



**Asia-Pacific  
Economic Cooperation**

# **APEC Low Carbon Model Town (LCMT) Promotion through Eco-Point Program (LCMT-EPP)**

**Asia-Pacific Economic Cooperation (APEC)  
Energy Working Group (EWG)**

**November 2014**

APEC Project: EWG 10/2013A

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APEC#214-RE-01.18

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## 1. Background

At the 9<sup>th</sup> APEC Energy Ministers Meeting (EMM9), held in Fukui, Japan on 19 June 2010, focused on the theme “Low Carbon Paths to Energy Security”, the Ministers observed that “Introduction of low-carbon technologies in city planning to boost energy efficiency and reduce fossil energy use is vital to manage rapidly growing energy consumption in urban areas of APEC”. In order to achieve the Low Carbon Town Concept, people oriented approach by participation of all stakeholders especially local people is very importance. The result of the eco-lifestyle measures including the eco-point program will enhance the implementation of low carbon town concept not only by increasing the awareness of the local people but also encouraging all stakeholders to participate in low carbon scheme of APEC region. The LCMT-EPP project will assist APEC to achieve these development aspects of low carbon town. The project will provide the guideline to implement eco-point program as local based program or regional based program. In the APEC Low Carbon Model Town Phase 2 (SAMUI Island), the feasibility study has proposed an eco-point program - originally developed and implemented by Japanese government since 2009 - as a bottom-up approach to promote low carbon lifestyles and measures. A program incorporating all low carbon measures and encouraging the public for low carbon consumption shall be developed to overcome the constraint.

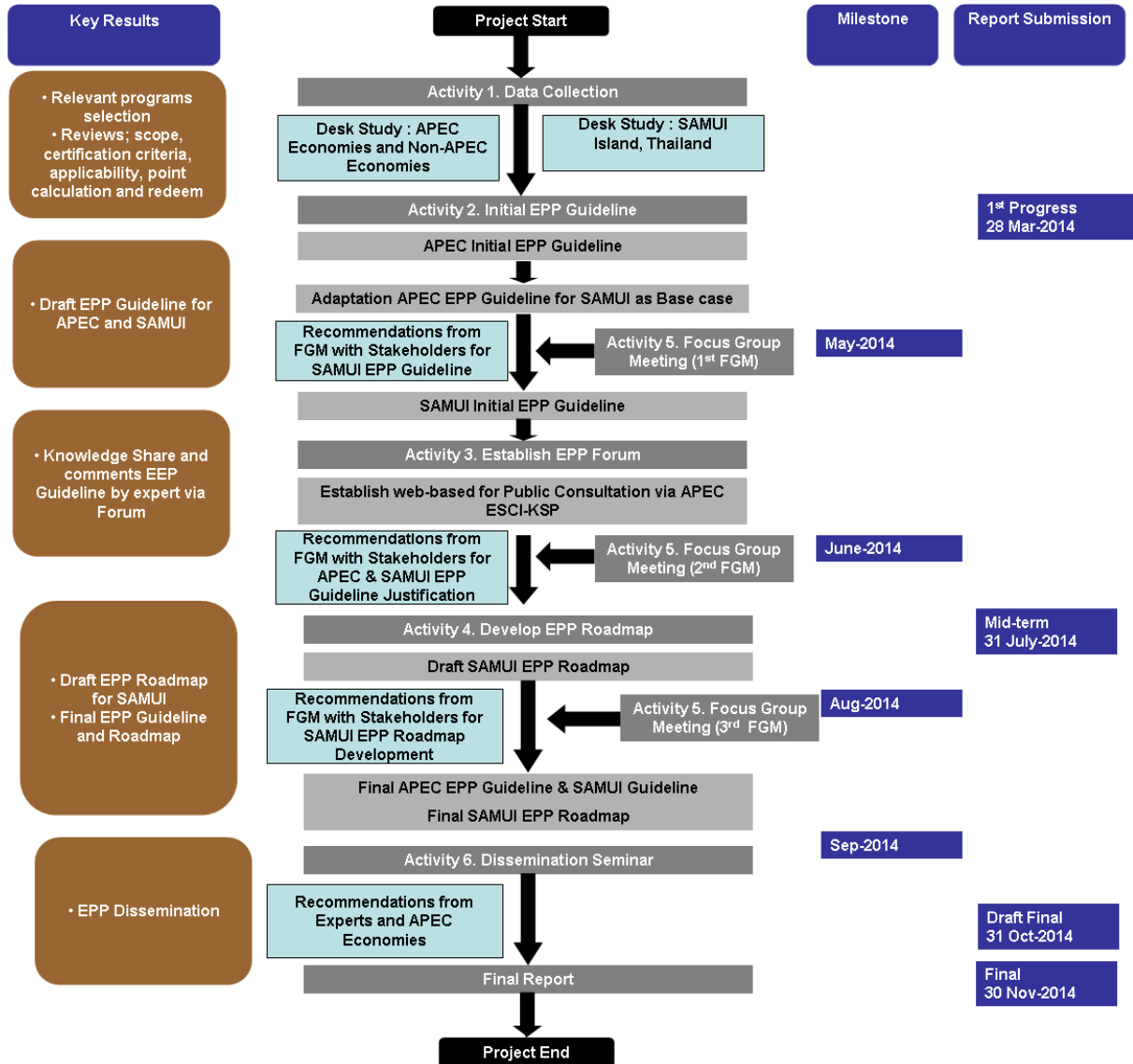
EPP is an incentive program promoting green consumption towards low carbon society by giving points and rewards to the consumers who purchase certified eco-goods and services. This eco-point program is voluntary basis with main elements consisting of eco-point certification systems, eco-point valuation approaches, EPP office (acting as eco-point certification body; eco-point administrative/technical committee), eco-products (including both goods and services), eco-point funds and eco-point rewards. The EPP guideline will assist APEC to achieve these development aspects of low carbon town by implementing EPP as local based program or regional based program.

The eco-point program consists of committee, certification system and rewards for people who purchase the certified products/services. To accomplish this, the scope of low carbon consumption will be defined to ease the monitoring carbon reduction and make it measurable and achievable. The eco-point program can be widely applied in the APEC member economies for low carbon model town promotions. Development of a guideline and roadmap for the eco-point program for APEC region will be a useful tool for carbon emission reductions. Furthermore, to support public consultation and knowledge dissemination, an EPP Forum (online system) will be implemented through Energy Smart Communities Initiative Knowledge Sharing Platform (APEC ESCI-KSP). The platform will also support the experience and knowledge exchanges among the APEC member economies.

The Final Report is prepared under project “APEC Low Carbon Model Town (LCMT) Promotion through Eco-Point Program (LCMT-EPP)”. It contains all studies and its process contents such as project Background, Data collection and assessment of EPP program via desk reviews, Public consultation; Focus Group Meeting, EPP Forum and Dissemination results, Development process and the finalization of APEC EPP Guideline, and Development process and finalize SAMUI EPP Guideline and Roadmap as well as required

activities for guideline developments. The completed report has submitted to Project Overseer (PO), Department of Alternative Energy Development and Efficiency (DEDE) and Energy Working Group (EWG) for approval.

The project work flow and milestone for each activity can be shown in **Figure 1**.



**Figure 1:** The project work flow and milestone of each activity

All the above flow tasks have been completed and the details of each activity have been described in the following chapters. The annexes have been providing the results of Eco-Point Program Guideline of APEC and SAMUI as well as its EPP roadmap.

## 2. Data collection and assessment of EPP program via desk reviews

### 2.1 Data Collection of Eco-Point Program or other Relevant Programs

The starting process of developing Eco-Point Program (EPP) Guideline, has been prepared by searching and studying the most relevant programs in several economies for summarizing the key findings of each program. The approach used for the Eco-Point Programs Guideline preparation is to assess the currently implemented EPP in any economy as well as other similar programs in some selected economies. Whereas implemented programs data collection is the initial step of the whole process prior developing EPP guideline.

The data collection and reviewing process requires setting important criteria for selecting programs for initial review and assessment especially the programs relevancies. Then each program data will be individually collected, reviewed and assessed under the following aspects;

- Program Goal & Scope including Applicability,
- Methodologies & Procedures (Application, Certification, Point Calculating and Redeeming System),
- Institutional Frameworks,
- Short- and Long Term Benefits

The results of the studies have been found that there are relevant twenties (20) programs from ten (10) economies which have been reviewed and assessed. The review process has been prepared by dividing programs into two (2) categories depending on its relevancies. First category is direct relevant programs or “Eco-Point Program” that are already implemented. The second category is similar or potential programs for EPP adaptation.

The first category consists of two Eco-point programs; Japan and Korea that directly relevant to Eco-point programs while eighteen (18) similar or adaptable programs from different economies have been reviewed and assessed.

The result of initial assessment will be used for developing EPP guideline in the next step in accordance with additional data or information found for its completeness. The programs selected for assessment and adaptation for EPP developing will be described in section 2.2 below.

## 2.2 Programs Assessment

In order to establish the guideline for EPP development and implementation, it is crucial to gather data from existing EPP and similar schemes which have been applied in APEC and non-APEC economies. The main data sources are governmental agencies websites such as Department of Energy, Department of Environment and Natural Resources, etc. Furthermore, it should be mentioned that due to language barriers, only documents in English are included in the desk reviews. The EPP and similar schemes in Canada Hong Kong China, Japan, Korea, the Philippines, Singapore, United States, EU, Denmark, Germany and the UK are reviewed and summarized in **Table 1**. For the schemes in Thailand which may possibly be included in the EPP guideline for SAMUI Island, they are reviewed and concluded in **Table 2**. The detailed data of the chosen schemes are documented in Annex I and II. The main parameters being considered under this review process are:

- **Type:** Type of the reviewed EPP and similar programs includes both policy/program/project and labelling system. Many policies/programs/projects have been launched to promote certain labels, existing energy rating systems or specific energy strategies in the economy or region.
- **Responsible institution:** The institutions which are responsible for the EPP and similar programs are often governmental agencies in energy or environmental related divisions.
- **Goal and objectives:** Many programs share similar goals (i.e., to promote sustainable practices in different sectors, to increase energy efficiency, or to decrease energy consumption). The objectives are different in details. Only a few programs have set quantitative targets for GHG emission and environmental impact reduction.
- **Scope:** Applications are varied from products, services and organizations in general to specific products and services (i.e., energy appliances, energy utility services, transportation services) or sectors (i.e., residential sector).
- **Methodologies:** Relevant methodologies cover procedure for program applications, program compliance and verification. Nonetheless, application procedures are predominant in documentation as can be seen in this section.
- **Certification criteria:** For most programs, the criteria are not documented in details and only general description is provided. Commonly, there are two sets of assessment criteria which are quantitative requirements using measured/estimated data and qualitative requirements using expert judgment.
- **Promotional schemes:** Most of promotional schemes do not relate with eco-point systems and only a few promotional schemes have been developed by incorporating qualitative targets. Moreover, the calculation approaches and choices modelling are rarely documented transparently.
- **Short and long term benefits:** The benefits generally depend on the defined goal and scope whether carbon emission, energy and other environmental impacts are specifically focused or the outcomes may lead to sustainability as a whole. In order to ensure the program effectiveness, there is a need for monitoring and evaluating the short and long term benefits but this part cannot typically be seen in the selected schemes.



**Table 1:** EPP and similar programs/schemes in APEC member economies and non-APEC economies other than Thailand

No.	Name & Type of Scheme	Goal and Scope	Methodology of the Scheme	Certification Criteria	Promotional Schemes	Short- and Long-Term Benefits
<i>Japan</i>						
1	<p><b>Name:</b> Housing Eco-Point System</p> <p><b>Type:</b> Eco-point (Building)</p> <p><b>Responsible by:</b></p> <ul style="list-style-type: none"> <li>- The Ministry of Land, Infrastructure, Transport and Tourism.</li> <li>- The Ministry of Economy, Trade and Industry</li> <li>- The Ministry of Environment</li> </ul>	<p><b>Main Goal:</b></p> <ul style="list-style-type: none"> <li>- to reduce CO<sub>2</sub> emissions</li> <li>- to curb global warming</li> <li>- to encourage energy-efficient houses</li> <li>- to stimulate economy in Japan.</li> </ul> <p><b>Scope:</b> National</p> <p><b>Objectives of the programs:</b></p> <ul style="list-style-type: none"> <li>- To promote home owners to construct low-carbon buildings (energy-saving, long-lasting structures built using eco-friendly materials)</li> <li>- To encourage manufacturers to adopt processes and supply environmentally sound products.</li> </ul>	<p><b>Methodology</b></p> <ol style="list-style-type: none"> <li>1. The owners of eco-friendly houses will receive eco-points for the improvement of thermal insulation of windows, replaced paned and exterior walls, ceiling or floor heat insulation that meet building energy-efficiency performance standards.</li> <li>2. The eligible home owners have to apply for inspection of energy-efficiency containing three main aspects: thermal insulation, air tightness and sunlight shielding.</li> <li>3. After the approval, home owners will be rewarded eco-points of 300,000 yen per unit in earthquake-affected areas and 150,000 yen in other areas. Refurbishments to make homes more eco-friendly will be awarded points up to the equivalent of 300,000 yen.</li> <li>4. The points, worth ¥1 each, can be exchanged for three types of goods: coupons and prepaid cards, energy-efficient products, or products</li> </ol>	<ol style="list-style-type: none"> <li>1. Energy-efficiency of new or retrofitted homes must meet the Housing Energy Conservation Label Guidelines, the Energy Conservation Act and CASBEE standards which are CASBEE for New Construction, and CASBEE for Renovation. (<a href="http://www.ibec.or.jp/CASBEE/english/">http://www.ibec.or.jp/CASBEE/english/</a>)</li> <li>2. Current targeted items for this scheme are as follows:               <ol style="list-style-type: none"> <li>1. Energy Conservation Renovation of House                   <ol style="list-style-type: none"> <li>a) Insulation of windows (double glazing by using sash for inner windows, changing the single window glass to multiple glazed glass, etc.)</li> <li>b) Insulation of external walls, ceilings or floors</li> <li>c) In addition to the points provided by implementing the above 1 or 2, more</li> </ol> </li> </ol> </li> </ol>	Eco-point	<ul style="list-style-type: none"> <li>- To improve energy-efficiency in residential buildings</li> <li>- Non-energy-benefits such as better indoor climate and health, improved sound insulation and safety.</li> </ul>

No.	Name & Type of Scheme	Goal and Scope	Methodology of the Scheme	Certification Criteria	Promotional Schemes	Short- and Long-Term Benefits
			<p>that promote regional economies. The government's list of eco-products contains 271 products and suppliers of exchangeable articles. Most of the goods are prepaid cards, like East Japan Railway's Suica cards and bitWallet Inc.'s Edy, or gift coupons issued by major department stores. There are also travel tickets from JTB Corp., Kinki Nippon Tourist Co., Japan Airlines and All Nippon Airways. A total of 109 commerce groups from municipalities across the economy have also issued coupons for exchange with Eco-points. The owners can use these points for donations to environmental organizations as well.</p>	<p>points are added to the case if "barrier-free" reform is implemented with the above reform of a) or b).</p> <p>2. New Construction of House</p> <p>a) Housing that is in the same energy performance level with the Top Runner Standard of Energy Conservation Act,</p> <p>b) Wooden housing that conforms to the energy conservation standard in the Energy Conservation Act (1999 standard, which stands in the energy conservation measure rate of 4).</p>		
2	<p><b>Name:</b> Eco-point for purchasing energy-efficient appliances</p> <p><b>Type:</b> Eco-point (Products)</p> <p><b>Responsible by:</b></p> <ul style="list-style-type: none"> <li>- Ministry of the Environment (MOE)</li> <li>- Ministry of Economy, Trade</li> </ul>	<p><b>Main Goal:</b></p> <ul style="list-style-type: none"> <li>- to reduce CO<sub>2</sub> emissions and to meet its goal of reducing carbon emissions by 25 percent by 2020 and by 80 percent by 2050, compared to 1990</li> </ul> <p><b>Scope:</b></p>	<p><b>Methodology</b></p> <ol style="list-style-type: none"> <li>1. Consumer will receive eco-points when purchasing housing appliances specifically refrigerators, air conditioners, heat pumps, TV sets that meet certain standards of energy consumption efficiency within 1 year.</li> <li>2. For manufacturer to be</li> </ol>	<ol style="list-style-type: none"> <li>1. For manufacturer to be eligible, product's energy efficient level had to be over the "Four-Star" level certified under the "Unified Energy Conservation Label". For the second year of the program, the eligibility level was increased and the eligible level was set</li> </ol>	Eco-Point	<ol style="list-style-type: none"> <li>1. Replacement with green home appliances largely contributes to energy saving and lower carbon emissions in the household sector.</li> <li>2. CO<sub>2</sub> emission reductions resulting from the diffusion of green home</li> </ol>

No.	Name & Type of Scheme	Goal and Scope	Methodology of the Scheme	Certification Criteria	Promotional Schemes	Short- and Long-Term Benefits
	and Industry (METI) - Ministry of Internal Affairs and Communications (MIC) Green Home Appliance Promotion Office - Secretariat for Green Home Appliance Eco-Points  <b>Time Frame:</b> Buying products from 2009- December 2010 <b>Exchange Points:</b> until 31 March 2012	National <b>Objectives of the programs:</b> - To promote consumers to buy energy-efficient products. - To provide incentives to individuals and the private sector to encourage carbon dioxide reduction efforts - Provide policy support to accelerate dissemination of existing low carbon technology - To encourage manufacturers to adopt processes and supply environmentally sound products. - To support research and development of manufacturers for low carbon infrastructure, and human capacity development.	eligible, product's energy efficient level had to be over the "Four-Star" level certified under the "Unified Energy Conservation Label". For the second year of the program, the eligibility level was increased and the eligible level was set higher at "Five-Star" level. LED lamps were later introduced to the program in December 2009, and beginning in April 2010 consumers could use Eco-Points to buy LED lamps at a 2 to 1 Eco-point ratio. For example, a LED lamp which cost JPY 4,000 would only require 2,000 Eco-Points. 3. Purchasers of approved home appliances could apply for Eco-Points worth 5 to 10 percent of the product's value; each Eco-Point was worth JPY 1. Eco-points are rewarded according to appliance's capacity as shown below. 4. Consumers could then exchange their Eco-Points for a variety of items sponsored by the government (gift certificates, prepaid cards, regional specialties, and energy-efficient or	higher at "Five-Star" level.		appliances under the home appliance eco-point system during the system implementation period (May 2009- March 2001) estimated to be about 2,700,000 t-CO <sub>2</sub> /year. 3. Ratio of green home appliances with four or more stars on the unified eco-label to the total shipped quantity has increased by a large amount since the start of the home appliance eco-point system. Average from April to December 2010 : Air conditioners: About 96%, Refrigerators: About 98%, TVs: About 99%

No.	Name & Type of Scheme	Goal and Scope	Methodology of the Scheme	Certification Criteria	Promotional Schemes	Short- and Long-Term Benefits
			environment-friendly products) or donate them to any of 181 environmental organizations. The points are valid for 3 years.			
3	<p><b>Name: Eco-car Tax Reduction Program</b></p> <p><b>Type:</b> Tax Incentive (Products: cars)</p> <p><b>Responsible by:</b> Ministry of the Economy, Trade and Industry (METI)</p> <p><b>Time Frame:</b> 1 May 2012 – 30 April 2015</p>	<p><b>Main Goal:</b></p> <ul style="list-style-type: none"> <li>- To reduce CO2 emissions as well as to curb global warming. This program is designed to encourage the adoption of eco-cars through measures such as tax breaks on fuel-efficient cars.</li> <li>- The government wants 50 percent of new cars sold to be eco-friendly models such as hybrids or electric cars by 2020,</li> </ul> <p><b>Scope:</b> National</p> <p><b>Objectives of the programs:</b></p> <ul style="list-style-type: none"> <li>- To promote consumers to buy eco-friendly cars.</li> <li>- To encourage manufacturers to adopt processes and supply environmentally sound products.</li> </ul>	<p><b>Methodology</b></p> <ol style="list-style-type: none"> <li>1. The types of environmentally friendly vehicles eligible under this scheme are as follows:           <ul style="list-style-type: none"> <li>- Electric vehicles (including fuel cell vehicles) No acquisition tax</li> <li>- Natural gas vehicles</li> <li>- Plug-in hybrid vehicles</li> <li>- Hybrid vehicles</li> <li>- Diesel cars which conform to the FY 2009 Car Emissions Regulation</li> <li>- Trucks, buses and other types of vehicles weighing over 2.5t and less than 3.5t in total, which conform to the FY 2015 Fuel Efficiency Standard</li> <li>- Vehicles recognized as fuel efficient and with low gas emissions vehicle tonnage tax and automobile acquisition tax</li> <li>- Fuel efficiency standards will be revised and the tax reduction for eco-friendly cars will be maintained for 3 years</li> </ul> </li> </ol>	<ol style="list-style-type: none"> <li>1. The types of environmental friendly vehicles eligible under this scheme are as follows:           <ul style="list-style-type: none"> <li>- Electric vehicles (including fuel cell vehicles) No acquisition tax</li> <li>- Natural gas vehicles</li> <li>- Plug-in hybrid vehicles</li> <li>- Hybrid vehicles</li> <li>- Diesel cars which conform to the FY 2009 Car Emissions Regulation</li> <li>- Trucks, buses and other types of vehicles weighing over 2.5t and less than 3.5t in total, which conform to the FY 2015 Fuel Efficiency Standard</li> <li>- Vehicles recognized as fuel efficient and with low gas emissions</li> <li>- vehicle tonnage tax</li> </ul> </li> </ol>	Tax Incentive	-

