The Green Initiative: Second Cycle of Daegu Initiative

Final Report

APEC Small and Medium Enterprises Working Group

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Prepared by:
APEC SME Innovation Center
24 Gukjaegeumyung-ro, Yeongdeungpo-gu, Seoul, Korea
Tel:(82) 2 769 6702/6704 Fax: (82) 2 769 6959
E-mail: apec@sbc.or.kr Website: www.apec-smeic.org

For APEC Secretariat
35 Heng Mui Keng Terrace Singapore 119616
Tel: (65) 68919 600 Fax: (65) 68919 690
Email: info@apec.org Website: www.apec.org

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Final Report
Executive Summary

Section I: Introduction and Overview

Introduction

The Green Initiative aims to help create an economic and policy environment conducive to facilitating green growth of SMEs in the APEC region and to identify cooperative measures based on voluntary reviews, and the sharing of policy experiences among Member Economies. The Green Initiative is designed as the second cycle of the Daegu Initiative on SME Innovation Action Plan, and adopts much of its methodology from the Daegu Initiative. The main body of this report summarizes member economies policies on green SMEs and best practices, as presented in the GAPs and the workshops.

Section I provides history of SME Related Agenda of APEC, background on Daegu Initiative and what policy areas and sub-categories of each policy areas the Green Initiative focused on. Section II contains four chapters which correspond to the four main policy areas of the green initiative. Each chapter contains a background on the area, summary of action plans submitted by member economies. The best practice reports on each area are also included as an appendix. Section III consists of conclusion and recommendations based on the submitted materials and comments by participants and advisors.

Reasons for Choosing Greening of SMEs as the Main Theme of the Green Initiative

In 2010, members held discussion on whether to proceed with the second round of the Daegu Initiative. A consensus was quickly reached on change of focus from innovation to ‘Greening of SMEs’. Thus, the second cycle was renamed "Green Initiative." The rationale for government intervention in fostering of green SMEs introduced and agreed at the beginning of the Green Initiative were as follows.

- SMEs are **major employers** and key economic players in all economies
- Green transition is **important**
- However current market environments could better assist greener SMEs
- Therefore green transition **can be assisted by government** intervention and support
- SMEs would benefit from **stronger intervention** and support for successful green transition

There are several other reasons for selecting ‘Greening of SMEs‘ as the central theme of the second cycle. First, there was a popular demand by the APEC members reflecting growing concern on environmental degradation and international debate on global environmental problems especially climate change. Rise of energy and resource prices between 2005 and 2010 also strengthened members’ interest in better environmental management and improved energy and resource saving which can contribute to more efficient production of goods and services. In addition, ‘Greening of SMEs’ was also deemed appropriate considering the fact that a growing number of SMEs, especially manufacturing companies, were facing stringent environmental requirement which are imposed by large companies that make final product using the parts supplied by SMEs. Lastly, growing demand for global action on climate change made it appropriate for the APEC, a large cooperative body which represents 40% of world population and 54% of world’s gross domestic product, to promote ‘greening of its SMEs’ as an appropriate theme for the second cycle.

Green Growth, Green SME Policies and APEC

SMEs have an important role to play in green growth. Because of the size of the SME sectors in most economies, no green growth policies will be successful unless SMEs actively and willingly participate in green growth programs. Further, many of the technologies and products necessary to successfully transform the current "fifth wave" economy into "sixth wave" green economy will be developed and popularized by SMEs. Thus, there is a need for policies to assist SMEs in becoming "green." These policies include demand-side policies which will facilitate SMEs becoming users of green technologies and products, as well as supply-side policies which will assist SMEs develop and market green technologies and products. For simplicity, in the rest of this report, we will refer to SMEs which are users (or potential users) of green technologies and products as green user SMEs; and SMEs which create and manufacture green technologies, products or services as green creator SMEs, or sometimes just green SMEs for short.

APEC has also pursued green growth. APEC is pursuing a two-pronged green growth policy: Lowering carbon output, and increasing the use and trade of EGS (Environmental Goods and Services). Eleven working groups and committees are pursuing projects related to green growth, showing that APEC is firmly committed to certain aspects of green growth. Since the beginning of the Green Initiative, green growth has taken a more important role in APEC dialogue. Many important initiatives are underway in APEC, ranging from harmonizing standards of the energy efficiency of appliances to promoting development and trade of alternative fuels such as biofuels. These initiatives are taking place mostly under the Committee for Trade and Investment, but most of the remaining APEC committees and working groups are taking a significant role in these initiatives as well.

Implementation Strategy

The Green Initiative was submitted to the SME Working Group and the SME Ministers at the APEC SME WG Meeting and SME Ministerial in May 2011. The Joint Ministerial Statement recognized the importance of green SME policies and the role of the Green Initiative. In early 2011, the Green Initiative research team identified four policy areas and seventeen subordinate elements relevant to green growth of SMEs as follows:

<Table 1> Green Initiative Areas and Elements[1]

Areas	Elements	Element Description
A. Overview: Definition and Framework	A-1	Definition of "Green Growth" and National Green Growth Target (including benchmarks: easy to understand standards that SMEs can follow)
	A-2	Existence of Comprehensive Green SME Development Plan – Roadmap
B. Financial and Non-Financial Support for Green Technology Innovation and Green Management	B-3	R&D Grant, Loan and/or Tax Incentive Programs for Technology Development by Green SMEs
	B-4	Start-up Assistance and Early Stage Funding (Consulting, incubation, venture capital) for Green SMEs
	B-5	Employee Training (skill, understanding and motivation) for Green and Potentially-Green SMEs
	B-6	Green Renovation - Funding for SMEs for Employing Existing Green Technologies, Goods and Services
	B-7	IPR Assistance for Green SMEs

[1] : See *The Green Initiative: Second Cycle of Daegu Initiative: Background and Manual*, SME Innovation Center (2010).

C. Fostering a Green-Friendly Economic Environment including Creating Demand for Green Technology and Awareness Raising	C-8	Incentives for Green Government Procurement (stimulating early stage deployment) from Green SMEs
	C-9	Regulatory Reform (including subsidy reform) to Encourage Green SMEs
	C-10	Improving Market Access for Green Technologies and Products
	C-11	Raising Consumer Awareness on the Importance of "Green Consumption" and Green Technologies
	C-12	Online tools and resources for environmental and economic performance improvement tips for Green SMEs
D. Creating Green Partnerships	D-13	Encouraging Green Partnerships with SMEs and Large Corporations (supply chain management)
	D-14	Encouraging Partnerships with Green SMEs and Universities and Research Institutions
	D-15	Encouraging Partnerships with Green SMEs and Other SMEs (including clustering)
	D-16	Encouraging Partnerships with Green SMEs and Civil Societies and Local Communities
	D-17	International Partnerships - Capacity Building and Best Practice Sharing on Green SMEs and Green SME Policies

The Green Initiative would request that the member economies report various green SME policies in these seventeen elements through GAPs, as well as submit best practice reports and workshop presentations. Details on rationale for choosing above areas and elements can be found in *The Green Initiative: Second Cycle of Daegu Initiative: Background and Manual*, which was distributed to member economies in early 2011. The summaries of the reports and presentations given by the APEC member economies form the bulk of Section II of this report. APEC Innovation Center was tasked with

- Arranging and hosting sessions on GAPs and best practices during SME Innovation Workshops
  - Area A and B in November 2011 and Areas C and D in April 2012;
- Submit summary reports of the sessions after each workshop
  - Report to be written by the Green Initiative Research Team
- Drafting final report by August 2012, and if deemed suitable, submitting the final report to the SME Ministers in 2012
  - Report to be written by the Green Initiative Research Team.

Green Initiative is based on voluntary reviews and the sharing of policy experiences among Member Economies. Each member economy was requested to submit Green Action Plans (GAPs) in four policy areas with a total of seventeen subordinate elements, as listed in <Table I-1>. Two workshops were to be held, the first in the latter half of 2011 and the second in the first half of 2012, where the member economies would present and discuss their GAPs and best practice reports. Two workshop reports would be written by the Green Initiative Research Team after the end of each workshop, and the Team would write a final report, which may be submitted to the Ministers in the SME Ministerial 2012 if the report is deemed of sufficient quality. This is the final report.

The Green Initiative proceeded as listed in <Table 2>.

<Table 2> Timeline of the Green Initiative

Date	Action

April 2011	Presentation of the "Green Initiative" framework
May 2011	Dissemination of draft report to APEC members for comments
May 20-21st 2011	Submission and Approval of the Green Initiative during APEC SME WG Meeting and SME Ministerial Meeting in Gifu, Japan
June ~ Nov. 2011	Collection of GAPs & Best Practice Reports in Area A&B
Dec. 13th 2011	First Green Initiative Workshop on Policy Areas A and B A: Definition of 'Green' and SME Roadmap B: Support for Green R&D and Management Held in Bangkok, Thailand
Dec. 2011 ~ Mar. 2012	Collection of GAPs & Best Practice Reports in Area C&D
April 2012	Second Green Initiative Workshop on policy area C and D C: Fostering a Green-Friendly Economic Environment D: Creating Green Partnerships Held in Negara, Brunei Darussalem
Aug 2012	Submit Final Report to SME WG, and if approved, to SME Ministers

Participation Overview

During the duration of the Green Initiative, eighteen of the twenty-one member economies participated in one form or another. The participation in the Green Initiative was slightly better than participation in the Daegu Initiative, where only fifteen economies participated. <Table 3> gives the state of participation in the Green Initiative.

<Table 3> Participation in the Green Initiative

Member Economy	GAP Areas A and B	GAP Areas C and D	Written BPRs	Presentation First Workshop	Presentation Second Workshop	Attendance in First and / or Second Workshop
Australia	O	O		O	O	O
Brunei Darussalem			O	O		O
Canada						
Chile						
China	O			O	O	O
Hong Kong, China						O
Indonesia	O*	O	O	O	O	O
Japan	O	O		O	O	O
Korea	O	O	O	O	O	O
Malaysia				O	O	O
Mexico	O	O	O	O	O	O
New Zealand	O	O				
Papua New Guinea	O	O		O	O	O
Peru	O		O	O	O	O

The Philippines	O	O	O		O	O
Russia				O		O
Singapore						
Chinese Taipei	O	O	O	O	O	O
Thailand					O	O
The United States	O	O*		O	O	O
Viet Nam			O		O	O

Some member economies presented details on successful individual green SMEs. While informative, the details concerning individual privately owned companies seemed inappropriate to include in this report, and did not fit into particular elements in <Table I-1>. Thus, the Research Team have decided not to include them in this report. For readers who are interested in these individual firms, they are referred to the first and second workshop reports.

Section II: Green Action Plan (GAP), Best Practice Reports and Presentation Summaries by Area and Element

1. Area A: Overview: Definition and Framework

This area examines the broad context of green SME policies in a member economy - whether the economy has a definition of "green" or "sustainable growth," and whether the economy has a comprehensive unified framework for its green SME policy (or green growth policy). Because we do not want to force one particular definition or policy goal over another, we asked that the Member Economies report their own definition of "green" to be used in the rest of the GAP, and what overall plans they have to achieve their "green" policy objective. Also, to examine the overall policy strategies that the APEC member economies may choose to develop their green SMEs, we asked that member economies report whether they have a comprehensive plan to develop green SMEs, and if so, a general outline of the plan.

A-1 : Existence of Domestic Definition of "Green" or "Sustainable" Growth and National Green Growth Targets ((including benchmarks: easy to understand standards that SMEs can follow)

This element examines whether the government of the member economy has a definition of "green," "green technology", "green growth", and "green products (goods and/or services)." This definition may be legal or informal (as long as it is used by the government body in charge of SMEs, or is used by more than one government body). Having a definition for "green" is useful because it allows the government to focus its attention and resources on projects which are clearly "green" in nature, reducing waste and increasing transparency. Further, if there is a clear definition or guidelines and benchmarks for what constitutes "green," it allows interested parties (such as inventors, researchers, entrepreneurs, manufacturers and service providers) to get a better idea on the potential for various incentives which may be available from government agencies. Also, definitions can be used to filter policies or technologies whose contributions are dubious. However, the concept of "green" may differ across member economies, ranging from lowering carbon emission, lowering greenhouse gases in general, reducing waste of resources (e.g. recycling) to 'eco-friendly' and sustainable development. This element was designed to examine whether the economies had a clear definition of 'green' as it applied to their economies; and which areas of 'green' the economies chose to emphasize.

Twelve economies included information on this element in their GAPs. Indonesia and Korea reported they have legal definitions; while the other economies reported that they had no legal definitions. However, many economies did report informal or working definitions. In those economies which have formal or informal definitions, while all definitions do emphasize the need to protect the environment by reducing harm to the environment and increasing the efficiency of resource use, the focus of the environmental goals can be different across economies. Also, some economies view 'green' as a tool to develop new industries or expand existing industries; which some economies emphasize a balance of economic, environmental and social development

Korea submitted a best practice report for this element on *Green-Biz ("G-Biz firms") Selection and "Excellent Green Biz"*

A-2 : Green SME Development Roadmap

This element examines existence of long-term national development plan for fostering green SMEs and greening of conventional SMEs. Some SMEs and entrepreneurs will act on their own in greening of their businesses. However, the current policy and economic environment still strongly supports fossil-fuel based energy intensive industries, despite increasing number of policies for green industrial revolution and greener economic development. In this regard, national green SME development plan could provide a useful guideline for not only SMEs but policy makers who are in position of authority to create incentives and disincentive for industries of varying green performance levels.

Eleven economies reported relevant information on green SME development roadmap. Among the eleven economies, Korea was the only member economy that had a SME roadmap with clear quantitative targets and timelines. However, the ten other member economies also have broadly defined green industry targets which would be highly relevant to green SME development.

For this element, Korea has submitted a best practice report on its "*National Green SME Development Roadmap*."

2. Area B: Financial and Non-Financial Support for Green Technology Innovation and Green Management

This second area is limited to concrete government assistance given to specific green SMEs..

B-3: R&D Grant, Loans and / or Tax Incentives Programs for Green Technology Development by Green SMEs

This element examines whether a member economy has a financial support system in place for green R&D activities by SMEs. Eleven economies submitted GAPs which gave some information on this element. Some additional economies gave relevant information in their workshop presentations. APEC economies run diverse R&D support programs, grant programs and tax incentives to encourage R&D and innovation. Green SMEs engaged in R&D for green technologies can easily take advantage of these programs. However, very few economies seem to operate programs specifically targeted for 'green' SMEs and the development of 'green' technologies. Rather, the programs are either more general or specific. The general programs target wider variety of technologies of which 'green' technologies are only a part of the technologies being supported by these R&D support programs. The specific programs often target a sub-

set of green technologies, including clean energy and reduction of greenhouse gases. Papua New Guinea was unique in that it has a general assistance program which is not open to industries which have potentially negative effects on the environment.

B-4: Start-Up Assistance and Early Stage Funding for Green SMEs

It is often very challenging for new start-up companies to penetrate the market with green technologies because most markets are already saturated with existing products and technologies. Further, 'green' products are often designed to increase unseen long-term benefits. Such long-term public benefits do not increase marketability of the products to non-green consumers who are unaware of such benefits. Considering such negative factors, some economies believe it is sometimes imperative to implement tools and policies designed to help 'green technology' start-up companies penetrate the market and replace conventional, less environmentally-friendly technology-based products and businesses. Support measures may include free consultation services, venture incubation as well as financial assistance measures such as venture capitals and tax exemption. Nine member economies gave information concerning this element. Some additional economies included information in this element in their workshop presentations.

In this element, we saw a wide variety of policies, ranging from assistance policies targeted specifically at start-up green SMEs to assistance policies targeted at start-ups in general, and assistance to green technologies in general. These policies are generally aimed at SMEs which research and create new green technologies and products, in short, green creator SMEs. While there are various policies in place on the supply side of green products and services, economies have reported less on policies in place to support the demand side of green products and services. While Korea has reported financial assistance for SMEs to become green users, most member economies seem to be utilizing laws and regulations to impose some type of obligations for using green technologies or products (e.g. banning or limiting the use of non-green alternative products).

B-5 Greening the Workforce

There is a strong case for government of member economies to invest in government-sponsored workforce training program that focus on green skills, environmental awareness and motivation building for following reasons. Green transition requires workforce equipped with different sets of skills that are under-utilized in the market. Green transition is a fundamental shift over a long period of time and such long-term transition cannot happen unless it is backed by a strong and capable workforce with strong understanding on imperative of the change. Also, it is important to offer a high quality program that cultivates green motivation of employees. Therefore, it is important to provide trainings and classes with focus on boosting motivation of employees to participate/lead on green transition. Government-sponsored job training for SMEs is particularly important because SMEs often lack resource and capacity to train their employees even on conventional business issues and skills.

Thirteen economies reported relevant information on green workforce training programs. Among the thirteen economies, eleven economies reported on programs focused on dedicated green skills training. The remaining two reported on job skills trainings which were relevant to greening of SME operation although they were not created for achieving such objective.

Mexico submitted a best practice report on its "*International Leadership Training*"

B-6 Green Renovation (Greening of Existing Businesses)

This element examines use of policy tools designed to overcome financial barrier in employing existing green technologies, goods and services by SMEs. Energy efficiency improvement technologies have great potential to lower greenhouse gas emission, reduce pollution and bring economic benefits over long run. However, potential of such technologies are not fully realized because the benefits are realized over many years while requiring significant investment early on. This is especially true for SMEs which often have limited access for funding required for investment. In addition, SMEs also often prefer to maintain status-quo operation, and have a more conservative and cautious approach in incorporation of new technologies. Such lack of financial resource is a key barrier to wide uptake of green technologies and services by SMEs. Government assistance, such as loan support for employment of green technologies can be useful in accelerating green transition.

Fourteen economies reported on programs and policies established for supporting green renovation of existing SMEs, such as loan scheme for purchasing of green equipment and facilities and SME outreach and provision of green potential assessment services. Among the fourteen economies, ten economies reported on programs focused on dedicated support program for greening of existing SMEs. The remaining four economies, reported on green renovation programs relevant to greening of existing SMEs.

Peru submitted three best practice reports related to this element, dealing with "*Center of Technological Innovation of Leather, Shoes and Similar Industries (CITECCAL),*" "*Energy Efficiency Program for Handmade Bricks - EELA,*" and "*Strengthening the Chain of Calcium Oxide at the Lesser Town Center Asacra Familia, District of Simon Bolivar – PASCO*."

B-7: IPR Assistance for Green SMEs

IPRs can play a large part in green activities of SMEs. Green creator SMEs may choose to patent the technologies that they have developed, and green user SMEs may need to license the technology that others have developed. In some cases, while green SMEs may have the expertise in green technologies to develop and use these technologies, they may not have the legal expertise to navigate through various IPR systems, which can be quite complex and costly. For this element, we look at government policies dealing with IPRs such as patents, utility models, designs, trademarks and copyrights.

This IPR element was one of the least reported elements in the GAP. The under-reporting probably reflect the fact that SME related government agencies are rarely responsible for IPR related policies so that the GAP writers did not have relevant information for this element. However, the under-reporting may also reflect low emphasis that IPR related issues are given in green growth. In the latter case, since green growth, even for the less developed economies, is likely to involve patentable technologies, economies should recognize that IPR related issues can be important in green growth, and examine how governments can make it easier for their green SMEs to patent their technologies or use patented technologies.

3. Area C: Fostering a Green-Friendly Economic Environment

This area is designed to look at policies, including general government policies and labeling campaigns, to encourage general demand for green products, and setting a green-friendly economic environment which will allow green creator SMEs to prosper. By encouraging the demand for green products, we not only help green SMEs to thrive, but also go a long way in reducing carbon gases, managing scarce natural resources for the present and the future, and reducing damage to the environment.

C-8: Incentives for Green Government Procurement from Green SMEs

This element examines whether the government of your economy gives any incentives to green creator SMEs in government procurement. The incentives may take the form of hard procurement goals (in terms of value or percentage of total procurement), recommendations that the government procure green products and services, or government sponsored measures to introduce green products and services to various procuring government agencies.

Nine economies reported GAPs for this element, though one economy merely stated that it did not have relevant policies in this element. In the presentations, additional economies reported some detail on this element. Responses to this element showed that APEC economies have a diverse range of incentives dealing with green government procurement, ranging from very active programs which mandate purchase of products from green SMEs, to guidelines which encourage government agencies to purchase green products. Also, some economies use standard-setting to inform agencies which products are green. Other economies encourage the procurement of green products, but do not have any formal measures under the principle that each agency should procure to get the best value for money. The diverse range of programs shows the diverse ways of approaching green purchasing in APEC economies, as well as the concerns about public procurement.

C-9: Regulatory Reform and Subsidy Reform to Encourage Green SMEs

In this element, we examine the regulatory reform framework as it deals with green growth policies. An economy's regulatory reform framework can greatly help or hinder green SMEs and the adoption of green technologies and products. APEC-OECD regulatory reform framework encourages economies to review its new and existing regulations, and carry out regulatory impact analysis (RIA), which may include environmental factors and consider whether there are alternatives to regulation which can fulfill the goal of the regulation with less disruption or cost. Regulatory alternatives include self-regulation, negotiated agreements, partnership between government and the private sector[2], voluntary standards and voluntary labeling. Often, regulatory alternatives can offer a more cost-effective way to achieve regulatory goals[3]. Some economies have already chosen to include environmental factors in their RIAs. One area of regulation that is relevant for green growth is technical standards and specifications. Often, technical standards and specifications are drawn in a rigid way so that alternative approaches cannot be considered. A way around this problem is to use performance standards, which specify what qualities the output must satisfy, rather than how the output is made. Performance standards, coupled with some safeguards to make sure that green methods are used, would allow greener growth.

Eight economies submitted GAP entries for this element, and additional economies presented information on this subject in their workshop presentations. While no economy has a review system specifically for examining how regulation impacts on the environment or have a special review process for green SMEs, many economies include environmental impact on their general regulatory review process, which can be very effective in considering cost-effective ways to measure environmental impact and consider effects of new regulations on green SMEs. Some economies are establishing or revising their regulatory review process, and plan to include reviews on environmental impacts. Some economies reported how they are changing their regulations to lessen negative impacts on the environment. The regulations reported are usually at an industry-level designed to encourage green SMEs in a certain industry or increase green characteristics and reduce environmental impact in a certain industry. However, no economy has reported a formal review process to eliminate existing regulations which needlessly harm

[2] : For example, HACCP for food safety
[3] : The most oft-cited example is cap-and-trade system for greenhouse gases.

the environment or encourage regulations to be written in an environmentally-friendly fashion. Also, some economies reported their eco-labeling programs, which can serve as a criteria for receiving various preferences such as tax grants or government procurement preferences; as well as act to increase demand for the green labeled goods. During discussions in the second workshop, member economies showed keen interest in eco-labeling, since discussions on eco-labeling may play an important part in defining what 'green product' is.

For this element, Brunei Darussalem submitted a best practice report on "*Green Building Concepts*" and Chinese Taipei submitted a best practice report on "*Certification Promotion Program of Green Supply Chain for SMEs – the Case of Hair O'right International Corp*"

C-10: Improving Market Access for Green Technology and Products

Lowering market barriers for green technologies and products can vastly increase the capacity to achieve green growth. There are two types of market barriers considered in this element: international and domestic. By taking full advantage of green technologies developed abroad, and facilitating trade of goods and services produced in a greener method, carbon footprints, greenhouse gases and environmental degradation can be reduced while still maintaining the economy's welfare levels or growth. Conversely, there are domestically produced green technology and products which may have a receptive market abroad. Foreign Direct Investment and Overseas Direct Investment can facilitate the development of green technologies and goods, while providing good jobs. Improving market access for green products is a two-way process. Both importing and exporting economies; both investor and investee economies must act to reduce market barriers in order for SME market access to be improved. Many of the elements listed in the Green Initiative is included to build trust among APEC Member Economies that what is "green" in one economy can be "green" in other economies. Facilitating trade of green products and the use of foreign green technologies will do much to reduce carbon and other greenhouse gases as well as reduce environmental degradation. In this element, we limit the examination to how the individual governments deal with trade and investment barriers in a unilateral manner. International cooperation - public and private - will be dealt with in element D-16.

Eight economies submitted GAP entries for this element, and various economies mentioned this element in their presentations. The reported measures concentrated overwhelmingly on measures to assist green SMEs in accessing foreign export markets. There were almost no reports on how member economies examined their existing laws and regulations to reduce market barriers on imports of green SME products, though some economies did report programs which facilitated imports of useful foreign technologies. This bias probably reflects the regrettable trend that measures to improve exports are politically more popular than measures to improve imports, even though imports are as important to an economy as exports in terms of improving national welfare.

For this element, Korea submitted a best practice report on "*Support for Green SME Export Feasibility Study*" and Consulting and Chinese Taipei submitted a best practice report on its "*Green Trade Project Office*"

C-11: Raise Consumer Awareness on the Importance of "Green Consumption" and Green Technologies

Although businesses and governments have powerful influence on ways products and services are produced and consumed, consumers have even more powerful influence as their purchasing decisions have direct impact on sales, which in turn directly impact sustainability of companies that rely on revenue

from business to consumer transactions. This element examines activities and programs by government of member economies for raising consumer awareness on importance of ‘green consumption’.

Currently, relatively small number of consumers regards environmental performance of companies or environmental characteristics of products as key considerations in their purchasing decisions. Ironically, consumer survey results suggest that much larger number of consumers inspire to be a responsible consumer. This suggests that there are many consumers with potential to create new demand for green products, provided that their awareness on benefits of green products and technologies are heightened. Increasing consumer awareness has a double-fold benefits of expanding green consumer base and fostering of informed citizens willing to embrace green policies required for green transition of the economy.

Twelve economies reported information on their programs designed for raising consumer awareness. Many economies had similar initiatives including environmental labeling and green lifestyle promotion campaigns. Many member economies had policies focused on environmental labeling including carbon footprint labels. Many of the member economies also had sustainable consumption education as a part of national curriculum for educating students on importance of sustainable consumer culture.

Korea submitted a best practice report in for this element concerning "*Raising Consumer Awareness on Importance of Greenhouse Gas Emission Reduction, through Carbon Footprint Labeling Scheme*"

C-12: Online Tools and Resources for Environmental and Economic Performance Improvement Tips for Green SMEs

Provision of online tools and resources are increasingly becoming a popular new policy initiative in developed economies. They are especially ideal for raising awareness of new concepts and providing practical tips which may quickly result in tangible benefits, in turn, leading to greater interest and stronger engagement of targeted businesses. Such form of online engagement is especially useful for SMEs as they can be accessed without any cost provided that SMEs have access to computers, smart phones or telephones. Such online tools and resources can be used by both green creator SMEs and green user SMEs, depending on the range of information available. For example, if information on standards for green products, registering green products or technologies, contact information for green growth specialists or government officials are online, green creator SMEs can reduce their costs of doing business.

Ten economies reported relevant information on use of online tools and resources for environmental and economic performance improvement for Green SMEs. More industrialized economies had online tools and resources. Some economies reported that they offered telephone-based services for consultation.

4. Area D: Creating Green Partnerships

The last area is "Creating Green Partnerships." In the first three areas, the government is the explicit leader in setting and implementing green growth policies. However, too much active involvement by the government sets up the danger that the green SMEs will become too dependent on government - that it will not be able to become successful independent firms or industries, and will always need government assistance. In order to help the green SMEs and green industries become viable in their own rights, they must build links with others - businesses, the civil society, foreign firms and organizations, and other green or non-green SMEs. This area is designed to look at what the government is doing to help green

SMEs build such relationships with non-government groups or international bodies (government and non-government) so that they can grow to be more independent of the government and more interdependent with other economic agents and society.

D-13: Green Partnerships with SMEs and Large Corporations

Modern commodities and products are produced using resources and services secured via complex web of supplier network. Many consumer products from simple food products to more complicated machineries are subjected to environmental quality performance standards. In theory, each supplier of raw materials and parts is responsible for production and delivery of goods that are in compliance with relevant environmental standards. However, understanding and complying with ever-increasing green requirements has become a serious challenge for SMEs which often lack dedicated workforce for environmental R&D and compliance work. Government support can be significant help for such SMEs which must cope with increasing number of ever-stringent new green requirements. Supporting green transition of SMEs is a paramount challenge for any government regardless of economic development status because there exist millions of SMEs in any economy. Such problem can be alleviated with support of large companies which have existing business relationship with relevant SMEs. Overall, there is a strong business case for government to encourage and support green partnership between large companies and SMEs, especially considering large companies' strong potential to positively influence its suppliers with their purchasing power.

Seven economies reported information on their programs designed for promoting and encouraging green partnerships between SMEs and large corporations. Many economies, especially member economies with many large corporations or SMEs which supplies their products to large corporations had relevant policies in place. Many member economies with a significant number of large corporations and SMEs had policies on supporting green partnership between large corporations and SMEs with few to several years of history. Many of the large corporations are supporting greener business management of their suppliers many of which are SMEs.

Indonesia submitted a best practice report related to this element, titled "*SMEs and State Owned Company Partnership In Producing Organic Fertilizer (Pt.Pusri)*"

D-14: Encouraging Partnerships with Green SMEs with Universities and Research Institutions

In order for green growth to succeed, economies must be able to take full advantage of green innovation and new green technologies. Universities and public research institutions are often rich sources of new science and technology which can be developed into new products or processes. Thus, partnerships should be encouraged between green SMEs and universities and research institutions which carry out basic research that can be commercialized by green SMEs. Partnerships can include joint research projects or arrangements for green SMEs to commercialize technology or basic knowledge that the universities and research institutions have developed. Governments can facilitate such partnerships not only through financial incentives, but also through laws and regulations dealing with technology transfer or technology sharing, and political leadership to encourage national universities and national research institutions to cooperate with green SMEs.

Nine economies submitted GAP entries for this element. Their reports showed that member economies have diverse programs in place to allow green SMEs to exploit opportunities and synergies with research

institutions and universities, ranging from joint technology research programs to programs which exploits technologies developed through research, as well as employee and student training programs.

D-15: Encouraging Partnerships with Green SMEs and Other SMEs

Positive interaction among SMEs are important for greater sharing of information and knowledge among green SMEs and encouraging more non-green SMEs to purchase green products manufactured by green creator SMEs. Governments can play a positive role in facilitating such interactions by providing incentives and support programs. Green SMEs in the same industry may benefit from sharing information, not only on technical issues but also on management as well as legal and regulatory issues. Many industries have members groups created to forge cooperation among competing firms in areas that needs cooperation. Government assistance may not always be necessary in establishing such industry groups, however interactions between such industry group and government officials can be very useful in discovering what the industry requires of the government, and what the government requires of the firms.

There is also a role for partnerships and cooperation between green SMEs and non-green SMEs. In order to maximize the positive impact from green innovations and green growth, these non-green SMEs should be encouraged to use more green products, adopt more green procedures and (at least for some non-green SMEs), transform themselves into green SMEs. However, in order to do so, green SMEs must inform non-green SMEs of the advantages of using green products and processes. Therefore policies designed to facilitate more interaction between green SME producers and non-green SME consumers can be beneficial in fostering of green SMEs in member economies.

Eleven economies reported information on their programs designed for promoting green partnership among SME. Most policies and programs were focused on development of SME clusters and development of dedicated agencies for building capacity of SMEs in groups by sectors and regions.

D-16: Encouraging Partnerships with Green SMEs and Civil Societies and Local Communities

Green transition is a difficult challenge for governments of member economies regardless of their development status. It requires fundamental change in policy priorities, product manufacturing methods and environmental performance characteristics of all products consumed within the economy. Tackling some environmental issues, climate change for example, requires fundamental shift in overall structure of economy itself. A green transition also requires sustained effort in environmental management because it is common for SMEs to discontinue investment in environmental management and switch back to conventional materials when there is an economic crunch. Support and monitoring from local communities and civil society organizations can help green SMEs sustain their green management effort. Since greener operation can lead to improved public health and environment of local communities, there is a strong incentive for local communities and civil society organization to collaborate on green transition. Accordingly, policies and programs to support NGO-corporate collaboration could be beneficial, as such partnership has potential to significantly accelerate green transition.

Nine economies reported information on their programs designed for promoting green partnership between green SMEs and civil societies.Most of the government led initiatives involved collaboration between local government and businesses based in the local communities rather than NGOs. Some programs were mostly focused on building capacity of local governments as well. Although it is reasonable to assume that these programs involve participation of SMEs, most of the policies were not specifically focused on SMEs.

Two best practice reports related to this element were submitted: the first is "*PT. Swen Inovasi Transfer and Society Partnership In Producing Biogas Energy*" from Indonesia, and the second is "*The Green Supply Chain: A Case Study of Vietnam Tourism*" from Vietnam.

D-17: International Partnerships - Capacity Building and Best Practice Sharing on Green SMEs and Green SME Policies

Environmental protection, including reducing carbon and greenhouse gases to retard or reverse climate warming, must be an international endeavor. Environmental problems must be tackled regionally or multilaterally, and international cooperation on environmental protection and management has been increasing. For this element, we examine what type of policies are in place to encourage international cooperation among APEC Member Economies concerning policies and activities dealing with green SME growth. APEC economies are uniquely placed to contribute to this discussion because APEC is a regional bloc which encompasses a large proportion of the globe geographically, and perhaps even more importantly, a diverse group of economies ranging from the very advanced economies to newly developed and developing economies. Furthermore, the number of the Member Economies are small enough so that serious discussions can take place, and consensus respecting the views of the diverse economies can be forged.

For this element, we wanted to look at various initiatives by Member Economies to increase cooperation on environmental, green growth, and greenhouse gas issues as it concerns SMEs[4]. International cooperation may include initiatives such as the Green Initiative to share experiences and best practices, but also include other more technical initiatives. Nine economies submitted GAP entries for this element, and other economies reported additional information during the Green Initiative workshops.

For this element, most economies reported measures where they participated in global initiatives or projects. Some economies gave details on domestic projects which allowed domestic SMEs to participate in global markets or global cooperative projects. Some economies have hosted workshops on green growth policies. Overall, there is a diverse range of international cooperation and partnership measures, but so far, most of the measures are exploratory in nature, designed to encourage idea sharing and set up a foundation for further endeavors. (The Green Initiative can be counted among such measures). The member economies must decide whether there has been enough preparation to proceed with more formal international cooperative endeavors.

Section III: Observations and Recommendations

1. Observations

Observation 1: APEC members have high interest in energy efficiency improvement and carbon reduction.

According to the green action plans submitted, each member economy had its own definition of 'Green' and 'Sustainable Growth'. For example, Korea had a legal definition of 'green growth' as 'growth achieved by saving and using energy and resource efficiently to reduce climate change and

[4]: We note that the Green Initiative is limited to government policies and measures dealing with SMEs, so while more comprehensive environmental policies are certainly helpful and desirable, they fall outside the area covered by the Green Initiative unless these policies and measures are widely used by green SMEs.

damage to environment, securing new growth engines through research and development of green technology, creating new job opportunities, and achieving harmony between the economy and environment'. Other economies had different definitions composed of different wordings and emphasis. However, improving energy efficiency was commonly found in many of the definitions and many of policies submitted by the members. Such trend seemed to be related to increasing concern on climate change and rising energy price. As a result, focus on energy efficiency is likely to intensify over time as all countries are expected to experience stronger impact of climate change and increasingly high fossil fuel price.

Observation 2: There are best practices hidden in the green action plan.

A number of participants submitted detailed report on their best practices. However, analysis of green action plans submitted by members suggested that there are many policies and practices that may qualify as best practices although they were not submitted as best practices For example, according to the GAP by New Zealand, it has a very comprehensive set of online tools designed to help a wide range of businesses including the movie industry to be greener while Australia also reported on a number of green policy initiatives and online tools. We believe same is true for many policies which were reported in the GAPs.

Observation 3: The large proportion of reported policies deal with supply-side assistance

The Green Initiatives have examined various policies of member economies as submitted through GAPs, best practice reports and various presentations. However, the majority of policies are designed to assist those SMEs which create green technologies, products and services. This bias toward supply-side policies may reflect the classifications used in GAPs, especially in Area B, but most tax grants and financial assistance reported by the member economies seem to be aimed at assisting the creation of green products. There were very few reports which dealt with assistance to assist SMEs change toward greener production processes and green products. Most measures to increase demand for green products seems limited to public campaigns and labeling schemes. Similarly, in element C-10, most reported measures assist exporting green SMEs, and very few facilitate imports of green SME products. While these measures are certainly desirable, we note that there is actually a stronger economic justification for demand-side assistance in green products, since using green products have positive externality effects on the environment and reduction of greenhouse gases.

Observation 4: There is growing attention on green labeling and classification of green products

Several members have presented information on their domestic green labeling schemes. The labeling schemes have been used to determine which firms and productshave desirable green qualities and therefore eligible for various assistance, and to raise consumer awareness for superior 'green' products. Thus, green labeling has always been a topic of interest to APEC economies. However, recently, the members' interest in green labeling seems to have grown, due in part to exploratory talks on liberalizing trade and investment in green industries and products. As seen, member economies have not yet reached complete consensus on what constitutes a green industry or a green product. However, in order to initiate an international negotiation on liberalization of trade and investment in green industries, there has to be some consensus on the characteristics of green products. As a result, many economies seem to be looking at other members' green labeling schemes to get an idea on what other economies consider 'green' and how different other's labeling schemes compared to one another. As the interest in trade and investment liberalization increase, the focus, and possibly contention on labeling is likely to increase as well.

2. Recommendations

Recommendation : Continue to pursue exchange on green SME policies of high interest among members.

A large number of recently implemented green policies reported during the Green Initiative and high participation rate during the two workshops suggest that 'Green' has become an issue of high interest among majority of economies. 'Green' is highly likely to remain as a high profile issue since environmental degradation continues to happen with economic development and evidence of damage from climate change are increasing. In case of greenhouse gas emission reduction, the European Union is planning with long-term time horizon up to 2050. Therefore, it is recommended that APEC continues to exchange information on their green policies of high interest such as energy efficiency improvement beyond second cycle of Daegu Initiative.

Recommendation : Capitalize on bilateral collaboration opportunities

Collection and summarization of green policies of member economies provided APEC members with an overview of how different members are dealing with green issues using different sets of policies and what have been achieved so far. Although the information shared through GAPs and presentations are not very detailed, it can serve as a catalogue for identifying members which may be more experienced in certain policies areas than the rest. Therefore, members should consider finding a partner of their choice using the Green Initiative report and engage bilaterally to capitalize on other member's experiences.

Recommendation : Increase policy experience sharing with other economy forums such as OECD for maximum benefits.

Unlike OECD, which consists of only advanced economies, members of APEC are diverse in its economic status, making it a unique forum which can serve as a base where both north to south and south to south type of collaborations can be fostered. Therefore information shared within the network is likely to hold some value to other economic organizations such OECD. The information from APEC programs such as the Green Initiative could be especially useful for the OECD member states who are conducting north to south green aid programs on individual government levels. Although all the reports will be made available on the APEC website, it is well known that active advertising effort is necessary to make the materials on the websites to be actively utilized by target audience. Therefore it is recommended that effort is made to pass on the findings from the APEC programs, especially ones with focus on green growth, to maximize utility of the materials produced with APEC funding and contribution of its members.

Recommendation : Deal with issue of need for eventual absolute reduction of global GHG emission

According to the scientific consensus supported by the Intergovernmental panel on climate change, bringing down total global emission of greenhouse gas(GHG) is an absolute requirement for ensuring stability of global climate. Translated into a member state level context, it means we must achieve absolute reduction in GHG emission. This is very important because it means achieving vastly improved efficiency in energy use or resource use may not be effective if it leads to vastly increased production which pushes up absolute amount of GHG gas emitted. Less developed economies need not worry about curving GHG emission as much as more industrialized members, but significantly curving GHG emission to make positive contribution in prevention of dangerous climate change remains a vital issue for all economies today. According to a study conducted by Price-Waterhouse-Coopers in 2006 in UK, UK economy needs to provide its services and products while emitting only ten percent of GHG emission by 2050 in order to make a positive contribution in stopping climate change at a average global temperature of two degrees Celsius, a threshold recommended by majority of scientists. Therefore, it is recommended that future green growth program is conducted in regards to achieving economic growth while playing a positive role in tackling climate change.

