GREEN PURCHASING NETWORK

A LANDSCAPE OF PRACTICE TO ACHIEVE SCP

International Green Purchasing Network

FOREWORD

Sustainable development should be based on the premise of well protected planet of human beings, which has been global consensus. Agenda 21, global action plan for sustainable development, adopted by 183 countries at United Nations Conference on Environment and Development (UNCED Earth Summit) held in Rio1992, pointed out: “the major cause of the continued deterioration of the global environment is the unsustainable pattern of consumption and production”.

But what are the keys to address this issue? Since then, approaches and solutions were actively explored toward sustainable pattern of consumption and production transition all over the world. Of them, green public procurement system steadily became mainstream to develop SCP pattern by government, played the pilot role leverage its effect in advocating, encouraged and directly guided the direction of green consumption. Due to its immediate proactive effects, high attention attracted by lots of countries globally.

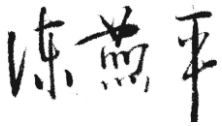
The Statement of United Nation Summit Meeting on Sustainable Development held in 2002 pointed out:“ *Relevant countries and local authorities should promote the reform of government procurement policy, actively develop and adopt environment-friendly goods and services*.” Over the past two decades, green public procurement has been grown, blossomed and with fruitful progress in many countries, which has promoted formation of green purchasing awareness and establishment of SCP patterns. Nowadays, the exploration, improvement, and expansion of green procurement system are continuing to be undertaken, being with numerous programmatic, valuable practice and experiences.

The International Green Purchasing Network (IGPN) Promotes green purchasing around the globe by coordinating those who take the initiative in implementing green purchasing towards sustainable consumption and production. Aims to establish platform sharing the knowledge, peer exchanging on research findings and best practice on sustainable consumption and production, encourage to “*Reduce, Reuse and Recycle*” of the production processes to minimize environmental pollution, advocate the better efficiency model of SCP.

The *International Green Purchasing Network-A Landscape of Practice to Achieve SCP*, which is one component of the IGPN Secretariat annual plan, also an important work has been anticipated for quite a long. This report provides update of cases, practices on green purchasing of IGPN members, indicates the achievements and progress in their explorations, progresses and successful experience in promoting green products and green purchasing, implementation and research on green purchasing system and mechanism, which serve a good example and inspiration toward to SCP transition.

I am deeply grateful to the members who contribute, effective participate in this report, appreciation also be extended to the team of the IGPN Secretariat, who overcome the difficulty during the Covid-19 pandemic and engage to the completion of this report.

The formulation of this publication will be an effective element of IGPN activities, It is hoped that this report could bring about fresh and conducive references to all IGPN members, contribute to the implementation of green procurement in each country. With diversified approaches, we will continue our explorations and strengthen our communications and collaborations in the coming future hopefully.



CHEN Yanping

PERFACE

“Climate crisis, the biodiversity and nature crisis, and the pollution and waste crisis are the three planetary crises that threaten human collective future”, The statement said the Assembly of UNEA-5 held in February this year wished “to strengthen our support for the United Nations and for multilateral cooperation and remain convinced that collective action is essential to successfully address global challenges.”

Green Purchasing was recognized in Agenda 21, adopted at the 1992 United Nations Conference on Environment and Development (UNCED Earth Summit), as an effective approach not only to minimize of environmental impacts but also shift toward Sustainable Consumption and Production.

The International Green Purchasing Network (IGPN) was established in 2005 to promote Green Purchasing around the globe with all stakeholders, such as international organizations, businesses, governmental organizations, local authorities, and NGOs, who take the initiative in implementing Green Purchasing.

China Environmental United Certification Center (CEC) hosted the IGPN Secretariat since 2018 proposed by the Chair with the approval of the Council and agreed with the Ministry of Ecology and Environment of the People’s Republic of China (MEE). CEC is a comprehensive certification and professional service institution leading in environmental protection, energy saving and low carbon areas，engaged its activities in policy research and practice of China Environmental Labelling Program, promote china government public procurement implementation, which in turn foster sustainable production and consumption transition.

This document aims to bring together its partners/members existing experiences and examples on the synergized between environment friendly products/services and green purchasing, which in turn accelerate the knowledge sharing and change to actions on green purchasing. It provides an overview of how the green purchasing networks functions to achieve the SCP along with the four application of green purchasing networks, i.e., market level, private level, business level, and public level. It helps to identify where the green purchasing networks are by knowing the progress they made, the challenge they face, the lesson they learnt; come to conclusion the common characters which lays importance practice from the front-line practice, diversity embodied, Ecolabel served as market mechanism tool, criteria support public implementation, multi-approach in private sector, and circularity and innovation in business sector.

Insights and recommendation are provided, including synthesis on Ecolabelling scheme and green purchasing; advocate the accessibility of green products in private sector; proactive the innovation practice in business sector; and deepen the pilot effect of public green procurement. More importantly, this will be the flagship indicate the beginning of proactive and collective engagement on the specific practice implementation of the networks, one provides programmatic landscape of the network actors to achieve SCP; one provides interface to deepen the communication through the networks.

This document is a knowledge product of the International Green Purchasing Network (IGPN). The IGPN Secretariat provided the outline of this report, formulate with the first part of this report, coordinated and collected from the members/partners for the practices and cases from the green purchasing network members of Korea Green Purchasing Network (KGPN); China Green Purchasing Network (CGPN)-China Environmental United Certification Center(CEC); Sustainable Procurement Charter- Green Council Hong Kong; Green Purchasing Alliance Movement (GPM)-Philippine Center for Environmental Protection and Sustainable Development, Inc. (PCEPSDI); Thailand Green Purchasing Network (TGPN)-Thailand Environment Institute (TEI); Green Purchasing Network Malaysia (GPNM); Green Purchasing Network India (GPNI)-Ekonnect Knowledge Foundation; the advisory board member TCO Development; and the vice chair organization ICLEI-Local Governments for Sustainability.

The writing team of IGPN Secretariat are ZHANG Xiaodan, LIU Qingzhi, CAO Lei, YAN Tao, ZHENG Hong, ZHANG Xiaohui, WANG Jing, REN Liping, QI Ran from China Environmental United Certification Center.

The IGPN Secretariat would like to express their heartfelt gratitude to all the contributors of this collections. Deserving of special mention are: Augustine Koh(Green Purchasing Network Malaysia); Chuttree Phurat(Thailand Environment Institute); CUI Xiaodong(China Environmental United Certification Center); DING Ling(China Environmental United Certification Center); Felix Lam(Green Council Hong Kong); JeeAn YANG(KGPN secretary general); Duk-seung Lee(KGPN Co-chair); Insoo Jeon(KGPN Co-chair); Jouelle Hannah Nerveza (Philippine Center for Environmental Protection and Sustainable Development); Josefine Hintz (ICLEI Germany); WANG Jing (China Environmental United Certification Center); Philipp Tepper (ICLEI Germany); Prasad Modak(Ekonnect Knowledge Foundation,India); Nick LIU(TCO Development).

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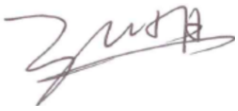
Finally, we wish to this collection contribute to the One Planet Network Sustainable Public Procurement Program, which is a global multi-stakeholder partnership of governments, non-governmental organizations and corporations with the objective of advancing awareness and capacity in sustainable public procurement to achieve Sustainable Development Goal 12- “ensure sustainable consumption and production patterns”.



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PART I

INTRODUCTION

1. GREEN PURCHASING

1.1 CONCEPT AND DEFINITION

Agenda 21 is a comprehensive plan of action to be taken globally, nationally, and locally by organizations of the United Nations system, governments, and major groups in every area in which humans' impact on the environment, adopted at the 1992 United Nations Conference on Environment and Development (UNCED Earth Summit), recognized Sustainable consumption and production (SCP) as an overarching theme to link environmental and development challenges, first placed Green Purchasing as an effective tool to shift toward not only reduction of environmental load but also sustainable consumption and production[1].

Thereafter, Sustainable consumption and production refers to "the use of services and related products, which respond to basic needs and bring a better quality of life while minimizing the use of natural resources and toxic materials as well as the emissions of waste and pollutants over the life cycle of the service or product so as not to jeopardize the needs of future generations". The implementation of SCP was recognized as an integrated approach helps to achieve overall development plans, reduce future economic, environmental, and social costs, strengthen economic competitiveness and reduce poverty.

Purchasing has long been, and remains, one of the most complex processes and can be approached in many difference ways. Purchasing is the premise and foundation of consumption, accordingly green purchasing directly response to the green consumption not only individual sector, but also in the public sector through the whole supply chain.

There has similar definition of green purchasing, such as green procurement, sustainable procurement, or environmentally preferable purchasing which are as follows:

Green Procurement is a process whereby organizations take into account environmental elements when procuring goods, services, works and utilities and achieve value for money on a whole life-cycle basis [2].

Environmentally Preferable Purchasing refers to the procurement of products and services that have a lesser or reduced effect on human health and the environment when compared with competing products or services that serve the same purpose [3].

Sustainable Procurement is a process whereby organizations meet their needs for goods, services, works and utilities in a way that achieves value for money on a whole life basis in terms of generating benefits not only to the organization, but also to society and the economy, whilst minimizing damage to the environment. Sustainable Procurement seeks to achieve the appropriate balance between the three pillars of sustainable development i.e. economic, social and environmental [2].

1.2 CHARACTER AND PRINCIPLE

Green Purchasing with its aim at decoupling environmental degradation from economic growth instead "business as usual" [4]. That is doing more and better with less, 'more' is delivered in terms of goods and services, with 'less' impact in terms of resource use, environmental degradation, waste and pollution.

Green Purchasing encouraging to consume environmentally friendly products with applying life cycle thinking, which increase the sustainable management of resources and achieving resource efficiency along both production and consumption phases of the lifecycle, including resource extraction, the production of intermediate inputs, distribution, marketing, use, waste disposal and re-use of products and services.

Green purchasing offering opportunity to creation of new green market, encouraging a more resource efficient, environmentally sound and competitive technologies, bypassing the inefficient, polluting, and ultimately costly phases of development, reversed transmission of greening production, boost to tackle the climate change and resource efficiency.

Green purchasing through public spending wields enormous purchasing power, exercising leadership through government purchasing, shifting that spending towards more sustainable goods and services can help drive markets in the direction of innovation and sustainability, thereby enabling the transition to a green economy.

Green purchasing providing guide to the green consumption behavior, assisting individuals and households to make environmentally sound purchasing decisions; and convey the green lifestyle and concept to the whole society.

1.3 THE IGPN AND GREEN PURCHASING

The International Green Purchasing Network (IGPN) Promotes green purchasing around the globe by coordinating those who take the initiative in implementing green purchasing towards sustainable consumption and production.

The IGPN is a global multi-stakeholder partnership for green purchasing founded with its mission:(a) Promote globally the development of environmentally friendly products and services and Green Purchasing activities;(b) Share information and know-how on Green Purchasing and environmentally friendly products and services internationally;(c) Harmonize the efforts of Green Purchasing and the development of environmentally friendly products and services from a global viewpoint.

The IGPN was established in 2005 to promote Green Purchasing around the globe with all stakeholders, such as international organizations, businesses, governmental organizations, local authorities and NGOs, who take the initiative in implementing Green Purchasing.