No.	Name & Type of Scheme	Goal and Scope	Methodology of the Scheme	Certification Criteria	Promotional Schemes	Short- and Long-Term Benefits
			<ul style="list-style-type: none"> <li>- Motor vehicle tonnage tax will be further reduced for especially eco-friendly cars</li> <li>2. Under the "Clean Energy" subsidies program, car purchasers in Japan are granted a maximum of 850,000 yen (approximately \$8,500) upon the purchase of new Electric vehicles. The maximum amount was reduced from 1,000,000 yen (approximately \$10,000). The formula to calculate the actual amount of subsidies was also slightly changed each year. The current formula is rather complicated but is basically: two thirds of the price difference between the EV and a comparable gasoline car.</li> <li>3. In addition to the subsidies, EV purchasers enjoy exemption and reduction from certain auto-related taxes. For example, EV's are exempt from automobile acquisition tax (basically 5% of the purchase price) and from automobile weight tax. EV's also have substantial reduction from annual automobile tax. Eco Subsidy: In FY 2012, the government</li> </ul>	<ul style="list-style-type: none"> <li>and automobile acquisition tax</li> <li>- Fuel efficiency standards will be revised and the tax reduction for eco-friendly cars will be maintained for 3 years</li> <li>- Motor vehicle tonnage tax will be further reduced for especially eco-friendly cars</li> <li>2. The subsidies are granted to both domestically and foreign produced cars for example EV's. Nissan Leaf and Mitsubishi i-MiEV as well as Mercedes Benz's EV "smart for two electric drive" are on the list of eligible EV's.</li> </ul>		

No.	Name & Type of Scheme	Goal and Scope	Methodology of the Scheme	Certification Criteria	Promotional Schemes	Short- and Long-Term Benefits
			budget is utilized to stimulate Japanese economy by implementing the eco car subsidy scheme. The total budget for the scheme for this year is 300 billion yen.			
4	<b>Name: Eco-Town</b>  <b>Type:</b> Products, Energy, Activity  <b>Responsible by:</b> Ministry of the Economy, Trade and Industry (METI) and Ministry of Environment	<b>Main Goal:</b> To promote measures for preventing global warming in the region. Environmentally friendly town-building plans that adopt viewpoints for the prevention of global warming. Promotion of 3Rs that consider CO <sub>2</sub> emissions.  <b>Scope: National</b>  <b>Objectives of the programs:</b> 1. To cope with serious shortage of final landfill sites 2. To revitalize stagnating local industries at the same time 3. To support the slogan of “Zero Emissions”	<b>Methodology</b> 1. Local government may propose an Eco-town plan to achieve regional developments through the promotion of environmentally friendly industries and to develop recycle-based society through reduction and recycle of wastes 2. MoE and METI are to approve the plan. If the plan is both innovative and pioneering enough to be a model for other local governments. 3. If approved, the local governments obtain access to grants which cover the project cost up to 50 percent for Hardware”” project Construction of an infrastructure and “Software”” project PR and networking activity and the promotion of information service and environmental education for stakeholders	None	Direct Government Subsidy	1. Evaluation of 90 hardware Facilities in 26 Eco-towns are Reduction of Virgin Materials; 900,000.ton /yr CO <sub>2</sub> Emission Reduction 480,000 t-CO <sub>2</sub> /yr Circular use ration of by-product 92% Intra-eco-town circulation ratio 61% 2. Quantitative evaluation of economic effects for resource substitution and environmental effects of low carbon for 26 eco-towns identifies good frontier practices, Kitakyushu, Kawasaki ,Sapporo, and Aichi

No.	Name & Type of Scheme	Goal and Scope	Methodology of the Scheme	Certification Criteria	Promotional Schemes	Short- and Long-Term Benefits
5	<b>Name:</b> Eco-Point Town <b>Type:</b> Eco-point Program (Transport and Products) <b>Responsible by:</b>	<b>Main Goal:</b> to encourage people to consider environmental issues in the context of their everyday lives <b>Objectives of the programs:</b> 1. To promote the use of public transport and consumption of eco-products. <b>Time Frame:</b> From 2009 until Now	<b>Methodology</b> <ul style="list-style-type: none"> <li>- Participants who register for this project through its PC or mobile-phone website can obtain points by participating in environmental events, or by shopping or dining at affiliated stores and eateries in the district and paying for the services with their e-money. In addition, 1% of the price paid with e-money is automatically saved in a fund that invests in activities to expand areas of plants and flowers, and other environmental activities.</li> <li>- People can use their points in three ways. One is to exchange the points for eco-goods that can be selected according to the amount of points. The second is to exchange the points for recycled goods provided by affiliated stores and companies implementing 3R (reduce, reuse, recycle) activities. The third is to indirectly participate in social action programs in and out of Japan by donating the points.</li> </ul>	Associated with Eco-labeling products	Eco-Point Program	-
6	<b>Name:</b> Promotion of Zero Energy Building (ZEB) and Zero Energy Houses (ZEH)	<b>Main Goal:</b> <ul style="list-style-type: none"> <li>- to promote a building or house with zero net primary energy consumption</li> </ul>	The summary of the subsidy in FY 2012 is as follows: <ul style="list-style-type: none"> <li>- A maximum two thirds of the construction cost can be subsidized for ZEB building</li> </ul>	<ul style="list-style-type: none"> <li>- Before amendment of energy conservation law 2008, those people who plan to construct large-scale house/buildings</li> </ul>	To further promote the construction of ZEB and ZEH, the METI introduced a subsidy program and	A mid-range target to reduce CO <sub>2</sub> emissions by 25% by 2020 (compare to 1990). In order to achieve this goal higher

No.	Name & Type of Scheme	Goal and Scope	Methodology of the Scheme	Certification Criteria	Promotional Schemes	Short- and Long-Term Benefits
	<p><b>Type:</b> Building</p> <p><b>Responsible by:</b> the Government ,the Ministry of Economy, Trade and Industry (METI) Ministry of Land, Infrastructure, Transport and Tourism (MLIT)</p>	<p>annually, usually utilizing a combination of energy producing technologies like renewable energy and energy efficient facilities and systems.</p> <p><b>Scope:</b> National</p> <p><b>Objectives of the programs:</b></p> <ul style="list-style-type: none"> <li>- to promote a building or house with zero net primary energy consumption annually, usually utilizing a combination of energy producing technologies like renewable energy and energy efficient facilities and systems.</li> <li>- to promote potential new building owners to realize ZEB for newly constructed public buildings, etc., by the year 2020.</li> <li>- to promote potential new building owners to realize ZEB for an average of newly constructed buildings by the year 2030.</li> </ul>	<p>(both new and existing building)</p> <ul style="list-style-type: none"> <li>- A half the cost subsidy for the ZEH construction of existing house</li> <li>- A third the cost subsidy for new construction of ZEH house.</li> </ul>	<p>(2000 m2 or more) are obligated to submit the report concerning approach toward energy saving</p> <ul style="list-style-type: none"> <li>- After amendment in 2008               <ol style="list-style-type: none"> <li>1. Introduced order and penalty for large scale and building</li> <li>2. Middle or small-scale house and building is added</li> </ol> </li> </ul>	<p>the budget was 14 billion yen in FY 2012 and the program continues in FY 2013. The summary of the subsidy in FY 2012 is as follows:</p> <ul style="list-style-type: none"> <li>- A maximum two thirds of the construction cost can be subsidized for ZEB building (both new and existing building)</li> <li>- A half the cost subsidy for the ZEH construction of existing house</li> <li>- A third the cost subsidy for new construction of ZEH house.</li> </ul>	<p>energy saving measures of the new buildings and energy saving renovation of the existing building in the business &amp; residential sector is definitely needed. Moreover Japan has long-range target to reduce CO<sub>2</sub> emission by 60 to 80% by 2050. The building average life span is about 40 years so if most buildings are assumed to be rebuilt by 2050 energy efficient building is a must.</p>



No.	Name & Type of Scheme	Goal and Scope	Methodology of the Scheme	Certification Criteria	Promotional Schemes	Short- and Long-Term Benefits
<b>Hong Kong, China</b>						
7	<b>Name:</b> Hong Kong Green Label Scheme <b>Type:</b> Ecolabel - Type I <b>Responsible by:</b> Green Council	<b>Main Goal:</b> To help consumers clearly understand which products are more environmentally preferable than the other similar products with the same functions in the market. <b>Scope:</b> - Products - A 3-year license - National (Hong Kong) <b>Objectives of the programs:</b> - To encourage consumer to purchase commodities with reduced adverse environmental impact - To provide manufacturers and importers with incentives to reduce adverse environmental impact of their products - To provide a clear and independent guide for consumers considering environmental factors when making	<b>Methodology</b> 1. Submit the application 2. Product testing (if any) 3. Examination of document 4. Site visit & Interview 5. Comply with product criteria and relevant requirement. 6. GC consultation with advisory committee 7. Approval for label 8. Notice of approval 9. Sign contract 10. Issue of green label certificate 11. Compliance monitoring and management HKGLS is a self-financed voluntary scheme and the operation costs are principally recovered from following; Application Fee / Renewal Fee, Evaluation Fee/ On-site Audit Fee, and License Fee.	<ul style="list-style-type: none"> <li>- The criteria of each product category will be developed under following factors; the products that has a potential damage on the environmental quality, the products are widely used in the market, the products pose no health or safety threat to human beings</li> <li>- The steps of criteria developing; collection of information, criteria development, and criteria review and endorsement.</li> <li>- The criteria usually includes: background, potential environment impact, label objective, product definition and product criteria with verification methods</li> </ul> Note: The criteria has already been set for 10 categories, 59 products.	No Promotional schemes	1. provide the environmental information for consumers 2. Financial benefit to the producers 3. it is a positive move towards sustainable development

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		<p>purchases</p> <ul style="list-style-type: none"> <li>- To ultimately improve the quality of the environment and encourage sustainable management of resources.</li> </ul>				
<b>The Philippines</b>						
8	<p><b>Name:</b> The National Ecolabelling Programme - Green Choice Philippines (NELP-GCP)</p> <p><b>Type:</b> Ecolabel - Type I</p> <p><b>Responsible by:</b> Philippine Center for Environmental Protection and Sustainable Development, Inc.</p>	<p><b>Main Goal:</b> To produce and distribute environmentally preferable products and services in the Philippines</p> <p><b>Scope:</b> - Products and services - A 3-year license - National (Philippines)</p> <p><b>Objectives of the programs:</b></p> <ol style="list-style-type: none"> <li>1. To guide the consumers, products and services that have lower impacts on the environment.</li> <li>2. To encourage manufacturers to adopt processes and supply environmentally sound products</li> <li>3. To use the label to empower the consumers and</li> </ol>	<p><b>Methodology:</b></p> <ol style="list-style-type: none"> <li>1. Apply for label</li> <li>2. Processing of Application</li> <li>3. Need to conduct site visit/product testing</li> <li>4. Evaluation Results – Passed Product criteria</li> <li>5. Approval</li> <li>6. Awarding of Approval/certification</li> </ol> <p>Note: It will be charged for label fees</p>	<p>There are 38 product categories that have already had criteria, one category (e-vehicles) is an ongoing process, and two categories (hotels and resort, and carbon-intensive products) are on negotiations process.</p>	<p>This program does not have any promotional schemes but it is based on the market power concept. “if consumers prefer to purchase environmentally friendly products and services due to label information, it is hoped that market forces will encourage producers and manufacturers to change their production and business processes to reduce environmental harm”</p>	<ul style="list-style-type: none"> <li>- Reinforce product’s brand and image, and gain a position in a market because the label guarantees that products are manufactured with an international eco-friendly quality.</li> </ul>

No.	Name & Type of Scheme	Goal and Scope	Methodology of the Scheme	Certification Criteria	Promotional Schemes	Short- and Long-Term Benefits
		complement the government's environmental policy				
<b>Singapore</b>						
9	<b>Name:</b> One-year accelerated depreciation allowance for energy efficient equipment and technology (ADAS) <b>Type:</b> Policy/Program/Project	<b>Main Goal:</b> It encourages companies to replace old, energy-consuming equipment with more energy efficient ones and to invest in energy-saving equipment. <b>Scope:</b> - Services (Replacement or installation) - one year - National (Singapore)	<b>Methodology:</b> 1. Check the list that can be applied 2. Download the application 3. Engage a Professional Engineer to complete or endorse the evaluation report. 4. Submit the completed application form and the supporting invoices to the Inland Revenue Authority of Singapore (IRAS) when making your tax submission. 5. Forward a copy of the application form and the evaluation report to the Energy Efficiency & Conservation Department	-	The capital expenditure on the qualifying energy efficient or energy-saving equipment can be written off or depreciated in one year instead of three. (Taxes will be reduced)	-
10	<b>Name:</b> BCA Green Mark Incentive Program <b>Type:</b> Policy/Program/Project <b>Responsible by:</b> Building and Construction Authority (BCA)	<b>Main Goal:</b> To drive Singapore's construction industry towards more environmentally friendly building <b>Scope:</b> - Services (Building) - National (Singapore) <b>Objectives of the programs:</b> 1. This scheme aims to	<b>Methodology:</b> This cash incentive (upgrading & retrofitting) scheme is applicable to building owners of existing private commercial (non-residential) development with a minimum gross floor area of 2000 m <sup>2</sup> ; who are planning to do energy improvement retrofitting works in their buildings to achieve the Green Mark certification (GM ENRB Version 3) or must have	Followed BCA Green Mark - Energy efficiency - Water efficiency - Environmental protection - Indoor environment quality - Other green features and innovation	Total incentive amount is dependent on the Green Mark Rating achieved or to be achieved by the application with regard to the building as indicated in the application form and the Aircon System Efficiency. The grant (total incentive	

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		encourage building owners to undertake upgrading or retrofitting to improvements in energy efficiency. 2. The schemes are targeted mainly at energy intensive buildings such as shopping malls, hotels, office buildings, hospitals etc.	attained a Green Mark rating (minimum GM Gold) which is still in its validity period.		amount) of this program is explained in term of “percentage of qualifying cost”, which may be up to 50%	
<b>Korea</b>						
11	<b>Name:</b> Green Credit Card Program <b>Type:</b> Incentive program <b>Responsible by:</b> Korean Ministry of Environment and local municipalities	<b>Main Goal:</b> In the context of the Republic of Korea's 2008 green growth plan, the Korean Ministry of Environment has coordinated a comprehensive eco-reward program called green card since 2011. This program aims to encourage individuals to adopt a more sustainable lifestyle, especially in purchase and energy management. <b>Scope:</b> - People who has credit card, check card or membership	<b>Methodology:</b> <ul style="list-style-type: none"> <li>▪ The <b>Carbon Point Program</b> concerns the amount of saved electricity, gas and tap water in the building sector. The Carbon Point Program is the responsibility of local authorities. They receive power consumption data of individuals from the Korean Environment Corporation and award points. Incentives are issued by the municipality in various forms, including cash, energy efficient products (LED, multi tab, etc.), gift cards, garbage bags, and points, which are issued to Green Card holders.</li> <li>▪ <b>Green purchasing points</b>, the program concerning the</li> </ul>	<b>Carbon Point Program:</b> - 10% less water, electricity or gas for 6 months compared to a reference set to the average of the previous two years - Purchase green products, certified with eco-labels, such as Korea Eco-Label and Carbon Label, via green credit card. <b>Public transport program:</b> credit card companies give points to passengers using intermodal public transport	<ul style="list-style-type: none"> <li>▪ A household can get up to 70,000 points (1 point = 1 KRW), approximately € 50 per year</li> <li>▪ User can obtain money points equivalent to 1-5% of the product price from the manufacturer of distributor or government</li> <li>▪ Points allow the green card holder to have access to four types of rewards:</li> <li>▪ Incentives in the</li> </ul>	<ul style="list-style-type: none"> <li>▪ The Ministry of Environment expects that 3% of greenhouse gases generated from households, or 2.08 million tons per year will be reduced if 3 million Green Card holders achieve 10% of energy saving and green product purchase, which is equivalent to planting 749 million pine trees each year.</li> <li>▪ A circulation system of the Green value chain can be established when the</li> </ul>

No.	Name & Type of Scheme	Goal and Scope	Methodology of the Scheme	Certification Criteria	Promotional Schemes	Short- and Long-Term Benefits
		<p>card, which obtained from partner banks or through exclusive web page.</p> <ul style="list-style-type: none"> <li>- Green Card System are categorized in three sectors including carbon point system which is an energy saving program at home, green consumption point by purchases of green products, and public services</li> <li>- <i>Duration:</i> Initiated since July 22, 2011</li> </ul> <p><b>Objectives of the programs:</b> Green Card System is a green life infra policy to provide economic incentives to the people who practice green live, including energy saving, green products purchases, and use of public transportation, be making use of a point system with credit cards.</p>	<p>purchase of eco-friendly products: the user can get points by paying with green card for the purchases of eco-labeled products.</p> <ul style="list-style-type: none"> <li>▪ <b>Public transport program:</b> Paying public transport fares with a credit card is common in the Republic of Korea and is widely accepted by different modes of public transport (bus, express bus, mini bus, subway and taxi). Fare discounts are provided when people transfer from one mode of public transport to another. The credit card companies provide points to passengers engaging in this scheme.</li> </ul>		<p>public sector: 50% discount for parks; free of charge of reduction of 5% to 50% for access to public services (tourist sites, museums, swimming pools, etc.)</p> <ul style="list-style-type: none"> <li>▪ Withdrawal of money equivalent points from cash machines</li> <li>▪ Payment of cash or points in Green Card affiliates</li> <li>▪ Points are exchanged against phone bills</li> <li>▪ Donation; points are converted into cash for environmental associations</li> </ul>	<p>extension of green life culture and green consumption using the Green Card is continued to the manufacturing of green products and increased distribution.</p>
<b>The United States</b>						
12	<b>Name:</b> Green Roofs - Cooling Los Angeles	<b>Main Goal:</b> Encourage comprehensive green	<b>Methodology:</b> 1) Establish initial concept for green roof	Green building programs constructed around LEED or other green building	Provide financial incentive regarding the level of LEED	<ul style="list-style-type: none"> <li>▪ Extended life of conventional roofs to reduce the frequency</li> </ul>

No.	Name & Type of Scheme	Goal and Scope	Methodology of the Scheme	Certification Criteria	Promotional Schemes	Short- and Long-Term Benefits
	<b>Type:</b> Incentive project <b>Responsible by:</b> City of Los Angeles Environmental Affair Department (EAD)	design to reduce the buildings' impact on the urban environment and conserve natural resources <b>Scope:</b> Commercial or institutional building in City of Los Angeles <b>Objectives of the programs:</b> To promote, educate and advance sustainable green building practices	2) Design green roof by Consulting with green roof professionals, a landscape architect, an architect, a structural engineer, etc. 3) Check pre-design with Fire Department 4) Prepare construction plans 5) Submit complete construction documents and plans to Fire Department and Department of Building and Safety respectively. 6) Assemble construction team and begin construction	certification programs must be included in the assessment of green roof incentives and evaluated continuously for the inclusion of green roofs Therefore, if a tax credit is awarded for a certain level of LEED certification, it is providing direct financial reward for LEED, therefore providing financial incentive for green roofs if incorporated into the project.	certification. 1) <b>Existing Incentive</b> - Earn one point for reducing heat islands - Point for storm water management 2) <b>Potential Future Incentives</b> - Reduce storm water charge for buildings with green roofs	and cost of roof replacement <ul style="list-style-type: none"> <li>▪ Increased building energy efficiency to save money on energy costs</li> <li>▪ Improved function of photovoltaic</li> <li>▪ Reduced size of HVAC equipment and usage to save money on equipment and energy costs</li> <li>▪ Create additional urban green space and increase property values</li> <li>▪ Noise reduction</li> <li>▪ Food production</li> <li>▪ Reduced urban heat island effect</li> <li>▪ Reduced strain on urban infrastructure</li> <li>▪ Improved air quality</li> <li>▪ Improved water quality</li> <li>▪ Reduced urban storm water runoff quantity</li> <li>▪ Create habitat</li> <li>▪ Sequester Carbon.</li> </ul>
13	<b>Name:</b> Anaheim Public Utilities - Commercial & Industrial New	<b>Main Goal:</b> This program has been initiated to help Anaheim City deferring the future	<b>Methodology:</b> 1. Complete, print out and sign an online application. 2. Attach the following:	ENERGY STAR® or other qualifying rated appliances and high-efficiency household conservation	Financial incentive will be provided to users in different rate depending on the	Benefits from ENERGY STAR performance for consumers: - SAVE ENERGY AND

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	<p>Construction Rebate Program</p> <p><b>Type:</b> Rebates Program</p> <p><b>Responsible by:</b> Anaheim Public Utilities (APU)</p>	<p>purchase of costly resources by conserving electricity and water consumption.</p> <p><b>Scope:</b></p> <ol style="list-style-type: none"> <li>1. Only for customers of APU electric services.</li> <li>2. Incentives are limited for residential use within the APU service area.</li> </ol> <p><b>Objectives of the programs:</b></p> <ol style="list-style-type: none"> <li>1. Achieve legislatively driven goals and objectives (AB 2021)</li> <li>2. Meet the needs of our customers &amp; Department</li> <li>3. Maximize Public Benefit Investments</li> <li>4. Promote New Energy/ Water Technologies</li> <li>5. Expand Renewable Energy (meet SB-1) goals</li> <li>6. Promote Green Buildings</li> <li>7. Develop effective communications and marketing plans</li> </ol>	<ul style="list-style-type: none"> <li>▪ A copy of a recent Anaheim Public Utilities bill</li> <li>▪ Original, paid sales receipts or invoices, which must include the product's brand name, the manufacturer number, the purchase price and date, and, if available, the product's efficiency information.</li> </ul> <ol style="list-style-type: none"> <li>3. Submit the entire application package via post to Rebate Processing Center, or via email to rebates@anaheim.net</li> <li>4. An Anaheim Public Utilities representative may call to schedule a physical inspection of their installed appliance or conservation measure prior to issuing a rebate.</li> <li>5. The participant must keep their inspection appointment to ensure that your application is processed in a timely manner.</li> <li>6. Rebate checks are normally mailed within 30 days from the date of approval.</li> </ol>	measures	<p>used appliance.</p> <p><u>Example</u></p> <p>Refrigerator --&gt; \$50</p> <p>Dishwasher --&gt; \$50</p> <p>Room AC --&gt; \$50</p>	<p>MONEY</p> <ul style="list-style-type: none"> <li>- GET COMFORTABLE</li> <li>- PROTECT VALUABLE INTERIORS</li> </ul>
<b>Canada</b>						
14	<b>Name:</b> CMHC Green Home -	<b>Main Goal:</b> ▪ Encourage peoples to	<b>Methodology:</b> There are two types of application.	<b>For the purchase of a house or unit located in</b>	▪ A 10% premium refund on the	▪ Improve an efficiency of energy