Recommendation: SME WG and its members should be informed of APEC projects in other committees and working groups, and if necessary, participate actively.

As stated above, other APEC committees and working groups are working on various green-related projects, and in 2011, the green agenda was initiated. Some of these projects are useful to SMEs and should be explored. Also, exploratory talks have begun on liberalizing trade of green technologies, goods and services as well as liberalizing investment in green industries. In order to successfully negotiate trade and investment liberalization, there has to be a consensus on what is "green." Both the definition of "green" and trade and investment liberalization on "green" will have major consequences on green and non-green SMEs in APEC economies, and SME WG cannot afford to be left out of the discussion. It is up to the SME WG to see that the needs of the SMEs are not ignored in future discussions. Thus, SME WG and the WG members should keep themselves informed of "green "discussions outside the SME WG and if necessary, participate in those discussions so that the needs and requirements of SMEs are reflected.

Recommendation: Explore Collective Agenda on Eco-Labeling

Based on the interest shown in the Green Initiative, the member economies of SME WG seem ready to further pursue green policy agenda in a more collective and focused fashion. In fact, many member economies showed great interest in further discussion and cooperation on eco-labeling scheme in the second workshop held in Brunei. We observed throughout the Green Initiative that eco-labeling is used not only to create consumer and public interest, stirring demand for green products; but also as a tool for government assistance. For example, many economies target green-related assistance to those firms which produce products officially recognized and labeled 'green' (or related terms such as 'environmentally-friendly,' 'low carbon,' etc.) However, we also saw that different economies have different definition of what makes a product 'green.' While most economies recognize products which reduce greenhouse gas emission as 'green,' some economies use wider definitions such as environmentally-friendly (products that reduce waste or manufactured using recycled materials; products which make positive contribution to protection of the environment, products that cause less pollution to certain natural resources such as water, and so on). We also saw that many member economies do not have a legal or working definition of what is considered 'green.'

Facilitation and liberalization of international trade in green products is becoming an issue in APEC CTI as well as other fora, and due to the nature of international trade, the formation of a reasonable international working definition of 'green' products and services is becoming an important issue. Eco-labeling, by its very nature, requires member economies to explicitly state what constitutes a green product or service, and because eco-labeling is important to many SMEs whose strategy is to manufacture green 'niche' products, eco-labeling is an ideal topic for further discussion in the SME WG, and is a way for the SME WG to contribute to APEC overarching agenda on green economic policy. Thus, further discussion on eco-labeling, such as a workshop with government and private sector participation, is warranted; and the workshop may be used to develop a collective action agenda.

The Green Initiative: Second Cycle of Daegu Initiative

Final Report

Written by the Green Initiative Research Team
Junsok Yang
(Associate Professor, The Catholic University of Korea)
Jiseok Kim
(Senior Climate Change Policy Officer, The British Embassy, Seoul)

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Section I: Introduction and Overview

1. Introduction

The Green Initiative is an initiative which aims to create economic and policy environment conducive to facilitating green growth of SMEs in the APEC region and to identify cooperative measures based on voluntary reviews, and the sharing of policy experiences among Member Economies. The Green Initiative is designed as the second cycle of the Daegu Initiative on SME Innovation Action Plan, and adopts much of its methodology from the Daegu Initiative.

The “Daegu Initiative on SME Innovation Action Plan was approved as a part of overall SME-related work in APEC by the APEC Small and Medium Enterprise Ministers in September 2005. It aimed to create economic and policy environment conducive to SME innovation in the APEC region, identify cooperative measures based on voluntary measures, and share policy experiences among its members. During the first cycle (2006-2010), member economies were requested to report on past/present/future policies on seven policy areas relevant to promoting innovation by SMEs in a given format called "Innovation Action Plan." Then each economy made a report on Innovation Action Plan on one or two policy area(s) chosen each year between 2006 and 2010 which was then shared among the members. The members also made reports on policy practices they considered as best practices which were also shared among the members. The first five year cycle was completed with significant participation of member economies in 2010, and the final report was presented at the annual SME Ministerial Meeting in 2010.

In 2010, members held discussion on the second round of the Daegu Initiative and decision was made to launch the second cycle of the program. The main topic of the program was also changed from ‘Innovation’ to ‘Greening of SMEs’ reflecting member economies’ growing interest in the issue. Also, based on review of the first cycle, the duration of the second cycle program was reduced to two years from five years to better reflect the changing policy environment, and maintain interest and participation. However, as in the first cycle, the member economies were requested to report their green SME development related policies in a fixed format called "Green Action Plan (GAP)" and workshops were held where member economies could present their GAPs and best practices concerning green SME development policies. Member economies were also encouraged to submit written best practice reports on individual green SME development policies which the member considered worthy enough to be APEC best practices.

This report, which summarizes member economies policies on green SMEs and best practices, as presented in the GAPs and the workshops, is structured as follows.

Section I provides history of SME Related Agenda of APEC, background on Daegu Initiative and what policy areas and sub-categories of each policy areas the Green Initiative, the second cycle of Daegu Initiative, focused on. The Section I also includes detailed explanation on reasons for choosing ‘Green’ as the core theme of the second initiative. An overview of agreement made on reporting process and timeframe of the second cycle is also provided in the Section I. Lastly, a summary of participation of the member economies is also included.

Section II contains four chapters which correspond to the four main policy areas of the green initiative. Each chapter contains a background on the area, summary of action plans submitted by member economies. The best practice reports on each area are also included as an appendix.

Section III consists of conclusion and recommendations based on the submitted materials and comments by participants and advisors.

Because this report seeks to summarize the contents of GAPs, best practice reports and the workshops, effort was made to preserve original wording of the GAPs and best practice reports. However, some of the submitted information by member economies was modified to balance entries which differed significantly in length and details. In most cases, some of the details were removed to shorten length of the entries. The readers are encouraged to refer to actual GAPs and best practice reports submitted by the member economies to learn more about particular policies and practices they find interesting. The GAPs and best practices are available for downloading at the APEC Innovation Center website at http://apec-smeic.org. It should also be noted that detailed information on policies by many member economies are available at websites of relevant agencies.

The writers / editors of the report are the Green Initiative Research Team which consists of Junsok Yang, a Professor of Economics at the Catholic University of Korea and Jiseok Kim, a senior climate change policy officer at the British Embassy Seoul. They are responsible for the compilation, summarization and editorial decisions made for preparation of this report as well as observations and recommendations made in Section III. The writers are also responsible for incorporation of comments by member economies and input from the advisors, Professor Peter Newman of Curtin University Sustainability Policy (CUSP) Institute and Associate Research Fellow Chen-Sheng Ho of Chinese Taipei APEC Study Center, Taiwan Institute of Economic Research. While the writers made every attempt to remain accurate to the contents of GAP and best practice reports submitted by the member economies, the writers are responsible for any misinterpretation of the contents. The writers wish to thank the two advisors and APEC SME Innovation Center for their support and guidance. The writers also give acknowledgement to Dr. Woosung Lee of the Science and Technology Policy Institute (Korea), who made significant contributions in the very early stages of the Green Initiative. Finally, the writers would like to thank Harim Jung, Junghee Baek and Jiae Yang of the Small Business Corporation of Korea for their contribution in the Green Initiative.

2. History of SME Related Agenda of APEC and Daegu Initiative

Established in 1989, the Asia Pacific Economic Cooperation (APEC) is a forum for 21 Pacific Rim economies that seeks to promote free trade and economic cooperation throughout the Asia Pacific region. As of 2012, the members account for approximately 40% of the world's population, approximately 54% of the world's gross domestic product and about 44% of world trade.

Created to "further enhance economic growth and prosperity for the region and strengthen the Asia-Pacific community", APEC members quickly expanded its agenda from trade and investment to cooperative effort on social agendas. Supporting SMEs was one of the social agendas chosen as they play an important role in their member countries but face great difficulty in trading abroad, attracting foreign direct investment as well as making overseas investment. The decision led to establishment of Ad Hoc Policy Level Group on SMEs (PLGSME) for carrying out work on improving competitiveness of SMEs of the APEC members. The term of PLGSME was extended until 2010 and the group was granted permanent status and renamed as the Small Medium Enterprises Working Group (SMEWG). The SMEWG has been providing foundation for incorporating SME considerations into APEC mandates and

activities and leading on SME-related initiatives, including the Daegu Initiative which was focused on SME's potential on leading innovation.

3. Reasons for Choosing 'Greening of SMEs' as Main Theme of the Second Cycle

In 2010, members held discussion on whether to proceed with the second round of the Daegu Initiative. A consensus was quickly reached on the continuation of Daegu Initiative but with some modification from the first cycle including shortened reporting cycle to two years and change of focus from innovation to 'Greening of SMEs'. Thus, the second cycle was renamed "Green Initiative."

The rationale for government intervention in fostering of green SMEs introduced and agreed at the beginning of the Green Initiative were as follows.

- SMEs are **major employers** and key economic players in all economies
- Green transition is **important**
- However current market environment could better assist greener SMEs
- Therefore green transition **can be assisted by government** intervention and support
- SMEs would benefit from **stronger intervention** and support for successful green transition

There are several other reasons for selecting 'Greening of SMEs' as the central theme of the second cycle. First, there was a popular demand by the APEC members reflecting growing concern on environmental degradation and international debate on global environmental problems especially climate change. Rise of energy and resource prices between 2005 and 2010 also strengthened members' interest in better environmental management and improved energy and resource saving which can contribute to more efficient production of goods and services. In addition, 'Greening of SMEs' was also deemed appropriate considering the fact that a growing number of SMEs, especially manufacturing companies, were facing stringent environmental requirements which are imposed by large companies that make final product using the parts supplied by SMEs. Lastly, growing demand for global action on climate change made it appropriate for the APEC, a large cooperative body which represents 40% of world population and 54% of world's gross domestic product, to promote 'greening of its SMEs' as an appropriate theme for the second cycle.

A McKinsey study, published in 2006, titled "Drive – the Future of Automotive Power" provides a good explanation on rise of interest in green growth agenda. The study stated introduction of fuel efficiency/CO2 emission standard by government and changes in oil price as the two key conditions that may trigger substantial growth of alternative technology in automotive sector and presented three scenarios depending on the two factors. The first scenario "ICE Age" was defined by oil price remaining at the 30 USD per barrel without introduction of any new regulation on vehicle fuel efficiency/CO2 emission standard. The "Intermediate" scenario was defined by oil price at 50 USD per barrel without introduction of new regulations on fuel efficiency/CO2 emission standard. Finally the Green world' scenario is defined by oil price of 100 USD per barrel and introduction of new fuel efficiency/CO2 emission standard in key markets. As of June 2012, oil price has risen to above 90 USD per barrel as of June 2012 and many governments including EU and US introduced stringent fuel efficiency/CO2 emission standards, indicating that conditions for the 'Green World' scenario has been met. The study concludes that more efficient powertrain such as hybrid electric vehicles and diesel engine vehicles could

capture more than 20 percent, depending on boundary conditions such as oil price and regulation set by government. Although the study was specifically focused on green cars, its conclusion provides convincing explanation on why interest in green technologies and businesses has increased vastly during the Green Initiative.

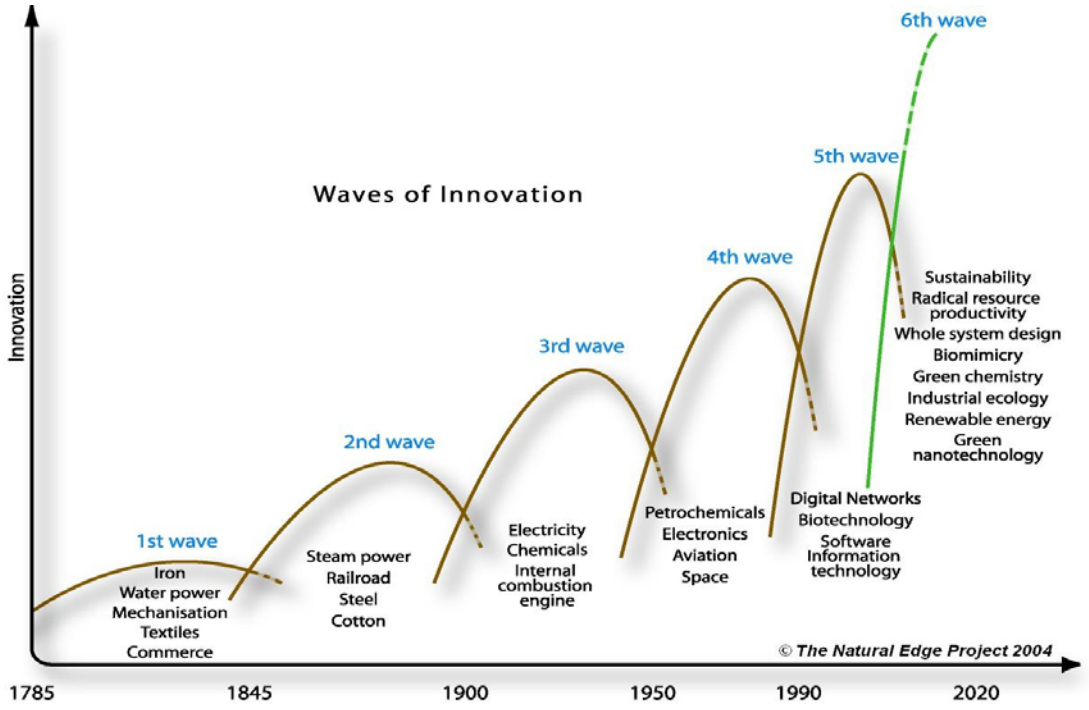
A significant change was also made between 2006 and 2010 in the science and economics of climate change. First, science of climate change has gained stronger consensus with the IPCC endorsing expressing "very likely" in its 4th report published in 2007, which stands for more than 90% of probability. An UK government funded Economics of Climate Change report, titled Stern review also concluded that tackling climate change by investing of 1% of GDP annually can lead to prevention of significant damage caused by climate change of 5 to 20% of GDP by 2100. The lead author, Nicholas Stern later commented that investment in tackling climate change should be doubled to 2% of GDP because climate change was happening faster than had been previously thought. Although there is some dispute among scientist how much climate change has contributed to the increased scale and intensity of recent natural disasters, evidence supporting argument for collective action on reducing greenhouse gas emission is growing stronger.

As a result, a growing number of international organizations such as OECD is placing increased emphasis on achieving economic growth while reducing greenhouse gas emission and environmental pollutants. In fact, OECD created a new theme of 'Green growth and sustainable development' as one of their high priority policy areas. The climate change is also highlighted in the OECD agenda among other environmental issues because 'the impact of climate change on our environment, our economies and our security is one of the defining issues of our era.' Likewise climate change remains as one of the top priority issues at the United Nation.

Unlike other policy areas, greening of SMEs, especially greenhouse gas reduction can contribute to common prosperity of the APEC members and non-APEC members alike, making 'Greening of SMEs' a unique area with strong case for collaboration. Sharing positive policy practice and experience could be especially important and beneficial as majority of climate scientists and growing number of economists are calling for a faster reduction of greenhouse gas emission in order to avoid irreversible damage to climate change system.

'Greening of SMEs' is also closely linked with innovation. According to the Natural Edge project 2004, we are living in the time of the sixth wave of innovation which is focused on sustainability, renewable energy, green nanotechnology and etc. The Sixth Wave is synonymous with the green economy and as stated on the graph the most important feature of the green economy will be 'radical resource productivity' which will enable carbon reduction to avoid dangerous climate change. This makes 'greening of SMEs' especially appropriate for the second cycle of the Daegu initiative which was launched as a project on creating a favorable policy environment for promoting innovation by SMEs.

<Picture I-1> Six Waves of Innovation



4. Green Growth and Green SME Policies: A Short Background[5]

What is Green Growth

"Green Growth" is defined as "the pursuit of economic growth and development, while preventing costly environmental degradation, climate change, biodiversity loss, and unsustainable natural resource use. Green growth aims to combine mutually supportive economic and environmental policies. By accounting for environmental risks that could old back social and economic progress, and improving competitive conditions in the economy, green growth policies will spur the transformational change and ensure that investing in the environment can contribute to new sources of economic growth.[6]"

The Importance of Green Growth

Due to recognition on the importance of sustainable growth and environmental protection, green issues have received more emphasis in public discussion and policy in the last decade. There is more recognition that economic growth, without due recognition of environmental degradation and finite resources, can result only in temporary growth with the end in disaster, both in economic and environmental terms. There has been movement on both developed and developing economies to recognize the importance of growth that is sustainable – which will enable continual growth and continual increase in welfare, not only for the near future, but for the long term. Such sustainable growth recognizes both the trade-offs and synergies between economic growth and the limited nature of environment and natural resources. It also recognizes the need for sustainable growth - to give nature and natural resources

[5] : Details in this section is adapted from *The Green Initiative: Second Cycle of Daegu Initiative: Background and Manual* (2010) which was distributed to member economies at the beginning of the Green Initiative.
[6] : www.oecd.org/greengrowth

a chance to replenish itself - so that economic growth can continue at a steady pace for future generations. Green growth is gaining support as a way to pursue economic growth and development, while preventing environmental degradation, biodiversity loss and unsustainable natural resource use[7].

However, such sustainable green growth does not come by itself. Markets tend to over-exploit existing resources with little care for future generations. Thus, there is room for active government policies to foster green growth. However, such green growth policies require governments to have strategic vision is necessary to ensure that the policies that governments will implement are the most appropriate from an economic efficiency, environmental integrity and social equity point of view, as well as coherent both at a national and an international level. Further, it requires policies to identify cleaner sources of growth, seize opportunities to develop new green industries, jobs and technologies, while managing the structural changes associated with the transition to a greener economy[8]. Sharing information and building a consensus on what makes good policies in this area is the major objective of the Green Initiative.

Because the green growth requires a comprehensive approach, requiring scores of effort across all sectors of the economy, a wide variety of policies must be coordinated and implemented if governments can effectively bring about successful green growth. Policies related to green economy and green growth include not only R&D policies, but policies (including tax policies and tradable permit policies) to correctly price scarce resources. Market-based instruments may not be enough, and regulations may also be needed to address market failures or in cases where complete bans are necessary. There are also roles for voluntary instruments and information-based measures such as energy efficiency ratings and well-designed eco-labeling[9]. Such need for wide variety of approaches suggest that sharing of experiences and best case examples will be especially helpful.

Another point to consider is that the current economic environment – global recession in the aftermath of the global financial crisis – is an ideal opportunity to accelerate green growth policies. We have seen in the various financial crisis of the last few decades that crisis can be an opportunity to carry out structural adjustments that would not be possible in normal times due to various political interests. The global climate change has made people recognize that environmental problems have become global and serious. Coupled with the current global financial crisis, people have become open to the idea that massive structural adjustments in the economy is desirable and necessary. Thus, this is a good time for a push to incorporate green growth into the global economy.

For example, OECD has made green growth a high policy priority. At the OECD Ministerial Council Meeting held in June 2009, Ministers from all thirty OECD countries as well as Chile, Estonia, Israel and Slovenia signed the Green Growth Declaration, which declared that the signatories will "strengthen their efforts to pursue green growth strategies as part of their responses to the crisis and beyond, acknowledging that green and growth can go hand-in-hand. The signatories endorsed a mandate for the OECD to develop a green growth strategy, bringing together economic, environmental, social, technological and development aspects into a comprehensive framework[10].

We also note that Green Initiative is a good follow-up to the first cycle of the Daegu Initiative, since innovation is an important element in green growth; and SMEs must play a role in green innovation. Innovation will have to be not only national, but multilateral. Such role for international cooperation in

[7] OECD (2010) *Interim Report of the Green Growth Strategy: Implementing our commitment for a sustainable future* p.9 paragraph 2
[8] : OECD (2010) op cit. p.9 paragraphs 1-2.
[9] : OECD (2010) op cit. p.9
[10] OECD (2009) "OECD and Green Growth"

innovation and innovation policies make the green growth a logical outgrowth of policy elements considered in the Daegu Initiative. Green economic policies must take a broad approach, comprising price-based instruments and incentives for firms to engage in green activities, as well as public procurement and the funding of basic research. Member Economies must remove barriers to trade in clean technologies as well as to the entry of new firms, and improve the conditions for entrepreneurship, especially in light of growing evidence that young firms, likely to be SMEs, represent a large source of more radical innovations. There is also the need for more effective and inclusive multilateral co-operation on science, technology and innovation[11].

We finally note that SMEs have an important role to play in green growth. Because of the size of the SME sectors in most economies, no green growth policies will be successful unless SMEs actively and willingly participate in green growth programs. Further, many of the technologies and products necessary to successfully transform the current "fifth wave" economy into "sixth wave" green economy will be developed and popularized by SMEs. Thus, there is a need for policies to assist SMEs in becoming "green." These policies include demand-side policies which will facilitate SMEs becoming users of green technologies and products, as well as supply-side policies which will assist SMEs develop and market green technologies and products.

For simplicity, in the rest of this report, we will refer to SMEs which are users (or potential users) of green technologies and products as green user SMEs; and SMEs which create and manufacture green technologies, products or services as green creator SMEs, or sometimes just green SMEs for short.

Green Growth in APEC

APEC has also pursued green growth, though perhaps in a less comprehensive and coordinated way than the OECD.

APEC held a dialogue on the growth of Environmental Goods and Services (EGS) in the Asia-Pacific region, which was held in Sendai, Japan in late September, 2010. The dialogue, which brought together APEC officials, experts from other international bodies and business representatives, identified barriers to trade and investment in this important industry. It also focused on what work was being done across the various APEC fora to support development of the fast-growing sector, with the aim of better coordinating and collaborating on efforts. And it targeted what additional assistance APEC could provide in coming years to the industry.

According to APEC press release, “EGS are devoted to solving, limiting or preventing environmental problems. Development of the sector is essential to slowing global warming and other forms of pollution and protecting natural resources. Environmental technologies, such as solar cells and panels, are also needed as the world's population grows, energy demands increase and supplies of more polluting forms of energy such as oil and coal dwindle.[12]”

Supporting trade of EGS, therefore, cuts across a number of APEC goals, including a commitment to sustainable and innovative economic growth. Both attributes are important components of APEC's new growth strategy, which was presented to APEC Economic Leaders at their annual meeting, in Yokohama in November. APEC is committed to achieving "high quality" economic growth in the region through supporting trade of EGS.

[11] : OECD (2010) op cit. p.9 paragraph 7.
[12] APEC (2010) “Shining the Light on Green Growth Issues”
http://www.apec.org/Press/Features/2010/1029_greengrowth.aspx

The press release also stated:

> The dialogue in Sendai heard that a myriad of APEC activities and projects are underway to assist development of EGS, including working to reduce non-tariff measures that act as obstacles to trade and investment in the industry. Companies face a range of difficulties when trading their products throughout the region and globally, including different regulations on testing and certification, arbitrary customs procedures and inadequate protection of intellectual property rights, the OECD's Dale Andrew told the dialogue. Standards are essential for ensuring quality, providing information to consumers and protecting them from damaged or dangerous goods. But the coexistence of different schemes in Member Economies for standards, testing and compliance can create major delays and increase costs for businesses, the dialogue heard.

One participant in the dialogue pointed out that "EGS is a subject that requires a holistic approach with APEC. This type of approach and collaboration is key to ensuring effective dissemination of information, helps to prioritize our efforts within APEC, minimizes duplication, reduces costs while at the same time draws on the rich and technical expertise across APEC fora,"

Thus, the logic of discussing green growth in APEC is similar to the logic of discussing green growth in the OECD. However, APEC brings a wider variety of economies to the green growth discussion and participation since Asian-Pacific economies are under-represented in the OECD, and OECD includes few developing economies. Pursuing green growth strategies, tactics and implementation in the APEC can bring a fresh point of view and increased participation and give added value to discussions about green growth in other international for a.

As seen above, APEC is already pursuing its own green growth agenda. <Table III-1> shows projects underway in APEC dealing with green growth when the Green Initiative began in 2010.

<Table I-1> Green Growth Projects in APEC as of Early 2010

I. Make APEC a Low Carbon Society	
1. Promote energy efficiency measures through the Peer Review on Energy Efficiency (PREE) and the Cooperative Energy Efficiency Design for Sustainability (CEEDS).	EWG
2. Introduce and implement a peer review mechanism on non-fossil energy related policies like the APEC Peer Review on Energy Efficiency (PREE).	EWG
3. Promote the dissemination of low-carbon technologies through the “Low-Carbon Model Town Project,” which demonstrates some successful models of organized usage of low-carbon technologies in an area, e.g., city, town or district.	EWG
4. Undertake activities to analyze, rationalize and phase out inefficient fossil fuel subsidies that encourage wasteful consumption, and to reduce waste and limit CO2 emissions while protecting the poor.	EWG
5. Promote energy conservation activities through the introduction of more energy efficient ICT devices and systems, including data centers and ICT utilization in many sectors and new ICT services such as cloud computing (Green ICT).	TELWG
6. Exchange information on initiatives to address aviation’s climate change	TPTWG

	impacts and harmonize systems for more effective and efficient transportation operations.	
7.	Highlight Sustainable Development as a key action area and support related projects.	ISTWG
8.	Discuss green growth and implement a project on Green Finance.	SFOM
II. Lay the Foundation for Dissemination and Enhanced Utilization of Environmental Goods and Services (EGS)		
1.	Implement the APEC EGS Work Program with revised mapping in 2010.	CTI
2.	Provide public and private stakeholders in APEC with the latest information, studies, projects, and commitments on EGS through the APEC EGSIE (EGS Information Exchange) website.	MAG
3.	Develop activities to facilitate trade of energy efficient products through work on standards and conformance, including studies and workshops in the areas of home appliances, solar standards and green commercial building.	SCSC
4.	Conduct a mapping exercise on energy efficiency standards, labeling, and testing and measurement procedures for electric appliances in each APEC economy and their alignment with international standards to understand any divergence and convergence in these fields in APEC.	EGEE&C
5.	Promote sustainable tourism measures and programs by looking at the opportunities for, and barriers to, sustainable tourism; develop best practices related to energy efficiency.	TWG
6.	Promote projects to establish ecotourism as tourism which serves to sustain the natural environment, and prosperity of local communities; develop the tourism industry in a balanced manner.	GOS/TWG

<Notes> EWG: Energy Working Group
TELWG: Telecommunications and Information Working Group
TPTWG: Transportation Working Group
ISTWG: Industrial Science and Technology Working Group
SFOM: Senior Financial Official Meeting
CTI: Committee on Trade and Investment
MAG: Market Access Group
SCSC: Sub-Committee on Standards and Conformance
EGEE&C: Expert Group on Energy Efficiency and Conservation
TWG: Tourism Working Group
GOS: Group on Services

As seen from <Table I-1> APEC is pursuing a two-pronged green growth policy: Lowering carbon output, and increasing the use and trade of EGS. Eleven working groups and committees are pursuing projects related to green growth, showing that APEC is firmly committed to certain aspects of green growth. However, compared to the OECD, APEC's pursuits seem limited. Also, SME WG is not yet intensively involved in green growth. Thus, APEC needs to expand its role in green growth.

Since the beginning of the Green Initiative, APEC expanded its role. The United States, the host of APEC in 2011, used its role to emphasize green growth, and APEC initiated its green growth agenda in 2011[13]. At their annual meeting in Honolulu in November, APEC Leaders committed to a series of initiatives that aim to assist the region speed the transition toward a low-carbon economy, in a way that

[13] : APEC press release, Jan. 3, 2012 (http://www.apec.org/Press/Features/2012/0103_greengrowth.aspx)

promotes the development and spread of green technologies, and thus helps grow our economies, increases energy efficiency and enhances energy security.

Leaders singled out the need for increased energy efficiency, which would cut demand for energy including for fossil fuels, reduce emissions and save money. They also directed APEC economies to further encourage development of energy-smart, low-carbon communities. The APEC-related Energy Smart Communities Initiative has some 30 projects up and running on four pillars - smart transport, smart buildings, smart communities and smart-job education and training. A wealth of information about these technologies and methods is being collected online so that economies can share knowledge and learn best practice. In a separate initiative, APEC is supporting development of smart electricity grids that enable sources of clean power to be seamlessly connected to existing structures. To underline the importance of saving energy, Leaders agreed to a goal to reduce energy intensity by 45 percent by 2035 using 2005 as a base year. The target is a regional or aggregate one, meaning individual economies could vary above or below the exact mark.

As part of efforts to slow down carbon dioxide emissions from fossil fuels, Leaders also committed to phasing out inefficient fossil fuel subsidies that encourage wasteful consumption. Economies will reform their policies at their own pace, and in their own way, recognizing that the poorest populations who rely on them need to be protected. APEC is also building a reporting mechanism to assist economies to detail and analyze their current subsidies. In this way, economies can share lessons learnt on subsidy reform, and build on best practices. A report that tracks progress of these reforms will be presented to Leaders annually.

APEC is also utilizing peer reviews as another tool to help economies undertake policy reforms to achieve their green goals. Economies can volunteer for a peer review of their energy efficiency efforts, which allows a team of experts to analyze in detail their policies and provide objective feedback and constructive criticism. The resulting report is circulated among economies so they can identify and share best practice, and ultimately improve energy efficiency. Eight economies have volunteered for assessment with more to come.

Current estimates suggest that tens of trillions of dollars of investment will be required in the coming years to meet our clean energy, clean air, sanitation and other environmental goals, Leaders said in their Honolulu declaration. One of the best ways to meet these goals is to increase the flow of green goods. APEC therefore is working to reduce tariff and non-tariff barriers to trade in environmental goods and services. Leaders committed, for example, to eliminating existing policies that require businesses to source some or all of their inputs locally. While these “local content requirements” are designed to foster local green industries, they can also discriminate against foreign companies. On tariffs, APEC will work to develop a list of environmental goods next year, on which member economies are resolved to reduce tariff rates to 5% or less by 2015.

As seen, since the beginning of the Green Initiative, green growth has taken a more important role in APEC dialogue. In addition to the initiatives listed above, many other important initiatives are underway in APEC, ranging from harmonizing standards of the energy efficiency of appliances to promoting development and trade of alternative fuels such as biofuels. These initiatives are taking place mostly under the Committee for Trade and Investment, but most of the remaining APEC committees and working groups are taking a significant role in these initiatives as well. Green Initiative and the SME WG can take pride that the SME WG was at the forefront of the green growth movement in APEC.

5. Implementation Strategy, Policy Areas and Subordinate Elements of the Green Initiative

The Green Initiative was submitted to the SME Working Group and the SME Ministers at the APEC SME WG Meeting and SME Ministerial in May 2011. The Joint Ministerial Statement recognized the importance of green SME policies and the role of the Green Initiative.

<Box I-1> Extract from the SME Joint Ministerial Statement 2011

Identifying Policies to Support Green SMEs

15. We acknowledged that in order to promote green growth and to identify policies that support green SMEs, it is important to convene SMEs, policymakers, and innovators to discuss these issues.

16. At green growth seminars held in Big Sky (How to Grow Your Green Small Business, Improving SME Competitiveness through Sustainable Business Practices, and the SME Green Growth Competitiveness Forum), speakers discussed a variety of topics to help SMEs increase their business internationally. These seminars looked at issues such as financing, regulation, trade promotion (from the perspective of what is required to facilitate the business environment), and public-private partnerships that support SME sustainability, innovation, and the development of green technology.

17. Ministers agreed that continuing the dialogue on green growth in Bangkok in November 2011 will help APEC economies structure green growth policies to meet the needs of the SME community and contribute to job growth and sustainable development regionally. We encourage APEC policymakers, businesses, and innovators to make progress on developing green action plans to resolve barriers to green growth in the Asia-Pacific region. We also encourage APEC economies to develop their own sustainable business practices to support SMEs achieve green growth.

18. Ministers acknowledged that green international trade has become a new driver of economic growth. SMEs' involvement in green international trade will bring many benefits to SMEs. At the same time, it will also expose them to greater risks, such as varying regulations and standards. Ministers were pleased to note that the "Symposium on Enhancing SME Capacity of Managing the Risks Associated with Trade Liberalization" to be held in Chinese Taipei this August will help address this issue.

19. We recognized that Korea's Green Initiative promotes sharing policy experiences and identifying collaborative measures, thus facilitating green growth in the APEC region. We encourage APEC economies to participate in and support the Initiative.

In early 2011, the Green Initiative research team identified four policy areas and seventeen subordinate elements relevant to green growth of SMEs as follows:

<Table 1-2> Green Initiative Areas and Elements[14]

Areas	Elements	Element Description
A. Overview: Definition and Framework	A-1	Definition of "Green Growth" and National Green Growth Target (including benchmarks: easy to understand standards that SMEs can follow)
	A-2	Existence of Comprehensive Green SME Development Plan –

[14] : See *The Green Initiative: Second Cycle of Daegu Initiative: Background and Manual*, SME Innovation Center (2010).

		Roadmap
B. Financial and Non-Financial Support for Green Technology Innovation and Green Management	B-3	R&D Grant, Loan and/or Tax Incentive Programs for Technology Development by Green SMEs
	B-4	Start-up Assistance and Early Stage Funding (Consulting, incubation, venture capital) for Green SMEs
	B-5	Employee Training (skill, understanding and motivation) for Green and Potentially-Green SMEs
	B-6	Green Renovation - Funding for SMEs for Employing Existing Green Technologies, Goods and Services
	B-7	IPR Assistance for Green SMEs
C. Fostering a Green-Friendly Economic Environment including Creating Demand for Green Technology and Awareness Raising	C-8	Incentives for Green Government Procurement (stimulating early stage deployment) from Green SMEs
	C-9	Regulatory Reform (including subsidy reform) to Encourage Green SMEs
	C-10	Improving Market Access for Green Technologies and Products
	C-11	Raising Consumer Awareness on the Importance of "Green Consumption" and Green Technologies
	C-12	Online tools and resources for environmental and economic performance improvement tips for Green SMEs
D. Creating Green Partnerships	D-13	Encouraging Green Partnerships with SMEs and Large Corporations (supply chain management)
	D-14	Encouraging Partnerships with Green SMEs and Universities and Research Institutions
	D-15	Encouraging Partnerships with Green SMEs and Other SMEs (including clustering)
	D-16	Encouraging Partnerships with Green SMEs and Civil Societies and Local Communities
	D-17	International Partnerships - Capacity Building and Best Practice Sharing on Green SMEs and Green SME Policies

The Green Initiative would request that the member economies report various green SME policies in these seventeen elements through GAPs, as well as submit best practice reports and workshop presentations. Details on rationale for choosing above areas and elements can be found in *The Green Initiative: Second Cycle of Daegu Initiative: Background and Manual*, which was distributed to member economies in early 2011. The summaries of the reports and presentations given by the APEC member economies form the bulk of Section II of this report. APEC Innovation Center was tasked with

- Arranging and hosting sessions on GAPs and best practices during SME Innovation Workshops
  - Area A and B in November 2011 and Areas C and D in April 2012;
- Submit summary reports of the sessions after each workshop
  - Report to be written by the Green Initiative Research Team
- Drafting final report by August 2012, and if deemed suitable, submitting the final report to the SME Ministers in 2012
  - Report to be written by the Green Initiative Research Team.

Green Initiative is based on voluntary reviews and the sharing of policy experiences among Member Economies. Each member economy was requested to submit Green Action Plans (GAPs) in four policy

areas with a total of seventeen subordinate elements, as listed in <Table I-1>. Two workshops were to be held, the first in the latter half of 2011 and the second in the first half of 2012, where the member economies would present and discuss their GAPs and best practice reports. Two workshop reports would be written by the Green Initiative Research Team after the end of each workshop, and the Team would write a final report, which may be submitted to the Ministers in the SME Ministerial 2012 if the report is deemed of sufficient quality. This is the final report.

The Green Initiative proceeded as listed in <Table I-3>.

<Table I-3> Timeline of the Green Initiative

Date	Action
April 2011	Presentation of the "Green Initiative" framework
May 2011	Dissemination of draft report to APEC members for comments
May 20-21st 2011	Submission and Approval of the Green Initiative during APEC SME WG Meeting and SME Ministerial Meeting in Gifu, Japan
June ~ Nov. 2011	Collection of GAPs & Best Practice Reports in Area A&B
Dec. 13th 2011	First Green Initiative Workshop on Policy Areas A and B A: Definition of 'Green' and SME Roadmap B: Support for Green R&D and Management Held in Bangkok, Thailand
Dec. 2011 ~ Mar. 2012	Collection of GAPs & Best Practice Reports in Area C&D
April 2012	Second Green Initiative Workshop on policy area C and D C: Fostering a Green-Friendly Economic Environment D: Creating Green Partnerships Held in Negara, Brunei Darussalem
Aug 2012	Submit Final Report to SME WG, and if approved, to SME Ministers

6. Participation Overview

During the duration of the Green Initiative, eighteen of the twenty-one member economies participated in one form or another. Twelve economies submitted GAPs for Areas A and B, though one of those economies submitted its GAP only in the form of a Powerpoint presentation, and some economies chose not to answer all of the elements. Ten economies submitted GAPs for Areas C and D, though again, one economy submitted the GAP only in the form of a Powerpoint presentation and some economies chose not to answer all the elements. Only eight economies submitted written best practice reports, though many additional economies introduced their best practices in workshop presentations. Of the eight economies which submitted best practice reports, many submitted more than one report, indicating strong enthusiasm for green SME policies.

Participation in the workshop were more enthusiastic. Thirteen economies gave presentations in the first workshop, held on December 2011 at Bangkok, Thailand; and fourteen economies gave presentations in the second workshop, held on April 2012 at Nagara, Brunei Darussalem. In fact, Russia was scheduled to give a presentation in the second workshop bringing the total number of presentations at fifteen, but the presentation material was lost during travel from Russia to Brunei Darussalem, forcing the cancellation of the presentation. Although Hong Kong, China did not submit a report or give a presentation, it attended both the first and the second workshops.

In all, the participation in the Green Initiative was slightly better than participation in the Daegu Initiative, where only fifteen economies participated. The increased participation probably reflects the importance given to green SME growth policies by the APEC member economies. <Table I-4> gives the state of participation in the Green Initiative. <Table I-5> lists the written best practice reports that the member economies submitted, and <Table I-6> and <Table I-7> lists the topics of presentations that the member economies gave in the first and second workshop respectively. In some cases, the reporting member economy did not specify which element the best practice reports belonged. In those cases, the research team placed the best practice reports in the element which seemed most appropriate.