The IGPN with its members, disseminating the green purchasing which expands the market of environmentally friendly products, encouraging industries to develop products with minimal impacts on the environment while supporting industries that strive to preserve the environment. Every industry, government agency and household purchase products or services of some type on a daily basis. Green purchasing is an activity anyone can easily undertake to help preserve the global environment.

2. BACKGROUND OF REPORT

2.1 INITIATIVE OF CASES COLLECTION

The initiative of call for submissions of good practices for environmentally friendly products/services launched by the International Green Purchasing Network from September 2020 to March 2021.

It invites its members to share the experience and examples, with the view to help identify lessons learned and good practices on the synergized between environment friendly products/services and green purchasing including those implemented through labels or purchasing network.

The practices promote the development of environmentally friendly products/service and green purchasing including but not limit to the new criteria, guideline, method, stakeholder meeting, or initiatives in late 1-2 years which focus on:

- ※ Environmentally friendly products/services: ecolabels, green labels or sustainable labels etc.;
- ※ Innovation practice in: business mode; networking operation; green finance etc.;
- ※ Green purchasing in: policy, action plan or implementation etc.

Cases from the Green Purchasing Networks of Korea, Malaysia, Thailand, the Philippines, India, China Hong Kong and China were collected, and also cases from ICLEI, and TCO Development are provided in this report.

The typical and diversity in terms of geography, actors and perspectives, hot environmental topic such as plastic pollution, biodiversity and resources efficiency issues are considered and addressed. The innovation of environmentally friendly products, services or business mode of green purchasing, as well as the lessons learnt in terms of relevance for policy making or green purchasing implementation are highly recommended.

Taking stock of existing experiences and lessons learnt on how to improve green purchasing powerful way to stimulate environmentally friendly products/services to adopt, adapt and scale up proven and effective practices thus in turn stimulate the sustainable consumption and production regionally in this report.

2.2 SELECTED CASES RESULTS

The following case studies were selected, 13 cases from 7 countries/areas and 2 global organizations with 24 key elements represent difference aspects through the green products and purchasing.

Table 1.1 Selected cases and key element

Geography	Case name	Key element
China	Practice on promoting green plastic packaging products in government procurement	Technical tool
		Policy support
		Government procurement
China	Environmental guardian certification program accelerates furniture green purchasing	Green supply chain management
		Environmental performance
		Government procurement
Korea	Green Product of the Year Award	Annual award
		Business mode
		Private purchasing
Thailand	Green Label Thailand	Ecolabel and purchasing
Malaysia	Understanding the Synergy Between Green Procurement & Ecolabelling	Ecolabel and purchasing
Philippines	The Green Choice Philippines in Food Service Sector	Ecolabel and purchasing
India	Ekonnect Fortnightly Panel Discussions on Greener Products and Circular Economy	Awareness raising
		Training session
India	The Greener Product Directory	Product list
		Business mode
		Private purchasing
China Hongkong	"Quick Wins" for Sustainable Procurement	Sustainable procurement
		Business and private sector
Global collaboration	Innovative Furniture Procurement Contributing to Green Supply Chain Binhai New Area, Tianjin, China	Local government procurement
		New product criteria
		Policy support
Global collaboration	Ice Storage Air Conditioning Procurement for Green Building-Guangming district, Shenzhen, China	Local government procurement
		New product criteria
		Policy support
Europe	Boost Energy Label Take up	Innovative solution
		New approach of energy saving labels
Global	Practical examples of how to achieve circular management of IT products	Circular IT management
		Circular purchasing
		IT supply chain

2. 3 MAIN CHARACTERISTICS AND FINDINGS

(1) The front-line practice

The cases are originated from the front-line practice of the green purchasing networks, featuring with the challenge, barrier and restrains for each green purchasing network faced; being attempted by the specific solution with technical criteria, trick principles or stimulus activities; showed the practical progress how to achieve; shared the lesson learned respectively in their area nationally or regionally.

(2) Diversity embodied

The collected cases encompass diversity through the green purchasing implementation, approaches scattered in market, private, business and public sector; target at differences stage, including awareness raising, policy support, purchasing implementation, and technical development based on the purchasing cycle. The geography coverage includes global, regional and national, nine cases are from Asian region, among them four cases are in China, two cases are in India; two cases are from global; and one cases from Europe.

(3) Ecolabel served as market mechanism tool

Ecolabelling program are served as an effective market mechanism tool to promote green purchasing in several countries, for example Thailand, Malaysia, Philippines and China. Subsequently, progresses have achieved, respectively series criteria are developed; numbers products models from numerous manufactures are certified; guidelines are already developed, attempt in tackling plastics pollution issue are advocated; stakeholders from the product manufacturers and service providers, supply chain, government and the general consumer are collaborated; sustainable procurement training session are actively conducted; insight and recommendations are provided to the policy makers for example the green procurement act; systematic and problematic approach are delivered. Moreover, in depth exploration on how to synergize ecolabel and green purchasing expected to be followed.

(4) Criteria support public implementation

Several cases in public sector indicating criteria play a fundamental support to green procurement practice not only local government but also federal government. The cases showed that, from down to top, in local government, criteria filled the gaps of existing enrolled product category of green purchasing item; transfer the advanced environmental preferably product in local government which bring additional environmental benefits and Co2 emission reduction along the product life cycle; from top to down, the criteria issued by the federal government have the relevant effect to carry on implementation.

(5) Multi-approach in private sector

Cases in private sector indicating products directory, product award approach are commonly taken by the green purchasing

network, as it is showing the effect to build awareness by nudging the manufacturer to pursue the environment friendly producing method; beside this, capacity building, panel discussion, or training session are usually adopted to improve awareness on the green purchasing; hereinafter, the quick win principle have been developed to influence the target organization change to sustainability. Even though the impact not obviously be seen due to the relevant limited promotion scale, however positive changes have been taken.

(6) Circularity and innovation in business sector

Cases from global perspective, showed from a glimpse of circular IT products management featured with resources efficiency and less greenhouse emission inspiring the trends beyond green purchasing. The recommendations such as extending product life, upgraded instead of replaced, or best overall value procurement are provided to change to circularity mindset.

An innovation approach of new energy label, designed to provide consumers with accurate, recognizable and comparable information regarding energy consumption, performance and other essential characteristics of domestic household products. Featured with QR code allows consumers to

obtain further information on the appliance; new energy scale from A to G no more '+' classes; with specific energy consumption for each product; Pictograms which indicate the performance and characteristics of the product. All gives the more specific consumer information, motivate change to green purchasing behavior.

2.4 CHALLENGE AND LESSON LEARNT

The systematic review of the case studies divided the whole practices based on its applied scenarios into four categories, i.e., market sector, private sector, business sector, and public sector.

Market sector embodied ecolabel program as the market mechanism tool to achieving green purchasing; Private sector mostly combined with the SMEs and industry associations, which featured with the green product annual award and product directory; Business sector referred the manufactures by using green supply approach; and public sector totally remains the meaning of local and national government authorities with standard and guideline approach.

However, each category embodied with featured approach faced its challenge and lesson learnt, which differs with the categories shown in the following table 1.2. Generally, for the market sector, challenges come from the stakeholders cooperation, monitoring and evaluation, accessible and understandable of criteria, certification cost; for the private sector, products price, the visibility of green products, quality function, less data availability are the main source of the challenge; for the business sector, the boundary of circular procurement comes from the mindset, technical obstacles; for public sector, challenges mostly come from the shortage of standard, criteria and guidelines especially in local authorities.

Table1.2 Challenge and lesson learnt

Category	Approach	Challenge	Lesson learnt
Market sector	• Ecolabel Program	• Lack of stakeholder cooperation • Limitation of product's technical expert • Short of environmental monitoring and evaluation • Less power to increase the demand of consumers • Willingness of the manufacturers to have their products certified • Expensive cost of certification • Shortage of product criteria availability, and availability and cost of testing and laboratories • Terminologies being used were too technical to understand the topic on capacity building activities	• Influencing relevant stakeholders representing groups, sectors, and the public in general, and most especially the government is equally important strategy promoting SCP • Enabling policies and laws to encourage and motivate consumers and producers to shift to SCP of goods and services still not adequate
Private sector	• Green product annual award • Product Directory	• Less participation expansion and scope • Expensive cost more • Limited sustainable product standard • For the new product category such as sustainable packaging could not always meet the functional requirement • Some product, such as food, not easily available; the price is too expensive to prevail; not easily to trust; not clear to the benefit • The results based on Life cycle assessment can be different depending on the system boundaries one sets. • Less availability of data on impact assessment • Lack of visibility of green products	• A strong, well-devised national eco-labelling scheme, followed by systematic implementation and accompanied with a nationwide environmental and ecolabel awareness initiative could bolster the production and consumption of green products • highlighting the life-cycle costs and benefits of green products should be focused • Advertise or other communication method of green product should be adopted • National environmental laws pertaining to ecolabelling, procurement and green production are needed to kickstart green product market formation and diffusion

Business sector	• Circular procurement • Green product annual award	• Lack of a circular mindset: Lack of supporting legislation and incentives; Lack of communication; • Technical obstacles: Concerns about data protection; Poor battery lifetime; Barriers to repair or upgrade; Inadequate or lack of warranties; • Not enough material reuse Materials contain hazardous substances; Products don't reach recycling facilities; Products and materials are not made for recycling; Not enough economic incentive for safe recycling	• Extending product life cuts greenhouse gas emissions • Emissions lower when notebooks are upgraded instead of replaced • Buying new doesn't compensate for emissions from manufacturing • Circular solutions are better also from a financial perspective
Public sector	• Guideline • Standard	• Current label-based system falls short of encouraging local authorities to take more aggressive actions beyond the basic requirements of the central government • Neither national nor industrial environmental standard has been established for ice storage AC systems • Information asymmetry caused limited recognition • Confusion of market cognition; • Low awareness of the standard • Dispatched with purchasing requirements	• Effective communication between the procurement supervisory body and the procuring entity is the key to success • More attention required in informing the market of new bidding rules • International cooperation opens new opportunities for GPP • Collaboration with the industry association promote technological progress

3. SUGGESTIONS AND RECOMMENDATIONS

3.1 SYNTHESIS ON ECOLABELLING SCHEME AND GREEN PURCHASING

Establishment (or revival) of a strong, well-devised national eco-labelling scheme, followed by systematic implementation and accompanied with a nationwide environmental and ecolabel awareness initiative could bolster the production and consumption of green products in specific country.

Stimulus needs to be materialized as a push factor for consumers to use compliance alternatives; promotion and training to educate consumers to level of awareness to make purchasing decision could lead for positive impact; more clear benefits should also be added in to entice the industry players and consumers to embrace these schemes such as tax exemption, tax relief, grants or special funding for manufacturing, purchasing, training and certification.

Continue building partnerships and develop new collaborations involving and educating more organization and people to achieve its vision to have a sustainable society characterized by ecologically aware people, healthy environment, and progressive economy.

3.2 ADVOCATE THE ACCESSIBILITY OF GREEN PRODUCTS IN PRIVATE SECTOR

Green purchasing in the private sector is as important as in public sector, explore research and approach in the private sector will be an opportunity to promote green purchasing implementation. Performance monitoring methodology such as reporting, benchmarking and evaluation need to be adopted in private sector, which will deepen the green purchasing implementation impact.

Diversity approach need to be carried out on the basis of traditional annual award or product directory, especially considering the on-line shopping new consuming methodology; integrate with the related initiative of green lifestyle including focusing on the people eat, travel, use, live and dress; and collaboration with the broad stakeholders in related sectors.

