綠色亞洲	163
附 錄 6	實地參訪之討論與發現	200
附 錄 7	我國環保標章制度推動成果英文宣導摺頁	202

壹、前言

近年來，全球各國陸續發生自然性的大災難及極端氣候造成的衝擊，許多的資料如地表均溫及海平面之上升已充分顯示地球暖化速度非常快，而這些氣候變遷的戲劇性現象僅僅在數十年間就已出現，雖然各國政府已一同發展因應環境變遷之架構與策略，在此同時，身為地球公民的我們有必要反躬自省，我們要坐著任由氣候變遷持續超乎預期的發生而不回應，或是起身去找出我們在防止生態系統惡化現狀下應積極扮演之角色。經濟成長固然能滿足人類需求，獲得個人生活福祉，然其代價則消耗大量能源及原料，並產生大量廢棄物，且消費型態直接影響產業、產品的發展型態，間接地造成環境污染及資源耗費問題。有鑑於此，1978 年德國首倡並推動產品生態標章(Ecolabelling)的觀念與制度，期藉由綠色消費行為，促使產品製造商減少產品對環境的負荷。這個制度在近年來相當迅速地被世界各國採用。

行政院環境保護署自 81 年 3 月評選出以「一片綠色樹葉包裹著乾淨不受污染的地球」作為我國環保標章的圖案，並依法註冊登記其商標專用權及對外界公告，另於 81 年 8 月 25 日正式公告實施「環保標章推動使用作業要點」及「環保標章審議委員會設置要點」，推動環保標章之申請作業。除積極鼓勵事業單位於產品之原料取得、製造、配送銷售、使用及廢棄處理回收之產品生命週期過程中，能夠降低環境之污染及節省資源之消耗，促進廢棄物之減量、減毒及回收外，同時，為喚醒消費者選購可回收、低污染、省資源之產品，已陸續推動政府機關綠色採購、民間企業機構綠色採購、擴展實體與虛擬之綠色產品銷售通路..等，降低環境衝擊，以提昇環境品質。此外，因應全球暖化危機，於 98 年實施產品碳足跡標籤之認證，鼓勵企業透過產品碳排放之盤查，找出生命週期中可減少溫室氣體排放之流程與措施，同時，呼籲消費者選購低碳排放之產品，激勵業者減排。

近年來我國積極參與相關國際組織活動，尤其是與環保標章最為相關之全球環保標章網路組織(Global Ecolabelling Network, GEN)。亞洲生產力組織(Asian Productivity Organization, APO)自 1994 年即推動綠色生產力的觀念，作為達成永續的經濟成長及強調氣候變遷是緊迫議題之途徑。APO 現有 20 個會員國，我國是其中之一會員國，

各會員國均成立政府組織或非政府組織之國家層級的生產力組織(National Productivity Organization, NPO)，我國的 NPO 是財團法人中國生產力中心。APO 成立於 1961 年，今年是慶祝該組織 50 周年，APO 的主要任務是在無歧視、無政治性及非營利的原則下，藉由提升生產力對亞洲及太平洋地區的發展做出貢獻。近年來積極推動綠色生產力及綠色經濟，並強調區域性共同生態產品及綠色採購對環境永續之重要性；每年 APO 均透過不同研商議題邀請各會員國派員參加。

100 年度為持續加強國際參與及合作機制，行政院環境保護署特派員並出席 APO 「生態產品資料庫研習會」，會中除發送我國環保標章制度推動成果宣導摺頁予各國與會代表，介紹我國環保標章制度與政府綠色採購之經驗，並推動國際相互承認、制訂共同核心規格標準外，並邀請各國來台參加我國主辦之 100 年度全球環保標章組織年會及綠色博覽會，將由我國主辦，藉此說明規劃辦理情形，並邀請各國代表歡迎來台參加年會，可達到提升我國在國際間能見度之成效，亦間接提升國內產品在國際之競爭力，避免不必要之貿易障礙。

貳、目的

本次赴印尼參與 APO 「生態產品資料庫研習會」之目的：

- 一、了解 APO 推動區域性生態產品資料庫之作法及我國因應方式。
- 二、瞭解其他會員國環保標章制度執行現況及其他相關措施，並進行環保標章推動經驗交流，以建立良好之溝通管道，掌握環保標章國際發展，以作為我國環保標章制度精進之參考。
- 三、宣傳我國推動環保標章制度及綠色採購之成果，提升我國國際地位。
- 四、作為我國後續規格標準制訂或合作開發、相互承認之推動參考。
- 五、邀請各國代表今年 10 月來台參加 2011 年全球環保標章網路組織年會及綠色博覽會，了解我國推動環境保護產品之成果，提升我國在國際間能見度。

參、出國行程

一、出國計畫名稱：出席亞洲生產力組織「生態產品資料庫研習會」

二、出國人：李金靖簡任技正

三、出國日期：100年5月22日至100年5月28日

四、出國行程與內容概要：

活 動 日 期	活 動 內 容	活 動 地 點
100年5月22日	搭中華航空 CI761 班機啟程赴印尼雅加達	—
100年5月23日	<p>生態產品資料庫研習會(第一天)：</p> <p>(一)開幕</p> <ol style="list-style-type: none"> 1.致歡迎詞(印尼人力資源暨移民部處長 Mr. Mohd Razali Hussain 及 APO 秘書處官員 Ms. Yumiko Yamashita) 2.本次研討會 APO 之工作人員、講座及參加人員介紹。 3.合照。 <p>(二)研習會議程</p> <ol style="list-style-type: none"> 1.印尼的生態標籤(Ecolabel)計畫-“Ramah Lingkungan”(印尼環境部技術與標準助理副部長， Mr. Dasrul Chaniago) 2.印尼的綠色採購及綠色行動與政策(印尼綠色採購網絡(GPN)主席，Mr. Handito Hadi Joewono) 3.生態標籤及生態產品(台灣財團法人環境與發展基金會，Dr. Ning Yu) 4.分組討論--議題 A：建立亞太地區生態產品共同的界定、條件及分類，“環境友善是甚麼？”(主持人：Dr. Ning Yu、紐西蘭環境部廢棄物及資源資深分析師，Ms. 	<p>印尼雅加達</p> <p>Hotel Bumi Karsa</p> <p>Bidakara</p>

	Dana Peterson) (三)APO 歡迎晚宴	
100 年 5 月 24 日	生態產品資料庫研習會(第二天)議程： 1.APO 生態產品指南與資料庫及，最近發展現況介紹(Ms. Yumiko Yamashita) 2.生態產品是什麼？清晰性、複雜度及共同發展(Ms. Dana Peterson) 3.分組討論並由各組報告議題 A 的結果(各研習會參加人員) 4.分組討論--議題 A 結論(主持人：Dr. Ning Yu、Ms. Dana Peterson)	印尼雅加達 Hotel Bumi Karsa Bidakara
100 年 5 月 25 日	生態產品資料庫研習會(第三天)： (一)實地參訪-松下國際股份有限公司印尼廠的綠色生產及永續發展做法 (二) 研習會議程 1.實地參訪之發現與討論(主持人：Dr. Ning Yu、Ms. Dana Peterson) 2.建構低碳城市的策略-台灣新竹市介紹(Dr. Ning Yu) 3.分組討論--主題 B：朝向綠色亞洲-為建立較綠色的亞洲應有之系統性規劃及建議的區域行動方案(主持人：Ms. Dana Peterson)	印尼雅加達 Hotel Bumi Karsa Bidakara
100 年 5 月 26 日	生態產品資料庫研習會(第四天)議程： 1.轉變到一個”綠色經濟”的模式、挑戰與機會(Ms. Dana Peterson)	印尼雅加達 Hotel Bumi Karsa Bidakara

	<p>2.分組討論並由各組報告議題B的結果(各研習會參加人員)</p> <p>3.分組討論--議題 B 結論(主持人：Ms. Dana Peterson)</p>	
100年5月27日	<p>生態產品資料庫研習會(第五天)議程：</p> <p>(一) 研習會所有議題之整體結論(主持人：Dr. Ning Yu、Ms. Dana Peterson)</p> <p>(二) 閉幕</p> <p>1.致詞(印尼人力資源暨移民部官員 Ms Yunani Rodiah 及 APO 秘書處官員 Ms. Yumiko Yamashita)</p> <p>2.頒發研習會結業證書</p>	<p>印尼雅加達</p> <p>Hotel Bumi Karsa</p> <p>Bidakara</p>
100年5月28日	搭中華航空 CI 762 班機由印尼雅加達返台	—

肆、與會過程

一、亞洲生產力組織簡介

1959 年在日本東京舉行亞洲圓桌生產力會議(The Asian Round Table Productivity Conference)，與會各國決議成立亞洲生產力組織(Asian Productivity Organization, APO)，1961 年在菲律賓馬尼拉會議由我國、日本、南韓、印度、菲律賓、巴基斯坦、泰國及尼泊爾等國簽署共同成立，目前共有近 20 個會員，係第三方國際性非營利民間組織，其成立宗旨為在無歧視、無政治性及非營利的原則下，藉由提升生產力及競爭力對亞洲及太平洋地區的發展做出貢獻。

APO 為服務會員國，扮演服務會員國之五大任務及角色，包括做為會員國的知識庫為會員國研究迫切需要之問題並提供解決方法、做為會員國間之催化劑促進會員國間有關提高生產力之相互合作關係、做為會員國之顧問提供會員國必要經濟發展與競爭力提升之諮詢服務、做為會員國組織建構者提供會員國 NPO 及相關組織在生產力提升與訓練服務、做為生產力資訊交換中心提供會員國間的資訊交換與溝通。APO 提升會員國生產力之策略方向為：

- 一、強化各國 NPOs 的能力，並促進會員國中小企業與社區之發展。
- 二、催化以創新為引導之生產力成長。
- 三、促進綠色生產力，創造綠色產品與服務之需求。

APO 的最高權力機構為理事會，但活動及管理事務由秘書長統籌辦理，理事會每年開會並聽取秘書長的年度會務報告及財務稽核報告，決定 APO 政策、策略、方向及會員關係，認可未來的二年計畫、年度活動及預算財務規劃。秘書長領導秘書處執行理事會交付之任務，為會員國的利益與其他國際組織、政府部門及私人機構溝通與協調。

二、我國參與亞洲生產力組織現況

我國(以財團法人中國生產力中心為代表組織，CPC)為亞洲生產力組織(APO)之創始會員國之一。CPC 為我國與 APO 聯絡之窗口，每年 APO 所推動之計畫與舉辦之研討(習)會，均透過 CPC 聯繫相關政府部門知悉或參與，而我國政府有關提升生產力與競爭力之迫切議題亦透過 CPC 轉之給 APO。

為持續維持我國影響力，並慶祝我國百年國慶，已取得 2011 年全球環保標章網路組織年會主辦權，並將舉辦綠色博覽會，已透過本次研習會邀請各國代表屆時蒞臨參加。

三、生態產品資料庫研習會

(一) 概要

- 1.主辦：APO 及印尼 NPO
- 2.參加人員：APO 會員指派參加人員約 13 國 19 名、研習會講座 (speaker)、印尼 NPO 工作人員。
- 3.我國參加人員：
 - (1) 本署管考處李金靖簡任技正
 - (2) 財團法人環境與發展基金會于寧總經理 擔任講座
- 4.主要行程：
 - (1) 100 年 5 月 23 日：開幕 / 研習會 / APO 歡迎晚宴
 - (2) 100 年 5 月 24 日：研習會 / 議題 A 分組討論
 - (3) 100 年 5 月 25 日：實地參訪(發現與討論) / 議題 A 分組討論、結論報告
 - (4) 100 年 5 月 26 日：研習會/議題 B 分組討論、結論報告/印尼 NPO

歡送晚宴

(5) 100 年 5 月 27 日：討論議題總結 / 閉幕

(6) 99 年 10 月 28 日：2010 年全球環保標章網路組織年會年度會員大會

5.生態產品研習會議程表(如附錄 1)、參加人員與講座名冊(如附錄 2)及講座會議資料(如附錄 3)

6.議題 A 分組討論之各組報告資料(如附錄 4)

7.議題 B 分組討論之各組報告資料(如附錄 5)

8.實地參訪之討論與發現(附錄 6)

9.我國環保標章制度推動成果英文宣導摺頁(附錄 7)

(二) 生態產品資料庫研習會 各日情形

1.日期：100 年 5 月 23 日

(1)地點：印尼雅加達 Hotel Bumi Karsa Bidakara

(2)開幕

(3)研習會：

A.印尼的生態標籤(Ecolabel)計畫-“Ramah Lingkungan”(印尼環境部技術與標準助理副部長 Mr. Dasrul Chaniago)

(A)印尼目前有第一型及第二型環境標章的認證，分別核發不同的標章圖案加以區別。第二型環境標章有無經由第三方驗證皆可。

(B)目前有標準的產品大致為影印用紙類、合成粉狀清潔劑、油漆、皮革類、乾電池、衛生紙、包裝紙，並制定相關之指引。

(C)標章圖樣係為印尼環境部註冊所有。

B.印尼的綠色採購及綠色行動與政策(印尼綠色採購網絡(GPN)主席 Mr. Handito Hadi Joewono)

(A)印尼將在低碳發展及減低氣候變遷兩大主軸下發展綠色經濟。

(B)印尼長期國家製造業之發展目標將以環境、經濟及社會兼籌並顧。

(C)綠色企業發展計畫將以省能、無污染、廢棄物管理及資源回收循環利用等願景為推動重點。

C.生態標籤及生態產品(台灣財團法人環境與發展基金會 Dr. Ning Yu)

(A)永續消費與生產的重點及發展歷程介紹。

(B)永續消費與生產的行動包含提升產品品質、製程創新、法令規範、經濟工具、標章與獎勵、政府採購。

(C)ISO14020 系列規定之環境標章及宣告之原則介紹。

D.分組討論--議題 A：建立亞太地區生態產品共同的界定、條件及分類，"環境友善是甚麼？"(主持人：Dr. Ning Yu、紐西蘭環境部廢棄物及資源資深分析師，Ms. Dana Peterson)



圖 1 生態產品資料庫研習會開幕致詞



圖 2 講座、參加者及 APO 工作人員合照



圖 3 Mr. Dasrul Chaniago 介紹印尼生態標籤
計畫



圖 4 Mr. Handito Hadi Joewono 介紹印
尼的綠色採購及綠色行動與政策

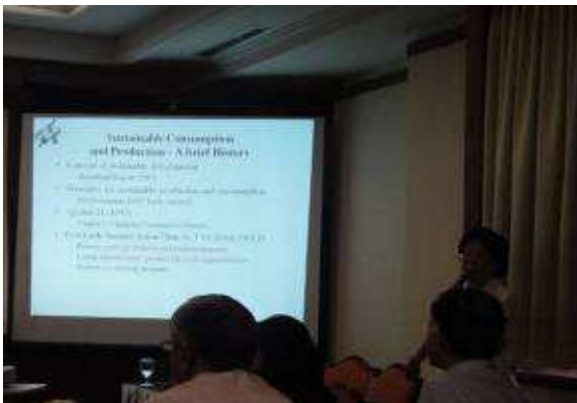


圖 5 Dr. Ning Yu 介紹生態標籤及生態產
品



圖 6 分組討論-本組夥伴

2.日期：100 年 5 月 24 日

(1)地點：印尼雅加達 Hotel Bumi Karsa Bidakara

(2)研習會：

A. APO 生態產品指南與資料庫及發展現況介紹(APO 秘書處秘書
Ms. Yumiko Yamashita)

(A)APO 自 2004 年起每年出版生態產品指南一書，2011 版的生態產品指南總共分成物質、元件、產品及服務四大類，有 818 種品項。

(B)所建置之 818 種品項不必是環境標章產品或服務，但必須是在綠色採購網絡(Green Purchasing Network, GPN)註冊有案之產品或服務，足可證明其可減少對環境的衝擊。

(C)APO 於 2010 年已建置生態產品資料庫

(<http://apo-ecoproduct.com>)，可提供各國對生態產品或服務之蒐尋及建立國家層及資料庫之參考。

B.生態產品是什麼？清晰性、複雜度及共同發展(Ms. Dana Peterson)

(A)生態產品其目的應清晰、文件及資料應可被證明、及其企圖與暗示應讓消費者清楚。

(B)隱瞞交易、沒有證明文件、與意含糊、誤導標示、毫無相關、較少罪惡感及假的自我宣告等，都是常見的漂綠行為。

(C)因為不同產品有不同的議題與標準，其評估的方法及管理方式亦不同，增加生態產品認證的複雜性。

(D)永續產品的設計應包含對的生產流程、對的能源來源、隊的物料型態與使用方式、對的民眾處理。

C.分組討論並由各組報告議題 A 的結果(各研習會參加人員)。



圖 7 Ms. Yumiko Yamashita 介紹 APO 生態產品指南與資料庫及發展現況



圖 8 本組報告議題 A 之討論結果

3.日期：100 年 5 月 25 日

(1)地點：印尼雅加達 Hotel Bumi Karsa Bidakara

(2)研習會：

A.實地參訪-松下國際股份有限公司印尼廠的綠色生產及永續發展做法。

B.實地參訪之發現與討論(主持人：Dr. Ning Yu、Ms. Dana Peterson)。

C.建構低碳城市的策略-台灣新竹市介紹(Dr. Ning Yu)

(A)一項行動：免費公車及自行車路網。

(B)二個焦點：低碳的居住與商業區、低碳的工業區。

(C)八種主題：低碳建築、節省能源、低碳運輸、再生能源、資源回收、低碳生活、綠色環境、企業減碳。

D.分組討論--主題 B：朝向綠色亞洲-為建立較綠色的亞洲應有之系統性規劃及建議的區域行動方案(主持人：Ms. Dana Peterson)



圖 9 參訪松國際公司印尼廠合照



圖 10 松下國際公司印尼廠推動 5S

4.日期：100 年 5 月 26 日

(1)地點：印尼雅加達 Hotel Bumi Karsa Bidakara

(2)研習會：

A.轉變到一個”綠色經濟”的模式、挑戰與機會(Ms. Dana Peterson)

(A)善用市場的力量朝向綠色成長：包括 B2B、B2G、B2C、政府的行動、跨部門(公、私)聯合。

(B)政府的行動：立法進行產品的管理、立法將不好的產品從市場中排除、徵收環境稅或碳稅、進行政府綠色採購。

(C)永續設計(D)esigned for Sustainability, D4S)應將民眾(people)、地球(planet)、產品(product)及利潤(profit)一併考量。

B.分組討論並由各組報告議題 B 的結果(各研習會參加人員)。



圖 11 (Ms. Dana Peterson 介紹轉變到一個“綠色經濟”的模式、挑戰與機會



圖 12 本組報告議題 B 之討論結果



圖 13 各組參加者就議題 B 之結論表達意見



圖 14 印尼 NPO 之歡送晚宴

5.日期：100年5月27日

(1)地點：印尼雅加達 Hotel Bumi Karsa Bidakara

(2)研習會所有議題之整體結論(主持人：Dr. Ning Yu、Ms. Dana Peterson)。

(3)閉幕。



圖 15 Dr. Ning Yu 就研習會之總結論說明



圖 16 Ms. Dana Peterson 就研習會之總結論說明



圖 16 研習會閉幕致詞



圖 18 我國參加人員李金靖接受結業證書



圖 19 研習會閉幕合照

四、發放我國環保標章制度推動成果英文宣導摺頁

為向國際友人展示我國於環保標章與綠色消費之努力與成果，製作我國環保標章制度推動成果英文宣導摺頁(如附錄 3)，並藉 2010 年全球環保標章網路組織年會發放予各國與會人員宣傳。

英文宣導摺頁重點內容包括：

- (一)我國環保標章概述：含緣起、現況、主要產品類別。
- (二)機關綠色採購：含起始時間、指定項目、採購目標比率等。
- (三)民間綠色採購推動與綠色採購聯盟：此部分除基本說明外，重點在於曾辦理之各類綠色採購推動措施。
- (四)我國環保標章與 GEN 之關係。
- (五)歷年與其他國家環保標章相互承認實績。