<Table I-4> Participation in the Green Initiative

Member Economy	GAP Areas A and B	GAP Areas C and D	Written BPRs	Presentation First Workshop	Presentation Second Workshop	Attendance in First and / or Second Workshop
Australia	O	O		O	O	O
Brunei Darussalem			O	O		O
Canada						
Chile						
China	O			O	O	O
Hong Kong, China						O
Indonesia	O*	O	O	O	O	O
Japan	O	O		O	O	O
Korea	O	O	O	O	O	O
Malaysia				O	O	O
Mexico	O	O	O	O	O	O
New Zealand	O	O				
Papua New Guinea	O	O		O	O	O
Peru	O		O	O	O	O
The Philippines	O	O	O		O	O
Russia				O		O
Singapore						
Chinese Taipei	O	O	O	O	O	O
Thailand					O	O
The United States	O	O*		O	O	O
Viet Nam			O		O	O

<Table I-5> Written Best Practice Reports Submitted by Member Economies

Member Economy	Topic	Element

Brunei Darussalem	Green Building Concepts	C-9
Indonesia	SMEs and State Owned Company Partnership in Producing Organic Fertilizer	D-13
Indonesia	*PT Swen Inovasi* Transfer and Social Partnership in Producing Biogas Energy	D-16
Korea	Green-Biz ("G-Biz") Selection and "Excellent Green Biz"	A-1
Korea	National Green SME Development Roadmap	A-2
Korea	Support for Green SME Export Feasibility Study and Consulting	C-10
Korea	Raising Consumer Awareness on Importance of Greenhouse Gas Emission Reduction through Carbon Footprint Labeling Scheme	C-11
Mexico	International Leadership Training	B-5
Peru	Center of Technological Innovation of Leather, Shoes and Similar Industries (CITECCAL)	B-6
Peru	Energy Efficiency Program for Handmade Bricks (EELA)	B-6
Peru	Strengthening the Chain of Calcium Oxide at the Lesser Town Center Sacra Familia, District of Simon Bolivar - Pasco	B-6
The Philippines	MSME Development Policies	A-2
Chinese Taipei	Certification Promotion Program of Green Supply Chain for SMEs – the Case of Hair O'right International Corp	C-9
Chinese Taipei	Green Trade Project Office	C-10
Viet Nam	The Green Supply Chain: A Case Study of Vietnam Tourism	D-16

<Table I-6> Presentations in the First Workshop

	Titles
Australia	Green Action Plan Areas A and B
Brunei Darussalem	Green Building Concepts
China	The National Economic and Social Development in the Eleventh Five Year Plan and the Guidelines to Strengthen the SMEs Energy Saving and Emissions Reduction
Chinese Taipei	Best Practice: Certification Promotion Program of Green Supply Chain for SMEs – the Case of Hair O'right International Corp
Indonesia	GAP and Green Business Center
Japan	Various Green SMEs
Korea	GAP and Best Practices
Malaysia	Policy Overview and Green Technology Financing Scheme
Mexico	International Leadership Training Program / FIDE-SENER Programs
Papua New Guinea	Green Growth Initiatives
Peru	GAP and Best Practices
The Philippines	Policy Overview and Best Practices
Russia	Innovative Agrocomplex "Zelyonye listya"
United States	Policy Overview

<Table I-7> Presentations in the Second Workshop

	Titles
Australia	Green Action Plan Areas C and D

China	Chinese Government Agencies and Relevant Policies to Support SME Green Initiative
Indonesia	GAPs Area C and D and Best Practices
Japan	Best Practices in Areas C and D
Korea	GAPs Areas C and D and Best Practices
Malaysia	Creating Local Solid State Lighting (SSL) Champions
Mexico	Best Practices: National Program for the Sustainable Use of Energy (2009-2012) and Environmental Leadership for Competitiveness Program
Papua New Guinea	Green Growth Initiative in PNG: Towards REDD++ : The Papua New Guinea Efforts in Building a Green Economy
Peru	Advances in Green Innovation: OTCIT and CITEs
The Philippines	Green Action Plan and Best Green Practice
Chinese Taipei	Establishing Green Partnership for SMEs in Chinese Taipei
Thailand	Policies and Plans toward Green Development of Thailand
United States	US Green Action Plan and Best Practices Part II
Vietnam	The Green Supply Chain: A Case Study of Vietnam Tourism

Note from <Table I-6> and <Table I-7> that some member economies presented details on successful individual green SMEs. While informative, the details concerning individual privately owned companies seemed inappropriate to include in this report, and did not fit into particular elements in <Table I-1>. Thus, the Research Team have decided not to include them in this report. For readers who are interested in these individual firms, they are referred to the first and second workshop reports.

Section II: Green Action Plan (GAP), Best Practice Reports and Presentation Summaries by Area and Element

1. Area A: Overview: Definition and Framework

As stated in the introduction, for the Green Initiative, we identified four areas of green SME policies to examine. The first area, Area A, is the "Overview: Definition and Framework." This area examines the broad context of green SME policies in a member economy - whether the economy has a definition of "green" or "sustainable growth," and whether the economy has a comprehensive unified framework for its green SME policy (or green growth policy). Economies sometimes have different definitions for "green." Some economies limit the definition to lowering carbon gases, while other economies include other greenhouse gases. Some economies approach "green" in a more comprehensive manner - to manage their natural resources and environment; while still others use the term "green growth" or "sustainable growth" to refer to an optimal growth path which give due weight to economic growth and environmental / resource management. Still others use the term "green growth" to refer to growth led by new industries which develop environmentally-friendly (or greenhouse gas reducing) technologies, goods and services. Because we do not want to force one particular definition or policy goal over another, we asked that the Member Economies report their own definition of "green" to be used in the rest of the GAP, and what overall plans they have to achieve their "green" policy objective. Also, to examine the overall policy strategies that the APEC member economies may choose to develop their green SMEs, we asked that member economies report whether they have a comprehensive plan to develop green SMEs, and if so, a general outline of the plan. This area is designed to accommodate the diversity of APEC Member Economies, to see the commonalities and differences in the approaches of various Member Economies, and also to look at policy coherence and policy trajectory shifts as recommended in the OECD framework for green growth.

A-1 : Existence of Domestic Definition of "Green" or "Sustainable" Growth and National Green Growth Targets ((including benchmarks: easy to understand standards that SMEs can follow)

This element examines whether the government of the member economy has a definition of "green," "green technology," "green growth," and "green products (goods and/or services)." This definition may be legal or informal (as long as it is used by the government body in charge of SMEs, or is used by more than one government bodies). Having a definition for "green" is useful because it allows the government to focus its attention and resources on projects which are clearly "green" in nature, reducing waste and increasing transparency. Further, if there is a clear definition or guidelines and benchmarks for what constitutes "green," it allows interested parties (such as inventors, researchers, entrepreneurs, manufacturers and service providers) to get a better idea on the potential for various incentives which may be available from government agencies. Also, definitions can be used to filter policies or technologies whose contributions are dubious. However, the concept of "green" may differ across member economies, ranging from lowering carbon emission, lowering greenhouse gases in general, reducing waste of resources (e.g. recycling) to 'eco-friendly' and sustainable development. This element was designed to examine whether the economies had a clear definition of 'green' as it applied to their economies; and which areas of 'green' the economies chose to emphasize.

Twelve economies included information on this element in their GAPs. Indonesia and Korea reported they have legal definitions; while the other economies reported that they had no legal definitions. However, many economies did report informal or working definitions. The responses are summarized in <Table A1-1>. Also, while the definitions were, in general, related to eco-friendly development, the definitions also showed that economies do have subtly different emphasis in their green growth goals.

<Table A1-1> Reporting Economies for Element A-1

Legal Definitions	No Legal Definitions but Informal or Working Definitions Reported	No Definitions reported
Indonesia Korea Papua New Guinea	Australia China Mexico New Zealand Peru The Philippines Chinese Taipei United States	Brunei Darussalem Japan

While Brunei Darussalem stated that it has no formal definitions, relevant agencies may have their individual approaches to green-related projects, but they are too diverse to report. Chinese Taipei reported that it has no legal definition of "green growth" and "sustainable development," but it did report a working definition of "trades of green products and services" which includes implicit definition of green products.

Many of the economies who have reported their definitions (legal or informal) use definitions which specify ideals, idealized end-goals and principles rather than concrete definitions. China's working definition of "green growth" and "sustainable development," are "means to build an eco-friendly or environmentally friendly society by increasing the utility efficiency of energy." Chinese Taipei's working definition contains two components: "the products or services for environmental protection or

environmental recovery (e.g. pollution abatement)" or ": the products or services that produce less impact than the traditional products to the environment and ecology in their life cycles.

Among other economies which use somewhat abstract definitions of green growth or sustainable development include Indonesia, which defines that green industry " has to be sustainable, economically viable, socially participated by stakeholders and the quality of the environment protected." and New Zealand which defines green growth as "the long term improvement in living standards through economic growth, supported by effective environmental stewardship and sustainable use of resources, and our ability to harness the global growth potential of green technologies, practices and services."

Some economies first define "green growth" and "sustainable development" in an abstract way, but then define subordinate terms which are more concrete. Korea and the United States are examples of such cases. Korea defines "green growth" as "growth achieved by saving and using energy and resources efficiently to reduce climate change and damage to the environment, securing new growth engines through research and development of green technology, creating new job opportunities, and achieving harmony between the economy and environment" and "sustainability" as "using economic, social and environmental resources in a harmonized and balanced way without wasting or deteriorating in quality those resources to be used by future generations to meet the needs of the present." These definitions are supported by more technical definitions defined in other relevant legislation. The United States defines "green" typically as "clean and energy-efficient," and "sustainability" as creating and maintaining the conditions under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic and other requirements of present and future generations. Other legislations define related terms, sometimes in more technical terms.

Korea has submitted a best practice report which is closely tied to this element. The Korean government gives various grants and preferences on the basis of whether SMEs have superior green technology or management techniques. For most of these programs, a certification of a firm being "Excellent Green-Biz" (or equivalently "Excellent G-Biz") fulfills the condition of having superior green management techniques. The Excellent Green-Biz system aligns incentives for SMEs to become green with the National Green Management Standards and Indices, as well as reward SMEs which use superior green management techniques. The examination criteria used to determine whether a SME satisfies the conditions to be classified as an Excellent Green-Biz serves to make the legal definitions of "green" into practical, concrete, operational conditions.

Papua New Guinea reported a legal definition which also spells out their goals in a very concrete fashion. "Climate Compatible Development" is defined as development compatible with the goal of 50% emission reduction of green house gases. Papua New Guinea was the only economy which incorporated a specific target in their definition. This definition is used to implement various green growth initiatives and Climate Compatible Development Strategy.

Several economies do not have a formal or legal definition of 'green,' but have informal working definitions. Peru has an informal term "eco-efficiency" which is not formally defined, but its definition is implied by various legislation and guidebooks. Peru's National Plan of Environmental Action includes objectives to secure an adequate environmental quality for the health and integral development of its people, to foresee the affectation of the ecosystems, recuperating the degraded environments and promoting an integrated management of environmental risks and a clean and eco-efficient production; as well as to obtain the competitive and eco-efficient development of the public and private sectors, promoting the national and international economic and environmental potentialities. In Peru, eco-efficiency is compulsory in the public sector.

Some economies, such as Australia and the Philippines do not have a formal definition of "green" or "sustainable growth," but do have definitions for green-related terms, which they use to carry out formal programs.

While most of the economies which have formal or informal definitions of "green" or "sustainable growth" emphasize "eco-friendliness," a more careful look show that economies have slightly different emphasis when pursuing green growth. Perhaps because of the Kyoto Protocol and the widely emphasized potential threats from global warming and climate change, most definitions or subordinate definitions emphasize lowering carbon footprint, lowering greenhouse gases, or otherwise dealing with greenhouse gases. Among the economies which included these issues in their formal, informal or subordinate definitions are Indonesia, Korea, Papua New Guinea, Mexico, Papua New Guinea, and the United States.

However, many economies emphasize other goals, sometimes in addition to reduction of greenhouse gases, and sometimes in lieu of such reduction. Among the most often mentioned is a balance of social, economic and environmental outcomes and goals. Australia, Indonesia, Korea, New Zealand, Philippines and the United States gave definitions which explicitly incorporated such balanced approach. Australia, Korea, the Philippines and the United States also explicitly acknowledged one of the goals of green development as engine of growth or job-generator. Chinese Taipei emphasized international trade in green products.

Traditional environmental issues such as environmental protection and recovery, as well as reduction in pollution were mentioned by Chinese Taipei, Indonesia, Korea, New Zealand, Peru and the United States. We note that environmental protection may be emphasized by those economies where tourism, especially to natural areas, play an important role in the economy.

Energy conservation and clean energy was another factor which was included in many definitions: Australia, China, Indonesia, Mexico and the United States have mentioned this issue in their definitions. Clean production was also mentioned by Chinese Taipei and the United States. Technical skills and innovation was also mentioned by Australia, Chinese Taipei, Korea, Peru, and the United States.

Some economies included environmentally related issues that may be specific to their own situations. For example, Australia includes water use; Chinese Taipei mentioned waste water management, and the Philippines mentioned food safety. These details show that economies may have green-related issues which are important to them individually, but may not be shared by other economies.

To sum up, GAPs and the presentations show that APEC member economies do not always have legal or working definitions of 'green,' 'sustainable development' or 'eco-friendly.' In those economies which have formal or informal definitions, while all definitions do emphasize the need to protect the environment by reducing harm to the environment and increasing the efficiency of resource use, the focus of the environmental goals can be different across economies. Also, some economies view 'green' as a tool to develop new industries or expand existing industries; which some economies emphasize a balance of economic, environmental and social development.

Best Practice Report:
Korea: Green-Biz ("G-Biz firms") Selection and "Excellent Green Biz"

Introduction

For elements B-3, B-4, B-5 and B-6, various grants and preferences were given on the basis of whether SMEs had superior green technology or management techniques. For most of these programs, a certification of a firm being "Excellent Green-Biz" (or equivalently "Excellent G-Biz firms") fulfills the condition of having a superior green management technique.

The Excellent Green-Biz system serves to align incentives for SMEs to become green with the National Green Management Standards and Indices, as well as reward SMEs which use superior green management techniques. Further, it gives incentives for "non-green" SMEs to become greener since SMEs must fulfill certain green conditions to become a G-Biz firms, and the evaluation process includes customized advice to SMEs under consideration in many cases. Finally, it gives the private sector, such as banks and large companies, a clear indication that a SME certified as Excellent G-Biz firms is clearly a green enterprise, and encourages partnerships and investment in these SMEs, as well as facilitating the development and usage of green products and technologies.

Implementation of Excellent G-Biz Firms Policy

The selection process has five steps: preliminary evaluation, diagnosis, reform, main evaluation and certification. An SME can apply for an evaluation, or evaluation and diagnosis. For firms which applied for evaluation, they will be evaluated on the basis of five areas and twenty specific elements based on the National Green Management Standards and Indices. The five areas and twenty elements, as well as the total number of points given to each element is shown in <Table 1>. Based on the number of points, firms are divided into five categories as seen in <Table 2>. Classes S and A, which received more than 700 points are certified as "Excellent Green Biz" and are eligible for various supports and preferences as listed in <Table 3>.

For firms which applied for diagnosis and evaluation, these firms undergo evaluation and diagnosis at the same time. These firms receive diagnosis reports. If the firms are evaluated as classes S and A, they are classified as "Excellent G-Biz firms." If the firms are classified as classes B, C, or D, they are encouraged to reform their management system. Government sponsored green reform programs are available for some firms. After reforms, these firms are encouraged to apply for evaluation or diagnosis and evaluation again.

Evaluation and diagnosis are carried out by the Korea Standards Association, and the final approval is given by regional offices of Korea Small and Medium Business Administration. Evaluation includes on-site examination as well as documentary examination. As seen in <Table 1>, the elements examined in the evaluation and diagnosis include elements which looks at the green management system set up by the firm, as well as the results showing how effective the system had been.

The G-Biz firms certification is valid for two years, but the length of validity can be extended by applying for evaluation.

Some programs for reforming SME management automatically includes application for evaluation and diagnosis. Government affiliated public or private institutions will help the SME establish a green management system, and then will help the SME to apply for G-Biz firms certification.

<Table 1> Evaluation Criteria for Excellent Green-Biz

Major Area	Minor Area	Elements	Points (Max.)	System	Results

1. Strategy	Vision	01. Establishing Green Management Strategy and Implementation Tactics	44	O	
	Overall Management	02. Level of Green Production Process Development	46	O	
		03. Results of Green Product and Service Development	54		O
		04. Amount of Green Procurement	24		O
		05. Establishing Cooperation between Firms	32	O	
2. System	Implementation System	06. Degree of Development for Green Management Organization	12	O	
		07. Establishment of Cross-Divisional Opinion Communication System and Degree of Its Management	28	O	
	Performance System	08. Establishment, Maintenance, Implementation, and Degree of Monitoring and Corrective System	36	O	
		09. Level of Implementation for Internal Reviews	24	O	
3. Energy and Resources	Conservation of Water and Raw Materials	10. Reduction in the Won-based Cost of Water	79		O
		11. Reduction in Won-based Cost of Raw Materials	75		O
	Recycling	12. Level of Won-based Reduction of Waste and Refuse	58		O
	Reduction in Use of Energy	13. Level of Won-Based Reduction for Use of Energy	123		O
		14. Amount of New Renewable Energy Generation	15		O
4. Greenhouse Gases and Environmental Pollution	Reduction in Greenhouse Gases	15. Reduction of Won-based Carbon Gas Emissions	82		O
	Reduction in Environmental Pollution	16. Reduction of Major Atmospheric Pollution	58		O
		17. Reduction of Major Water Pollution	58		O
		18. Reduction of Harmful Chemicals (won-basis)	52		O
5. Social and Ethical Responsiblity	Information Provision	19. Openness of Green Management Related Information	27	O	
	Rule of Law	20. Level of Compliance for Environmental Laws	73		O
		Total Points	1000		

<Table 2> Point Criteria for Excellent Green-Biz

Classification	**S**	**A**	**B**	**C**	**D**
Classification Title	Green Leader	Green Company	Green Challenger	Need to change	Black
Number of Required Points	850 - 1000	700 - 850	500 - 700	350 - 500	0-350
Type of Firms	Leading Green Management Firm	Firms with Sufficient Level of Compliance and Implementation of Green Management	Firms which Use Green Management, but Need Some Adjustments	Firms which Do Not Use Green Management Effectively	Firms which Require Radical Adjustment in Their Use of Green Management Techniques

<Table 3> Support Available for Green-Biz

Area	**Types of Support**	Description	Start Date	Agency in Charge
Finance	Private Bank Loans	Industrial Bank of Korea (IBK) Green Business Preferential Loans ・ To provide SMEs with working or facility capital ・ A maximum of 90% of the capital needed ・ G-Biz firms are eligible to 1% interest rate, which can be approved by the branch manager.	'10.7	Industrial Bank of Korea
	Policy Funds	Facility Funding under the New Growth Foundation Fund ・ Up to 4.5 billion won for SMEs in Seoul Metropolitan Area, 5 billion won for non-Seoul SMEs ・ Not factored into aggregate loan limits (150% of revenues) Working Capital Funding under the New Growth Foundation Fund ・ Funds to cover initial operating expenses for those who took out loans to invest in facility ・ Loan limits expanded from 30% of facility investment value to 50%	'10.6	Small and Medium Business Corporation (SBC)

	Technology Guarantees	Exemption from Guarantee Review · 100% of operating expenses (compared to 80%-100% for non G-Biz firms) Streamlined Process · The branch manager is given the discretion to make loans up to 200 million won to firms on the watchout list for subpar credit scores (100 million won for non-G-Biz firms) · Early Delisting G-Biz firms are taken off the 'watch out' list after 6 months instead of the usual one year	'10.6	Korea Technology Finance Corporation (KIBO)
R&D	Extra Points for R&D Project Owners	Two extra points are awarded to SME technology development project owners One extra point is given to industry-academia-research institute project owners	'11.1	Small and Medium Business Administration (SMBA)
Patents	Accelerated Evaluation	Patent applications associated with G-Biz firms designation are eligible for accelerated evaluation process	'10.5	Korea Intellectual Properties Office (KIPO)
Labor	Extra Points for Foreign Worker Import Program Owner	Five extra points are given to skilled foreign worker import program owners.	'10.6	Small and Medium Business Corporation (SBC)
Marketing	Extra Points for Public Procurement	An extra 1.5 points are given to Green Biz when they are evaluated for their ability to fulfill a public procurement contract.	'10.6	Small and Medium Business Administration (SMBA)
	Extra Points for Proprietary Technology	One extra point is offered to G-Biz firms with proprietary technology during the production facility audit process G-Biz firms	'10.6	Small and Medium Business Administration (SMBA)
	Advertisement Discount	70% discount for TV and radio advertisements.	'10.9	Korea Broadcast Advertising Corporation (KOBACO)
Exports	Extra Points for Export Oriented SMEs	Two extra points are awarded to G-Biz firms chosen as "export oriented SMEs."	'11.1	Small and Medium Business Administration (SMBA)

	Extra Points for SMEs with Export Potential	Three extra points are awarded to firms chosen as "SMEs with export potential."	'11.1	Small and Medium Business Administration (SMBA)
	Extra Points for Incubation Center Tenants	Five extra points are offered to tenants of export incubation centers.	'10.7	Small and Medium Business Corporation (SBC)
	Extra Points for Compliance with Standards and Certification Abroad	Five extra points are awarded to firms that comply with standards and certification abroad.	'11.1	Small and Medium Business Administration (SMBA)
	Less Stringent Standards for SME Export Brand	Standards are less stringent for G-Biz firms to be designated as a "Global To be selected as a SME export brand, non G-Biz firms must reach a minimum of UDS 3 million in export or KRW 20 billion in revenue For G-Biz firms, the minimum amount is reduced to USD 2 million in export or KRW 10 billion in revenue.	'11.1	Small and Medium Business Administration (SMBA)
	Extra Points for On-line Export Program Owners	Extra points are awarded to online export program owners.	'11.1	Small and Medium Business Corporation (SBC)
	Compensation for Loss from Export Contracts or Financial Contracts	The export insurance premium is discounted by 10% and coverage is expanded within 200% range.	'10.7	Ministry of Knowledge Economy

<Note> As of September 2011, 1 US dollar is worth 1105 Korean won.

Implications and Results of the Excellent G-Biz firms Policy

In 2010, 250 SMEs applied for evaluations in the Excellent G-Biz firms program. 3 firms (1.2% of total applicants) qualified as class S firms, and 20 firms (8.0%) were classified as A firms, so in all, 23 firms qualified as Excellent Green Biz SMEs. 30.0% of applicants were classified as class B firms, 39.6% as Class C firms, and 21.2% as Class D firms. Standards for evaluation are currently being examined to see whether the requirements may be too difficult. SMBA plans to evaluate 400 firms in 2011

Excellent G-Biz firms Policy, including the selection process and the various support policies for excellent G-Biz firms SMEs can be considered a best practice because it has following effects and

implications: 1) The policy gives incentives for SMEs to become "green" according to the National Green Management and Indices. Thus, it helps businesses become greener; 2) the selection criteria includes both green creator and user factors, thus it encourages both the demand and supply for green products, further encouraging green innovation, lower carbon footprint and improvements in the environment; 3) by having "Excellent G-Biz firms" as the criteria for eligibility for various green growth support programs, it gives a unified definition that all government agencies can follow, greatly simplifying the evaluation process and regulations as well as reducing confusion on which objectives SMEs must follow; 4) the Excellent G-Biz firms certification brings attention to the SMEs which gained certification, and will encourage private investment in these SMEs.

A-2 : Green SME Development Roadmap

This element examines existence of long-term national development plan for fostering green SMEs and greening of conventional SMEs. As environmental science and health science have evolved, it has become clear that green businesses have potential to bring significant benefits to the public by reducing negative impact on environment. However, development of new green SMEs and transition to greener SMEs has been proven to be a difficult task in most economies so far. Some countries, Denmark for example, has done significantly better in making the transition on use of renewable energy with national development plan with a concrete goal. Since SMEs which often lack internal capacity and resource for shaping its market and influencing policies, national green SME development roadmap can serve as a useful guideline.

Some SMEs and entrepreneurs will act on their own in greening of their businesses. However, they are likely to struggle and face significant risk of failures unless the green shift is made on national or on a even wider regional level. As recent researches on fossil fuel subsidies suggests, the current policy and economic environment still strongly supports fossil-fuel based energy intensive industries, despite increasing number of policies for green industrial revolution and greener economic development. In this regard, national green SME development plan could provide a useful guideline for not only SMEs but policy makers who are in position of authority to create incentives and disincentive for industries of varying green performance levels.

Eleven economies reported relevant information on green SME development roadmap. Among the eleven economies, Korea was the only member economy that had a SME roadmap with clear quantitative targets and timelines. However, the ten other member economies also have broadly defined green industry targets which would be highly relevant to green SME development. It should be noted that Peru was in process of examining a need for establishment of more detailed development plan for green SMEs. The member economy responses are summarized in <Table A2-1>.

<Table A2-1> Reporting Economies for Element A-2

Clear green SME Development Roadmap	Green roadmap but not specific for green SME development	Not reported
Korea	Australia China Malaysia Mexico Papua New Guinea Chinese Taipei The Philippines Thailand United States New Zealand	Brunei Darussalam Indonesia Japan Peru*

According to the information submitted, Korea's green SME roadmap is not intricately detailed with ultimate target defined as broadly as development of 9,000 green SMEs by 2050 with some interim milestones. Although, such goal is subjected to be influenced by many external factors, there could some tangible benefit in setting such targets as it could serve as driving force in realizing green transition.

Many economies that reported having a non-specific yet relevant green roadmap/plan had a different range of time frame. For example, China and Philippines reported five year industry development plans while Mexico and Papua New Guinea reported objectives set for 2050. Many of economies were focused on greenhouse gas emission reduction through energy efficiency improvement and other relevant measures such as increasing supply of renewable energies.

Korea reported having a green SME roadmap as a part of national roadmap. Long-term targets stated in the roadmap are as follows.

- No. of SMEs participating in Large-SME green partnership program (9,000 SMEs by 2050)
- No. of new green industry cluster established (45 clusters by 2050)
- No. of green social enterprise established (800 green social enterprises by 2050)

More detailed information can be found in the best practice reported attached on the end of this section.

Several economies reported on a relevant green roadmap/plan but not specific to green SME development.

Australia has established the Clean Energy Future Plan, a major policy initiative that includes measures to promote innovation and investment in renewable energy, encourage energy efficiency and create opportunities in agriculture to reduce pollution. It also has in place water and tourism policies which are relevant to green SME development. However, it has not created a specific green SME development roadmap.

China reported many goals in its 11th National Economic and Social Development Plan that are relevant to green SME development as follows.

- To build a number of demonstrative enterprises or bases regarding gas emission reduction and energy-saving within 3 to 5 years
- To achieve 25% reduction in energy use of energy intensive SMEs
  - Centralized energy-supply including heat supply, power supply and refrigeration, as well as centralized industrial pollution control methods
  - Centralized energy-supply including heat supply, power supply and refrigeration, as well as centralized industrial pollution control methods
  - Prevent the transformation of backward production capacity from large enterprises to SMEs.

Malaysia formerly announced facilitation of the growth of the green technology industry and increasing its contribution to the national economy as a national objective. In line of such objective, it announced a series of policies between 2009 and 2011, which were designed to support green SME development. Moreover, a number of green roadmaps including green technology roadmap phase 1, Electric vehicle infrastructure roadmap, 40% Carbon intensity reduction roadmap, Renewable Energy Technology R&D Roadmap were announced recently. Although they are not specifically designed to nurture green SMEs, they should provide a useful guideline for relevant SMEs operating in Malaysia.

Mexico released 'Special Climate Change Program' which sets out aspirational target of reducing 50% percent of its national GHG emission by 2050 compared to 2000 baseline. Although such aspirational goal provide a long-term guideline, near-term implication to SMEs is not very clear. In 2005, Inter-ministerial Commission on Climate Change was established and 31 program goals called for 7.37 Mt of reduction, which could be contributed by SMEs.

Papua New Guinea's Vision 2050 statement is "We will be a Smart, Wise, Fair and Happy Society by 2050" The government has identified seven policy pillars for realizing the vision and one of the policy pillar is 'Environmental Sustainability and Climate Change' and identified 50~70% reduction of greenhouse gas emission as an interim goal by 2030. Such GHG reduction target can serve as a guideline for SMEs operating in the economy. Lack of strong SME base due to institutional, environmental and structural impediments is one of the reasons for lack of SME development roadmap in the economy. There is a more SME-specific policy set for SME, as part of the 'Wealth Creation' pillar, which is to achieve a four-fold increase in number of SMEs and SME employment.

The Philippines has established "MSME Development Strategy for 2011-2016" which is designed to strengthen MSME's capacity to benefit from new opportunities. One of the objectives of the strategy is to identify priority sectors with potential of benefiting from greening. The strategy also includes 'implementation of green growth conducive policies' as an objective. The development policy should provide some guidance for green SMEs. However, a clear roadmap for greening of SME is not in place yet.

The 'Master plan for Energy Saving and Carbon Reduction' of Chinese Taipei has many programs relevant to green SME development including 'low carbon industry program, energy saving and emission reduction technology.' There is a focus on 'Improving energy efficiency' which is one of the three targets of Framework of Chinese Taipei's Sustainable Energy policy. The policies and programs should provide useful guidance to SMEs operating in Taiwan.

According to the report submitted, Thailand seems to be relying heavily on UNIDO for greening of its industry. The UNIDO's green industry initiative launched in 2008 sets out 'greener and lessen their environmental footprint, while they (industry) continue to grow and deliver goods, services and jobs to their populations' as its main objective.' In detail, the green industry initiative aims for both 'greening of industries' and 'creation of key green industries' as two main pillars for achieving reduction of conventional pollution, waste, energy use as well as greenhouse gas emission. One of its energy programs is 'Rural(renewable) energy for SME' – which is specifically designed for greening of SMEs for reduction in greenhouse gas emission.

In 2009, President Obama of the United States agreed to contribute in reduction of global greenhouse emission by 50 percent at G8 summit. The US government then identified solar, wind, waste-to-energy, battery, biomass, renewable energy, energy efficiency and green building technologies as key industries for achieving its GHG emission reduction goal. Furthermore, the US government has set long-term goals including increasing electricity production from clean energy source to 80% in 2035, a two-fold increase from 40% today. The automobile fuel economy standard of 33.5 miles per gallon in the year 2025 is another important target for delivering GHG emission reduction. Such targets, especially increased automobile fuel efficiency improvement target will lead to development of greener SMEs as many automobile parts are manufactured by SMEs. However, it was not evident whether US government has established a green SME development roadmap.

In New Zealand the Green Growth Advisory Group is exploring options to help SMEs transition to a lower carbon economy, while sustaining the desired level of productive growth. The Group aimed to develop tangible steps the government can undertake New Zealand's green growth including advice on how to encourage greater SME participation in green growth initiatives by end of 2011.

Best Practice Report:

Korea: National Green SME Development Roadmap

A well designed national green transition roadmap serves as both a guide map and a progress tracker by defining the ultimate long-term goal and milestones that must be achieved in order to make the transition complete. Understanding importance of such roadmap, Korean government produced a national green transition roadmap with clear time line and quantitatively defined milestones, shortly after launching green growth initiative.

Major milestones of the South Korea's national green roadmap are as follows.

	2009	2020	2050	Unit
Energy intensity	0.317	0.233	0.101	toe/$1,000
New & renewable energy	2.7	6.1	30	%
Green technology investment	16	25	30	%
Resource recycling	15	17.6	19.8	%
Proportion of green export	10	22	35	%

In addition to national green roadmap, Korean government also created a green SME development roadmap with clear timeline and milestones.

Key green SME Roadmap milestones are as follows.

	2009	2020	2050
No. of SMEs participating in Large-SME green partnership program	685	2,900	9,000
No. of new green industry cluster established	5	20	45
No. of green social enterprise established	40	500	800

Korean government has also established short-term green SME goals as follows, to be achieved by 2013.

- Support creation and operation of 1,000 green technology specialty companies
- Support creation and operation of 2,000 SMEs with competitive green business management capacity

The South Korea's green SME roadmap is not very detailed as it was created as a part of the Korea's first national green transition roadmap. However, effectiveness of first version of long-term transition roadmap should be measured by what actions it has induced rather than how detailed it is or whether all the goals in the roadmap have been realized or not. In this light, the green SME roadmap by South Korean government should be considered as a best practice.

Best Practices:
The Philippines: MSME Development Policy

Under the Medium-Term Philippines Development Plan (2011-2016), the goals include:

- Pursue inclusive growth that allows the pursuit of MDGs

- Improvement of the ability of Philippine industries to be competitive in a sustainable manner
- Firm-level support to new or potential and existing MSMEs
- Improve environmental quality for cleaner and healthier environment
- Reduction in air pollution, water pollution and waste generation

The Philippines MSME Development Policy (2011-2016)

- Adopts Climate Change/Green Growth as one of its 4 Thematic Areas that will guide the development of specific strategies and action plans.
- The 4 Outcome Portfolios are the following:
  - Business Environment (BE)
  - Access to Finance (A2F)
  - Access to Market (A2M)
  - Productivity and Efficiency (PE)
- Leading to environment-friendly SMEs, products and Services

The Implementation of the MSME Development Policy follows these strategies:

1 Addressing the requirements of individual SMEs
  - 1.1 Green management and technological capabilities
  - 1.2 Harness knowledge and technology
  - 1.3 Provide technical and other business development support
  - 1.4 Strengthen linkages

2 Identifying priority sectors
  - 2.1 Fostering partnerships and networks in priority sectors

3 Improving the MSME policy and operational environment
  - 3.1 Implement green growth conducive policies
  - 3.2 Develop financing support programs

2. Area B: Financial and Non-Financial Support for Green Technology Innovation and Green Management

The second area is "Financial and Non-Financial Support for Green Technology Innovation and Green Management." As implied by the title, this area is limited to concrete government assistance given to specific green SMEs. This area is designed to look at policies targeted to specific, qualified SMEs, rather than encouraging a general environment favorable to SMEs. (The latter is addressed in the next two areas). There are five elements in this area looking at 1) R&D grants, loans and tax incentives for technology development at SMEs; 2) start-up assistance and early stage funding for green SMEs; 3) Employee training; 4) Funding for SMEs for employing existing green technologies, goods and services; and 5) IPR assistance. The first and second elements look mostly at policies aimed at green creator SMEs, while the fourth element look at policies which encourage green user SMEs. The fifth element looks at training policies and incentives for both green creators and users. This area is designed to look at a wide array of policies targeted to specific SMEs as recommended by OECD and others.

B-3: R&D Grant, Loans and / or Tax Incentives Programs for Green Technology Development by Green SMEs

This element examines whether a member economy has a financial support system in place for green R&D activities by SMEs. According to best scientific knowledge available, widespread use of even the best technologies of today do not lead to a truly green future. Therefore, a leapfrog advancement in technology, such as fluorescent light bulbs to LED lights, needs to be made in order to dramatically improve green performance of businesses. Large corporations which produce and sell a large bulk of goods and services to the global economy have strong R&D capacity and good access to funding, but SMEs often do not have access to such capacity and funds. Thus, many SMEs often lack capacity and resource to invest in green technology R&D. Further, R&D has potential for large positive spillovers, so there is strong economic justification for government assistance for R&D. Therefore SMEs with promising green technology R&D ideas would greatly benefit from R&D grant, loan or tax incentive for green technology development.

Eleven economies (Australia, China, Chinese Taipei, Indonesia, Japan, Mexico, New Zealand, Papua New Guinea, the Philippines, Peru and the United States) submitted GAPs which gave some information on this element. Some additional economies gave relevant information in their workshop presentations. However, few economies reported programs specifically targeted at green SMEs. More often, the economies operate R&D support programs which aim at SMEs in general, or technology and innovation in general, which can be utilized by green SMEs for developing green technologies,

Korea reported R&D programs specifically targeted at Green SMEs developing green technologies. For R&D grants, Small & Medium Business Administration (SMBA) has strengthened R&D assistance to green SMEs as a part of the overall national Green Technology Roadmap. Government specifically targeted nine industry sectors and 41 strategic products especially suitable for SMEs in three green-related sectors for R&D grants. The assistance is divided into three stages: Planning, R&D and Commercialization. In the Planning stage, SMBA, utilizing research cooperatives and organizations, examines the technology, prospect for commercialization and market prospect of the RFP. In the R&D stage, funds are given for innovative technology development, early stage business start-up. convergent technology development, and the greening of manufacturers. In the commercialization stage, grants are given for developing commercially viable products as well as technology transfer to SMEs. Korea also provides R&D loan support for green industries, and the government will give preference to establishing a "fund of funds" for investment in green and new growth industries as identified in the Green Technology Roadmap to encourage private investment in these industries..

China reported a program specifically to help SMEs save energy. China has set special awards to eliminate backward production capacity in the developing areas. Further, Ministry of Industry and Information Technology has proposed the improvement of financing system of SMEs for energy saving and gas emission reduction. In 2010, the Ministry formulated *the Guidelines on Further Deepening the SMEs Energy Saving and Gas Emission Reduction*, which also strengthened the guidance for the investments to this section.

Indonesia, Japan, and the Philippines are economies which reported R&D support programs specifically for green firms. Indonesia gives incentives for green procurement, tax incentive, environment subsidy, credit scheme, green trading, licensing, insurance, labeling and recognition as mandated by Environment Protection and Management Law of 2009. The Ministry of Economy, Trade and Industry of Japan has a budget for technology development to reduce greenhouse gases, which is applicable to SMEs. The

budget is used for development of energy conservation technology in the mid and long term in the following 4 phases; challenge research, leading research, practical development, and empirical research, considering the Cool Earth Energy Innovative Technology Plan. New Energy and Industrial Technology Development Organization (NEDO), an independent governmental agency, is the implementation body and acts as the project coordinator. Project term is, in principle, 2-3 years and the budget is different according to each project. Some projects are outsourced to private companies, universities, etc. In the Philippines, the Department of Science and Technology (DOST) runs the Integrated Program on Cleaner Production Technologies.

In Mexico, there is R&D Grant for SMEs, though it the program covers biotechnology, agribusiness, advanced manufacturing, as well as clean technologies and green technology development. For the last four years, the Ministry of Economy (SE) and the National Council of Science and Technology (CONACYT) have provided support to some 400 Mexican micro, small and medium enterprises (MSMEs) in order to develop projects of technological innovation and boosting growth of niche markets in areas mentioned above. There is an incentives program for research, technological development and innovation supported by Secretary of Finance and Public Credit (SHCP) and the National Council of Science and Technology (CONACYT). Within the set of policy instruments for the promotion of renewable energy, there is accelerated depreciation for investments in renewable energy allowing 100% depreciation of investments "for machinery and equipment for power generation from renewable sources".

Malaysia initiated Malaysia's National Green Technology Policy, which includes measures to increase national capability and capacity for innovation in GT development and enhance Malaysia competitiveness in GT in the global arena. To this end, the government has launched several initiatives including Renewable Energy Technology R&D Roadmap under Ministry of Science, Technology and Innovation.

Most of the other reporting economies reported that they have general R&D support programs which can be used by SMEs to develop green technologies. Australia reported several programs under this element. For R&D tax support, the Australian Government's R&D Tax Incentive program provides tax offsets to businesses, especially targeting SMEs, to undertake research and development activities such as those with a potential to develop new or improved technologies. The R&D Tax Incentive program is market-driven and entitlement-based, and does not specifically focus on any particular industry or technology sectors. SMEs can access a higher rate of support than larger companies. The program provides a 45 per cent tax offset to SMEs with an aggregated turnover under A$ 20 million per annum. If an SME conducting R&D is in tax loss, it can receive a cash refund. All other firms receive a 40 per cent non-refundable R&D tax offset for their eligible R&D expenditures. Australia's Enterprise Connect Program contains the Tailored Advisory Service (TAS) grant to build broader firm capability. The TAS grant provides matched funding of up to A$20,000 towards the cost of engaging external assistance in implementing the recommendations identified through a Business Review. The TAS grant supports businesses to improve a range of relevant areas including technical testing and validation and/or economic modelling. Australia's A$200 million Clean Technology Innovation Program aims to increase investment and collaboration in research and development, proof of concept and early stage commercialization activities that lead to the development of new clean technologies and associated services including low emission and energy efficient solutions that reduce greenhouse gas emissions. It is a competitive, merit-based, grants program. The program will provide grants of between A$50,000 and A$5 million and will contribute one dollar for every one dollar contributed by grantees Applications involving collaboration are encouraged to stimulate collaborative activity by Australian firms – collaborative activity has been found to be associated with novel or radical innovation. The program is now open for applications.

Chinese Taipei operates a wide range of R&D grants, loans, credit guarantee, and tax incentives programs for technology development, including green technology development by green SMEs, under

the general administrative and policy framework of MOEA, involving mainly such agencies as Industrial Development Bureau (IDB), Department of Industrial Technology (DoIT), and Small and Medium Enterprises Administration (SMEA). The administrative and policy framework follows the guidance of newly effected Statute for Industrial Innovation.