No.	Name & Type of Scheme	Goal and Scope	Methodology of the Scheme	Certification Criteria	Promotional Schemes	Short- and Long-Term Benefits
	<p>Mortgage Loan Insurance</p> <p><b>Type:</b> Incentive Program for Energy sector</p> <p><b>Responsible by:</b> CMHC's Mortgage Loan Insurance</p>	<p>invest in an energy-efficient home or make energy-saving renovations in order to reduce energy consumption rate</p> <ul style="list-style-type: none"> <li>▪ Promote energy conservation and reduce GHG emissions</li> </ul> <p><b>Scope:</b></p> <ul style="list-style-type: none"> <li>▪ Commercial level both:               <ul style="list-style-type: none"> <li>- construction/purchase of an energy-efficient home, <b>OR</b></li> <li>- purchases/refinance of an existing home which improve energy efficiency</li> </ul> </li> </ul> <p><b>Objectives of the programs:</b> To offer borrowers more affordable financing choices when purchasing an energy-efficient home or making energy-efficient improvements</p>	<p>Purchasing or Building an Energy-Efficient Home</p> <p><b>Step 1:</b> Find out how energy-efficient they will have to provide confirmation that their home or unit complies with the applicable qualifying requirement</p> <p><b>Step 2:</b> If required, boost your energy efficiency</p> <p><b>Step 3:</b> Discuss and arrange a CMHC-insured mortgage</p> <p><b>Step 4:</b> Confirm the improvement</p> <p><b>Step 5:</b> Apply for your Premium Refund</p> <p>Renovating to Make Home More Energy-Efficient</p> <p><b>Step 1:</b> Obtain an energy rating for their home</p> <p><b>Step 2:</b> Discuss CMHC insured refinancing</p> <p><b>Step 3:</b> Improve your rating</p> <p><b>Step 4:</b> Confirm the improvement</p> <p><b>Step 5:</b> Apply for your Premium Refund</p>	<p><b>low rise residential buildings</b></p> <ul style="list-style-type: none"> <li>▪ Rate 82 or higher on an NRCan energy evaluation; <b>OR</b></li> <li>▪ Be constructed under a CMHC-eligible energy-efficient building program</li> </ul> <p><b>For the purchase of homeowner units located in high rise residential buildings</b></p> <ul style="list-style-type: none"> <li>▪ 5% more energy-efficient than if constructed to meet provincial/territorial requirements (where they exist) <b>OR</b></li> <li>▪ 20% more energy-efficient than if constructed to meet the Model National Energy Code for Buildings).</li> </ul> <p><b>For improvements to make a home more energy-efficient</b></p> <ul style="list-style-type: none"> <li>▪ NRCan energy assessment evaluation is required</li> <li>▪ Property improvements must increase the home's NRCan energy assessment rating by at least 5 points; and once improvements are completed,</li> <li>▪ the property must achieve a minimum NRCan energy assessment rating of 40.</li> </ul>	<p>Mortgage Loan Insurance premium</p> <ul style="list-style-type: none"> <li>▪ Loan-to-Value (LTV) ≤ 80%</li> </ul>	<p>consumption in housing sector</p> <ul style="list-style-type: none"> <li>▪ People can afford to purchase efficient-energy house</li> <li>▪ A 10% premium refund on the Mortgage Loan Insurance premium provided to borrowers</li> <li>▪ Loan-to-Value (LTV) ≤ 80% Amortization periods of up to 40 years without a premium surcharge</li> </ul>



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15	<p><b>Name:</b> ecoENERGY Retrofit Incentive for Buildings</p> <p><b>Type:</b> Incentive program</p> <p><b>Responsible by:</b> Natural Resources Canada's (NRCan's) Office of Energy Efficiency (OEE)</p>	<p><b>Main Goal:</b></p> <ul style="list-style-type: none"> <li>▪ Reduce energy consumption and emissions,</li> <li>▪ Increase competitiveness and produce a healthier and more comfortable workspace.</li> <li>▪ Using less energy helps reduce greenhouse gas emissions contributing to a cleaner environment for all Canadians.</li> </ul> <p><b>Scope:</b> Organization that own, manage or lease eligible buildings</p> <p><u>Eligible Building Types</u></p> <ul style="list-style-type: none"> <li>▪ Commercial or institutional buildings</li> <li>▪ Federal government buildings that are under a long term (5 years or more)</li> <li>▪ Provincial, territorial or municipal buildings</li> <li>▪ Multi-unit residential buildings and mixed-use</li> <li>▪ commercial/residential buildings</li> </ul>	<p><b>Methodology:</b> There are several steps to conduct for applying this program.</p> <p><b>Step 1:</b> Conduct a Pre-Project Energy Audit</p> <p><b>Step 2:</b> Complete the Application Form</p> <p><b>Step 3:</b> OEE Review and Approval Process</p> <p><b>Step 4:</b> Implement the Project and Send Status Reports</p> <p><b>Step 5:</b> Submit the Final Report Form and Claim for Payment Form</p> <p><b>Step 6:</b> OEE project Verification</p> <p><b>Step 7:</b> OEE Payment Process</p>	<p><b>Data requirement for Auditing</b></p> <ul style="list-style-type: none"> <li>▪ physical characteristics of the building</li> <li>▪ major existing equipment</li> <li>▪ current building energy consumption by end-use type</li> <li>▪ analysis of the recommended energy-saving measures</li> <li>▪ net effect on energy consumption of other energy systems in the building</li> </ul> <p><b>Incentive calculation</b> The eligible incentive will be calculated based on the lowest of the following criteria: \$10 per gigajoule (GJ) of estimated annual savings recognized by NRCan following an internal technical review; 25 percent of eligible project costs; or \$50,000 per project and \$250,000 per recipient over the life of the program</p>	<p>The incentive is based on the lowest of the following three amounts: \$10 per gigajoule (GJ) of recognized annual energy savings, 25 percent of net eligible project costs or \$50,000 (up to \$250,000 per organization).</p>	<ul style="list-style-type: none"> <li>▪ Reduce energy consumption and emissions;</li> <li>▪ Increase competitiveness and produce a healthier and more comfortable workspace.</li> <li>▪ Using less energy helps reduce greenhouse gas emissions and air contaminants contributing to a cleaner environment for all Canadians.</li> </ul>

No.	Name & Type of Scheme	Goal and Scope	Methodology of the Scheme	Certification Criteria	Promotional Schemes	Short- and Long-Term Benefits
		<p><b>Objectives of the programs:</b> Assist owners and operators of small and medium-sized buildings implement energy retrofit projects that reduce energy consumption and emissions.</p>				
<b>EU</b>						
16	<p><b>Name:</b> Building the Single Market for Green Products</p> <p><b>Type:</b> Policy/Program/Project</p> <p><b>Responsible by:</b> European Commission</p>	<p><b>Goal:</b> Allow and facilitate, in the medium term, a higher uptake of green products and of greener practices by companies in the EU market by contributing to the removal of potential barriers to the free circulation of green products in the Single Market.</p> <p><b>Scope:</b> European products and organisations</p> <p><b>Objectives of the programs:</b> Contribute to improving the availability of clear, reliable and comparable information on the environmental performance of products and organisations to all</p>	<p><b>Methodology:</b> The generic concept of green product will be operationalized by: 1) the method to measure life cycle environmental impacts; and 2) the product category-specific rules which will provide the benchmark necessary to define a truly green product. The same approach will also be implemented for organisations. The method for products and organisations are Product Environmental Footprint (PEF) and Organisation Environmental Footprint (OEF) methods, respectively.</p>	<p>The selection of the product categories and sectors participating is based on: magnitude of environmental impacts; the willingness of stakeholders to contribute or lead; the need to ensure that diverse products and sectors are included; the availability of existing work; and the availability of information in terms of life cycle data.</p>	-	<p>Societal benefits of reduced environmental damage with higher satisfaction of consumers as well as potential economic benefits for producers and consumers through more efficient use of natural resources.</p>

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		relevant stakeholders, including to players along the entire supply chain.				
17	<p><b>Name:</b> The Current Climate and Energy Policy in the EU and in Switzerland</p> <p><b>Type:</b> Policy</p> <p><b>Responsible by:</b> Swiss Federal Institute of Technology Zurich (ETH Zurich)</p>	<p><b>Main Goal:</b> Reduce greenhouse gas emissions and energy consumption of private households in EU and Switzerland.</p> <p><b>Scope:</b> To discuss policy instruments which would, in principle, lend themselves for a scale-up of employer-led incentive schemes focusing on project-based CO<sub>2</sub>-markets and direct subsidy schemes to end-consumers</p> <p><b>Period:</b> April 2012 – March 2014</p> <p><b>Applicability:</b> Households in aggregate</p> <p><b>Objectives of the programs:</b> To examine opportunities to incorporate employer-led incentive schemes into existing mandatory policy instruments.</p>	<p><b>Methodology:</b> Describe the policy instruments that governments and public authorities have used up to now in the context of tackling small-scale emissions from disperse sources, especially households. We will analyse which role firms could play in this context in order to increase private household energy savings and GHG emission reductions. The discussed policy instruments are:</p> <ol style="list-style-type: none"> <li>1) Climate and Energy Policies</li> <li>2) Credit-based schemes focusing on Tradable White Certificates, Green Certificates, Renewable Energy Certificates and domestic small-scale emission reductions</li> <li>3) Subsidy-based schemes focusing on electric vehicle, heating in residential buildings, solar power production in private households and household appliances</li> </ol>	<p><b>Criteria:</b> Effectiveness, cost efficiency, verifiability and acceptability of measures for the employees.</p>	-	Win-win situation for households and firms: both profit from employees saving energy and reducing CO <sub>2</sub> in their households. In addition, under specific conditions companies may profit from offsetting their emissions by their employees' emission reductions.
<b>Denmark</b>						
18	<p><b>Name:</b> Energy Strategy 2050- from coal, oil and gas to green energy</p>	<p><b>Main Goal:</b> Denmark to be independent of fossil fuels by 2050</p>	<p><b>Methodology:</b></p> <ol style="list-style-type: none"> <li>1. Transition track: Efficient energy consumption and</li> </ol>	-	All the new initiatives in the government's strategy are fully	Energy Strategy 2050 is also Denmark's contribution to curbing

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	<b>Type:</b> Energy Policy <b>Responsible by:</b> The Danish Government	<b>Scope:</b> Danish Energy efficiency, renewables <b>Period:</b> Short – up to 2020 Long – up to 2050 <b>Applicability:</b> Danish Energy System <b>Objectives of the programs:</b> The Danish government is working for an EU commitment to reduce overall emissions of greenhouse gases by 30% by 2020 relative to the 1990 level.	energy supply based on renewable energy 2. Planning and preparation track: Integration of new solutions in the energy and transport system. 3. Technology development: more knowledge, analysis, research, and development as well as demonstration and preparation for market efforts.		financed. This also applies to tax revenue losses resulting from lower energy consumption and in particular lower consumption of fossil fuels.	global warming. Finally, the strategy will bolster Danish growth and wealth. The transition will strengthen companies' opportunities for innovation and demonstration of new green solutions.
<b>Germany</b>						
19	<b>Name:</b> The Blue Angel Ecolabel <b>Type:</b> Ecolabel Type I <b>Responsible by:</b> The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety is the owner of the Blue Angel. The Federal Environment Agency develops the technical criteria of the Basic Award Criteria documents. The Blue Angel is awarded by RAL gGmbH based on the Basic Award	<b>Main Goal:</b> The Blue Angel promotes the concerns of both environmental protection and consumer protection. Its aim is the information and exchange of best practice in order to develop harmonized targets across Germany. <b>Scope:</b> Products and services with the Blue Angel are available for all areas of life. Today there are 13,000 products and services by approximately 1,260 companies in 120	-	Mandatory criteria have been established for the procurement of wood and wood products, while a general administrative regulation was issued for the procurement of energy efficient products and services. In general Blue Angel and GPP provide one level of criteria but contracting authorities can differentiate between core and comprehensive levels. Social criteria have not yet been incorporated.	All consumers that are interested in environmental safe purchasing. Environment also benefits when purchasing a product with the Ecolabel.	-

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	Criteria documents decided by the Environmental Label Jury.	<p>product categories.</p> <p><b>Period:</b> It has set the standard since 1978</p> <p><b>Applicability:</b> It is awarded to products and services which - from a holistic point of view - are of considerable benefit to the environment and, at the same time, meet high standards of serviceability and health and occupational protection.</p> <p><b>Objectives of the programs:</b> Companies will use the label to professionally promote their eco-friendly products in the market. Thus, it will be an ecological beacon showing the consumer the way to the ecologically superior product and promotes environmentally conscious consumption. The label should cover top 20-30% of products – highly ambitious.</p>				

No.	Name & Type of Scheme	Goal and Scope	Methodology of the Scheme	Certification Criteria	Promotional Schemes	Short- and Long-Term Benefits
<b>The UK</b>						
20	<p><b>Name:</b> Green Deal and Energy Company Obligation</p> <p><b>Type:</b> Policy/ program/project</p> <p><b>Responsible by:</b> Department of Energy &amp; Climate Change, The United Kingdom</p>	<p><b>Goal:</b> (Green Deal) To overcome access to capital, mismatched incentive problems and provide a trustworthy framework for the energy efficiency supply chain. (ECO) To provide additional support to deliver measures for achieving the UK's carbon targets (not fully financeable through the Green Deal), and provides subsidised measures to low income and vulnerable households to relieve fuel poverty</p> <p><b>Scope:</b> For domestic and non-domestic sector Time: 13 December 2013-30 June 2014 (Cashback program)</p>	<p>The Green Deal process has four stages:</p> <ol style="list-style-type: none"> <li>1. Assessment This is carried out in your home or business premises by a Green Deal Advisor or Provider, and may be subject to a charge.</li> <li>2. Finance Once the Green Deal Advisor has given you your report, you can take it to one or more Green Deal Providers who can arrange and fund the improvements.</li> <li>3. Installation The Green Deal Provider will arrange for a Green Deal installer to come and carry out the work you have agreed to.</li> <li>4. Repayment Pay back the cost of the improvements over time through your electricity bill.</li> </ol>	-	<p>The Green Deal Cashback Scheme is a first-come, first-served offer where householders can claim cash back from Government on energy saving improvements like insulation, front doors, windows and boilers. Packages could be worth more than £1,000.</p>	<p>Initially, the project can be non-directly used for increasing people awareness in energy consumption. In long term, the energy used for residential activities or an organization will be consumed efficiently.</p>

**Table 2:** Existing low carbon policies, frameworks and measures for SAMUI Island, Thailand

No.	Name & Type of Scheme	Goal and Scope	Methodology of the Schemes	Certification Criteria	Promotional Schemes	Short- and Long-Term Benefits
1	<p><b>Name:</b> Energy Label No.5</p> <p><b>Type:</b> Energy Saving Label</p> <p><b>Responsible by:</b> Electricity Generating Authority of Thailand (EGAT) and Ministry of Energy</p>	<p><b>Objective:</b></p> <ul style="list-style-type: none"> <li>To encourage manufacturers/ importers to produce and import high efficiency appliances in sensible price.</li> <li>To Attract and persuade the attitude of energy preservation to people and educate precise information on the efficient energy consumption</li> <li>Be an option for consumer in purchasing the high efficient product.</li> <li>To support and persuade the technology of energy preservation, which includes managing the electric consumption for the highest benefits of consumers and the economy.</li> </ul> <p><b>Scope:</b> In the present , there are 21 products</p>	<p>Registration processes for this program are as follow:</p> <ol style="list-style-type: none"> <li>1. Inform to attend the program for testing the products</li> <li>2. Verify document and detail of equipment for testing</li> <li>3. Queue the testing</li> <li>4. Test and inform result to the company</li> <li>5. Ensure response from the company</li> </ol>	<p>Electricity Generating Authority of Thailand (EGAT) is the organization responsible for setting the benchmarks for electric equipment and it also verifies the efficiency of products in the program. Electric equipment labelled energy no.5 must have energy consumption lower than minimum standard.</p>	<ul style="list-style-type: none"> <li>- Energy Label</li> <li>- Voluntary Mechanism</li> </ul>	<p><b>For consumers:</b> Consumer is able to compare the pros and cons of electric equipment clearly.</p> <p><b>For private organizations:</b> This program causes competition between manufacturers and upcoming adaptation to focus on developing products that save more energy and are environmentally friendly.</p> <p><b>For government:</b> The national energy consumption will decrease significantly.</p>

No.	Name & Type of Scheme	Goal and Scope	Methodology of the Schemes	Certification Criteria	Promotional Schemes	Short- and Long-Term Benefits
		involved in the program and it covers, among others: refrigerator, air conditioner, T5 and fluorescent lamp, low loss ballast, Louver Luminaries, electric iron, electronic fan, ventilation fan, oscillating Fan, electric kettle, electronic rice-cooker, jasmine rice No.5, computer monitor, television receiver, water heater and etc.				
2	<b>Name:</b> Green Label  <b>Type:</b> Label Type I  <b>Responsible by:</b> Thailand Environment Institute (TEI)	<b>Goal:</b> Promote the concept of resource conservation, pollution reduction, and waste management.  <b>Objective:</b> <ul style="list-style-type: none"> <li>• To provide reliable information and guide customers in their choice of products.</li> <li>• To create an opportunity for</li> </ul>	<ul style="list-style-type: none"> <li>- Upon approval of the application, a contract for the use of the Thai Green Label will be drawn up between TEI and the applicant. The applicant right to use the Green Label is conditional upon its fulfilment of the terms or the contract, which will be valid for a maximum period of two years, or until the criteria for green label status are re-evaluated.</li> <li>- An application fee of 1,000 Baht is charged to all applicants. Upon approval of the product, applicants must</li> </ul>	The green label criteria have been developed under the guidance of the following principles: <ul style="list-style-type: none"> <li>• An environmental assessment of the product using life cycle consideration; environmental protection, the efficient use to raw materials and reductions in environmental impacts.</li> <li>• Solving specific issues of high political priority,</li> </ul>	<ul style="list-style-type: none"> <li>- Environmental Label</li> <li>- Voluntary Mechanism</li> </ul>	<b>For consumers:</b> This logo informs consumers that the products have awareness in the environment friendly.  <b>For manufacturers:</b> Manufacturer receives The benefits in terms of profit due to more consumption of those products.



No.	Name & Type of Scheme	Goal and Scope	Methodology of the Schemes	Certification Criteria	Promotional Schemes	Short- and Long-Term Benefits
		<p>consumers to make an environmentally conscious decision.</p> <ul style="list-style-type: none"> <li>To reduce environmental impacts that may occur during manufacturing, utilization, consumption and disposal of products.</li> </ul> <p><b>Scope:</b> The Thai Green Label Scheme applies to products and services, not including foods, drinks, and pharmaceuticals. Products or services which meet the Thai Green Label criteria can carry the Thai Green Label.</p>	<p>pay a user fee of 5,000 Baht for license to use the label throughout the contract term. All payments are made to TEI.</p>	<p>e.g. reduction of waste production, and minimization of energy and water consumption.</p> <ul style="list-style-type: none"> <li>Capability to meet proposed criteria with reasonable process modification and/or improvement.</li> <li>Possession of appropriate test methods.</li> </ul>		<p><b>For government:</b> The program causes competition among the manufacturers to improve the quality of their technology with regard to their impact on the environment.</p>
3	<p><b>Name:</b> Carbon Footprint of Product (CFP)</p> <p><b>Type:</b> Label Type III</p>	<p><b>Objective:</b> To provide an alternative to consumers to contribute towards reducing GHG emissions by purchasing low</p>	<p>For registration process, producer has to collect data and report in 3 parts; PCR, Verification sheet, and Presentation to registered verifiers for verification. After TGO certifies the result from verifier, the producer can label CFP logo on the product and</p>	<p>In assessment of the carbon footprint of each product, company must follow the Product Category Rule (PCR). Any products without PCR in Thailand, the assessment conductor/consultant must</p>	<ul style="list-style-type: none"> <li>- Environmental Label</li> <li>- Voluntary Mechanism</li> </ul>	<p><b>For consumers:</b> The carbon footprint label gives consumers information on the greenhouse gas emissions of products and services, assisting them in making</p>

No.	Name & Type of Scheme	Goal and Scope	Methodology of the Schemes	Certification Criteria	Promotional Schemes	Short- and Long-Term Benefits
	<b>Responsible by:</b> Thailand Greenhouse Gas Organization (TGO)	emission products and services. The project also seeks to promote and enhance the competitiveness of the Thai industrial sector in the global market.	the logo will expire after 2 years.  The registration fee is 8,500 Baht	submit a draft of product specifications following the template format provided in TGO website so TGO can make a further consideration.  At present, TGO has PCR of 17 Categories level and 134 PCR for general products.		informed purchasing decisions and providing them the opportunity to participate in GHG management.  <b>For manufacturers:</b> The carbon footprint label can be used to promote low emission products in the market and help establish a positive image of an organization that is committed towards GHG mitigation.
4	<b>Name:</b> Carbon Footprint for Organization  <b>Type:</b> Label Type III  <b>Responsible by:</b> Thailand Greenhouse Gas Organization (TGO)	<b>Goal:</b> To promote the measurement and reduction of the carbon footprint of organizations, which are both the Corporate Carbon Footprint and the Carbon Footprint for Local authorities projects.	For registration process, organizations have to collect data and report in 2 Excel sheet based on TGO format to registered verifiers for verification. After TGO certifies the result from verifier, the organization will receive the certificate.	The organization must assess the carbon footprint and report in Greenhouse gas inventory as defined by TGO.	<ul style="list-style-type: none"> <li>- Environmental Label</li> <li>- Voluntary Mechanism</li> </ul>	<b>For private organizations:</b> <ul style="list-style-type: none"> <li>- To quantify and identify any significant sources of greenhouse gas emissions from its activities that could be mitigated.</li> <li>- To trade or sell GHG reductions as carbon credits to other organizations for offsetting purposes.</li> </ul>