伍、心得及建議

本次研習會議及參訪行程提供參與國際事務交流機會，藉此了解各國在環保標章推動現況及執行經驗，本次出席「生態產品研習會」心得建議如下：：

(一)建立亞太地區生態產品指南及資料庫之建議如下：

- 1.區域性的生態產品指南及資料庫符合區域整體環境利益，且有助於綠色經濟及綠色產業之發展，確實有必要性。在朝向區域性生態產品指南與資料庫建置的方向時，各國有必要先行建立國家層級之資料庫或指南，以利將來區域性資料庫之整合。
- 2.我國之生態產品發證分別由本署(環保標章產品)、內政部(綠建材標章)及經濟部(節能、省水標章)負責，各自建立標章產品資料庫供民眾查詢，為了建立國家級統合之資料庫，有必要成立跨部會溝通平台商討資料(訊)整合問題。
- 3.各國生態產品發展程度差異極大(如越南、印度、伊朗、巴基斯坦等國尚未有生態產品制度)，而 APO 只是一個 NGO 團體，無法實際規範各會員國一致的做法與步調，再者，制度與系統之建置雖然 APO 會協助，但資金仍須由各會員國自籌，各國參加者雖贊同區域性之生態產品資料庫與指南之建置，但短時間要發展出區域性生態產品資料庫與指南仍有困難。
- 4.各國參加者雖贊同生態產品應以 ISO14020 系列有關環境標籤之第一型生態標籤產品(Type I ecolabelling product)及經第三者驗證通過之第二型生態標籤產品(Type II ecolabelling products)為主，但各國之生態產品標準不一，且對國外之生態產品是否可等同於該國認證之生態產品有極大的限制，因此，APO 應在建立區域性生態產品驗證標準(eco-product criteria / standards)及各國相互認證制度上(mutual recognition systems)扮演更積極角色。
- 5.綜觀 APO 目前發行之 2011「生態產品指南」一書，內容所介紹的廠商全數皆是日商之跨國或全球性公司提供的產品或服務，顯見日本之大企業已非常重視綠色經濟與綠色產業未來之發展潛力。而我國之大企業雖然強調環境保護，卻未積極落實在產品設計與研發上，這將是政府未來在強化與導引產業發展方向上應有更深一層的戰略規劃。

(二)有關我國環保標章與產品碳足跡制度建議部分：

- 1.發展服務業環保標章制度將是未來的重點與方向，我國在服務業環保標章已有環保旅館之認證標準，然而，服務業是多重面向的產業，舉凡水處理業、企業節能或新能源分析顧問服務、能源管理諮詢顧問…等，在日本已可認為是生態服務之一種，日本與韓國之經驗將可供未來環保標章標準制定之參考。
- 2.我國環保標章產品一規格標準及特性目前區分為 14 類，然而，有許多是具有類似之性質，APO 目前發行之 2011「生態產品指南」中僅將生態產品分成物質(料)、元件、產品及服務 4 大類，反映此生態產品或服務之基本特質，亦可讓消費者或顧客在選購生態產品時，由此分類了解到這生態產品之用途是否相符，這可供我國在分類方式之參考。
- 3.因應全球暖化的問題，亞洲國家如我國、日本、南韓及泰國均已在減少溫室氣體排放上做出非常多的努力，如企業溫室室氣體盤查、產品碳足跡之認證..等，未來可在 ISO 制定出共同規範後，於產品類別規則(PCR)的發展與建構程序上攜手合作，減少差異性、增加透明度，朝向區域性 CFP 制度之建立。

附錄 1

APO 生態產品資料庫研習會議程表

Tentative Program

11-IN-99-GE-WSP-B: Workshop on Eco-products Database

(Jakarta, Indonesia, 23 - 27 May 2011)

Program venue & accommodation

Hotel Bumi Karsa Bidakara

Jl. Jend Gatot Subroto Kav. 71-73, Jakarta Selatan 12870, Indonesia

(Tel) +62-21-8379-3555 (Fax) +62-21-8379-3554 www.bidakarahotel.com

Sunday, 22 May

Arrival of participants

Monday, 23 May

Time	Agenda
08:30 - 09:00	Registration of participants
09:00 - 10:30	Opening ceremony <ul style="list-style-type: none">• Opening remarks by APO Director for Indonesia• Opening remarks by APO• Introduction of APO resource persons, APO participants• Group photo (led by NPO Indonesia & APO)
10:30 - 11:00	Coffee Break
11:00 - 12:00	Session 1: Presentation Indonesian Ecolabel Program - "Ramah Lingkungan" Presenter: Mr Dasrul Chaniago, Assistant Deputy for Standardization and Technology, Ministry of Environment, Indonesia
12:00 - 13:30	Lunch
13:30 - 14:30	Session 2: Presentation Green purchasing and green initiatives/policies in Indonesia Presenter: Mr. Handido Hadi Joewono, Chairman GPN Indonesia
14:30 - 15:30	Session 3: Lecture Introduction of Eco-products Lecturer: Dr. Ning Yu, APO Resource Person
15:30 - 16:00	Coffee Break

16:00 - 17:30	Session 4: Group exercise A (Introduction, Group work) Establishing a common definition/criteria/classification of “eco-products” within the Asia-pacific region - What is “environmentally-friendly?” Moderator: Dr. Ning Yu
19:00 - 21:00	Welcome Dinner hosted by APO @ (Venue TBA)

Tuesday 24 May	
Time	Agenda
09:00 - 09:30	Session 5: Presentation Presentation on APO Eco-products Directory/Database and its recent developments Presented by APO Secretariat
9:30 - 10:30	Session 6: Lecture What is an “eco-product” part 2 - clarity, complexity and co-evolution By Ms. Dana Peterson, APO Resource Person
10:30 - 11:00	Coffee break
11:00 - 12:30	Session 7: Group Exercise A (Group Work (con’t))
12:30 - 13:30	Lunch
13:30 - 15:30	Session 8: Group Exercise A (Group Presentations) Presentations by Group 1 - 4 Moderator: Dr. Ning Yu
15:30 - 16:00	Coffee Break
16:00 - 17:00	Session 9: Group Exercise A (Conclusions) Conclusions and wrap-up on the group findings Moderator: Dr. Ning Yu

Wednesday 25 May	
Time	Agenda
09:00 - 12:00	Site visit (Venue: PT Panasonic Manufacturing Indonesia)

12:00 - 13:30	Lunch
13:30 - 14:00	Session 10: Group discussion Findings from the site visit Moderator: Ms. Dana Peterson
14:00 - 15:00	Session 11: Lecture Strategy on Building a Low Carbon City - Hsinchu, Taiwan Lecturer: Dr. Ning Yu
15:00 - 15:30	Coffee break
15:30 - 17:00	Session 12: Group Exercise B (Introduction, Group work) Towards “GreenAsia” - Formulating proposals and recommendations for regional initiatives to build a greener society in Asia Moderator: Ms. Dana Peterson

Thursday 26 May	
Time	Agenda
9:00 - 10:00	Session 13: Lecture Transitioning to a “Green Economy” - models, challenges, and opportunities Lecturer: Ms. Dana Peterson
10:00 - 12:30	Session 14: Group Exercise B (Group work (Con’t)) (Includes working coffee)
12:30 - 13:30	Lunch
13:30 - 15:30	Session 15: Group Exercise B (Presentations) Presentations by Groups 1 - 4 Moderator: Ms. Dana Peterson
15:30 - 16:00	Coffee Break
16:00 - 17:00	Session 16: Group Exercise B (Conclusions) Conclusions and wrap-up of group findings Moderator: Ms. Dana Peterson
18:00 -	Farewell Dinner hosted by NPO Indonesia @ (Venue TBA)

Friday 27 May	
Time	Agenda
09:00 - 10:30	Session 17: Group discussions Overall conclusions of the workshop Moderator: Dr. Ning Yu
10:30 - 11:00	Coffee break
11:00 - 12:30	Session 18: Closing <ul style="list-style-type: none"> • Evaluation • Certification • Closing remarks by APO • Final remarks by NPC Indonesia (led by NPC Indonesia & APO)

Saturday, 28 May
Departure of participants

附錄 2

APO 生態產品資料庫研習會參加人員 及講座名單

(23–27 May 2011, Jakarta, Indonesia)

List of Participants

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(*)Participants from Profit-Making Organization = 0

(**)Colombo Plan Sponsored Participants = 0

()APO Sponsored Participants = 0***

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附錄 3

APO 生態產品資料庫研習會講座獎議資料



Building a Regional Platform - The APO Eco-products Directory -

Yumiko Yamashita
Program Officer, Industry Department
Asian Productivity Organization

Promotion of APO Eco-products Directory 

Contents

1. About APO
2. Green Productivity (GP)
3. Overview of the APO Eco-products Directory
4. Building a Regional Green Platform



Promotion of APO Eco-products Directory 

1. About APO



Promotion of APO Eco-products Directory 

How APO came to be

- ✓ 1959 - Asian Round Table Productivity Conference held in Tokyo envisioned a regional intergovernmental organization for productivity
- ✓ 1961 - the Convention to constitute the APO charter was signed.
- ✓ 2011 - APO celebrates its 50th Anniversary



Promotion of APO Eco-products Directory 

Mission of APO

To contribute to the socioeconomic development of Asia and the Pacific through enhancing productivity

- ✓ Non-political
- ✓ Non-profit
- ✓ Non-discriminatory

The APO flower - Stamariaara APO



Promotion of APO Eco-products Directory 

The Role of APO

Promoting and advocating a consciousness of productivity within the Asia-Pacific region, by performing the roles of:

- ✓ A think tank
- ✓ A catalyst
- ✓ A regional adviser
- ✓ An institution builder
- ✓ A clearing house of information on productivity



Promotion of APO Eco-products Directory 

Our members



20 member economies of the Asia-Pacific region

Promotion of APO Eco-products Directory 

National Productivity Organizations (NPOs)

The implementing arm and partners of APO in member economies:



Promotion of APO Eco-products Directory 

Funding of APO

- ✓ Annual membership contribution based on gross national income/gross domestic product (74%)
- ✓ Special cash grants
- ✓ Project implementation grants given by member governments (project hosting county)
- ✓ Miscellaneous income: publication, participation fee, interest income



Promotion of APO Eco-products Directory



Organizational chart



Promotion of APO Eco-products Directory



2. Green Productivity (GP)



Promotion of APO Eco-products Directory 

Green Productivity (GP) - its origin

1992 - The Rio Earth Summit Recommendations:
Principle 4. Environmental Protection in the
Development Process

*In order to achieve sustainable development,
environmental protection shall constitute an integral
part of the development process and cannot be
considered in isolation from it.*



1996 - The APO World Conference on Green Productivity
"Manila Declaration on GP"

*Environmental protection should be promoted
without sacrificing productivity.*

Promotion of APO Eco-products Directory 

Green Productivity (GP) - the concept

- ✓ A strategy to enhance productivity and simultaneously reduce the negative impacts on the environment
- ✓ The application of appropriate productivity and environmental management tools, techniques, and technologies to reduce the environmental impact of an organization's activities, products, and services.



A Productivity-Based Approach to Sustainable Development

Promotion of APD Eco-products Directory 

Green Productivity (GP) - the programs

- ✓ Introduced in 1994, through a special grant from the Government of Japan, as a practical way to answer the challenges of sustainable development
- ✓ The aim - propagate a "GP consciousness" within the Asia-Pacific region

Example of APD GP projects:

- Eco-products International Fair
- Establishment of Eco-products Database
- International Conference on Green Productivity
- Training of Trainers on Green Productivity
- Workshop on Eco Design
- Study Meeting on Eco-products Database
- Workshop on Green Procurement
- Workshop on Eco-products Directory



Promotion of APD Eco-products Directory 

The Green Productivity 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 with a long experience in undertaking environmental measures and/or developing world-class environmental technology

Chairperson:

Mr. Tetsuke Kitayama, Chairman of the Board,
Sumitomo Mitsui Banking Corporation

Vice-chairpersons:

Mr. Yukio Yamase, Director, Representative Executive
Officer, President and Chief Operating Officer,
DRIK Corporation

Mr. Hajime Bada, President and Chief Executive Officer,
JFE Steel Corporation

Mr. Takashi Yamajishi, Executive Vice President,
Member of the Board and Chief Technology Officer,
Teijin Limited

Professor Ryotchi Yamamoto, University of Tokyo

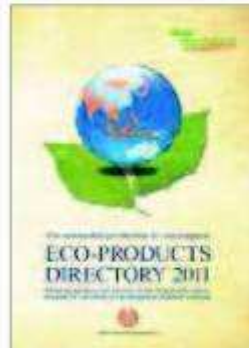
Mr. Tsuneaki Taniguchi, President, Japan Productivity Center



Promotes of APO Eco-products Directory



3. Overview of the APO Eco-products Directory



Promotes of APO Eco-products Directory



Its origin

- ✓ First edition in 2004, launched at EPIF 2004 in Kuala Lumpur, Malaysia
- ✓ Envisioned as a data version of a regional platform of eco-friendly products in the Asia-Pacific region, in line with EPIF



Promotion of APO Eco-products Directory 

The APO Eco-products DATABASE



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



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

Promotion of APO Eco-products Directory 

Criteria for Eco-products Directory 2011 - ISO

ISO	Description
Type I (ISO14024)	Product classification and criteria set by third-party organizations 
Type II (ISO14021)	Producers' self-declaration of commitment to the environment 
Type III (ISO14025)	Verification & disclosure of quantitative environmental impact data 

Promotion of APD Eco-products Directory 

Criteria for Eco-products Directory 2011 - Others

- ✓ Other environmental labels apart from those of ISO
- ✓ Products which has not received any environmental labels, but are registered in the GPN Database
- ✓ Products decided by the Eco-products Database Working Group that the information submitted by the providers reflects the initiatives for environmental impact reduction in line with the Purchasing Guidelines by the Green Purchasing Network.



Promotion of APD Eco-products Directory 

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
Total	754	567	591	725	804	1,000	818



Representation by APO Member Economies

Member Economy	EM	EC	EP	ES	# of listed items
India	1	1	9	0	11
Indonesia	1	0	0	0	1
Japan	60	83	358	53	554
Malaysia	5	1	12	1	19
Pakistan	0	0	3	1	4
Philippines	2	1	7	0	10
Republic of China	16	0	47	0	63
Republic of Korea	5	14	66	0	85
Singapore	11	3	7	0	21
Thailand	0	2	48	0	50



Representation by APO Member Economies

Member economy	# of listed enterprises
India	7
Indonesia	1
Japan	93
Malaysia	8
Pakistan	1
Philippines	7
Republic of China	17
Republic of Korea	20
Singapore	4
Thailand	12
Total	170



Promotion of APO Eco-products Directory

Page Layout









- 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



Promotion of APO Eco-products Directory

Features of Registered Data - Category A

Which environmental issues does the product or service intend to address?

	2009	2010	2011
Global warming prevention 	441	566	482
Pollution prevention 	84	145	106
Chemical substance reduction 	207	209	213
Waste reduction 	173	199	129
Resource saving 	355	471	362
Biodiversity 	N/A	N/A	7



Features of Registered Data - Category B

How does the product or service address environmental issues?

	2009	2010	2011
Recyclability 	116	136	110
Long life 	104	115	82
Degradability 	55	56	28
High quality 	230	321	330
Energy saving 	469	549	440
Environmental clean-up products 	83	125	120
Using recycled material 	80	134	112



Features of Registered Data - Category C

When and where in the product life-cycle does the product or service address environmental issues?



	2009	2010	2011
Extraction of materials	48	66	55
Material and components production	86	107	105
Design and material selection	247	313	203
Product manufacturing	145	237	181
Transportation	16	29	22
Product use, maintenance and repair	525	576	506
End of life	80	90	92



Promotion of APD Eco-products Directory



Official Launch at EPIF2011



Pragati Maidan
New Delhi, India
10-12 February 2011



The Eco-products Directory 2011 presented to H.E. Mr. Anand Sharma,
Minister of Commerce and Industry, Government of India
by Prof. Ryuichi Yamamoto

Promotion of APD Eco-products Directory



Promotion Throughout the Year



- ✓ Distribution to APO member economies (NPOs), collaborating environment-related agencies, other international organizations, etc.
- ✓ Distribution to participants for related APO Events and projects
- ✓ Distribution at various environment-related events, conferences, exhibitions in cities around the Asia-Pacific region
- ✓ Promotion by APO experts/resource persons at various related events
- ✓ Distributions to places which would reach out to the public, such as libraries

Promotion of APO Eco-products Directory 

4. Building a Regional Green Platform



Promotion of APO Eco-products Directory 

The Busan Recommendations



The APO Study Meeting on Eco-products Database

- ✓ Held 31 August-3 September 2010 in Busan, ROK
- ✓ Attended by participants from 16 participants from ROC, India, Indonesia, Japan, ROK, Malaysia, Philippines, Singapore, Sri Lanka, Thailand, Vietnam



Vision of the APO Eco-products Directory/Database:

- ✓ To realize a Greener Society in Asia - "GreenAsia"
- ✓ To provide a platform to profile Green Business in the region
- ✓ To promote Green Growth in the Asia Pacific
- ✓ To facilitate the development of Green Economies among APO members

Promotion of APO Eco-products Directory



Defining "platform"

- ✓ A showcase of latest environmentally-conscious products and services offered by enterprises in the APO region?
- ✓ A tool for companies to promote their green businesses to regional and international audiences?
- ✓ An arena to share best practices on various and latest green initiatives in the region?
- ✓ *What else?*

Current Format



Promotion of APO Eco-products Directory



Considerations ① - The Existing EPD

- ✓ Current involvement by member economies is limited
- ✓ Despite some improvements over the years, there is still limited recognition /visibility of the EPD within the region
- ✓ Current format does not necessarily have a specific targeted user
- ✓ Current format has difficulties in conducting impact evaluations (vis-à-vis a procurement tool, for example)
- ✓ Little mechanisms to really assess whether the current EPD is helping APO member economies



Promotion of APO Eco-products Directory 

Considerations ② - Regional Diversities



- ✓ Member economies have different levels of development in terms of environment-related policies, programs and initiatives
- ✓ Member economies, depending on their social structures, cultural distinctiveness, organizations at play, may need different ways to drive and promote environmental consciousness within their economies

Promotion of APO Eco-products Directory 

Considerations ③ - APO's role


- ✓ As an international organization led by the member economies, APO's activities and publications must be guided by the current needs of its members
- ✓ As an international organization funded by the member economies, APO's activities (including publications) must be of benefit to its members
- ✓ As an international organization contributing to the overall socioeconomic development within the region, APO's activities (including publications) should serve as many people and parties within member economies as possible



Promotes of APO Eco-products Directory 

In Moving Forward

- What kind of APO publication would help member economies?
- ✓ In promoting sustainable growth (Green Productivity) within their countries?
 - ✓ In promoting eco-products/services?
 - ✓ In facilitating regional cooperation on environmental initiatives?
 - ✓ *In building a "Green Asia"?*


*Guide us with your
recommendations through
this workshop.*



Promotes of APO Eco-products Directory 



Introduction of Eco Products

Dr. Ning Yu

President, Environment and Development Foundation and
Chair, Taiwan Green Purchasing Alliance

APO Workshop on Eco-Product Database, May 24–27, 2011



Sustainable Consumption and Production - A brief History

- Concept of sustainable development
 - Brundtland Report (1987)
- Principles for sustainable production and consumption
 - Rio Declaration (1992 Earth Summit)
- Agenda 21 (1992)
 - Chapter 4: Changing Consumption Patterns
- Post Earth Summit Action Plans by UNCSD & OECD
 - Promote *green government procurement* measures
 - Extend *manufacturers' product life-cycle responsibilities*
 - Promote *eco-labeling* programs



Sustainable Consumption and Production - History (cont.)