New Zealand does not have specific R&D grants or tax incentives for green technology development specifically, but the Ministry of Science and Innovation offers various grants to assist businesses investing in research and development, which can include green technology development. These include: *Technology Transfer Vouchers*, which help firms that lack internal R&D capability in a specific area to commission research from accredited research organizations, providing up to 50% funding towards business R&D projects; and the *Technology Fund*, which provides support for potential high growth companies to undertake R&D projects to develop new technology products, processes or services in four priority sectors: food and beverage manufacturing, biotechnology, specialized manufacturing and information and communication technologies. A number of grants are available on demand which generally provide 50% of the project's cost.

For Peru, the Presidency of the Ministers Counseling (PCM) is in charge of a Program of Science and Technology denominated "Financing for the innovation, the science and the technology –FINCyT". The Program aims to generate scientific and technological knowledge, promote innovation in businesses, and strengthen technological research capacities. The types of projects that are principally financed are those related to the technological innovation specifically for business, research projects and technological development in universities, research centers, projects dedicated to the strengthen of the capacities for the science and technology among others. Programs to promote innovation includes *The Technological Innovation Centers* (CITE), which give information for the competitive development of the different areas of the production, including information on the service of quality control and certification, advisory and specialized assistantship, and technical training. There are currently 16 private and public CITES. CITEs are innovation technological centers whose purposes are: Access to technology and innovation; Market driven; Promote regional development, productive chains and competitive clusters; Agents of Technological transference between enterprises and R&D institutions; Active presence of the private sector (direction) and; Integrated in a NETWORK - RED de CITEs. CITE provides services such as: Training & education; Consultancy; Technical Advice; Information (trends, fashion, technology); Laboratory services - quality control; Design & development of products; Pilot Plants and; Research & development partnership with universities. Another Peruvian program, the Fund for Research and Development for the Competitiveness – (FIDECOM- INNOVATE PERU) is a contestable fund that finances Projects of Productive Innovation, and Projects of Knowledge Transference for the Productive Innovation and Business Management. This Fund can co-finance up to 75% of the total amount of a project. This fund has been operating for a year and ten months, approved 53 projects and financed 47 projects related to Productive Innovation. Recently the Vice-Minister of MYPE and Industry announced the "First National Survey of the Technological Innovation of the Manufacturing Sector" through which the CITES and all of the other Ministry of Production Programs will be evaluated.

The United States reported its The Small Business Innovation Research (SBIR) program. SBIR Program is a highly competitive program that encourages domestic small businesses to engage in Federal Research/Research and Development (R/R&D) that has the potential for commercialization. Through a competitive awards-based program, SBIR enables small businesses to explore their technological potential and provides the incentive to profit from its commercialization. By including qualified small businesses in the nation's R&D arena, high-tech innovation is stimulated and the United States gains entrepreneurial spirit as it meets its specific research and development needs. Under the SBIR program, several government agencies, including US Department of Energy, Environmental Protection Agency, and the Small Business Administration maintain websites which list grant opportunities, government

programs, R&D funding opportunities and opportunities for government procurement which are open to Green SMEs. SBIR encourages domestically small businesses to engage in Federal Research/Research and Development that has the potential to commercialize; provide small businesses an opportunity to explore their technological potential; stimulate technological innovation; meet Federal research and development needs; and increase private-sector commercialization of innovations derived from Federal research and development funding. One of the 12 agencies participating in SBIR is Department of Energy, which, through an annual funding opportunity solicitation, invites small businesses to apply for grants in areas such as energy production, energy use, and environmental management. Other R&D Grant, Loans or Tax Incentive programs include: Department of Energy's Office of Energy Efficiency and Renewable Energy's Financial Opportunities, which lists grant opportunities for businesses developing energy efficient technologies; Environmental Technology Opportunity's Portal, which provides information on government programs that help fund development of new environmental technologies and offers information on existing technologies; and National Center for Environmental Research, which provides information on funding opportunities for scientific research in the environmental sciences that will improve the Environmental promotion agencies scientific basis for decisions on environmental issues.

Finally, Papua New Guinea reported a program which, unlike other reporting economies, aims to discourage non-Green companies. Its Risk Sharing Facility (RSF) provides access to credit facilities and capacity building, and the RSF under standard performance criteria will not fund environmentally sensitive areas, such as logging, due to Government's strong commitment for PNG to be a carbon stock economy

In all, we see that APEC economies run diverse R&D support programs, grant programs and tax incentives to encourage R&D and innovation. Green SMEs engaged in R&D for green technologies can easily take advantage of these programs. However, very few economies seem to operate programs specifically targeted for 'green' SMEs and the development of 'green' technologies. Rather, the programs are either more general or specific. The general programs target wider variety of technologies of which 'green' technologies are only a part of the technologies being supported by these R&D support programs. The specific programs often target a sub-set of green technologies, including clean energy and reduction of greenhouse gases. Papua New Guinea was unique in that it has a general assistance program which is not open to industries which have potentially negative effects on the environment.

B-4: Start-Up Assistance and Early Stage Funding for Green SMEs

It is often very challenging for new start-up companies to penetrate the market with green technologies and because most markets are already saturated with existing products and technologies. The challenge is also compounded by the fact that 'green' products are often designed to increase unseen long-term benefits for greater public. Such long-term public benefits do not increase marketability of the products to non-green consumers who are unaware of such benefits. Considering such negative factors, some economies believe it is sometimes imperative to implement tools and policies designed to help 'green technology' start-up companies penetrate the market and replace conventional, less environmentally-friendly technology-based products and businesses. Governments interested in fostering of green start-up companies can consider implementing support measures such as free consultation services, venture incubation as well as financial assistance measures such as venture capitals and tax exemption. In this element, we examine various monetary and non-monetary assistance given to start-up green creator SMEs or green creator SMEs in early stages of development.

Nine member economies (Australia, Chinese Taipei, Indonesia, Korea, Mexico, New Zealand, Peru, Philippines, United States) gave information concerning this element. Four economies (Brunei Darussalem, China, Japan, Papua New Guinea), which submitted GAPs, included no information on this particular element. Some additional economies included information in this element in their workshop presentations.

Only Australia, Indonesia, Korea, and the Philippines reported programs specifically targeted for Green Creator SMEs, that are SMEs which create green technologies and green products. As part of its Enterprise Connect Program, Australia maintains the *Clean Technology Innovation Center*, one of a national network of Centers that provides tailored support to eligible Australian SMEs. The Clean Technology Innovation Centre assists Australian SMEs in the clean technology sector. This includes firms involved in:

- the generation of energy from renewable and low carbon sources such as solar, wind, wave, tidal, low emission coal, biofuels and cogeneration
- commercial and industrial water, solar hot water, desalination and water efficiency
- the development and supply of methods, equipment and technology used to reduce energy demand or increase energy efficiency
- environmental technologies and services in waste management, recycling, environmental assessment, monitoring and remediation.

The first level of service offered is a Business Review which is provided at no financial cost to the firm. The Business Review is a comprehensive analysis of the firm, carried out on site by skilled and experienced Business Advisers. The Clean Technology Innovation Center further provides a range of services designed to link firms in the clean technology sector to new ideas, technologies and markets. The Enterprise Connect program also maintains the *Clean Technology Innovation Network*, which brings Business Advisers with specialist knowledge of clean technology together with companies and researchers. The network works with SMEs on ways to cut energy, water and material use; plan for change; and adopt new technologies that will help reduce their environmental impact.

Korea has several programs in place to assist green creator SME start ups, and provide funding to green SMEs. Korea has initiated "Entrepreneurial Leading Universities" and "Entrepreneurial Nurture" programs, which encourage selected universities to offer courses on green entrepreneurship and green business start-ups as well as provide space for green start-up companies in or near universities. By 2011, a total of six universities will be selected as leading universities, and three universities will be selected for

the nurture program. For start-ups located in the areas under the nurture program, registration taxes will be waived, property taxes will be reduced, and these start-ups will be eligible for stream-lined factory establishment procedures. Also a quota for SME guarantees for green SMEs is in place. For those SMEs which has been certified as having green hi-tech, their guarantee can be as much as 10 billion won. Further, Ministry of Finance and Planning's 2010 Tax Reform contained measures to support low-carbon green growth agenda including an expansion of tax exemption for green technology R&D. For green technologies, the R&D tax exemption is higher than non-Green technologies, at 20% of investment in general, and 30% for SMEs.

Indonesia provided revolving fund to Cooperatives in operating renewable energy production (micro hydro) and initiated CSR programs of selected government owned companies (Bank Mandiri) in the form of grant and soft loan for SMEs engaging in green industries. Indonesia also has created a "Green Business Center," which acts as an incubator for green creator SMEs, in collaboration with Korean government, as a part of its effort to foster green SMEs. Indonesian government provides office space and support for helping tenant companies access financial resources in Indonesia. The Korean government is responsible for managing of the center and providing expertise as well as access to Korean financial sources. The operational cost and support for accessing local and international market opportunities is provided by both parties. Basic role of the Green Business Center includes: incubation (green technology upgrading, financing, and marketing), transfer of knowledge, transfer of green technology, and business partnership on green business undertaking. GBC plan to start in operation in 2012. Activities of Green Business Center includes: Public campaigns, international seminar on green technology to share policy initiatives, technological expertise and best practices of Korean and Indonesian companies, and institutional setting (facilities and man power for 2012 operation).

Micro-SME (MSME) Program of the Philippines includes Clean Development Mechanism (CDM) projects, which improve access to finance for alternative energy and energy efficiency projects. Micro SME (MSME) Development Strategy (2011-2016) includes goals of developing green management and technological capabilities, harnessing knowledge and technology, providing start-up support and strengthen linkages between "green champions" and other firms. Technical programs in support of green technologies include R&D funding support, technology piloting and commercialization support, IPR assistance, and Environmental Technology Verification (ETV) for technology generators. The program also includes consultancy on Cleaner Production (CP) technologies, energy efficiency audits, commercialization support for green technologies, and Green standards certification and other support for technological adopter SMEs.

In the United States, through the Small Business Administration (www.sba.gov) and other agencies such as the Department of Energy and the Environmental Protection Agency, start-up consultations are free. For example, The Department of Energy provides a Loan Guarantee Program through which businesses can apply for loans via private commercial lenders. The Loan Programs allow the Federal Government to share some of the financial risks of projects that employ new technologies that are not yet supported in the commercial marketplace or where private investment has been inhibited. U.S. agencies such as the U.S. Export-Import Bank (ExIm), the Overseas Private Investment Corporation have worked on streamlining their processing of RE&EE financing to shorten the amount of time it takes companies to access credit, which increases the ability of U.S. companies to close export deals. Also, ExIM has developed a Renewable Energy Express Program to provide streamlined post-completion project financing to small renewable-power producers that meet Ex-Im Bank’s credit standards. Ex-Im Bank has launched the initiative to meet the increased demand for financing of small renewable-power transactions. Both ExIm and OPIC have also dedicated more financial resources towards green development.

US Small Business Administration is offering Green Government Opportunities (GGO) for Small Businesses. The program seeks to connect green SMEs with other members of the green small business community, allow green SMEs to browse active federal prospects, find RFPs and SBIR, STTR and ONR grants and search for these prospects using filters important to small businesses, such as type of technology or opportunity type. Small Business Innovation Research (SBIR) Program encourages domestically small businesses to engage in Federal Research/Research and Development that has the potential to commercialize; provide small businesses an opportunity to explore their technological potential; stimulate technological innovation; meet Federal research and development needs; and increase private-sector commercialization of innovations derived from Federal research and development funding. One of the 12 agencies participating in SBIR is Department of Energy, which, through an annual funding opportunity solicitation, invites small businesses to apply for grants in areas such as energy production, energy use, and environmental management.

US 2009 American Recovery Act allocates substantial funds for green-related technologies to modernize the way the nation produces, transports, and consumes energy. The program allocated $80 billion for a clean energy future, with funding dedicated to renewable electricity, energy efficiency, transportation, carbon capture and storage, grid modernization, and science and innovation. Congress entrusted the Department of Energy (DOE) with $36.7 billion in appropriations and $6.5 billion in power marketing administration borrowing authority. Other Examples of American Recovery Act Allocation of funds include funding for smart grid technology, low-income home weatherization projects, green federal buildings, state and local renewable energy and energy efficiency efforts, green job training programs, and competitive grants

Other programs include Department of Defense programs such as Navy fleet goal to run on bio-fuels, and Air Force program to use renewable energy such as wind turbines. Obama Administration's energy programs include measures to increase domestic oil and natural gas production, get better mileage for cars (average of 35.5 miles per gallon for model years 2012-2016), improve transportation by encouraging reductions in the cost of electric vehicle battery, encouraging the use of electric cars, investing in cleaner public transit bus fleets, reducing barriers to increased use of bio-fuels, commercializing new technologies such as bio-refineries. and increasing renewable electricity generation so that the percentage of electricity generation using clean energy will increase from 40% to 80% by 2035.

Malaysia reported its initiatives to encourage start-ups and investment in a single green industry, namely, the solid state lighting (SSL) industry. Malaysia has targeted twelve 'New Key Economic Areas,' which are defined as drivers of economic activity that has the potential to directly and materially contribute a quantifiable amount of economic growth to the Malaysian economy, one of which include development and dissemination of solid-state lights as a priority program. Through its SSL Champions Initiative (EPP10), Malaysia seeks to replace inefficient lighting technology products such as incandescent lights into more efficient lights, mainly LED. The LED/SSL initiative is carried out by public sector organizations including Pemandu, Greentech Corp, NCER and FMM/Associations with private sector participants of SSL/LED companies based in Penang. The Malaysian Government announced it will stop all production, import and sales of traditional incandescent light bulbs by 2014. There are multiple LED/SSL related programs with particular focus on EPP 10. The program module aims to nurture at least 5 local SSL companies into global champions in technology and manufacturing and identify business opportunities for domestic companies in LED value chain. The Malaysian government plant to evaluate SSL/LED companies based on survey outcomes & score rating and assists promising SMEs to become LED/SSL champions in increasing automation in their factories, incubating Innovation and R&D and obtaining relevant certifications to access the global market. Financial assistance for selected LED/SSL companies takes place through funding for the development or improvement activities of commercially viable SSL products, and funding of activities which are focused

in providing partial / matching grant through improvements in manufacturing equipment, testing, processes or monitoring techniques, to obtain international certifications as well as doing market feasibility.

Most economies reported start-up assistance and funding programs which are eligible for all SMEs including Green SMEs. Australia reported its Commercialisation Australia program, which is a competitive, merit based assistance program offering funding and advisory support to accelerate the business building process for Australian companies, entrepreneurs, researchers and inventors. The initiative aims to convert intellectual property into commercial ventures, creating high skill jobs and increasing Australia's global competitiveness. Commercialisation Australia supports eligible and meritorious projects to commercialize new products, processes and services across all industry sectors and technology domains. . Commercialisation Australia offers a range of funding options exist for participants at various stages of commercialization. Support includes funding for proof of concept, early stage commercialization, obtaining specialist skills and knowledge from third party service providers and engaging an experienced senior executive. Advisory support includes tailored assistance from Case Managers, who are experienced business builders that guide participants through the commercialization process, and also link participants to Volunteer Business Mentors who can help them make the right business connections and linkages. Commercialisation Australia is monitored according to Key Performance Indicators which are designed to reflect the impact the initiative has on participants converting intellectual property into commercial outcomes as well as monitoring benefits to the broader community.

Chinese Taipei reports that it has been building up several regional resource integration centers for the general development of local startups to accommodate green entrepreneurial development. For example, Incubation Network for Green Industry. Startups for green businesses may seek help from specific programs for such development, advisory groups or consultant services and credit support programs. Similarly, New Zealand has no start-up assistance or early stage funding specifically for innovative green SMEs, but it has general assistance,, which qualified green SMEs may be able to access, including: free information, advice and support for businesses through a network of regional business partners; business incubators, which assist technology-based and export potential businesses to become established during their start-up phase; and venture capital and seed funding, which is invested alongside private sector co-investors in high-growth potential companies.

Peru's support programs are targeted at technological innovation, which includes green technologies. In Peru, the enterprises, small or medium, count on the Centers of Technological Innovation, which offer following services (among others): Technical Assistantship and assistance to the technological enterprises needs; constant formation of promoters or technicians through the organization of workshops, courses, seminars, programmed instruction; processing and diffusion of the documentation and technical information and others of interest for the enterprises; advising projects so they can reach a higher productivity, incorporate new raw material, mechanisms of control and handling the environment; and providing essays, analysis, certification and conformity the standard technical norms and specifications of inputs, products, fabrication and presentation processes and others. In Peru a financial assistantship is not established in the national regulation. However, through *FIDECOM-INNOVATE PERU*, projects that have the finality of promoting the research and development of productive innovation of practical usage in the enterprises are financed.

Mexico has no government programs, but it does have private entities which support green technology start-ups. Mexico reports that it has no official free business consultation services for green technology companies, and there is no policy, that is applicable for business incubation support for green technology companies. but there are private business incubation support organizations with mission to start-up

assistance for funding only green technology companies. Also, there is one government-backed venture capital set aside for investment in green technology companies.

Finally, Korea has reported a somewhat unusual assistance to SMEs. Whereas most reports concentrated on assistance to green creator SMEs which create new technologies, Korea reported an initiative to help SMEs make their production greener, and help make them green user SMEs. The Korean government supports the use of low-carbon, highly energy-efficient, and environmentally-friendly manufacturing methods by SMEs through programs for developing technologies which foster "Greening of Manufacturing." The project supports the development of technologies which will help transform existing high-cost, energy-inefficient, polluting manufacturing processes into environmentally friendly and sustainable processes. As a part of this program, approximately 30 billion won has been allocated for cooperative technology development projects developed between public research institutions and SMEs; and 10 billion won for technology development projects proposed by SMEs. The goal of this program is to develop SMEs which utilize green management and can fulfill international environmental standards and regulations. To augment the program, a technology demand survey has been carried out for cooperative technology development projects to help select which projects deserve assistance.

In this element, we saw a wide variety of policies, arranging from assistance policies targeted specifically at start-up green SMEs to assistance policies targeted at start-ups in general, and assistance to green technologies in general. These policies are generally aimed at SMEs which research and create new green technologies and products, in short, green creator SMEs. While there are various policies in place on the supply side of green products and services, economies have not reported much on policies in place to support the demand side of green products and services. While Korea has reported financial assistance for SMEs to become green users, most member economies seem to be utilizing laws and regulations to impose some type of obligations for using green technologies or products (e.g. banning or limiting the use of non-green alternative products).

B-5 Greening the Workforce

All companies make investment in employee training in order to increase productivity of the workforce they employ. Since companies are motivated to invest in training of their workforce, case for government support by private sector workforce is not very strong. However, there is a strong case for government of member economies for investing in government-sponsored workforce training program with focus on green skills, environmental awareness and motivation building for following reasons.

First, green transition requires workforce equipped with different sets of skills that are under-utilized in the market. For example, greenhouse gas emission accounting and ecological impact assessment are considered as non-essential skills in many member economies, despite their importance in wider environmental and economic context.

Second, green transition is a fundamental shift over a long period of time and such long-term transition cannot happen unless it is backed by a strong and capable workforce with strong understanding on imperative of the change.

Third, it is also important to offer a high quality program that cultivates green motivation of employees. For some people, motivation comes naturally with good understanding of an issue. However, majority of workers are not likely to be motivated to take career risk for future benefits of public by entering green industry. Therefore, it is important to provide trainings and classes with focus on boosting motivation of employees to participate/lead on green transition.

Fourth, government-sponsored job training for SMEs is particularly important because SMEs often lack resource and capacity to train their employees even on conventional business issues and skills.

Thirteen economies reported relevant information on green workforce training programs. Among the thirteen economies, eleven economies reported on programs focused on dedicated green skills training. The remaining two, Papua New Guinea and Peru reported on job skills trainings which were relevant to greening of SME operation although they were not created for achieving such objective. The member economy responses are summarized in <Table B5-1>.

<Table B5-1> Reporting Economies for Element B-5

Dedicated green skills training program	Relevant skills training program for green growth
Australia	Papua New Guinea
China	Peru
Indonesia	
Republic of Korea	
Malaysia	
Mexico	
New Zealand	
The Philippines	
Chinese Taipei	
Thailand	
United States	

Many of the training programs were focused on GHG emission reduction through improving energy efficiency and green management, indicating their emphasis on greening of their existing SMEs. However

some member economies had training programs designed to foster workforce in new green businesses. For example, Korean government agencies had programs on training expert workforce in solar and wind energy businesses, which are strategically supported by Korean government as new driver for economic growth.

The scope of education varied from industry-specific training found in New Zealand to comprehensive society level education found in Malaysia, where multiple ministries are involved for education in public schools, universities and training institutes that belong to other ministries. It is also noteworthy how some training programs were created by state governments in economies such as the United States and Australia. Some economies focus on SMEs that meet specific criteria. For example, Chinese government targeted managers of SMEs that utilize more than 5,000tons worth of energy per year for green management skills improvement. Such targeted approach could be beneficial as it potentially could lead to greater emission cut per investment made in green skills training.

Summary of information on green skills training of each member economy is as follows.

The following members reported on having dedicated green skills training programs.

The *Green Skills Agreement* of Australia is a partnership between the federal, state and territory governments and was endorsed by Council of Australian Governments on 7 December 2009. The agreement is building the capacity of the vocational education and training (VET) sector to deliver the skills for sustainability required in the workplace that will enable individuals, businesses and communities to adjust to, and prosper in, a sustainable, low-carbon economy. The objectives of the *Green Skills Agreement* are as follows.

- Developing national standards in skills for sustainability within the requirements of the national regulatory framework;
- The up skilling of VET practitioners so they can provide effective training and facilitation in skills for sustainability;
- The strategic review of Training Packages which specify the skills and knowledge required to perform effectively in the workplace, to embed sustainability knowledge, skills and principles;
- Implementing a transition strategy to re-skill vulnerable workers.

In addition, the Clean Energy and Other Skills Package will deliver up to A$32 million over four years to enable trades people and professionals in key industries to develop the skills needed to deliver clean energy services, products and advice to Australian communities and businesses. Similarly, the Enterprise Connect *Making Better Managers* Program is designed to lift management skills by improving the general management and leadership skills of client companies. The objective of the program is ‘to seize new business opportunities in climate change adaptation and mitigation and create new jobs in green manufacturing.’

Establishment of comprehensive green jobs and hiring of energy management professionals is one of the key goals of China’s eleventh National Economic and Social Development plan. Focusing on more efficient use of fossil fuel and GHG reduction, the training program targets ‘SMEs with annual energy consumption over the equivalent to that provided by 10,000 tons of standard coal, and those who have been assigned by the provinces and whose annual energy consumption over the equivalent to that provided by 5,000 tons of standard coal’

Indonesian government provides more comprehensive green skills training for SMEs on topics including designing greener product, technical workshop on clean production e.g. natural coloring for batik.

Korean government has created several green skills training program tailored for growing demand in green SMEs as follows.

- Green academy by SMBA
- Training of core green tech (solar and so on) experts
- Green technology expert certification scheme
- Climate change –related degree programs at graduate schools

Malaysian government has taken a comprehensive approach to educate young students, college students and existing workforce in collaboration with relevant institutes. For example, it is facilitating the development and integration of green topics/courses into the education syllabus and institutes of higher learning in collaboration with other ministries and agencies including Ministry of Education, in charge of elementary and secondary public schools and Ministry of Higher Education, in charge of universities, colleges and polytechnics. Moreover, Malaysian government is working with several ministries to integrate green topics into the curriculum of skills training of following institutes.

- Ministry of Human Resources
- Ministry of Youth & Sports
- Ministry of Tourism (Eco-tourism)
- Ministry of Rural and Regional Development

In Mexico, the National Council of Science and Technology (CONACYT) is encouraging establishment of training programs for green SME employees in Mexico. For example, CONACYT, in cooperation with German government, has sponsored one year training program that specialize in technology cooperation for promotion of energy efficiency and application of renewable energies in Mexican companies. In addition, the Ministry of Education and Universities has launched programs to train specialized professionals for emerging green companies in Mexico.

New Zealand's Energy Efficiency and Conservation Authority (EECA) is currently developing industry-specific training program with the following organizations:

Energy Management Association of New Zealand	Training and accreditation program focusing on electricity management and efficiency in commercial buildings aimed at facilities managers and commercial building energy specialists.
Institute of Refrigeration, Heating and Air Conditioning Engineers of New Zealand Inc	Online training courses to improve electricity management and efficiency in the refrigeration, air-conditioning and heating services industry. An energy efficiency certificate is issued to attendees who complete the course, and building owners are encouraged to look for service companies with staff holding this level of certification.
Energy Efficiency and Conservation Authority	General guide to help businesses design their own energy awareness and motivation program for staff, getting them involved in managing their energy consumption

The MSME development strategy of the Philippines has objectives including "development of green management and technological capabilities' and 'harnessing knowledge and technology' However, details of training programs established for achieving the objectives could not be found.

Master Plan of Chinese Taipei for Energy Saving and Carbon Reduction includes energy saving and emission reduction education. In addition, Chinese Taipei government also has implemented talents training program through holding related summits, seminars and providing green trade related training courses, with aim of promoting green trade competitiveness. Furthermore, Bureau of Foreign Trade (BOFT) and MOEA also invite international organizations and private companies to share their green trade experiences for capacity building of local SMEs. There are also ongoing programs to assist domestic

scholars & experts to participate in green trade related conferences & activities. The BOFT and MOEA also maintain Green Trade Website which provide information on regulation and certification, which could be employed as green skills training materials.

UNIDO, which is leading green industry initiative in Thailand, identified 'removal of gaps in the industrial sector's knowledge and skill set' as one of the Green Industry Initiative focus areas. In addition, it identified 'Create new skills and capacity' as one of the key benefits of its green industry initiative. Therefore, it can be assumed that some investment is made in training of green workforce in Thailand. However, it is not clear what kind of specific training programs are offered in Thailand according to the GAP report by Thailand.

Green Jobs Act of 2007 of the United States authorized $125 million per year to create an Energy Efficiency and Renewable Energy Worker Training Program for workers in construction of energy efficient buildings to manufacturing that produces sustainable products. More recently, the 2009 American Recovery Act, which aims to modernize the way the nation produces, transports and consumes energy, has led to investment of $600 million dollar in green job training programs. For example, US Department of Labor received $100 million in green jobs training grants through the American Recovery Act. In addition, the Energy Training Partnership Grants provides training and placement services in the energy efficiency and renewable energy industries. There are also state level green job training initiatives. For example, The New Jersey Department of Labor and Workforce Development created Green Job Training Partnership Program for training of entry-level workers in energy-efficiency projects.

Two members reported on having relevant green skills training program

Human capital development, gender, youth and people empowerment is one of the seven pillars of Papua New Guinea's Vision 2050. However, green SME workforce training program was not established, largely because SME itself is quite small.

Center for Technological Innovation of Peru has been providing skills training program aimed at improving productivity and product and process quality management capacity of SMEs. and In 2010, 13,512 workers from 5,006 companies attended training programs that lasted 12 to 25 hours. Although the training programs are not designed for greening of SMEs, they have potential to improve greenness of Peruvian SMEs as many of the skills required for improving productivity and quality management may lead to improved environmental performance of SMEs by reducing waste and energy use.

Best Practice Report
Mexico: International Leadership Training

Mexico reported its International Leadership Training program, a joint program of Mexico and Germany.

The program is a cooperative effort between Consejo Nacional de Ciencia y Tecnologia (CONACYT) of Mexico and Gesellschaft für Internationale Zusammenarbeit (GIZ) of Germany. The program aims to promote renewable energies and energy efficiency projects for changing processes in Mexico. GIZ offers international leadership training in more than 20 sectors. The training involves 12 months training in Germany.

The Mexican participants deepen their professional know-how of Green technologies and leadership by coming in contact with Green institutions and companies in Germany. The participants of the program must work out a transfer project to be implemented in Mexican companies once they have returned to

Mexico. GIZ offers consultancy services during the implementation phase of these programs. The program has resulted in the establishment of five Green SMEs in 2010 and the program has demonstrated that it is highly relevant in terms of qualifying experts as they collaborate as consultants in development of Green policies.

B-6 Green Renovation (Greening of Existing Businesses)

This element examines use of policy tools designed to overcome financial barrier in employing existing green technologies, goods and services by SMEs.

According to many experts, energy efficiency improvement technologies have great potential to lower greenhouse gas emission and bring economic benefits over long run. Similarly, there are many green technologies that may significantly reduce pollution that cause serious impact on environment and local communities. However, potential of such technologies are not fully realized because the benefits are realized over many years while requiring significant investment early on.

This is especially true for SMEs which often have limited access for funding required for investment. In addition, SMEs also often prefer to maintain status-quo operation as they have less control over interruption in production activities faced with buyer demand and high competition. As a result, most SMEs have a more conservative and cautious approach in incorporation of new technologies.

UK government, for example, identified such lack of financial resource as a key barrier to wide uptake of green technologies and services by SMEs and created a zero-interest loan scheme with maximum payback period of four years by Carbon Trust, a government-funded not-for-profit company with focus on accelerating low carbon transition of UK companies. Such loan support for employment of green technologies (i.e. purchase of new equipment with improved energy efficiency) is especially useful in accelerating green transition also because such financial tool can create positive feedback effect with faster uptake of new green technologies and create stronger market demand for green technologies.

Fourteen economies reported on programs and policies established for supporting green renovation of existing SMEs, such as loan scheme for purchasing of green equipment and facilities and SME outreach and provision of green potential assessment services. Among the fourteen economies, ten economies reported on programs focused on dedicated support program for greening of existing SMEs. The remaining four economies, Australia, Indonesia, Papua New Guinea and Peru reported on green renovation programs relevant to greening of existing SMEs. The member economy responses are summarized in the <Table B6-1>.

<Table B6-1> Reporting Economies for Element B-6

Dedicated support program for greening of existing SMEs	Relevant support program that may contribute to greening of existing SMEs
China Japan Republic of Korea Malaysia Mexico New Zealand The Philippines Chinese Taipei Thailand United States	Australia Indonesia Papua New Guinea Peru

Most of the support programs were focused on GHG emission reduction through improving energy efficiency with some programs supporting employment of renewable energy. This indicates wide-spread

acceptance of GHG emission reduction and efficient energy use as core of green SME operation. Some advanced economies subjected to international agreement on greenhouse gas reduction, such as Japan, had subsidy program which reward SMEs that achieved GHG emission reduction. Furthermore, some economies such as Mexico have already achieved substantial GHG emission reduction through government-led green renovation of businesses.

Many of support programs were not specifically designed for supporting SMEs. For example, United States had policy on promoting local renewable energy and energy efficiency effort as a part of its American Recovery Act with budget of $6.3 billion. In fact, most of support programs did not limit beneficiaries to SMEs but all range of businesses that could deliver project objectives. Korea, once again reported on SME-specific support schemes for green renovation activities such as special loan for purchase of energy efficient equipment. However, it seems logical to design support schemes that are accessible to all sizes of businesses especially if the schemes are designed to deliver reduction in energy use and greenhouse gas emission.

Following member economies reported dedicated support programs for greening of existing SMEs.

Chinese government is providing support for building information platform for green technologies available. Furthermore, it has created a technology equipment catalogues of energy saving and emission of both greenhouse gas and conventional pollutant reduction in key industries and support SME technology reform through following activities.

Boiler renovation	Energy system optimization
Comprehensive management of consumption of resource	Cleaner production

The Chinese government also sponsors conferences on technologies and products for energy and gas emission reduction in order to promote large-scale uptake of such products and technologies by SMEs

Faced with internationally binding GHG emission reduction target, Japan has a range of policies for supporting green renovation of SMEs with focus on GHG emission reduction as follows. (Detailed information on each support program can be found in the GAP report)

Subsidy for SMEs based on CO_2 emission reductions	Subsidy for equipment replacement cost
Tax benefit for energy reform	Tax incentive on green investments

Korean government has established several support measures designed to encourage green renovation of existing SMEs as follows. (Detailed information on each support program can be found in the GAP report)

- Special loans and preferential loans for green SMEs
- Excellent green biz certification program
- Loan for investment in green facilities

Malaysia is operating the Green Technology Financing Scheme which benefits both green technology producers and green technology users. The scheme allows a maximum of 10.0 million RM per company that uses green technology for maximum of 10 years. Although the funding itself comes from private financial institutions, government reduces the burden on green technology users by subsidizing the companies with monthly interested payment which effectively reduce interest rate by 2%. The implementing government agency also provide loan guarantee of up to 60% of approved amount.

Mexican government has established Electrical Power Savings Trust Fund (FIDE), Federal Electricity Commission (CFE) and Energy Ministry (SENER) in order to accelerate uptake of green technology products with high energy efficiency. For example, FIDE provides various free assessment services that identify areas of improving environmental performance of companies. In addition to assessment service, FIDE also administer financial support for purchase of small energy efficient equipments and cogeneration system for manufacturing companies, using funding from the Mexican government. According to the GAP report, FIDE's action between January and August of 2010, resulted in saving of 435.69GWh of electricity, leading to reduction of 290,786 tons of CO2 emission.

New Zealand's Energy Efficiency and Conservation Authority(EECA) provides grants through the 'Energising Business Funding' program to eligible businesses spending under $250,000 annually on energy, who wish to identify and implement energy-saving technologies or renewable energy products. The Maximum amount of the grant is 33% of the cost of identification or opportunities and implementing the project, to a maximum of 10% of annual energy spend per site.

The Philippines government provides consultancy on cleaner production (CP) technologies and audit on energy efficiency. Environmental Technology Verification (ETV) and 'Green standard certification' program also contribute to promoting technologies that may contribute to greening of existing SMEs.

Chinese Taipei government offers consultation services with Green Trade guidance to companies including SMEs. In addition, a green trade advisory committee which consists of experts from government, academia and industry makes policy suggestions and select green products and services. Although the policies focus on provision of information rather than financial subsidy, they could be useful for SMEs looking for guidance on ways to improve their environmental performance.

According to the GAP report submitted by UNIDO Thailand, there are two on-going projects in Thailand namely Industrial Energy Efficiency and ISO 50001 with Ministry of Industry ($3.62m) and Demonstration of BAT/BEP in Fossil fuel fired Utility and Industrial Boilers (regional project: $4m for six countries). It is plausible that these two projects may lead to greening of SMEs in Thailand. Another project titled 'Greening Economy through Low Carbon SMEs Development in Thailand' ($2m) is also in pipeline. Although information on the project is limited, this project should lead to greening of existing SMEs with focus on carbon emission reduction.

The 2009 American Recovery Act of the United States led to allocation of $6.3 billion in local renewable energy and energy efficiency effort. Although, the fund is not ear-marked for supporting greening of SMEs, it is plausible that some of the funding would be spent on greening of existing SMEs, leading to reduction in GHG emission. In addition to financial support, Environmental Technology Opportunity's Portal offers information on existing green technologies, which could serve as reference for SMEs looking for green technologies for implementation.

The following members reported on support programs that have potential to contribute to greening of existing SMEs.

The Australian government has the Enterprise Connect Clean Technology Innovation Network which has elements focused on connection of the existing SMEs. The network brings Business Advisers with specialist knowledge of clean technology together with companies and researchers. The advisers then work with businesses on ways to cut energy, water and material use; plan for change; and adopt new technologies that will help reduce their environmental impact. The Australian Government is also delivering a A$1.2 billion Clean Technology Program to help improve energy efficiency in manufacturing industries and support research and development in low pollution technologies

Indonesia has policies in place designed to mobilize private financial institutions by establishing a framework on Green Banking Policy aimed at improving bank's capacity to serve and manage risk related to green industries.

Papua New Guinea together with other rainforest nations is currently working to create mechanism for Reduction in Emissions from Deforestation and Forest Degradation including conservation (REDD+) According to the GAP report, PNG expect development of REED+ mechanism to accelerate appropriate SME policy formulation and create enabling environment for SME promotion and development with emphasis on low-carbon growth.

Although Peru does not have a specific financial support programs for companies that aims to green its operation, it offers financial support for business innovations that lead to improved productivity. There are other elements that contribute to greening of existing SMEs. For example, private banks such as San Salvador Scotiabank requires enterprises to comply with all environmental laws and regulations and 'not to use the funds of the present credit in activities that damage environment or that transgress the standing national legislation on this matter' Peru has also introduced three best practices reports where the government and SMEs cooperate to make certain industries green.

Best Practice Report
Peru: Center of Technological Innovation of Leather, Shoes and Similar Industries (CITECCAL)

On November 2, 1998, Center of Technological Innovation of Leather, Shoes and Similar industries was opened whose function is to promote the innovation in the chain of leather and footwear, provide specialized services research in laboratories, testing and quality control certification and training trainers and consultants to spread of knowledge.

In this regard, the center provides advice to small and medium enterprises in the process of leather tanning, because they need to improve their processes, technologies and knowledge for a cleaner tanning. That is because in Peru tanning activity is particularly complex by the use of poor technology and little investment, generation of large amounts of toxic waste, low-skilled workers, lack of environmental awareness, low profitability due to low export for non-compliance with environmental requirements, among others. It should be noted that those features are in direct opposition to the trend in other countries, about manufacture environmentally friendly products, to comply with the allowable levels of chromium VI, mercury, lead, cadmium, use biodegradable products where possible, reduce as far as possible the amount of waste, among others. Consequently, if we keep doing business as usual our small and medium enterprises will be suffer the risk of being out of the international markets and thus jobs of 100 thousand people.

In this sense, considering such aspects, CITECCAL has been teaching companies related to leather tanning more about the environmental technologies process, in order to make improvements through the implementation of cleaner production techniques, such as reduction of water consumption, reduction of salinity in the wastewater and solid waste, chemical optimization, recovery and recycling of toxic materials, among others, what has been reflected in economic and environmental profits.

Therefore, small and medium enterprises that have adopted eco-efficient behaviors minimize production costs, improve their processes which are reflected in the quality and finish of the products,

increase productivity and comply with the environmental requirements that markets today demand, thus obtaining a green growth.

One aspect that remains to be done in the short term, is promoting the formalization of small and medium enterprises related to this activity in particular, with the consequent incorporation of environmental measures embodied in an instrument of environmental management.

Best Practice Report:
Peru: Energy Efficiency Program for Handmade Bricks - EELA

It is a program of the Swiss Agency for Development and Cooperation (SDC), implemented by Swiss contact in seven countries of the Region. It seeks to contribute to mitigating climate change thorough reducing emissions of greenhouse gases (GHG) emissions from the brick Latin American crafts and improve the quality of their life. The program in Peru is coordinated directly with the Ministry of Production.

In that sense, to achieve that purpose, this program promotes energy technology and processes more efficient furnaces seeking a 30% improvement, and the use of cleaner fuels, which contributes to reducing greenhouse gases.

Currently, the program has been running en San Jeronimo, Cuzco, where will be built a pilot oven of a single camera, vaulted and chimney that improves energy efficiency of conventional ovens up to 40%, obtaining the handmade brick an increase of 10%. That experience will be promoted and replicated in other places in Peru.

Similarly, it promotes the highest and best use of fans for firing ceramics, as well as, the widespread use of carbon or other (wood, sawdust) in this process, aside rubber and plastic that are highly polluting. Additionally, advises on the optimization the mix to improve the quality of the ceramic to comply with legislation about building materials.

It should be noted that this program goes with permanent coordination with the Ministry of Production, which must implement policies that promote the formalization of the handmade bricks, to which shall, in coordination with other entities such as the Ministry of Economy and Finance, the Ministry of Environment, International Organizations, elaborate a national diagnosis brick, so that progressively adopt these innovations in the development process of the bricks, and achieve the development of small or medium-sized eco-efficient.
In this regard, it is important to mention that this sector through the Directorate of Environmental Affairs of Industry, within the framework of EELA, has been developed workshops for handmade brick, which are mentioned below:

- North and South Regional Workshops: "Exchange of experiences handmade brick Manufacturing Sector" in the North and South, with the aim of promoting the exchange of experiences on the topics of brick oven models and production of brick and disseminate guidelines good practices and environmental standards and formalization.