No.	Name & Type of Scheme	Goal and Scope	Methodology of the Schemes	Certification Criteria	Promotional Schemes	Short- and Long-Term Benefits
						<p><b>For government:</b></p> <p>Measuring the carbon footprint could be used as a key driver to frame management of the economy's emissions reduction goal.</p>
5	<p><b>Name:</b> Carbon Footprint of Service</p> <p><b>Type:</b> Label Type III</p> <p><b>Responsible by:</b> Thailand Greenhouse Gas Organization (TGO)</p>	<p><b>Goal:</b> To promote the measurement and reduction of the carbon footprint of service.</p>	<p>For registration process, an organization has to collect data and report based on TGO format to registered verifiers for verification. After TGO certifies the result from verifier, the organization will receive the certificate.</p>	<p>The organization must assess the carbon footprint and report in Greenhouse gas inventory as defined by TGO.</p>	<ul style="list-style-type: none"> <li>- Environmental Label</li> <li>- Voluntary Mechanism</li> </ul>	<p><b>For private organizations:</b></p> <ul style="list-style-type: none"> <li>- To quantify and identify any significant sources of greenhouse gas emissions from its activities that could be mitigated.</li> </ul> <p><b>For government:</b></p> <p>Measuring the carbon footprint could be used as a key driver to frame management of the economy's emissions reduction goal.</p>
6	<p><b>Name:</b> Carbon Reduction</p>	<p><b>Goal:</b> To get consumers</p>	<p>For registration process, producer has to send the detail of material in process to TEI</p>	<p>Criteria and requirements for Carbon Reduction Label</p>	<ul style="list-style-type: none"> <li>- Environmental Label</li> <li>- Voluntary</li> </ul>	<p><b>For consumers:</b></p> <p>The label gives</p>

No.	Name & Type of Scheme	Goal and Scope	Methodology of the Schemes	Certification Criteria	Promotional Schemes	Short- and Long-Term Benefits
	Label  <b>Type:</b> Label Type III  <b>Responsible by:</b> Thailand Environment Institute (TEI) and Thailand Greenhouse Gas Organization (TGO)	involved in the reduction of GHG emission through market mechanism and stimulate manufacturers to increase the efficiency of production processing.	for verification. After TGO certifies the result from TEI, the producer can label the carbon reduction logo on the product and the logo will expire after 3 years.  The registration fee is 100,000 Baht	is as follows: <ul style="list-style-type: none"> <li>• Greenhouse gas emission resulting from the manufacturing process should be reduced by at least 10 percent; or</li> <li>• Electricity supplied to manufacture the product is generated on-site from biomass residues or wastes; or</li> <li>• The product has been manufactured from less carbon intensive technology compared to others in the same industry</li> </ul>	Mechanism	consumers information in order to make more informed decision when choosing products and services which can contribute to GHG emission reduction to reduce the global warming problem.  <b>For manufacturers:</b> <ul style="list-style-type: none"> <li>- To reduce fossil fuel consumption, and increase use of renewable energy.</li> <li>- To demonstrate their social responsibility and enhance the company's image.</li> </ul>
7	<b>Name:</b> Cool Mode  <b>Type:</b> Label Type I  <b>Responsible by:</b> Thailand	<b>Objective:</b> To give more options for consumers to select clothing that reduces GHG emission while encouraging the climate-conscious among the producers and textile market in	For registration process, company has to send the fabric to THTI for testing the structural property and verify it. After TGO certifies the result from THTI, the company can label CoolMode logo on the product and the logo will expire after 3 years.	The fabric shall be durable and safe for consumers in order to be certified, The requirements in order to get the CoolMode standard are as follows:  <ul style="list-style-type: none"> <li>• must be breathable in order to decrease the energy used and easy to clean as to reduce</li> </ul>	<ul style="list-style-type: none"> <li>- Environmental Label</li> <li>- Voluntary Mechanism</li> </ul>	<b>For consumers:</b> The consumer can select clothing that are appropriate for hot climate  <b>For government:</b> Reduce the electricity use for air conditioning, as well

No.	Name & Type of Scheme	Goal and Scope	Methodology of the Schemes	Certification Criteria	Promotional Schemes	Short- and Long-Term Benefits
	Greenhouse Gas Organization (TGO) and Thailand Textile Institute (THTI)	Thailand.		water consumption, or <ul style="list-style-type: none"> <li>made of natural or manufactured fibers, or synthetic materials, or</li> <li>use an innovative fiber technology, or biotech finishing technology to decrease the skin's temperature.</li> </ul>		as directly and indirectly decrease the GHG emission when people are comfortable in buildings at 25 degree Celsius.
8	<b>Name:</b> TREES (Thailand Green Building)  <b>Type:</b> Label Type III  <b>Responsible by:</b> Thai Green Building Institute (TGBI)	<b>Goal:</b> To support Thai architects and engineers to make quality which are comparable internationally and define the green building standard that is suitable with weather and other traditional practices of Thailand.  <b>Scope:</b> TREES-NC standard design for the buildings is over than 3 floors with follow minimum requirement.	- TGBI will assess in 30 days - Registration fee 12,800 Baht - Building assessment fee calculates from building area; <ul style="list-style-type: none"> <li>Area &lt;5,000 m<sup>2</sup> = 50,000 Baht</li> <li>50,000&gt;Area &gt;5,000 m<sup>2</sup> = 10 Baht/m<sup>2</sup></li> <li>Area &gt;5,000 m<sup>2</sup> = 500,000 Baht</li> </ul>	Buildings which are certified by TREES must pass 2 conditions as follows: <ol style="list-style-type: none"> <li>Buildings must pass 8 basic regulations</li> <li>Point must be over than the lower standard               <ul style="list-style-type: none"> <li>Platinum (&gt;61)</li> <li>Gold (46-60)</li> <li>Silver (38-45)</li> <li>Certified (30-37)</li> </ul> </li> </ol>	- Environmental Label - Voluntary Mechanism	<b>To Building owners:</b> <ul style="list-style-type: none"> <li>TREES certification label is value added to buildings and tenants are more interested in green building. The cost of the building's energy consumption and water will decrease.</li> <li>It shows that project owners are interested and pay attention to tenants' well-being and especially to environmental friendly buildings.</li> <li>It also can help to promote the building of the CSR (Corporate</li> </ul>

No.	Name & Type of Scheme	Goal and Scope	Methodology of the Schemes	Certification Criteria	Promotional Schemes	Short- and Long-Term Benefits
						<p>Social Responsibility) to the society as well.</p> <p><b>To government:</b>            Building in Thailand are going to create the new and retrofit began to be used TREES requirements in term of reference (TOR) since it will decrease energy consumption in commercial sector if most buildings in Thailand are able to be certified TREES.</p>
9	<p><b>Name:</b> Green Leaf</p> <p><b>Type:</b> Label Type III</p> <p><b>Responsible by:</b> Green Leaf Foundation</p>	<p><b>Objective:</b></p> <p>To help lower operational costs and pass those cost-savings on to the customers, too. Indeed, the program also encouraged participatory activities by customers in saving energy and natural resources saving.</p>	<p>The step for applying this program as follow;</p> <ol style="list-style-type: none"> <li>1. Grading Questionnaires and send back to the Green Leaf foundation.</li> <li>2. Audit team will screen the completeness of data.</li> <li>3. The hotels will be contacted in 48 hours before the audit team visit the hotel for auditing.</li> <li>4. Calculating scores from questionnaires and results of audit compared to the Standard score derived</li> </ol>	<p>A process of auditing environmental standard of hotel has consisted of 3 steps as follows:</p> <ul style="list-style-type: none"> <li>• Screening process - Certain rules, regulation, or legislation with regards to environmental restriction.</li> <li>• Qualify process - Proper environmental activities in hotels</li> <li>• Grading process - A self-environmental audit</li> </ul>	<ul style="list-style-type: none"> <li>- Environmental Label</li> <li>- Voluntary Mechanism</li> </ul>	<p><b>For government:</b></p> <p>Transforms an environmental vision into practices by 79 hotels in 2003 which have received green Leaf Certificate. The happenings will help encourage other hotels to continue to upgrade the environmental standards, which leads to sustainability.</p>

No.	Name & Type of Scheme	Goal and Scope	Methodology of the Schemes	Certification Criteria	Promotional Schemes	Short- and Long-Term Benefits
			from 20 reference hotels.	<p>in operational process of hotel which divides into 11 sections.</p> <p>The ranking will be set to identify 1-5 green leaf hotels.</p>		
10	<p><b>Name:</b> DEDE subsidy (80:20)</p> <p><b>Type:</b> Project</p> <p><b>Responsible by:</b> Department of Alternative Energy Development and Efficiency (DEDE)</p>	<p><b>Objective:</b> To support the increase of energy efficiency of machines and equipment in factories focusing on medium and small factories.</p>	<p>The method for obtaining supporting funds in energy efficient machines, materials and equipment is as follows:</p> <ol style="list-style-type: none"> <li>1. Factories submit application forms to DEDE</li> <li>2. DEDE checks and analyzes the documents for the possibility of remodeling measures.</li> <li>3. DEDE approves the support financial amount and notifies the approval to the factories.</li> <li>4. The factories sign a contract with DEDE for a specified period.</li> <li>6. DEDE appoints the factories to check before installation of machines, materials or equipment.</li> <li>7. The installation of machines, materials or equipment occurs within 6 months, after the approval documents are submitted</li> </ol>	<p>Qualifications of the applicants</p> <ol style="list-style-type: none"> <li>1. The applicants are medium or small size factories.</li> <li>2. The applicants have to follow the terms and conditions of the project and also participate in any activities related to the project. Application forms must be approved by a chief executive or his representative.</li> <li>3. The applicants must follow the terms and conditions related to the contract parties with the government.</li> </ol> <p>Qualification of the measures</p> <ol style="list-style-type: none"> <li>1. The measures must not previously or</li> </ol>	<p>Subsidy for investment which follow these conditions.</p> <ul style="list-style-type: none"> <li>- DEDE supports 20% of equipment and installation costs.</li> <li>- The applicants can apply more than 1 measures but the financial amount should not exceed 3 million baht.</li> </ul>	<p>Promoting from government will make the entrepreneur to be confident and interested to invest in energy efficiency more than before. This will decrease significantly the overall energy in the factory and the entire economy as well.</p>

No.	Name & Type of Scheme	Goal and Scope	Methodology of the Schemes	Certification Criteria	Promotional Schemes	Short- and Long-Term Benefits
			by DEDE. 8. DEDE officer checks the completeness of machines, materials or equipment installation. 9. The factories have to submit withdrawal financial amount document to DEDE. 10. DEDE approves funding 11. The factories are appointed for receiving the fund.	currently be supported by the government and have to be related to energy conservation 2. The measures must save energy substantially and the simple payback period can't exceed 7 years. These measures consisted of (1) High efficiency motor (2) Inverter for controlling speed of motor (3) High efficiency air compressor (4) Changing boiler (5) Lighting system		
11	<b>Name:</b> ESCO Revolving Fund <b>Type:</b> Program <b>Responsible by:</b> Department of Alternative Energy Development and	<b>Objective:</b> 1. To stimulate investments in renewable energy and energy efficiency. 2. To encourage more annual energy saving. 3. To promote and	<b>Eligible applicant:</b> Potential entrepreneurs from industrial sectors or Energy Service Companies (ESCO) with potential energy efficiency or renewable energy projects that would result in a reduction of the energy consumption, an increase of the energy efficiency, fuel switching, or	<b>Terms of Investment:</b> 1. The project must relate to energy conservation in Energy Conservation for Promoting Domestic Energy Conservation Act. 2. Return of investment must be high.	- Subsidy for investment which is differentiated in each investment service For example, for the Equity Investment, the investment	Promotion from the government and the financial institution in energy efficiency through ESCO projects, whether it is a governmental project or several products from the financial institute (soft loan or revolving fund),



No.	Name & Type of Scheme	Goal and Scope	Methodology of the Schemes	Certification Criteria	Promotional Schemes	Short- and Long-Term Benefits
	Efficiency (DEDE), Energy for Environment Foundation (E for E)	<p>support private investments through Energy Service Company (ESCO).</p> <p>4. To assist entrepreneurs in minimizing their energy cost, and achieving revenues from carbon credit</p> <p>5. To provide financing to energy efficient and renewable energy businesses.</p>	<p>renewable energy businesses.</p> <p>Investment Services in ESCO Revolving Fund are as follows:</p> <ol style="list-style-type: none"> <li>1. Equity Investment</li> <li>2. ESCO Venture Capital</li> <li>3. Equipment Leasing</li> <li>4. Carbon Credit Facility</li> <li>5. Credit Guarantee</li> <li>6. Technical Assistance</li> </ol>	<ol style="list-style-type: none"> <li>3. Risk of technical and financial investment must be appropriate.</li> <li>4. 10 – 50 % of investment will be supported but the total amount won't be higher than 50 million baht per project.</li> <li>5. Organizations must invest in business operations 10-30 % of the capital but the amount won't be higher than 50 million baht.</li> <li>6. Equipment can be 100 % pay instalment but the amount won't be higher than 50 million baht and repayment won't be higher than 5 years.</li> <li>7. The project must be consistent with the aims of the project investment.</li> </ol>	<p>criteria is as follow:</p> <ul style="list-style-type: none"> <li>▪ Size of equity investment: 10%-50% of total equity but limited to 50 Million baht per project, and it should not be the major shareholder</li> <li>▪ Investment period is 5-7 years.</li> <li>▪ Exit method: Share sell-back to the entrepreneur</li> <li>▪ Exit price : Following the shareholder agreement</li> <li>▪ Board - seat is needed.</li> </ul>	<p>causes the entrepreneur to be able to reduce cost of energy consumption including managing energy more efficiently. Moreover, support will be given to the reduction of energy consumption in the entire economy as well.</p>

### 2.2.1 Contextualize Relevant Programs

The generic concept of Eco-Point Program (EPP) as mentioned in the previous section is the framework demonstrating how to establish a rewarding program for people who purchase eco or green products and services. The EPP should consist of eco-point calculating and redeeming system as well as quantified certification criteria. There were many programs directly and/or indirectly associated with EPP. In order to select the existing schemes for initial EPP guideline development in this project, the assessments of programs relevancies (for APEC and non-APEC economies other than Thailand) have been carried out as shown in Table 3. The aspects of relevancies include the existence of eco-point system, eco-label, applications (both goods and services), measurement, reporting and verification (in terms of carbon emissions, energy, and other environmental impacts).

**Table 3: Relevancies of selected schemes for EPP guideline development**

No.	Schemes	Eco-point System	Eco-label	Applications		Measurement, Reporting and Verification		
				Goods	Services	Carbon Emission	Energy	Other Impacts
1	Housing Eco-Point System	○	○	○	○			
2	Eco-point for purchasing energy-efficient appliance	○	○	○	○			
3	Eco-Car Tax Reduction Program		○	○				
4	Eco-Town Program		○	○	○			
5	Eco-Point Town		○	○	○			
6	Promotion of Zero Energy Building and Zero Energy Houses		○	○		○	○	
7.	Hong Kong Green Label Scheme		○	○				○
8.	The National Ecolabelling Programme - Green Choice Philippines		○	○	○			○
9.	One-year accelerated depreciation allowance for energy efficient equipment and technology				○			
10.	Green Mark Incentive Scheme for Existing Building		○		○		○	○
11.	Green Credit Card Program	○	○	○	○	○	○	○
12.	Green Roofs - Cooling Los Angeles				○		○	○
13.	Anaheim Public Utilities - Commercial & Industrial New Construction Rebate Program		○	○			○	
14.	CMHC Green Home - Mortgage Loan Insurance		○	○			○	
15.	ecoENERGY Retrofit Incentive for Buildings				○		○	○
16.	Building the Single Market for Green Products			○	○	○	○	○
17.	The Current Climate and Energy policy in the EU and in Switzerland				○	○	○	
18.	Energy Strategy 2050- from coal, oil and gas to green energy				○	○	○	
19.	The Blue Angel Ecolabel		○	○	○		○	○
20.	Green Deal and Energy Company Obligation				○		○	

**Note:** Economy of origin – Japan (Scheme No.1-6); Hong Kong (Scheme No.7); the Philippines (Scheme No.8); Singapore (Scheme No.9-10); Korea (Scheme No.11); the United States (Scheme No.12-13); Canada (Scheme No.14-15); EU (Scheme No.16-17); Denmark (Scheme No.18); Germany (Scheme No.19); the UK (Scheme No.20).

**Relevant schemes in APEC member economies:** The eco-point systems have not been found in APEC economies except the schemes in Japan and Korea. In fact, the first economy initiating the eco-point program is Japan. Japan can be considered as one of the leader in reducing GHG emission. Nevertheless, Japan pledged to go further with its 2007 proposition of a low-carbon society, as a contribution to halving global emissions by 2050. Japan continues to make contributions, utilizing various schemes such as law enforcement, tax incentives, grant, and technical cooperation and also eco-point program. The low-carbon promotional schemes are implemented in all sectors namely industrial, consumer and transport sector. The implementation schemes are prioritized according to the level of GHG emission. Eco-point programs are initiatively implemented to consumer sector including eco-friendly housing and energy-efficient electrical appliances. Eco-point programs created a mechanism that encouraged consumers to select products that incorporate low-carbon technology or high energy efficiency products. However, eco-point programs cannot be implemented without well-established eco-labelling such as CASBEE (building), Energy Saving Labelling, Eco-Mark and etc.

Housing Eco-Point System aims to promote the construction of new houses and the renovation of existing houses to meet building energy-efficiency performance standard, namely CASBEE. Homeowners of new and refurbished houses will be given 300,000 eco-point per unit in disaster-affected area and 150,000 eco-point in other areas. One eco-point equal to one yen and can be exchanged for eco-products, gift vouchers, public transport passes and donations.

Eco-point for purchasing energy-efficient appliance is somewhat similar to housing eco-point system. The program aims to promote consumers to buy main housing electrical appliances specifically refrigerators, air conditioners, heat pumps and TV sets that have 4 or 5 star energy efficient level certified under the “Unified Energy Conservation Label”.

Eco-point town Daimaruyu had passed its 2-year experimental period and is now full operating. This program tries to encourage people to consider environmental issues in the context of their everyday lives. Eco-points are awarded to commuters for choosing to use public transit by using a prepaid card. Points are also given when people join environmental events held in the district, or ride public services such as a local hybrid electric shuttle bus. People can use their points in three way: exchanging for eco-goods, exchanging for recycled goods or donating the points.

Although, the implementation of eco-point for housing and electrical appliances can be considered successful since there were a large program applicants than initially expected. These experiences learned by Japanese cases will be very useful for APEC LCMT-EPP guideline development.

For Korea, the green credit card program provides the complete structure of an EPP system including eco-point system, eco-labels, applications both for products and services as well as holistic consideration of environmental impacts.

Apart from Japan and Korean, some APEC member economies are still at their initial stages of developing eco-labels or green. Less than 10 eco-labels are available in each economy although an eco-label specifically for energy can be normally found. The eco-label for product is widely available in many countries but the label for services sector is rarely available and the license fees (including application, evaluation) are essential for maintaining the eco-label organization. The promotional/incentive schemes are the useful tool for stimulating the eco-market (both producers and consumers) but should have limitations (time/budget).

Ahead of these APEC economies without the eco-point system, Singapore has both eco-label schemes and incentive programs, aimed to stimulate the efficiency of energy usage, reducing carbon emission from building sector. This stimulus program is named The Green Mark Incentive Scheme for Existing Building (GMIS-EB). This program provides fund for renovating the existing energy intensive building by using the Green Mark certification. The building will be certified Green Mark if it passes or achieves five criteria categories, which are: energy efficiency, water efficiency, sustainable operation & management, indoor environment quality and other green features. There is another incentive program named one-year accelerated depreciation allowance for energy efficient equipment and technology (ADAS) which allow owners to calculate the equipment depreciation in one year instead three years. By doing so, the owners will pay less tax. This program aims to stimulate the replacement of old equipment that has low efficiency energy usage with high efficiency energy equipment. However, the incentive schemes are limited by available period (time) and budget.

The assessment of relevance to the EPP programs in **Table 3** presents that most economies have the eco-label certification which may have some differences in the criteria. For products, the criteria are usually set as a minimum requirement basically determined by potential environmental impacts of each product. Thus, all eco-label criteria can be measurable, reportable and verifiable in term of environment impacts but the criteria do not include the energy and carbon emissions. For building (BCA Green Mark), the criteria include the efficiency of energy usage and the environmental impact. However, only eco-label that is not enough to support the goal of national policy or stimulate the green-market growth. The incentive program will be required to initiate the market/system, either demand or supply side, or may be both side.

**Relevant schemes in non-APEC economies:** From intensive review of European countries and the North America countries, there is no program having exact characteristics of eco-point program being implemented. With the same aim of having incentives for consumers to buy eco-friendly products, the European Commission attempted to build single market for green products. This program aims to provide incentives for both consumers to choose the most resource-efficient products through appropriate price signals and clear environmental information. Although this program is still at its early phases of developing proposal and testing, a lot of efforts have been spent to establish strong methodology such as developing a harmonized method for the calculation of the environmental footprint of products, developing product category specific criteria, guides and simplified tools. This process, supported by a consultation process with industry, has culminated in the development of both Product Environmental Footprint (PEF) and Organization Environmental Footprint (OEF).

Other scheme to promote low carbon society are aiming at providing incentive to the construction and the renovation of building and residential housing that meet energy-efficiency standards. Examples of this incentive are refund scheme such as EcoEnergy Retrofit Incentive for building or low-interest loan directly to eligible home owners such as CMHC Green Home-Mortgage Loan Insurance. Besides the aim of reducing energy consumption in building sectors, there are no such schemes to promote consumers to use energy-efficient electrical appliances. However, in these developed economies, energy-labels are extensively available such as EU Energy Label, EKOenergy and Group for Energy Efficient Appliances Label.

Other types of eco-labels are fairly well developed to cover different product categories such as general products, electrical appliances, agricultural products, construction materials, textiles, hotels and much more. For instance, the blue angel eco-label have certified more than 13,000 products and services covering 120 product categories. The wide variety of eco-label categories can be considered as an advantage to Eco-point program because there will be a broad range of products and services to be able to join the program, and thus increase a chance of attracting more consumers to the program.

In conclusion, out of 20 reviewed schemes from ten economies and one continent, only housing eco-point system and eco-point for purchasing energy-efficient appliances in Japan and green credit card program in Korea have eco-point systems. Consequently, these programs are chosen for the initial EPP guideline development and the details are presented below.