- Recommendation of the Council on Improving the Environmental Performance of Public Procurement
 - Adopted by OECD Council (2002)
- WSSD Plan of Implementation (2002)
 - Promote **public procurement policies** that encourage development and diffusion of environmentally sound goods & services
- Launch of Marrakech Process (2003)
- EU SCP/SIP Action Plan (2008)
- 10-Year Framework on SCP (May 2011)



Some Initiatives of SCP

Improving Products	Changing Patterns
Product Innovation	Developing a Strategic Vision
Regulation	Planning and Demand Side Management
Economic Instruments	Redirecting Public Spending
Ecolabelling	Education and Awareness Raising
Public Procurement	Supporting Community Action
	Capacity Building



ISO 14020 Environmental Labels and Declarations ---General Principles

Principle 1

Environmental Labels and Declarations shall be **accurate, verifiable, relevant and not misleading**.

Principle 3

Environmental Labels and Declarations shall be based on **scientific methodology** that is sufficiently thorough and comprehensive to support the claim.

Principle 5

The development of Environmental Labels and Declarations shall **take into consideration all relevant aspects of the life cycle** of the product.

Principle 8

The process of developing environmental labels and declarations should include an open, participatory **consultation with interested parties**.



Environmental Labels and Declarations

- Information about a product or service in terms of its the overall environmental character, a specific environmental aspect, or any number of aspects.
- Purchasers can use this information in **choosing** the products or services they desire
- Environmental label or declaration will be effective in influencing the purchasing decision
- The market share of the product or service can increase and other providers may respond by improving he environmental aspects of their products or services



Goals of Ecolabelling

1. Consumer information
2. Information for **green purchasing**
3. Incentives for market **competition**
4. Board discussions about environmental goals in product-related construction, design, communication and management
5. **Ecological standards** for products and services
6. Credible environmental claims in **advertising**



Relevant International Standards

- **ISO 14021** Environmental labels and declarations— Self-declared environmental claims (Type II environmental labelling)
- **ISO 14024** Environmental labels and declarations— Type I environmental labelling— Principles and procedures
- **ISO 14025** Environmental labels and declarations— Type III environmental declarations
- **IEC 62430** Environmentally Conscious Design for Electrical and Electronic Products and Systems
- **ISO CD 14067** Carbon footprint of products



Type I Ecolabelling

Characteristics

- Well-established **history and credibility** (favorable public perception)
- Most programs in the world have Strong **government support**
- Patented **logo** for easy recognition
- Voluntary, cover **multiple sectors** (cleaning products, home appliances, detergents, IT products and vehicles, etc.)
- Life Cycle Consideration
- **Preset Criteria** with multiple requirements
- Leadership (Selective)– only the top 20-30 % can meet the criteria
- **Third-party Certification**



Type I Ecolabelling

Patented Logo



Only the **best products** can be awarded to use the logo;
Consumers may buy these products without doubt.



Example of Product Criteria- Water-based paints

1. The product shall not contain formaldehyde or halogenated solvents. The content of aromatic hydrocarbon compounds in the product shall meet the following requirements:

Type of Paint	Aromatic hydrocarbon content
Latex	< 0.1% (weight)
Others	< 1% (weight)

2. The product shall not contain mercury, lead, cadmium, hexa-valent chromium, arsenic, antimony, as well as tributyltin (TBT) and triphenyltin (TPT). If the above substances exist in the product as impurities or contaminants, their total weight shall be less than 0.1% of the product.
3. The flash point of the product shall be equal to or greater than 61°C.
4. If the product is stored in a spray can, it shall not contain any substances regulated by the Montreal Protocol; if it is stored in a metal container, the container shall not contain lead; if it is stored in a plastic container, the type of plastic shall be labeled on the container



Example of Product Criteria- Water-based paints (cont.)

5. The content of volatile organic compounds (VOCs, boiling points shall be less than 250°C) in the product shall meet the following requirements:

Type of Paint	VOCs
Latex	< 50 g/L
Others	< 100 g/L

6. The name and address of the "Green Mark" user must be clearly printed on the product or on the package. For non-manufacturing Logo users, the manufacturer's name and address shall also be shown.
7. The product or its packaging shall bear a label reading "Low Pollution Paint".





Global Ecolabelling Network

1. Association of **Type I** ecolabelling practitioners
2. Founded in 1994 / Incorporated in USA
3. **Secretariat** in Canada and **General Affairs Office** in Japan
4. **29 Full Membership**:
Croatia, Czech Republic, EU, Germany, Nordic (5 countries), Greece, Luxembourg, SSNC (Sweden), UK, Croatia, China, Chinese Taipei, Hong Kong(2), India, Indonesia, Japan, Korea, Philippines, Singapore, Thailand, USA, Canada, Brazil, Australia, New Zealand, Malaysia and Isreal
5. **3 Associates**:
Green Guard, ISEAL Alliance and IGPN



Global Ecolabelling Network

6. Work area:
- **Capacity Building**
Technical assistance programs, workshops and teaching material (Introduction to Ecolabelling)
 - **Internal cooperation**
Strategic plan, **mutual recognition** and peer review, **common core criteria** and shared databases (product category list, restricted chemicals)
 - **External promotion, relations and associates**
Contact with and participation in multinational forums (ISO, WTO, UNCSD, World Bank), promotional plan, GENews, GEN Annual Report
Website: <http://www.gen.jr.jp>
 - **Management and administration**
 - **Board of Directors**



Issues Need to be Recognized

- Program *credibility* must be supported;
- Consumer *values* (cultural, environmental and societal) and *eco-system sensitivities* must be respected;
- *Unnecessary trade restrictive* effects should be avoided; and
- *Simplicity* of design and implementation must be sought.



Environmental Benefits of Green Mark Products

Product Group	Logo used (until Dec. 2010)	Environmental Benefit
Recycled Plastic/Rubber	12,686,204	2 Kg/product, 25,372 tons of virgin material saved
Packaging Paper with Recycled Paper	285,076,347	0.75 Kg/product, 213,807 tons of virgin paper or 3.7 million trees saved
Household Air Conditioner	574,403	15 KWH saved per month, 51,896,270 KWH saved per year, (if product is used for six months)
Recycled and Refilled Toner Cartridges	1,007,122	1 Kg plastic casing/product, Total 1,007 tons of waste saved



Type-II Programs

Self-declared program

- Sweden - BPD (Building Product Declaration)
 - Established by Sweden's Eco-cycle Council for the Building Sector in mid-1990
 - Self-declarations by manufacturers followed rules developed by Eco-cycle Council
 - No 3rd party verification



Type II Plus program

- Credibility of declarations improved by third party certification--- Certificates issued to manufacturers by TEPA/EDF through a panel review process



14021 Self-Declared Environmental Claims

- Guidelines on the terms, condition of use and method of evaluation

- | | |
|-------------------------------------|----------------------------|
| (1) Compostable | (2) Recovered Energy |
| (3) Reduced Resource Use | (4) Degradable |
| (5) Recyclable | (6) Water Reduction |
| (7) Design for Disassembly | (8) Recycle Content |
| (9) Reusable and Refillable | (10) Extended Life Product |
| (11) Reduced Energy Consumption | (12) Waste Reduction |
| (13) Renewable Energy/Resource | (14) Sustainable |
| (15) Claims related to GHG Emission | |





Type-III Programs

- Providing quantified environmental data using predetermined parameters and, where relevant, additional environmental information
- Purchasers decide on what to buy
- Similar to Vitamin labels

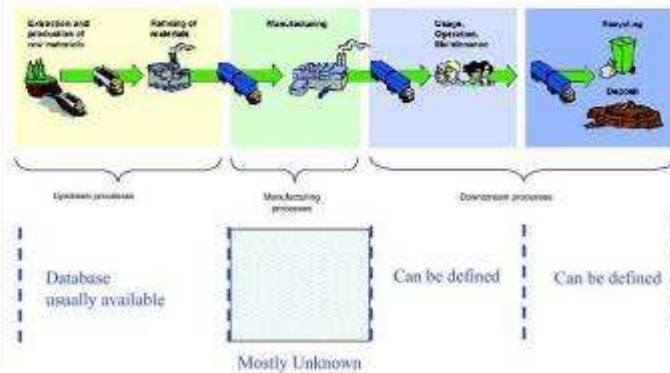
Content	Quantity
Vit. A	100mg
Vit. B	200mg
Vit. C	100mg
Niacin	50mg

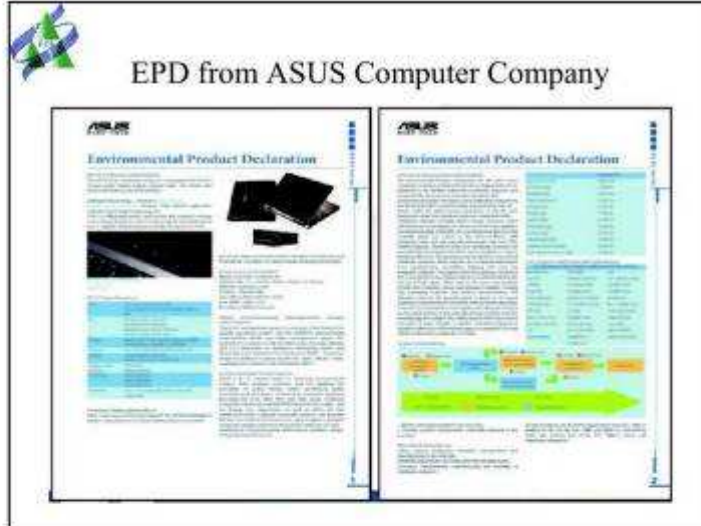



Category	Impact
Global Warming	xx Kg CO2
Energy Consumption	xx MJ
Eutrophication	xx Kg PO4
Acidification	xx Kg SO2



Product Life Cycle Stages







○ LCA Results of Particleboard (Environmental Impact and Amount of Waste)

Environmental impact	Unit	Total	Chip Manufacturing	Transport	Production of glues	Production of particleboard
Global warming	CO ₂ -eq (kg)	3.30E+02	1.18E+01	5.59E+00	2.31E+02	8.27E+01
Ozone layer depletion	CFC-11-eq (kg)	6.85E-11	—	—	6.85E-11	—
Acid precipitation	so ₂ -eq	1.80E+01	1.68E+00	1.93E+00	7.78E+00	3.23E+00
Photochemical oxidant formation	ch ₄ -eq (kg)	1.50E+00	3.51E-01	6.39E-01	3.91E-01	1.99E-01
Eutrophication	O ₂ (kg)	2.15+01	3.33E-01	5.03E-01	1.95E+01	1.13E+00
Industrial waste	kg	2.56+00	1.28E-01	—	1.45E+00	9.87E-01



GEDNET

Global Environmental Database Network

HOME ABOUT GEDNET GUIDEBOOK MEMBERSHIP PCR LIBRARY

GEDnet

News Item

Public consultation on PCR on UTTACD technologies

Global PCR Library available

Public consultation on PCR on UTTACD technologies

Public Registry Files (PRF) for development of Environmental Protection (EPA) for UTTACD technologies developed by UTTACD are available for consultation on the GEDNET website. The PRF is being released by the project team through GEDNET and through the UTTACD website.

Global PCR Library available

The Global PCR Library is a web-based database of PCR technologies developed by UTTACD and other organizations. The library is available for consultation on the GEDNET website. The library is being released by the project team through GEDNET and through the UTTACD website.



International EPD Database

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SEARCH FOR EPDS

SEARCH FOR EPDS

SEARCH FOR EPDS

<http://www.environdec.com/pageId.asp>




Other Programs

- **Single Sector**
Forest Stewardship Council (FSC): Forestry sector label, certify sustainably managed forests and products
- **Single Attribute**
Energy Star Label:
 - Energy saving labelling program initiated by USEPA/DOE
 - Only focus on energy saving
 - Expanded to international program, covers EU, Canada, Japan, Taiwan, Australia with limited product scope
- Carbon Footprint Label







Comparison of Various Ecolabels

	Requirements	Selective	Science-based	3rd Party Verification	Trade Mark	Operators
I	Multiple	Yes	LCC	Required	Yes	Mostly government supported NPOs
II	Mostly single	No	No	Preferred	No	Manufacturers
III	Multiple	No	LCA	Required	–	Mostly manufacturers/ FPO/Certification Bodies
CFP	Single issue	No	LCA	Required	Yes	Mostly government supported/Industry associations



Lessons Learnt

1. Improving products is easier than changing consumption patterns.
2. Subsidy reform, ecological pricing and values shifts offer high leverage, but difficult to implement
3. Education and awareness raising initiatives alone have limited impact
4. Ecolabelling schemes have been moderately successful.
5. Public procurement denotes a more accessible market than individual consumers



Lessons Learnt

6. Working closely with local people is critical to implement demand-side management measures
7. Combining modern technology with traditional values help prevent unsustainable consumption patterns
8. Collective measures are particularly successful at transforming market conditions
9. Women, elderly, youth and affluent middle class are the target groups for green consumerism
10. The benefits of green consumerism need to be demonstrated



Misleading Environmental Labels and Claims

- UNEP survey found at least 700 labels and 2000 green claims at global level
- Greenwashing— false or unverified claims
- **Seven Sins of Greenwashing**— a TerraChoice Study
- US, Canada, UK and Australia
- Sin of the Hidden Trade-off—non-important attribute(s)
- Sin of No Proof— recycle content
- Sin of Vagueness—All Natural
- Sin of Irrelevance—CFC free
- Sin of Lesser of Two Evils—organic cigarettes
- Sin of Fibbing— false claim
- Sin of Worshiping False Labels





Strategy on Building a Low-Carbon City--- Hsinchu, Taiwan



Ning Yu, Ph.D.
APO Workshop on Eco-product Database
May 24~27, 2011

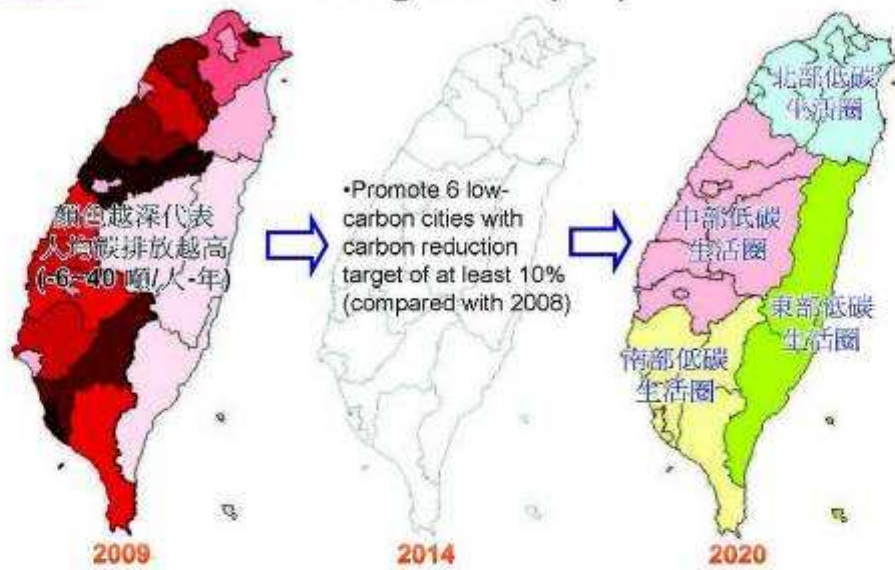


Background (1/2)

- Consensus of National Energy Conference (establishment of a Low-Carbon Homeland)
 - Promote low carbon cities, 2 low-carbon communities in each city/county by 2011 (a total of 50 communities)
 - 6 low-carbon metropolis by 2014,
 - 4 low-carbon living circles by 2020



Background (2/2)



I. Current Status

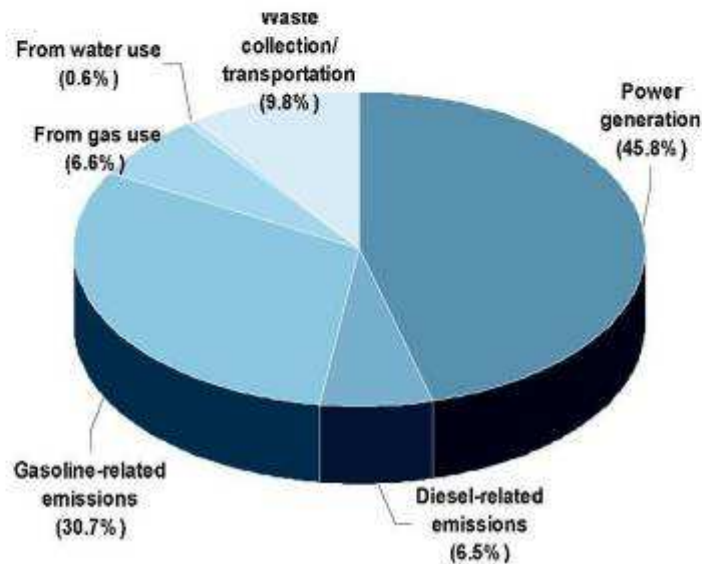


Basic Information for Hsinchu City

- Area 104.15 km² (42.7% urban)
- Population 411,600 (138,500 households)
- Registered motor vehicles 392,100 (67% motorcycles, 29% cars)
- 12 bus routes (average 12.3 passengers per trip)
- Industries located mainly in Science Park. Total revenue at 4.5% of total GDP. 317 headquarters in Hsinchu.
- Besides Science Park, remaining industries are mainly wholesalers/retailers (48.5%, manufacturing (10.5%, lodging and restaurants (10.4%)). Relatively low revenues.



Status of GHG Emission in Hsinchu





2008 GHG Emission in Hsinchu City

2008	Science Park included	Without Science Park
Industrial	8,199.87	1,828.79
Commercial/Residential	878.22	878.22
Transportation	607.80	607.80
Total	9,685.90	3,314.81

Unit :
Thousand
Ton

Ton/Person GHG Emission

	2004	2005	2006	2007	2008	2008 (Without Science Park)
Hsinchu	15.80	16.66	17.25	17.56	17.34	8.18
Taipei	6.02	6.38			6.24	
New Taipei		8.85				
Kaoshiung	28.11	26.27				
Taiwan	10.96	11.26	11.87	11.71	11.15	
Global			4.28	4.63	4.72	

Reducing emissions from Science Park is vital to reducing city's emission !!

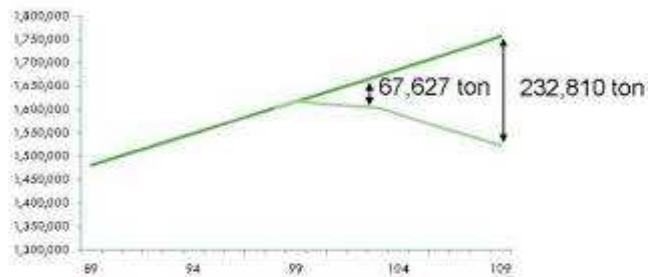


II. Vision and Goals



Hsinchu's GHG Reduction Goal

- In line with national GHG reduction goal
 - Return to 2009 level in 2014 >>>> Reduce 67,629 ton
 - Return to 2005 level in 2020 >>>> Reduce 232,810 ton



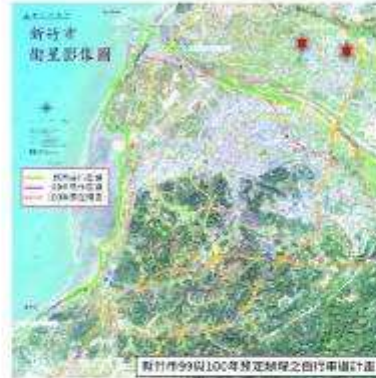
Hsinchu's Characteristics

- Become the trailblazer in creating small but low- carbon city
- Regional integration with the Hsinchu County
- Cooperation with stakeholders
 - Assist city government in urban development
 - Demo and application of low carbon technologies
 - Demo of low-carbon education (12 universities and ITRI)
 - Lead in developing low-carbon/green energy industries
- Low-carbon urban transportation without fast transit system



One Action, Two Highlights and Eight Themes

- One action ---- Double B Transportation
- Two highlights ----
 - Low Carbon Residential & Commercial District
 - Low Carbon Industrial Park
- Eight themes ----
 - Low carbon building
 - Energy conservation
 - Low carbon transportation
 - Renewable energy
 - Resource recycling
 - Low carbon living
 - Greening the environment
 - Business carbon reduction



Double B Transportation

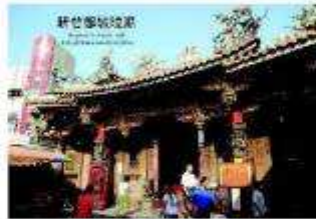
- Free bus
 - Expand bus route coverage and schedules, integrate city buses with shuttle buses from Science Park and retailers
- Bicycle network
 - Adopt low-chassis buses for easy bicycle loading, expand bike trails/routes for both commuting and recreational purpose.