This was held two macro regional workshops brick, the northern macro composed by departments of Piura, Cajamarca, Lambayeque and La Libertad, and the southern macro by the departments of Arequipa, Cusco, Puno and Ancash. The South macro-region workshop was held on May 26 and 27, 2011 in the

city of Arequipa. The northern macro region workshop was held on June 16 and 17, 2011 in the city of Chiclayo.

- National Workshop on "Capacity Building on Environmental Regions", with the aim of strengthening the capacities of regional governments officials and sensitize these officials in the Energy Efficiency Program - EELA that is being implemented in Cuzco. The workshop was held on September 9, 2011 in the city of Lima.
- Workshop: "Environmental Framework for handmade brick in the levels of government" (National, Regional and Local), with the aim of analyzing the environmental regulatory framework of handmade brick for facilitate their coordination and harmonization in the various levels of government. The workshop was held on August 22, 2011, in the city of Cusco. It should be noted that on October 19, 2011, was held the second workshop related to review the regulatory framework.

Additionally, this program has the objective to develop a methodological proposal for the carbon market entrants of the handmade brick sector, incise on the responsible organizations for effective institutionalization of handmade brick sector policies, promoting appropriate management models of energy efficiency according to national legislation conditions, promote capacity building in the handmade brick business and craft service providers to be included in the value chain and promote the exchange of knowledge and experience.

Best Practice Report
Peru: Strengthening the Chain of Calcium Oxide at the Lesser Town Center Asacra Familia, District of Simon Bolivar – PASCO

The Directorate of Environmental Affairs of Industry, is conducting a pilot intervention in the activity of calcium oxide production in the Lesser Town Center Sacra Familia, where he has identified the serious problem of pollution generated in the manufacture of the this product.

It should be noted, that the achievements reached in the Lesser Town Center Sacra Familia, will be replicated in other regions and will highlight the importance of intervention methodology to solve the specific problem of contamination and the strengthening of the productive chain, what is achieved through the implementation of various components.

In that sense, it requires more information on good manufacturing practices for the production of calcium oxide, for it shall be the following steps:

- Validation of clean production systems and environmental management.
- The installation of a demonstration module for clean production systems.
- The development of the Guide of good manufacturing practices for production of calcium oxide.

It will also require appropriate monitoring and control of the productive activity of calcium oxide, for which it shall:

- Training for the promotion of marketing management systems in supply chains.
- Business roundtable to facilitate the execution of buy-sell agreements directly.
- Training in the formalization of the productive activity of calcium oxide.

In this regard, it is important to mention that the sector through the Directorate of Environmental

Affairs of Industry has developed several training workshops, divided into modules, the first of which took place on 28 September 2010 and the second on October 9, 2010. Similarly 10 and December 11, 2010 conducted the workshop in good manufacturing practices in the production of calcium oxide, in order to establish with the producers a business plan for implementing good practices in production of calcium oxide and lay the groundwork to start a program of cleaner production.

B-7: IPR Assistance for Green SMEs

Both for green creator SMEs which develop green technologies and for green user SMEs which must use technologies and products developed by other green SMEs, IPRs can play a large part of their green activities. Green creator SMEs may choose to patent the technologies that they have developed, and green user SMEs may need to license the technology that others have developed. In some cases, while green SMEs may have the expertise in green technologies to develop and use these technologies, they may not have the legal expertise to navigate through various IPR systems, which can be quite complex and costly. Green creator SMEs (SMEs which research and commercialize green technologies, or produce green products) may need to deal with intellectual property rights, especially patents. SMEs which develop technology or new methods usually patent their technologies; and SMEs which produce green products sometimes must license technologies that others have developed.

OECD (2010) suggests that policies in this field aim at enhancing the diffusion of new technology while encouraging investment in R&D[15]. OECD (2010) also suggests that governments should address technology transfer issues beyond patents (such as transferring know-how) and broader technology transfer agreements, perhaps involving local universities and companies, or international cooperation[16]. For this element, we look only at government policies dealing with IPRs such as patents, utility models, designs, trademarks and copyrights. Policies dealing with technology transfer and management agreements between universities and research institutions with SMEs should be reported in element B-13, those with SMEs and large corporations should be reported in element B-12, and those with other SMEs should be reported in element B-14. Technology transfer can also take place through international trade and FDI, but measures to facilitate transfers through trade and FDI should be reported in element C-10.

Very few economies reported or presented material on this topic. Six economies (Brunei Darussalem, China, Indonesia, Japan, Papua New Guinea, the Philippines) did not include any details on IPR assistance for Green SMEs. Thus, we do not know if they have any explicit programs to give IPR related assistance to Green SMEs. Mexico reported that it is planning to initiate assistance in specific IPR-related areas in the future, but did not specify the time schedule. Chinese Taipei, New Zealand and Peru have general IPR programs, but do not give any specific preference to green-related technologies. Finally, three economies (Australia, Korea, and the United States) reported IPR assistance available to Green SMEs, but none were specifically targeted at Green SMEs. Rather, these were more general programs (mostly for SMEs, but sometimes programs for green technologies) that Green SMEs can utilize.

Australia, Korea, and the United States have policies which allow acceleration of patent applications for innovative technologies which can be utilized for green technologies. Korea offers tailored support to innovative firms in the green technology area which apply for patents so that they can bring their products to the market faster. US Green Technology Pilot Program seeks to advance environmental quality, energy conservation, development of renewable energy, or greenhouse gas emission reduction applications, out of turn for examination without meeting all of the current requirements of the accelerated examination program. This program can reduce the time to obtain a patent by many months, and helps entrepreneurs validate their technologies faster to secure financing and grow their business.

[15] : OECD (2010) Interim Report of the Green Growth Strategy: Implementing our commitment for a sustainable future, p.47, Box 12

[16] : OECD (2010) *op cit.* p.47 Box 12.

Korea, Peru and the United States offer databases so that interested firms can search for green-related IPRs both domestically and internationally, though Korea's database is only at a beginning phase. Korea offers assistance to firms which apply for IPRs in other economies and offer dispute settlement assistance for IPR related problems faced by SMEs, both domestically and internationally. Korea and the United States also have programs which encourage technology transfers between SMEs, between government research centers and SMEs, or between academia and SMEs. Among the tools and policies used by these two countries are "Internet Patent Technology Market ("IP-Mart") of Korea; and Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs of the United States. Peru runs National Invention Contests to encourage invention and to help SMEs gain economic advantage of their inventions, but the Contest is not limited to green technologies.

The United States has prepared tools and resources to help all SMEs protect and enforce their IPR worldwide, available through its website www.STOPfakes.gov.

This IPR element was one of the least reported elements in the GAP. The under-reporting probably reflect the fact that SME related government agencies are rarely responsible for IPR related policies so that the GAP writers did not have relevant information for this element. However, the under-reporting may also reflect low emphasis that IPR related issues are given in green growth. In the latter case, since green growth, even for the less developed economies, is likely to involve patentable technologies, economies should recognize that IPR related issues can be important in green growth, and examine how governments can make it easier for their green SMEs to patent their technologies or use patented technologies.

3. Area C: Fostering a Green-Friendly Economic Environment

The third area is "Fostering a Green-Friendly Economic Environment." This area has five elements dealing with 1) Incentives for green government procurement (i.e. encouraging green demand through government procurement of green SME products); 2) Regulatory reform (including subsidy reform) to reduce regulatory burden on green entrepreneurs as well as reducing discriminatory regulations against green SMEs; 3) Policies for improving market access for green technologies and products, including reducing trade barriers for green technologies and products; 4) Policies for raising consumer awareness on the importance of green consumption and green technologies; and 5) Online tools and resources for environmental and economic performance improvement tips for green SMEs. As seen from the elements, this area is designed to look at policies to encourage general demand for green products, and setting a green-friendly economic environment which will allow green creator SMEs to prosper. The fourth element (C-11) looks at general government policies (including green labeling campaigns) which encourage non-green users to become green users. By encouraging the demand for green products, we not only help green SMEs to thrive, but also go a long way in achieving the goal of "green" namely reducing carbon gases, managing scarce natural resources for the present and the future, and reducing damage to the environment.

C-8: Incentives for Green Government Procurement from Green SMEs

This element examines whether the government of your economy gives any incentives to green creator SMEs in government procurement. The incentives may take the form of hard procurement goals (in terms of value or percentage of total procurement), recommendations that the governments procure green products and services, or government sponsored measures to introduce green products and services to various procuring government agencies.

Government is a major consumer of goods and services, Government consumption expenditure can reach around 15% of the GDP in individual countries. Given the size of the market, government procurement can provide a steady market for green product, especially early in the product cycle when the private market demand for the green product may not be stable. By providing a steady source of revenue, government procurement can reduce the risk of R&D and entrepreneurial activities associated with green technology and products, and perhaps induce entrepreneurs and researchers into green technology and products[17]. Public procurement can also serve to introduce or reinforce green product demand where a "demonstration effect" is required to foster acceptance and demand from consumers[18]. Such reduction of risk and the demonstration effect can be especially useful for green creator SMEs. Further, because the government is such a large consumer, if it purchases green products, it will help considerably in reducing carbon footprint and environmental degradation.

Nine economies reported GAPs for this element, though one economy merely stated that it did not have relevant policies in this element. In the presentations, additional economies reported some detail on this element. <Table C8-1> groups the reports according to the type of policies in place. In workshop presentations, some economies also gave additional details on their green government procurement policies.

<Table C8-1> Reporting Economies for Element C-8

Economies which reported formal or informal guidelines which obligated or recommended government agencies to procure from green SMEs	Economies which reported activities to encourage government agencies to procure from green SMEs without setting formal or informal obligations	Policies Planned
Chinese Taipei Korea Mexico The Philippines United States	Australia Indonesia Japan Thailand	New Zealand Papua New Guinea

Korea has reported one of the more active programs: Korean Green Procurement System enforces obligatory procurement of green products and sets numerical targets. Under the Act on the Encouragement of Purchase of Green Products (formerly the Act on the Encouragement of Purchase of Environment-Friendly Products) Korea requires that its public agencies procure, or give priority to green products when making their procurement choices. The Act defines green products as those products which have received green certification, or those products whose characteristics are consistent with

[17] : Though there is some question on whether green procurement is a cost effective way to do so. See Brännlund, Runar,, Sofia Lundberg and Per-Olov Marklund (2010) "Assessment of Green Public Procurement as a Policy Tool: Cost-Efficiency and Competition Considerations" Paper presented at *4th International Public Procurement Conference*, Seoul, August 26-28, 2010

[18] : OECD (2010) Interim Report of the Green Growth Strategy: Implementing Our Commitment for a Sustainable Future, OECD, Paris p.46 para 66

standards for green certification; those products which have received green recycling (GR) certification or have characteristics consistent with standards for GR certification. Public Procurement Service has required the labeling of an energy efficiency rating for government-purchased goods, offered procuring entities 10% discount on procurement fees for procurement energy efficient products. The Vice Minister of Environment is responsible for drafting a five year framework plan to encourage the procurement of environmentally friendly products, and annual guidelines for procurement of environmentally friendly products. Under the Act, the public agency must procure green products unless there is a clear difference in quality or quantity available between green and non-green products, or the procurement is in response to an urgent situation. The procurement of public agencies is reviewed annually to confirm that the agency has acted faithfully to carry out the conditions of the Act. Provincial governments can establish their own regulations to encourage the procurement of green products by provincial governments. In cases of public procurement of construction services, use of environmentally friendly construction material may be required depending on the type of construction.

Chinese Taipei reports similar programs. Chinese Taipei has been promoting green government procurement since the 1990s. Government Procurement Law was amended to indicate that green-licensed products could be listed as a priority to be purchased. In addition, various agencies of the central government, as well as the city and county governments, are encouraged to implement green procurement schemes. Action plan to implement government green procurement was carried out by two phases. In the first phase, the central government, along with Taipei and Kaohsiung City governments, 'greened' their procurement up to 30%. In the second phase, a target was set for central cities and county government agencies, government-owned enterprises, public schools, and hospitals. Target for green procurement was 50% at first and 85% in 2008. Every year, the outcomes of implementation are reported to Environmental Protection Agency and evaluated by the Effectiveness of Green Procurement Assessment Committee composed of government officials, scholars, experts, and NGOs

The Philippines mandates the establishment of a Green Procurement Program for all its departments, businesses, offices and agencies of the executive branch. Laws mandate the government to promote an environmentally informed purchase and use of products and services, considering their price, performance, availability, and safety. The Green Procurement Program is currently being test-implemented in 8 pilot agencies. It requires the agencies to include environmental criteria in their public tenders and other procurement activities.

Many economies prefer to set guidelines rather than fix numerical targets. In Japan, Law Concerning the Promotion of Procurement of Eco-friendly Goods and Services by the State and Other Entities, generally known as the “Law on Promoting Green Purchasing,” was established in May 2000, recognizing that it is important not only to promote the supply of eco-friendly goods but also to prioritize the purchase of eco-friendly goods in order to transform our economy and society into sustainable ones. Under the law, the national government sets the basic policy for the procurement of eco-friendly goods. Each governmental entity (the Diet, courts, ministries and agencies, and local governments, etc.) must draw up a policy for promotion of procurement of eco-friendly goods, etc at the annual basis. The policy stipulated:

a) procurement target of designated goods, etc for a fiscal year
b) eco-friendly goods, etc for procurement promotion, etc.

While each governmental entity sets a certain requirements for suppliers of eco-friendly goods, size of company is not included in the requirements. Therefore, suppliers are not limited to SMEs. As of 2007, there were over 150 items targeted for green procurement such as office equipment, vehicles and electrical appliances.

Some economies have mixed programs, where they do not mandate or recommend purchases from green SMEs, but rather, they have guidelines or rules to purchase from SMEs and separate guidelines or rules to purchase green products. In Australia, the core principle of the Commonwealth Procurement Guidelines (CPGs) is that Australian government agencies must achieve value for money through their procurements. This principle requires a comparative analysis of all relevant costs and benefits of each proposal throughout the whole procurement cycle (whole-of-life costing). Sustainability should be considered as part of this total cost assessment. The Australian Government's target for SME participation in government procurement by contract value is 10 per cent. This figure is regularly exceeded. The Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC) aims to improve the environmental performance of Australian Government agencies by implementing policies, providing advice, communication networks, and access to best practice environmental management techniques from around the world. Also, Australia's 2009 National Waste Policy contains a commitment to sustainable procurement in government. Strategy 2 of the National Waste Policy states that all Australian governments will embody and promote sustainable procurement principles and practices within their own operations. Each jurisdiction is responsible for implementation. DSEWPaC is taking the lead for the Australian Government through developing core guidance material that will assist agencies understanding and implement sustainable procurement. However, while this policy relates to encouraging and enabling green procurement in general, it is not specific to SMEs. There are no targets included, but the uptake of sustainable procurement will be reported periodically.

Similarly, for Indonesia, government procurement aims at competitive, fair and transparent procedure of biding. Under this decree there is no specific regulation and incentive concerning green products or services procurement particularly offered to SMEs, but SMEs and micro enterprises as well as small cooperatives are given opportunity to participate in the government procurement. The value of the work packages of goods or construction work and other services up to IDR 2.5 billion is intended for micro and small businesses and small cooperatives. SMEs are given priority in the government procurement. Separately, environmental protection and management laws mandate the provision of incentive for green procurement. There is no specific point on the promotion of green procurement for SMEs, but due to the increasing green awareness among government agencies, the opportunities for SMEs in the procurement of goods and services for the government should further encourage SMEs to conduct business activities in the field of environmental friendly products as the demand for green products and services increase.

Some governments do not have comprehensive programs, but rather individual programs which promote purchasing of certain green products from green SMEs. Australia's Packaging Covenant and ICT Sustainability Plans are two such policies. The Australian Packaging Covenant (APC) aims to minimize the environmental impacts arising from the disposal of used packaging, conserve resources through better design and production processes and facilitate the re-use and recycling of used packaging materials. It is the voluntary component of a co-regulatory arrangement based on the principles of shared responsibility through product stewardship, between key stakeholders in the packaging supply chain and all spheres of government. The regulatory underpinning is provided at the jurisdictional level by the National Environment Protection Measure on Used Packaging Materials (NEPM), designed to deal with free riders and non-signatories. As a signatory to the APC, the Australian Government develops a 5 year action plan and documents progress against this plan through its annual report to the APC. The Australian Government committed in its Action Plan (2010-2015) to promote the government's sustainable procurement goals, which are directed to all Australian government agencies rather than 5MBs specifically. To this end, sustainable procurement guidelines are being developed for procurement officials. The Australian Government lCT Sustainability Plan 2010-2015 has been introduced to improve the sustainability of the information and communications technology (lCT) operations of Australian Government agencies. The Plan's measures and actions inform agencies, and industry, of the Government's requirements in regard to: Sustainable ICT procurement, improving ICT energy and

carbon management, and using ICT to promote sustainable solutions. The Plan includes mandatory environmental standards, actions and targets for ICT procurement, energy management, associated consumables and waste for government agencies' operations. Although the plan does not specifically require procurement of green goods and services from SMEs, the Plan does require agencies to follow the Commonwealth Procurement Rules, including the principle of encouraging competition and ensuring that procurement methods do not unfairly discriminate against SMEs.

Mexico also operates several individual programs which affects green government procurement. In 2009, the Federal government published the National Program for the Sustainable Use of Energy 2009-2012 (The "Program"). The Federal Government will use the Program as an instrument to establish the objectives, strategies, actions and goals for Mexico to achieve the optimum use of energy in all processes and activities where it is produced, transformed, distributed and consumed. An energy efficiency guideline for federal public administration 2010 has green requirements for following items:

- Efficient Lighting in Buildings and Facilities of the Agencies and Entities.
- Air Conditioning Equipment for Buildings and Facilities.
- Insulation in the Envelope of Buildings and Industrial Processes of the Agencies and Entities.
- Energy efficiency of the Vehicular Fleet of the Agencies and Entities.

Guidelines for the Procurement of Goods with Low Environmental Impact in the Public Administration of the Federal District Mexico 2010 established the minimum criteria for the procurement of goods with less environmental impact, in compliance with the Law of Procurement for the Mexico City. Mexico states that all these policies give many opportunities especially to SME sectors but sometimes there is not enough public information to take advantage of these opportunities, more public information is required. Though the Environmental Management Systems will be monitored, there is no specific "Green Purchasing" target. Mexico City government has specific policies to purchase green products for specific products such office materials, printing materials, fluorescent lamps and balastros, sanitary accessories, lavatories, showers and toilets. Furthermore, the requirement to purchase products from green SMEs is through technical specifications, or as part of tendering qualifications. And there is an official policy to give considerations to green SMEs in Mexico City government procurement.

In Thailand, the Ministry of Natural Resources and Environment has compiled a list of environmentally friendly products and services for government agencies to purchase. There are now 14 office products and 3 services covered by the Green Procurement Project, and over 1,000 items have been put on the list. In addition, Thailand, in cooperation with the government and private sectors, has established market mechanisms to promote the use of alternative energy in electricity generation such as electricity generation from biogas, biomass, solar energy, etc.

In the United States, various laws, executive orders and procurement regulations now require federal agencies to purchase green products. The Small Business Administration operates New Green Government Opportunities (GGO) for Small Businesses website (http://green.sba.gov). Through the website and the program, green SMEs can connect with other members of the green small business community, browse active federal prospects. find RFPs and Small Business Innovation Research (SBIR) Program, STTR and ONR grants, and search for these prospects using filters important to small businesses, such as type of technology or opportunity type. US also maintains Energy Efficiency and Renewable Energy's Financial Opportunities and Environmental Technology Opportunity Portal

Some economies reported that they have no specific green procurement programs. In New Zealand, no incentives exist specifically for green SMEs. However current government procurement reform includes a focus on low carbon-emitting products and services. The 'whole of life cost' of products, including sustainability implications, is included in decision making criteria in All of Government contracts. Papua New Guinea also reports no such programs, because SME in PNG is small as compare to other sectors

contribution to the national purses, due to institutional and policy environment. However, in the national front, Department of Finance, is working on developing a National Procurement Policy Framework. Its role is to develop public service procurement, policy and practice through a process of procurement management reform.

In some of the programs listed above, to encourage green purchasing, the laws require or recommend purchases of goods and services which are labeled as 'green.' Thus, labeling plans become crucial to the operation of green government procurement. The Philippines has reported details concerning their green labeling programs in this element. A major component of the Philippines' Green Procurement Program is the National Eco-Labeling Program (NELP). This program is intended to develop and/or adopt green criteria for products, conduct product certification, encourage manufacturers to adopt processes and supply products that have less environmental impacts, and, finally, promote green consumption among consumers. The program activities are managed by the National Eco-Labeling Program Board.

While most economies reported measures obligating their governments to purchase green products, Korea has reported a program to assist green creator SMEs export to governments abroad. Korea's Global Business Vendor Participation (Supplier) Consultation Support Program will help global SMEs break into foreign markets by providing assistance so that SMEs can receive consultation on vendor participation (parts, raw materials), supply, and contract negotiations. The program will provide all or part of the costs of consultation regarding global vendor (supplier) participation and provide consulting on market, policies, customs clearance, and distribution in foreign markets as well as consultations on communications with potential buyers, how to fill out documentation on vendor registration, conditions on suppliers and on technical advice. Any company which is legally classified as a SME is eligible for the program, and the budget of the program is 250 million Korean Won (KRW) which can be used for supporting up to 10 projects.

Responses to this element showed that APEC economies have a diverse range of incentives dealing with green government procurement, ranging from very active programs which mandate purchase of products from green SMEs, to guidelines, to standard-setting. The diverse range of programs shows the diverse ways of approaching green purchasing in APEC economies, as well as the concerns about public procurement.

C-9: Regulatory Reform and Subsidy Reform to Encourage Green SMEs

An economy's regulatory reform framework can greatly help or hinder green SMEs and the adoption of green technologies and products. APEC, under cooperation with OECD has engaged in work on regulatory reform from 2001. APEC-OECD regulatory reform framework encourages economies to review its new and existing regulations, and carry out regulatory impact analysis (RIA), including cost and benefit analyses of regulations and examination of possible regulatory alternatives which will fulfill the same social goals, but at lower social cost. Under the green growth framework, regulatory policies and framework plays an important part in achieving the goal of green growth. Thus, in this element, we examine the regulatory reform framework as it deals with green growth policies.

However, studies have pointed out that rigid regulations do not necessarily guarantee reductions in environmental degradation, and often involve higher costs than necessary. In a RIA, the regulators or some central authority must consider the costs and benefits, as well as the distributional effects of a new, revised or existing regulation and consider whether there are alternatives to regulation which can fulfill the goal of the regulation with less disruption or cost. Regulatory alternatives include self-regulation, negotiated agreements, partnership between government and the private sector[19], voluntary standards and voluntary labeling. Often, regulatory alternatives can offer a more cost-effective way to achieve regulatory goals[20]. Some economies have already chosen to include environmental factors in their RIAs. In OECD (2010a) *Guidance on Sustainability Impact Analysis*, OECD suggests that economies adopt Sustainability Impact Analysis (SIA) where necessary. SIA is a methodological soft policy instrument for developing integrated policies which take account of the three sustainable development dimensions (economic, environmental and social) and which includes cross-cutting, intangible and long-te4rm considerations; as well as a process for assessing the likely economic, social and environmental effect of policies, strategies, plans and programs before they have been formulated. In some sense, SIAs are similar to more well known RIAs, but consider more dimensions. Elements from SIAs can be combined with RIAs as in UK or Flanders in Belgium.

One area of regulation that is relevant for green growth is technical standards and specifications. Often, technical standards and specifications are drawn in a rigid way so that alternative approaches cannot be considered. For example, some economies, when drawing a technical specification for roads, specify what material should be used and in what particular way. Such rigid specifications can hinder the use of greener manufacturing methods. One way around this problem is to use performance standards, which specify what qualities the output must satisfy, rather than how the output is made. OECD as well as WTO encourage the use of such performance standards. Performance standards, coupled with some safeguards to make sure that green methods are used, would allow greener growth.

Eight economies submitted GAP entries for this element, and additional economies presented information on this subject in their workshop presentations.

<Table C9-1> Reporting Economies for Element C-9

Economies which reported a comprehensive review of its regulations to foster green SMEs or SMEs, including green SMEs	Economies which reported various regulations designed to foster green SMEs	Economies which reported information on their eco-labeling process
Australia	New Zealand	The Philippines

[19] : For example, HACCP for food safety
[20] : The most oft-cited example is cap-and-trade system for greenhouse gases.

Chinese Taipei Indonesia Korea Papua New Guinea The Philippines		

Regulatory Review Processes

First, we examine information from those economies which submitted information on their regulatory review process. Under its Strategic Environmental Assessment Act, Chinese Taipei operates a comprehensive environmental administrative system to monitor environmental impact of enterprises, as well as the impact of new regulations on enterprises and the environment.. Strategic Environmental Assessment Act, inspired by the Environmental Impact Assessment (EIA) scheme, was formulated to ensure policies of economic development and regulations on enterprises, including SMEs, are not undermining the environment. Greenhouse gases emission is listed as one item to be assessed in the EIA. To foster SMEs in coping with the rising standard of environmental regulations in the international community, as well as in local communities, the Small and Medium Enterprise Administration (SMEA), Ministry of Economic Affairs initiated a series of programs, e.g. the "SME Response to the International Green Supply Chain Guidance Project", to provide guidance to SMEs on compliance with new standards and on deepening their quality control technology in order to provide products with stable quality in the long term.

Mexico's Inter Committee on Climate Change reviews new regulations and its environmental impacts. Public consultancy also allows assessment of the effects of new regulations on the environment. These mechanisms allow interested parties to give information in a transparent fashion. However, in some cases. the consultancy processes to make standards are too short. SME sectors may need more time to assess results and give accurate feedback to these national processes. Mexico City government has a checking and monitoring mechanism which mainly consist of:

1. Preparation of Environmental formats to evaluate Materials and Green Purchasing through technical advice.
2. Monthly submission of monitoring formats to the Environmental Management Systems and developing Environmental Aspect Program: Materials and Green Purchasing,
3. Semi-annual follow-up visits to verify compliance with the environmental guidelines
4. Assessment of environmental benefits and preparation of report.

Finally, civil society organizations, private sector, academic and scientific sectors are consulted when new technical standards are considered.

In Korea, environmental regulations accounts for 7% of all major and subsidiary regulations in 2010. Korea requires Environmental Impact Analysis (EIA) as a part of Combined Impact Analysis, which is required for new regulations as part of its regulatory review process. EIA prevents environmental contamination by examining a project in its planning and implementation stages for economic, technical, environmental appropriateness and impact in a comprehensive manner. Under the Act for Combined Impact Analysis, EIA is carried out to predict and analyse potential environmental problems involved in a project, and to come up with responses to these problems; to encourage environmentally sound and sustainable development and bring about comfortable and safe lives for citizens. The functions of EIA include: 1) Information provision (information provision to policymakers so that environmental impact, severity of impact, and reduction of environmentally adverse effects can be considered in policy-making before any plans or projects are finalized; and information provision to regional governments and citizens so that they are informed of environmental impacts of plans and projects and participate in environmental impact assessments so that they can give as well as receive relevant information on environmental impact

of a plan or a project); 2) Encouragement of mutual agreement (Through public dissemination of EIA as well as through public hearings and distribution of information, provide information to, and receive information from the public; and through the mutual sharing of information bring about closer cooperation between regional interest groups to encourage mutual agreement on a project or a plan); 3) Guidance (By providing useful information to policymakers, EIA encourages environmentally-friendly policy planning. Also in cases where the policymaker decides to pursue environmental targets above the current standards and regulations, or when there is no relevant environmental standards, EIA encourages adjustments in policy and planning so that the high goals can be met. EIA helps policymakers choose the most environmentally friendly option from various policy options which may be presented. Overall, EIA helps guide policymakers into choosing the most environmentally friendly plans); and 4) Regulatory capacity (EIA can be linked with regulatory system so that in cases where plans or project require registration or permits, EIA can be used to place environmentally related requirements and establish penalties if these requirements are not met).

For Australia, under the Australian Government's best practice regulation framework, a Regulation Impact Statement (RIS) is required for all regulatory proposals that are likely to have an impact on business and the not-for-profit sector, unless the impact is of a minor or machinery nature and does not substantially alter existing arrangements. A RIS identifies the problem that the regulation seeks to address, outlines the objectives of government action, and assesses the impacts of a range of feasible options for addressing the problem. The RIS includes a consultation statement which includes a description of how consultation was conducted, the views of stakeholders and how those views were taken into consideration. The RlS should identify the expected costs and benefits of the options, including an assessment of the effects on business (including small business), the community and the environment. Further information on RIS requirements and guidance on regulatory impact analysis is available from the Office of Best Practice Regulation (OBPR) and the Best Practice Regulation Handbook.

The Philippines reports that while there is no centralized body that specifically reviews legislations and regulations that may impact on the environment as well as SMEs, the National Economic and Development Authority (NEDA), the country's independent economic development and planning agency, undertakes policy review on various areas of concern including those that have environmental and SME impacts. Further, the Department of Environment and Natural Resources (DENR) maintains a unit that looks into the environmental impact of regulations and legislations. The Department of Trade and Industry (DTI) performs a similar review function for the SME sector and the Department of Energy (DOE) for the energy sector. The government also recently enacted into law the establishment of the Commission on Climate Change (CCC). The commission is the sole policy-making body of the government tasked to coordinate, monitor and evaluate the programs and action plans of the government relating to climate change.

The United States reports that it continuously works to create a regulatory environment that is friendly to private sector industries, including the renewable energy and energy efficiency sector.

Indonesia and Papua New Guinea are in the process of establishing regulatory instruments to promote green SME growth. Indonesia mandates the formulation of environmental economic instruments consisting of a) development planning and activities of the economy, b) funding for environment protection, and c) incentives and disincentives for environment related economic activities. However, there is no specific regulation concerning the promotion of green SMEs. The government is preparing the Draft of Government Decree concerning environmental economic instruments. Under the decree, there will be specific regulation on green procurement, incentive for green business undertaking and promotion of green SMEs.

Papua New Guinea's National Strategy for Climate-Compatible Development will mitigate carbon emission and protect PNG against climate-driven hazards while fostering sustainable economic growth. PNG's goals are to halve projected emissions by 2030 and become carbon neutral by 2050, to reduce vulnerability to climate change-associated risks while tripling GDP per capita by 2030. In March 2010, the Office of Climate Change and Development (OCCD) was established by the Cabinet, to coordinate all climate change-related policies and activities in PNG. OCCD has been developing its institutional capabilities by building team through training on key skills, explicit mentorship and a strict performance management process. It has already begun to coordinate the implementation of selected adaptation and mitigation initiatives, including the development of an effective coastal early warning system and the potential review of forest clearance concessions for agricultural development. The Cabinet also created the National Climate Change Committee to take full and exclusive responsibility for all policies and actions concerning climate. Chaired by the Chief Secretary, PNG's highest ranked civil Servant, it includes the heads of all relevant government departments and authorities. The Committee meets monthly to ensure that climate change is approached by the whole of government

Green, SME-Friendly Regulations

New Zealand has taken another approach. Rather than establish a single program, it has initiated several concrete regulatory programs dealing with certain aspects of green SME growth. Its Emissions Trading Scheme (ETS) incentivizes firms to reduce emissions through a price on carbon. This program provides a benefit to those firms that are already green, and incentivizes other firms to adopt green technologies. The program further indirectly benefits firms which produce such technologies by increasing demand for their products. Industries have been phased into the scheme since 2008; currently the scheme covers most industries, and will be comprehensive once agriculture enters fully in 2015. Some SMEs will be eligible to receive carbon allocations from government. Most SMEs will not interact directly with the ETS, but will be subject to the incentives it creates, for example through increasing energy costs. The Resource Management Act (Simplifying and Streamlining) Amendment Act 2009 established the Environmental Protection Authority to process applications for proposals of national significance in a timely and efficient manner. The Energy Efficiency and Conservation Authority (EECA) runs several programs that subsidize energy efficient products for households. Different programs target households, businesses, or both. The Sustainable Farming Fund partially subsidizes projects led by farmers, foresters or growers, some of whom are SMEs. Funding supports ‘Communities of Interest’ to undertake research or technology extension/ adoption projects to tackle shared problems or leverage opportunities. Projects are led by rural land owners or managers, usually with support from industry organizations, agribusiness, researchers or consultants. Most projects leverage other funding or in-kind support.

Brunei Darussalem has established a comprehensive program to instill green building practices. The details of this program are detailed in its best practice report, included in the end of this section.

Technical Standards and Labeling

Technical standards are a type of regulations, and (as we saw in element C-8), many economies use national technical standards to differentiate green products from non-green products. Many economies reported their green standard or green labeling process. Papua New Guinea has the National Institute of Standard and Industrial Technology (NISIT), which is the National Standards Body responsible for overseeing to all standardization and conformance activities in PNG. Standards are updated as per the regular cycle of three years from the commencement of their establishment and publication date. In effect, standards review - is an ongoing process in maintaining the currency, validity and applicability in the current domestic, regional and international markets.

In the Philippines, the Bureau of Product Standards (BPS) under DTI, convenes a multi-disciplinary committee that includes representatives of the environment sector, both public and private. It adopts a performance-based system for standards development. There are also private sector-led and government-supported initiatives to develop green standards such as the green building standards being pushed by the Philippine Green Building Council (PGBC).

Labeling, if officially backed by the government and has legal implications, may be considered as regulation. As we saw in the Korean Best Practice Report in element A-1, some economies use green labeling to let potential customers (including government agencies) know which goods and services are considered 'green,' The green labels are also used to determine which SMEs are eligible for green-related preferences. Further, several economies inside and outside APEC are considering international trade agreements to encourage international trade of green goods and services. Thus, green labeling can have major consequences for green SMEs. Some economies reported their green labeling programs.

As stated in element C-9, a major component of the Philippines' Green Procurement Program is the National Eco-Labeling Program (NELP), which develops green criteria for products. The program activities are managed by the National Eco-Labeling Program Board, which also certifies products for Green Choice Philippines Seal of Approval. The board has established the criteria for 35 product categories and certified 24 products. More categories and products will be covered by the Board. Green Choice Philippines is the national eco-labeling program recognized by the Global Eco-labeling Network13, a non-profit association of third party, environmental performance labeling organizations which aims to identify environmentally responsible products in the market. The Philippines' Energy Labeling Program is a component of the National Energy Efficiency and Conservation Program. Energy labels are used to inform companies and consumers about the energy efficiency of certain products (air conditioners, CFL, ballasts and refrigerators). The labels are in the form of mandatory stickers or labels that are affixed to products or their packaging. Under the program, lists of certified products (for air conditioners, CFL, ballasts and refrigerators) are available for consumers and companies to influence their buying behavior. The program has to date certified 1,803 appliances (not including the CFLs and ballasts).

Chinese Taipei reported several government eco-labeling programs. Green Mark Program is programs include: Green Mark Program, which is an ISO Type-I Program which certifies products recognized as Class-I products. The program was initiated by EPA in 1992, and it is the oldest, largest and most recognized eco-label worldwide. Currently, it covers 94 product categories and is operated by Environment and Development Foundation (EDF) under EPA commission. Energy Label and Water Conservation Label Programs classify items which are recognized as Class-III products. These programs are operated by ITRI under Bureau of Energy, Ministry of Economic Affairs and Water Resources Agency, MOEA, respectively. Green Construction Material Label, initiated in 2004, is operated by Chinese Architecture Center (CAC) under Architecture and Building Research Institute, Ministry of Interior Affairs. Energy Star Label was initiated in Chinese Taipei in 2001. Chinese Taipei also submitted a best practice report on Certification Promotion Program of Green Supply Chain for SMEs. Compared to large-scale enterprises, SMEs have limited budget for financing, recruiting, and advertising. However, by virtue of obtaining certification, SMEs are able to distinguish ourselves from large enterprises and become competitive in the market. Details concerning certification of O'Hair International are described in the best practice report, which is included in the end of this section.

Thailand maintains No. 5 Energy Efficiency Label. Ministry of Energy by Electricity Generating Authority of Thailand (EGAT) plays a leading role in the management of the electricity consumption, including residential, commercial, and industrial sectors, and EGAT has launched the energy conservation

program, named No.5-labelling campaigns on several products including compact fluorescent lamps, refrigerators, air conditioners, electric rice cookers and pots. TV and computer monitors, and nutritious brown rice. Thailand also maintains the Green Label program. The Green Label is an environmental certification awarded to specific products that are shown to have minimum detrimental impact on the environment in comparison with other products serving the same function. It was initiated by the Thailand Business Council for Sustainable Development and it was formally launched in August 1994 by the Thailand Environment Institute (TEI) in association with the Ministry of Industry. At present, 48 product categories are available for manufacturers to apply for the Green Label. As of March 2011, 555 models in 25 product categories from 71 companies received the Certified Green Label. Carbon Footprint Label and Carbon Reduction Label is maintained by Thailand Greenhouse Gas Management Organization (Public Organization: TGO) under the Ministry of Natural Resources and Environment, in collaboration with the Ministry of Science and Technology. The Carbon Footprint of Products takes into account the quantity of GHG emissions from each production unit throughout the whole life cycle of a product. The carbon reduction label scheme has been developed by Thailand Greenhouse Gas Management Organization and Thailand Environment Institute. The objective is to get consumers involved in the reduction of GHG emissions through market mechanisms and to encourage manufacturers to increase their production efficiency. Currently, there are 480 products from 117 companies that received Certified Carbon Footprint Labels, and there are 154 products from 39 companies that received Certified Carbon Reduction Labels

For this element, while no economy has a review system specifically for examining how regulation impacts on the environment or have a special review process for green SMEs, many economies include environmental impact on their general regulatory review process, which can be very effective in considering cost-effective ways to measure environmental impact and consider effects of new regulations on green SMEs. Some economies are establishing or revising their regulatory review process, and plan to include reviews on environmental impacts. Some economies reported how they are changing their regulations to lessen negative impacts on the environment. The regulations reported are usually at an industry-level designed to encourage green SMEs in a certain industry or increase green characteristics and reduce environmental impact in a certain industry. However, no economy has reported a formal review process to eliminate existing regulations which needlessly harm the environment or encourage regulations to be written in an environmentally-friendly fashion. Also, some economies reported their eco-labeling programs, which can serve as a criteria for receiving various preferences such as tax grants or government procurement preferences; as well as act to increase demand for the green labeled goods. During discussions in the second workshop, member economies showed keen interest in eco-labeling as various international organizations, including APEC's Committee on Trade and Investment are attempting to introduce a trade agreement reducing trade barriers on green products. In order for the agreement to work, member economies must agree on what constitutes a "green product," and eco-labeling may play an important part in defining what 'green product' is.