## **2.2.2 EPP Summary in Japan, Korea and Thailand**

The following reviewed results of EPP in Japan and Korea have been elaborated as well as existing programs in Thailand for further development.

### **1. Existing EPP schemes in Japan**

The existing schemes with eco-point systems in Japan are “Housing Eco-Point System” and “Eco-point for purchasing energy-efficient appliance”. The specific details of these schemes which are applicable for establishing EPP guideline in the project are described below.

#### **1.1 Goal and scope**

Japan’s government has committed to reduce CO<sub>2</sub> emission about 80% in year 2050, compare with 1990 level. To meet this target the government launched two main eco-point programs namely “Housing Eco-Point System” and “Eco-point for purchasing energy-efficient appliance”, which focused on energy efficiency of building and home appliances. These two programs were implemented economy wide with the government total funding of Yen 244.6 billion (\$US 3.02 billion) for the first scheme and Yen 693 billion for the second scheme.

Beside the main goal of reducing carbon emission and energy saving, secondary goals are to stimulate Japan’s economy and accelerate manufacturers’ technology development.

## 1.2 Methodologies

- **Application procedure**

This program has been applied for two main fields: building and home appliances. For the building scheme, home owners will be rewarded eco-points of 150,000 yen for newly built houses and of 300,000 yen for refurbishment homes. Special sympathy of Yen 300,000 was giving to the construction of new houses in earthquake-affected area. Home owners must apply for inspection of energy-efficiency containing three main aspects: thermal insulation, air tightness and sunlight shielding. Half of the eco-point rewards should be exchanged for good or services of local areas. Remaining points can be exchanged for energy-efficient and eco-friendly products, such as energy-efficient air-conditioning equipment, prepaid cards for mass transportation and products made by eco-friendly firms, and donation to environmental organisations.

For electrical appliance, carbon reduction aim at high-energy consumption appliances which are refrigerators, air conditioners, heat pumps, TV sets and LED lamps (high energy consumptive appliances). Customers who buy those kinds of products with energy conservation higher than 4 level will receive eco-point rewards. The eco-point can be exchanged for eco-friendly gift voucher, used to pay for other eco-friendly products and services, or donate to environment organizations.

- **Certification procedure**

For home improvement scheme, energy-efficiency of houses must be assessed and certified by third-party registered under CASBEE (Comprehensive Assessment System for Built Environment Efficiency, CASBEE). For home appliances, eligible products must passed and certified under “Unified Energy Conservation Label” at level Four- or Five-Star. The government also created a new label to inform consumers which products are eligible for eco-point program

- **Point calculating and redeeming system**

For eco-friendly housing program, eco-points will be awarded according to energy efficiency performances and area as shown below. Additional points will be given to the improvement of solar heat utilization and seismic upgrading.

**Table 4:** Criteria Housing-Ecopoint

Criteria	Eco-point award
Construction of new houses	
- in earthquake-affected area	300,000
- in other area	150,000
* Additional for Solar heat utilization	20,000
Renovation and replacement houses	Maximum 300,000
- Renovation for barrier-free	Maximum 50,000
- Energy efficiency equipment	Maximum 20,000
- Insurance for renovation defects	Maximum 20,000
* Additional for Seismic upgrading	150,000

For electrical appliances eco-point program, point of each product is calculated according to product categories and its values. The example of point reward for home appliances is shown in table below. However, an exactly concept of point calculating method is not accessible. For redeeming, each eco-point equal to 1 JPY and the points can be exchanged for eco-friendly gift voucher, used to pay for other eco-friendly products and services, or donate to environment organizations.

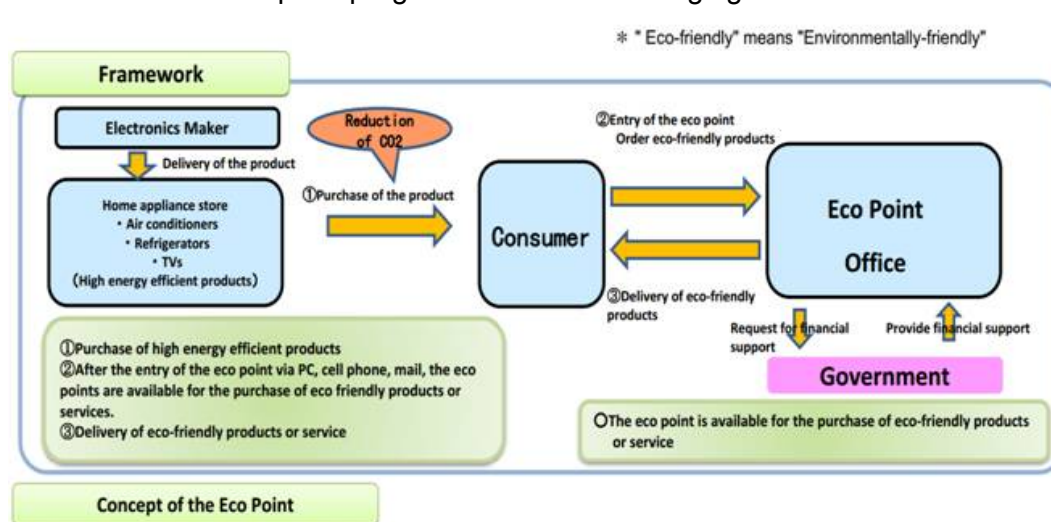
**Table 5:** Example of home appliances eco-point reward

Air Conditioning		Refrigerator		Television	
3.6 kW or more	9,000 points	501 liters or more	10,000 points	46V or more	36,000 points
2.8 kW – 2.5 kW	7,000 points	401 – 500 liters	9,000 points	42V, 40V	23,000 points
2.2 kW or less	6,000 points	251-400 liters	6,000 points	37V	17,000 points
		250 liters or less	3,000 points	26V or less	7,000 points

The points rewarded could be exchanged for gift certificates, prepaid cards, regional specialties, and energy-efficient/ environment-friendly products. The government made a list of 271 products eligible for the program. They could also be donated to any of 181 environmental organizations selected from public entries. By December 31, 2009, approximately 85.93 billion points had been issued for individual consumers, and 79.27 billion points had been used to order gifts or make donations.

### 1.3 Institutional frameworks

The main authorities that involve in this program are The Ministry of Economic, The Ministry of Environment, Trade and Industry and other authorities up to each field, i.e. for building eco-point, the Ministry of Land, Infrastructure, Transport and Tourisms is involved. For housing eco-point program, there is no specific illustration to explain the duties of responsible parties. It can be assumed the pattern could be similar to those of home appliances program. The responsible parties should include home owner, local authority, third-party housing certify bodies, eco-point offices and suppliers. For home appliances, The Ministry of Internal Affairs and Communications, Green Home Appliances Promotion Office and Secretariat for Green Home Appliance are involved. The framework of eco-point program shows in following figure.



**Figure 2:** Framework of eco-point program

(Source: [http://www.metu.go.jp/English/press/2011/pdf/0614\\_01a.pdf](http://www.metu.go.jp/English/press/2011/pdf/0614_01a.pdf))



### 1.4 Short and long term benefits

- **General short and long term benefits**

The benefits of these schemes include reduction in energy consumption and CO<sub>2</sub> emissions; and improvements in energy efficiency, indoor climate and health, as well as sound insulation and safety.

- **Monitoring and evaluation**

Japan’s authorities reported that the effectiveness of eco-point program is quite success. The power consumption from home appliances was reduced drastically, 20% or more for air conditioner, 50% or more for refrigerators and 30% or more for TV sets. It can be estimated as the 2,700,000 t-CO<sub>2</sub> reduction per year. Moreover, this program also affect an economic system, it serves as a trigger economic effect about 5 trillion yen and creates employment around 320,000 persons per year.

### 2. Existing EPP scheme in Korea

The existing scheme with eco-point system in Korea is “Green Credit Card Program” launched in 2011 with more than 5 million current users. The specific details of these schemes which are applicable for establishing EPP guideline in the project are described below. In addition, **Figure 3** illustrates the displaying system of the green card symbol, eco-point on eco-products.



**Figure 3:** Examples of eco-point displaying system in supermarkets.

(Source:

[http://www.greentrade.org.tw/sites/default/files/1\).Green%20Credit%20Card.pdf](http://www.greentrade.org.tw/sites/default/files/1).Green%20Credit%20Card.pdf))

## 2.1 Goal and scope

### ▪ Goal

Since 2011 the green card program is a comprehensive eco-reward system which has been coordinated by the Korean Ministry of Environment according to the Republic of Korea's 2008 green growth plan with the main goal to encourage individuals to adopt a more sustainable lifestyle, especially in purchase and energy management.

### ▪ Objectives

To reach the main goal encouraging individuals to adopt a more sustainable lifestyle, the objectives of the green card system are to provide economic incentives to the people who practice green live (i.e., energy saving, green products purchases, and use of public transportation) and to apply a point system with credit cards.

### ▪ Scope

- People who has credit card, check card or membership card, which obtained from partner banks (Woori Bank, Hana Bank, National Agricultural Cooperative, Industrial Bank of Korea, and Post Office) or through exclusive web page.
- Green Card System are categorized in three sectors including carbon point system which is an energy saving program at home, green consumption point by purchases of green products, and public services (i.e. public transportation).
- *Duration:* Initiated since 22 July 2011

## 2.2 Methodologies

- **Application procedure**

For the green purchasing point program, the application procedure how to gain and use points by the public is illustrated in **Figure 4**.



**Figure 4:** How to gain and use points in the green credit card program.

(Source:

[http://www.greentrade.org.tw/sites/default/files/1\).Green%20Credit%20Card.pdf](http://www.greentrade.org.tw/sites/default/files/1).Green%20Credit%20Card.pdf))

- **Certification procedure**

As can be seen in **Figure 5**, the green card system is linked with the existing eco-labelling programs (i.e., Korea Eco-Label and Carbon Label) in Korea. The examples of eco-labels included in this program are shown in **Figure 4**. The certification procedure of the eco-products is therefore exactly the same as the specific eco-labels which the products are applied for.



**Figure 5:** Korean Eco-Label (left side) & Korean CoolL (CO2Low) Label (right side)

(Source: <http://www.globalecolabelling.net/>, <http://www.pctech.ise.polyu.edu.hk/>)

- **Point calculating and redeeming system**

**Carbon Point Program:** For carbon point program, households can earn points by reduction in water, electricity and gas consumption for 6 months compared to a reference set to the average of the previous two years under incentive criteria in **Table 6**. A household can get up to 70,000 points (1 point = 1 KRW), approximately € 50 per year.

**Table 6:** Criteria for Carbon Point System Incentive

Item	Annual Green house Gas Reduction Rate	
	Below 5-10%	Greater that 10%
Electricity	20,000 KRW	40,000 KRW
Water	5,000 KRW	10,000 KRW
Gas	10,000 KRW	20,000 KRW

**Green purchasing points:** When purchasing green products certified with eco-labels, such as Korea Eco-Label and Carbon Label, via green credit card, green points can be collected and redeemed and the points have the monetary values depending on the product price (equivalent to 1-5% of the product price).

**Public transport program:** Eco-points are given to passengers with green credit card using intermodal public transport. The point values depend on the amount of card payment from 10% (20,000 - 1,000,000 KRW) to 20% (1,000,000 KRW). The maximum point is 10,000 point.

All in all the estimation of eco-point redeeming values for each program category under the green credit card program is concluded in **Table 7**.

**Table 7:** The estimation of eco-point redeeming values and the main providers

Category	Main Benefits	Amount	Provider
1. Carbon point	Point rewards for household energy savings	USD 70 ~100/yr	Government (MoE 50%, Local Gvt 50%)
2. Green consumption	Points are rewarded for green consumption	3~7% of price	Government(2%) Manufacturer(1~5)
3. Cultural facilities	Free or discounted entry to facilities run by local government or public agencies	18 agencies, 381 facilities	Government
4. Public transportation use & credit card service	-Points are rewarded for public transportation use -Up to 0.8% of card bill is rewarded	Points are rewarded for each use	Card Issuer(Bank)
5. Partner Companies	Points are rewarded for products bought at eco-money partner stores	1~5% of paid amount	20 partners

(Source: <http://www.myco2.com/green-card-korean-a-role-model-worldwide-green-growth-tools/#sthash.phrbOEAq.Ori0B5GP.dpuf>)

### 2.3 Institutional frameworks

Figure 6 demonstrates the role and responsibility for different stakeholders in the green credit card program.



Figure 6: Role and responsibility for different stakeholders in the green credit card program

(Source:

[http://www.greentrade.org.tw/sites/default/files/1\).Green%20Credit%20Card.pdf](http://www.greentrade.org.tw/sites/default/files/1).Green%20Credit%20Card.pdf))

### 2.4 Short and long term benefits

- General short and long term benefits**

Generally, the benefits of green credit card system are similar to the eco-point schemes in Japan such as reduction in energy consumption and CO<sub>2</sub> emissions. Nonetheless, since the green credit card system is more comprehensive with the systematic link to the existing eco-label system, the benefits are extended to environmental impact reduction and supporting nature recreation facilities as presented in Figure 7.

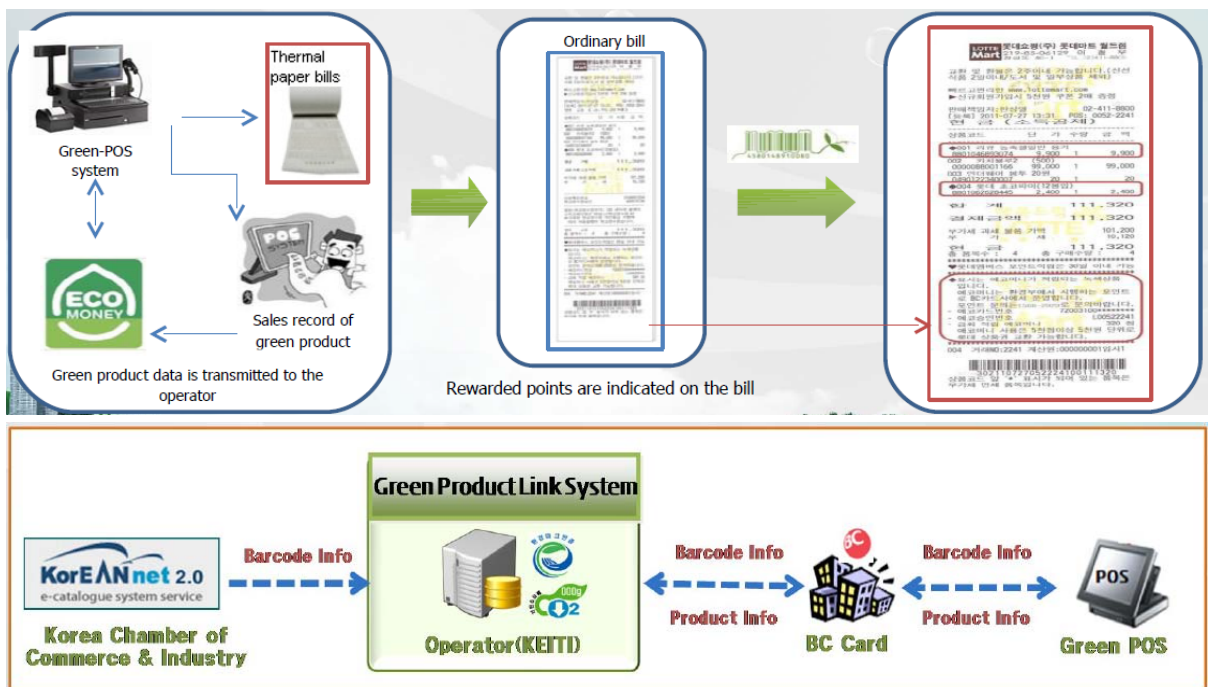


**Figure 7: Benefits of green card for users**

(Source: <http://www.eng.me.go.kr/eng/web/index.do?menuId=169>)

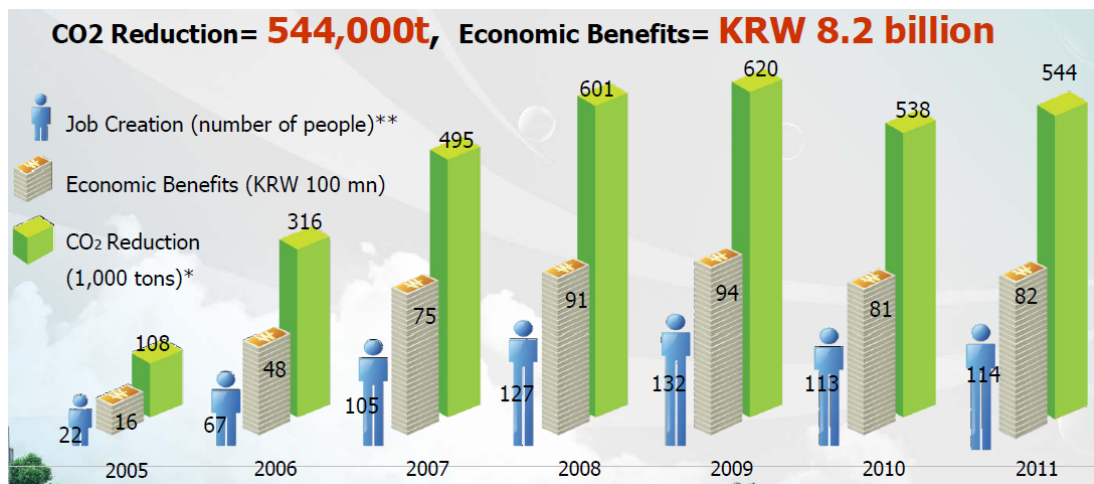
• **Monitoring and evaluation**

Since the program is tied with credit card system, monitoring and evaluation of the program can be easily done via Green POS (Point Of Sales) system or an automatic green product link system. The green POS system automatically recognizes a green product and reward eco-money points if the payment is done by the Green Credit Card resulting in effective operation as shown in **Figure 8**. Afterwards, the overall benefits of the program can be estimated based on the specific environmental data of the eco-products. Although the monitoring and evaluation of benefits for this program has not been documented individually, the green procurement as a whole was evaluated and presented by Korea Environmental Industry and Technology Institute as demonstrated in **Figure 9**.



**Figure 8: Green POS (Point Of Sales) system**

(Source: [http://www.greentrade.org.tw/sites/default/files/1\).Green%20Credit%20Card.pdf](http://www.greentrade.org.tw/sites/default/files/1).Green%20Credit%20Card.pdf))



**Figure 9:** Benefits from green procurement from 2005 to 2011 in Korea

(Source:

[http://www.greentrade.org.tw/sites/default/files/1\).Green%20Credit%20Card.pdf](http://www.greentrade.org.tw/sites/default/files/1).Green%20Credit%20Card.pdf))

### 3. Existing schemes in Thailand

Thailand has been implementing several energy labeling and eco-labeling schemes as well as promotional schemes for energy labeling and eco-labeling as previously described in **Table 2**. Each scheme has setup its own certification systems for products and services and the corresponding schemes usually involve promoting high energy efficient products, eco-labels products and certificates specifically to buildings including servicing business such as hotels.

Since Thailand has not yet developed and implemented Eco-Point (EPP) but, however, some existing energy labeling and eco-labeling schemes shall be assessed to see its relevancies to EPP for adaptation to SAMUI EPP Guideline in the future. As shown in **Table 8**, eleven schemes that currently used are assessed and compared.

**Table 8:** Relevancies of Selected Schemes for EPP in Thailand

No.	Schemes	Eco-point System	Eco-label	Applications		Measurement, Reporting and Verification		
				Goods	Services	Carbon Emissions	Energy	Other Impacts
1	Energy Label No.5		○	○			○	
2	Green Label		○	○	○		○	○
3	Carbon Footprint of Product (CPF)			○		○		
4	Carbon Footprint for Organization		○			○		
5	Carbon Footprint of Service		○		○	○		
6	Carbon Reduction Label		○	○		○		
7	Cool Mode		○	○		○	○	○
8	TREES (Thailand Green Building)		○				○	○
9	Green Leaf		○		○		○	○
10*	DEDE Subsidy 80:20						○	
11*	ESCO Revolving Fund						○	

**Remark** \* Incentive programs



### 3.1 Thailand Labelling Schemes

From **Table 6**, the schemes can be divided into three (3) types

#### 1. Energy Labeling Scheme for High Efficiency Appliances in Thailand

Energy Labeling Scheme for High Efficiency Appliances is called “Energy Label No. 5” which has been launched for more than 20 years and is very effective in Thailand. The labels mostly apply to household electrical appliances such as split type air conditioners, cookers, fans, T5 lamps etc. Even though there is no subsidy from the government when purchasing Energy Label No. 5 appliances under this scheme, but the government has campaigned and encouraged consumers regularly on the benefits of using the Energy Label No. 5 appliances as well as attempting to bring up more appliances. The driving mechanism of Energy Label No. 5 appliances is from the consumers who are willing to pay due to its energy savings. The increasing awareness and demand of consumers has driven the manufacturers to produce and register their products to get Energy Label No. 5, otherwise they cannot compete in the market.

Energy Label No.5 is the most widely known label in Thailand and it is considered as a primary choice when deciding to buy new electric equipments. The label covers over 20 types of electric equipments. After July 2011, EGAT has launched 168 million labels which can reduce energy consumption up to 2,183.4 MW and reduce 8,072,704 million tons of greenhouse gases. These have benefited both the people and the economy. This eco-label has been very widely effective because there have been frequent and continuous advertising campaigns and marketing events for stimulating the market of Energy Label No.5 products.

#### 2. Eco-labeling schemes in Thailand,

Eco labeling schemes are voluntary basis. There are three type of eco-labeling; green label, carbon reduction label, carbon footprint label. Some labels like Green Labels have been launched for more than 20 years while carbon footprint and carbon reduction label have been launched for more than 6 years. Currently, carbon footprint of products certified outnumbers the other eco-labels - green label products and carbon reduction label products as shown in **Table 8**. The products manufacturers select to apply appropriate label depending on their objectives and cost of certification.




Since there seem no eco-products-use driving mechanism for both manufacturers and consumers, therefore; the numbers of certified products increase slowly each year. However, the certification systems for those eco-labeling have been clearly defined and provided for product manufacturers, but the numbers of products and services are still limited.