Advertising needs to be set up by the producers to overcome the lack of visibility of green products, green purchasing consideration and adoption need initiate through decisions and actions regarding minor yet preferable purchases in product categories

Improve the practical participation of the consumers and producers for each green purchasing network, place each consumer or producer bond with the network as a community. Stimulate the network serves as a hub for the partnerships between different stakeholders from the public, private and producer.

3.3 PROACTIVE THE INNOVATION PRACTICE IN BUSINESS SECTOR

Both circular IT products management and new energy label, provide the fresh practice on the green purchasing in business sector. Circular IT products with the circular purchasing concept push for fair and safe working conditions and environmental sustainability across the entire supply chain including raw materials extraction, manufacturing and delivery stages as well as at repairing, reuse, recycling and disposal stages.

This gave the option to buy a durable product that is possible to repair and upgrade and use it for as long as possible; choose to maintain and keep the current device longer; extending the lifespan of notebooks is a choice that can cut greenhouse gas emissions also in those cases where hardware upgrades are necessary. Allow IT products to live longer, or buying used products whenever possible and giving them a second life.

Climate change, biodiversity loss and pollution as the three major environmental crises currently faces, green purchasing practice needs to use new technology adapt and explore models at the broader scope of the chain of sustainable consumption and production. For example, enlarging the

boundary to integrate the trade impact in the purchasing; adopting new processes, systems, technologies, business modes to changing the existing practices.

3.4 DEEPEN THE PILOT EFFECT OF PUBLIC GREEN PROCUREMENT

Public procurement accounts between 15-25 percent of global GDP and offers tremendous opportunities to drive circularity and advance the goal shift of consumption and production more sustainable.

Public procurement through its pilot and the positive role in triggering market transformation and realizing consumption pattern transformation. On the one hand, promote the green transformation of the consumption behavior to proactive the concrete action to practice; On the other hand, through the interaction between policy and market, which play its role in resource allocation, formulate the market mechanism innovation of green products and green services.

Encourage to integrate tools and methods to promote the alignment of each national public green procurement concepts, principles, methods and procedures with international benchmarks. For example, establish basic technical support for green procurement; formulate and implement performance evaluation tools, coordinate with the performance evaluation database etc.

International cooperation opens up new opportunities. International cooperation promotes the green purchasing at local level to establish the system and knowledge for making correct decision. Strengthen cooperation at the global and national levels, which expand resources and opportunities, and pursue the vision of sustainable development goal “leaving no one behind” from the bottom to up through procurement practices at the fundamental basis.

4. WAY FORWARD

"Climate crisis, the biodiversity and nature crisis, and the pollution and waste crisis are the three planetary crises that threaten human collective future"[5], the IGPN has the mission to use the purchasing power change the business as usual which will accelerate the shift of sustainable development accordingly.

With the plans to pursue the work initiated with the present study. Our objectives are to extend the topic and cases along with the main theme of the sustainable consumption and production chain, which will cover, integrate and synthesis the stage of purchasing, producing and consumption. On line meeting will be set follow-up for discussion, dissemination, and exchange of information.

Additional initiatives, through yearly calls for contribution will be continues, topic such as integration of green purchasing and green finance and green economy, and climate change issues, green trade, supply or value chain and others embodied in the recommendations. New perspectives will be opened with the One Planet Network Sustainable Public Procurement Program to promote the practical practice on specific topic in the broad view, and explore the guidance accordingly attract the partners and themes in the near future.

PART II

CASE COLLECTIONS

GPN CHINA

PRACTICE ON PROMOTING GREEN PLASTIC PACKAGING PRODUCTS IN PUBLIC PROCUREMENT

Background

Plastic pollution is one of major pollution in the world. The theme of June 5 World Environment Day of 2018 is “Beat Plastic Pollution”. It is the call of UNEP for immediate and coordinated actions of all countries to prevent and control plastic pollution. In May of 2019, an expedition team reached 10927 m depth of Mariana Trench, breaking the deep-diving record and at the same time found a piece of plastic waste at the bottom. The study findings show expected accumulation of about 710 million t plastic waste releasing into the environment by 2040 even if under the most ideal circumstance (SCS scenario), that is, all countries in the world take immediate and coordinated action for effective control of plastic pollution.

Right now, China is under high quality development with increasing plastic pollution. In particular, the consumption of single-use plastic products has been gone up over the past few years with the development of new industries such as express delivery and takeaway. Study findings show that plastic packaging materials mainly include thin plastic bags (excluding nacreous paper bags and filled plastic films), woven bags, foam boxes, nacreous paper bags, tape and filled plastics. Among them, ordinary plastic bag has the highest mass percent at 62.90%.

According to the latest data of State Post Bureau, express delivery package in China was dominated by corrugated cartons and plastic bags in 2018. Corrugated cartons accounted for 44.0% (packages) and plastic bags 33.5%. In 2018, the consumption of plastic packaging material in mainland China was 851,800 t, taking up 9.05% of the total delivery package. The total accumulated amount of express delivery packages was 63.52 billion in China 2019, about 41.1% of which was plastic package (including plastic bags, nacreous paper bags, woven bags and foam materials). The China Express Delivery Development Index Report (2020) points out that the amount of express delivery will exceed 64.1 billion during January ~ October of the year.

Huge amount of plastic delivery packages also leads to a major pollution problem. Minimizing plastic pollution is an important control approach for not only end-of-life treatment, but also the raw material and production processes. Meanwhile, only depending on the coordination and cooperation of all stakeholders can we finally meet the target of reducing plastic pollution. NDRC and Ministry of Ecology and Environment released new order for restriction on plastic bags —— “Suggestions on Further Enhancing the Prevention and Control of Plastic Pollution” in January of 2020. The Suggestions identify the plastic reduction target and restriction of plastics in four key areas (non-degradable plastic bags, single-use plastic dishware, hotel bathroom amenities and delivery plastic packages). Ministry of Finance, Ministry of Ecology and Environment and State Post Bureau jointly released <Standard for Goods Package of Public Procurement (Trial)> and < Standard for Express Delivery Package of Public Procurement (Trial) >in June of 2020. The documents require that “goods package and delivery package involved in public procurement of goods, works and services should refer to the packaging standard. The procurement document should clearly identify specific packaging requirements for products and delivery services provided by public procurement suppliers.

Development Approach

The standards identify the requirements for plastic package and goods package in public procurement in order to guide reduction of plastic pollution.

The standards require that all goods, projects, and services that are procured by government financial fund should take into account of the requirements of the two criteria. Some government procurements relevant of goods have included the requirements of related standard for goods package and delivery package in bidding document since 2020 when the document was released.

<Standard for Goods Package of Public Procurement (Trial)> and <Standard for Express Delivery Package of Public Procurement (Trial)> mainly identify the requirements for goods and delivery packages involved in public procurement such as reduction of package, application of degradable plastic package and limits for toxic and hazardous substances.

Standard for Goods Package of Public Procurement

Goods Package aims to ensure the security and performances of goods. In general, enterprises will employ composite package, that is, the package is composed of several kinds of raw materials. At present, composite material packaging refers to the package of two or more kinds of materials that combine after one or more dry-lamination processes, which has certain functions. Several kinds of raw materials of package will bring about big difficulty in post-application treatment due to their different performances. To reduce the consumption of this kind of composite packaging, the current standard requires “utilization of single packaging material as much as possible, if it is necessary to employ different materials, they should be easy to separate”.

The phenomenon of excessive packaging is increasingly serious and some packages go beyond their due functions. Excessive packaging leads to not only waste of resources, but also environmental pollution and damage of the interests of consumers. To stop the spread of this kind of conduct, General Administration of Quality Supervision, Inspection and Quarantine and National Standardization Administration released the national standard “Requirements for Restricting Excessive Package — Foods and Cosmetics” on March 28, 2010, which goes into effect as of April of 2010. To better facilitate the reduction of package by enterprises and manufacturers, the current standard requires “goods package should not exceed 3 layers and porosity ≤ 40%”.

The standard also presents requirements for the package of government procured goods in areas such as source and utilization of raw materials and printing ink.

Standard for Express Delivery Package of Public Procurement

More and more goods are sent to buyers by express delivery with the development of delivery industry and e-commerce. Express delivery packages in the current standard mainly refers to package materials for express delivery, including envelope, tape, face sheet, packaging bag/box, filling materials, bulk bag, turnover box and so on. Requirements for contents of heavy metals and hazardous substances as well as biodegradability have been identified based on the type and utilization of raw materials.

To address environmental problems resulting from treatment of plastic packages, the standards identify the requirements for the use of raw materials and use of mix during production. The standards require banning the use of diisononylphthalate (DINP), di-n-octylphtalate (DNOP), di(2-ethylhexyl) phthalate (DEHP), diisodecylphtalate (DIDP), butylbenzylphtalate (BBP) and dibutuylphtalate (DBP) as plasticizer in the plastics of delivery package. The raw materials of plastic package and inflatable packaging should be single material with biodegradability > 60%.

To ensure the safety of express package, clients usually employ many tapes for winding package. This not only causes waste and nuisance to receivers, but also brings about environmental pollution due to abandoning of such tape. The standard especially requires the utilization of biodegradable tape with width ≤45 mm.

Relevant requirements in the standards transfer the reduction pressure from consumers back to producers to urge relevant enterprises taking account of post-abandoning disposal during the

production of delivery package, thus addressing environmental problem at the source. Meanwhile, the release of the two standards also promotes the reduction of plastic pollution in the field of government procurement. In doing so, government plays a guiding role in green consumption.

Key challenges

The implementation period of <Standard for Goods Package of Public Procurement (Trial)> and <Standard for Express Delivery Package of Public Procurement (Trial)> is less than a year. There are not any requirements for goods package and delivery package in some public procurement activities. Therefore, comprehensive and effective implementation of the above two standards will be one of the challenges for green public procurement.

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GPN CHINA

ENVIRONMENTAL GUARDIAN CERTIFICATION PROGRAM ACCELERATES FURNITURE GREEN PURCHASING

Background

Based on China Environmental Labeling certification practice of the past more than 20 years and combined with the methodology of evaluation on green supply chain management, China Environmental United Certification Center (CEC) has developed this Environmental Guardian Certification Program for Furniture Products as a new approach. Which aims to provide public with more green ecological products, help improve environmental performances, promote green and low carbon development of furniture industry in China. The first certificate of Environmental Guardian Certification program for furniture products was issued by CEC in May 2020 with its portfolio of stricter index requirements, stronger leadership and more comprehensive LCA considerations.

Development Approach

Introduced "green supply chain management" evaluation concept based on LCA, including green supply chain management, product eco-design, supplier management, key raw material management and enterprise environmental behavior.

At green supply chain management level, CEC has integrated the requirements of standard for evaluation of green supply chain, requirements of Ministry of Information Technology for evaluation of green supply chain as well as local green evaluation standards, and classified 125 requirements for green supply chain management in 5 areas such as management of green supply chain, design and development, supplier management, management of key raw materials, and corporate environmental performances. Relevant enterprises are scored based on their green supply chain management level. That is, green supply chain management level of relevant enterprises is evaluated based on the percent of final score (TTL) with 1 star being the lowest and 5 stars being the highest. If any furniture product applies for Environmental Guard Certification, its supply chain management should reach at least 3 stars.

Introduced stricter index requirements, such as limitation of TVOCs of wood panels, formaldehyde emission etc.