Best Practice Report:
Brunei Darussalem: Green Building Concepts

The development is envisaged to be planned and executed in accordance to the best GREEN BUILDING practices. It is expected that all of the following will be addressed during the details design phase:

a) Travel distances are kept to a minimum. All amenities are within a 20 minutes walking distance of about a kilometer distance in any direction. Walking and cycling would reduce reliance on

motor transport thus conserving energy resources.

b) Devastated ecosystems need to be replaced with ecological succession which should not complete with the indigenous species of the locality.
c) Orientation of building to ensure heat gain to the building is kept to minimum levels by orientating the building and fenestration to avoid direct sunlight. Thermal walls for east and west facing walls. Double glazed low-e window glazing, shading devices, etc.
d) Orientation to take advantage of prevailing wind directed to the internal spaces and courtyards for comfort cooling.
e) Roof gardens, water features and vertical planting to reduce heat gain through the roof and walls. Floor slab cooling if possible.
f) Building integrated photovoltaic systems to harvest energy. Solar panels on roof and sides building for water heating and electricity generation.
g) Used of solar powered systems for street lighting.
h) Rainwater harvesting and storage for plan irrigation, toilet flushing and general maintenance purposes or for air cooling purposes such as evaporating water shower features.
i) Water conservation by using dual flush sanitary systems.
j) Mirror ducts to transmit natural light to the interior of buildings.
k) Use of energy efficient electrical fitting and systems. Eco friendly fluorescent lamps, LED lights, etc.
l) Energy efficient electrical management system such as sensor controlled electrical and air-conditioning systems for common areas. Automated building operating systems. Efficient M&E systems – lighting, air-conditioning, lifts systems.
m) Less dependence on air-conditioning. Personalized ventilation systems if feasible. Efficient passive or active (mechanical) ventilation with ducts to pull out hot air and pull in cool air.
n) Recycling of waste materials at source by providing separate hoppers for paper, glass and ceramics, and metals and plastic.
o) Sewage recycling for compost or for bio-gas feul. Methane gas produced from sewage and garbage can be used to generate electricity or used as feul for vehicles.
p) Construction materials to be preferably mechanically jointed for flexibility (change-of-use) or for future recovery at end of life of building. Removable partitions and even floors where possible.
q) Less reliance on private motor vehicles by providing efficient public transport systems and shorter walking distances.

Chinese Taipei: Certification Promotion Program of Green Supply Chain for SMEs – the Case of Hair O'right International Corp

Compared to large-scale enterprises, SMEs have limited budget for financing, recruiting, and advertising. However, by virtue of obtaining certification and taking innovative green business approaches, SMEs are able to distinguish ourselves from large enterprises and become competitive in the market.

Presented here is the successful case of Hair O'right International Corporation, who carried out its green transformation by a four steps action plan.

The First Stage of Actions

The company's first action was to obtain green certifications and build a green supply chain. The goal

of the company was to label all of our products with Carbon Footprint Labels by establishing the carbon inventory, and then to build a green supply chain. O'right had neither experience with calculating carbon inventory nor establishing carbon footprint database before. Besides, without strong purchasing power, suppliers had little willingness to cooperate in building carbon inventory. Thanks to SMEA, MOEA's assistance and counseling, its products are now carrying Carbon Footprint Labels.

After earning experience of calculating carbon footprints, O'right continues with reducing carbon emission in its supply chain through 5 stages of carbon inventory process, its ultimate goal is to produce carbon neutral products. This green supply chain transformation can enhance the company's competitiveness and fulfill its social responsibility at the same time.

Stage 1: Raw materials

Purchasing non-toxic organic materials can promote organic farming and then reduce the usage of pesticide, which will slow down environmental pollution.

Green organic products can enhance customer's health, for example, eco-friendly shampoos are less irritating to skin, and its shampoo does not contain environmental hormones which reduces pollutants in waste water discharged into rivers; moreover, customers can help the environment when purchasing eco-friendly products.

The company used green materials to implement packaging reduction. Also, the company cut down the usage of petrochemical plastics and improved industrial processes to circulate industrial resources.

Reducing product packaging will reduce environmental footprint and lessen the burden on the environment, in this way, the company can make earth a better place.

Stage 2: Manufacture

The company use clean energy in our manufacturing process, such as wind and solar energy. It can lower the use of coal-fired electricity, which produces high carbon pollution. Besides, the company is working on the water recycling system to lower carbon emission, save more on energy and makes the production process more environmental friendly.

Utilizing clean energy in production process not only provides eco-friendly products to customers but also provides a sustainable, low-carbon environment for future generations.

Stage 3: Distribution/Retail

The company provides free delivery with a minimum purchase requirement encouraging customers to make its orders at the same time; this can reduce the amount of carbon produced during the delivery process. In 2010, O'right implemented the low-carbon delivery system, which reduced 933 tons of carbon emission and saved 750 thousand NTD (25 thousand USD) in delivery cost. The reduction in carbon emission is equivalent to plant a forest at the size of 92 FIFA World Cup Stadiums.

Stage 4: Consumer use

The company introduces green spending habits and provides consultancy service on environmental protection to our customers. The company holds green workshops in major cities to promote the importance of environmental protection, and encourage more customers and consumers to join its green acts. O'right also assists its salon customers in carbon reduction and energy savings. For example, the company improved their indoor air quality by planting good air filtration capacity plants. Also, the company improved its essential business equipments, such as integrating air conditioners and water heaters to form a heat exchange system; this will lower the electricity bill by 50%.

Stage 5: Disposal

Recycling and reusing materials in the production process can reduce a great amount of waste. In the process of calculating carbon inventory, the company found that if the company could form an industrial

resource cycle along the supply chain, materials could be reused before disposal and production cost can be decreased.

O'right has three major ways to reduce wastes, the first is to reuse cartons carrying bottles from suppliers, the second is to recycle empty cartons after delivering products to our customers, and the third is recycling empty product bottles.

Recycling process materials is good to the environment, and it can enhance company's competitiveness by cost reduction, not to mention, the company is moving one step closer to achieve Corporate Social Responsibility.

To make the plan successful, the company benefits its customers with the delivery cost saved to encourage them to participate.

Chinese Taipei is the world's 11th to develop the carbon neutral policies and promote carbon footprint labeling systems. With the assistance of SMEA, MOEA, O'right was proud to be the first PAS 2060 certified carbon neutral SME in Chinese Taipei, O'right and its shampoos were also the first SME to apply carbon footprint labels in Chinese Taipei. Not to mention, the company were the first company in the world that produced carbon neutral shampoos which meet the PAS 2060 standard.

With SMEA, MOEA's counselling, O'right obtained the certificates as below:

- The first SME in Chinese Taipei to receive "Carbon Footprint Label".
- The first shampoo in Chinese Taipei to receive "Carbon Footprint Label".
- The first SME in Chinese Taipei to pass verification of compliance for "Product Carbon Footprint", PAS2050.
- The first shampoo in Chinese Taipei to pass verification of compliance for "Product Carbon Footprint", PAS2050.
- The first small and middle size enterprise (SME) in the world to declare certified "Carbon Neutral" PAS2060.
- The first shampoo in the world to declare certified "Carbon Neutral" PAS2060.The first shampoo in the world to declare certified "Carbon Neutral" PAS2060.

The Second Stage of Actions

The second action of our green transformation plan is to devote to green innovation.
The company replaced traditional high energy consuming and high carbon pollution hair treatment service by our innovative service without using electricity, which is more simple, and eco-friendly. The carbon dioxide reduction through the new service is about 46 thousand tons per year, which is equivalent to plant a forest 4500 times the size of a FIFA World Cup Stadium, which contains 4 million 20-year-old trees.

O'right also developed the world's first "tree-in-the-bottle" 100% biodegradable packaging, which are made of the starch extracted from discarded fruit and vegetables. The bottle can decompose in earth within one year and so does the tree seed plug that was embedded underneath the bottle when manufactured. Seeds in the plug will sprout after bottles degrade in earth, also the decomposed bottles can provide fertile soil to grow the tree. This innovative design brought our existing Technical Metabolism recycling stream to the Biological Metabolism level.

O'right's "tree-in-the-bottle" design was patented in Chinese Taipei, China and Germany. Also, the

company's biodegradable, compostable material has been certified in various countries, including USA, Japan, European Union, and Germany.

The Third Stage of Actions

The third action of our green transformation plan was to fulfill Corporate Social Responsibility. O'right is always dedicated to promoting environmental protection and involved in public benefit activities, the company hope to bring more positive energy to the society. The company supports education to needy children, adopt forest in Chinese Taipei, and engage in beach sweeping and carbon reduction programs. Last but not least, the company was one of the sponsors of filming HOME, the environmental protection documentary produced by Luc Besson, as well as publishing the DVDs and original books in 2009.

The Fourth Stage of Actions

The company's forth action is to continue the company's growth by green innovations and sell our products worldwide.

In 2006, O'right was unable to pay salaries to employees. But the company dedicated in green innovation and earned certifications with the assistance of SMEA, MOEA in 2007. Since then, the company's revenue has grown by 400%. Even during the global financial crisis in 2008, when Chinese Taipei was suffered from -1.9% recessions, the company's turnover has consistently increased.

O'right established a department of international trade to fulfill global marketing ambition in 2009. In 2010, its products successfully launched in Malaysia, Thailand, and Italy and long-term agency agreements were signed. The company also starts receiving orders from the United States and agency agreement was signed in April 2011.

The company is currently reviewing contracts with agencies in Ukraine, Netherlands, and Germany, and hoping that through working with innovative green small and medium companies from Chinese Taipei, the company can share its green experience globally and earn more trade opportunities around the world.

After working hand in hand with SMEA, MOEA, O'right has our products verified and labeled with Carbon Footprints, also the company fulfilled the corporate social responsibility by green innovation. The company cooperated with suppliers and third-party providers as well as integrated its internal departments to create our green supply chain. This integration will not only add values to its product but increase the company's competiveness. Meanwhile, the company act receives wide media coverage, which helps encouraging more small to medium size enterprises to engage in green innovations so that every one of the society can build a better and brighter future together.

C-10: Improving Market Access for Green Technology and Products

Lowering market barriers for green technologies and products can vastly increase the capacity to achieve green growth. There are two types of market barriers considered in this element: international and domestic. By taking full advantage of green technologies developed abroad, and facilitating trade of goods and services produced in a greener method, carbon footprints, greenhouse gases and environmental degradation can be reduced while still maintaining the economy's welfare levels or growth. Conversely, there are domestically produced green technology and products which may have a receptive market abroad. Foreign Direct Investment and Overseas Direct Investment can facilitate the development of green technologies and goods, while providing good jobs. Improving market access for green products is a two-way process. Both importing and exporting economies; both investor and investee economies must act to reduce market barriers in order for SME market access to be improved. Many of the elements listed in the Green Initiative is included to build trust among APEC Member Economies that what is "green" in one economy can be "green" in other economies. Facilitating trade of green products and the use of foreign green technologies will do much to reduce carbon and other greenhouse gases as well as reduce environmental degradation. In this element, we limit the examination to how the individual governments deal with trade and investment barriers in a unilateral manner. International cooperation - public and private - will be dealt with in element D-16.

This element deals with improving the market access for green technologies and products. The element may also deal with programs which attempts to allow green SMEs to showcase their green products abroad and develop export markets. Many economies reported that they have programs to promote green SME products internationally. Some economies also reported domestic measures, since green SMEs may face barriers domestically from laws and regulations which favor old non-green technologies and competition with larger companies. In cases of domestic market barriers, there is some overlap between the contents of this element and element C-8.

Eight economies submitted GAP entries for this element, and various economies mentioned this element in their presentations.

Indonesia reported that it has been encouraging and facilitating SMEs to increase their market access both to domestic and international markets. The Indonesian government does not differentiate marketing facilitation for SMEs for whatever products they produce. Promotion support is given to SMEs engaging in environmental friendly products in the form of a subsidy as much as 50% to SMEs which participate in international exhibitions. Green SMEs which have used these subsidies include SMEs engaged in recycled products, organic fertilizer, and biogas energy plants. The government also conducts regular workshop concerning matters related to eco-products to improve awareness and also capacity of SMEs to utilize appropriate green technologies to meet market demand on green products.

In Chinese Taipei, its SMEA launched the “SME Business Matching and Technology Exchange Train” activity, whereby the Administration provides active support to help SMEs obtain intensive exposure for their new products within a short space of time, giving the general public an opportunity to familiarize themselves with these new products, while building new channels for marketing collaboration, so that the inventors of new technology can quickly find funding support to commercialize them, or to access key technologies that they require for successful commercialization. SMEA also operates various programs, such as the SME Green Supply Chain Guidance Project indicated in the C-9 section, to enhance the awareness of the growing green markets for the private sector. Also, for promoting foreign market access, SMEA has launched the SME International Marketing Promotion Guidance Plan to encourage Taiwan’s

SMEs to expand international marketing activities, gain increased international exposure at minimal cost, and undertake collaborative development of overseas markets. The Bureau of Foreign Trade launched the New Zheng He Plan to step up SMEs' development of export markets and founded the Green Trade Project Office to assist Green SMEs in developing international partnerships and connection with global green supply chain. Some of these programs are described in more detail in element D-17.

New Zealand Trade and Enterprise (NZTE) helps to promote New Zealand's 'cleantech' capability and presence in international markets. This includes establishing New Zealand's presence at events and in-market missions, helping position New Zealand as a regional leader in specific clean technology sectors, helping clean-tech companies develop capability to take advantage of international opportunities / collaborations, and facilitating foreign and domestic investment to develop and commercialize clean technology.

Korea reported two programs to promote green SMEs export abroad. The first is a Support for Feasibility Studies. This program supports feasibility studies for domestic green SMEs in foreign markets for areas such as new renewable energy and energy efficiency projects (e.g. solar energy, fuel cells, LED, green IT, CO2 capture, waste treatment, etc.). The program helps cover all or part of the costs of feasibility studies for green project bidding in foreign countries. Korea has submitted a best practice report on this program. Additional information is available in the Best Practice Report. Korea's second program is designed to assist Korea's green SMEs export abroad by assisting green SMEs receive eco-labeling in other economies: applying and receiving foreign environmental certifications, marketing support, etc. The details of this program is listed in <Table C10-1>

<Table C10-1>. Support for SME Eco-Labeling Certification

	Project	**Details of Support**	**Amount of Support**
New Projects	Packaging Design Development	Support for design development including packaging design for certified projects, design for label stickers, product logo	15 projects; 300 million KRW each
	Receiving Foreign Certification	Support for applying and receiving foreign environmental label and certification in Japanese, Australian and other foreign markets; including 50% of the costs of application, testing and analysis.	6 projects; 5 million KRW each
	Participation in Foreign expositions	Support when green SMEs participate in foreign expositions, including costs for booth rentals, equipment installation, freight, and other miscellaneous costs	10 projects; 3 million KRW each
	Marketing Support	- Support for SMEs attending housing brand fair expositions - Producing publicity material for superior certified products in TV and newspapers (after 2013)	10 projects; 3 million KRW each
Continuing Projects	Eco-Design, On-site Assessment and Advice	Examine SME Eco-Design implementation and formulate custom eco-design strategies for the SME	10 projects 9 million KRW each

	Consultation for Choosing Sites for Stores Selling Green Products	- Inform standards and procedures for establishing a distribution center and stores; - Facilitate discussion between green SME sales representative and distributors	-
	Day for Environmental Certification Consultation	On every Wednesday morning at Korea Environmental Industry & Technology Institute (KEITI), hold consultations for SMEs on environmental labels and certification, as well as various other types of support.	-

The Philippines has reported that while the Philippines has no specific policies intended to assist green SMEs to export or import their products outside of the regular development assistance available to all SMEs, in the case of green imports, the Renewable Energy Act of 2008 provides incentives including duty-free importation of machinery and equipment related to the generation of renewable energy. End-users, including SMEs, can also exercise the Green Energy option under the said law where they can choose to contract directly with renewable energy companies for their power requirements.

Australia did not report a program designed for a wide range of green SMEs, but rather a program designed for clean energy. Under the three-year Clean Energy Trade and Investment Strategy, Austrade (the Australian Government's trade and investment development agency) has been promoting Australia globally as: A desirable investment location for renewable energy, including for biofuel projects, carbon capture and storage and energy efficiency; home to a thriving R&D sector and a source of early-stage clean technologies; and a competitive supplier of technologies and services in the energy efficiency environment and water sectors.

Papua New Guinea reported its Regional Centre for Technology Innovation (RCTI). PNG has a strategic plan for SME-appropriate technology development that aims to identify and profile existing appropriate technologies that is suitable for PNG, especially for the rural population to process their natural resources. The Centre is about developing and introducing simple machines. equipment & tools, as well as manufacturing processes for resource owners to enable them to processes their own natural resources for their own consumption and/or for sale in the domestic and international markets.

Chinese Taipei has established a Green Trade Project Office as a best practice. The Bureau of Foreign Trade under the Ministry of Economic Affairs initiated a flagship project, the Green Trade Promotion Project, to promote green trade of local enterprises, improve market access for green products, and provide online resources for carbon footprint disclosure. The Project comprises experts and practitioners from think tanks, industries, public sectors and consultancies to assist local green-product manufacturers and service providers build better connection with the global market. To implement the Project for “a greener life, a greener world”, the Green Trade Project Office (GTPO) was established in March 2011. Details are included in the best practice report at the end of this section.

Mexico reported that they do not yet have programs to assist green SMEs get market access abroad.

The United States recommended strongly that APEC should aim to support free and open trade in green products. As economies work to encourage trade in green technologies and products they must avoid creating unnecessary barriers, which could impede the adoption and use of green technologies and products. US argued that market barriers for green products should be removed, and reported some market access barriers identified by U.S. Department of Commerce:

- Local content requirements:
  - by requiring an overly burdensome percentage of environmental products come from local providers, entry into the market of technologies can be slowed and can keep out SMEs manufacturing products and components.
- Certification requirements and Technical Barriers to Trade:
  - testing and certification requirements that create unnecessary obstacles to trade discourage SMEs from entering markets and restrict their access to buyers.
- Subsidies:
  - As economies work to develop and encourage green technologies, practices which artificially distort the competitiveness of the market to keep out or unfairly disadvantage competing products and technologies discourages the adoption of the best possible environmental technologies and solutions.
- IPR Protections:
  - Measures which do not adequately protect the intellectual property of SMEs developing green technologies, or enforce infringement, can damage SMEs' abilities to compete and reduces incentives to innovate.

This element reported various measures to help market access for green SMEs. The reported measures concentrated overwhelmingly on measures to assist green SMEs in accessing foreign export markets. There were almost no reports on how member economies examined their existing laws and regulations to reduce market barriers on imports of green SME products, though some economies did report programs which facilitated imports of useful foreign technologies. This bias probably reflects the regrettable trend that measures to improve exports are politically more popular than measures to improve imports, even though imports are as important to an economy as exports in terms of improving national welfare.

Best Practice Report:
Korea: Support for Green SME Export Feasibility Study and Consulting

SMEs face problems in exporting its products abroad due to lack of distribution network and exporting experience. SMEs which create green products (i.e. green creator SMEs) face the same problems. Small and Medium Business Administration of Korea (SMBA) have initiated a support program for green creator SMEs: Providing support for feasibility studies on green SME products for potential export, and, for those SMEs which have strong potential for exports, providing consulting services so that they can export their products. Korea Environmental Industry & Technology Institute (KEITI), which is an institute affiliated with the Ministry of Environment dedicated to supporting green businesses explore foreign markets, also runs a similar program.

SMBA Support for Green SME Export Feasibility Study and Consulting

The program has four main components: Support for development of green projects; support for vendor participation (delivery) to client companies; creating favorable environment for green SMEs for export; and operating a support organization for green SMEs to export abroad.

For example, the "support for green projects" component of the program allows individual SMEs or consortium which include two or more SMEs to apply for financial support for feasibility study on export market potential of green products in selected areas of technology such as renewable energy (e.g. solar energy, fuel batteries) and increasing energy efficiency (e.g. green IT and LED). The program budget includes 900 million won specifically for feasibility studies up to around ten projects annually, and the program may provide up to 70% of the cost of the study or 100 million won per project. Priority is given

to projects for companies with total expenditure of less than 50 billion won. If the feasibility study shows that the green SME product has high market potential, then the SMBA grants funds for consulting in the areas of contracting, incorporation of a company, technology transfer and project financing (PF). The amount of the support is up to 100% of the cost of consulting up to 30 million won per consortium. The length of the support is five months. The program's total budget for all consultation support is 250 million won for up to about ten projects.

Ministry of Environment KEITI Green Export Agreement Project

In addition to the SMBA initiative, the Korean Ministry of Environment along with its subsidiary institution, the Korean Environmental Industry & Technology Institute (KEITI) also provides similar assistance to capable green SMEs. The objective of KEITI is to assist green businesses in breaking into foreign markets. KEITI provides assistance on export consulting, identification of suitable projects abroad, assistance for feasibility studies, and establishing master plans to break into markets in developing countries. It maintains a export consultation center, and provides financial assistance to qualified green creator SMEs. Through "Green Export Agreement Project," KEITI provides assistance to green creator SMEs which have set voluntary export targets for next three years, and KEITI helps these SMEs achieve their targets. In 2011, KEITI has signed agreements with 30 SMEs who have increased their green exports by 35% compared to 2010. The Agreement Project allowed Korean businesses to win contracts in Vietnam and Morocco for waste water treatment facility projects, and provide electricity generation equipment to hospitals in Japan after the Tsunami in 2011.

Results of the Program

In 2011, ten consortiums underwent feasibility studies, spending 600 million won in total. Projects included three solar energy-related projects, including building of solar energy plant in Bulgaria, as well as two projects dealing with LEDs and two projects dealing with waste reclamation. Consulting services were provided to 24 projects (360 million won total). Ten projects dealt with getting project orders, and fourteen projects were on vendor participation consulting. Two seminars were held in Korea on international green market trends and how to break into foreign green markets. 283 people participated in these seminars. Further, three green partnership seminars were held outside of Korea (in Spain, Japan and China) and 91 firms participated. These seminars resulted in contracts of 22.4 million dollars for Korean green SMEs.

Both SMBA and the Ministry of Environment program seek to provide comprehensive assistance to green creator SMEs. Previously, there were many instances where green SMEs had viable green technologies, but failed to commercialize them. Further, even in the cases where SMEs succeeded in turning technology into a product with commercial possibilities, many SMEs failed in domestic and international markets because of lack of capital, market information and marketing know-how, especially in foreign markets. The programs listed in this report are designed to overcome such problems using a comprehensive approach. Support is given first for a feasibility study, to make sure that the green SME product or service is commercially viable. Then financial and informational assistance is given to break into the foreign markets. Further, because the program first allows firms to receive feasibility study results, those firms whose products are not viable can be discouraged and the resources be shifted to those SMEs with better prospects.

Best Practice Report:
Chinese Taipei: Green Trade Project Office

In view of the climate change and the urgent need for sustainable development, Chinese Taipei is now moving towards a low-carbon and eco-friendly economy. More attention has been paid to the requirements of carbon emission reduction and ecologically-friendly green products and services. Considering the prospect of green trade is promising, the Bureau of Foreign Trade under the Ministry of Economic Affairs initiated a flagship project, the Green Trade Promotion Project, to promote green trade of local enterprises, improve market access for green products, and provide online resources for carbon footprint disclosure.

The Project comprises experts and practitioners from think tanks, industries, public sectors and consultancies to assist local green-product manufacturers and service providers build better connection with the global market. To implement the Project for "a greener life, a greener world", the Green Trade Project Office (GTPO) was established in March 2011

Objectives:
The 4 objectives of GTPO are:

- Enhancing Chinese Taipei's competitiveness and increasing local companies' green awareness;
- Promoting green products and services of local enterprises abroad;
- Assisting local enterprises to seek international green business opportunities;
- Presenting the excellencies of local well-established green supply chain

Organization and Strategies:
The GTPO provides a wide range of services, including environmental policy analysis, training courses, business consulting, and international marketing. The GTPO is constituted of the following divisions:

- Coordination Division
- Policy Analysis Division
- Consulting Services Division
- Training and Education Division
- Integrated Marketing Division

The 5 division would collaborate intensively to implement 3 strategies as follows:

Strategy I：Consulting Services:
GTPO provides consulting services, promotes carbon footprint disclosure programs, and improves domestic-international market connections to cultivate green competence of companies in Chinese Taipei.

- Consulting Services
  - To establish consultation services and mechanisms
  - To assist business accessing governmental consulting resources
  - To assist business using the resources offered by GTPO
- Disclosure of Carbon Footprint for Trade Services
  - To encourage carbon footprint disclosure of conference activities
  - To assist service providers to disclose their carbon information in accordance with ISO 14064-1 or PAS 2050
- Domestic-International Market Connection
  - To invite international organizations, trade partners, and enterprises to Chinese Taipei for seminars and workshops
  - To assist business participating in international green trade conferences & activities

- To publish e-news periodically and taking part in the international conferences and trade fairs

Strategy II：Training and Education:

The GTPO regularly holds seminars related to green consumption, green technology, green regulations, green purchasing and green procurement. The GTPO also holds Green Summit each year to address the megatrends in green growth policy and green trade. The seminars and the Green Summit aim to build up green awareness of the public; form an international network with foreign think tanks, research institutes, green organizations and governmental agencies, and enhance capacity of enterprises and government officials in green trade issues. In order to foster human capital of local companies on green trade, the Advisory Committee, Expertise Building Programs and the Information Website were established.

- Advisory Committee
  - To integrate the resources from cross-governmental departments
  - To provide policy suggestions
  - To sort out niche products/markets
- □Expertise Building
  - To hold international conferences and training sessions
  - To provide on-line green trade training
- Information Website
  - To collect information of international organizations, regulations and certifications
  - To collect information of international green procurement & green supply chains

Strategy III： Integrated Marketing

In order to enhance visibility and promote green image of Chinese Taipei in global business communities, GTPO actively participates in international trade fairs and promote green procurements; collaborates with local industrial associations and promoting green trade; regularly arranges video-conferences for international buyers with local companies; organizes visits to international buyers for local quality suppliers, especially small and medium enterprises (SMEs), and; sets up the Taiwan Green Classics Award.

- National Green Image Building
  - To build green national image
  - To participate in international exhibitions and gain media exposure
  - To organize the promulgation of Taiwan Green Classics Award
- Overseas Orders
  - To increase exposure for green products & services
  - To contact and invite overseas green buyers
- Integrated-marketing Activities
  - To market green products & services on-line
  - To hold on-line trade interviews
  - To earn GPA business opportunities for green products & services

Achievement of 2011

- 1 Telephone-based Services Center
- 1 Information Website
- 120 consultation cases
- 2 research projects on “Impacts of Green Trade” and “Niches for Green Trade”
- 1st Eco-Product Directory (English version) comprising 284 green products from 94 local

companies

- 4 cases of carbon footprint disclosure
- 4 green procurement exhibitions
- 11 Green Trade Training Programs
- 1st Taiwan Green Classics Award
- 5 industrial exhibitions overseas

C-11: Raise Consumer Awareness on the Importance of "Green Consumption" and Green Technologies

This element examines activities and programs by government of member economies for raising consumer awareness on importance of ‘green consumption’.

Although businesses and governments have powerful influence on ways products and services are produced and consumed, consumers have even more powerful influence as their purchasing decisions have direct impact on sales, which in turn directly impact sustainability of companies that rely on revenue from business to consumer transactions.

There have been many examples of profound impact consumers made on individual companies. For example, strong reaction of consumers against Nike’s use of child labor led Nike to fundamentally change its policy on use of child labor. Moreover, it led to strengthened standard on ban on use of child labor by many similar companies. As the Nike case demonstrates, companies rise and fall with change in consumer preference and what consumers tolerate and what they do not.

Currently, relatively small number of consumers regards environmental performance of companies or environmental characteristics of products as key considerations in their purchasing decisions. Ironically, consumer survey results suggest that much larger number of consumers inspire to be a responsible consumer. This suggests that there are many consumers with potential to create new demand for green products, provided that their awareness on benefits of green products and technologies are heightened.

Of course, increased environmental awareness alone would not turn all potential ‘green’ consumers into environmentally-conscious consumers and green policies that provide incentive for green consumption will be necessary. However, it is virtually impossible to introduce substantial green policies in a country populated with consumers (voters) with low environmental awareness. Therefore, increasing consumer awareness has a double-fold benefits of expanding green consumer base and fostering of informed citizens willing to embrace green policies required for green transition of the economy.

Twelve economies reported information on their programs designed for raising consumer awareness. Many economies had similar initiatives including environmental labeling and green lifestyle promotion campaigns.

<Table C11-1> Reporting Economies for Element C-11

Dedicated green consumer awareness raising program	Relevant program focused on promotion of green consumption
Australia Indonesia Japan Republic of Korea Malaysia Mexico New Zealand Papua New Guinea The Philippines Chinese Taipei Thailand	

United States	

Many member economies had policies focused on environmental labeling including carbon footprint labels. Many of the member economies also had sustainable consumption education as a part of national curriculum for educating students on importance of sustainable consumer culture. Summary of information on consumer awareness raising program on green consumption of each economy is as follows.

Australia has a number of initiatives to raise consumer awareness about the importance of greener consumption and to provide consumers with information on the energy performance and water consumption of a range of products.

LivingGreener.gov.au	This is a single, user-friendly government website to provide consumers with information on household energy efficiency and living sustainably to encourage behaviour change.
The Equipment Energy Efficiency Program (E3)	This is a joint Commonwealth/State initiative to improve the energy efficiency of equipment and appliances, using mandatory Minimum Energy Performance Standards (MEPS) and Energy Rating Labels (ERLs).
EnergyRating.gov.au	The core function of the wcbsite is online registration and approval of products so they can be legally sold in the Australian and New Zealand markets.
Product environmental label scheme	The Water Efficiency and Labeling and Standards (WELS) scheme is a national legislative scheme that requires specified water-using products to be registered and labeled for water efficiency when supplied, helping Australian households to save water, energy and money.
National education curriculum	Sustainability is now reflected in the curricula for English, maths, science and history.
National Action Plan, Living Sustainably	This plan was developed by DSEWPaC in 2009 and aims to equip all Australians with the knowledge and skills required to live sustainably.

In Indonesia, public awareness campaigns are mostly undertaken in the form of environmental related exhibitions by the government. Exhibitions are also regularly carried out by companies such as the event of "Environmental Week" which is also participated by SMEs producing environmental friendly products. Public campaigns to encourage people to use environmental friendly products and services are also undertaken by many institutions both from the government, companies and NGOs. Kompas (a mass media), Unilever (consumers' products company) and other government owned companies are examples of companies that organize environment-concerned exhibitions.

In Japan, the Consumer Affairs Agency in the Government of Japan has the portal site for consumer awareness raising, a part of which is for the environment; There are also many kinds of product environmental labels for consumers. While some are operated by national/local governments, others are operated by private companies. Key characteristics of two green labelling schemes are as follows.

Eco mark	- Operated by a public organization based on ISO standard 14024; - This mark may be put on environmentally friendly products; and placed on more than 4,800 products
Green Policy Innovation mark	- Operated by Fujitsu company since November 1998; and - This mark may be put on highly environmentally friendly products (ex. PCs) approved as "Green Products" to meet the criteria set by the company.

In Korea, the Korean government has been actively supporting consumer campaigns and environmental labeling schemes to promote green consumption since late 1990s. The focus on green consumption shifted from environmentally friendly products to low carbon products since Korean government announced low carbon green growth as the new growth paradigm. The 'Green Start' campaign, launched in October 2008, is one of the newer campaigns designed to promote low carbon consumption and greener lifestyle. The objective of campaign is to achieve significant reduction in national GHG emission through proliferation of green lifestyle. Environmental labeling is another important tool used in raising consumer awareness on greenness of products. Environmental label programs in Korea includes Environmental certification mark and Good recycled label scheme. The Ministry of Environment and KEITI launched product carbon footprint assessment and labeling service which have become the second largest scheme in the world with 434 products labeled, following the UK. Despite its short history of only three years, it has become well established as a national scheme that raise awareness on carbon footprint associated with various consumer products. Korea has submitted a best practice report on environmental labeling program which is attached at the end of this section.

Malaysia has various policy goals for promoting green products including 50% of selected products and services purchased by the public sector should be eco-label certification by 2020. Following green objectives of Malaysian government also indicated that there is a strong emphasis on use of green labels for raising consumer awareness.

- To promote awareness on Green Technology among SMEs
- To increase production of green products and services that will certify with green label;
- To expand market on green products and services.

In addition, the following objectives of MyHijau SMEs & Entrepreneurs Program also indicate a strong emphasis on use of Eco(green) labels for promoting green consumption.

- Green labelling such as Eco Label or GreenTag
- Marketing and promotional activities

Mexico has a successful program on consumer awareness-raising on green lighting as follows:

The Sustainable Light program helps to familiarize Mexican families with efficient lighting technologies, thereby strengthening the market transformation of energy-saving lamps to facilitate the transition to standard NOM-028-ENER-2010, which set minimum limits efficacy for lamps in the residential, commercial, services, industrial and street lighting.

Mexico also has an environmental label scheme that provides consumers information on positive/negative environmental impact of products. License for use of the FIDE seal is awarded to products of the companies that verifies to the FIDE by technical documentation and test reports issued by accredited laboratories(domestic or foreign) that their products are outstanding in the efficient use of energy electrical, or whose properties or attributes help reduce consumption of it.

New Zealand has a number of initiatives designed for raising consumer awareness on importance of green consumption and green technologies. List of relevant initiatives are as follows.

Energy Rating Labels and Energy Star systems	Energy Rating Labels appear on all new appliances, telling consumers how much energy the appliance uses in a year and rating it out of five for efficiency. The rating systems are promoted through television and online advertising campaigns to raise consumer awareness of the systems and the benefits of choosing energy efficient appliances.
Landcare Research New Zealand's CarboNZero programme	Provides emissions certification and tools and resources to measure, manage and mitigate greenhouse gas emissions for individuals, households and businesses. NZTE also provides a directory of certification and ecolabel schemes for businesses wanting to participate in an ecolabel scheme or gain certified

	environmental impact credentials. The Ministry for the Environment provide a directory of product stewardship schemes, encouraging businesses that use particular products to participate in recycling / environmentally sound buy-back programmes, though the government does not run these programmes itself.

New Zealand's education curriculum is non-prescriptive, so teaching about green consumption depends on how teachers choose to illustrate Achievement Objectives for their students. The Social Science areas of the curriculum cover understanding producers and consumers and how they exercise rights/meet responsibilities, and understanding how economic decisions impact people, communities and nations.

Papua New Guinea reported its environmental policy on prohibition on the use of non-biodegradable plastic bags. Administered by the Department of Environment and Conservation (DEC) these regulation came into force in November 2009 prohibiting manufacturing and import of non-biodegradable plastic bags. However, weak monitoring system in place has made the ban difficult to enforce. However, some business has now taken the initiative under the Public Private Partnership Policy arrangement to further this campaign on a positive note by encouraging the use of other products instead of plastic bags. The Bank South Pacific Limited (largest Financial Institution in the country) has introduced Green Bilum and Basket Competition involving interested locals especially women to produce hand-made bags from tree bulks and Baskets to enter into competition to win weekly prize money.

In the Philippines, the eco-labeling initiatives such as the Green Choice Philippines Seal of Approval as well as the Energy Labels for electric appliances and devices have been launched to help create consumer awareness on green products and influence their buying behaviors. The initiative of the Philippine Green Building Council (PGBC) is to come up with its BERDE rating system for checking compliance to green building standards or best practices, can even be considered as supportive of eco-labeling since the ratings can be used by consumers as a decision criteria in buying real estate properties. The Green Purchasing Alliance Movement (GPAM) was also launched in 2009. This is a movement composed of government agencies, non-government organizations (NGOs) and private business institutions that consistently patronize environment-friendly or eco-labeled products. Among the objectives of the movement is to encourage for more SMEs and companies in the Philippine market to produce and sell environment-friendly or eco-labeled products for food and health safety and for the conservation of the environment. It also seeks to come up with advocacy and promotion activities geared towards better consumer appreciation of green products. For example, the Philippine Green Pages (www.philippinegreenpages.com) is an online directory of environment-friendly products and services which can serve as a consumer guide to institutional purchasers and individuals. Also, the Philippine government enacted last 2008 Republic Act 9512 which is intended to promote environmental awareness in the various sectors of society. The law specifically provides for the integration of environmental education in the school curricula at all levels. It likewise declared for an Environmental Awareness Month which is to be celebrated annually every month of November.

Chinese Taipei established the Green Mark Program, Green Construction Material Label, Energy Label and Water Conservation Label Programs to promote deployment of energy efficiency technologies and application of market incentive mechanisms, as well as to encourage manufacturers to invest in research and development of environmental products. Applicants determined to have met the requirements of criteria through the application reviewing process are allowed to affix energy labels on qualified products. Furthermore, to construct Green Consumerism, national education curriculum from primary school to higher education provides a wide range of environmental modules, including issues of green purchasing, carbon footprint, and etc.

Thailand's National Environmental Quality Management Plan includes 'Enhancement of environmental awareness and responsibilities' as one of its top priority. And the policy on promotion of sustainable

consumption includes ‘encouraging people to buy environmentally friendly products.’ Development of environmentally-friendly agricultural and industrial production are also included as part of the Thailand’s national strategy. Thailand also has an active eco-labeling scheme which has made following progress.

Total Certified Green Label Products	555 products in 25 categories by 71 Companies (as of March 2012) - Carbon Footprint: 480 products (as of Mar 2012) - Carbon Label: 154 products (as of Jan 2012)

The United States has a number of labeling schemes designed to inform consumer on environmental impact of consumer products and promote green consumption. The U.S. Environmental Protection Agency develops standards and eco-labeling programs as part of its mission to protect human health and the environment. The scope of EPA-endorsed eco-labels is quite broad, ranging from electronics to chemistry.

Energy Star	- Helps consumers choose energy- conserving devices - Affixed to thousands of products, including TVs, laptops, refrigerators, etc. - Public awareness >80% in 2011
Watersense	- Newer program to recognize water-saving devices including toilets, faucets and irrigation controllers (dishwashers are under energy star)
Design for the Environment	- Recognizes safer consumer, industrial and institutional products - DfE also provides EPA technical tools and expertise as incentives to businesses for participation and change.

Best Practice Report:
Korea: Raising Consumer Awareness on Importance of Greenhouse Gas Emission Reduction, through Carbon Footprint Labeling Scheme

In 2008, Korean government announced ‘Low Carbon Green Growth’ as a new paradigm for achieving economic growth of Korea. Since then a number of new policies were introduced to help companies reduce greenhouse gas(GHG) emission associated with their business activities and help raise consumer awareness on GHG emission associated with products they consume. The carbon footprint labeling scheme serves as an assessment tool for companies to help understand how much GHG emission is associated with production of their goods or services. It also serves as a useful tool for educating consumers on how much GHG emission is associated with products and services they consume.

The companies seeking carbon footprint label for their products is required to make detailed assessment of GHG emission associated with lifecycle of the products from extraction of raw materials to disposal/recycling of the products at end of its life cycle. The labels are placed on the packaging of products to raise consumer awareness on GHG emission associated with consumption.
The Ministry of Environment implemented various incentive policies for products with carbon footprint labels.

- Bonus point scheme for buyers who purchased carbon footprint labeled products using the 'Green Card,' a special credit card.
- Up to two bonus points in building environmental performance rating for buildings constructed using carbon footprint labeled materials.
- Carbon footprint assessment result as one of the evaluation criteria of the Public Procurement Service for products including air conditioner, laundry machines, desktop computers and LCD monitors.
- Free training on life cycle carbon footprint assessment, climate change and greenhouse gas reduction

The Public Procurement Service is planning to revise their policy to make carbon footprint label mandatory in near future in order to encourage companies to participate in the scheme.

The number of companies participating in the carbon footprint label scheme has reached 100 mark as of April 2012 with a total number of carbon footprint labeled product at 548, which is more than three folds increase from 33 companies and 111 products in 2009. The number of carbon footprint labeled products is second largest in the world following the United Kingdom.

The Ministry of Environment expects over one thousand products to be carbon footprint labeled by 2014, leading to enhanced consumer awareness on carbon emission and better management of GHG emission.

C-12: Online Tools and Resources for Environmental and Economic Performance Improvement Tips for Green SMEs

Provision of online tools and resources are increasingly becoming a popular new policy initiative in developed economies. They are especially ideal for raising awareness of new concepts and providing practical tips which may quickly result in tangible benefits, in turn, leading to greater interest and stronger engagement of targeted businesses. Such form of online engagement is especially useful for SMEs as they can be accessed without any cost provided that SMEs have access to computers, smart phones or telephones.

Such online tools and resources can be used by both green creator SMEs and green user SMEs, depending on the range of information available. For example, if information on standards for green products, registering green products or technologies, contact information for green growth specialists or government officials are online, green creator SMEs can reduce their costs of doing business. For green users, online information on low-cost green alternatives can greatly help accelerate the use of green products and technologies, and introduce basic principles of green management. For example, Carbon Trust, established with UK government funding offers sector specific advice for 21 business sectors including government, healthcare and horticulture. UK SME business owners and employees can also call '0800 0852005' for consultation on energy saving, allowing business owners with less proficiency in computer use to access Carbon Trust's service.