Highlight 1 Low Carbon Residential & Commercial District

- Transform the old East Gate and Temple District into a low-carbon one
 - Create “pedestrian only” district
 - Convert existing buildings into green buildings
 - Resource recycling
 - Greening the environment
 - Promote “Green Stores”



Highlight 2 Low Carbon Industrial Park

- New Urban Development Plan along Route 5





Eight Themes



Theme 1 Low Carbon Transportation

- Comprehensive and intelligent public transportation network
- Complete city-wide free bus system before 2014
- 45,000 electric mopeds by 2014
- Increase # of electric cars to 300 by 2014
- Planning of bike route system
- Planning of “pedestrian only” district
- Promote green transportation vehicles
- Low carbon driving style





Theme 2 Energy Conservation (1/2)

- Energy conservation in air-conditioning
 - Phase out inefficient old air conditioners. Subsidy 20,000 air conditioners, reduce 6,000 ton annual GHG emission
- Energy conservation in lighting
 - Replace 20% of city lighting by 2014 to save 25% lighting electricity consumption, reduce 6887 ton annual GHG emission



Theme 2 Energy Conservation (2/2)

- Energy conservation in street lighting
 - Install 35,000 LED street lights by 2014, reduce 8,700 ton annual GHG emission
- Energy conservation activities
 - Seed Instructor training
 - Promotion and consultation





Theme 3 Renewable Energy (1/2)

- Solar photovoltaic
 - Cooperate with green energy companies in Science Park to demo green products.
 - Install at least 1000 kWp solar PV facilities by 2014, reduce 700 ton annual GHG emission
- Small-scale wind power
 - Cooperate with Tsinghua University and Metal Industry Center in establishing demo small-scale wind power system
 - Install small scale systems in coastal schools first. Install 2000 kW by 2014, reduce 4,000 annual GHG emission



Theme 3 Renewable Energy (2/2)

- Wind power/ solar PV street light
 - Install 500 LED wind power street lights, reduce 300 ton annual GHG emission
- Solar water heaters
 - Install 5,000 m² of solar water heating panels by 2014, reduce 1,000 ton annual GHG emission





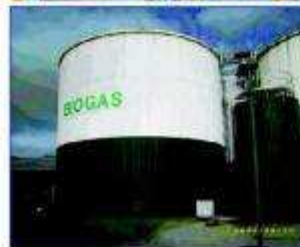
Theme 4 Resource Recycling (1/3)

- Promotional strategy for resource recycling
- General waste
 - Economic incentive existed, resort to market mechanism
- Bio-waste recycling system
 - Establish public composting plant
 - Establish anaerobic digestion and energy recovery system
- Bulk waste
 - Promote community repair work shop to reduce waste
- City's current overall recycling rate at 47%, goal is to improve to 55% in 2014, reduce annual GHG emissions 22,000 tonnes.



Theme 4 Resource Recycling (2/3)

- Anaerobic digestion & energy recovery system for organic waste
 - 100 ton/day anaerobic digestion plant may generate daily 10,000 m³ biogas and 15,000 kWh electricity (equivalent to reducing 3,500 ton annual GHG emission)
 - Reduce organic waste and recover valuable energy
 - Post-digestion sludge can be used as organic fertilizers for parks





Theme 4 Resource Recycling (3/3)

- Convert waste incinerator to a Bioenergy Reuse Center
 - Mixed waste treated with high-temperature and mechanical sorting to improve resource recycling ratio
 - Biofuel recycled from thermo-decomposition of fibrous waste
 - Waste heat recovered from incinerators for cold-room and high-temperature cooking purpose



Theme 5 Low Carbon Buildings

- New building constructed according to green building code
- Improve eco performance of existing buildings
- Required all public buildings to acquire green building label
- Incorporate green building code into EIA criteria;
- Establish Green Building Service Corp, to provide green building diagnosis and improve service
- If 20 new buildings acquire Green Building label by 2014, 6.4 million kWh and 4,000 ton annual GHG emission maybe reduced





Theme 6 Low Carbon Living (1/2)

- Green Consumption
 - Promote “Green Stores” and award the best ones
 - Promote and encourage citizens’ to buy Green
- Low carbon community
 - Assist communities in moving towards low carbon lifestyle
 - Establish pilot low carbon demo community and expand to other communities



Theme 6 Low Carbon Living (2/2)

- Low carbon tourism
 - Linking attractions and scenic areas with bike paths, LED street lamps and low carbon public transportation system
- Low carbon commercial district
 - Promote Green Stores
 - Refurbishment of old buildings;
 - bus service linking various attractions and commercial district





Theme 7 Greening the Environment

- Provide natural and human-based living environment
 - Integrate with green buildings to promote green roofs and green walls
 - Improve greening of parks and scenic areas
 - Greening the campus



Theme 8 Business Carbon Reduction

- GHG emission inventory
 - Demonstrate products' advantages through carbon inventory
- Corporate energy conservation
 - Introduce ESCOs to reduce Science Park's office power consumption
- Low carbon car-pooling
 - Encourage businesses to adopt low carbon buses and establish carpool system.



Overall Assessment ---- Carbon Reduction Benefits

Strategy	Actions	Reduction of CO ₂ e (ton/yr)	Reduction of CO ₂ e (ton/yr)	%
Low-carbon Transportation	Public transportation network	8,780	> 12,260	18.1%
	Bicycle route system	--		
	"Pedestrian Only" Zone	--		
	Green vehicles	3,500		
	Low-carbon driving style	--		
Energy Conservation	Air-conditioning	6,000	23,367	34.8%
	Lighting	8,667		
	Street lighting	8,700		
	Promotional activities	--		
Renewable Energy	Solar photovoltaic	700	6,000	8.9%
	Small-scale wind power	4,000		
	Wind-solar street light	300		
	Solar water heater	1,000		
Resource Recycling	Bio-energy reuse center Recycling of bulk waste	55% recovery rate	22,000	32.5%
Low-carbon Building	Low-carbon buildings	4,000	4,000	5.9%
	Refurbish old buildings	--		
Low-carbon Living	Green consumption	--	Indirect benefit	-
	Low-carbon tourism	--		
	Low-carbon communities	--		
	Commercial district	--		
	Total		> 67,627	100%

What is an "eco-product" ?

- part 2 -

clarity, complexity, & co-evolution

Dana Peterson

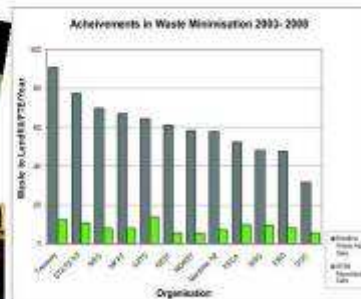
APO workshop, Jakarta 22-27 May 2011



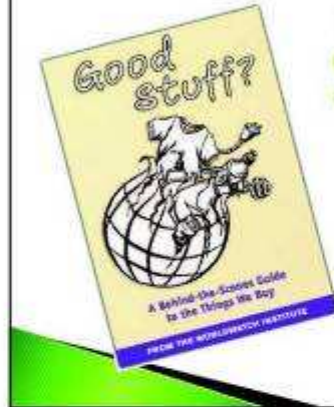
what I hope to contribute:

- Some ideas & experiences
- Some findings from other experts
- Some central questions
- Reminders - why this is important
- Encourage action -- courage, innovation, cooperation, celebration
-& very keen to learn from you!!

Lessons from Govt³ = motivate people,
build partnerships, use evidence-based tools

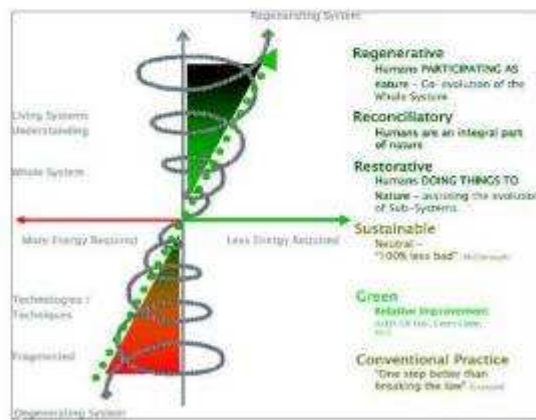


Secret lives – buyer beware!



Your everyday choices

- *make an impact &*
- *can make a positive difference*



Trajectory of environmentally responsible design (Source: Reed, 2007)

Clarity

How much "eco" makes an "eco-product"?

- Single issue, single lifecycle phase, or more?
- Resource, product, or producer ?
- What is the life cycle boundary?

Clarity of purpose

Why define eco-products?

Your purpose guides your design.

- for Who? – supplier, buyer... future generations?
- for What? – differentiation? market share? ...? Helping SMEs be more resource efficient?
- To reduce climate change? Reduce toxics? Assure sustainable economy?
-Creating levers for market incentives in supply chains?

.... What works for you locally?

Clarity of proof

- What is being claimed, compared to total impacts?
- Who says? Do they have a vested interest?
 - either direct or through an industry association?

Clarity of intent vs implication

What do you intend, vs how will it be understood and used?



"7 sins of greenwashing"



Hidden Trade-off



No Proof



Vagueness

<http://sinsofgreenwashing.org/findings/the-seven-sins>



Misleading labels



Irrelevance



Lesser evils



False claims

<http://sinsofgreenwashing.org/findings/the-seven-sins>

Ecolabelling = “eco-promising”

- Direct communication with buyers (business, government or consumers)
- Dilemma - how to represent complexity in a simple, honest, & trusted way?



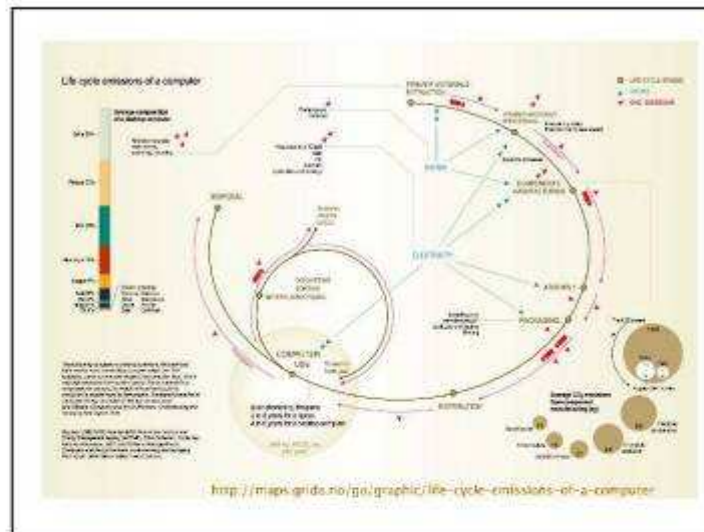
Type I ecolabels

The best we have so far - but leaves a lot off -
e.g.

- Comparing products within the label
- Rewarding the best among the top 20-30%
- Truly green design vs current best practice
- Carbon footprinting
- Embodied (vs ingredients) toxicity & impacts
- Good operational practise by companies
- Stepwise progress
- Social impacts - eg working conditions, fair trade

Complexity

- Embodied extraction & production as well as use & disposal impacts
- Different issues for different products
- Poor lifecycle impacts data in supply chains
- Chain of custody/ management systems vs environmental effects
- Stages of progress toward "green"
- Every step counts - and they are not equal



Tools for co-evolution

- Type I + attribute (e.g. Blue Angel addition)
- Type II + (self-claims audited)
- premier resource extraction labels
- stepwise options (e.g. EPEAT, EnviroSmart, GreenGlobe)
- on-line databases that contrast and compare
-?

Your ideas!

1. Eco-products easily recognised @ home if –

- Made from renewable/natural/locally grown fibres
- Handmade/ handcrafted/ locally made
- Biodegradable/compostible
- Organic, pesticide free, beneficial for health
- Reusable, recyclable
- Made with recycled material
- Energy-saving (appliances, vehicles, buildings)
- Solar powered
- e-based (e-books, e-governance, e-filing)
- Have ecolabels, including self-claims
- Government certified eco-products
- Water-saving
- ISO 14001 certified
- Green awards
- Pollute less/ fewer negative effects

3. What factors should be used to define an eco-product?

Product use / attributes

- Life-cycle assessment/consideration
- Minimum or no negative impact on natural/built environment
- Enhancing/conserving/protecting environment
- Promotes healthier lifestyle
- Design to help minimise impacts in product use
- Durability/ product lifetime
- Inform consumers including environmentally friendly use
- Product can be used to abate, monitor or prevent negative impacts

Materials & production

- Renewable/ biodegradable materials
- Resource efficient/ reduced use of natural resources/ waste minimisation
- Energy efficient/use renewable energy/ reduced carbon footprint

3. continued

Product end-of-life

- Ratio of reusable/ recyclable waste at end of life
- Negative effects of product waste on environment
- Recyclability, including costs and logistics
- Product take-back for reuse/recycling/ treatment

Assurance

- Ecolabels/ eco-guarantee, third party assessment
- Data/claims audited by professional third party
- Company self-claims (including advertising)
- Meets quality standards

Safety/ hazards

- Limit hazardous materials in production/cleaner production
- Product safety/ healthy guarantee for employees and consumers
- Eco-sensitivity of production location

Company attributes

- Company complies with domestic laws and international conventions
- Company has environmental policies

sustainable product design

cyclic 

solar 

safe 

efficient 

social 

right materials flow

made from organic materials, and is recyclable or compostable, or is made from minerals that are continuously cycled in a closed loop

right energy sources

uses solar energy or other forms of renewable energy that are cyclic and safe, both during use and manufacture

right materials type

non-toxic in use and disposal, and its manufacture does not involve toxic releases or the disruption of ecosystems

right materials use

efficiency in manufacture and use is improved by a factor of ten, requiring 90% less materials, energy and water than products providing equivalent utility did in 1990

right treatment of people

product manufacture and use supports basic human rights and natural justice

Edwin Datschefski www.biothinking.com

Terima kasih banyak
Thank you very much!!

dana.peterson@mfe.govt.nz

Transitioning to a "Green Economy" –

models, challenges, & opportunities

Dana Peterson

APO workshop Jakarta 22–27 May 2011



We are all in this together



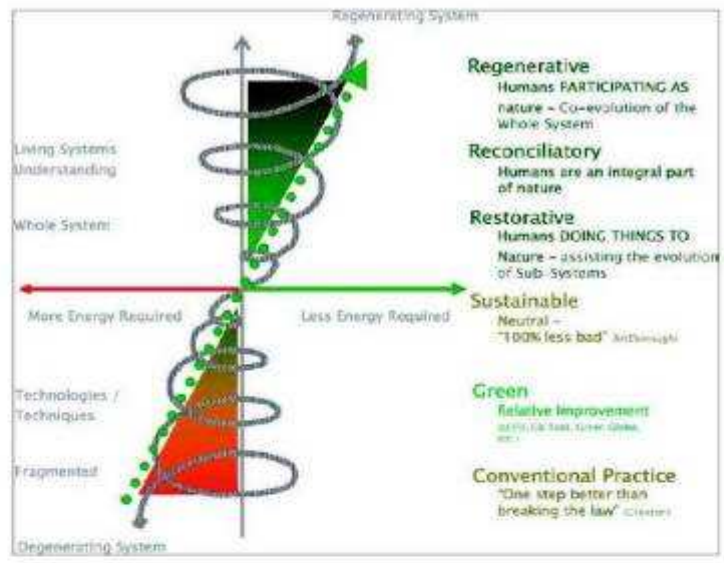
What *is* the “Green Economy” ?

- ▶ Not just “slightly greener version of status quo”
- ▶ what is the heart of the problem?
...an economy that does not value:
 - human well-being
 - clean air, clean water, healthy soil
 - future generations
 - biodiversity and ecosystem services

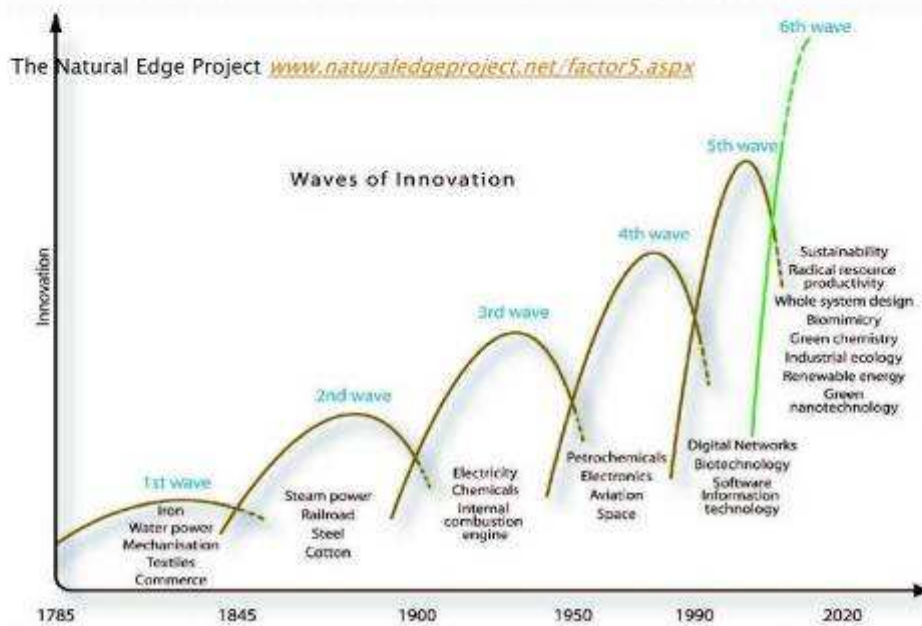


the economy – in perspective

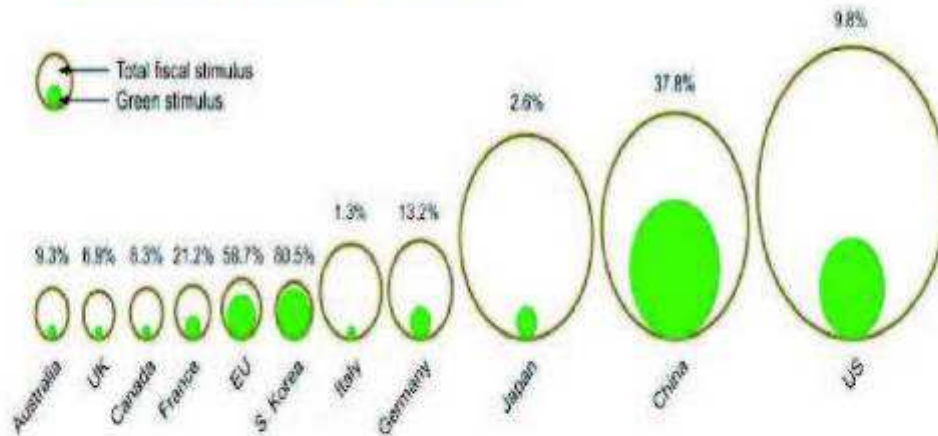




Trajectory of environmentally responsible design (Source: Reed, 2007)



Eco-friendly components of fiscal stimuli 2008/2009

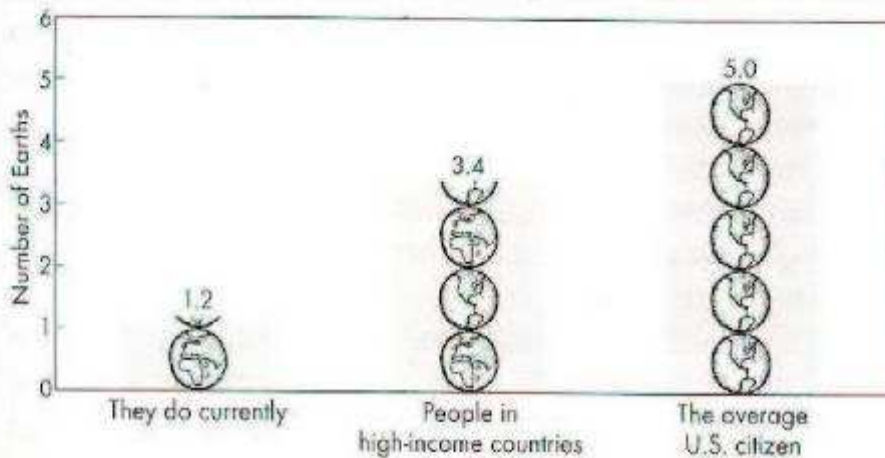


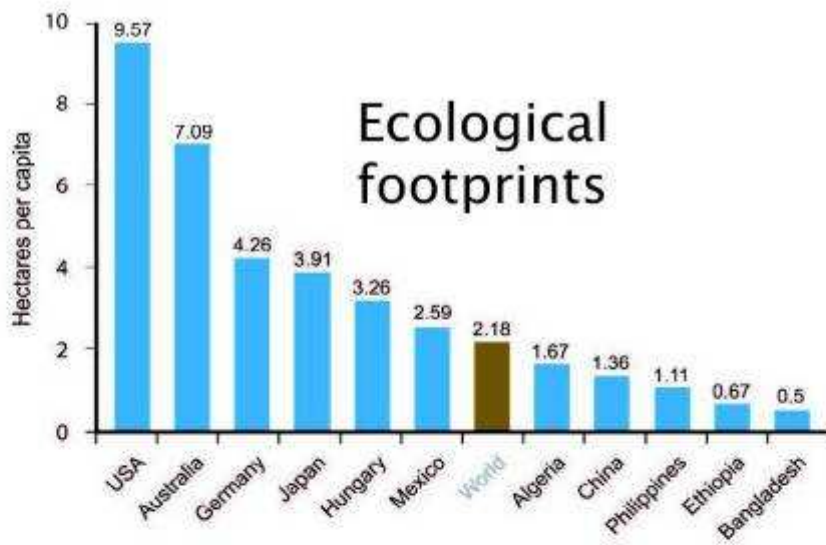
German Institute for Development (DIE), based on data from HSBC
www.naturaledgeproject.net/factor5.aspx

Why do we care?