More direct environmental indicators with direct impacts on human health are chosen, that is, heavy metals in product coatings such as Cd, Cr and Hg, TVOC emission of wooden board, formaldehyde emissions of wooden boards (fiberboard, particle board, plywood, block board and veneer) used in furniture products. These indicators are far stricter than existing technical requirements of China environmental label. It has played certain guiding role in furniture industry. The comparison of the indicators of Environmental Guard with environmental indicators of China Environmental Label is seen in Table 2.1.

Table2.1 Indicators Comparison between CEC Environmental Guard and China Environmental Label

Item	Limits of CEC Environmental Guard	Limits of China Environmental label
Cd	≤50 mg/kg	≤75 mg/kg
Cr	≤25 mg/kg	≤60 mg/kg
Hg	≤25 mg/kg	≤60 mg/kg

TVOC emission of wooden board used in furniture product	0.40mg/m2·h（72h）	0.50mg/m2·h (72h)
Formaldehyde emission of wooden board (fiberboard, particle board, plywood, block board and wood veneer) used in furniture product	0.08 mg/m^3	0.12 mg/m^3

Approach results/Outcomes

Provide consumers with a stronger signal of green choice to stimulate the enterprises to carry out green production. At present, more than 100 enterprises have applied the certification from CEC. CEC has issued nearly 150 certificates of Environmental Guard Certification. The technical indicators of products having obtained Environmental Guard Certification meet not only high star requirements of CEC green supply chain, but also the indicators far superior to that of China Environmental Label.

Support government adopt the certified products to guide green and sustainable consumption. The outcomes of Environmental Guard Certification of furniture products have attracted the attention of competent local government departments, industrial associations and consumers. Some big bid inviting bodies have adopted the results of Environmental Guard Certification and taken the results as scoring items for bidding. Moreover, Zhejiang Province Department of Finance has included the furniture products having obtained Environmental Guard Certification into the priority procurement products for government procurement in the province.

Additionally, CEC in cooperation with furniture association has carried out publicity, extension and training activities on “Environmental Guard Certification for furniture products” for enterprises in furniture industry based on early technical preparations, encouraging the collaboration on practice on the Environmental guardian certification program.

Experience or Lesson learnt

At the beginning of the development of Environmental Guard Certification Scheme, CEC has obtained the support of local furniture industry. They have made a concerted effort in the design of technical indicators as well as publicity and training on technical standards. This has accelerated the launching of Environmental Guard Certification Scheme for furniture products.

CEC and industrial association have jointly developed Environmental Guard Certification Scheme. This scheme could guide relevant enterprises to promote technological progress, achieve upgrading of green transformation; help structural reform of supply side, provide technical support to government procurement, and facilitate standardized and green government procurement of furniture products, thus promoting green procurement of the whole society.

Key challenges

The challenges came from the implementation stage, the Environmental Guard Certification Scheme for furniture products is not long and public understanding and awareness of the characteristics of “Environmental Guard” products needs improvement. On one hand, although consumers have higher demands for environmental quality, they have limited understanding about environmental protection knowledge and environmental indicators due to asymmetric information. On the other hand, some enterprises in market arbitrarily publicize their products as “Environmental Guard” products in self-promotion, confounding market awareness. Therefore, CEC should accelerate the promotion work.

Way Forward

In the future, more efforts in publicity will be taken on Environmental Guard to more consumers, furniture manufacturers bid inviting bodies will understand technical characteristics of “Environmental Guard” products. Consumers are guided and encouraged to purchase real “Environmental Guard” product, thus making greater contributions to green public procurement.

Furthermore, the extension of Environmental Guard Certification Scheme or replication the experience in Environmental Guard Certification Scheme for furniture products in more industries or

areas will be taken which to promote green procurement in more industries or even the whole society accordingly.

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GPN KOREA

GREEN PRODUCT OF THE YEAR AWARD

Background

Necessity and history

2005: Need to expand green purchasing to the private sector after enactment of the Green Purchasing Law;

2005~2007: NGOs discuss together to promote green purchasing in the private sector and decide to cooperate with the 'Selection of Green Products of the Year'

2008: First year of Green Product of the Year(pilot project)

2010: Green Product of the Year Selection, Start in earnest

2011: Establishment of the concept and definition of “Green Product of the Year”, selection system and procedure

2015: KGPN operates independently without receiving financial support from other organizations

2019: Enacted a slogan to celebrate the 10th anniversary of this year's Green Product Award, “Now, Green is a Culture!”

2020: Establishment of “The Award of Green MASTERPIECE”

Purpose

(Green Product of the Year Award) To encourage companies to develop green products and revitalize the green product market by inducing green purchases by providing more reliable green product information to consumers through green product selection

(The Award of Green MASTERPIECE) To encourage companies that have contributed to the development of the Green Product of the Year Award, the development of green products, and the promotion of green purchasing

Selectable Category

Green products in 11 items and 75 product lines: Stationery and office supplies, office equipment, housing and construction materials, life and personal supplies, household goods, digital devices and mobile phones, IOT, furniture and bedding, automobiles and related products, food, etc.

Green service: Distribution stores, transportation (airline, railroad, delivery, etc.), accommodation, food and beverage stores, finance, cultural products, etc.

Selection range and classification

Regardless of the category of product line, about OO Green Products of the Year are finally selected through consumer panel evaluation and consumer voting team evaluation

The Concept definition "Green Product of the Year"

The Green Product of the Year is a green product selected by consumers with expert advice and excellent environmental improvement.

The Green Product of the Year will be joined by consumers and experts to discover, award and promote eco-friendly products, and through this, we will pass on a healthier planet to future generations.

Selected Items: Eco-friendly products and service

Stationery, office supplies and equipment, personal and daily necessities, home appliances, furniture, clothing, cosmetics, food, etc. 9 eco-friendly products

distribution stores, transportation(air, rail, etc.), finance, accommodation, cultural products service

Selection System

To enhance the credibility, responsibility and expertise of the Green Product of the Year selection process, we operate three committees and two consumer evaluation groups

3 committees:

Selection Committee: Comprehensive review and finalization of selection plan and overall operation;

Expert Committee: Technical advisory such as environmental review and mentoring of consumer panel;

Consumer Evaluation Committee: a study on evaluation methods to secure objectivity and reliability of the consumer evaluation groups.

2 consumer evaluation groups:

Consumer Panel: as a group that conducts pre-evaluation, it recommends candidates for the Green Products of the Year by evaluating products through use, observation, and exploration under the mentoring of experts for a month.

Consumer Voters: after reviewing the evaluation opinion of the consumer panel group in advance and participating in this year's green product candidate product briefing session, searching for sufficient information about the candidate product, voting for the best green product that consumers will prefer with excellent environmental performance.

Selection Criteria: Environment improvement + Merchantability

Environmental evaluation items: 'ERRC Model' by KGPN

Eliminate / Reduce / Raise / Create

- Eliminate: Which of the factors that are taken for granted have been removed?
- Reduce: Compared with the same industry, what factors have been reduced below the standard to improve environmental efficiency?
- Raise: What factors have been increased to improve environmental efficiency

- Create: What factors have been creatively applied to improve the environment compared to the same industry?

Merchantability evaluation items

- Reflections of products of the value of green and communication with consumers

Selection Procedure

Composition of selection committee, expert committee, and consumer evaluation committee / Open recruitment of participating products

Environmental review and consumer evaluation

- 1st evaluation: Environmental Review(Expert Committee)
- 2nd evaluation: Consumer panel evaluation activities (observation, use, and exploration of products)
- 3rd evaluation: Meet with producers and consumers and final presentations, Consumer voting

Comprehensive Review and Selection the Green Product of the Year

Announcement of selection results, Awards Ceremony and public relations activities

Approach results/Outcomes

As public purchase became the government's business under legislation, KGPN operated the 'Green Product of the Year' program to revitalize the market and held its 10th anniversary in 2019(https://www.youtube.com/watch?v=NXbk6HtfO1A), firmly establishing itself as a reputable award from the private sector.

For 11 years, a total of 280 products from 100 companies have been selected. In particular, in the 10th anniversary in 2019, 50 products from 24 companies participated in the award and we selected 34 products. In 2020, 62 products from 25 companies participated in the award and we selected 41 products (https://youtu.be/BUJkwrIJ7Pc).

Products from various companies, ranging from large companies such as Samsung and LG to those of green small and medium-sized venture companies, are participating in the award every year. (https://bit.ly/2DeVxqQ; https://www.wikitree.co.kr/articles/567603)

In addition, on the 10th anniversary of last year, LG won the corporate award for 10 years, while Samsung, LG Hausys, and Ecomass received awards for 5 to 9 consecutive years. (https://www.wikitree.co.kr/articles/567616;https://live.lge.co.kr/the-award-of-green-masterpiece/)

Figure 1 10th Anniversary & Awards

Figure 2 10th Anniversary Slogan Presentation Performance: "Now, Green is a Culture!"

Experience or Lesson learnt

Consumer evaluation opinions in the process of selecting the Green Product of the Year are being used to improve and develop products, and green products that reflect consumer opinions eventually lead to consumer choice, leading to the expansion of the market for green products and driving companies to produce green products.

In addition, excellent eco-friendly products from small and medium-sized enterprises, which have difficulty in developing markets, have been selected for the Green Product of the Year and have expanded their distribution channels to department stores, large retail stores, and life cooperatives.

Way Forward

Expand participation of more diverse products and selected products Strengthening publicity.

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GPN THAILAND

GREEN LABEL PROGRAM

Back Ground

Green Label Scheme in Thailand was initiated by TBCSD or Thailand Business Council for Sustainable Development) in October B.E. 2536 (1993) with approval and collaboration from the Ministry of Industry, Ministry of Science, Technology and Environment, Thai Industrial Standards Institute and other relevant agencies to concretely implement the scheme. Consequently, the project is a result of the collaboration among government authorities, private sector, and central agencies, with Thai Industrial Standards Institute and Thailand Environment Institute serving as the secretariat.

The notion of **green products** currently available in the market comes independently from advertisements and marketing campaigns of manufacturers and products distributors. Green Label was initiated in order to serve as an independent organization which can provide extensive information on products and services that are environmentally friendly, with impartiality, credibility as well as devise and implement measures for control over environmental quality by enhancing awareness while also preventing pollution that may result from any part of products life cycle systematically and with due transparency. (http://www.tei.or.th/greenlabel/about.html)

Develop approach

Green label criteria development and revision (http://www.tei.or.th/greenlabel/name-list.html)

Selection Principles

- Must be general consumer products for daily consumption such as paper, color, energy-saving equipment, or water-saving equipment.
- Take into account the possible environmental impacts of the products as well as environmental benefits that will be realized once the products are sold and distributed.
- Use inspection methods that are not too complicated or too expensive to evaluate products quality according to the regulations
- The manufacturers of the products have alternatives to their production method that result in less environmental impac

Selection Approaches

- Interested individuals, manufacturers, consumers, associations, or groups of environmentalists can propose or recommend types of products to the secretariat office. The proposal sent must include details of the products, their marketing significance, and the reasons on how the specific products can help lower environmental impacts, along with verifiable supporting information or filling out the products proposal form from the Secretariat Office.
- Results of marketing studies and researches which Green Label Scheme has conducted/ commissioned to conduct.
- Government sector promotional plans for procurement of products and services that are environmentally friendly.
- The Office of Secretariat will then present the name list of all products to the Green Label Scheme Administration Committee to consider whether to give approval for making them as parts of Green Label Regulations.