For service, the labels make availability and can apply to the whole building for certificate. Such the existing schemes, TREES where can be certified to all types of buildings and Green Leaf where can be certified to the hotels. Like the other eco-labeling, this voluntary basis schemes are increasing in numbers of the buildings that can be certified.

### 3. Promotional Scheme

Besides, the energy labeling and eco labeling schemes, the other programs that can be considered as supporting programs to products manufacturers to improve process efficiency which can save energy and reduce carbon emission. Provided incentive schemes in energy efficiency are one of the supporting and promotional tools for manufacturers to produce more green or low carbon products and services. However, these schemes are periodic programs that aim to enhance the use of high efficient technologies for product manufacture. For examples, two (2) schemes called DEDE subsidy 80:20 and ESCO fund have also been included in the **Table 9**. Although these schemes are not related to eco-labels directly, much funding has been offered and may apply to help products or services being green inside the EPP.

**Table 9:** The number of products certified under different schemes in Thailand

Label	Logo	Certified Products/Services
Energy Label No. 5		168 million labels (cover over 20 types of electric equipment, updated July 2011)
Green Label		607 models (under 24 Products Category 69 companies, updated January 2014)
Carbon footprint of products		1,164 products (under 269 companies, January 2014)

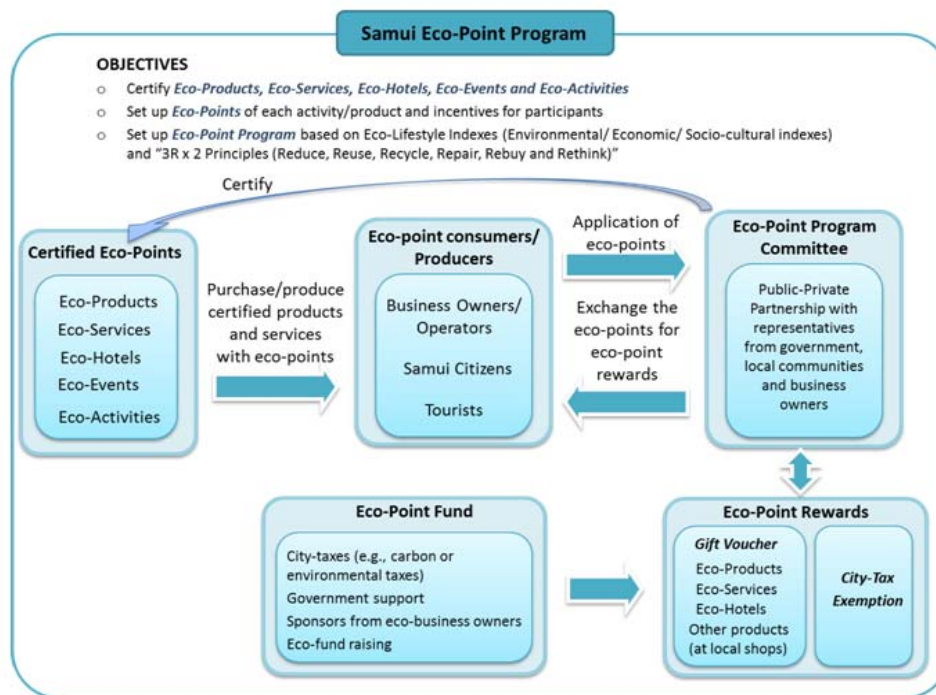
Label	Logo	Certified Products/Services
Carbon footprint for Organization	 <p>องค์กร rganization Carbon Footprint for Organization</p>	26 organizations (updated January 2014)
Carbon Reduction Label		189 products (under 49 companies, updated January 2014)
CoolMode		25 Products (under 6 companies, updated October 2013)
TREES		23 buildings (updated March 2014)
Green Leaf		203 hotels (updated March 2014)

### 3.2 Initiating EPP Adaptation Potential in Thailand

The Eco-Point Program is the program that gives points when purchasing products and services by consumers. Each product and service in EPP shall reflect the reduction of carbon emission where it shall be quantified and verified during the certification process for products and services registry to the programs. Thus, increasing of green products and services in the EPP programs will promote low carbon emission. The certification of products and services can be considered as a core component when developing EPP.

EPP can drive consumer consumptions (Demand side) as well as products manufacturers to make products availabilities. The manufacturers and service providers must also increase the green products and services to the market.

The effectiveness of the EPP has considered from components, operations and promotions of the schemes to producers and consumers. The general idea of the components involved in this program as follows;



**Figure 10:** Concept of SAMUI Eco-point Program

The above figure show logical framework in developing EPP. The required components include;

- **Certification of Eco-Point Products and Services**  
 Preparing certification criteria for each product and service as well as certification procedures  
*Example of Thailand Certification Adaptation*
  - **Products based Certification System**  
 There are number of products using different certification system for different purposes.
    - **Energy Label:** The energy label is intended to promoting high energy efficient appliances for home uses or some industrial applications. Energy Label No. 5 uses threshold of minimum energy consumption of appliances to certify Energy Label No. 5 by the Testing and Certifying Party.
    - **Eco Label:** carbon reduction label, green label, carbon footprint label are also certified to products as voluntary basis for manufacturers. There are certain criteria for each type of label. Each certified product have limited period for using the labels so there needs to be re-certified by third-party after the period of using the labels expires.
  - **Services based Certification System**  
 There are some certification types that are not directly certified to the services themselves, but the certificate will be given to the buildings to encourage the owners to apply for its own benefits. This includes TREES standard for commercial buildings and Green

Leaf for hotels. The schemes will certify the building according to criteria for different categories which involve improving energy efficiency (energy efficient equipment or materials), renewable energy use, reducing environmental impacts, increasing eco-friendly material use etc.

Both Energy labeling and Eco labeling are able to integrate as part of EPP. They already have methodology and certification criteria for specific products or services in each scheme. Therefore; they can be modified if necessary or integrate in the EPP to earn eco-points.

The adaptation of existing certification for products and services shall be made under proposed schemes. There are two possible approaches for certification system

- Modified existing certification criteria for products and services
- Develop new certification criteria specifically to EPP enrollment

- **Point Calculating and Redeeming**

To calculate eco-point value and setting up redeeming system for green purchasing. Products and services come in variety. In order to create comparative point, there shall be certain rules or methods to convert those products and services to eco-points when purchasing. The approach for converting may be complicated or simplified rules based on its economics and environmental reduction value.

- **Eco-Point Fund**

The EPP may require promotional tools such as subsidy from the government, willingness of product manufacturers for bringing products into the programs, etc. This may require a lot of efforts and financial input such as certification cost, improvement of production process etc., especially when launching the EPP where the products and services are not much available.

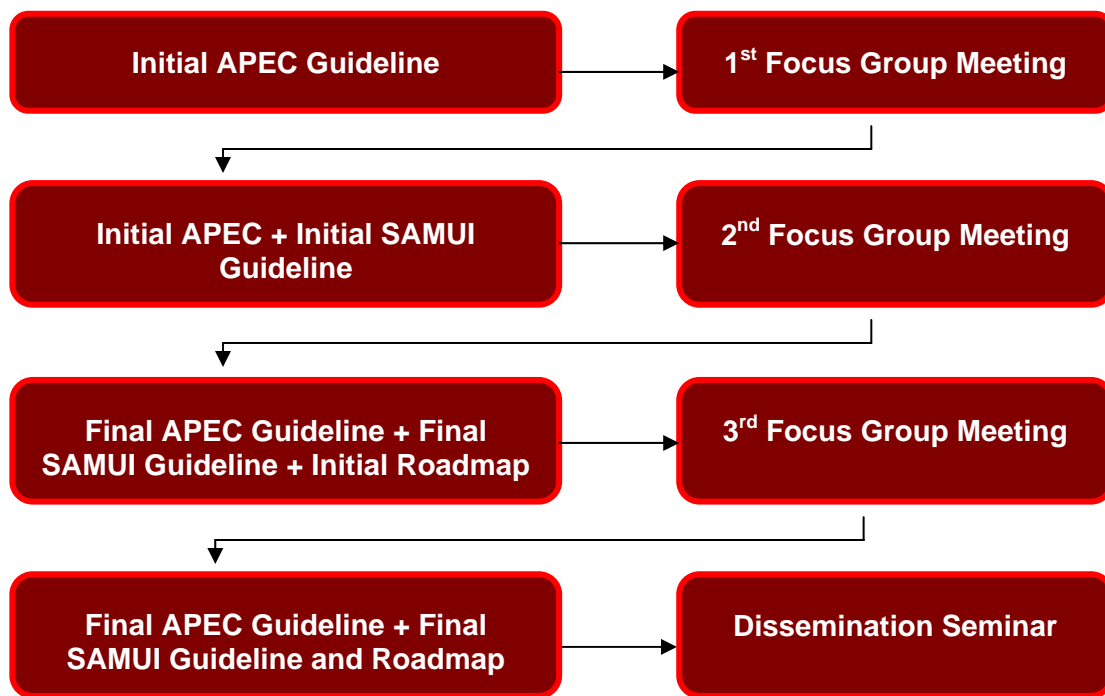
The funding sources need to be reviewed and subsidized when necessary from the governments and self sustainability. This mechanism will be further studied when developing EPP guideline.

- **Eco-Point Committees**

One of the important components of the EPP is on how EPP operates. This includes the operational committees who will perform necessary tasks to run the EPP and make the EPP operational. A group of committees may be from both government and private sectors to become the certification body in the program. For example; in Thailand, the committee from each eco-label can be taken as a part of the EPP committee.

### 3. Public consultation; Focus Group Meeting, EPP Forum and Dissemination results

During developing the APEC EPP guideline and SAMUI EPP guideline and roadmap, three (3) Focus Group Meetings (FGMs) had been conducted to gain comments and recommendations for relevant stakeholders including a dissemination seminar as process shown in **Figure 11**



**Figure 11:** EPP Process of public consultation on EPP guideline and roadmap by conducting FGMs and dissemination seminar

**3.1 Focus Group Meeting (FGM)** is the best method together information, ideas, and suggestion for EPP development process. FGM steers the decisions and directions of many stakeholders by sharing their opinions and giving feedback on selected schemes such as possibility of project implementation in SAMUI Island or future development plan for this program.

#### 3.1.1 First (1<sup>st</sup>) Focus Group Meeting Conduct and Results

1<sup>st</sup> FGM had been conducted on 7 May 2014 at Bangkok, Thailand. There were 17 participants from 12 organizations. This first FGM was intended to gain central stakeholders point of views from several public and private sectors involving goods and services including certify bodies of green and low carbon labels of goods and services at national level.

Below is the list of all participants attending the FGM #1.

Organization	Sector
1. Department of Land Transport (DLT)	Government
2. Department of Environmental Quality Promotion (DEQP)	Government
3. Tourism Authority of Thailand (TAT)	State Enterprise
4. Electricity Generating Authority of Thailand (EGAT)	State Enterprise
5. Green Leaf Foundation (GLF)	NGO
6. Thailand Environment Institute Foundation (TEI)	NGO
7. Thai Green Building Institute (TGBI)	NGO
8. The Federation of Thai Industries (FTI)	NGO
9. Office of Natural Resources and Environmental Policy and Planning (ONEP)	Government
10. Thailand Greenhouse Gas Management Organization (Public Organization) (TGO)	NGO
11. Siam Makro Public Company Limited	Private (Goods)
12. Ek-Chai Distribution System Co., Ltd (Tesco Lotus)	Private (Goods)

The discussion of FGM was focused on 1) **Framing Certification Systems**; what types of goods and services suitable to be selected into EPP including certification criteria of those goods and services, and 2) **Determining Economic Values of Eco-points**; how eco-points are provided to labeled goods and services and how they are calculated using recognized method, and 3) **Formulation of Eco-Point Program Office**; how EPP Committee shall be setup.

The results from participants were consisting of various aspects which can be summarized below;

### 1) Framing Certification Systems

- Types of goods and services to be included in the EPP and Certification system

#### Points of Discussion :

Since there are numbers of certified goods and services from different schemes, how to utilize the existing schemes or even setting up the new schemes for EPP certification system?

#### Comments/Recommendations from the meeting :

1. Most participants agreed on adapting the existing certification schemes of goods sector such as green labels, carbon footprint labels, green building & green hotel labels in services sector (in compliance with national, local and international standard) etc., and incorporated into the EPP. Using existing labels will be more cost effective and shortening timeframe for EPP implementation. In addition, besides using existing labels, the certification system of CO<sub>2</sub> reduction shall be developed for certifying and quantifying CO<sub>2</sub> reduction where it directly suited to the program objectives.
2. The numbers of certified goods and services are already available in the markets. EPP shall make use of existing goods and services by providing



some benefits to those providers on order to convince them such as easy steps for entering the EPP or low fees for application.

3. Since there are no existing labels that quantify and certify CO<sub>2</sub> reduction in their goods and services but, instead, green labels measure on environmental impact reduction while carbon footprints only report CO<sub>2</sub> emission without CO<sub>2</sub> reduction quantification. Therefore; if the existing labels are adapted, there shall develop calculation methods between existing labels to quantify CO<sub>2</sub> reduction.
4. Since different labels have their owned requirement and criteria, it is necessary to setup rules or requirements to comply all different labels to make them more comparable and reflect the environmental impact (CO<sub>2</sub> reduction) or other environmental categories) and its economic values.

### **Conclusion :**

1. Adaptation of existing labels of goods and services is crucial and less efforts for EPP initiatives.
2. Certain rules or criteria for comparing goods and products from different labels which will reflect to eco-points provision shall be made.
3. Development of CO<sub>2</sub> reduction schemes for goods and services certification systems may require if they are not yet available.

## **2) Determining Economic Values of Eco-points**

- Eco-point Provision

### **Points of Discussion :**

How are goods and services assigned to eco-point?

1 label (per goods or service) = 1 eco-point

### **Comments/Recommendations from the meeting :**

1. In case of goods and services which can be measured their CO<sub>2</sub> reductions, the eco-point shall be evaluated based on CO<sub>2</sub> reduction cost. This reflects more actual cost.  
For example of Energy Label No. 5 which certified by benchmarking the energy savings from standard electrical appliances, CO<sub>2</sub> reduction can be easily calculated, therefore, the eco-point value can be given to reflect the CO<sub>2</sub> reduction and cost of equipment increment.
2. In case of goods and services which cannot be measured their CO<sub>2</sub> reductions, the eco-point shall be assigned to the numbers of labels certified in goods and services. It shall be taken into considerations that each label requires different criteria and strict evaluation process for its certification. Therefore; the benchmarking among different labels or level of certificates.  
For example of Green Leaf Standard which awards the certificate at different levels - Level 1 (1 Tree leaf) to Level 5 (5 Tree leaves), the eco-point and the level of Green Leaf Level shall be taken into consideration.

In addition, in case of goods and services that earn more than one labels, there shall be determine how to assign the eco-point to those goods and services.

- Eco-point valuation

**Points of Discussion :**

What are the methods for valuation of eco-points among following four (4) approaches?

- Approach A Valuing by considering existing Carbon Market
- Approach B Valuing by considering cost-benefit impact valuation
- Approach C Valuing by considering Social Cost of Carbon (SCC)
- Approach D Valuing by considering Marginal Abatement Cost (MAC)

**Comments/Recommendations from the meeting :**

1. Most participants suggest using Approach A for valuating eco-points due to its simplicity of calculation and data requirements. Using percentage (%) of goods or service price will be easy but may not reflect the real carbon reduction and actual carbon reduction cost.
2. Approach B is not applicable due to volatility of carbon market and sensitive to policy changes. The other approaches (Approach C to D) require much information to calculate the carbon reduction cost which is dependent on goods and services technology installations.

**Conclusion :**

1. All goods and services with existing energy efficiency and environmental labels can be selected to the EPP. But, however, there CO<sub>2</sub> reduction shall be estimated or criteria for each good and services shall be prepared in order that different categories of goods and services.
2. In case of environmental label such as green labels which are not directly measuring CO<sub>2</sub> reduction, it shall be made transparent, comparable of criteria to assigning the eco-point to goods and services. One approach for this particular case is using minimum point system for eco-products which CO<sub>2</sub> reduction cannot be measured.
3. All approaches shall be provided as alternative for EPP developer to consider and select the most effective approach for eco-point valuation. Different economies may select approaches to suit economy's context.

**3) Formulation of Eco-Point Program Office**

**Points of Discussion :**

Who shall be the lead role for EPP Office?

**Comments/Recommendations from the meeting :**

1. Initially, EPP office must be formulated and consider on how to operate the EPP including human resource and budget planning.

2. EPP office shall be setup from organizations who involve in policies and regulations on environmental issues including CO<sub>2</sub>.

### **Conclusion :**

EPP office shall be setup from organizations who involve in policies and regulations on environmental issues including CO<sub>2</sub> inventory. The important roles of EPP office which shall consist of members of two committees – technical and administrative committees are preparing operational work and budget

### **3.1.2 Second (2<sup>nd</sup>) Focus Group Meeting Conduct and Results**

2<sup>nd</sup> FGM had been conducted on 2 June 2014 at *SAMUI Island*. There were 41 participants from 27 organizations comprising both public and private sectors. The objectives of the FGM were to introduce the concept of Eco-Point Program and framework of EPP development to all participants. The second FGM was conducted and intended to gain local stakeholders point of views. Several public and private sectors involving goods and service providers had been invited to join the meeting.

The discussion of FGM was focused on 1) **Framing Certification Systems**; what types of goods and services suitable to be selected into EPP including certification criteria of those goods and services, and 2) **Determining Economic Values of Eco-points**; how eco-points are provided to labeled goods and services and how they are calculated using recognized method, and 3) **Formulation of Eco-Point Program Office**; how EPP Committee shall be setup.

Below is the list of all participants attending the FGM #2.

<b>Organization</b>	<b>Sector</b>
1. Koh SAMUI City Municipality	Government
2. Tourism Authority of SAMUI	State Enterprise
3. Tourism Association of Koh SAMUI	NGO
4. SAMUI Ta Car rent	Private (Service)
5. Bangkok Airways Public Co., Ltd	Private (Service)
6. Laithai Restaurant	Private (Service)
7. Bangkok Hospital SAMUI	Private (Service)
8. Koh SAMUI Hospital	Private (Service)
9. Chaweng Garden Beach Resort	Private (Service)
10. The Erawan Group Public Company Limited (IBIS SAMUI Bophut)	Private (Service)
11. Coral Cove Chalet Resort & Spa	Private (Service)
12. SAMUI Resotel Beach Resort	Private (Service)
13. The Library KohSAMUI	Private (Service)
14. Nora Beach Resort & Spa Resort	Private (Service)
15. SAMUI Verticolor	Private (Service)
16. Banyan Tree SAMUI	Private (Service)
17. Popies SAMUI	Private (Service)
18. Silavadee Pool Spa Resort	Private (Service)

19. New Star Beach Resort	Private (Service)
20. Four Seasons Hotel	Private (Service)
21. Tong Sai Bay SAMUI	Private (Service)
22. Centara Grand Beach Resort SAMUI	Private (Service)
23. Melati Beach Resort & Spa Koh SAMUI	Private (Service)
24. SAMUI World Resort	Private (Service)
25. Siam Makro Public Company Limited	Private (Service)
26. Central Pattana Public Company Limited	Private (Service)
27. SAMUI Green Park	Private (Service)

Objectives of second focus group meeting are set to be gathering initial ideas on “what are requirements if EPP is implemented?” This FGM will focus on organizations at **Local Level** whose roles and responsibilities relating to goods and services producers/retailers and certificate issuance and control.

### 1) Framing Certification Systems

- Types of goods and services to be included in the EPP and Certification system

#### Points of Discussion :

Certification of green labels and carbon footprints goods are already available in the local markets through retailers. Therefore; at initial stage of EPP, it is recommended to utilize existing labels and, at the same time, the certification schemes of CO<sub>2</sub> reduction shall be studied and implemented. However, the local goods and services shall be taken into consideration which directly impact to area CO<sub>2</sub> reduction and economics.

What types of goods and services shall be selected and included in the SAMUI EPP programs?

#### Comments/Recommendations from the meeting :

1. The fund of eco-points shall be setup by the eco-products producers and services provides. They shall share some benefits to re-pay to consumers to help local environments.
2. For transportation, the business owners are willing to attend EPP by giving and using eco-points for tourist traveling. However, the definition of low carbon traveling shall be standardized for fair eco-points provision.
3. Some existing certificate such as Green Leaf certificate to provide eco-points may cause the unequal comparison. The readiness of each hotel differs from place to place.
4. Goods and services in EPP can align with 7-greens project which already have some goods and services joining the program.

#### Conclusion :

1. Adaptation of existing labels of goods and services at national level and local level is crucial and less efforts for EPP initiatives.
2. Certain rules or criteria for comparing goods and products from different labels which will reflect to eco-points provision shall be made.

3. Local governor shall involve EPP.

## 2) Determining Economic Values of Eco-points

- Eco-point Provision

### **Points of Discussion :**

How is eco-point valued?

1 label (per goods or service) = 1 eco-point

### **Comments/Recommendations from the meeting :**

1. In case of goods and services can be measured its CO<sub>2</sub> reduction. The eco-point shall be evaluated based on CO<sub>2</sub> reduction cost. This reflects more actual cost.
2. In case of goods and services cannot be measured its CO<sub>2</sub> reduction. The eco-point shall be assigned to the numbers of labels certified in goods and services. It shall be taken into considerations that each label requires different criteria and strict evaluation process for its certification. Therefore; the benchmarking among different labels or level of certificates.

- Eco-point Valuation

### **Points of Discussion :**

What are the methods for valuation of eco-points among following four (4) approaches?

Approach A Valuing by considering existing Carbon Market

Approach B Valuing by considering cost-benefit impact valuation

Approach C Valuing by considering Social Cost of Carbon (SCC)

Approach D Valuing by considering Marginal Abatement Cost (MAC)

### **Comments/Recommendations from the meeting :**

1. If the eco-point is calculated by percentage of room price for hotels, small hotels may not be interested to attend the programs since their room price is low and eco-points earned may not be attractive to consumers.
2. In hotel's point of view of the eco-points system, if business owners have to cut their profits for earning eco-points for accommodations to customers, some of hotels may not be interested in joining the programs especially high class hotels (>5 stars) since the business owners may not be attracted in increasing the occupancy rate.
3. SAMUI city municipality shall involve the EPP by providing some incentives such as tax reduction for business owners who enter the EPP.
4. The combination for eco-point valuation may be used.