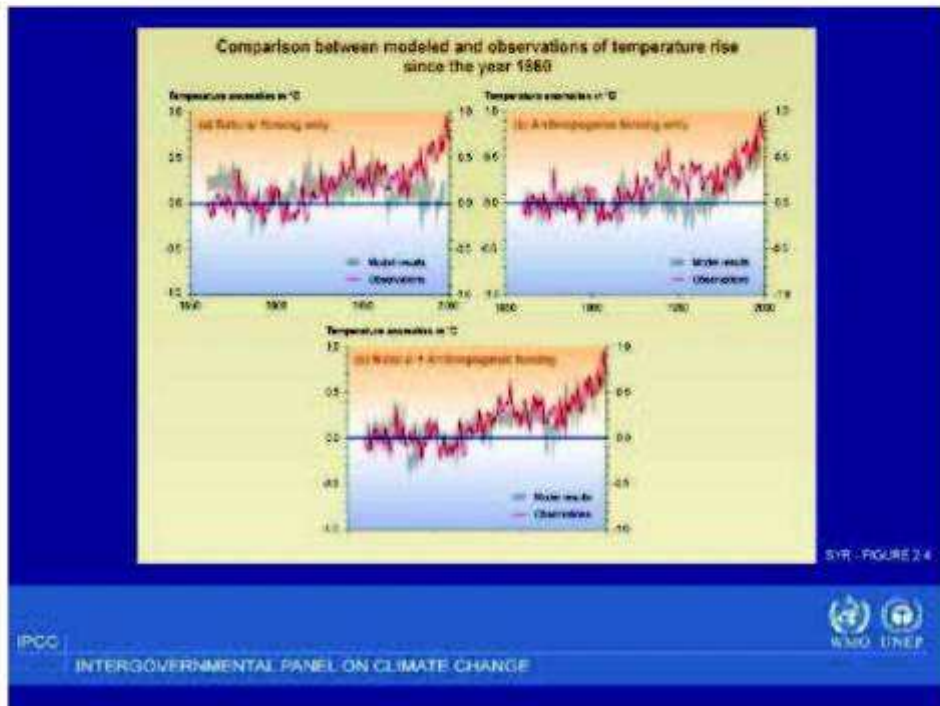
consumption outstripping resources & ecosystem services

Number of Earths Needed If Everyone Consumed Like...

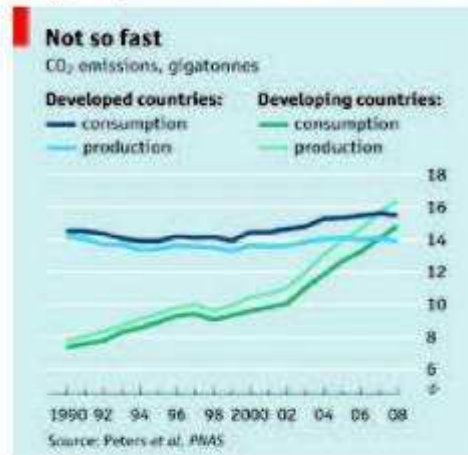




Courtesy Mathis Wackernagel, Global Footprint Network
as cited in www.natureedgeproject.net/factor5.aspx

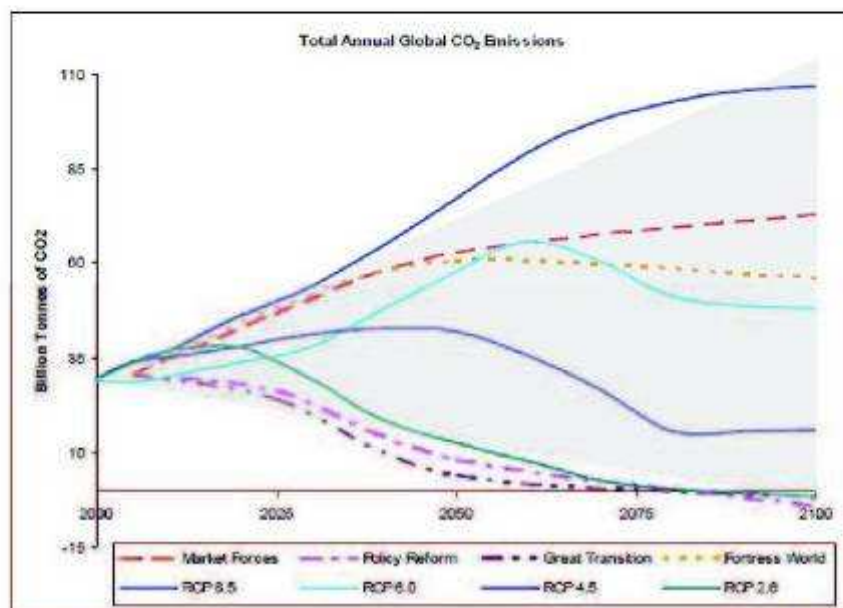


Embodied CO₂ – production vs consumption



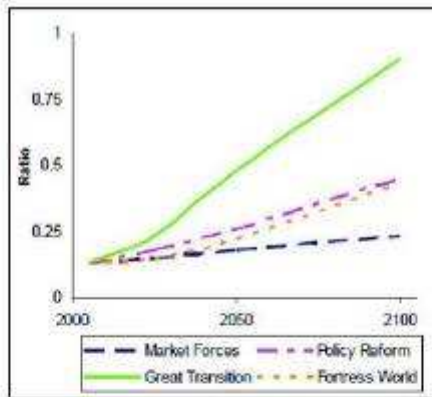
The Economist, 28 April 2011 www.economist.com/node/18618451

Future scenarios



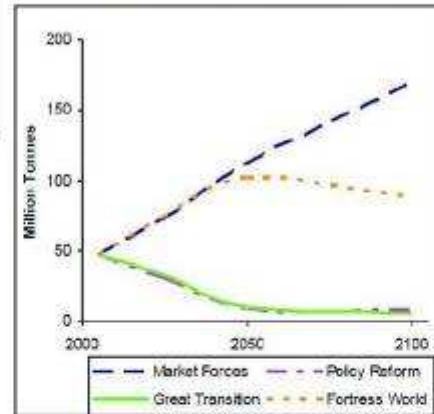
www.mdpi.com/journal/sustainability

Sustainability **2010**, *2*, 2626–2651; doi:10.3390/su2082626



International equity -
ratio of non-OECD to
OECD regions

Toxic Chemical Loads.



SMM

Sustainable Materials Management

OECD Working Party on Resource Productivity
and Waste (WPRPW)

*“SMM elevates the focus of governments,
industry and consumers from individual
material, product or process attributes, to
the entire system of material flows and
associated life cycle impacts”*



“Progress in Resource Productivity in the G8 and the OECD”

- ▶ Improving resource productivity
 - *reduces impacts to environment*
 - improves *resource security* and *competitiveness*
- ▶ 20% of annual resource extraction = waste
- ▶ Per capita municipal waste decreasing but offset by population growth
(e.g. OECD average 3.5% waste reduction while 14% GDP increase, but 2.5% population increase)
- ▶ *Decoupling of resource use from economic growth ..?*
 - only in relative terms for most, if at all

ENV/EPOC/WPRPW/WPEI(2011)1 - declassified May 2011

... material intensity

- Germany, Japan and UK - absolute decoupling
-- unless indirect flow data included...

Japan

Material consumption decreased by over 20% 1980-2008 while the economy expanded by 96%.

When including unused domestic extraction and estimated indirect flows from trade, the decrease in material consumption appears more modest - 1% between 1980 and 2008.

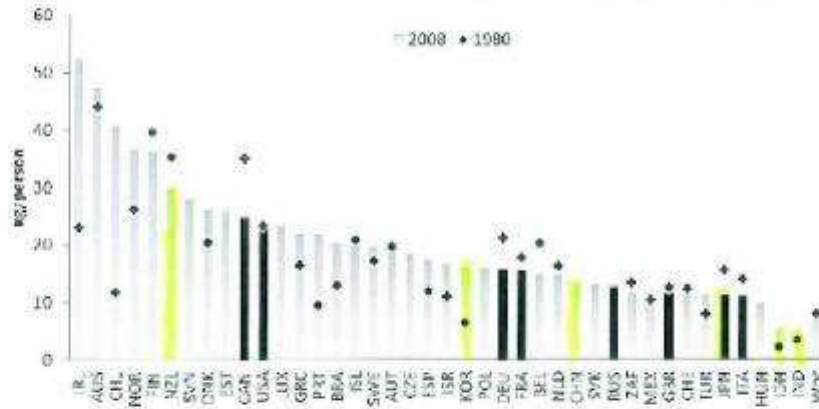
Germany

Domestic material consumption decreased by over 10% between 1996 and 2008.

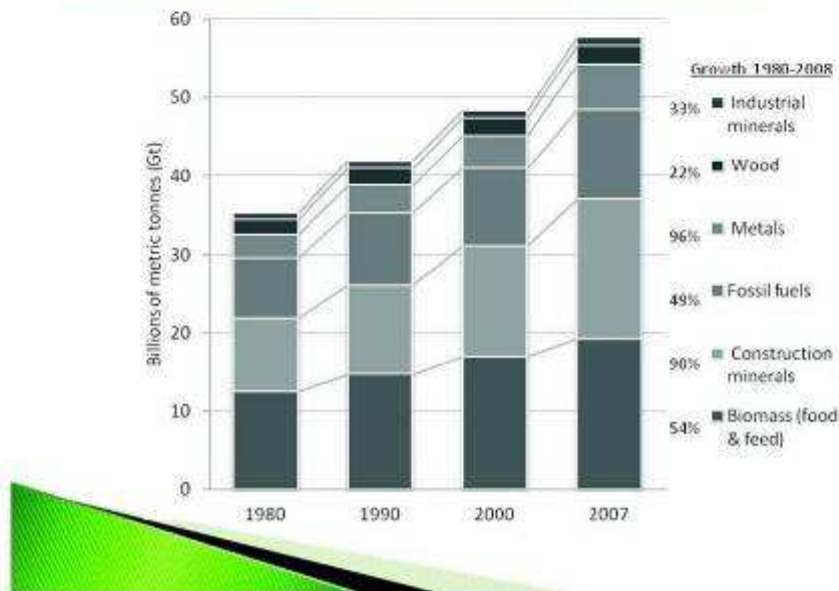
Accounting for unused extraction and indirect flows cuts this progress in half.

Figure 2: Per capita domestic material consumption (DMC), OECD and BRICS countries, 1980-2008

ENV/EPOC/WP/PW/WP/1(2011)/FIN/1
Working Party on Resource Productivity and Waste



Global extraction of material resources



Material intensity improving?

Per \$ GDP

Fewer material resources are being used and consumed to produce each dollar of GDP.

1980 – 2007 – global economy material intensity from 1.3 kg/USD (constant PPP) to 0.9 kg/USD.

With unused materials included, 2.4 kg to 1.5 kg/USD.

Per person

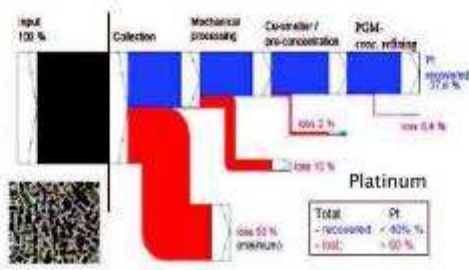
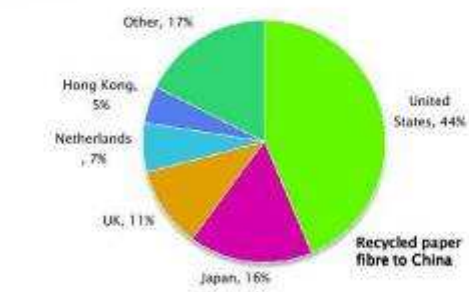
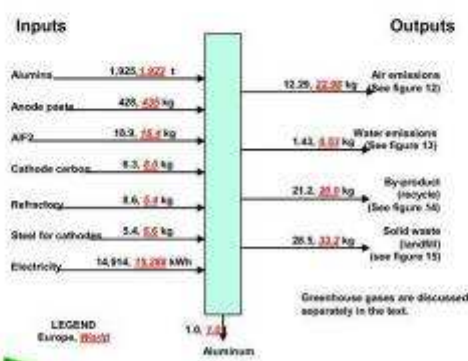
Up to early 2000's global per capita material consumption fairly stable @ 8 t /person /year.

Accelerating material extraction beginning in 2003, driven primarily by rapid economic growth in emerging economies (the BRIICS: Brazil, Russia, India, Indonesia, China and South Africa), saw this rise to nearly 9 t/year by the end of 2007.



OECD sustainable materials life cycle studies

- Critical metals & mobile devices
- Aluminium
- Plastic waste
- Wood fibres

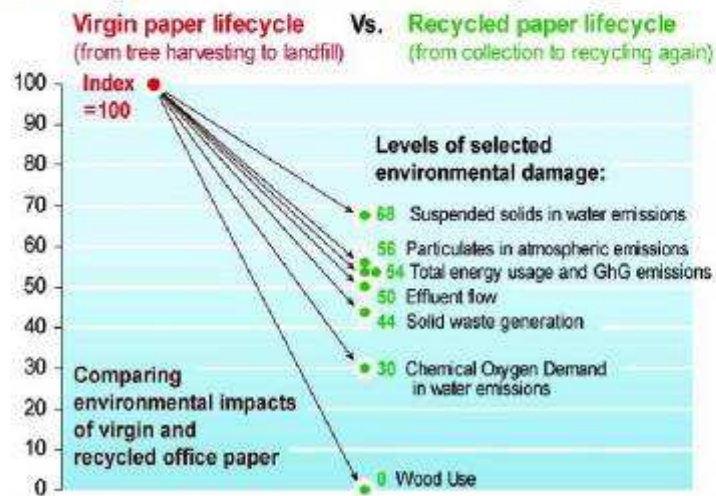




Earlier work confirmed- net GHG contributions from paper cycle



Paper lifecycle - benefits of recycling



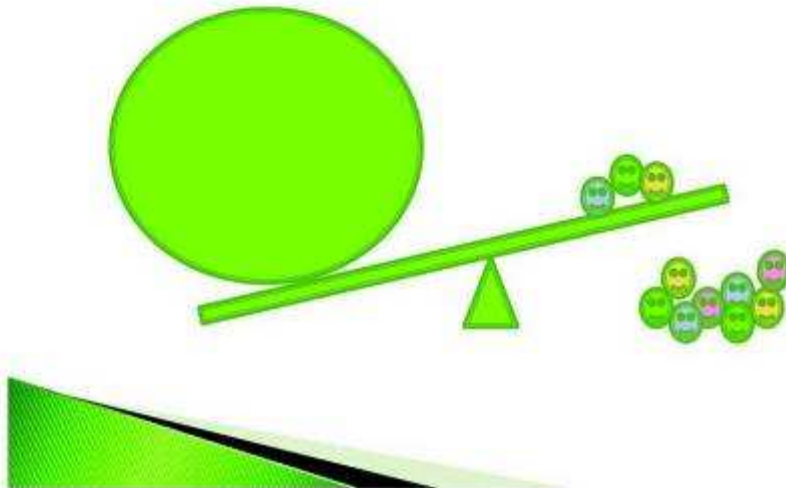
Source: Paper Task Force Recommendations for Purchasing and Using Environmentally Preferable Paper, Environmental Defense Fund, 1995 (figures revised in 2002).

UNEP http://maps.grida.no/go/graphic/paper_lifecycle_comparison

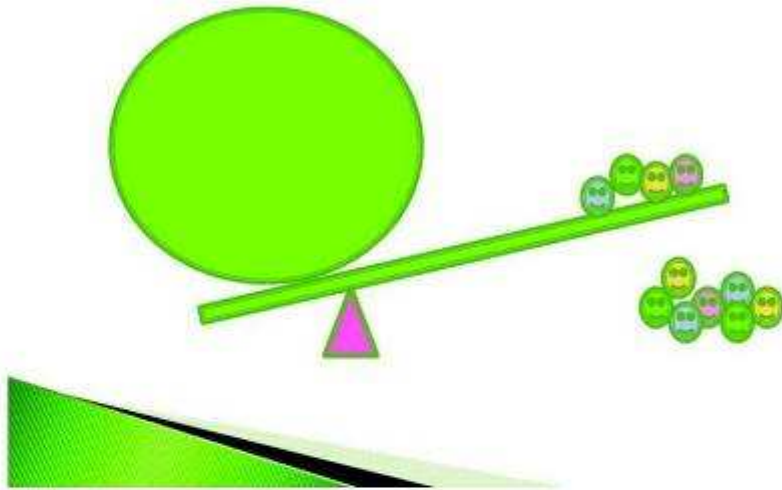
- ▶ Further progress requires more integrated policy that takes into account the full life cycles of materials and SMM principles



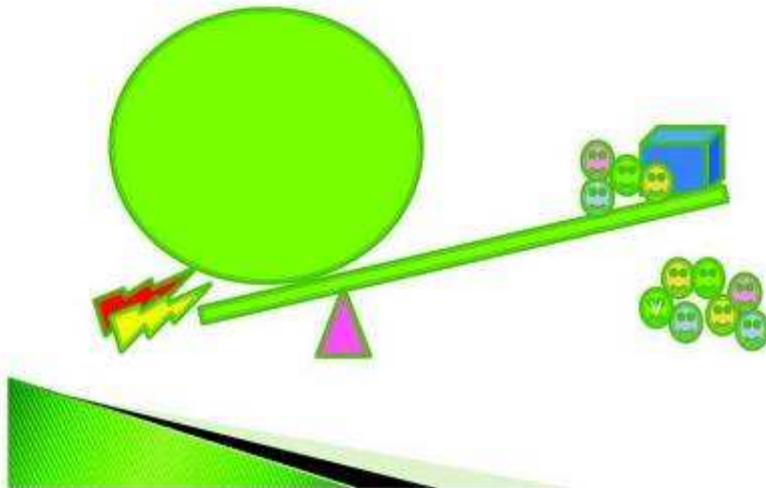
Leverage ..?