Green label certification (http://www.tei.or.th/greenlabel/name-list.html)

The regulations specified are different and will depend largely on the environmental impacts that will result from the specific type of products such as hazardous materials, waste released to air, water, soil, and garbage as well as environmental benefits that can be received once the products are made available in the market. Because of the regulations issuing using Life Cycle Assessment method to evaluate environmental impacts from the product is rather difficult in practice at the present, specifying environmental regulations for any product should be achieved through Life Cycle Consideration. However, with emphasis on the environmental impacts during product use, products

disposal after use, their reusability, or how the product can be repurposed though production process. In other words, the main emphasis lies in the committee and technical subcommittees solving the problems that have been considered as having the top priority. The regulations issued may correspond to only one environmental problem or more.

Develop Green purchasing guideline for private company

TEI and PTT Company Limited (Report) that has the responsibility to manage the organization-environmentally friendly procurement according to the government green procurement policy. These activities aim to support PTT's supply chain management approach for sustainable efficiency and effectiveness using the life cycle environmental impact consideration to set a requirement. Moreover, the environmental impact evaluation also concerned through the carbon dioxide emission calculation.

Results/Outcomes

Green label criteria development and revision

2019	2020
Revision **Sanitary paper (TGL-08/2-19)** **New criteria** **Optical fiber cable (TGL-123-19)**	**Revision** Soaps (TGL-24-R2-20) Lubricant oil change service station (TGL-72-R1-20) Printers and Photocopiers Room air conditioners (TGL-07-R4-20) Refrigerated display cabinet (TGL-85-R2-20) Water dispenser (TGL-97-R1-20) Refrigerators (TGL-03-R4-20)
Note: The list of Green label product criteria can find at : http://www.tei.or.th/greenlabel/application.html	

Green Label Certification

- ※ 2019: 33 products 667 models from 93 companies
- ※ 2020: 33 products 752 models from 104 companies

Top 10 certified products are Paints, Photocopiers, Transformers, Sanitary paper, Printing and Writing paper, Fire extinguishers, Insulators, Cars, Faucets, and Flushing toilet

Fine the list of certified product at http://www.tei.or.th/greenlabel/labs.html

Green purchasing guideline for private company

The examples of green procurement criteria in the guideline that had been developed during 2017 – 2019 include the green product purchasing such as; Car Leasing and Purchasing, Office Supplies Purchasing Fuel Purchasing , and the service contract such as; Freight Forwarding Services, Catering and House Keeping Services, Cementing Services, Work and Accommodation Vessel/Barge Chartering Services, Painting Services, Wellhead Platform and Pipeline Construction Services, Waste Management Services, Crew Boat Chartering Services.

Figure 3 Green Procurement manual for PTTEP from 2017-2019

Key challenge

- Stakeholder cooperation
- Limitation of product's technical expert
- Environmental monitoring and evaluation

Way forward

- Develop Pro-active marketing strategy
- Manage experience and knowledge sharing workshop
- Apply an environmental monitoring and evaluation case study

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GPN MALAYSIA

IMPLEMENTATION EXPERIENCES OF SIRIM ECO LABELLING SCHEME FOR BIODEGRADABLE AND COMPOSTABLE PLASTIC AND BIO PLASTIC

Context

Understanding the Synergy Between Green Procurement & Ecolabelling

Green Procurement and eco-labelling address key environmental issues such as global warming. While much has been achieved in recent years, it is realized that the efforts and impacts would have been more effective and greater if both the entities operate in tandem and in synergy with one another. When moved as one, they become powerful tools that can bring tremendous changes and impacts to society.

Being on the different sides of the same coin, they have no choice but to be an inseparable entity promoting the same values and properties. Only, when the coin rolls as an entity will the universal mission and goals of Sustainable Consumption and Production be realized.

An eco-system with the necessary element is fundamental to ensuring a successful implementation. Consumer education to inculcate green action, green procurement law and regulations, and an active participation by relevant civil society are key elements to ensure a functioning system. Certification programs such as eco-labels and green procurer certification will bring about confidence and ensure better compliance. However, an effective system needs to be established to monitor and enforce these new regulations. At the same time, the market place has to ensure that there is accessibility to green products and services. Living in a new normal situation, digital operations and marketing are becoming more dominant and acceptable form of purchasing. New methods and tools are necessary to ensure that both programs remain relevant to society. We have to look beyond traditional mode of dissemination

and use innovative approaches and digital tools such as video streaming to promote and market eco-labelled products.

In January 2020, International GPN Berhad (IGPNB) and SIRIM QAS International have collaboratively taken up the initiative for proposing the implementation of training and certification of green procurers i.e Green Procurer Certification Scheme to International Green Purchasing Network (IGPN) for acceptance and recognition.

The Green Procurer Certification Scheme aimed to improve confidence for relevant stakeholders in green purchasing. It can be achieved through a globally accepted process of assessment and periodic re-assessments of the competence of the Certified Green Procurer. A properly planned and structured assessment will be served to ensure impartiality of operations and reduce risk of a conflict of interest. Moving forward, this initiative need to be recognized and be able to complement government efforts for GGP and the Roadmap for implementation for both in public and private sectors to address environmental issues due to plastic pollution and beyond, in Malaysia. It also aimed to encourage consumers, purchasers to opt for and use eco-friendly and sustainable alternatives and for suppliers and manufacturers to adopt sustainable consumption and production methods.

More engagement and discussion will be strongly needed with relevant Ministries, Regulatory Bodies, Agencies, State Authorities as well industries and consumers to buy in the initiative and acceptance of both Green Procurer Certification Scheme and SIRIM ECO Labelling Scheme nationwide.

There are various entities promoting green consumerism but most of their activities overlap and achievements are at best within their own domain. Central government, agencies such as SIRIM and non-governmental organizations such as the Green Purchasing Network must find common grounds

to spearhead the movement. This will bring about the necessary changes to ensure green consumer consciousness.

Then only will the problems of green washing, that is becoming prevalent in the market place be minimized and reduced. All purchasers from government to general consumers need to have the comfort and confidence when making green choices and practices. Policy framers must realize that being together as one can bring about momentum change in consumer behavior, a key component of implementation.

Malaysia government expanded Green Government Procurement (GGP) implementation in 2017 to all government agencies. Each ministry was required to incorporate green specification in the procurement of GGP product groups which encouraged green purchasing and demand of consumers within public sectors. The GGP observed SIRIM ECO Labelling as one of the GGP award criteria. Existing purchasing officers were given this added responsibility.

Following is an examination of SIRIM's efforts to promote ecolabelled biodegradable plastic to solve landfill problems and its synergy with green procurement.

Malaysia faces monumental tasks in handling it's municipal solid waste disposal. Huge amount of single use non degradable plastics are being disposed of daily at landfills, creating the problems of scarcity of landfills. At the same time efforts are being made to produce ecolablled degradable plastics, with the intention of solving the landfill problems.

Background

Plastic waste pollution has become a major environmental problem in Malaysia and is contributed mostly from plastics that are designed to be thrown away after being used only once (single-use) which results in single-use disposable plastics waste accumulations. Single-use plastics are commonly used for plastic packaging, carry bags and other items intended to be used only once before they are thrown away.

In 2018, Malaysia has launched the Roadmap Towards Zero Single-Use Plastics 2018-2030 to provide a policy direction to all stakeholders including State Governments in taking a unified and collective approach to address single-use plastics pollution in Malaysia.

To address single-use plastics pollution, plastic industry which is currently about 1,300 plastic manufacturers in Malaysia to be encouraged to transition to ecofriendly products compliance to SIRIM ECO 001 criteria document. Consumers also are to be continuously educated and enforced to support the usage of eco-friendly products as alternatives for single-use conventional plastics.

In line with this policy direction, SIRIM Eco-Labelling mark is used to indicate compliance to SIRIM ECO 001 criteria document. The compliance is achieved via SIRIM Eco Labelling Scheme that has incorporated third party certification and testing to verify the compliance of the products to SIRIM ECO 001.

Development Approach

The first SIRIM ECO 001 criteria document has been developed and published in 2016 that cover four categories of products which are Biodegradable, Compostable, Photo-degradable and Oxo-degradable plastics.

During phase 1 (2018-2021) of the Roadmap Action Plan, the SIRIM ECO001 criteria document has been revised to exclude photo and oxo-degradable plastics. To date, the revised SIRIM ECO001:2018 criteria documents has been used for certification of biodegradable and compostable plastics and bioplastics under SIRIM's Eco Labelling Scheme.

As SIRIM's Eco-Labelling is a voluntary scheme, plastic industry has been approached via number of seminars, engagement sessions and promotions to get their acceptance for certification as well as continuous promotions to consumers to increase level of awareness to opt for products with SIRIM Eco-Labelling mark.

Engagements and discussions with relevant Ministries, regulatory bodies and agencies have been regularly conducted to accept and enforce compliance to SIRIM ECO 001 criteria document for alternatives products to replace single-use conventional plastics for implementation of the roadmap.

Approach results/Outcomes

As of to date, there are 26 local and international companies that have been certified to SIRIM ECO 001:2018 for products including plastic packaging, straw and plastic sheet. This number is relatively small compared to the number of industry players in Malaysia but progressively sufficient to support the implementation of the roadmap.

In view of measures that are to be taken progressively in the roadmap such as the widespread uptake of eco-friendly products nationwide, example, bio bags to replace plastic bags as well as expansion of scope for biodegradable and compostable products to be used as food packaging, food container and cutleries, supported by the recognition of SIRIM ECO 001 for

compliance. This then will generate a positive demand for the SIRIM Eco Labelling Scheme.

Experience or Lesson learnt

Even though the Roadmap has provided strong factors for compliance to SIRIM ECO 001 for the alternatives of single-use conventional plastics, the current uptake from the plastic industry is still discouraging mainly due to manufacturing cost issues, ie cost of biomaterials and availability.

Even though the manufacturing cost of eco-friendly plastic may get cheaper as demand increases, the demand for such eco-friendly plastics from consumers is still too low and manufacturers are reluctant to produce the alternatives in bulk although they would help to decrease the costs.

Low demands from consumers are due to cheaper single-use conventional plastic compared to the higher price of alternatives.

There were also a few issues encountered during the implementation of SIRIM ECO 001 including testing cost, testing duration and waiting period and testing facilities availability. There were several methods deployed to overcome these issues such as acceptance of test reports issued before the audit with requirements that the test reports complied with certain conditions, to reduce the burden for re-testing cost. In addition, more testing equipment were procured to address issues on long duration and waiting period for testing. However, high testing cost is seen as the major barrier in the implementation of green procurement.

Key challenge

Consumers of single use-plastics are mostly from traders and business owners. The biggest challenge is on how to increase demand of consumers for the SIRIM ECO 001 compliant alternatives to replace the single-use conventional plastics. As Malaysia needs more industry players to transition to SIRIM ECO 001 compliance to support the Roadmap, consumer demand is the driven factor that must come first to ensure the market is growing and attractive enough for more industry players to participate which results in competitive manufacturing cost and pricing of the alternatives.

Way forward

The Roadmap has set up a progressive plan for enforcement to drive consumers to use alternatives to replace single-use conventional plastics and it needs to be materialized as a push factor for consumers to use SIRIM ECO 001 compliance alternatives.

The promotion and training to educate consumers to level of awareness to make purchasing decision that could lead for positive impact to environment has to be planned and structured.