### **Conclusion :**

1. All goods and services with existing energy efficiency and environmental labels can be selected to the EPP. But, however, there CO<sub>2</sub> reduction

shall be estimated or criteria for each good and services shall be prepared in order that different categories of goods and services.

2. In case of environmental label such as green labels which are not directly measuring CO<sub>2</sub> reduction, it shall be made transparent, comparable of criteria to assigning the eco-point to goods and services. One approach for this particular case is using minimum point system for eco-products which CO<sub>2</sub> reduction cannot be measured.
3. Approach A is the most effective approach for eco-point valuation due to it easiest to apply.

### 3) Eco-point Cooperation in SAMUI

#### Points of Discussion :

What are the interesting points from local stakeholders to attend the EPP?

#### Comments/Recommendations from the meeting :

1. The EPP office shall consist of selected members from different stakeholders such as SAMUI City Municipality, Hotel Association, One Tambol One Product (OTOP) representatives and others and organized by SAMUI City Municipality
2. Piloting small scale of EPP by recruiting stakeholders who are interested in the program.

#### Conclusion :

EPP office shall be setup from local organizations such as SAMUI City Municipality or association related to tourism industry such as Tourism Authority of SAMUI, Tourism Association of Koh SAMUI, as well as private sector.

#### 3.1.3 Third (3<sup>rd</sup>) Focus Group Meeting Conduct and Results

3<sup>rd</sup> FGM had been conducted on 29 August 2014 at *SAMUI Island*. The 3<sup>rd</sup> FGM was separated into 2 sections for EPP Establishment and EPP implementation for tourist accommodation sector. There were 41 participants from 27 organizations comprising both public and private sectors. The objectives of the FGM were to introduce the concept of Eco-Point Program and framework of EPP development to all participants. The second FGM was conducted and intended to gain local stakeholders point of views. Several public and private sectors involving goods and service providers had been invited to join the meeting.

The discussion of FGM #3 - EPP implementation for tourist accommodation sector was focused on 1) **Collaboration in EPP of Tourist Accommodation Services Entrepreneur**; Interest including problem and obstacle of entrepreneurs in participating EPP, and 2) **Operational Procedure and Redeeming Systems of EPP**; Collecting and redeeming point including boundary of redeeming system, and 3) **Eco-Point Funding in Implementation EPP**; Type of financial incentive from government and support from EPP Office to the entrepreneurs.

Below is the list of all participants attending the FGM #3 - EPP implementation for tourist accommodation sector.

Organization	Sector
1. Tourism Association of Koh SAMUI	NGO
2. Centara Grand Beach Resort SAMUI	Private (Service)
3. The Library KohSAMUI	Private (Service)
4. The Imperial Boat House Beach Resort	Private (Service)
5. Popies SAMUI	Private (Service)
6. SAMUI Resort and Spa	Private (Service)
7. SAMUI Paradise Chaweng Beach and Resort	Private (Service)
8. Six Senses Hideaway SAMUI)	Private (Service)
9. Coral Cove Chalet Resort & Spa	Private (Service)
10. SAMUI Resotel Beach Resort	Private (Service)
11. Buri Rasa Village	Private (Service)
12. Muang SAMUI Spa Resort	Private (Service)
13. Utopia Resort	Private (Service)
14. Royal Muang SAMUI Villas	Private (Service)
15. Centara Villas SAMUI	Private (Service)
16. New Star Resort and Spa Koh SAMUI	Private (Service)
17. Nora Beach Resort & Spa	Private (Service)
18. Bandara Resort & Spa	Private (Service)
19. Banburee Resort & Spa	Private (Service)
20. Paradise Beach Resort (Maenam)	Private (Service)
21. Kanda Buri Resort & Spa	Private (Service)
22. Chaweng Garden Beach	Private (Service)
23. Fairhouse Villas	Private (Service)
24. Sala SAMUI Resort & Spa	Private (Service)
25. Sareeraya Villas and Suites	Private (Service)
26. Anantara Lawana Resort & Spa	Private (Service)
27. SAMUI Palm Beach Resort	Private (Service)
28. SAMUI Resotel	Private (Service)
29. Amari Palm Reef Koh SAMUI	Private (Service)
30. World Resort	Private (Service)
31. Rocky Resort	Private (Service)
32. Banyan Tree SAMUI	Private (Service)
33. Shasa Resort & Residences Koh SAMUI	Private (Service)

Objectives of FGM #3 - EPP implementation for tourist accommodation sector are set to be gathering ideas on “what are suitable methods in each step if EPP is implemented?”, and ask for “willingness to participate in EPP including problems and obstacles”. This FGM will focus on tourist accommodations organizations at **Local Level (SAMUI Island)**.

## 1) Collaboration in EPP of Tourist Accommodation Services Entrepreneur

- Interest in attending the EPP from the tourist accommodation entrepreneur

### Points of Discussion :

For EPP implementation, the willingness of stakeholders is very important.

### Comments/Recommendations from the meeting :

1. All participants in FGM are willing to attend the EPP for several reasons as follows:
    - Organization policy
    - Marketing (increasing sales volume)
    - Organization image
    - Environmental aspect (support Low Carbon Town)
    - Stimulating standard of tourist accommodations services
    - Support tourism business
  2. For attending the EPP, each hotel had different conditions or success factor of EPP implementation as follows:
    - Investment cost/budget
    - Reliable standard
    - Operational organization
    - Point collecting and redeeming scheme
    - Incentive from the EPP
- Problem and obstacle of entrepreneurs in participating EPP

### Points of Discussion :

In participating the EPP, each participant had different problems and obstacles.

### Comments/Recommendations from the meeting :

Each participant proposed problem and obstacle in participating EPP as follows:

- Cooperation whether in the organization
- Contacting with EPP Office or government agency
- Point collection and redeeming system
- Condition in attending the EPP
- Continuance of the EPP
- Investment cost/budget
- Request for certification standard
- Database of tourist accommodations sector
- Raising awareness of organization's staff

## 2) Operational Procedure and Redeeming Systems of EPP

- Collecting and redeeming point



### **Points of Discussion :**

In operating of EPP must have both providing and redeeming point which the business owners are able to attend one or both. This topic discussed in detail about collecting and redeeming point including the restriction of each selection.

### **Comments/Recommendations from the meeting :**

1. Most participants in the FGM are willing to attend the EPP in both proving and redeeming point, nonetheless in detail have some different suggestion as follows:
  - Design of eco-point logo shall be suitable with the EPP.
  - Eco-goods and services which will attend the EPP shall be certified with the environmental standard or others.
  - Pattern of redeeming system shall be discount from normal price.
  - Redeeming of eco-point shall be specific for the business owners which attend the EPP.
  - Proportion of redeeming eco-point of each entrepreneur shall be set up at the same rate or not?
  - Donation shall be one alternative for redeeming system.
  - Goods and services for the EPP shall not be specific only eco-goods and services.
- Boundary of redeeming system

### **Points of Discussion :**

What is the suitable redeeming system for the EPP among following three (3) types?

- |        |  |
|--------|--|
| Type A | Eco-point can redeem in every sectors and brands.            |
| Type B | Eco-point can redeem in every sectors but in the same brand. |
| Type C | Eco-point can redeem in every brands in the same sector.     |

### **Comments/Recommendations from the meeting :**

1. If the eco-point is calculated by percentage of room price for hotels, small hotels may not be interested to attend the programs since their room price is low and eco-points earned may not be attractive to consumers.
2. In hotel's point of view of the eco-points system, if business owners have to cut their profits for earning eco-points for accommodations to customers, some of hotels may not be interested in joining the programs especially high class hotels (>5 stars) since the business owners may not be attracted in increasing the occupancy rate.
3. SAMUI city municipality shall involve the EPP by providing some incentives such as tax reduction for business owners who enter the EPP.
4. The combination for eco-point valuation may be used.

### **3) Eco-point Cooperation in SAMUI**

- Types of government's financial incentive to business owners which are willing to participate in EPP.

**Points of Discussion :**

What are the suitable supports from government interesting points from local stakeholders in tourist accommodation sector to attend the EPP?

**Comments/Recommendations from the meeting :**

EPP Office shall support the business owners that attend EPP in necessary consist of Tax Benefit, eco-point rewarding, Initial Operational cost, and system Infrastructure cost.

Type of Financial Incentive	Proportion (%)
Tax Benefit	49
Eco-point rewarding	27
Initial Operational cost	15
System Infrastructure cost	9

**Conclusion :**

EPP office shall be setup from local organizations such as SAMUI City Municipality or association related to tourism industry such as Tourism Authority of SAMUI, Tourism Association of Koh SAMUI, as well as private sector.

- Types of EPP Office's supports to business owners which are willing to participate in EPP.

**Points of Discussion :**

In attending EPP program, what benefits which EPP Office should support the business owners in operational aspects?

**Comments/Recommendations from the meeting :**

1. The support from EPP Office which all participants suggest in the FGM are as follows:
  - Database of Eco-Goods and Services which attend the EPP.
  - Database of customers
  - Infrastructures of collecting and redeeming system
  - Operational cost of the business owners which are willing to attend the EPP.
  - Promotion and advertising of the EPP both national and international
  - Website of the EPP
  - Center to be responsible for the EPP.

**Conclusion :**

EPP office shall be setup to operate and facilitate the business owners and customers which are interest in the EPP.

The discussion of FGM #3 - EPP Office Establishment was focused on 1) **Organization structure of EPP Office and Responsible Agency**; Related organizations with EPP and responsibility of each organization, and 2) **Role and Responsibilities of EPP Office**, and 3) **Operational Procedure and Redeeming Systems of EPP**; Collecting and redeeming point including boundary of redeeming point, and 4) **EPP Office Collaboration Framework of Agency in EPP Office Establishment**;

Below is the list of all participants attending the FGM #3 - EPP Office Establishment.

Organization	Sector
1. Koh SAMUI City Municipality	Government
2. Provincial Electricity Authority – Koh SAMUI	State Enterprise
3. Provincial Waterworks Authority – Koh SAMUI	State Enterprise
4. Tourism Authority of Thailand – Koh SAMUI	State Enterprise
5. Thai Hotel Association of Southern Chapter East Coast	NGO
6. Tourism Association of Koh SAMUI	NGO
7. Bangkok Airways Public Co., Ltd	Private (Service)
8. SAMUI Transportation Co., Ltd	Private (Service)
9. SAMUI Renong	Private (Service)
10. Chaweng Regent Beach Resort	Private (Service)

Objectives of FGM #3 - EPP Office Establishment are set to be gathering ideas on “what are suitable organization structure and operational process of EPP?”. This FGM will focus on core organizations at **Local Level in SAMUI Island** related with EPP in every aspect.

### 1) EPP Office Establishment

#### Points of Discussion :

The discussion point of this FGM is to operation structure of EPP Office, EPP Office operational framework, role and responsibility of each organization including operational procedure and redeeming system.

#### Comments/Recommendations from the meeting :

1. At initial stage of EPP implementation at SAMUI Island, Low Carbon Board shall be set up to be in charge of all low carbon project at SAMUI Island because setting up EPP Office in the first step may be too difficult. However, underneath Low Carbon Board, committee or board of specific project shall be set up separately such as EPP Board for EPP implementation.
2. Lesson learn from implementation of Green Leaf certification at SAMUI Island may be useful for EPP implementation, especially staff who will be responsible in detail of EPP implementation.
3. EPP Office committee shall be expert in related field with the EPP for providing information to the business owners or customers which attend the EPP, but some topics that are necessary to conclude will be propose and conclude by Low Carbon Board.

4. For ease of operation, EPP Office may operate under the foundation instead of the government agency.
5. Koh SAMUI City Municipality concerns about the small number of eco-goods and services which Koh SAMUI City Municipality is developing the new label named “SAMUI Trust Mark” for the local products which are produced by using local resource and may expand to the hotel sector.

### 3.2 EPP Forum

The EPP Forum website has been developed to collect crucial information from participants who would like to share ideas, experiences, suggestions and recommendations on the EPP guideline from public, especially among APEC member economies. EPP forum implemented through the Energy Smart Communities Initiative Knowledge Sharing Platform (APEC ESCI-KSP) and the experts will be invited through APEC secretary and direct e-mail by the consultant to ensure that valuable feedbacks could be received. All comments from participants will be compiled and used for improving the EPP guideline or experiences relevant to EPP or similar programs. This website covers the initial APEC EPP Guideline and the framework of Public Consultation in order to obtain comments from the experts to develop final APEC EPP Guideline.

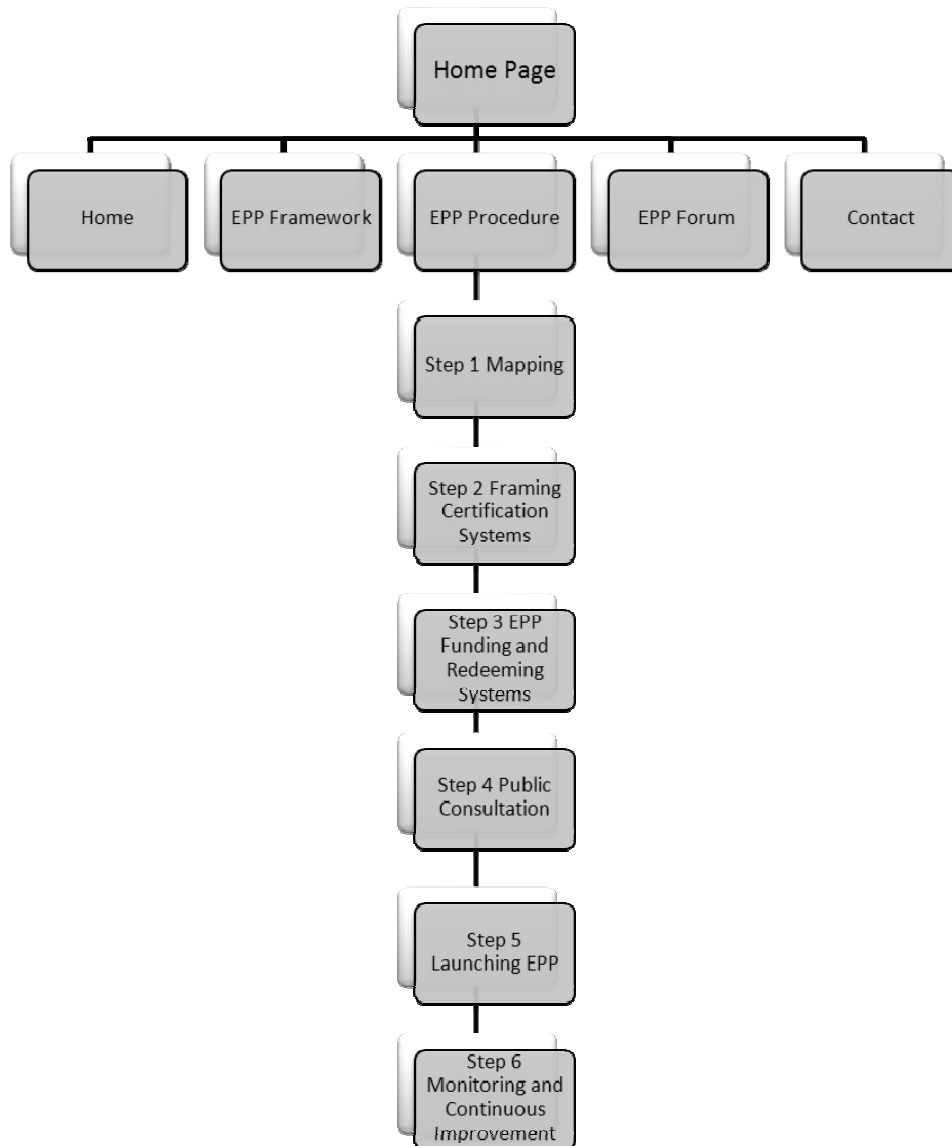
#### 3.2.1 Structure of the EPP Forum website content preparation

The structure of the EPP Forum website will cover 5 major pages as shown in **Table 10**.

**Table 10:** Contents on each area of EPP Forum Website

Contents	Objective
Home	Provide the participants on the general information about the description of EPP, the objectives of EPP guideline and guideline users.
EPP Framework	Explain the elements of EPP required and how one element operates and connects to others.
EPP Procedure	Provide information on stepwise approach to setup the EPP of APEC member economies. The procedure has prepared for the participants to read and give comments of each step where participants can answer in the EPP Forum webpage.
EPP Forum	Prepare for all participants to share ideas, comments, and recommendations in the initial APEC EPP guideline. In this section, the questionnaire has been prepared in electronics files formation or direct on-line response. The questionnaire in the EPP forum is both closed and open-ended questions.

Contents	Objective
Contact	Provide information of participants and consultant. The participants can contact to consultant via e-mail for any question arises during answering questionnaire.



**Figure 12:** Structure of EPP Forum website

### 3.2.2 Webpage Development

After already prepared the webpage structure and contents the complete operational webpage has been developed where the participants can access and respond to questionnaire via EPP Forum at <http://lcmt-epp.bright-ce.com/index.html>.

The example of webpage is provided in **Figure 13**.



**Reference documents**

Related information can be downloaded on the following links: [The initial APEC EPP Guideline](#)

**Questionnaire for Evaluation the APEC EPP guideline**

**Contact Information**

Please provide your contact details below:

Name :

Organisation represented :

Position :

Location (country) :

Phone :

E-mail :

**General Comments on EPP Guideline**

1. In overall, how are the quality and its usefulness of the EPP guideline? (either positive or negative)

2. Are the contents of the EPP guideline clear, suitable and complete for EPP adaptation in your country?  
 Please specify?

3. Do you think whether the provided steps for EPP development and implementation in the guideline are understandable and practical if you apply to your country? Please specify?

4. Do you think whether EPP framework has included all necessary elements in setting up EPP and directly applicable in your country? Please specify?

**Figure 13:** EPP Forum Page <http://lcmt-epp.bright-ce.com/forum.php>

### 3.2.3 Feedbacks from EPP Forum

The results from EPP Forum were gathered after 2 months of public consultation period. The valuable comments and suggestions were from many experts in both APEC member economies and non-APEC member economies such as The Philippines, Russia, Viet Nam, Indonesia, and Germany.

In the EPP Forum, the question the APEC EPP Guideline is separated into 2 types as follows:

1. Indicate how strongly agree or disagree with each topic in the APEC EPP Guideline
2. Provide comments/suggestions of each topic in the APEC EPP Guideline

The topics for public consultation in EPP Forum follow the steps in the APEC EPP Guideline as follows:

- **Step 1** Mapping
- **Step 2** Framing Certification Systems
- **Step 3** EPP Funding and Redeeming Systems
- **Step 4** Public Consultation
- **Step 5** Implementing EPP
- **Step 6** Monitoring and Continuous Improvement

Most experts agree that each topic in every step is clearly, suitable, and complete for the APEC EPP.

For general comments on the overall APEC EPP Guideline can be concluded that all experts agree the EPP guideline will be useful and adaptable for any economy that wants to engage in eco-friendly goods and services, but some experts think the EPP guideline can be improved by providing more details on technical parts and pathway for EPP implementation should be extended. The details of the comments and suggestions for each step can be summarized below.

○ **Step 1 Mapping**

- **Goals and targets:** it is defined reasonably and clearly on what should be accomplished and how it can be done.
- **Scope and boundary:** the EPP guideline has taken all necessary factors which might influence the outcomes of the program into account.
- **Sectors for EPP:** Four (4) main sectors - Household Utilities, Consumer Goods, Transportation, and Tourist Accommodation Service, are suitable for applying in APEC member economies because there are the most important sectors in consideration which are generating emissions that could affect low carbon growth. However, some economies may concern that the EPP guideline should discuss industrial production as well and must be aware of overlapping with other policy initiatives for CO2 reduction such as rebate and etc.
- **EPP requirements:** the requirements seem practical and the principles of framework are reasonable and can be modified in accordance with local conditions.
- **Organization structure:** it is fundamentally proposed in the EPP guideline, but, when adapted to each economy, it needs to be realized.

○ **Step 2 Framing Certification Systems**

- The direct goal and carbon calculations are applicable as mentioned in the guideline because this will provide an enhancement of awareness of consumers on the need to understand what carbon emissions and such calculation is clear and simple methodology for all countries.
- The appropriateness of the eco-point and monetary unit valued will depend on the economies how much incentives can it gives and also the availability of fund is crucial. In the meantime it should be valued in accordance with its important. And one more important thing has to be concern is to changing overtime of carbon price and how to deal with it.
- The certification procedure in the guideline is clear and appropriate, but for some economies may has to establish its own entity which handles certification of eco-goods and services.

○ **Step 3 EPP Funding and Redeeming Systems**

- **Funding Source:** the EPP implementation will require a large upfront investment, so the government should provide first initial funding. For some economies, the sources of funding should be reviewed to suit their policies and contexts.
- **Point Redeeming:** the point collection and redeeming process is quite clear and easy to implement; however, the most important condition is



that the process should create most favorable conditions for encouraging consumers to purchase certified eco-goods and services.

- **Point Collecting Systems:** the two (2) collection eco-point options (hard copy and online-IT) are all suitable in different conditions. The hard copy option can be instantly implemented with large human resources, while the online-IT system needs less human resources, but it requires time and IT infrastructure which can be expensive for development.
- **Step 4 Public Consultation**
  - The public consultation activities are suitable for the EPP guideline development in practice but depend on number of stakeholders, level of enthusiasm, and voluntary participation and etc. The results from the public participations should be capped with a memorandum of agreements, memorandum of understandings (MOU) or covenants.
  - The best tools for public consultation are to combine quantitative and quantitative method to strengthen the program.
  - The effective public consultation process should be carefully planned; the participants and their stakes, the methods to be utilized, the feedbacks to complete the guideline, and etc.
- **Step 5 Implementing EPP**
  - The implementation of EPP in the APEC EPP guideline could be followed because the terminologies and the crafting of the guideline are clear and easy to understand.
  - The best option for publishing the EPP is to use Tri-media (broadcasting, print, television) or even through electronic devices (E-mails).
- **Step 6 Monitoring and Continuous Improvement**
  - The monitoring and continuous improvement in the APEC EPP guideline is a comprehensive procedure. However the implementation of EPP in practice, the suitable monitoring process and continuous improvement will have synergy and flexibility to cope with situation on case by case basis.