Leverage +



Leverage +++



use the power of the market to drive green growth

- ▶ Large corporations and social networks – Business-to-business procurement (B2B)
- ▶ Government procurement (B2G)
- ▶ Government regulation
- ▶ Cross-sectoral alliances
- ▶ Consumers – households & individuals (B2C)



Large corporations & social networks

Choice editing + Supply chain

- ▶ Corporations & social networks (including religions) can be bigger than governments
- ▶ corporates/ industry associations partnerships can
 - ▶ control harmful components and activities
 - ▶ lead by example in design and procurement
 - ▶ use life cycle thinking & green supply chains
 - ▶ foster innovative green design/ green chemistry
 - ▶ Help suppliers upskill to provide greener products

- ▶ Some voluntary examples
Walmart, Interface, B&Q, Tesco & Sainsburys
NZ Tropical Timber Importers association



Government action

Regulations

- ▶ **Product stewardship / EPR**
 - Japan - e.g. cars, TVs, tyres
 - EU - likewise, also packaging
- ▶ **Exclude the worst from the market**
(e.g. RoHS in electronics, lighting, water equip)
- ▶ **Green taxes - change prices in the market**
(e.g. carbon tax, vehicle tax by engine size,

GPP "green government procurement"

Voluntary guidelines

- ▶ Govt procurement - EnergyStar
- ▶ ICLEI Procura+
- ▶ EcoBuy - Australia
- ▶ Govt3 + GBC + GreenStar

Legal requirement

- Japan, Korea, Taiwan



Consumers

- ▶ **Don't blame the consumer - the power lies elsewhere**
 - consumers do not "demand" toxics, power wastage, biodiversity loss ... these decisions are made by producers
 - If the goods do not include the price of creation or disposal, consumer choice is constrained
- ▶ **And - buyers also need information & support**
 - to be aware of the issues & need for change
 - have a way to ID genuinely greener products
 - choice editing by large buyers and sustainable product supply chains



Sustainable business – Indonesia

World Business Council for Sustainable Development welcomes the Indonesian BCSD to its Regional Network

- ▶ launched 27 April 2011 in Jakarta.
Joint effort between the WBCSD & KADIN. At launch were
 - ▶ 30 business leaders
 - ▶ Indonesia's Minister for Industry, Mr. S. Hidayat
 - ▶ the Minister for Environment, Mr. Gusti Muhammad Hatta
 - ▶ Chairman of the Indonesian National Council on Climate Change, Mr. Rachmat Witoelar
 - ▶ Chairman of Indonesia's Chamber of Commerce and Industry (KADIN), Mr. Suryo B. Sulisto
- ▶ Founding member companies include:
 - ▶ Asia Pacific Resources International Ltd (APRIL)
 - ▶ Holcim Indonesia
 - ▶ Garuda Indonesia
 - ▶ Bakrie Telecom
 - ▶ Medco Power Indonesia
 - ▶ Bank Negara Indonesia.



"These will be joined by members from leading national companies and subsidiaries of foreign enterprises sharing a common interest in advancing the sustainable business agenda in Indonesia".

www.wbcSD.org/plugins/DocSearch/details.asp?type=DocDet&ObjectId=Mzk2MTE

The Top Five:

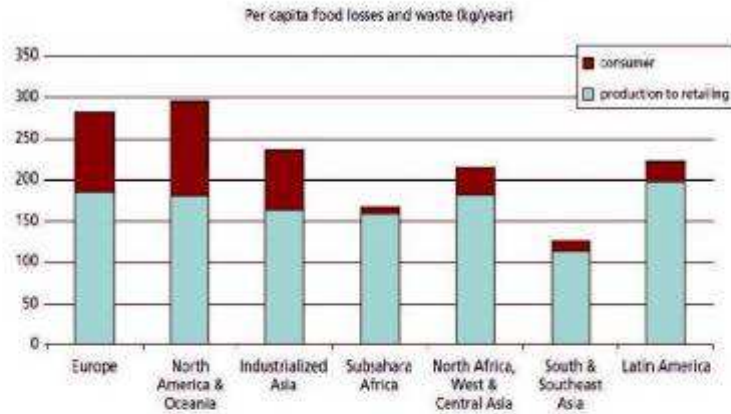
1. Buildings – design
2. Buildings – use
3. Transport
4. Food
5. Consumables / Toxics

The top six for procurement effectiveness – EU :

- ▶ Electricity from renewable resources
- ▶ Energy-efficient computers and IT office equipment
- ▶ Organic food
- ▶ Construction standards for buildings
- ▶ Cleaning services
- ▶ Public transport

Wasted food production

Figure 2. Per capita food losses and waste, at consumption and pre-consumptions stages, in different regions



Gustavsson et al, 2011, Swedish Institute for Food and Biotechnology and FAO pdf at www.apo.org.au/node/24802



D4S
Design for Sustainability

UNEP

sustainable product design



right materials flow
made from organic materials, and is recyclable or compostable, or is made from minerals that are continuously cycled in a closed loop

right energy sources
uses solar energy or other forms of renewable energy that are cyclic and safe, both during use and manufacture

right materials type
non-toxic in use and disposal, and its manufacture does not involve toxic releases or the disruption of ecosystems

right materials use
efficiency in manufacture and use is improved by a factor of ten, requiring 90% less materials, energy and water than products providing equivalent utility did in 1990

right treatment of people
product manufacture and use supports basic human rights and natural justice

Edwin Datschefski www.biothinking.com

Kamworks, Cambodia

Design partnership with

- Dutch charity, university & design company
- local company
- rural villagers

ជាម្ចាស់ការងារអាជីវកម្ម
សំខាន់ៗក្នុងសង្គមរុក្ខត



the solar charged "Moonlight" - replaces kerosene lamps - direct leap from fossil fuels to sustainable technology

EXAMPLES OF USAGE						
Category	Light	Radio	Mobile Phone	MP3	TV	Other
High	1	1	1	1	1	1
Medium	1	1	1	1	1	1
Low	1	1	1	1	1	1

DURATION IN HOURS		
SETTING	HOURS	USE
High	4+	Lighting, Reading, Work, Study
Medium	20+	Lighting, Entertainment, Working, Study, Work
Low	40+	Lighting, Security, Study, Work

Sources: www.kamworks.com, UNEP www.unep.fr/scp/publications/details.asp?id=DTI/0826/PA pages 97-98



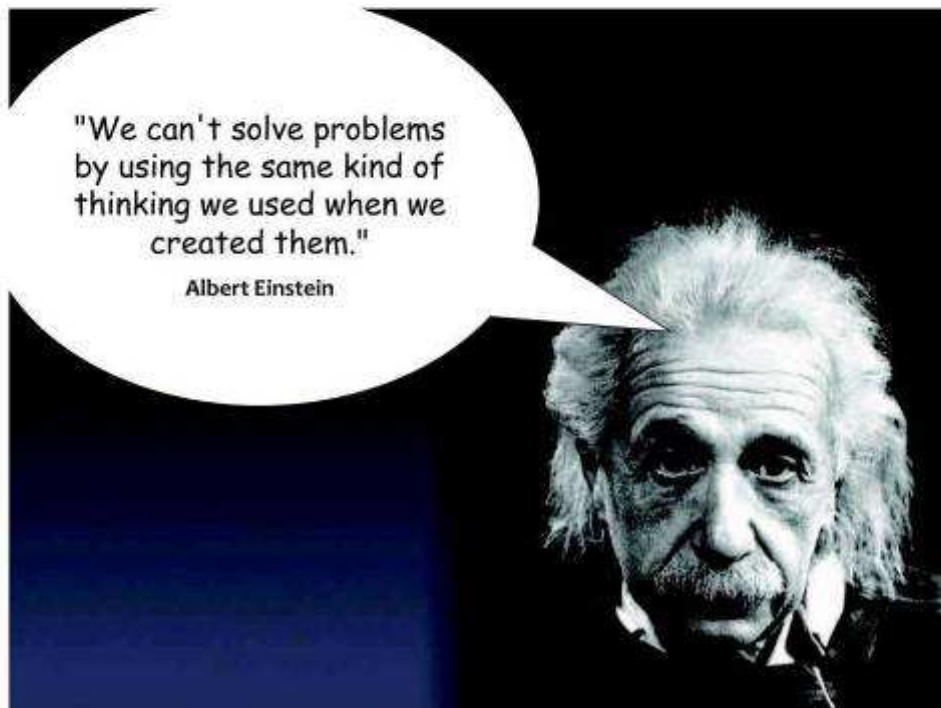
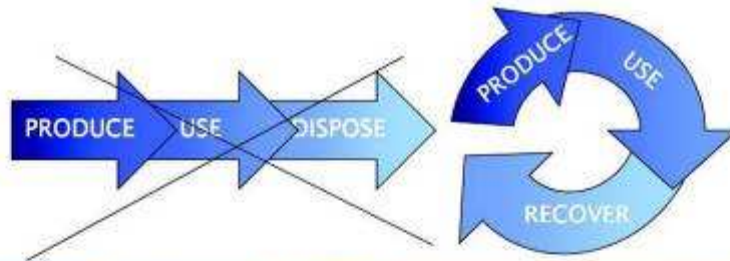
Biogenic (renewable) materials –
think outside the box!

“The starting point: respect nature.
The ending point: imitate nature”

Gunter Pauli, ZERI Foundation

“Waste is lost profit”

in cyclic systems – “waste = food”



*“the will to act
is a renewable resource”*



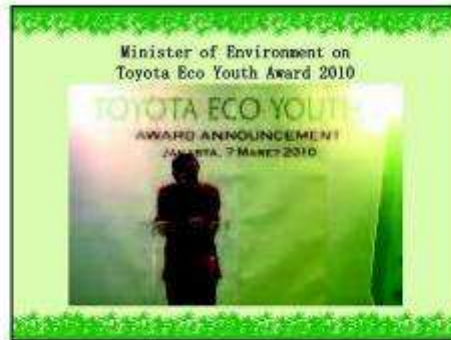
*Terima kaseh
Thank you !*

dana.peterson@mfe.govt.nz



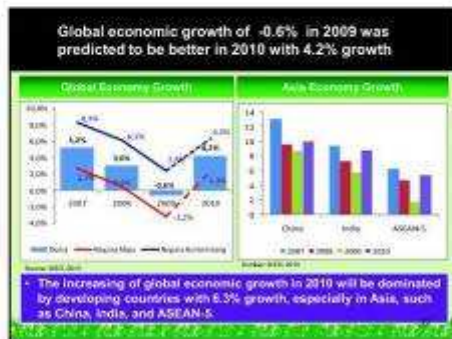








WORLD ECONOMY PROSPECTS





INDONESIA GREEN ECONOMY POLICY





3. CHALLENGES on GREEN INDUSTRY DEVELOPMENT

- Applicative manufacturing industry R&D → today's R&D has not meet national manufacturing industry needs yet
- Modification of manufacturing industry's machineries → need investment, while national commercial bank rate relatively high (14%), and no national machinery industry yet
- Competent human resources in green industry development → today's human resources have lack of competencies

Ministry of Forestry

POLICIES AND CHALLENGES IN GREEN INDUSTRY DEVELOPMENT

REKREASI DAN BUDIDAYA HAYATI SUSTAINABLE

3. CHALLENGES on GREEN INDUSTRY DEVELOPMENT (cont.)

- Green Industry Reward for companies which have implement green industry. Example: fund aid or technical aid to increase development
- Intensive partnership with other nations, international organizations, and financial institutions to get other access of technology and financial aid.





Indonesian Ecolabel Program :Challenging and Opportunity in Global Market and toward Sustainable Consumption and Production Pattern

Dasrul Chaniago

Assistant Deputy for Standardization and Tecnology
Ministry of Environment

May 24, 2011



Regulation

- Act Number 32 Year 2009 about Environmental Protection and Management
- Act Number 8 Year 1999 about Consumers Protection
- Act Number 18 Year 2008 about Waste Management

Objective of Ecolabel

- To Encourage consumers concern on environmental aspect of product and choose the environmental friendly products
- To encourage producers improving the environmental aspect on product, and increase market share

Types of Ecolabel

- Ecolabel Type 1 :
 - Based on multi-criteria and stakeholders agreement
 - Certified by the third party
 - Proactive and voluntary
- Ecolabel Type 2 :
 - Environmental claim self declaration
 - Non Certified, and could be certified by the third party
 - Proactive and voluntary

Ecolabel Type I Indonesian Ecolabel Logo



Ecolabel Type 2 Policy

- Voluntary and proactive tool
- Non Certified, and could be certified by the third party
- Bases of Indonesian self declaration ecolabel implementation:
 - Adopted standard 14021 ecolabel and declaration-self declaration environmental claim (ecolabel type II)
 - Guidance on self declaration to prevent miss-conduct & miss-leading by producers
- Using Indonesian Self-Declaration Ecolabel Logo regulated by Minister decree regarding to proverty right of logo by MoE
- Technical review event
- Objective :educate producer & consumer



(Environmental Aspect Claim)

Gambar 1 - Ecolabel Logo of Indonesian Self Declaration



Degradable

Gambar 2 - Example how to use Indonesian Self-Declaration Ecolabel Logo for environmental claim "Degradable"

Structure of ecolabel criteria standard

- Scope of product category
- Criteria and threshold value:
related to product life cycle review on significant environmental aspects
- Pre-requirement:
 - a. Comply to environmental regulations
 - b. Implement the Environmental Management System
 - c. Meet the quality standard and/or implement Quality Management System
 - d. The packaging material shall be environmental friendly
- Testing Method/verification

Institutions Certification Ecolabel

Institutions	Scope
Institutions Certification Ecolabel MALECO	<ul style="list-style-type: none">• Coating & Un – Coating Paper• Textile & Textile Product
Institutions Certification Ecolabel PaPICS - Bandung	Coating & Un - Coating Paper

Guidelines Application Support Ecolabel

- Guidance KAN 800 – 2004 : General Guidelines accreditation and Certification Ecolabel
- Guidance KAN 801 – 2004 : General Requirements Institutions Certification Ecolabel
- Guidance KAN 802 - 2004 : Audit Accreditation Institutions Certification Ecolabel
- Guidance KAN 803 – 2004 : Guidelines the use of sign Ecolabel
- Guidance KAN 804 – 2004 : Criteria Evaluator Competence Certification Ecolabel

Supporting Program

- Develop Green procurement policy
- Develop eco-office concept
- Member and active on Annual Meeting ISO/TC 207
- Member and active on Annual meeting Global Ecolabeling Network started in November 2006
- Review of ecolabel product self declaration on technical matter
- Green Building Material

List SNI Criteria Ecolabel

1. Un-coating printing paper,
2. tissue paper,
3. wrapping paper,
4. textile & textile products,
5. synthetic detergent powder for household ,
6. leather,
7. casual leather shoes,
8. dry cell,
9. coating paper,
10. paint.

Data Product Ecolabel (Trademark)

- | | |
|----------------|----------------------------------|
| • Apollo | • Instant Pre Print |
| • Copy Cat | • Office Print Copy |
| • Bola Dunia | • Paper One |
| • Golden Star | • April Laser |
| • Galaxy Brite | • Paper One Copier (green) |
| • Lucky Boss | • Paper One All Purpose (Blue) |
| • Absolute | • Perfect Print |
| • Anchor | • Paper One Presentation |
| • Golden Coin | • Kertas " IK " |

THANK YOU

for further information:

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Cleaner Production*

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附錄 4

分組討論議題 A：建立亞太地區生態產品
共同的界定、條件及分類

Recommendations of Establishing the Common Definition/Classification for Eco-products in the Region

(1) Common Definition and Classification

1. Type I products included automatically or not?
2. All other product data should be panel reviewed??
3. Classified as Eco-material, component, product, service, equipment, building and others?

(2) Selection criteria on target product groups

1. Besides market share, environmental impact, what else?
e.g. widely traded products among members, climate-related products, products with high buying frequency, products with existing quality standard and verification method, etc.

2. What is lacking from national databases?

Bearing in mind that most Asian manufacturers are ODM/OEM companies or component suppliers, what should the APO database focus on how to complement the existing ones??
Should APO database focus on helping developing countries to find clients??
e.g., E&E components, agricultural, forestry, food, cosmetics or other products?

(3) Environmental Improvement Strategies—optional or mandatory?/

Life-cycle thinking is essential--- multiples issue

Has to demonstrate the fact that the product is “greener” than conventional products

Quantitative data is preferable to qualitative

(4) Verification of data

Example:

Class II products in Taiwan are self-declared claims with certification through an expert panel review process including site audits.

Manufacturers have to give evidence that the environmental performance of their products have “net environmental benefits”.

What are the significant environmental impacts of their products and how they reduce the burden.

(5) Who should be the operation body(ies)? Review Panel(s)?

(6) Funding source?

Conclusion of the Group A discussion

1. There is a need of a regional directory/database (the APO Eco-product Directory)
2. The directory/database should consist of three sections:
 - (1) **Section I is for Type I products** (multiple attributes, life cycle consideration, selective, third-party certification and with patented logo),
 - (2) **Section II is for Type II** (single or multiple attributes but not based on life cycle consideration) **plus third-party certified products**
 - Only self-declared claims defined by 14021 (e.g., compostable, recyclable, energy reduction, recycle content, etc.) can be included.
 - Certification is a **must** and can be done by two approaches:
 - (a) through expert panel review or
 - (b) by a product certification body with operating procedures in conformance with ISO/IEC Guide 65.
 - Panel review process should include at least a desk-top review of documents such as test report, QMS/EMS certificate, evidence of meeting quality standards and environmental regulations, etc. When deemed necessary, a site-audit should be performed. A panel may be formed by various stakeholders, e.g., industry experts, NGOs, government officers and academia.
 - (3) **Section III is for Other certified/labeled products,**
 - Sector-specific labels (FSC, MSC, Organic and FPO/AT, etc.)
 - CFP label or Type III EPDs (single or multiple attributes, quantitative life cycle analysis, internally or externally reviewed),
 - Other labels awarded by credible organizations (to be determined by each country).
 - (4) Under each section, sub-divide to three classification: material/components, products and services.
 - (5) Product group, industrial sector and supplier's name, etc. maybe used for further classification.
 - (6) Many different types of services may be included, e.g., tourism, printing, car wash, laundry, canteen and cleaning, etc. For services, should have requirements on "resource-saving", in addition to "using eco-product or eco-material".
3. Should have country-specific, company-specific and product group-specific indices.
4. Main target users of the APO Directory are B2B and B2G for green purchasing. If used for B2C, it is more toward education and awareness-raising than creating market demand.

5. APO Directory should have links to national databases. National databases may need government sponsorship in some initial years and then be supported by registration fee and advertisement fee paid by companies.

Working Group A

Mr. Ha, Hyun Chul

Ms. Kamalaporn Phumpradab

Ms. Widya Prima Sari Fultanegara

Ms. Nguyen Thi Quing Huong

Member:





Eco-Products is???

- **Eco-Products** are product that contributes to saving more resource and reducing environmental pollution in comparison with other products.
- Type 1 products should **included automatically** in Eco-Products



Classified as Eco-???

- Eco Products
 - Eco – Materials
 - Eco – Components
- Eco Services – service that use eco-products, eco-material in the process such as Hotel &Resort,

Target product Groups

Paper

- White Paper
- Tissue Paper
- Kraft Paper





Criteria

- Use recycled paper in manufacturing (set % of paper)
- No heavy metal and toxic chemical (limit the amount of chemical)
- Save energy in manufacturing process (set minimum of energy)



Which are Lacking of the database

- Have only each manufacturing process but not weighted average in national database.
- It don't have the label of cultivation label information such as FSC label.
- How benefit from become to Eco-product for production sector?