More clear benefits should also be added in to entice the industry players and consumers to embrace these schemes such as tax exemption, tax relief, grants or special funding for manufacturing, purchasing, training and certification. However, these reports should be linked to sustainability reports, SDG. These require effective monitoring and reporting.

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International GPN Berhad

SIRIM QAS International Sdn. Bhd

GPN PHILIPPINES

THE GREEN CHOICE PROGRAMME

Background

The Philippine Center for Environmental Protection and Sustainable Development, Inc. (PCEPSDI) is a non-stock non-profit and non-government organization duly registered with the Securities and Exchange Commission.

PCEPSDI is the Administrator of the National Ecolabelling Programme-Green Choice Philippines (NELP-GCP) that is based on ISO 14024 – Guiding Principles and Procedures. NELP-GCP is a voluntary, multiple criteria-based, and third party programme that aims to encourage clean manufacturing practices and consumption of environmentally preferable products and services

Development Approach

Philippine Center for Environmental Protection and Sustainable Development, Inc. as the National Ecolabelling Programme – Green Choice Philippines secretariat has developed a pragmatic approach on designing its projects and programmes. It ensures that stakeholders from the product manufacturers and service providers, supply chain, government and the general consumer have a venue to collaborate, be involved and promote ecolabelling, green procurement and other advocacies related to sustainable consumption and production. The activities identified in the framework below are just examples of encompassing undertakings that the stakeholders can do altogether

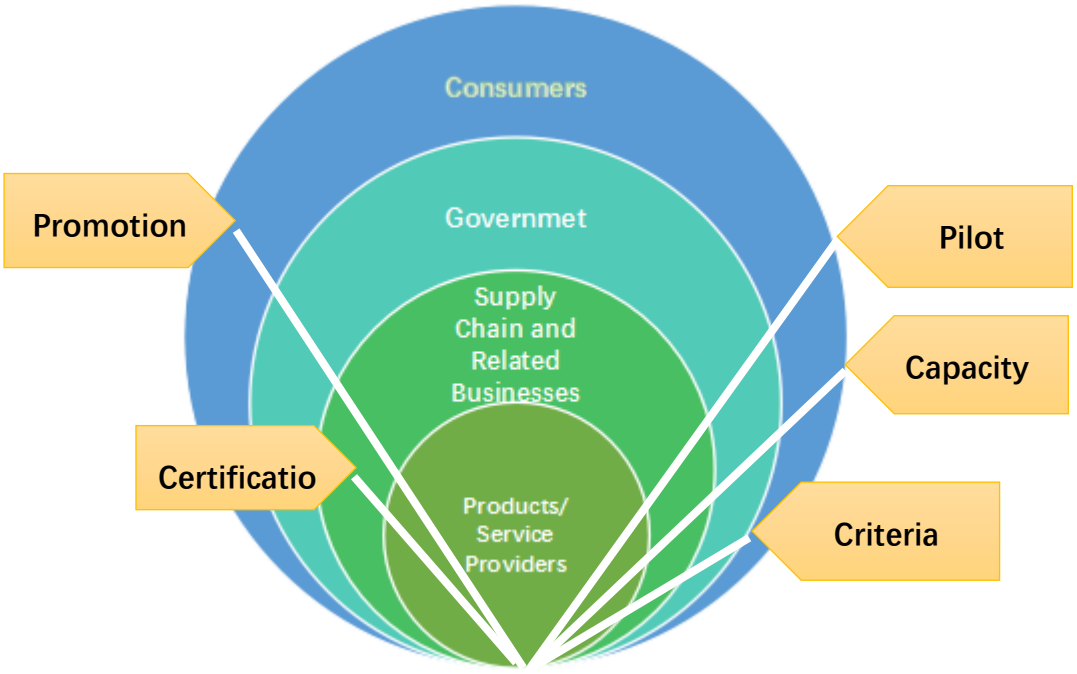

Figure 4 Development approach

Approach results/Outcomes

Through the pilot projects, criteria development and promotion advocacy collaborations with stakeholders from products/service providers, supply chain, government and general consumer, PCEPSDI was able to accomplish its vision to have sustainable society characterized by ecologically aware people, healthy environment, and progressive economy.

NELP-GCP reviewed the Food Service Establishment Criteria in 2019 which was first published in 2013 through the Sustainable Diner: A Key Ingredient for Sustainable Tourism, a 3-year project spearheaded by the World Wide Fund for Nature- Philippines (WWF-PH) in partnership with the

PCEPSDI. It is funded by the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety through its International Climate Initiative (IKI).

Through PCEPSDI's Green Purchasing Alliance Movement, a two-day training was conducted on January 14-15, 2019 for the Taganito HPAL Nickel Corporation at Claver, Surigao Del Norte. The participants completed a two-day training in preparation to incorporate green purchasing to all purchasing officers and end-users of the company that aims to establish their own green procurement programme.

In August 2019, PCEPSDI, under the Transforming Tourism Value Chains (TVC) project with the support of the Iloilo City Mayor's Office conducted a Sustainable Procurement Training for the Hospitality Sector in Iloilo City. This training was developed in accordance with the Country Report on the Assessment of Sustainable Procurement Practices at the National Level, developed by the project. The Country Report found that in addressing the gaps of sustainable procurement in the country, tourism stakeholders suggested to be provided with more capacity building and training, together with tools and guidance to support the practice of sustainable procurement, among other findings.

The Kalikasan Green Productivity, Green Purchasing Towards Green Philippines (KGP3), a biennial promotion and advocacy event of NELP-GCP and organized by its Administrator, PCEPSDI was held on November 2019. It serves as a green platform for sustainability initiatives and knowledge hub that hopes to gather a green convergence of commitments among different stakeholder working in various businesses and industries. KGP3 2019, a two-day event provided venue on SCP initiatives highlighting green products and ecolabelling on its first day and emphasized sustainable business, tourism, and forestry on its second day.

The Legislative House of Representatives of the Republic of the Philippines recognized PCEPSDI's expertise on ecolabelling, green procurement and sustainable production and consumption. PCEPSDI received an invitation to one of its hearing for House Bill 6954 known as the Green Public Procurement Act wherein the organization provided insight and recommendations through a position paper as early as second quarter of 2020. In August 2020, the House of Representative passed the House Bill 6954, this bill aims to promote the culture of making green, sustainable, and informed decisions in the executive, judicial, and legislative branches of government through sustainable production and consumption. The approval of this bill will encourage the government offices to implement GPP thus increase demand and supply for green products.

Another accomplishment through the Green Purchasing Alliance Movement (GPAM), PCEPSDI conducted a GPP Info Session - a two-day awareness webinar on Green Public Procurement (GPP) on October 2020. This webinar introduced key concepts of Sustainable Development and Sustainable Consumption and Production, discussed green procurement and green public procurement processes and its application, and demonstrated SCP tools and practices to implement a GPP Program. This webinar was conducted on behalf of the Department of Environment and Natural Resources' Central Office with an aim to disseminate and educate the agency's regional offices about their Green Public Procurement initiative.

Experience or Lesson learnt

PCEPSDI being one of the pioneering organizations in the promotion of Sustainable Consumption and Production (SCP) in the country have learned lessons and strategies since it started its SCP campaign in 2008. Advocating for SCP has been challenging but the organization learnt is to keep moving forward. Continue learning and keeping the organization abreast on the different issues and concerns on SCP is equally worth undertaking since the advocacy itself is changing as the environmental challenges evolves through time. Influencing relevant stakeholders representing groups, sectors, and the public in general, and most especially the government is equally important strategy promoting SCP. The advocacies would require enabling policies and laws for us to be able to successfully encourage and motivate consumers and producers to shift to sustainable consumption and production of goods and services.

Key challenge

For the ecolabelling programme, the usual challenges are the willingness of the manufacturers to have their products certified, cost of certification, availability of product criteria, and availability and cost of testing and laboratories required for their compliance documents. With these challenges, it results to lack of available third party certified green products in the market that contributes to the difficulty of promoting green purchasing and SCP among consumers.

On capacity building activities such as trainings and awareness campaign, PCEPSDI receive good feedbacks from the participants on the importance of the programme. However, the participants somehow feel that the language and terminologies being used were too technical for them to understand the topic and it needs to be laymanized while the time appropriated for the training is not enough to digest the subject. This usually happens when a training on any of the SCP Tools and Practices were conducted with diverse participants. Correspondingly, PCEPSDI used participatory approach in conducting activities that would re-group the participants and ensure that they are diverse and well represented by people who can provide insights from one aspect to another.

Amidst the pandemic, PCEPSDI adjusted its conduct of activities based on the new normal guidelines. All of the activities planned for the rest of 2020 was converted to virtual activities to ensure that the organization remains true to its vision and mission while protecting its staff and its stakeholders. The pandemic may have caused some challenges but it did not prohibit the organization to continually promote sustainability in the country.

Way forward

PCEPSDI since its establishment as one of the pioneering organizations in the promotion of SCP in the country will continue to its advocacy. The organization will remain true to its objectives to promote and encourage ecolabelling, green products, green procurement and other initiatives through its Sustainable Consumption and Production (SCP) advocacies. PCEPSDI will continue building partnerships and develop new collaborations involving and educating more organization and people to achieve its vision to have a sustainable society characterized by ecologically aware people, healthy environment, and progressive economy.

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GPN INDIA

CEKONNECT FORTNIGHTLY PANEL DISCUSSIONS ON GREENER PRODUCTS AND CIRCULAR ECONOMY

Background

Ekonnect Knowledge Foundation in partnership with Environmental Management Centre LLP (EMC) compiled a directory that included information on 48 'green product vendors' across India. Following this activity, panel discussions were organized by CEkonnect where the participating vendors were invited to talk about their businesses and experiences in the industry. CEkonnect is a knowledge network on Circular Economy (CE) initiated by Ekonnect Knowledge Foundation. Ekonnect works in partnership with several institutions, mentors, knowledge networks, academic institutions to bring forth a diverse knowledge base, experience and skillset.

So far, three (3) such panel discussions have taken place and have been attended by an average audience of 30 participants. These events have received an overall average rating of 8 out of 10. Over the coming months, the organization plans to invite other vendors for panel discussions over a series of online panel discussions.

Development Approach

A topic for panel discussion is chosen in line with the vendor directory. In certain cases, vendors

beyond the directory pool are also invited and their organization's information is then added to the greener product directory. These panel discussions are conducted on fortnightly basis on Fridays (5:00 PM IST).

Once a topic is selected and panelists are confirmed, the event is publicized over relevant platforms including social media. An online registration is setup and events are conducted over an online video conferencing platform. The sessions include an introduction to the topic by Dr. Prasad Modak, Director Ekonnect Knowledge Foundation and live interactions via the Mentimeter App. This is then followed by a panel discussion with the speakers moderated by Dr. Modak. Participants engage in a Q&A round towards the end of the discussion. They may also share their experience on the topic of the day.

Approach results/Outcomes

Key take-aways

There is a need to spread awareness on such frontier topics and there is an appetite within the audience to learn more on Greener Products and CE. Participants have been actively engaging in the discussions by asking important questions as well as sharing their personal and professional experiences on the subject.

Approach Results/Outcomes

Participants appreciated the format and quality of discussions. There has been repeat participants attending these online events. Panel discussions have been organized on Sustainable Packaging, Organic Food and Circular Economy in Thailand thus far. The discussion topic selected for next panel is 'Circular Textiles and Fashion'. The outcomes of these discussion are presented here.