Overall, online tools and resources have much potential as useful tools for greening of SMEs both as communication and support tools.

Ten economies reported relevant information on use of online tools and resources for environmental and economic performance improvement for Green SMEs. More industrialized economies had online tools and resources. Some economies reported that they offered telephone-based services for consultation.

<Table C12-1> Reporting Economies for Element C-12

Online Tools and Resources available for environmental and economic performance improvement of SMEs	Relevant program focused on provision of environmental and economic performance improvement tips
Australia Republic of Korea Mexico New Zealand Chinese Taipei United States	China Indonesia Malaysia Thailand

Following member economies operates online tools and resources for environmental and economic performance improvement of SMEs.

In Australia, the Australian Government's business portal, business.gov.au, offer links to a number of online tools and resources in its Environmental Management topic. These tools and resources are developed by the Australian Government and the State and Territory governments and feedback on the tools and resources is collected by the individual agencies. Business.gov.au does not provide sector specific advice. A full list of the tools and resources is available at:
http://www.business.gov.aulBusinessTopics/EnviromnentalmanagementlPages/default.aspx

Also, the national Small Business Support Line also provides small business owners with a single point of contact to access information and referral services to improve their business sustainability and help better manage their business. Further information is at: http://www.ausindustry.gov.aulprograms/small-business/sbsl/Pages/default.aspx

In Korea, a number of government funded institutes and public corporations provide a wide range of information on climate change related policy updates on their web sites. For example, the Korea National Environmental Information Center provides information on environmental policies of 20 key countries, to which Korean businesses export. KEITI, a government-sponsored green technology/product support organization, provides comprehensive information for companies associated with environmental services and green products at http://www.keiti.re.kr/home/business/indust8.jsp. The information is classified into four categories including R&D support, business incubation, export support and green products/management, for easy access.

Mexico reported that 'even when there are online tools for environmental and economic performance, this information is not specific for SMEs, and then this information could be useless for these sectors.' Environmental management system of the Mexico City government has reference documents, manuals and guides for green SMEs. But no online feedback is offered and advice is not specifically designed for green SMEs. Principal targets for these online tools are civil society organizations, private sector, academic and science sectors.

New Zealand has a number of on-line policy tools to designed to help SMEs make green transition, including the following.

Envirostep	Free entry-level self-assessment tool for businesses, comprising a questionnaire, a performance report, recommendations for improvement and over 400 links to other relevant websites. Recommendations can also be uploaded into an action plan, which helps users implement and track improvement. (http://www.eco-verification.med.govt.nz/envirostep)
Better By Design	An NZTE initiative incorporating design principles into all aspects of business practice, produces an online Sustainable Business Guide to help business owners understand the opportunity that sustainability offers. It contains information on the importance of sustainable businesses, interviews with business owners who have successfully integrated sustainability practices into their business models and a directory for further investigation. (http://www.nzte.govt.nz/develop-knowledge-expertise/Documents/NZTE_Sustainable%20Business%20Design.pdf)
Overseer	Agricultural management tool which assists farmers and their advisers to examine nutrient use and movements within a farm to optimize production and environmental outcomes. (http://www.overseer.org.nz)
Climate Change Adaptation Toolbox	The Adaptation Toolbox has a 5-step process to help you assess your resilience to the current climate, understand impacts of future change and find ways to act. (http://www.maf.govt.nz/environment-natural-resources/climate-change/resources-and-tools/adaptation-toolbox.aspx)
One2five Energy Diagnostic	It engages senior decision makers from businesses in both web based bench marking and in-person sessions. The programme helps businesses assess their current energy management, bench mark against best practice, and develop a plan for continual improvement. (http://www.eecabusiness.govt.nz/services-and-funding/energy-diagnostic)
Energy Leader	Designed to assist SMEs to identify energy saving opportunities, based on the completion of an interactive questionnaire. Energy Leader can be found

	at http://www.eecabusiness.govt.nz/energy-leader
Greening the Screen	An online tool kit to help film and television production companies make environmentally sound choices. (http://www.greeningthescreen.co.nz/)

Chinese Taipei has implemented numerous programs to provide tools and resources online for SMEs. In regards to Green SMEs, the SME Green Information Platform (http://green.pidc.org.tw/index.php) introduces the latest development related to environmental regulations, issues and researches in the globe; providing training programs, educational materials, and best practice for SMEs, and; online tools for performance evaluation, e.g. Carbon and Water Footprint Verification Programs. The SMEs Energy Saving & Carbon Deduction Information Platform (http://ghginfo.moeasmea.gov.tw/moeasmea/wSite/mp?mp=00602) is created to promote management capacity of SMEs to enhance energy/water efficiency and reduce greenhouse gas emission. Free consultation services, performance evaluation programs and training courses are also provided for SMEs. SMEs can access and/or apply for all the government information, services and programs via internet, phone or contact the agencies in person.

The United States has online tools and resources for SMEs and businesses that want to greener on the Small Business Administration and Environmental Protection Agency sites.

Small Business Administration (sba.gov)	- Broad range of support for SMEs - Green Business Guide provides a detailed catalogue with links to resources for small business that want to pursue green policies. - Sample resources include case studies and green product development.
Environmental Protection Agency (epa.gov)	- Commissioned an Environmental Management System (EMS) implementation guide for small and medium-sized organizations. - Guide includes advice on why organizations should have an EMS and how it can be implemented. - Provides a roadmap toward development and implementation of effective EMS strategies.

Member economies with relevant program focused on provision of online tools and resources for environmental and economic performance improvement tips to SMEs are as follows.

China has a plan to hire energy management professionals for companies with high energy consumption, which is an offline-focused approach to tackling CO2 emission. The presentation by the China Center for Promotion of SME Development stated building of information platform as one of its program objective. However, it is not clear whether China already offer online tools and resources for SMEs on more efficient and greener business management.

In Indonesia, there are no specific online tools and resources dedicated to SMEs as improvement tips for green SMEs so far. However to enhance awareness, understanding of SMEs on national green initiatives, there are webs of relevant agencies that SMEs may get access to. The Ministry of Environment (www.mlh.co.id) and the Ministry of Industry (www. kemenperin.go.id) are two government agencies that provide most related information on green initiatives that useful for SMEs as well. Besides, many NGOs such as Aliansi Organis Indonesia (AOI) and universities such as Bogor Agriculture University also have websites that provide relevant information to enhance people awareness on green related issues and opportunity in doing green business.

Although Malaysia does not have a dedicated website for green business tips, its '1-Innocert mechanism' has an online registration and self-assessment tool which could serve as a loose guidance on

greener business management especially with pre-certification coaching and external consultancy offered to companies that scored less than 700 out of 1,000.

Thailand has a Green SME Promotion Plan which include following actions that are relevant to provision of on-line tools for helping SMEs make green transition.

- Encouraging SMEs to engage in business operations by applying principles of good governance & supporting business operations that are environmentally-friendly
- Promote knowledge on business operation with social & environmental responsibility

However, it is not clear whether how many on-line tools for SMEs have been created.

4. Area D: Creating Green Partnerships

The last area is "Creating Green Partnerships." In the first three areas, the government is the explicit leader in setting and implementing green growth policies. However, too much active involvement by the government sets up the danger that the green SMEs will become too dependent on government - that it will not be able to become successful independent firms or industries, and will always need government assistance. In order to help the green SMEs and green industries become viable in their own rights, they must build links with others - businesses, the civil society, foreign firms and organizations, and other green or non-green SMEs. This area is designed to look at what the government is doing to help green SMEs build such relationships with non-government groups or international bodies (government and non-government) so that they can grow to be more independent of the government and more interdependent with other economic agents and society. Each element looks at partnerships with different types of organizations: 1) Partnerships with green SMEs and large corporations (e.g. supply chain management); 2) partnerships with green SMEs and universities and research institutions (e.g. cooperative R&D, technology transfer); 3) partnerships with other SMEs (green and non-green); 4) partnerships with civil society and local communities; and 5) international partnerships (with international bodies, both government and private).

D-13: Green Partnerships with SMEs and Large Corporations

A large number of modern commodities and products are produced using resources and services secured via complex web of supplier network. Automobile is a prime example of such product built using thousands of parts and services of large number of suppliers, most of which are SMEs.

Today, many of consumer products from simple food products to more complicated machineries are subjected to environmental quality performance standards. For instance, EU bans use of heavy metals such as hexavalent chrome in car parts and therefore automobile manufacturers now must use parts that are free of the banned substances.

In theory, each supplier of raw materials and parts is responsible for production and delivery of goods that are in compliance with relevant environmental standards. However, understanding and complying with ever-increasing green requirements has become a serious challenge for SMEs which often lack dedicated workforce for environmental R&D and compliance work.

Government support can be significant help for such SMEs which must cope with increasing number of ever-stringent new green requirements. However, supporting green transition of SMEs is a paramount challenge for any government regardless of economic development status because there exist millions of SMEs in any economy. Such problem can be alleviated with support of large companies which have existing business relationship with relevant SMEs. For instance Toyota has made a sustained effort to improve environmental compliance and general environmental management performance of its suppliers since early 90's.

Overall, there is a strong business case for government to encourage and support green partnership between large companies and SMEs, especially considering large companies' strong potential to positively influence its suppliers with their purchasing power.

Seven economies reported information on their programs designed for promoting and encouraging green partnerships between SMEs and large corporations. Many economies, especially member economies with many large corporations or SMEs which supplies their products to large corporations had relevant policies in place.

<Table D13-1> Reporting Economies for Element D-13

Policies on directly supporting green partnership with SMEs and large corporations	Relevant programs on supporting green partnership with SMEs and large corporations
Indonesia Republic of Korea Mexico Papua New Guinea Chinese Taipei Philippines	United States

Many member economies with a significant number of large corporations and SMEs had policies on supporting green partnership between large corporations and SMEs with few to several years of history. Many of the large corporations are supporting greener business management of their suppliers many of which are SMEs. Interestingly, Japan, a country populated with a large number of corporations did not report on any large company-SME partnership support policy. However, it should be noted that many

large Japanese corporations have supplier environmental management support program on their own. Likewise, it is possible that large-SME partnership programs exist in economies that did not report on having relevant policies since such partnership can be created regardless of government support, for mutual benefits of both large companies and SMEs.

Member economies with policies on directly supporting green partnership with SMEs and large corporations are as follows.

Indonesia has laws on mandating government to encourage partnership between large corporations and SMEs. And there has been already some cooperation between state-owned large companies and SMEs on various businesses including organic fertilizers as follows: The basic regulation underlying business partnership involving SMEs is stated under the Law number 20 of 2008. Article 25 states that the government must facilitate, support, and stimulate partnership activities, under the principles of mutual need, trust, strengthen each other and profitable. The partnership may take a variety of activities include transfer of skills in the production and processing, joint marketing, co-financing, human resources development, and technology transfer. Other regulation related to partnership between SMEs and state owned enterprises is regulated under the decree of the Minister of State Enterprises number 05/MBU/2007 concerning Partnership Program to Small Business and Community Development Program (abbreviated as PKBL). The PKBL is a form of social awareness to the community and the neighborhood, or better known as Corporate Social Responsibility (CSR).

Sub-contracting is one of the most common type of business partnership between large companies and SMEs. For Indonesia, in many big plantations such as in palm oil, rubber, cane plantation, SMEs under cooperative organization establish business linkages with the big companies. Supplying organic fertilizer to big company is an example of SMEs green business under partnership business undertaking with big company. Pt.Pusri is a state owned company that establishes business partnership with SMEs in producing organic fertilizer. Indonesia presented the case of Pt.Pusri as a best practice, and the best practice report is included at the end of this section.

In Korea, large company-SME green partnership program has been supported by the Ministry of Knowledge Economy since 2003, with multiple program objectives from establishment of environmental management system to removal of regulated substances. Between 2003 and 2010, 22 large corporations and 969 SMEs participated in the partnership program, resulting in both cost saving and boost in environmental performance. For example, CO2 reduction achieved through partnership is estimated as 63,000 tons per year and annual energy cost saving is estimated as 68.1 billion KRW. Starting in June 2009, large company-SME carbon management partnership was launched as a two year program. Participating companies received support in establishing greenhouse gas inventory system and carbon management system. As a result, the participants achieved CO2 reduction of 56,377 tons with energy cost saving of 27.5 billion KRW over two years. A total of 22 billion KRW was provided by the Korean government between 2003 and 2010 for the large company-SME green partnership initiative. The funding is provided to participant groups on project basis. The size of funding varies but it can be as large as 500 million KRW for a multi-year project involving one large company and 20 to 30 suppliers. Typically, participating large companies also invested their own resource including additional financial resources and expertise to ensure success of the projects. The Korean government is committed to expanding this successful initiative and has established long-term targets. According to the government announcement made in 2009, the Korean government plans to increase number of SMEs participating in green partnership from 685 SMEs in 2009 to 2,900 SMEs in 2020. It also plans to increase its number to 9,000SMEs in 2050.

Mexico does not have a government target and timeline for large-SME partnerships. However, there is a program for purpose of supporting SME's to supply green products to large companies. The 'SEMARNAT Environmental Leadership for Competitiveness' program encourages small and medium enterprises, providers of large enterprises; enhance competitiveness through cost savings in their production processes to reduce water consumption, energy and raw materials and emissions, waste and discharges of pollutants. The Environmental Leadership Program "is a voluntary program in which each company must be represented by two directors. They must have a profile of managers or persons responsible for Production, Maintenance, Quality, and Environmental Management or related, they are professionals with a minimum of two years of experience in business or industry. " In addition, it takes 40 hours classroom and 80 in their own plants, with nine meetings held over a period of three months. Data show the current program SEMARNAT Environmental Leadership for Competitiveness has grown so much that at the time involved 1.532 companies in 20 states throughout the country, with facilitating partners as the Partnership for Sustainable Development and Environmental Development, AC, Center for Sustainable Engineering and Energy of the Tecnológico de Monterrey, Campus Chihuahua Incubaempresas, AC, Instituto Tecnologico de Estudios Superiores de Occidente, AC; Caribbean University and the University Center Iberomexicano. Under a public-private partnership involving leading companies, suppliers and chambers and associations, private sector, and the federal government and local governments, public sector, related parties through linkage institutions, Environmental Leadership for competitiveness, is a program that does not discriminate any kind of productive activity. So for every peso invested by the private sector in the program, you save 1.57 pesos per year, 5.7 liters of water, 3 kWh and 346 grams of CO2 avoided and 256 grams of waste. While the annual savings achieved by the public sector for each peso invested is 162 pesos, 585 liters of water and 35 kWh, and avoid 36 kg of CO2 and 26 kilos of garbage.

The Government of Papua New Guniea, through the Ministry of Trade, Commerce &Industry and the Department of Commerce and Industry assist landowners to actively participate in spin-off activities resultant from major resources project developments. The Department of Commerce and Industry on the 22nd November 2009 was mandated by NEC to carry out the first of its kind the Business Development Grant Disbursement under the 1991Oil and Gas Act Section 171. The mandated task was given to the Department not only because it is in charge of all the Commercialization in Papua New Guinea but it also had the expertise in the field of Business in both Local Business Development and Supply and Procurement Supplies. Thus NEC endorsed K120 million seed capital for LNG Lancos

In the Philippines, many larger companies have started initiatives to assist their smaller suppliers to become greener. Nestle has carried out its greening the supply chain program since 2000, reaching out to over 170 of its local suppliers, among them many small companies. This initiative has pushed SMEs to become more competitive through resource efficiency and other environmental good practices. The EU-supported project, Green Philippines Islands of Sustainability (GPloS), has also catalyzed initiatives by companies to green their supply chain such as in the case of Manila Water Company. The company joined the program as one of its beneficiaries. Realizing that their company stands to benefit from the greening of their supply chain, it initiated to have their suppliers to be covered also by the program. It recently recognized 11 of its suppliers who have since availed of the program's services. The GPloS is a partnership of EU, private institutions as well as government agencies.

The Philippine Environmental Partnership Program (PEPP) of DENR provides a set of incentives and a package of assistance to encourage companies particularly SMEs to improve their environmental performance including energy efficiency, pollution prevention and cleaner production process. A total of 16 industries were recognized by the DENR-PEPP for qualifying the program's Track 1 classification. Although the purpose of the program is to support industry self-regulation towards enhanced environmental performance, it has likewise become an effective strategy for SMEs to become part of

green supply chains. Several of the microelectronics companies recognized by PEPP are Sony Green Partner Awardees. Toyota Philippines is likewise a PEPP awardee and has been into the greening of its supply chain for quite some time already. Although there is no specific government program related to greening of supply chain, there are already various efforts initiated by the private sector in this area and which normally taps government support and resources. In the same manner, although there is no dedicated portfolio for funding green supply chain projects but said projects can access the various funding mechanisms available for ESTs particularly both from government financial institutions such as Development Bank of the Philippines (DBP) and Land Bank of the Philippines (LBP) and private banks.

Establishing green partnerships between SMEs and large corporations is one new trend in Chinese Taipei greatly promoted by via CSR programs of large enterprises nowadays. The government has also initiated a series of green supply chain programs to promote green partnership of SMEs with domestic and large international enterprises. For example, the project of "International Green Supply Chain Consulting for SMEs", coordinated by the SMEA, introduces latest news, regulations, requirements of countries and large enterprises, and provides a wide range of consultation services, training courses, tools and guidance for SMEs to align their operation with the developments of green supply chains. There are other programs created with similar purpose including the project of "Industrial Sustainable Development Clearinghouse", coordinated by the Industrial Development Bureau, with the base of ISO 9001/14001, uses the necessary management and technique tools, such as Design for Environment (DfE), Green Supply Chain (GSC), Environmental Cost Accounting, and other advanced technologies in the engagement of helping SMEs to enhance their green competitiveness.

Member economies with relevant programs on supporting green partnership with SMEs and large corporations include the following:

The United States promotes market driven, private sector-led partnerships to take place. For the example, The U.S. Department of Commerce's International Trade Administration has the U.S. and Foreign Commercial Service (USFCS) provides matchmaking services and public-private partnerships through which SMEs, and SMEs and large corporations, can connect.

Best Practice Report:
Indonesia: SMEs and State Owned Company Partnership In Producing Organic Fertilizer (Pt.Pusri)

Background

The state owned company of Indonesia, Pt.Pusri is a pioneer of the National Fertilizer Industry. This company is continuously innovating in the field of fertilizers in order to achieve national fertilizer self-sufficiency. One such innovation of this company is in the production of organic fertilizer enriched with microbes. This activity is in line with the government's "Go Organic" campaign.

The research results of the land utilization in Indonesia showed that 79 % of paddy fields in Indonesia had the levels of soil C-organic less than 2%. This was due to the excess use of chemical fertilizers. This condition leads to a substantial decrease of soil fertility and it is not favorable enough for productive agriculture and plantations. The suitable level of C-organic in the soil is at least 5%.

"Pusri Organic Plus" is the organic fertilizer product brand to improve the soil texture and structure, and it has the added values because it contains additional material of microbial strains that serve as biological fixation of nitrogen, phosphorus and potassium solvents, as well as hyper growth hormone and controlling the crop disease. Stated differently, the product has a promising future as the awareness of the

people toward green agriculture is increasing as well.

In meeting the national demand of organic fertilizer, Pt.Pusri finds smart solution by establishing business partnership with SMEs covering wide range of activities to ensure availability of resources, spreading out production process and a wide distribution of the products.

Partnership with SMEs

Business partnership between SMEs and Pt.Pusri is base on the need for the development of mutually beneficial business linkage, since both sides has their own industrial strengths. Besides, Pt.Pusri is also obliged to the government regulations to develop partnerships with SMEs as stipulated in the regulation of the Minister of of State Enterprises number 05/MBU/2007.

In order to meet the yearly needs of organic fertilizer in Indonesia set by the government as much as 450,000 tons, Pt.Pusri offers an opportunity to SMEs to engage in organic fertilizer industry under partnership scheme. The program aims to accelerate the achievement of the national organic fertilizer production capacity and to help the growth of agriculture sector in the country by inviting broad participation of the business players particularly SMEs who dominate the agriculture sector. The organic fertilizer produced by Pt.Pusri, is also intended to boost horticulture production by SMEs engaging in agriculture sector as part of the state owned company commitment to promote SMEs as mandated by the government regulations.

In this program, SMEs as business partners of Pt.Pusri receive a business license to produce and sell organic fertilizer with a brand name of Pt.Pusri, the *"Pusri Organic Plus"*. Pt.Pusri provides SMEs all the technical requirements of the organic fertilizer factory, ranging from investment feasibility assessment, the basic design of packaging, as well as transfer of knowhow of the technology. Pt.Pusri also supplies the decomposers and microbial strain, which is a biological characteristic of the products. SMEs as business partners also receive a plant operating and sales training. Furthermore, SMEs are also given the right to use and to sell the product under the *"Pusri Organic Plus"* trademark.

Those SMEs interested in the business partnership of the organic fertilizer plant, subject to some technical requirements. They have to have a building area of 20 m X 25 m, strategic location to the agriculture production center and close enough to the sources of raw materials (organic waste, animal manure and other material such as straw and empty palm fruit bunches). Furthermore, they have to have sufficient amount of capital to run their operational activities and willing to follow the business system developed by Pt.Pusri.

Expansion of Plant Capacity

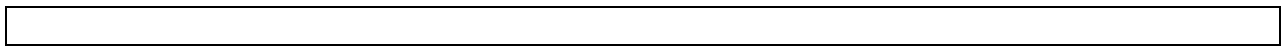
There is an increasing demand for organic fertilizer in the country not only due to the expansion of plantation and other agricultural business activities, but also due to the efforts to rehabilitate the soil condition. The increase in production of organic fertilizer by big companies further provides a greater opportunity for SMEs in establishing business partnership.

The first organic fertilizer factory of Pt.Pusri in Palembang has a production capacity of 3,000 tons per year. Later in the year of 2008, Pt.Pusri built another three organic fertilizer factories, among others, in Cianjur (West Java), Lumajang (East Java), and Sragen (Central Java).

Organic Products Awareness

Organic Agriculture Statistics of Indonesia (SPOI) in 2010 indicated that the area of organic farming in Indonesia in 2010 was 238,872.24 ha, an average increase of 10% yearly. Furthermore, president of the International Federation of Organic Agriculture Movement (IFOAM), recently told in Nurenberg, Germany, that the investment opportunity in organic products in Indonesia is very promising as the huge world demand for organic products continues to grow. There is no prediction how long this growth trend will be, but the reality is now the world's consumption of organic products rose steadily.

Empirical evidence shows that the future of organic products is very promising. This means that the business of SMEs in the field of organic products is also very promising in the future.



D-14: Encouraging Partnerships with Green SMEs with Universities and Research Institutions

In order for green growth to succeed, economies must be able to take full advantage of green innovation and new green technologies. Universities and public research institutions are often rich sources of new science and technology which can be developed into new products or processes. Thus, partnerships should be encouraged between green SMEs and universities and research institutions which carry out basic research that can be commercialized by green SMEs. Partnerships can include joint research projects or arrangements for green SMEs to commercialize technology or basic knowledge that the universities and research institutions have developed. Governments can facilitate such partnerships not only through financial incentives, but also through laws and regulations dealing with technology transfer or technology sharing, and political leadership to encourage national universities and national research institutions to cooperate with green SMEs. In previous APEC SME Working Group discussions and the Daegu Initiative, partnerships of SMEs with universities or research institutions were found to be very effective tools in encouraging innovation and commercializing innovative technologies. The Green Initiative looks at how this tool may be used for encouraging innovative green technologies.

Nine economies submitted GAP entries for this element. The Philippines reports various programs run by the Department of Science and Technology designed to foster green SME-university-public research institute partnerships and the development of green SMEs. The programs include: (a) support to green R&D projects thru its Grants-In-Aid program, (b) technology prototyping and piloting, (c) Environmental Technology Verification (ETV) intended to check on the performance claims and technical viability of ESTs developed by researchers as well as SMEs, (d) Technology Innovation for Commercialization (TECHNICOM) program intended to fast track commercialization of R&D results as well as facilitate access by SMEs to research personnel and facilities, and (e) Small Enterprises Technology Upgrading Program (SETUP) intended to upgrade the technologies and facilities of green SMEs. Further, a significant number of R&D projects being supported by DOST are conducted by scientists and researchers from colleges and universities. It likewise undertakes contract researches for SMEs. The DOST is conducting training for Green SMEs, universities, professional associations as well as industry particularly in the areas of clean production and energy efficiency. It likewise provides scholarship programs both in the undergraduate and post-graduate levels in science and engineering including environmental sciences. Support for R&D activities also come from other government agencies. The Commission on Higher Education (CHEO), which has regulatory and oversight mandate over colleges and universities, has been aggressively supporting R&D activities of academic institutions. Also, the Technology Transfer Act of 2009 is particularly intended to stimulate R&D activities in public research institutions and universities and hasten their commercialization. The law offers incentives to researchers by providing them with a share in royalties from their inventions and allowing them to launch their own start-ups. The law also provides a national framework to promote efficient and coordinated technology transfer which is somewhat similar to the Bayh-Dole Act in the US.

Australia reported its Cooperative Research Centre (CRC), which is formed through collaborative partnerships between publicly funded researchers and end users. CRCs must comprise at least one Australian end-user (either from the private, public or community sector) and one Australian higher education institution (or research institute affiliated with a university). Since 1991, the Australian Government has funded 190 CRCs and committed more than A$3.4 billion in CRC Program funding. Participants in CRCs have committed a further A$11 billion in cash and in-kind contributions over the same period. There are currently 42 CRCs in operation undertaking a range of activities including research; education and training programs; engagement with small and medium enterprises; and

utilization. In 2009-10, CRCs collaborated with 1,258 organizations, including 430 small, 368 medium and 460 large companies. Thirty three of 41 Australian universities and higher education institutions are currently participants in CRCs. CRCs also offer postgraduate students opportunities to work with and learn from leading researchers and industry experts. Graduates with CRC exposure are industry-ready and have both theoretical and practical experience. Twenty CRCs focus on delivering new technology for a cleaner, more sustainable future while many others also support green innovation. CRCs deliver innovation in climate change, clean manufacturing, environmental sustainability and energy efficient technologies ranging from forecasting the impact of climate change on infrastructure and landscapes to minimizing methane emissions from Australian farms.

Mexico reports that it has policies which foster partnerships which can be used by green SMEs, but they have no programs specifically for green SMEs. Programs which can be used by green SMEs include policies to encourage collaboration between green SMEs universities and/or public research institutions, such as "Fund for Technological Innovation-CONACYT-SE." The fund supports up to 70% of the total cost for technological innovation projects that improve competitiveness in Mexico. The fund is available for SMEs in selected industries including green technologies and renewable energies. Incentives for technological transfer or cooperation between green SMEs, universities and/or public research institutions include the National Award for Technology and Innovation, which support business development and other participating organizations by recognizing, promoting and encouraging successful processes of management of innovation and technology. To promote training for university students on areas relevant to green SMEs, the Institute of Science and Technology of Mexico City (ICyTDF) has scholarships for young people to stay in the companies of the City to promote science and technology. The scholarship allows young people with masters and doctorates (under 35) to stay 12 months in companies in Mexico City, so that entrepreneurs from Mexico City can introduce young researchers in the process of technological development and innovation in their companies. To promote training programs at universities or research institutions for current employees of green SMEs, Mexico operates programs such as the Mexican Wind Turbine. The project seeks to exploit the opportunities offered by the international wind energy market, and has embarked on developing a 1.2 MW wind turbine capacity designed to operate in high wind conditions as those found in the region of La Ventosa, Oaxaca.

Chinese Taipei and Indonesia reported their incubation programs, which are closely tied to research institutions and universities. In Chinese Taipei, the Incubation Network of Green Energy is one of the four Incubation Networks established through cooperation between the Ministry of Education, the National Science Council and the Ministry of Economic Affairs, for the implementation of the “Inter-Ministerial Project for Academic-Industry Collaboration” under the “Program of Industrial Manpower”. The Network is composed of research centers, universities, governments, incubation centers (of city/county government agencies and universities), and existing Bench Enterprises, which aims to foster Green SMEs by integrating research resources; providing consultation, diagnosis, referral and matching services, and; promoting activities for academic-industry clusters.

Indonesia reported that the role of university in promoting green SMEs is increasing, and the participation of universities in promoting the development of SMEs is generally done through incubator programs. Bogor Agricultural University, Brawijaya University, Bandung Institute of technology and I-CELL are examples of universities and research centers involving in developing incubation activities for SMEs engaging in green business. The Indonesian government supports the development of incubators in many ways. For example, at the first step of incubator establishment, there is financial incentive given by the government to support incubator’s operational expenses. Workshop, international comparative studies and national gathering are others activities supported by the government to strengthen incubator capacity to provide services to SMEs.

Korea reported two specific programs: SME Transferrable Technology Development Program and the Green Industries Skilled Labor Training Program. The SME Transferrable Technology Development Program seeks to facilitate technology transfer and commercialization of technologies held by public research institutions (such as universities and research institutes) by providing funds specifically for transfers and commercialization. Support is given to industry cooperation projects (which provides funds to commercialize technologies held by research institutions which have not yet been commercialized through cooperative research between the institutions and SMEs); projects initiated by businesses (where SMEs subcontract commercialization research to public research institutions); and foreign technology transfer projects (which supports efforts to import useful technologies from abroad and commercialize them. SMEs use the support to subcontract public research institutions which have technology licensing organizations (TLOs)). Specifically, foreign technology transfer projects seek to encourage transfers of foreign technologies found through foreign technology transfer support programs or TLOs. These projects can lead to opportunities for global cooperation by Korean SMEs as well as opportunities for successful commercialization of technology. Technology in this case can include not only patented technologies, but also know-how and technological cooperation MOUs. Green Industries Skilled Labor Training Program seeks to train young personnel familiar with and skilled in green technologies who can work in green SMEs, to alleviate the current labor shortage in Korean SMEs and facilitate the greening of Korean SMEs. The program gives assistance and support to green SMEs who wish to hire young college graduates; students and recent graduates; and learning institutions (colleges and universities). Coordinated assistance is given to SMEs, universities and student-employees. For SMEs, those green SMEs where solar energy, wind energy or LED-related products in the value chain account for more than 1 billion KRW of sales and which have more than ten full-time workers are eligible for this program.

Japan reports that it has many policies for encouraging collaboration among private companies, universities, and research institutes such as implementation of Act on the Promotion of Technology Transfer from Universities to Private Business Operators and Small Business Innovation Research program, etc. Such policies are applicable to partnership among green SMEs, universities, and research institutes.

In New Zealand, Tech NZ's Technology Transfer scheme connects businesses with research organisations to work together on R&D projects. Also, the Ministry of Agriculture, Ministry for the Environment and Energy Efficiency and Conservation Authority all have relationships with various research institutions. Although they do not directly connect SMEs with these institutions, they do have contact with both which facilitates knowledge transfer.

Papua New Guinea reported that it is planning to establish such partnership projects utilizing RCTI and University of Technology MOU on designing, manufacturing and testing of simple machines. Under the SME Appropriate Technology Development Program of the SME Policy, PNG Government has approved the establishment of Regional Centre for Technology and Innovation to address technology constraint as identified in the SME Policy. The Centre has signed a Memorandum of Understanding with the University of Technology to designing, manufacture or modifying and testing simple machines.

As seen, member economies have diverse programs in place to allow green SMEs to exploit opportunities and synergies with research institutions and universities, ranging from joint technology research programs to programs which exploits technologies developed through research, as well as employee and student training programs.

D-15: Encouraging Partnerships with Green SMEs and Other SMEs

Positive interaction among SMEs are important for greater sharing of information and knowledge among green SMEs and encouraging more non-green SMEs to purchase green products manufactured by green creator SMEs. Governments can play a positive role in facilitating such interactions by providing incentives and support programs.

Green SMEs in the same industry may benefit from sharing information, not only on technical issues but also on management as well as legal and regulatory issues. Many industries have members groups created to forge cooperation among competing firms in areas that needs cooperation. Government assistance may not always be necessary in establishing such industry groups, however interactions between such industry group and government officials can be very useful in discovering what the industry requires of the government, and what the government requires of the firms. In the Daegu Initiative, we witnessed that many economies use the strategy of forming SME clusters to foster cooperation and exchange of information among SMEs. Given such results, it seems plausible that green industries can benefit from clustering.

There is also a role for partnerships and cooperation between green SMEs and non-green SMEs. In order to maximize the positive impact from green innovations and green growth, these non-green SMEs should be encouraged to use more green products, adopt more green procedures and (at least for some non-green SMEs), transform themselves into green SMEs. However, in order to do so, green SMEs must inform non-green SMEs of the advantages of using green products and processes. Therefore policies designed to facilitate more interaction between green SME producers and non-green SME consumers can be beneficial in fostering of green SMEs in member economies.

Eleven economies reported information on their programs designed for promoting green partnership among SME. Most policies and programs were focused on development of SME clusters and development of dedicated agencies for building capacity of SMEs in groups by sectors and regions.

<Table D15-1> Reporting Economies for Element D-15

Policies on supporting green partnership among SMEs	Relevant programs on supporting green partnership among SMEs
Australia Indonesia Japan Philippines Republic of Korea Mexico Chinese Taipei	China Malaysia Peru United States

Member economies with policies on supporting green partnership among SMEs are as follows.

Australia has a number of policies on promoting partnership between SMEs including following.

- Clean Technology Innovation Network
  The Enterprise Connect Clean Technology Innovation Network is bringing Business Advisers with specialist knowledge of clean technology together with companies and researchers. The Network, based in the Clean Technology Innovation Centre, is working through Enterprise Connect Business

Advisers to assist manufacturing businesses adopt new technologies, plan for change and reduce their environmental impact.

- Supplier Advocate Program
  Through the Supplier Advocate Program industry leaders are appointed to targeted industry sectors to champion and work with Australian suppliers in enhancing their competitiveness, developing their capacity and facilitating greater access to opportunities. There are a number of activities which encourage partnerships, including:

The Clean Technologies and Water Supplier Advocates have developed Industry Capability Teams (ICTs). The ICTs are industry led and designed to unite smaller firms with complementary capabilities in order to collaboratively pursue larger business opportunities that would otherwise be beyond reach for smaller firms acting alone. ICTs help smaller firms develop the scale, efficiency and presence required to sell their capabilities into targeted domestic and international markets.

In Indonesia, there are two approaches taken by the government to develop partnerships among SMEs, namely through the development of SENTRA and the development of cooperative enterprises. SENTRA is a group of SMEs engaged in the green business in the region to conduct joint or interrelated activities among them. In developing a SENTRA and cooperatives, the government provides supports in the form of startup and matching fund for SMEs, Business Development Service Provider (BDSP), technical consultation and marketing access. SENTRA for agro-industry, renewable energy power plants (biogas and micro hydro), recycle products and handicraft are examples of green partnership related activities among SMEs.

Ministry of Economy, Trade, and Industry in the Government of Japan has implemented "the Industrial Clusters Plan" since 2001 in order to facilitate establishment of industrial clusters and thereby to facilitate sustainable innovation, to raise international competitiveness of Japanese industry, and to vitalize regional economy. Some of the clusters established focus on the environment, so the plan is applicable to partnership among green SMEs and other SMEs.

In 1996, Korean government created an independent administrative body, the Small and Medium Business Administration (SMBA), for supporting SMEs. The Small and Medium Business Corporation and other supporting organizations and institutes were also created in order to support SMBA achieve its SME policy objectives. Using the strong administrative capacity and existing network, the SME-related organizations invested good amount of resource to improve 'greenness' of SMEs. The effort of greening Korean SME was strengthened in 2009, with particular emphasis on reducing greenhouse gas emission. Many training and certification program, including carbon labelling certification training program, was created by KEITI for both SME and large companies, providing opportunities for discussion and best practice sharing among companies. Korean government has two track approaches to creating of green business clusters to increase SME-SME collaboration. First, it is encouraging SMEs in existing industry clusters to improve their environmental performance and act as catalysts in the cluster. Second, Korean government is working with local governments and large corporations to create new clean energy industry clusters. For example, a plan to create wind power cluster in Saemangum area was approved recently, with initial target of hosting 30 companies by 2014. The 'Eco Products Chain initiative is yet another measure to enhance green SME-SME collaboration. Established as a voluntary agreement initiative in September 2005, number of participating companies has grown from 30 in 2005 to 117 in 2011. Participating companies commit to increasing green procurement in order to become a responsible buyer while greening their own businesses and products.

SME Week is the most important business event in Mexico, organized by the Federal Government, where you will find the opportunities and solutions you need to start or strengthen your company or

business. The event is intended to support the strengthening and competitiveness of entrepreneurs, micro, small and medium businesses by offering programs, options and solutions available for it, and the spread of schemes and tools in a comprehensive manner the key issues for its development or for initiate, consolidate or expand their businesses. The Green Expo and Power Mex Clean Energy & Efficiency are international meeting[21], exhibition and conferences in Mexico City, where national and foreign experts from SMEs discourse, debate and share experiences and progress in regard to the care of the environment, and alternatives for power generation. The topics covered include solid waste management, recycling, CO2and water treatment, energy efficiency, cogeneration, energy efficiency and renewable energy. Mainly SMEs and large companies meet in this one week Green expo and shares the successful green experiences and also debates with government's representatives to discuss ideas for policies and government support. Even when these meetings are not part of a government programs, they are very useful to encourage discussions between Green and non-green SMEs. Furthermore these events presents green products, green solutions which encourage the purchases of goods and services by green SMEs.

In Chinese Taipei, creation of SME clusters are encouraged and supported by the government which the later provides consultation services on commercialization, marketing, incubation, technology transfer, and innovation. The three SME Cluster Projects[22] undertaken by SMEA aim to integrate supply chains and build up SME conglomerates by fostering Technology-Intensive Application Clusters and Knowledge-Intensive Service Clusters. Currently there are over 70 SME clusters and numerous Green SME clusters, including the Low-Carbon Living Cluster and the Smart Lighting Cluster. On the local level, the Industrial Development Bureau and the Central Region Office launched the Factory Tourism Guidance Plan to provide policy and financial incentives to traditional factories to transform business into "tourist factories" in accordance with local community development and the environment.

The report by the Philippines included two examples of government policy on supporting partnership among SMEs in green transition.

- Support to SME Green Industry and Clusters
  The government has been supporting various initiatives to come up with collaborations between green SMEs and other SMEs in the same industry. A case in point is the SMART Cebu Project implemented by a consortium of European and Philippine organizations in Cebu that is aimed at increasing the competitiveness of SMEs engaged in the home and lifestyle sectors((furniture and furnishing; fashion accessories; gift, toys and house ware) in Cebu by promoting clean production, development of eco-friendly products and entering the green markets in Europe and Asia. Another industry-specific project is the Zero Carbon Resorts Project which aims to address the concerns on the ever-increasing demand for energy as well as adverse impact on the environment of the tourism industry.
- Industrial Waste Exchange Program (IWEP)
  Efforts in the Philippines to promote organized waste exchange started in 1988 when the Department of Environment and Natural Resources (DENR), through the Environmental Management Bureau (EM B), established the Industrial Waste Exchange Program (IWEP). The project was eventually forwarded to an NGO, the Philippine Business for Environment (PBE). The IWEP aimed to create a market where generators and users of various types of waste could trade effectively with the support of a trade information system and some educational and communication activities. Among the successful waste exchanges was between an SME exporting desiccated coconut with 80,000 litres of unutilized coconut water being taken in by an SME manufacturing coco-based drinks.

[21] http://www.thegreenexpo.com.mx/
[22] The Project for Technology-Intensive of SMEs Clusters, the Project of Technological Service Industry of SMEs Clusters, and the Project of Servicing Manufactory Industry of SMEs Clusters.