### 3.3 Dissemination and Results

After finalizing APEC and SAMUI EPP Guideline including SAMUI EPP Roadmap, the dissemination seminar was arranged at SAMUI Island for 2 days on 19-20 September 2014 at SAMUI Island; One day will be for dissemination the project outputs and one day for workshop focusing on sharing experience from APEC Member Economies and discussion on APEC EPP Guideline. The participants in this seminar came from the APEC Member Economies and Thai stakeholders from every private sector in related field; household utilities, consumer goods, transportation, tourist accommodation services including local government agencies, NGOs which will involve the EPP in the part of EPP implementation at SAMUI Island. The number of participant is approximately 100 persons. There were eight (8) delegates from representative APEC member economies and three (3) speakers and one (1) researchers who were invited to join this seminar are as shown in **Table 11**.

**Table 11:** All speakers, researchers, and participants in the dissemination seminar and workshop

SPEAKERS							
S/N	Title	Economy or Non-member	Name	Organization	Type of Organization	Email	Assigned Task(s) at the APEC Event
1	Mr	Economy	Gyu-Soo Joe, Ph. D.	Sustainable Consumption Department Director General, Korea Environmental Industry & Technology Institute	Government	jksyo@keiti.re.kr	Share the experience from successful implementation on <b>EPP in Korea</b> including EPP setup and its operational system as well as barriers of EPP implementation will be shared.
2	Dr	Economy	Natarika Wayuparb	Deputy Executive Director of Thailand Greenhouse Gas Management Organization (Public)	Government	natarika@tgo.or.th	Share the experience from successful implementation on <b>low carbon program in Thailand</b> including setup and its operational system as well as barriers of low carbon program implementation will be shared.
3	Mr	Economy	Takahiro Ogawa	NIKKEN SEKKEI Research Institute	Private Sector	ogawat@nikken.co.jp	Share the experience from successful implementation on <b>EPP Program in Japan</b>
RESEARCHERS							
4	Ms	Economy	Min Ju Kim	Green Lifestyle Department Green Lifestyle Spreadability Office	Government	minju4022@keiti.re.kr	Share the experience from successful implementation on <b>EPP in Korea</b> including EPP setup and its operational system as well as barriers of EPP

							implementation will be shared
PARTICIPANTS							
5	Ms	Economy	Nguyen Le Hang	Vietnam Cleaner Production Centre (VNCPC)	Government	hang.nl@vncpc.org	Share the experience from successful implementation on <b><u>low carbon program or relevant program in Viet Nam</u></b>
6	Mr	Economy	Eva S. Ocfemia, Ph.D.	Environmental Management Bureau-DENR	Government	evaocfemia@yahoo.com ; oad.emb@hotmail.com	Share the experience from successful implementation on <b><u>low carbon program or relevant program in the Philippines</u></b>
7	Ms	Economy	Nailia Segizova	CEO, SCT Group	Private Sector	nelly.segizova@sctgroup.ru	Share the experience about the <b><u>sphere of energy, as well as smart city indicators and low carbon town modeling in the Russian Federation.</u></b>
8	Mr	Economy	Flor Maria Estefany Paredes Diaz	District Municipality of Miraflores	Government	Flor.paredes@miraflor.es	Share the experience from successful implementation on <b><u>low carbon program or relevant program in Peru</u></b>
9	Ms	Economy	Duong Thi Lien	Vietnam Cleaner Production Centre (VNCPC)	Government	lien.dt@vncpc.org	Share the experience from successful implementation on <b><u>low carbon program or relevant program in Viet Nam</u></b>
10	Mr	Economy	Gaspar G. Escobar Jr.	Department of Energy	Government	jescobar@doe.gov.ph	Share the experience from successful implementation on <b><u>low carbon program or relevant program in Philippines</u></b>

PARTICIPANTS (cont.)							
11	Mr	Economy	Wahyudi Suryatna	Senior Staff at Unit of Assistant Deputy Minister for data and information, Ministry of Environment, Republic of Indonesia	Government	w_suryatna@yahoo.com	Share the experience from successful implementation on <b><u>low carbon program or relevant program in Indonesia</u></b>
12	Mr	Economy	Yayat Rukhiyat	Senior Staff at Unit of Assistant Deputy Minister for data and information, Ministry of Environment, Republic of Indonesia	Government	rukhiyat1961@gmail.com	Share the experience from successful implementation on <b><u>low carbon program or relevant program in Indonesia</u></b>

The dissemination seminar consists of six (6) topics;

1. Conceptualize Eco-Point Program (EPP)
2. Planning EPP Implementation for APEC & SAMUI
3. Japan EPP Case
4. Korea EPP Case
5. Existing Low Carbon Program in Thailand to Support EPP Implementation, and Roadmap EPP- SAMUI Case

The workshop consists of five (5) discussion points;

- EPP Framework and Procedure
- Framing Certification – Setting Labelling
- Framing Certification – Eco-Point Valuation and Carbon Reduction Calculation
- EPP Funding and Redeeming System
- Problems or Obstacles for EPP Implementation

The detail of each discussion point will be described as follows:

### **1) Discussion Point 1: EPP Framework and Procedure**

#### **Points of Discussion :**

Do you think EPP Framework and procedure are suitable and applicable in your economy?

#### **Comments/Recommendations from the meeting :**

1. The level of rigor in the EPP guidelines seems to be high; the program has been well thought out and is likely to have a positive impact in each of the economies in which it will be implemented.
2. The feasibility of voluntary implementation in an economy as large as Russia may have an increased need for “command & control” if a program like EPP is to be successful. Historically, sustainability programs such as environmental audits have only been successful in Russia when the government has mandated businesses to participate. Once mandatory participation was made voluntary, almost no companies continued to participate in the environmental audits.
3. The point was made that the momentum of the EPP implementation will depend on how quickly it can gain customers trust or prove to customers that EPP is a good program. When consumers reach high levels of trust in the program, they will demand goods and services that function within the objectives of the program.
4. The problems may arise if a labeling system such as EPP does not have the backing of the government. When consumers have labeling systems not supported by the government, they may think that the guidelines vary and there is no shared bar for an “eco” product.
5. A single EPP framework should be adopted at the APEC level and implemented in a top-down manner instead of adopted and implemented at an economy level and later integrated.

## 2) Discussion Point 2: Framing Certification – Setting Labelling

### Points of Discussion :

- What is the current status of eco-labeling in each of the participating APEC member economies?
- How existing labeling systems should be integrated into the EPP framework?

### Comments/Recommendations from the meeting :

1. There is some preliminary level of eco-labeling, but these labels are largely semi-qualitative and are not tied to objective carbon reduction metrics or a common set of standards.
2. The lack of interest for the providers/manufacturers as there is no reward in return for them. But if everyone sees that they benefit, they will want to have the same system and there would be more involvement. In addition, it is necessary to hold your own economy-brand.
3. The representatives from Viet Nam shared an anecdote regarding their current eco-labeling which underscored the importance of broad consumer knowledge of labeling (and, perhaps, the integration of separate labeling systems). Due to a lack of consumer knowledge, companies are not incentivized to have their products labeled.
4. In order to facilitate the implementation of the labels, the criteria should be the same for the different APEC member economies but each one of them should keep its own national labels.
5. Think at an APEC level but act at a local level when implementing the eco-labels for national products.

## 3) Discussion Point 3: Framing Certification – Eco-Point Valuation and Carbon Reduction Calculation

### Points of Discussion :

- How should eco-point valuation be determined?
- How should the metrics of carbon reduction calculation for EPP qualifying goods and services be determined?

### Comments/Recommendations from the meeting :

1. The social effect is very practical and visible even though it is the most expensive method, another concern remains in the lack of knowledge in the company about their base year and the benchmark. Thus, it is impossible for them to start setting the goals and developing a plan to reach them.
2. A preference for utilizing the second method wherein EPP points would be indexed to the relative social cost of carbon emissions associated with the product and would ultimately be necessary for the legitimacy of the program.

3. Some investment should be done in the education even if social effects are costly. If this is done, people and companies will really believe in the program and they will follow it. The only problem with this aspect is that it is too dependent on the economy of each economy. Economies with bigger economies will have less difficulty to invest in social aspects.
4. EPP points would be allocated along a product's value chain (e.g. if a consumer stayed at a hotel where the owner purchased power from a newly developed wind farm, who would receive points? The wind farm developer? The hotel owner? The individual staying in the hotel?).
5. Some types of hybrid method must be employed. If APEC chose to strictly adopt a benchmark method, certain economies may have a very high density of EPP approved products and services (e.g. Japan), while others may have none. This would penalize economies with less developed sustainability programs that are nevertheless attempting to make progress. Conversely, a strict base year method would penalize purveyors of products and goods that have already achieved a very high level of sustainability improvement: if large improvements have already been made, the additional improvements required for EPP certification will be more difficult.

#### **4) Discussion Point 4: EPP Funding and Redeeming System**

##### **Points of Discussion :**

- What is the most appropriate funding scheme for the EPP program?
- How do involve the private sector after the government has provided the initial funding?

##### **Comments/Recommendations from the meeting :**

1. For implementing EPP, it will not be possible to start the program by asking the suppliers to fund the program themselves, although this will eventually be necessary for the EPP to become self-sustaining. For initial phase, government may have to pay for it, and when private companies see the benefit, they will invest on it.
2. The funding for the EPP program may come from penalties paid by companies committing environmental infractions. However, this method would force small companies to bear the majority of the expenditure. As many times large companies regulate the market in some sectors, and it is difficult to rule them. So, small company will pay mostly for it. A good idea will be to regulate according to the size of the companies.

#### **5) Discussion Point 5: EPP Funding and Redeeming System**

##### **Points of Discussion :**

- What would be the problems/obstacles of EPP implementation in your economy?
- Are there any other recommendations for the EPP guideline?

**Comments/Recommendations from the meeting :**

1. The delegates from the Philippines indicated that the largest barrier would be securing initial funding for the EPP program. Secondly, they raised concerns regarding the establishment of an organization in the Philippines to administrate the EPP program. They stated that a successful EPP organization in the Philippines would likely have to be multi-sectoral (including government agency representatives and private sector representatives) and that such an organization may be challenging to establish.
2. The delegate from Russia stated that the largest barrier for Russia would be raising the economy's awareness of the EPP program as it is implemented. She stated that it will likely take at least two years to raise consumer awareness to the point that EPP will be used as a method for evaluating goods and services. She also stated that this process could be accelerated by creating a "push" from the businesses selling eco goods and services; she thinks this could be done by making sure qualifying businesses are recognized for their efforts by the national government.
3. The delegates from Viet Nam agreed with the barrier identified by Russia; developing consumer awareness of the EPP program in Viet Nam will likely be a significant challenge. Additionally, the delegates from Viet Nam raised a concern about the method of converting existing labeling programs into EPP points; they reaffirmed that the actual carbon reduction associated with a product must somehow be integrated into the points that are conferred to a product or service.
4. The delegate from Peru echoed concerns about securing a source of funding. She also stated that the relationship with business owners must be carefully managed during implementation so that the EPP program is perceived as an opportunity and not a punishment. If this is not done carefully, businesses may reject the EPP program.



## 4. Development process and finalize APEC EPP Guideline

After the data collection on APEC and non-APEC member economies via desk studies and initial assessments, the initial guideline on eco-point program for APEC member economies has been developed. Initially, the existing programs in Japan and Korea which are relevant for the EPP guideline are used for the framework development and for the identification of possible alternatives on eco-point estimation techniques. Furthermore, several guidelines were additionally reviewed in order to develop a user-friendly EPP guideline. During the development process, the public consultation such as FGM, EPP Forum was established to gather information, recommendations, and comments from all parties prior to the development of final APEC EPP. At the end, the APEC EPP guideline is separated into two main parts which are:

- **Section one: Framework**
- **Section two: Procedures**

Firstly, section one (framework) explains purpose of EPP by answering the following questions.

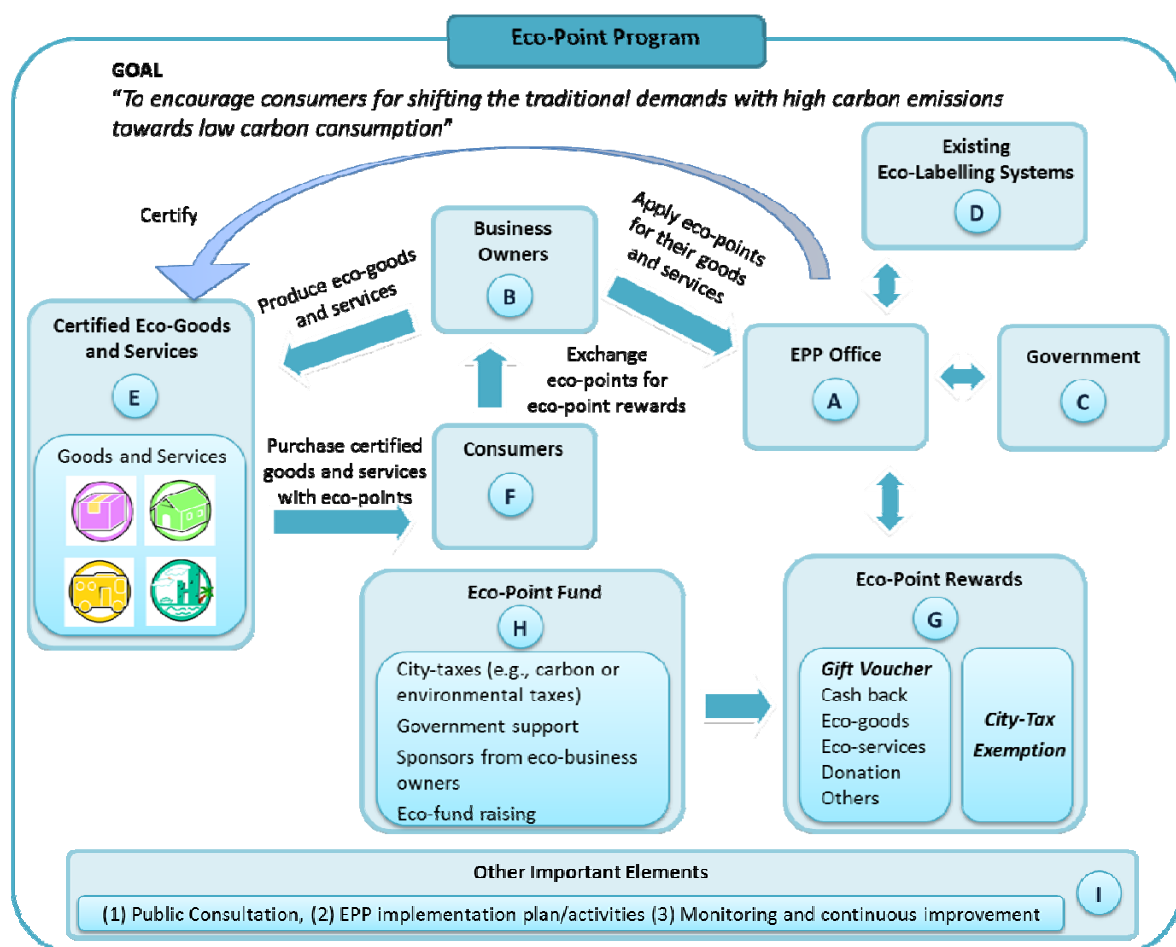
- **What is EPP about?**
  - : In this part, EPP is defined as *“an incentive program promoting green consumption towards low carbon society by giving points and rewards to the consumers who purchase certified eco-goods and services. This eco-point program is voluntary basis with main elements consisting of eco-point certification systems, eco-point valuation approaches, EPP office (acting as eco-point certification body; eco-point administrative/technical committee), eco-products (including both goods and services), eco-point funds and eco-point rewards.”*
- **Who is the guideline aimed at?**
  - : Basically, the guideline can be used by all actors with an interest in EPP implementation. This includes national and local governments, policy-makers, investors, service providers, practitioners and researchers.
- **What are the objectives of EPP guideline?**
  - : To provide an accessible operational guide to put EPP framework into practice in all APEC member economies as well as to provide a holistic approach so as to integrate the existing low carbon schemes and to systematically shift demands towards low carbon consumption

Secondly, six EPP principles in term of methodological choices and presentation towards creditable and effective implementation are proposed in this section. The EPP principles are holistic, validity, communicability, applicability, consistency and relevancy. Thirdly, the EPP framework comprising of important EPP elements which are main stakeholders and their relationships with certified eco-points, eco-point rewards and eco-point is illustrated in **Figure 14**. By following the framework, EPP developers will understand the overall EPP concept and main procedural steps. After the framework is presented, EPP step-by-step (6 EPP steps) with the sequential

procedure on how to accomplish EPP development is presented in the last part of this section. The 6 EPP steps are:

- **Step 1 Mapping**
- **Step 2 Framing Certification Systems**
- **Step 3 EPP Funding and Redeeming Systems**
- **Step 4 Public Consultation**
- **Step 5 Implementing EPP**
- **Step 6 Monitoring and Continuous Improvement**

In section two (procedures), the EPP step-by-step is explained in detail with various choices for actual implementation. In this section, each step will begin with the expected outputs, required resources, activities, and relevant EPP principles.



**Figure 14** Framework for the Eco-Point Program.

**Step 1 Mapping** consists of four main activities.

- Setting goals: Defining general and specific goals and specific targets
- Defining scopes and boundaries: Identifying geographical, temporal and sectoral specific scopes and carbon emission boundaries
- Identifying and outlining EPP requirements
- Designing organization structure: Specifying roles and responsibilities of and relationships among stakeholders

**Step 2 Framing Certification Systems** consists of three main activities.

- Setting Labelling System
- Developing Eco-point valuation system which counts on the chosen goal
- Designing Issuance of Certification process which will be depending on readiness of each APEC member economy.

**Step 3 EPP Funding and Redeeming Systems** consist of three main activities.

- To determine the financial support which may be provided from government or from the business co-operate funding
- To determine the potential system such as the IT-infrastructure, the budget, the scale of implementation and other factors that related with redeeming system
- Create the appropriate redeeming system.

**Step 4 Public Consultation** consists of two main activities.

- Reviewing the general characteristics of public consultation and participation
- Selecting the public consultation methods for EPP implementation

**Step 5 consists of 3 main activities as follows:**

- Pre-implementation: project planning and contingency planning
- Implementation: project and human resource implementations
- Post-implementation: monitoring, evaluating and reporting (The post-implementation is briefly explained here. Detailed description will be documented in Step 6 “Monitoring and continuous improvement”)

**Step 6 Monitoring and Continuous Improvement** consists of four main activities

- Defining monitoring types and indicators : Results evaluation, Time monitoring, Satisfaction monitoring, Financial monitoring and Human resource monitoring
- Planning the monitoring process
- Planning reporting process
- Planning continuous improvement plan : Plan-Do-Check-Act Cycles

The whole “**Final APEC EPP guideline**” is presented in **Annex I**. Afterwards, the Final APEC EPP guideline is used as a basis for SAMUI EPP guideline presented in **Chapter 5** of this report.

## 5. Development process and finalize SAMUI EPP Guideline and Roadmap

Based on the APEC EPP guideline, BMC has prepared SAMUI EPP guideline where it is localized and can be implemented in SAMUI Island. Due to the fact that the APEC EPP guideline has been developed in order to be applied in all APEC member economies, the guideline shall be applicable for SAMUI Island. However, local data will assist the EPP developers to apply the guideline with SAMUI specific context more easily and effectively. The initial SAMUI EPP guideline was therefore prepared with specific inputs shown in “**SAMUI Boxes**” as guides on how to apply the guideline on SAMUI Island throughout the whole report as presented in **Annex II**. The specific inputs for Thailand and SAMUI island were derived from the two focus group meetings arranged in Bangkok and SAMUI island. The purposes for the focus group meetings are to introduce EPP to key stakeholders as well as to get opinions and important inputs for SAMUI EPP guideline establishment.

BMC has targeted the audiences for the focus group meetings by selecting key personnel or organizations who can contribute to EPP development. The list of participants in the two focus group meetings is documented in **Annex III**.

In order to finalize the SAMUI EPP guideline, the 3<sup>rd</sup> focus group meeting will be arranged to consult with all stakeholders in August. Moreover, the roadmap for the SAMUI EPP guideline implementation will also be consulted.

After developing SAMUI EPP guideline, next step is to develop the SAMUI EPP Roadmap for implementation the EPP at SAMUI Island. The SAMUI EPP Roadmap included all components which are necessary for implementation EPP at SAMUI Island, the content of the SAMUI EPP roadmap may be similar with the SAMUI EPP guideline, but the sort of priority is quite different that it is easy to follow for setting EPP implementation plan.

The SAMUI EPP roadmap is separated into 4 phases including monitoring and continuous improvement as follows:

- Phase I: EPP Preparation
- Phase II: Implementation for Indirect Goal
- Phase III: Preparation for Direct Goal
- Phase IV: Implementation for Direct Goal
- Phase V: Monitoring and Continuous Improvement

**Phase I: EPP Preparation** consists of six (6) activities.

- Low Carbon Board (Developer) forming
- EPP Office forming
- Scope, budget and implementation planning
- Eco Funding raising
- Designing the infrastructure system
- Designing the monitoring process

**Phase II: Implementation for Indirect Goal** consists of five (5) activities.

- Implementation the 1<sup>st</sup> Stage
- Prepare the expansion for 2<sup>nd</sup> Stage
- Implementation the 2<sup>nd</sup> Stage
- Prepare the expansion for 3<sup>rd</sup> Stage
- Implementation of 3<sup>rd</sup> Stage

**Phase III: Preparation for Direct Goal** consists of three (3) activities.

- Preparing the benchmark or base Year for applying direct goal
- Setting the labeling system and frame the certification system of CO<sub>2</sub> reduction
- Designing funding and redeeming system for direct goal

**Phase IV: Implementation for Direct Goal** consists of two (2) activities.

- Switching from indirect to direct goal for all sectors
- Implementation of direct goal

The details of EPP implementation plan for SAMUI EPP roadmap both activities and duration of each phase is presented in **Annex II** together with the SAMUI EPP guideline.

APEC Project: EWG 10/2013A

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APEC#214-RE-01.18