Environmental Improvement Strategies


Mandatory

- Government, Public sector and other customer have responsibility on eco-products.
- Use the Life Cycle Thinking as a evaluated tool.
- To show amount of evidence for environmental testing or other assessment.
-



Verification of data

- Have to review and verify of all the label.
- In type of data below;
 - The evidence of other environmental label
 - The evidence of testing
 - The environmental impact.



Who will check data?

- The stakeholders consist of NGOs, experts panel and committee that are register on ministry of environment.
- The Governments



Funding Source?

- Government subsidies
- The foundation of environment. (International and national)
- Company from Checking Fee.
-



Establishing “Eco-Products” Data Base

APO Workshop Jakarta

May 24, 2011

Group A

Eco-Products - Criteria

- Site based eco-products
- Process based Eco-products
- Constituent based Eco-products
- Utility based Eco-products
- Non Compliant- Big Polluters
- **Critical Eco-product**

A. Site based eco-products

- **Location guidelines for setting up of industrial units.**
- **Developing Area Specific Guidelines**
- **The product so produced can be categorized as 'ECO-SITE FRIENDLY PRODUCT' or 'Eco-Product-S' if they comply with criteria**

B. Process based Eco-product

- **Industries using approved eco-friendly technologies**
- **Having technologies approved by the international accreditation agencies for green products**
- **The product so produced can be categorized as 'ECO-TECH FRIENDLY PRODUCT' or 'Eco-Product-T'**

C. Constituent based Eco-product

- Composition of raw material, product & wastes
- Properties [of the raw material, product & waste] such as effect (reaction) on water, air & land environment, after disintegration of raw material,
- The product so produced can be categorized as 'ECO-MATERIAL FRIENDLY PRODUCT' or 'Eco-Product-M'

D. Utility based Eco-product

- If the product used for abatement of pollution
- The product so produced can be categorized as 'ECO-UTILITY FRIENDLY PRODUCT' or 'Eco-Product-U'

Non -Compliant

- Main Polluters
- Requiring regulatory measures Fines etc
- Incentives
- Capacity building
- Cheap Capital to Change Production - Processes
- Consumers Pressure

Critical Eco-Product

CRITICAL ECO-PRODUCT or 'Eco-product-C'

- Site
- Raw material
- Technology
- Utility
- Final Disposal (Recyclable- re-useable)

Ultimate definition

Perfect Eco-product

Product being produced at a **compatible site** through an **enviro-friendly technology** using **non-toxic/non-hazardous materials** and leaving **no toxic residues** after disintegration.

Awareness Campaign / Incentives

- Educational Institutions / Public Sector
- Consumer guidance – leaflets
- Product specific- Consumer Information
- Incentives for purchasing Eco-Products-
 - **Green Credit card**
 - **Concessional vouchers**
 - **Discounts**
- Establishing Green Purchasing Networks-NPOs

Policies – Regulations to

Promote Eco-Production

- **Environmental Laws – to Promote Eco-Products**
 - Subsidies -Tax Credits-rebates
 - R & D for Eco-Product Development
 - Capacity Building-
 - Software for eco-products
 - Cheap / concessional Credit Facility
 - Public Procurements - **Green Purchasing**

Governing Body

- Special Cell in the Ministry of Environment
- Specialized Technical Institution
 - **Technical Support**
 - **LCA assessment / EIA**
 - **Peer Review**
- Final recommendations on the nature of Products
 - Product is Eco Friendly----**Eco Label**
 - Product not qualifying---- **Technical assistance to improve process etc for qualifying**

Qualifying Criteria

To based upon

- Industrial Emissions
- Solid Waste Generation
- Hazardous / Toxic emissions- Discharges
- Nature of in-house Mitigating measures
- Reuse / recycle Potential of the Products

Mechanism -Assigning Eco-Labels

- Industrial Classification- Listing
- Effluents / Missions – Information- EIA/ LCA
- Consumers Feedback
- 3rd Party Auditing
- Peer Review- Accreditation Body
- Award of Labels

Source of Funding

- Government Taxes
- Fines from the polluters (Polluter Pays Principle)
- Collaboration with International institutions (EU / UNIDO/UNEP)
- Public-Private Partnership (PPP)
- Voluntary Contribution from the Industry
- Carbon Credits



How to Develop Eco-product database

Group 3 & 1

ECO PRODUCT

- Basically an eco product is a label which identifies overall environmental preference of a product (ie good or service) within a product category based on life cycle considerations.
- In contrast to a self-styled environmental symbol or claim statement developed by a manufacturer or service provider, an eco product is verified by an impartial party to award an eco label to these products that meet established environmental leadership criteria.
- ~~consideration on environmental impact and impact~~
- Consideration on raw material extraction, manufacture, distribution, use and disposal. (~~product life cycle~~). This include organic products

Select the product category

- **Type 1** eco-label certified products
- **Type 2** eco-label with verification by third party
- **Type 3** eco-label certified product, such as energy saving products.

- Meet government policy and law
- Consider the environmental aspect and impact
- Issue of media care (e.g. illegal logging issue, plastic)

Product/ Services Category (cont'd)

- Detailed Categorization:
- recycled renew fibers (veneer, timber flooring, plastic carcass, pallets)
- recycled contents (drainage cells, re-bars, rolled steel, polycarbonate)
- biodegradable product
- batteries (alkaline/ manganese/ dry cells/ industrial storage/ lead acid/ rechargeable/ mercury free/ carbon-zinc)
- burners/ boilers
- cleaning (floor, kitchen, window cleaners/ dishwashing detergents, powder & liquid laundry detergents, industrial cleaning solutions, disaster recovery cleaning solutions)

Product/ Services Category (cont'd)

- clothing /textile (carpets/ mattress/ towels/ reusable bags, non-woven bags)
- construction/ building (construction – cement & pre cast concrete/ building materials – bricks, gypsum boards, calcium silicate boards, mineral boards, tiles, ceramics/ thermal insulation/ wall coverings/ road materials/ machinery/ windows)
- gardening/ agriculture (compost/ horticultural waste/ organic fertilizers/ lubricating oil/ machines)
- landscaping (drainage cells/ geo textiles)
- home appliances (refrigerators - split/ freezers/ air conditioners/ washing machines/ dryers/ water heaters/ electronic cooking appliances/ TV/ DVD)
- Lightings (compact lightings/ led lightings)

Product/ Services Category (cont'd)

- office equipment/ furniture (multi functional devices – printers, faxes, copiers/ toner cartridge/ computer monitor/ tables & chairs/ partition boards)
- office supplies (stationeries/ correction fluid/ correction tapes)
- packaging/ container (food packaging/ paper packaging/ plastic packaging)
- paper products/ ink (fine, copying, recycled paper/ printing paper, newsprint, hygiene paper/ soy based ink)
- personal care (diapers/ shampoo, soap, detergent, softener/ cotton swaps/ sanitary napkins/ sanitizing incenses/ tooth brushes/ hand dryers/ deodorants/ sanitizing liquid, sanitizing aerosol/ toiletries/ cosmetic products/ hair, gel, mousse/ shaving foam, cream)

Product/ Services Category (cont'd)

- services (accommodation facilities/ automotive maintenance/ automotive car wash/ automotive scrap/ condominiums/ digital printing/ air travel/ lithographic printing/ organic turf management/ photograph development/ environment tours & roof top trails/ pest control/ car pool/ dry cleaning/ supermarket/ restaurants & catering/ public transport/ waste collection/ textile cleaning/ laundry & dry cleaning/
- solar energy (solar cells)
- vehicle/ fuels (eco vehicles/ tires/ shipping/ engine oil/ fuel)
- water saving equipment (flushing valves/ toilets/ faucets)
- food (wine/ soft drinks/ food additives/ coffee)
- paints & coatings
- adhesives & sealants

Environmental Improvement Strategies

- Consideration of environmental related issue in building (e.g. green building certification)
- Regular technical examination by government (e.g. emission control of vehicle)
- Having standard for each product related to environmental aspect
- Educate the consumer and producer
- Input the environment matter to the curriculum of school
- Holding annual/ regular exhibitions & conferences on environmental issues (eg. Renewable energy)
- Environmental impact assessment should be mandatory on all projects (private, public)

Environmental Improvement Strategies continued

- Implementing Green Awards to reward agencies, punishment such as environmental taxes
- Research & Development incentives to encourage product design for all industry sectors
- R&D on energy storage solutions
- Programs to promote Eco Office, Eco Hotel, Eco School, Clean Fuels (CNG)
- Paying more attention to the environmental issue in media
- Facilities for importing Eco- Products (less tariffs)

Verification of data

- Establish third party inspection companies
- Monitor by government regulation

Operational bodies

- NPO
- APO
- Government (Environment Department)

Funding sources

- Manufacturers
- Government (e.g. envt'l taxes)
- International funding

Thank you



RECOMMENDATIONS OF ESTABLISHING THE COMMON DEFINITION/CLASSIFICATION FOR ECO-PRODUCTS IN THE REGION

GROUP MEMBERS

Ms Nadeeka, Sri Lanka
Mr Qutubuddin, Pakistan
Mr Jirawatr, Thailand
Ms Takako, Japan
Ms Jenny, Malaysia

DEFINITION

- ✘ “ A product or Service that meets present needs without compromising the ability of future generations to meet their own needs”

COMMON DEFINITION AND CLASSIFICATION

- ✗ Type I should be automatically included
- ✗ There should be panel review for other products (not Type I) data
- ✗ Sub-classification – material, component, product, service, etc, - not necessary to have so many sub-classification as could be **confusing** to users
- ✗ Suggest 3 sub-classification as sufficient, e.g.
 - a)material/component,
 - b)product,
 - c)service

SELECTION CRITERIA ON TARGET PRODUCT GROUPS

Product target group suggested:

- i) Widely traded or frequently traded products especially exports,
- ii) Life Cycle- Those products which have minimum environmental impacts (affecting climate change, ozone depletion, pollution, etc),
 - i) Those with lower energy consumption – energy efficient
 - ii) Products which are recyclable at minimum cost of time and resources as well as having reuseable components,
 - iii) Products containing recycle materials/ components
- iii) Those having high needs (essential, e.g. LED lamps in Japan) in the country,

WHAT IS LACKING IN NATIONAL DATABASES?

- ✦ Many national data bases do not generally cover agriculture, food and cosmetic products yet as eco product, although a few have carbon footprint labels. Whether desired or not to have such products in the database is subject to the national needs and uses for the database.
- ✦ Each country should have it's own database. However there are some constraints for APO to compile all national data bases together into one (different language and different categories). However links to these national databases can be incorporated in APO's directory with lingual support .
- ✦ APO's own database should include appropriate index by country and sub-categories, if possible. Type I products could be separately listed from other eco-products listing, with a liability statement from APO that they are listings from the countries and not necessarily endorsed by APO. This could be more user-friendly.

ENVIRONMENTAL IMPROVEMENT STRATEGIES

- ✦ EIS need not be mandatory as those companies listing their eco-products are sure to have their own EIS to ensure they have successful listing and continue to be competitive.
- ✦ Life cycle Thinking Essential
- ✦ Environmental impacts at
 - + Manufacturing
 - + Supply
 - + Reuse/Recycle
 - + Inverse Supply Chain

Verification of Data

- ✦ Quantitative data is preferred as it is easier to verify during evaluation or certification process

OPERATION BODY/REVIEW PANEL

Who will set up and operate data base?

- ✦ Examples: National Productivity Secretariat, Standards Authority, Ministry of Industry

Who will be review panel?

- ✦ Should include stakeholders like technical experts, environment experts, academia, industry representatives, NGO representatives, government representatives

FUNDING SOURCE

- ✦ Government seed money/advance for the first directory or database epitomized by Thailand
- ✦ Company may pay fees for evaluation, registration and renewal (affordable amounts)
- ✦ Annual fees for continued listing in eco-products database/directory could be paid by companies themselves (affordable amount)
- ✦ Additional advertisements in directory could be paid by the companies and this will support the operations

附錄 5

分組討論議題 B：朝向綠色亞洲

Question for Consideration

1. Is a *regional* eco-products directory/database necessary?

If YES to a regional eco-products database, how should it be designed/redesigned?

- What would be the objective?
- What would be the benefit for each member country?
- What would be the benefit for the entire region?
- What would be included/listed? What is the criteria?
Based on earlier group discussions/presentations, is the below sufficient?
 - 1) Type I eco-label (multiple (comprehensive?) attributes, includes life-cycle, considerations from raw materials to decomposition)
 - 2) Type II (self-claim) eco-label plus 3rd party certification (single attributes, multiple but not comprehensive attributes)
 - 3) Others with environmental labels that have relevant certification mechanisms
 - 4) Others without environmental labels (self-claim without 3rd party verification)? Can they be included?
- What about Eco-services? Should they be included?
 - 1) One group defined Eco-services to be “service that use eco-products, eco-material in the process such as Hotel &Resort.” Is this good?
 - 2) What about consultancy services or financial products that assist companies to develop green businesses?
- How to organize the listings?
 - 1) Based on earlier discussions/presentations, a distinction between multiple attributes (Type I) and single attributes (others) would be sufficient?
 - 2) How to prioritize within the single attributes?
- Who are the targeted users? B-to-B? B-to-C? B-to-G? What information will essential for them?
- How would the data be collected? How to attract the companies in each country?
- Is assistance to these companies necessary? How to help them? Who helps them?

If NO to a regional eco-products database, why? What is the problem?

2. What other regional initiatives or programs would be more beneficial in promoting green purchasing and eco-products/services?

- What would be the objective?
- What would be the benefit for each member country?
- What would be the benefit for the entire region?
- Who does what? What actors on the regional and national level need to be involved?
- Are specific regional cooperative frameworks necessary to realize this initiative/program?
- What other considerations are necessary?

Conclusions – Group Discussion B, Q.1

28 May 2011

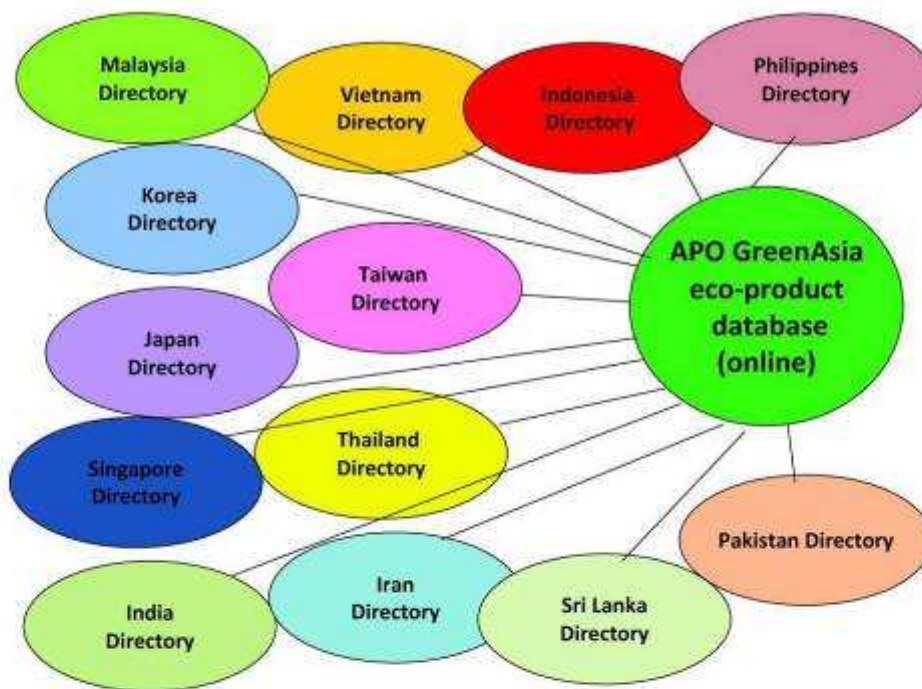
APO Workshop on Eco-products
Database

”Ecolabel Idol” winners !!

Question 1 – recommended changes to Directory –

The top 8 in order of most votes

1. Separate database for each country, linked on-line
2. Country-wise subject index
3. Separate section for Type II+ *(no Type II unverified)*
4. Industry index
5. On-line survey to companies that meet criteria
6. Source (where to buy) and price information
7. Include eco-services
8. Involve consumers *(e.g. business & government)* and NGOs



What's in

- Type 1 (automatic)
- Type 2 plus (with panel review)
- Type 3
- Carbon footprint
- Energy efficient
- Water efficient
- Other agreed environmental label (e.g. resource extraction, organic)
- Other local certification

+ Eco-Services, *provided* regionally agreed criteria & list of services

2. Other actions for APO.....?

- Incentives for companies (reduced taxes, finance access, SMEs) ✓✓✓✓✓
- Targeted interventions and workshops - top management, procurement (gov't/industry), pollution control ✓✓✓✓✓
- Expos/conferences/Eco-products International Fair - promote directory, business matchmaking ✓✓✓✓✓✓✓✓
- Regional awards and national awards ✓✓✓✓✓✓
- Environmental awareness programs/press release/trends info (e.g. TV) ✓✓✓✓✓
- Research grants to universities for development of eco-products ✓✓
- Technical support between countries - supply chain, production system improvements, SME-focused ✓✓✓✓✓
- Rating system - initiatives and success rates, monitoring system ✓
- Support for more mutual recognition of eco-labels in the region (includes work with GEN on capacity building ✓✓✓✓
- Online regional database - connect national databases ✓✓
- Promotion of government green procurement ✓✓✓✓✓✓✓✓
- Promotion of common criteria ✓✓

2. Other actions for APO.....?

Promotional activities

- Expos/conferences/Eco-products International Fair - promote directory, business matchmaking
- Regional awards and national awards
- Environmental awareness programs/press release/trends info (e.g. TV)

Capacity-building/technical support activities

- supply chain
- production system improvements
- SME-focused / top management
- Eco-labeling (mutual recognition of eco-labels, cooperation with GEN)
- green procurement for government / industry
- Pollution control
- Development of incentives for companies (reduced taxes, finance access, SMEs)

Questions for Consideration

GROUP WORK B



The Benefit for each member country



- To create Eco-Market Network,
- To give information for consumers about eco-products,
- To promote Greener Products, and
- To make benefit in economy

What would be included listed? What is criteria?



- The listed of Eco-product directory/database in each country must have first.
- Environmental Label should be include in Eco-product database as below.
 - Type 1,
 - Type 2 plus
 - Type 2
 - Type 3
 - Carbon footprint
 - Energy Saving
 - Water footprint
 - Any environmental label

Eco-Services included??



- Eco-service should be included although it is not used 100% eco-product but at least from services side, it contributes to keep environment “clean” gradually.
- Should be included in Eco-Products Database/Directory.

How to organize the listings?



- The database should be separated in each type.
 - Type 1
 - Type 2
 - Type 2 plus
 - Alternative Label
- Prioritize by Environmental problem or other reason up to trend of Environmental.

Target group

- B-B is information to other business or supply chain.
- B-C is information for consumers.
- B-G is information for Government because the government makes policy and automatically government could create demand and requirement for eco-products.
- Information need to them as below;
 - Life Cycle consideration
 - Environmental friendly point
 - How much is it?
 - Where they buy the Eco-products?
 - What are Eco-Products?

How be collect?

- Organization that operated Eco-Label in each type and each country.
- Survey or online questionnaire to the companies which companies meet the criteria itself.
- Government also could make a website to announce the criteria and show the way how companies registered.

Is assistance to companies?

- Yes, it is necessary to them.
- To help them choose Eco-products/services follow their Green Purchasing Procurement.
- The organization that responsibility these label will help them get more information and consultancy company.

APO INITIATIVES/PROGAMS

APO

- APO eco-product database guideline
- Eco-products International Fair
- International Workshop

Other

- Environmental Trend (TV, other Media)

Do you want to know the Eco-Products Database?