Member economies with relevant program on supporting green partnership among SMEs include the following:

China has established the Center for Promotion of SME Development for supporting SME development in productivity and other measures. Malaysia has MyHijau policy program which has a number of policy initiative for promoting green growth of SMEs. However, detailed information on policies was not included in the report. More than 50% of SMEs in Peru falls into logistics and retails industry. Therefore government has launched a pilot green logistics program in order to promote greening of SME activities. Finally, the United States promotes market driven, private sector-led partnerships to take place. And the U.S. Department of Commerce's International Trade Administration has the U.S. and Foreign Commercial Service (USFCS) provides matchmaking services and public-private partnerships through which SMEs, and SMEs and large corporations, can connect.

D-16: Encouraging Partnerships with Green SMEs and Civil Societies and Local Communities

Green transition is a difficult challenge for governments of member economies regardless of their development status. It requires fundamental change in policy priorities, product manufacturing methods and environmental performance characteristics of all products consumed within the economy. Tackling some environmental issues, climate change for example, requires fundamental shift in overall structure of economy itself.

A green transition also requires sustained effort in environmental management because it is common for SMEs to discontinue investment in environmental management and switch back to conventional materials when there is an economic crunch. For example, a recent survey indicated that 75 percent of UK SMEs have decreased their investment in environmental management in 2009, largely due to economic recession. Such disruption in investment can significantly slow down green transition, making green transition more costly than it could be.

In theory, support and monitoring from local communities and civil society organizations can help green SMEs sustain their green management effort. Since greener operation can lead to improved public health and environment of local communities, there is a strong incentive for local communities and civil society organization to collaborate on green transition.

Strong partnership between SMEs and NGOs / local communities may not be formed easily as their objectives are fundamentally different from one another. Despite the challenge, policies and programs to support NGO-corporate collaboration could be beneficial; as such partnership has potential to significantly accelerate green transition.

Nine economies reported information on their programs designed for promoting green partnership between green SMEs, local communities and civil societies.

<Table D16-1> Reporting Economies for Element D-16

Policies on supporting green partnership with SMEs and local communities	Relevant programs on supporting green partnership with SMEs and local communities
Indonesia Republic of Korea Mexico New Zealand Chinese Taipei United States	China Malaysia Thailand

Most of the government led initiatives involved collaboration between local government and businesses based in the local communities rather than NGOs. Some programs were mostly focused on building capacity of local governments as well. Although it is reasonable to assume that these programs involve participation of SMEs, most of the policies were not specifically focused on SMEs.

Member economies with policies on supporting green partnership between with SMEs Green SMEs and Civil Societies and Local Communities include the following:

In Indonesia, there is an increasing awareness of local communities in green initiatives. Local government encourages business partnership between SMEs and local communities to promote green initiative. For example, the local government of Lamongan, East Java district and the Ministry of Industry conducted a cooperation to improve the technique of batik designs by creating a group of SMEs along with local communities. The main intention is to utilize the local natural resources for batik industry, particularly in natural coloring of batik. Natural coloring in batik industry is now getting more popular in international market not only for their uniqueness but also most importantly for their participation to avoid massive use of chemical ingredient in batik making process as a part of ways to preserve environment. Another Indonesian example of a successful SME and local society partnership is Pt.Swen Inovasi Transfer, in producing biogas energy. The PT. Swen Inovasi Transfer, an SME with excellent reputation in the biogas energy sector for fabrication of biogas reactors (digesters) has installed biogas reactors in 31 provinces, 209 districts by the total number of plants as many as 2030 units, under a partnership scheme. According to the partnership arrangement, PT. Swen Inovasi Transfer fabricates and installs biogas reactors, conducts socialization, provides training in using biogas-fueled equipment (biogas stove, oven biogas, pasteurizing machines, electric generators, biogas fueled home appliances, etc.) The local community members participate in coaching, training and workshop, supplying raw materials and operating and maintaining the plants. Relevant local government also contributes to the program by providing development funds, facilitate training and conducts monitoring and evaluation. The details of the partnership is included in the best practice report at the end of this section.

Korea has a relatively strong environmental NGO community. For example, the Korea Federation of Environmental Movement is the largest environmental NGO in Korea. Korea is also a home country of over three thousand large companies and 3,069,000 SMEs. Despite large population of companies and healthy NGOs, there has been little NGO-SME collaboration on green growth agenda. There are many reasons for lack of collaboration between SMEs and NGOs. First, Korean environmental NGOs have been acting as protector of local environmental rather than promoter of green businesses. Secondly, both Korean NGOs and SMEs have been concentrating on working with large companies, including Samsung, Hyundai and Doosan, rather than working in a multi-stakeholder approach. Thirdly, there is a significant disparity between Korean government's green growth vision and Korean NGO's vision of green growth, which led to weakened collaboration between green NGOs and Korean government. Despite the low interaction between NGOs and SMEs, some local communities are embracing green SMEs, especially renewable energy cluster as they regard renewable industry as a promising industry with high growth and job creation potential. Korean government is providing financial support to those communities in order to help the communities establish low carbon industry clusters.

In Mexico, collaboration between NGOs and SME-local community are considered in National Development Plan. The Socially Responsible Business Distinction ® commits the company to comply with the proposed standards in the areas of quality of life in the company, Business Ethics, Bonding Company with the community, and care and preservation of the environment.

In New Zealand, the Ministry of Science and Innovation's Envirolink scheme provides funding to support the transfer of environmental scientific knowledge to local body government, translating it to practical advice.

A very significant number of projects related to the environment are being implemented in partnership with NGOs, local government units (LGUs) and the communities in the Philippines. There are hundreds of NGOs that partner with the government including the following organizations:

Name of organization	Activities
Philippine Green Building Council	Leads on green building initiatives

Philippine Business for the Environment	Assists SMEs in enhancing their environmental compliance as well as handles the Industrial Waste Exchange Program (IWEP)
ECCP*, PCCI*	Involved in several green SMEs projects
Federation of Philippine Industries	promotes the reduction of pollution through effective waste and emission management and the efficient use of raw materials, fuels and other utilities.
Pollution Control Association of the Philippines Inc	acts as an active partner in institutionalizing environmental conservation, continual improvement and compliance to regulations

* ECCP : European Chamber of Commerce of the Philippines
* PCCI : Philippine Chamber of Commerce and Industry

The establishment of local Ecology Centers is also gaining ground in Philippines. The ecology centers serve as a one-stop shop for environmental technologies and are a collaboration of the LGU, national government agencies as well as the community and NGOs.

In Chinese Taipei, engagement of NGOs and local communities is essential in the design and implementation of SMEs projects of the government. Training activities are commonly organized focusing on or in collaboration with local communities. Community development associations, community-based organizations, foundations and civic organizations are primary stakeholders involved in the implementation of SME projects, given the fact that SMEs are greatly connected to local communities, and the development of SMEs is essential for community building. The partnership with Green SMEs and local communities are promoted by projects coordinated by the SMEA and the Council of Cultural Affairs in charge of community building projects in Chinese Taipei.

Member economies with relevant program on supporting green partnership with SMEs and large corporations include the following:

In Thailand, the establishment of an Eco-town Pilot Project was launched in Chiangmai Province with emphasis on following activities.

Increasing green spaces	Encouraging waste selection & recycling
Producing fertilizer from organic waste	Promoting bicycle transport

Although partnership between SME and local communities/NGOs are not mentioned, it can be assumed that such regional initiative involve local SME participation.

In the United States, the league of Green Embassies Program offers an opportunity for SMEs to place their products and technologies in U.S. embassies, which are excellent technology showcases, and support sales into foreign markets. The U.S. Departments of Commerce and State are working to achieve energy efficiency goals the for Federal Buildings in various local communities. Partnership for Alliance to Save Energy provides energy efficiency initiatives and activism through its board of directors (which includes leaders from business, government, the public interest sector and academia); and participates in public-private partnerships. U.S. Coast Guard Sydney is the first U.S. diplomatic mission in Australia to join the CitySwitch; CitySwitch is Australia's leading energy-efficiency program for office buildings and covers 70% of Australia's office space. More details can be found in the U.S. Green Action Plan and Best Practices presentation from the APEC meeting in December 2011 held in Bangkok.

Vietnam's Eco-tour supply chain program involves greening of companies that provide services and products involved in tourist programs. Vietnam's best practice report on green supply chain and eco-tourism is included at the end of this section.

Best Practice Report:
Indonesia: PT. Swen Inovasi Transfer and Society Partnership In Producing Biogas Energy

The trend of utilization of alternative renewable energy sources in Indonesia is in the increasing trend. The fact that the reserve of energy derived from fossil is in the diminishing direction. Based on the data from the Ministry of Energy in 2010, Indonesia has numerous renewable energy sources such as waterpower of 75,760 MW (845 million barrels of oil equivalent), geothermal of 28 000 MW (219 million barrels of oil equivalent), micro-hydro of 49810 MWand biomass of 450 MW.

The availability of natural resources for biogas in Indonesia are generally obtained from organic materials such as animal manure (cow, buffalo, goat, sheep, horses, pigs, and poultry), human waste, industrial waste (tofu industrial waste, tapioca, and palm sludge), water hyacinth and other organic waste. The biogas energy utilization in Indonesia is just in the beginning started back around 2006 when the government's policy on fuel reduction subsidies especially kerosene started in place.

Waste utilization

The prospect of biogas energy generated from waste should be encouraged and developed in rural communities and urban areas. The fact that biogas energy originating from livestock manure and waste from the entire population of cattle in Indonesia is approximately 70,684,409 tons (2010 data). The economic value of using those natural resources could produce up to approximately 1.6 billion M^3 biogas or kerosene equivalents of 2.6 billion liters per year. This energy making could generate the economic value at the farmer level as much as of Rp. 10.4 trillion per year, assuming that the oil prices at the retail level is lDR 4.000 per liter.

Besides, the activity of energy making from biogas also produces sludge in the form of organic fertilizer around 42 million tons per year with a value of approximately lDR 12 trillion at the average retail price of organic fertilizer at IDR 300 per kg. Organic fertilizer production, furthermore, could provide support to farmers to cultivate paddy and other agricultural produce.

Partnership with Government and Society

PT. Swen Innovation Transfer is an SME categorized company pioneering in the development of biogas energy in Indonesia. The main product of his company is biogas reactor (digester) made of glass fibers (fiberglass). Besides producing equipments, this company also involve in national campaign in utilizing renewable energy, particularly for rural areas.

This company has been establishing sound business partnership with local government and local communities throughout Indonesia. Currently this company has installed its products in 31 provinces, 209 districts or cities by the total number of plants as many as 2030 units. *PT Swen Transfer Innovation* has also established good cooperation in promoting and developing biogas energy generation with the central government. There are as many as seven government institutions involved in its business undertaking namely: the Ministry of Agriculture, the Ministry of Home Affairs, the Ministry of Acceleration of Regional Development, the Ministry of Energy and Mineral Resources, the Ministry of Environment, the Ministry of Cooperatives and SMEs and the Ministry of Labor, Manpower and Transmigration.

The partnership pattern developed by *PT Swen Innovation Transfer* exhibits sharing of

responsibilities among parties involved. The main responsibilities of *PT. Swen Innovation Transfer* are in fabricating and installation biogas installations include providing equipment, conducting public campaign or socialization to societies and providing training to local personnel. The company provides warranty for 5 years to use its biogas equipments. *PT. Swen Innovation Transfer* also carry out activities on technology transfer to SMEs in using biogas-fueled equipment (biogas stove, oven biogas, pasteurizing machines, electric generators, home appliances fueled biogas, etc.). This partnership also helps users to create new businesses in the field of organic fertilizer produced from biogas related activities.

The government tasks and responsibilities in promoting business partnership in the biogas energy generation include conducting public campaign and socialization to enhance community awareness on using renewable energy sources. facilitating coaching, conduct training and workshop, providing development funds and monitoring and evaluation on the programs.

Biogas Utilization by the Local Community

There is an increasing awareness of utilizing biogas from livestock waste or farm waste for alternative energy. In general, it is important not only to reduce Greenhouse Gas Emissions (GHG) by excessive use of fossil fuel that may accelerate global warming process, but also most importantly, people have a choice to save their money by using biogas as a fuel to substitute for petroleum, coal, LPG or firewood for many purposes such as for cooking and lighting.

In the livestock sector, the biogas energy alternative also encourages a better pattern of animal husbandry undertaking by farmers. The trend of using biogas energy alternative in the rural areas has been providing additional economic stimulus for farmers. Furthermore, the increased supply of organic fertilizer from livestock reduces the financial burden of state subsidies for fuel and fertilizer. It is a great opportunity as well for organic fertilizer exports, creates new jobs, ensure clean farm practices and reduce environmental pollution, The biogas energy alternative exhibits an integration of agricultural development model of zero waste, which contributes a lot to the concept of sustainable development in the local and rural areas. Partnership has been one of the key success factors of this business.

Vietnam Best Practice
The Green Supply Chain: A Case Study of Vietnam Tourism

Introduction:

Vietnam, a tropical country with a humid climate, is awarded the plentiful and diversified nature and resources. Vietnam is both a 'cradle' of native species and a transitional area of organisms from the biota of the north (Himalaya-south China), the south (Malaysia-Indonesia) and the west (India-Myanmar) (Phan & Le 2002). With coastal line 3,200 km, variety coastal ecosystems, and beautiful islands and sandy beaches such as Cat Ba, Phu Quoc, Con Dao, Bach Long Vi islands, Ha Long, Nha Trang, Sam Son, Lang Co, Ngu Hanh Son beaches etc, Vietnam has become an attractive destination of tourists. Moreover, limestone ecosystems and special use forest system are also strength of Vietnam including 11 national parks of 259,797 ha; 61 nature reserves of 1,692,351 ha, and 34 environmental, historical, and cultural forests of 147,886 ha. Visitors can hike in famous limestone mountains in the Cat Ba, Ba Be, and Cuc Phuong National Parks and the Phong Nha – Ke Bang and Paco-Hangkia Nature Reserves (ibid).

Tourism is regarded as a "smokeless industry", developing quickly and yielding significant sources of

revenue to Vietnam economy (Vietnam National Administration of Tourism – VNAT, 2011). In details, in the development of the world tourism industry, Pacific Asia including Vietnam has continued to be the most dynamic area. Total international visitors coming to Vietnam in 2011 reached at 6,014,032 representing a 19.1% growth over 2010 (VNAT, 2011).
However, according to the Tourism Authority of Vietnam report, the tourism industry has also faced some major problems such as poor service quality (including shopping services, recreation services, food services, transportation services and accommodation services); lack of high quality labours and specially lack of environmental responsibility of tourism business although they has adopted a wide range of practices. Therefore, domestic tourism's experts have argued that one of challenges of developing quickly and sustainable competitive advantage is not only offer an approach in order to increase the number of new visitors but also pay attention for a deeper investment, for example, improving service quality, attract more quality labours and also improving environmental responsibility of tourism business which is considered valuable contribution in sustainable development (VNAT, 2011).

This paper aims to describe the green supply chain in tourism in general and an example in Vietnam in particular. It will contribute to existing literature on new forms of regulation for sustainable tourism development.

The Green Supply Chain in Tourism:

In recent years, the term "green supply chain" has received considerable attention in empirical studies as well as the media like internet, newspaper and magazines (Rao and Holt, 2005). This perspective may be explained by two reasons. First, the role of green supply chain and green supply chain management contribute higher profit and market share by reducing environmental risk and impact (Hu and Hsu, 2010). Second, the necessity of insight understanding of the role of green supply chain in achieving a sustainably competitive advantage for all parties involved (Rao and Holt, 2005).

Green supply chain has been defined and measured in different ways over years (Hu and Hsu, 2010). One of the latest definitions of green supply chain is the management of raw materials, components and process from suppliers to manufacturers to customers and products taken back with improvement to environmental impacts though lifecycle stages (ibid). This concept of green supply chain is also applicable to tourism sector. Tourism can be describes as an amalgam of different interests, activities, stakeholders and businesses that are functionally linked together to form a distinct supply chain (Page, 2003). However, unlike manufacturing sector where consumption of products following its production, in tourism green supply chain, production and consumption take place simultaneously at each link in the green supply chain. Tourism products are not physical items but it comprises several different services provided by many various suppliers, namely, tour operators, airlines, hotels, restaurants and car hire companies (Page, 2003).

The Green Supply Chain in Vietnam Tourism:

Nowadays, current tourism companies, especially, small and medium companies have not yet considered environment factor when they do their business. For example, the number of foreign customers coming to Vietnam has increased rapidly but the protection and reservation of sightseeing and environment are not paid much attention. Another example is the waste using and exploiting resources that are related to tourism (Vietnamtourism website). Therefore, the government always encourages tourism companies to seek sustainable development. By doing so, people will be friendly with environment, respect it and have environmental protection responsibility. A typical example for doing green tourism supply chain in Vietnam will be mentioned as follows.

Established in the very first year of the 21st century, choosing the primitive and poor Hon Tre Island to invest to – that might be a risk for other competitors but it is a brilliant deep-thinking investment of

Vinpearl. After approximately 10 years of building and developing, with its appropriate orientation and a thirst for pioneering, Vinpearl has overcome all difficulties and challenges to affirm its capability, becoming internationally renowned for tourism, resort and recreation services. Vinpearl Land is 'a tourism paradise of Vietnam' or 'a green tourism destination' and the managers of the company always to keep this image by applying government environmental policies and considering setting up a green supply chain. In order to become the international destination, the Board of Vinpearl land always consider to choose co-operators as well as try to build an effective and environmentally friendly supply chain to attract more and more customers around the world.

In details, in terms of accommodations and facilities, Vinpearl land often has meetings with co-operators in deciding to set up buildings with the low impact to environment. Another example is to require customers not to smoke in some common areas in the island and build up private smoking areas; and thus it creates the fresh environment and reducing the impact of air emission; building the process for deal with waste water. By doing some environmental initiatives, Vinpearl Land is trying to build the good image with not only domestic customers but also foreigner visitors. Now it has many villas that are located near the beach with many benefits and they are also friendly with environment. Another example, some entertainment activities encourage visitors not just experience but also gain knowledge about wildlife and environmental protection (Vinpearl Land home page, 2011). To sum up, it is necessary to set up green tourism supply chain. There are many determinants in supply chain, namely, suppliers, distributors, competitors, partners, governments and other firms. Therefore, in order to have a green supply chain, it requires all green activities are implemented by the whole chain. In details, each member in the chain has to establish their own environmental program; informing the benefit of cleaner production and technology; pressuring whole members to implement environmental actions; setting up environmental management system.

In Conclusion

This study brings an insight look of green supply chain. Hence, stakeholders at both the local and national levels are able to improve quality of tourism products and services in Vietnam by setting up green supply chain and implementing effectively green supply chain management. Moreover, managers of tourism companies are able to closely match available tourism products with the needs of tourists and finally, Vietnam national Administration of Tourism are able to develop green supply chain management strategies to enhance Vietnam image as "Hidden charm" and "green tourism".

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D-17: International Partnerships - Capacity Building and Best Practice Sharing on Green SMEs and Green SME Policies

Environmental protection, including reducing carbon and greenhouse gases to retard or reverse climate warming, must be an international endeavor. In recent years, there has been recognition that environmental problems must be tackled regionally or multilaterally, and international cooperation on environmental protection and management has been increasing. For this element, we examine what type of policies are in place to encourage international cooperation among APEC Member Economies concerning policies and activities dealing with green SME growth. APEC economies are uniquely placed to contribute to this discussion because APEC is a regional bloc which encompasses a large proportion of the globe geographically, and perhaps even more importantly, a diverse group of economies ranging from the very advanced economies to newly developed and developing economies, but the number of the Member Economies are small enough so that serious discussions can take place, and consensus respecting the views of the diverse economies can be forged.

For this element, we wanted to look at various initiatives by Member Economies to increase cooperation on environmental, green growth, and greenhouse gas issues as it concerns SMEs[23]. International cooperation may include initiatives such as the Green Initiative to share experiences and best practices, but also include other more technical initiatives. Nine economies submitted GAP entries for this element, and other economies reported additional information during the Green Initiative workshops.

Korea reported its Support for International Cooperative Environmental Projects. The Korean government has been giving support to encourage the development of viable Korean environmental technologies to fit in with foreign environmental regulations and requirements, especially those of developing economies, so that useful environmental technologies can be brought to use in developing economies as well as to assist Korean green SMEs export abroad. Support is currently given in eight areas deemed especially useful for solving environmental problems (e.g. clean air, clean water, waste water treatment, environmentally friendly waste recycling, measurement equipment, restoring contaminated soil and groundwater, reduction of greenhouse gases, and replacement of harmful material). Exports to all countries are eligible for support. (Before 2006, only exports to China were eligible, but the program expanded to include Southeast Asia in 2007 then to all countries in 2011). The Korean Ministry of Environment provides funding, and the program is overseen by Korea Environmental Industry & Technology Institute (KEITI). The Korean firm or research institution (with the participation of foreign research institution) is responsible for carrying out the relevant research under the program.

Mexico reported several programs. GEMI Initiative encourages the creation and development of green SMEs. GEMI (Global Environmental Management Initiative)[24] is a non-profit business organization created in 1990 in the United States by a group of world class companies committed to the pursuit of excellence in environmental health and safety. To achieve this commitment, GEMI has developed several environmental tools, including the Environmental Self-Assessment Program published in 1992, based on the 16 principles proposed by the International Chamber of Commerce. GEMI is globally recognized for coining the term Total Quality Environmental Management in 1991, which formally links environmental management with total quality. Mexico has also reported Mexico City's Climate Action Plan (Programa

[23] : We note that the Green Initiative is limited to government policies and measures dealing with SMEs, so while more comprehensive environmental policies are certainly helpful and desirable, they fall outside the area covered by the Green Initiative unless these policies and measures are widely used by green SMEs.
[24] http://www.gemi.org.mx/?a=2510

de Acción Climática de la Ciudad de México 2008-2012[25]) as a program with Mexican participation, where participants discuss definitions of "green" and "sustainability" on economy-wide basis or industry specific basis. The UN International Strategy for Disaster Reduction (UN/ISDR) has announced that Mexico City has been awarded the World Green Building Council, Local Climate Action Leadership Award. According to UN/ISDR, Mexico City was awarded for its Climate Action Plan (CAP), and its global leadership on the Mexico City Pact, also known as the Global Cities Covenant on Climate. The Global Cities Covenant on Climate has so far been signed by 147 cities committed to fighting climate change through a range of strategies. Mexico City's CAP is a $1 billion package of environmental measures designed to take seven million tons of carbon dioxide out of the atmosphere of Mexico City. According to UN/ISDR the CAP represents a collaborative effort between governmental and private institutions that targets 44 specific actions focused on energy and water savings, transportation, waste management and reforestation. Implemented in 2008, Mexico City's Climate Action Plan (CAP) is an integrated policy of 44 specific actions expected to impact housing, commercial buildings, governmental offices, subway stations, public parks and transportation with a goal of reducing seven million metric tons of the city's CO2 emissions, or 12% of the city's greenhouse gas emissions, by 2012. Specific actions under CAP include the Sustainable Housing Program, the Efficient Home Lighting Program, the Sustainable Buildings Program (PCES, the Renewable Energy Program, the Rooftop Naturation Program, and ECO BICI, dedicated to increasing cycling within the city and reducing dependency on automobiles. Most of the programs are voluntary, and participation is being promoted by a series of tax incentives. However, government buildings are required to comply with all of the requirements established within the programs.

Chinese Taipei reported "Green Trade Promotion Plan." The Plan focuses on international marketing, and encompasses three key strategies: provision of "green trade" guidance services, enhancement of SMEs' "green trade" competitiveness, and promotion of "green trade" marketing. In addition, a variety of activities – including the Emerging Markets Purchasing Partner Conference, issuing of special invitations to foreign trade delegations and individual large foreign corporations, and encouraging buyers in emerging markets to undertake purchasing in Chinese Taipei are implemented to attract foreign buyers. Furthermore, in cooperation with Taiwan External Trade Development Council (TAITRA), personnel are dispatched to assist SMEs for periods of 14 to 21 days at a time to link with market and business communities abroad.

Indonesia actively conducts international cooperation for the development of SMEs, including green SMEs, and enthusiastically participates in the green SMEs international gathering for exchange of experiences and views. Under APEC cooperation, Indonesia organized a workshop on the development of green technology and recommended establishing a green technology SME Center for APEC. Furthermore, under the ASEM forum, Indonesia and South Korea established a Green Business Center (GBC) in 2011 located in Jakarta. The GBC serves various activities namely seminars, workshops, financing and marketing facilitation in the development of green SMEs.

For the Philippines, the Philippine government had always been actively seeking out international partnerships for environmental programs and projects. Some of the programs being supported by the government in partnership with international institutions and/or foreign governments include:

- Philippines Energy Efficiency Project - Replacement of traditional light bulbs with compact fluorescent lamps (CFL). Supported by Asian Development Bank.
- SWITCH Policy Support Programme for the Philippines - Promotes sustainable consumption and production and implementing key environmental laws in the country.

[25] http://www.mexicocityexperience.com/documents/climate_change.pdf

Focuses on renewable energy and energy efficiency, ecolabelling and air quality. Supported by European Union.

- Green Business Asia (GBA) Project - Develops and promotes enterprise-level approaches that improve productivity and contribute to greening the economy. Supported by the International Labour Organization (ILO) and Government of Japan.
- Clean production and energy efficiency programs being supported by the Government of Japan through ICETT
- Various funding windows for environmentally sound technologies (ESTs) by World Bank and Asian Development Bank (ADB).
- Korean International Cooperation Agency (KOICA) support to various environment and climate change related projects.
- Various Clean Development Mechanism (CDM) projects.

Papua New Guinea reports that its government have received significant capacity building and sharing of best practices for the development and promotion and SME in the country through bilateral and multilateral channels. The establishment of SME Risk Sharing Facility is a joint project by the World Bank group, International Finance Corporation, and Government of Papua New Guinea. Recently the PNG Government has signed an Interim Economic Partnership Agreement with the European Union, a partnership allowing PNG products to be marketed in the European Union tax free. This arrangement has also calls on capacity building to develop our SME internationalization and to seek markets and export their products not only to meet the European Union market standard but also other international markets. However, PNG SME sector has not been robust due to policy, institutional, environmental and structural impediments. PNG Government will continue to address impediments for SMES by developing appropriate Legislation and Policy Framework to provide an enabling environment for the promotion and growth of SME in the country whilst taking into account new global business trend including the promotion of the Governments Policy and commitment on low carbon growth / Climate Compatible Development Strategy.

Japan reports that the Government of Japan has so far participated in Working Party on SMEs and Entrepreneurship (WPSMEE) of the OECD, one of whose agenda is Green Growth, Innovation and Employment. The second workshop presentation by Japan contained information on consumer awareness raining initiative including Consumer awareness raising portal and environmental labeling scheme. The portal is operated by the Consumer Affairs Agency in the Government of Japan for consumer awareness raising issues including the environment. There are many kinds of product environmental labels for consumers in Japan, some operated by national/local governments and others operated by private companies.

New Zealand reported that it works with Australia on the Equipment Energy Efficiency (E3) program. This program develops energy efficiency measures for a range of commercial, industrial and consumer products.

In the second workshop, Peru presented information on GS1 Peru, which was established in 1988, and accredited as Cite Logistica by Ministry of Industry in 2006. GS1 Peru is part of GS1 Global, which allows GS1 Peru to have a SCALE Network in Supply Chain And Logistics Excellence International with a Supply Chain Management platform for international cooperation with experienced consultants to support multi-national research collaboration, create professional networks and collaborate with local goverment in each contry with global best practices. GS1 have recently paid attention to emissions and "supply chains" of greenhouse gases (GHG). Major sources of GHG emissions include fuel consumption,

deforestation, electrical energy consumption, and resources consumption (paper, water, wood). GS1 have identified responsibilities for Peruvian government and Peruvian enterprises to improve regulations and controls to protect the environment pollution deforestation, improve uses of resources in all sectors; and promote social responsibility. GS1 argues that the idea of supply chain must be extended to recovering waste and GHG so it can serve as resources and energy. GS1 also advises on opportunities for green innovation in logistics for Peruvian SMEs. Because many Peruvian SMEs are not fully aware of the problems of environmental pollution, they use wrong manufacturing processes with the lowest private cost. Use of more suitable machines with low fuel consumption and gaseous pollutants can do much to reduce pollution. GIZ/P3U Guide - will help employers and consultants to implement the Good Business Management practices to increase productivity, reduce environmental pollution and production costs. GS1 has identified five priority steps to apply green logistics: 1) Distribution and Transport: Better practices can include minimizing the use of fuel by optimizing the fleet and coordinating the distribution services between several suppliers and reduce false freights. Adjusting the size and capacity of the trucks can also reduce city traffic and fuel consumption. 2) Sources: Use of EAN code bars and EDI can reduce paper consumption, labor hours and fuel. 3) Warehouse; Improve efficiency 4) Recycling of transport waste and 5) Packaging: Use recyclable or biodegradable materials. Pilot programs have shown that such improvement can increase productivity, decrease contamination and use of resources, and increase commercial results. Since 2011, GS1 offers consultancy for SMEs: green logistic concepts. GS1 argues that if there are no economics benefits, it is less likely that SMEs would apply green logistic and environmental pollution initiatives. Peru also reported a 2011 Project, "Profitable Environmental Management in SMEs (GAR)", which is a cooperative project between MINAM and GIZ (German Technical Cooperation). CITEs develop a training course for 15 professionals.

Also in the second workshop, the United States listed some of its international partnership activities related to green SME policies. They include:

1. U.S.-OECD Sustainable Manufacturing Toolkit
   - Collaboration between U.S. Dept. of Commerce and OECD.
   - Start-up guide and web portal with information on benchmarking environmental performance, and technical guidance.
2. U.S.-EU SME Best Practices Exchange
   - Conference to exchange SME policies, including green issues.
3. APEC – SME Working Group
   - Conference(s) to exchange GAPs, policies, and best practices for Green SMEs.
4. ASEAN – APEC Joint Efforts on Standards
   - Joint participation in 2011 Green Buildings Conference.
   - Incorporation of public and private sector stakeholders.

For this element, most economies reported measures where they participated in global initiatives or projects. Some economies gave details on domestic projects which allowed domestic SMEs to participate in global markets or global cooperative projects. Some economies have hosted workshops on green growth policies. Overall, there is a diverse range of international cooperation and partnership measures, but so far, most of the measures are exploratory in nature, designed to encourage idea sharing and set up a foundation for further endeavors. (The Green Initiative can be counted among such measures). The member economies must decide whether there has been enough preparation to proceed with more formal international cooperative endeavors.

Section III: Observations and Recommendations

We have examined four policy areas, which have been identified as key levers in fostering Green SMEs. The rate of participation and interest was high, with most of economies making active contribution in sharing their ideas of 'Green SMEs', policy experiences and aspirations. Level of participation varied in some policy element. For example, only seven members provided information on policies for promoting green partnership between SMEs and large corporations (Element C-13), while fourteen economies reported on policies for facilitating green renovation (Element B-6). In case of the element C-13, the low response rate seemed to be linked to the fact that many economies do not have many large companies as part of their industry. Although, it may not be true in all cases, it should be noted that low response rate do not necessarily reflect lack of interest in the policies.

We made some observations and recommendations based on the member economies' green action plans, advisor comments and best practice responses.

1. Observations

Observation 1: APEC members have high interest in energy efficiency improvement and carbon reduction.

According to the green action plans submitted, each member economy had its own definition of 'Green' and 'Sustainable Growth'. For example, Korea had a legal definition of 'green growth' as 'growth achieved by saving and using energy and resource efficiently to reduce climate change and damage to environment, securing new growth engines through research and development of green technology, creating new job opportunities, and achieving harmony between the economy and environment'. Other economies had different definitions composed of different wordings and emphasis. However, improving energy efficiency was commonly found in many of the definitions and many of policies submitted by the members. Such trend seemed to be related to increasing concern on climate change and rising energy price. As a result, focus on energy efficiency is likely to intensify over time as all countries are expected to experience stronger impact of climate change and increasingly high fossil fuel price.

Observation 2: There are best practices hidden in the green action plan.

A number of participants submitted detailed report on their best practices. However, analysis of green action plans submitted by members suggested that there are many policies and practices that may qualify as best practices although they were not submitted as best practices For example, according to the GAP by New Zealand, it has a very comprehensive set of online tools designed to help a wide range of businesses including the movie industry to be greener while Australia also reported on a number of green policy initiatives and online tools. We believe same is true for many policies which were reported in the GAPs.

Observation 3: Large proportion of reported policies deal with supply-side assistance

The Green Initiatives have examined various policies of member economies as submitted through GAPs, best practice reports and various presentations. However, majority of policies are designed to assist those SMEs which create green technologies, products and services. This bias toward supply-side policies may reflect the classifications used in GAPs, especially in Area B, but most tax grants and financial assistance reported by the member economies seem to be aimed at assisting the creation of green products. There were very few reports which dealt with financial assistance to assist SMEs change toward greener production processes and green products. Most measures to increase demand for green products seems limited to public campaigns and labeling schemes. Similarly, in element C-10, most reported

measures assist exporting green SMEs, and very few facilitate imports of green SME products. While these measures are certainly desirable, we note that there is actually a stronger economic justification for demand-side assistance in green products, since using green products have positive externality effects on the environment and reduction of greenhouse gases.

Observation 4: There is growing attention on green labeling and classification of green products

Several members have presented information on their domestic green labeling schemes. The labeling schemes have been used to determine which firms and productshave desirable green qualities and therefore eligible for various assistance, and to raise consumer awareness for superior 'green' products. Thus, green labeling has always been a topic of interest to APEC economies. However, recently, the members' interest in green labeling seems to have grown, due in part to exploratory talks on liberalizing trade and investment in green industries and products. As seen, member economies have not yet reached complete consensus on what constitutes a green industry or a green product. However, in order to initiate an international negotiation on liberalization of trade and investment in green industries, there has to be some consensus on the characteristics of green products. As a result, many economies seem to be looking at other members' green labeling schemes to get an idea on what other economies consider 'green' and how different other's labeling schemes compared to one another. As the interest in trade and investment liberalization increase, the focus, and possibly contention on labeling is likely to increase as well.

2. Recommendations

Recommendation : Continue to pursue exchange on green SME policies of high interest among members.

A large number of recently implemented green policies reported during the Green Initiative and high participation rate during the two workshops suggest that 'Green' has become an issue of high interest among majority of economies. 'Green' is highly likely to remain as a high profile issue since environmental degradation continues to happen with economic development and evidence of damage from climate change are increasing. In case of greenhouse gas emission reduction, the European Union is planning with long-term time horizon up to 2050. Therefore, it is recommended that APEC continues to exchange information on their green policies of high interest such as energy efficiency improvement beyond second cycle of Daegu Initiative.

Recommendation : Capitalize on bilateral collaboration opportunities

Collection and summarization of green policies of member economies provided APEC members with an overview of how different members are dealing with green issues using different sets of policies and what have been achieved so far. Although the information shared through GAPs and presentations are not very detailed, it can serve as a catalogue for identifying members which may be more experienced in certain policies areas than the rest. Therefore, members should consider finding a partner of their choice using the Green Initiative report and engage bilaterally to capitalize on other member's experiences.

Recommendation : Increase policy experience sharing with other economy forums such as OECD for maximum benefits.

Unlike OECD, which consists of only advanced economies, members of APEC are diverse in its economic status, making it a unique forum which can serve as a base where both north to south and south to south type of collaborations can be fostered. Therefore information shared within the network is likely to hold some value to other economic organizations such OECD. The information from APEC programs such as the Green Initiative could be especially useful for the OECD member states who are conducting

north to south green aid programs on individual government levels. Although all the reports will be made available on the APEC website, it is well known that active advertising effort is necessary to make the materials on the websites to be actively utilized by target audience. Therefore it is recommended that effort is made to pass on the findings from the APEC programs, especially ones with focus on green growth, to maximize utility of the materials produced with APEC funding and contribution of its members.

Recommendation : Deal with issue of need for eventual absolute reduction of global GHG emission

According to the scientific consensus supported by the Intergovernmental panel on climate change, bringing down total global emission of greenhouse gas(GHG) is an absolute requirement for ensuring stability of global climate. Translated into a member state level context, it means we must achieve absolute reduction in GHG emission. This is very important because it means achieving vastly improved efficiency in energy use or resource use may not be effective if it leads to vastly increased production which pushes up absolute amount of GHG gas emitted. Less developed economies need not worry about curving GHG emission as much as more industrialized members, but significantly curving GHG emission to make positive contribution in prevention of dangerous climate change remains a vital issue for all economies today. According to a study conducted by Price-Waterhouse-Coopers in 2006 in UK, UK economy needs to provide its services and products while emitting only ten percent of GHG emission by 2050 in order to make a positive contribution in stopping climate change at an average global temperature of two degrees Celsius, a threshold recommended by majority of scientists. Therefore, it is recommended that future green growth program is conducted in regards to achieving economic growth while playing a positive role in tackling climate change.

Recommendation: SME WG and its members should be informed of APEC projects in other committees and working groups, and if necessary, participate actively.

As stated above, other APEC committees and working groups are working on various green-related projects, and in 2011, the green agenda was initiated. Some of these projects are useful to SMEs and should be explored. Also, exploratory talks have begun on liberalizing trade of green technologies, goods and services as well as liberalizing investment in green industries. In order to successfully negotiate trade and investment liberalization, there has to be a consensus on what is "green." Both the definition of "green" and trade and investment liberalization on "green" will have major consequences on green and non-green SMEs in APEC economies, and the SME WG cannot afford to be left out of the discussion. It is up to the SME WG to see that the needs of the SMEs are not ignored in future discussions. Thus, the SME WG and the WG members should keep themselves informed of "green "discussions outside the SME WG and if necessary, participate in those discussions so that the needs and requirements of SMEs are reflected.

Recommendation: Explore Collective Agenda on Eco-Labeling

Based on the interest shown in the Green Initiative, the member economies of SME WG seem ready to further pursue green policy agenda in a more collective and focused fashion. In fact, many member economies showed great interest in further discussion and cooperation on eco-labeling scheme in the second workshop held in Brunei. We observed throughout the Green Initiative that eco-labeling is used not only to create consumer and public interest, stirring demand for green products; but also as a tool for government assistance. For example, many economies target green-related assistance to those firms which produce products officially recognized and labeled 'green' (or related terms such as 'environmentally-friendly,' 'low carbon,' etc.) However, we also saw that different economies have different definition of what makes a product 'green.' While most economies recognize products which reduce greenhouse gas emission as 'green,' some economies use wider definitions such as environmentally-friendly (products that reduce waste or manufactured using recycled materials; products which make positive contribution to protection of the environment, products that cause less pollution to certain natural resources such as water,

and so on). We also saw that many member economies do not have a legal or working definition of what is considered 'green.'

Facilitation and liberalization of international trade in green products is becoming an issue in APEC CTI as well as other fora, and due to the nature of international trade, the formation of a reasonable international working definition of 'green' products and services is becoming an important issue. Eco-labeling, by its very nature, requires member economies to explicitly state what constitutes a green product or service, and because eco-labeling is important to many SMEs whose strategy is to manufacture green 'niche' products, eco-labeling is an ideal topic for further discussion in the SME WG, and is a way for SME WG to contribute to APEC overarching agenda on green economic policy. Thus, further discussion on eco-labeling, such as a workshop with government and private sector participation, is warranted; and the workshop may be used to develop a collective action agenda.

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Prepared by:
APEC SME Innovation Center
24 Gukjaegeumyung-ro, Yeongdeungpo-gu, Seoul, Korea
Tel:(82) 2 769 6702/6704 Fax: (82) 2 769 6959
E-mail: apec@sbc.or.kr Website: www.apec-smeic.org

For APEC Secretariat
35 Heng Mui Keng Terrace Singapore 119616
Tel: (65) 68919 600 Fax: (65) 68919 690
Email: info@apec.org Website: www.apec.org

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