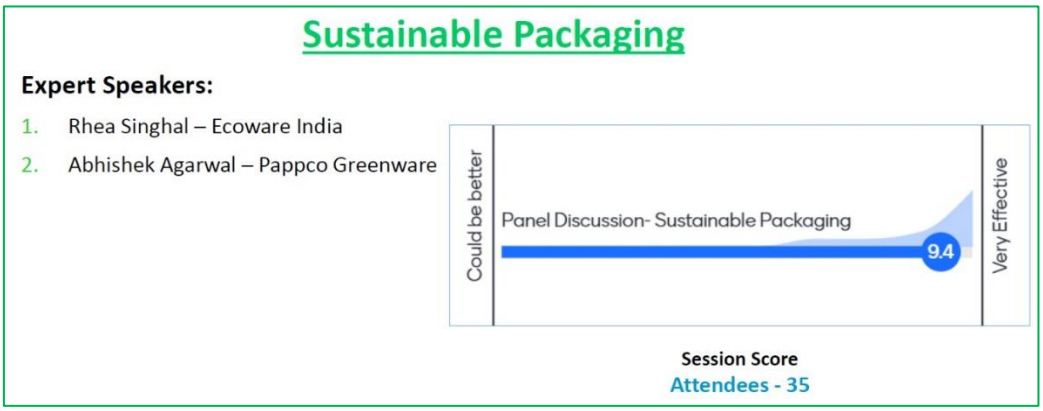

Figure 5 Panel Discussion on Sustainable Packaging

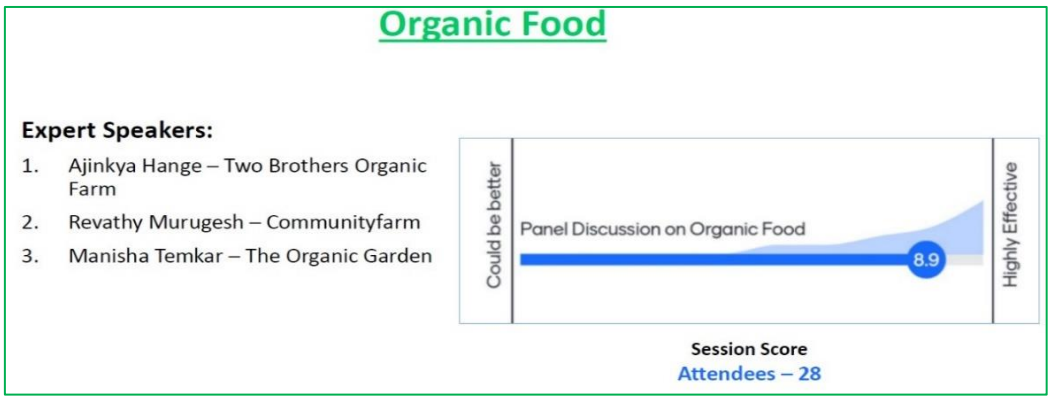

Figure 6 Panel Discussion on Organic Food

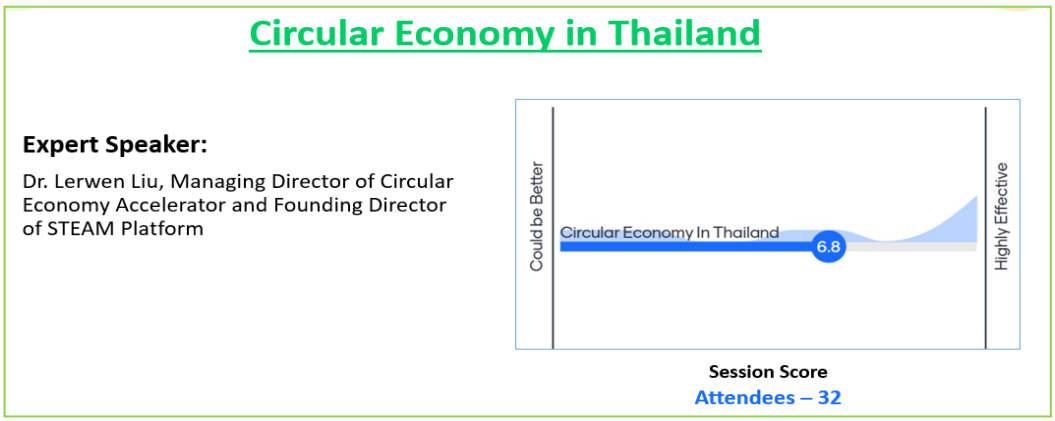

Figure 7Panel Discussion on Circular Economy in Thailand

Experience or Lesson learnt

Glimpses of Participant Engagement

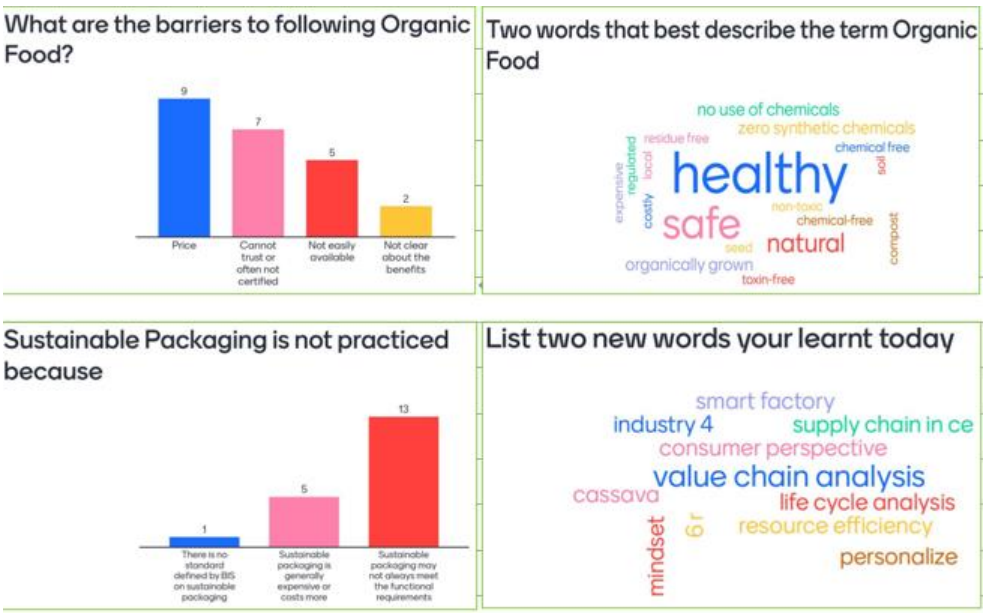

Figure 8 Glimpses of Participant Engagement

Way forward

The organization will continue to contact more and more green products manufacturers, globally and organize such panel discussions. Over the coming months, the manufacturers will be invited to talk about their businesses and experiences in the industry in a virtual format.

Ekonnect Knowledge Foundation

Established in 2012, Ekonnect Knowledge Foundation is a Section 8 not-for-profit company offering awareness, training and education programs in the domains of environmental management and sustainability. Ekonnect engages in practice research, operates knowledge and innovation networks and facilitates eco-entrepreneurship. Ekonnect is supported by its advisory consulting team Environmental Management Centre LLP for technical aspects.

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GPN INDIA

THE GREENER PRODUCT DIRECTORY

Background

While environmental protection is a governmental priority with well-established regulatory programmes in India, the scope of these programmes is largely limited to emission control and waste management. These programmes and policies do not specifically target product-oriented standards.

The development and implementation of standards for green products will bring about a change in the market availability of green products and boost sustainable consumption in India. There is gradual increase in voluntary initiatives in manufacturing and the promotion of green products in the Indian market due to increasing awareness amongst the urban consumers.

Most Indian companies manufacturing “green products” obtain environmental certifications mainly for products to be exported, as these have to meet stringent requirements of the developed countries.

So, there are hardly any producers who obtain green product certifications for the domestic market as the demand for certified green products from the Indian consumers is limited. Another important aspect that is responsible for slower market growth of green products in India is the lack in participation from MSMEs (Micro, Small & Medium Enterprises). MSMEs form a major component of the Indian industry and are suppliers for large scale national and international companies. They play a large part in public or government procurement of India. Due to limited capacity, lack of expertise and limited access to long-term finances, MSMEs find it difficult to meet the client requirements on product sustainability. Moreover, there is no financial, technical, or regulatory support from the government which could encourage MSMEs to manufacture environmentally sustainable products. If these areas of concern are addressed by the government, it will potentially lead to innovations in materials, design, and technology by the SMEs, which will further attract consumers to purchase green products in India.

The government of India launched an ecolabelling scheme called “Eco-mark” (in 1991) for recognition and certification of green products meeting multiple criteria. The certification is issued by the Bureau of Indian Standards (BIS) It is issued in around 16 categories like food, medicines, chemicals, electronic goods, paper, lubricating oils, packing materials etc.

The Eco-mark scheme has been unsuccessful in its efforts to raise environmental consumerism. In order to achieve an eco-mark certification, products must meet not only environmental criterion, but also quality criterion as laid down by the BIS. A lack of awareness among purchasers accompanied by the dual (environmental and quality) criteria requirements made it increasingly difficult for the Ecomark scheme to succeed.

In order to be successful, the Eco-mark scheme must be revised; assessment and updating of the current structure (particularly the dual criterion requirement) of the scheme and stronger stakeholder involvement is necessary. Most importantly, it is critical to establish national consumer awareness about the importance, existence and use of ecolabels before (or simultaneously with) implementing a nationwide ecolabelling scheme.

The primary barrier to the purchase of green products in India is identified to be the lack of awareness about green products. In particular, what constitutes a green product.

Based on a survey conducted by Green Purchasing Network India in 2014, most consumers that claimed to know about green products, considered green products to be “biodegradable” or “recyclable”. Among the group of consumers that were unaware about green consumers, the common answers were “non-toxic” or “organic”. The survey also found cost to be a concern for a number of consumers, but the cost factor was not as significant as the lack of awareness. Additionally, the survey revealed that Indian consumers were apprehensive about the truthfulness of the

“greenness” claims of the products. Lesser availability and visibility of green products was also reported to be influencing consumer decisions.

Development Approach

To understand the current landscape, Ekonnect Knowledge Foundation, in partnership with Environmental Management Centre LLP (EMC), compiled a directory that includes information on 48 'green product vendors' across India. For the purpose of this study, a definition of green products was developed to fill the existing gap to articulate the basic characteristics of a green product.

“A green product is a product that has low environmental impact (direct and indirect), is ethically produced, economical, recyclable, sustainable (in production and consumption), through its whole lifecycle.”

Majority of the data for the greener product directory was collected from these vendors in the form of an online questionnaire. A handful of vendors were contacted via telephone. These vendors were contacted between April and August 2020 with an aim to know more about their product offerings and gauge the current state of green products in India, including the impact of COVID-19 on their business. The questionnaire for vendors was designed considering the limited background research on eco-labelling. Wherever possible, the

participants were made aware of the terminologies used in the questionnaire, before they mark their responses.