Thank you very much
Gam sa hap ni ta
ขอบคุณค่ะ/ครับ
Terima Kasih Banyak
Xin cam on

Eco-Product website



**“Eco-Products” Directory
Designing**

Regional Eco-Products Database

APO Workshop Jakarta

May 26, 2011

Group A



**Is regional eco-products
Directory-database necessary**

Yes


Objectives

- Increase scope/ coverage of Eco-Products
- To establish linkages between Green Buyers & Green Producers
- Increase information for the stakeholders
- Promote Trading in Eco-Products Local / Regional Levels

Benefit to Member Country

- Improvement of basic data of Eco-Products
 - Regulatory Mechanisms
 - Government interventions-Incentives
 - Consumers involvement – Persuasions
 - Voluntary actions
- Product focused information –Comparisons-processes etc of **Green Products**
- Promote competition amongst producers
- Increase Number of Green Products / Services in the country

Benefit for the Region

- Promote uniformity of Purpose
- Common agreed Criteria- Eco-Products
- Synergic Effect  **Win-Win Situation**
- Targeted Investment in Cleaner Production R&D
- Information Sharing
 - **Cleaner Production**
 - **Best Practices**
- Incorporate in the national / Regional Environmental agenda, information of available green products Can be an Economic driver

Criteria

- Type 1 Eco-Labels
- Type 2
- Others- Full Filling Local Criteria
- Border line Products-Others
- Industry Index
- Country wise Subject Index

Eco-Services

- To be included **BUT**
- Need to Develop Uniform Agreed Criteria
- List of Services also Need to be Agreed Regionally
- Involve Consumers from the Region / Globe

Listings

- Eco-Products/Eco-Services
- Type 1
- Type 2
- Local Certification
- Others
- **Attributes**
 - Use based- Market Share
 - Environmental Impact based

Target Users

- B to B
- B to C - (Consumers Organizations- NGOs)
- B to G

Information

- Impact of Raw Materials- Constituents LCA
- Product Demand
- Production Volumes
- Details of Similar Products

Data Collection

- NPOs of the respective Countries
- Public Statistics of Industrial Production
- Voluntary Submissions by Industry
- Environmental Agencies
- Consumers Groups
- Industrial Organizations-Chambers of Commerce
- Regional / International Agencies

Incentive to Companies

- Improvement of Plant & Machinery
- Subsidies -Tax Credits-rebates
 - R & D for Eco-Product Development
 - Capacity Building
 - Software for eco-products
 - Cheap / concessional Credit Facility
 - Public Procurements - **Green Purchasing**

Question 2

- **Other Regional Initiatives / Programs**

OTHER REGIONAL INITIATIVES

Objectives:

- Sharing information and creating market place
- Educate current and future decision makers
- Capacitate the industry
- Develop new technologies

Programs/Initiatives

- Exhibits and Conferences
- Targeted / Focused Interventions (Top Management, Procurement Officers, Pollution Control Officers, Civil Society, Media, etc)
- Programs for Environmental Awareness
- Regional Awards Programs
- Research Grants for Universities to develop eco-products

Benefit For Each Country

- Collaboration of bright minds- increase in outputs
- Promoting Green Image of Member Countries
- Improvement of Industrial Process – capacity Building of stakeholders
- Provide a long-term plan for sustainability

Benefit for the Region

- Strengthen the Asian market-Eco Labels
- Improve competitiveness among the producers
- To be the environmental leader in the world - **“One Green Asia”**

Who? What?

- Political/Government Leaders; Community leaders
 - to capacitate themselves
- Industry & Professional Associations
 - Include environmental aspect in their philosophy
- Civil Society
 - Push for an action plan for the environment, influence policy development
 - Educate general consumer/industry/gov't
- Collaborations of Asian Educational Institutions

Specific Regional Cooperation

- Necessary
- Agreement or Declaration between Governments
- Focus on eco-products; will help to achieve Millennium Development Goals
- Technical Support between countries like:
 - its supply chain support
 - system improvement,
 - support SMEs
- Monitoring mechanisms in industry and SMEs
- Rating system between countries based on initiatives and success rates
- MUTUAL RECOGNITION AGREEMENT (MRA)
 - between Asian Type 1 Ecolabeling Programs

Other considerations

- Difference in culture (Religion, etc)
- Difference in technology
- Economic constituency
- Difference in major issues (pollution growth vs. pollution decline)





1. Is a regional eco-database directory/ database necessary?

Any improvement to APO directory?

Group 3 & 1



Yes to Regional Database - what should be considered in the design/ redesign to directory?

Objective of the regional database:

- **Priority from B to G, B to B, B to C**
- **Protect the environment by encouraging sustainable management, consumption of resources, innovative green technologies.**
- **Propagate environmental standards**
- **Propagate environmental awareness among consumers regarding the environmental effects of a product that is to be consumed.**
- **Provide competitive advantage + incentives to manufacturers and importers for reducing adverse environmental impact of products.**

Yes to Regional Database – cont'd



- **Benefit to each member country**
 - it should **increase market share** of each member country
- **Benefit for the entire region**
 - helping eco-product producing countries in the region to **find more customers** for their market penetration
- **What will be included/ listed & criteria?**
 - **Yes to include Type I eco label, Type II (self claim) eco label plus and Type III claims with relevant certification mechanisms.**
 - **No to self claim (without verifications)**
 - **The above plus basic principles and guidelines that can be monitored, should be included as criteria.**

What about Eco-services? Should they be included?



- **YES, besides Eco Hotels & Resorts as eco-services, the following should be included:**
 - **Eco camps**
 - **Eco accommodation facilities** – hotels/ back pack/ condominiums
 - **Eco automotive** public transport/ maintenance/ car wash/ car pool/ scrap yard
 - **Eco digital/ lithographic printing**
 - **Eco air travel**
 - **Eco organic turf management**
 - **Eco photograph development**
 - **Eco tours & roof top trails**
 - **Eco pest control**
 - **Eco laundry & dry cleaning**
 - **Eco super market & hyper markets**
 - **Eco restaurants/ food & beverage catering**
 - **Eco waste collection**

What about Eco-consultancy services or Financial products that assist companies to develop green business?



- **Yes** – such as Insurance and financial services for
 - **Eco certified Green Vehicle Manufacturers**
 - **Eco certified Green Consultancy services**
 - **Eco property Investments and hotel developments**
 - **Eco certified Tours/ Camps**

How to organize these listings?



Based on earlier discussions/ presentations, a distinction between multiple attributes (Type I) and single attributes (others) would be sufficient?

– **YES It is sufficient.**

How to prioritize within the single attributes?

Listing priority by TYPE, then followed by **Sectors** in alphabetical order such as Agriculture, Chemical, Clothing & Textile, Consumer Goods, Eco services, Home appliances, Office Supplies, Wood Based,

Who are the target users?

B to B? B to G, B to C?

All of the above.

What information will be essential to them?

- **The benefit** of eco product
- **The criteria** of eco product
- **The market** for their eco product

How would the data be collected? How to attract the companies in each country?

Data collection by:

- **Market survey** to collect data
- **Driven by Law** to request for data
- **Company submit** the data

Is assistance to these countries necessary? YES

How to help them?

- **Advertisement + Media Press Release**
- **To provide financial facilities** such as lower interest rates
- **To reduce taxes** for such companies than others
- **Showcasing benefits of the directory during workshops & conferences and overseas mission.**
- **Provide some facilitation in exhibitions & events** as well as **business match making**

Who helps them?

- **Government/ International Bodies (APO, UNIDO)/ NPOs/ Chambers of Commerce/ Private Sector Support**

2. What other regional initiatives or programs would be more beneficial in promoting green purchasing and eco-products/ services?

Any other actions for APO?

Group 3 & 1

Other Actions for APO. What would be the objective?

- **To harmonize and integrated promotion of eco-products**
- **To share database information according to eco-product list**
- **To create the eco-product market in the world**
- **A closer step towards regional green purchasing. Green Purchasing promotes sustainable business in the region.**

Other actions for APO. Benefit for each APO member country:

- **Conserve resources**
- **Improve our environmental footprint (water/ carbon/ etc)**
- **Market development**
- **Economic benefits**
- **Health and safety**
- **Reduced liabilities**
- **To encourage bilateral trade to regional trade and global trade through mutual Eco Labelling Agreement**

Other actions for APO. Benefit for the entire region:

- **Enhancing competitiveness of companies of APO member countries**
- **Promoting eco-products in APO member countries**
- **Harmonizing the member countries' effort related to eco-products**
- **Development of a scale up eco product database in the region**

Other actions for APO. Who does what?

- **APO/ NPOs/ Governments/ NGOs/
Private sector**

**Other actions for APO.
What actors on the regional and national
level need to be involved?**

Scheme of work



**Other actions for APO.
What actors on the regional and national
level need to be involved?**

Scheme of work – cont'd

Government (Ministry of Environment):

- **Set-up eco-product criteria (type 1)**
- **Set-up regulation and guidance**
- **Make a list a eco-product to share in web-site**
- **Monitor and evaluate the ecolabel program**

**Other actions for APO.
What actors on the regional and national
level need to be involved?**

Scheme of work – cont'd

Certification Body (3rd Party Accreditation)

- Certified eco-products
- Surveillance and reporting

Company

- Produce eco-products related to criteria or/and self-declare by third party
- Report all eco-products to government

NPO

- liaison and monitoring of progress and updates to APO



**Other actions for APO.
Are specific regional cooperative
frameworks necessary to realize this
initiative/ program?**

YES



Other actions for APO. What other considerations are necessary?

- **Funding** – Some facilitation needed for SMEs, especially in developing countries
- **Committee involvement** – Need to meet regularly and review and re-elect new committee annually
- **Mutual recognition mechanism** across the entire region
- **Need to establish the general & common criteria** on eco-product/ services for each country

Thank you



TOWARDS GREENASIA

GROUP MEMBERS

Ms Nadeeka, Sri Lanka
Mr Qutubuddin, Pakistan
Mr Jirawatr, Thailand
Ms Takako, Japan
Ms Jenny, Malaysia

Objectives of Regional Eco-Products/ Database

- **To be a clearinghouse for information on eco-products, suppliers and available green technologies to support sustainable development programs in member countries**
- **To promote eco-products by giving examples and its use for sustainable society**
- **To make public aware to use environment friendly products**
- **To create a network for cooperation of countries in the region about eco-products**

Benefits

✘ Member Country

- Sharing technical knowledge,
- Promotion of eco-products and easier procurement,
- Market access
- Enhance market/Quality competition

✘ Region

- Maintain benchmark for standard and quality assurance of eco-product
- Stimulate Trade

Eco-Products Directory/ Database

What should be included?

Only

- Products with Type I to be automatically included
- Type II + should be included, under separate section
- Others with environmental labels with relevant certification from responsible institutes/agencies

What are the criteria?

Certification requirements include

- Relevant documents to be submitted
- Panel review for Type II + and others
- Site assessment on recommendation of panel
- Product quality certificate given by local standards authority for Type II + and others

Eco-Services

- Should be listed in directory/database but should include resource efficiency (also saving resources) requirements, in addition to using eco-products, eco-materials and reducing environmental impacts.
- Cleaner production (also ESCOs, sustainability, etc.) consultants, and relevant financial products **MAY** be included

Organizing Listings

Categorize under

- Level 1 – segregation by Type (I and others) into 2 sections
- Level 2 – whether Eco-Material/Component, Eco-Products, or Eco-Services (3 categories)
- Level 3 – Categorize by main product or service group, e.g. office equipment
- Level 4 – Product or service item sub-category, e.g. cabinet
- Level 5 – All the different suppliers' information (product details, photos and contact details), in alphabetical order by name of company

Note: Levels 2 to 5 are repeated for the two sections

Targeted Users

- Business to Business (for Green Purchasing purpose)
- Business to Government (for Green Purchasing purpose)
- Business to consumer groups (for awareness and reference only)

Data Collection

How?

- Use Certifying authorities (e.g. Type I in Thailand is by Thai Environment Institute),
- local NPOs,
- Local GPNs,
- Industry Groups like Cement Group, Agricultural Chemicals Group (self-declared)

Assistance is necessary,

Example

- Funding is needed for collecting information and creating database/directory
- Capacity-building and guidelines needed for those countries which have not yet started to collect data, possibly by APO and the local NPOs

Other Regional Initiatives or Programs to Promote GP and Eco-Products & Services

1. Eco-Products International Fair should continue.
2. Regional Awareness-raising Workshops on Eco-Products & Services for Government Procurement Officers and/or Industry Procurement Officers, organized by APO with the local NPOs – to be held in conjunction with the EPIFs. APO can send their experts to conduct the workshops/training.
3. APO can cooperate with Global Ecolabelling Network (GEN) to support APO member countries to
 - develop more Eco-Products, especially to achieve the standards for Type I or Type II + ecolabels, and also to
 - establish programs to help obtain certification for ecolabelling.

附錄 6

實地參訪之討論與發現

Session 10: Findings from the Site visit (to Pt Panasonic Manufacturing Indonesia)

11-IN-99-GE-WSP-B: Workshop on Eco-products Database

Wednesday, 25 May 2011

- Need more machines (too much manual work)
- Good housekeeping, easy availability
- Waste segregation at source
- Need more staff education on green activity
- Have a car free day? – GHG measurement??
- Should have small efficiencies with big savings – not expensive
- Worker safety important
- Small energy savings vs large product impacts (Co2)
- Not in PVC free plastics
- Toxic air in factory?
- While life cycle? eg raw materials? – CO2
- Should have Car-less days – everyday?
- Improvements to water recycling – use fish to show how clean it is?
- Using ceiling lamps still which are mostly higher ones and less efficient
- Should have more cooperation with government and society on Green Ideas
- Should identify more efficiencies possible in product use
- Not clear enough on employee safety, air quality, water and waste treatment
- Good goals but are they eco-products?
- Should have van pool for workers?
- Need more clarity on disposal of products? How do they minimize impacts (e.g. take-back, easy to recycle parts)?
- Packaging
- Expected better plant and employee conditions
- Typical corporate host rather than a leading green company
- Good housekeeping, shop management, good workmanship
- Corporate responsibility important
- Waste...? eg chromium
- Solar cells – only 4mw generated not much compared to product life cycle
- Mass balance data would be good
- More information on water vs square meter of land
- Not much greenbelt
- Credit for progress
- Didn't see the "wet process" areas which have larger impacts
- More information on RoHS (Regulation on Hazardous Substances) compliance – can still have toxics
- Issue of employee evacuation areas – too close to buildings

附錄 7

我國環保標章制度推動成果英文宣導摺頁

GEN and Green Mark Program

EDF, being the implementation body of the Green Mark Program, became one of the Global Ecolabelling Network's (GEN) founding members in 1994. It has been actively engaged in most of the activities led by or promoted by GEN. The signing of mutual recognition agreements (MRAs) and joint development of Common Core Criteria (CCC) with fellow GEN members, as well as piloting the GENICES's Panel Review process are the three most important achievements so far. Through these initiatives, EDF has received significant feedback and results, especially on the MRA aspect, described as follows.

The Practice of Mutual Recognition Agreements

The mutual recognition agreement (MRA) signed between TerraChoice and EDF in 1998, has been reproduced by dozens of GEN members to enhance cooperation. Besides the MRA with TerraChoice, EDF has also entered into similar MRAs with other GEN members, including Green Seal in USA (1998), TEI in Thailand (2001), KEITI (formerly KOECO) in Korea (2002), AELA in Australia (2004), NZET in New Zealand (2004), JEA in Japan (2004), Living Planet in Ukraine (2005), CENIA (formerly CEA) in the Czech Republic (2006) and PECPSDI in the Philippines (2009).

The practice of MRA may take different forms. The first case happened a few years ago. A printer manufactured by a US-based company and certified by Terra Choice was exempted from product power consumption testing while applying for Green Mark. The second type of practice is for EDF to ask the other party to perform the necessary on-site audit or vice versa. The third type of practice is to have EDF acting as a window to help Taiwanese companies to apply for the use of the other party's logo. To date, there have been more than a dozen successful cases.

The above examples demonstrate that through different levels of MRAs, GEN members may be able to recognize each other's quality management system, test results and reports, and on-site audit and certification reports. Significant financial and environmental benefits may be achieved through properly structured and executed MRAs, which will include reducing the need for duplicate testing and significantly reducing the carbon footprint from long-distance travelling. EDF strongly believes



that through efforts such as MRAs, common core criteria and GENICES, the prospect of promoting green products and services can be greatly enhanced; and that promotion of MRAs should continue to be a priority task among GEN members and be looked upon as the first step in harmonization of global ecolabelling efforts.

Taiwan Green Mark Program in Chinese Taipei



Environmental Protection Administration,
Executive Yuan, R.O.C. (Taiwan)



The Green Mark Program in Chinese Taipei

Overview of Green Mark Program

The Green Mark Program ("Program") is the official eco-labelling program in Chinese Taipei which was founded in 1992 by the Environmental Protection Administration (TEPA). At present, the Program has issued Green Mark eco-label certificates to nearly 6,000 products under 112 product categories, including various cleaning products, office supplies and equipment, energy/water-saving products, home appliances, information technology products, construction materials, etc.

The Program is instrumental in the government's green procurement program which has been in place since 2002, as the Green Mark products are designated as the top priority products for government agencies and all publicly-owned enterprises/schools/hospitals to choose from. There are currently 43 designated Green Mark categories with preferential procurement status, and the government has set 88% of total procurement spending in these categories as the goal for government agencies' green procurement efforts. In recent years, total annual government green procurement spending has been around NT\$ 7-8 billion.

After close to 17 years of operation, the Program has evolved and shifted to electronic management for most of its operations, including application processing, license renewal and licensed product statistics, except document review and on-site audit. Through the Program website, <http://greenliving.epa.gov.tw/GreenLife/>, Green Mark applicants/ licensees may submit on-line applications and

eco-labeled product statistics. Interested parties may obtain all relevant green purchasing information and Program implementation statistics from the same site.

Since 2008, TEPA has expanded its promotion of green purchasing to the private sector, with the Program spearheading the efforts in establishing a Taiwan Green Purchasing Alliance (TGPA) and encouraging private companies to practice green purchasing and to green the supply chain. Under the sponsorship and direction of TEPA, TGPA has partnered with Environment and Development Foundation (EDF) in organizing a series of activities directed at promoting green private sector purchasing, including:

Eco-product exhibition: In 2007, TGPA helped organize the successful 2007 Green Living Expo in Chinese Taipei, and attracted a total of 80,000 visitors among from general consumers. A similar type of Expo is expected in 2011.

Green Stores: Initiated in 2007 as a TGPA project sponsored by the TEPA, the project seeks to work with local Environmental Protection Bureaus in soliciting local retailers to become "green stores." In order to qualify as a green store, the retailer needs to comply with the "Code of Good Practice for Green Stores." At present, there are over 9,956 green stores registered at TEPA and the number is still increasing. Green Stores will be able to display a specifically assigned logo at its entrance.

Green Marketing Award—Retailers: All Green Stores are eligible to participate in the Green Marketing Award for Retailers, sponsored by TEPA. Since 2007, almost all the major chain stores such as B&Q, Giant, RT-Mart and Carrefour, entered the contest with immense interest.

On-Line Store of Green Products: An On-Line Store of Green Products (<http://www.buygreentw.net>) was established by TEPA in 2007. The green products marketed on this store include not only Green Mark but also Water Conservation- and Energy Saving -labeled products.

Training Materials: TGPA helped develop 4 different versions of basic training materials on green purchasing in 2008, focusing on the topics of green consumption and Green Mark, government green procurement, private sector green purchasing, and promotional skills, respectively.

Green Voucher: TEPA has selected two Green Stores to pilot a Green Voucher plan this year to broaden the practice of green consumption among the populace. A total of NT\$5 million in vouchers will be issued which can be exchanged for Green Mark products in designated stores. If this trial project is successful, it will become a part of all government agencies' green procurement plans in 2011 to encourage the use of Green Vouchers in place of providing policy promotion materials, awards and gifts.



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