Approach results/Outcomes

Key take-aways

- 51% of respondents that described their products to be “green” reported that their respective products met environmental certifications. Alternatively, 49% reported meeting no environmental certifications.
- 48% of all respondents reported that their “green product” was priced 5-10% higher than “brown products” of the same category. Green vendors claimed that this was because the products were produced in ethical, environmentally friendly ways; they also expressed that their products had longer shelf-lives than “brown products” Organic food saw the most drastic price increase when compared to non-organic food.
- 64% of the respondents reported to expect changes to their business with respect to Covid-19. Vendors were largely concerned with challenges in manufacturing, moving back to the use of single-use items, and decrease in sales. However, vendors in the sustainable packaging and organic food sectors indicated that they were expecting an increase in sales.
- The main forms of assistance sought after by “green product vendors” was a) Goods and Services Tax (GST) benefits, b) Governmental grants and subsidies, c) Domestic environmental certifications, d) Creation of awareness among consumers, and marketing assistance.

Approach Results/Outcomes

- The 48 vendors surveyed belonged from 7 key industries: Sustainable Packaging, Organic Food, Cleaning and Janitorial Supplies, General Office Supplies, Bags & Utility, Corporate Gifting & Engineering Solutions. Sustainable packaging (including food packaging, tableware and shipping equipment) was the largest category, followed by organic food. Organic food was the most highly certified category, with 5 out of 6 vendors reporting environmental certifications for their product.

Experience or Lesson learnt

Experience or Lesson learnt

Establishment (or revival) of a strong, well-devised national eco-labelling scheme, followed by systematic implementation and accompanied with a nationwide environmental and ecolabel awareness initiative could bolster the production and consumption of green products in India.

Environmental awareness schemes should focus on highlighting the life-cycle costs and benefits of green products. Producers should promote and advertise to overcome the lack of visibility of green products. National environmental laws pertaining to ecolabelling, procurement and green production are needed to kickstart green product market formation and diffusion.

Key challenge

There is nothing like absolute Green. Life cycle assessment is a good tool that helps to investigate the 'greenness' of a product. However, the results can be different depending on the system boundaries one sets. Besides, there is a challenge regarding the availability of data on impact assessment.

Way forward

Ekonnect will continue to contact more and more green products manufacturers in India in order to maintain an updated greener products directory. The directory is available for download here. The directory will be promoted across relevant platforms for the benefits of consumers and upcoming entrepreneurs in the sector. Over the coming months, the organization will invite these vendors for panel discussions to talk about their businesses and experiences in the industry in a virtual format. So far, 3 such panel discussions have taken place and have been attended by an average audience of 30 participants. These events have received an overall average rating of 8 out of 10.

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GPN CHINA HONGKONG

"QUICK WINS" FOR SUSTAINABLE PROCUREMENT

Background

The Green Council ("GC") established a procurement charter – the Sustainable Procurement Charter ("SPC") in July 2018, to promote, guide and assist the implementation of sustainable procurement to all organizations in Hong Kong. Charter members are required to commit to the SPC requirements which reflect and compliment ISO 20400:2017 – Sustainable Procurement - Guidance. SPC has been reported as one of the contributions to the United Nations Sustainable Development Goal #12 (Responsible Consumption and Production).

To date, over thirty (30) corporations have sought and secured SPC membership. Green Council is currently working proactively with all members to improve their sustainable procurement efforts and results through capacity building exercises, seminars, company visits and sharing etc. Various SPC activities are described and can be referenced at: https://www.greencouncil.org/spc

To ensure all different stakeholders of procurement team could appreciate the benefits of Sustainable Procurement including green purchasing, one of the good practices is to initiate or start with some items which are simple and can be easily implemented for purchasing.

Development Approach

In 2019, Green Council officials have recommended and initiated some quick-win for SPC members to consider.

A quick-win is an improvement initiative that can be quickly and easily implemented within an organization and has immediate benefits. Such initiative should fit with the following criteria:

- Require minimal or no capital expenditure
- Low risk
- Known root cause and obvious solution
- Narrow and focused scope
- Stakeholders buy-in easily
- High confidence of a positive impact
- Can be implemented within 60-90 days
- Project team has authority to implement the change(s)

Initially, a survey was prepared and administered to all SPC members in order to identify and explore their current purchase and plans relating to the Quick Win items recommended and determined and by Green Council.

Approach results/Outcome

Based upon the survey responses as well as further discussion and consideration among members, the following 10(ten) items were selected for incorporation into members' purchases or practices in the immediate future:

Establish procurement policy with economic, environmental, social considerations

- Name cards printed on recycled paper
- Copying papers with recycled contents or with forest management certification
- Recycled toners for printers
- Refillable stationery items & refills
- Install flow controllers on water taps in own premises
- Stop purchase of single-use plastic bottled water
- T5 fluorescent lamp or LED lamp
- Buy souvenirs, trophies and flags from social enterprises
- Employ catering services for those special occasions from social enterprises

Experience or Lesson learnt

Based on our experience in launching quick-win for green purchasing, we have the following lesson learnt:

The price gap between “green” and “conventional” products is narrowing. Many green products are becoming less expensive and price competitive e.g. recycled papers, LED lightings.

Green purchasing consideration and adoption can initiate through decisions and actions regarding minor yet preferable purchases in product categories such as name cards, toners, water flow controllers, trophies, etc., in order to “get the ball rolling”.

To plan for and achieve the greatest savings from sustainable procurement implementation and application, organizational leaders and managers should re-think their needs along with best strategies and approaches to address the needs - e.g. water, toners, refills.

Procurement considerations and decisions for needed “high volume” products should focus on value for money over the full lifecycles of such products, rather than focusing only on initial spending -- i.e. lifecycle cost merits and advantages of more sustainable/environmentally-preferable products including LED lighting systems and bulbs, refillable stationery items, water flow controllers, etc.

Key challenge

Although launching quick win is a good practice for promoting green purchasing, we see some key challenges facing companies:

Cost consideration is still a significant obstacle and challenge for implementing green purchasing although the pricing gap is narrowing upon technology advancement and improving “economies of scale” for environmentally-preferable products.

Change management is also important for company-wide adoption of green purchasing. For example, to change people behavior from “Buy Bottled Water” to “Bring You Own Bottle” or from “Exchange Paper Business Card” to “Exchange Digital Business Card”.

Green procurement is not only the responsibility of procurement department but must gain and sustain support as well as involve and engage all relevant stakeholders to adopt green products/services or practices. To influence other staff to appreciate the benefits of green purchasing is challenging. Introducing more quick wins will help.

Way forward

Green purchasing is an effective tool to minimize the negative environmental impacts and has been widely applied in many countries. However, cost consideration is still one of the key concerns in private sector; Green Council has determined the following measures:

- To guide and assist SPC members [and possibly other entities in the public and private sectors in the future] to increase, simplify and strengthen their green purchasing, a green product supplier database can help procurement professionals to source cost competitive green products and services. Green Council officials are establishing and will enable access to such green product supplier database.
- Green Council will continue to guide, assist, encourage and collaborate with current SPC members while recruiting and welcoming new members. If the levels of efforts, engagements and results achieved by the SPC membership are sufficient, they can influence the broad Hong Kong industrial and commercial sectors to become sectors-wide greener and more sustainability focused in their procurement practices. Such extended green purchasing efforts will drive and enable the economies of scale for suppliers in supplying green products.
- To establish the system and knowledge for making correct decision in green procurement, company should advance the capacity of procurement officers in green purchasing. Green Council will continue to arrange training workshops and seminars to assist companies to pursue green purchasing.

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ICLEI:

INNOVATIVE FURNITURE PROCUREMENT CONTRIBUTING TO GREEN SUPPLY CHAIN BINHAI NEW AREA, TIANJIN, CHINA

Background

Tianjin Binhai New Area successfully established a green evaluation scorecard for school furniture procurement in 2018 with the support of ICLEI East Asia. This ambitious system incorporating green supply chain management principles has won Binhai a national honor – the 2018 China Government Procurement Innovation of the Year Award.

Binhai follows common GPP processes in China, with the two nationally certified eco-labels — the Governmental Procurement List of Environmental Labelled Products (ELPs) and the Governmental Procurement List of Energy Conservation Products (ECPs) at the center of GPP implementation by public authorities at all levels. Under the procurement law, all products in the ELPs (including school furniture if listed) should be prioritized voluntarily when conducting public procurement, whereas the ECPs contain a group of typical energy-consuming products that are mandatory for compliance. Local governments merely follow the lists and, in many cases, products are not fully listed. The situation reflects how the current label-based system falls short of encouraging local authorities to take more aggressive actions beyond the basic requirements of the central government. In spite of an imperfect national framework, the potential of GPP in driving green supply chains grasped the attention of the Tianjin Municipal Government in the early 2010s. To incentivize GSC, Tianjin released a set of ambitious policy measures to increase government acquisition of GSC products in 2014. However, little progress has been made in translating these polices into actions due to discontinued political backup at the municipal level. Under this situation, Binhai decided to take a further step to explore solutions on encouraging GSC management via new public tender models.

Development Approach

The majority of public procurement in Binhai is centrally supervised and administered by the Binhai Government Procurement Center. As a first step of developing a new tender model for school furniture procurement, the Center coordinated a core team consisting of representatives from all relevant departments, such as the Binhai Education and Sports Committee, and the Public Resources Trading Center, to facilitate better communication and cooperation among government officials, and took the lead to ensure a smooth implementation of GPP. ICLEI provided capacity building activities on GPP to the members of the core team.

Previous tender practice in Binhai was reviewed by the Procurement Center and ICLEI with the support of domestic partners. The most common evaluation criteria for government furniture tender were to assess the price (30%), objective quality – based on provided technical parameters (30%), and subjective quality– subjective judgement of evaluation committee members based on their experience (40%). Under this mechanism, environmental aspects, such as the ELPs and the ECPs product selections, are assessed under the objective quality
criteria and represent only 4% of total evaluation scores.

The core team decided to develop a new green evaluation scorecard for school furniture. The award criteria were restructured to embrace a broader dimension of environmental performance covering the whole life cycle as in Table 1. Environmental performance is listed out as a separate category and represents 15% of the total assessment, which stands a significant increase from previous practice. The assessing criteria of price and quality represent 30% and 55% respectively.

In June 2018, a calling for tenders was initiated to acquire school furniture for five new public campuses at the request of the Binhai Education and Sports Committee. An open tendering document with the above scorecard was published to inform the market one month in advance.

The core team decided to develop a new green evaluation scorecard for school furniture. The award criteria were restructured to embrace a broader dimension of environmental performance covering the whole life cycle as in Table 1. Environmental performance is listed out as a separate category and represents 15% of the total assessment, which stands a significant increase from previous practice.

The assessing criteria of price and quality represent 30% and 55% respectively. In June 2018, a calling for tenders was initiated to acquire school furniture for five new public campuses at the request of the Binhai Education and Sports Committee. An open tendering document with the above scorecard was published to inform the market one month in advance.

Approach results/Outcome

In July 2018, the bidding attracted six suppliers to apply. Two small and micro enterprises (SMEs) based in Tianjin were selected to perform the two contracts with a total value of 74,738 USD. The two contracts act as a milestone in greening Binhai and Tianjin's supply chain practice - more environmentally friendly products will be purchased, and more suppliers will be motivated towards green production.

Reduced Environmental Impacts. Out of the 315 sets of school desk and chair procured: 30 tons of furniture waste will be diverted from landfill, and GHGs equivalent to 92 tons of CO2 is reduced due to the guaranteed end-of-life collection, renovation and reuse services; 100% of packaging materials are recyclable with guaranteed collection services; Formaldehyde emissions from finished products (≤0.6mg/L) are significantly lower than national emission E1 class standard (≤1.5mg/L); Binhai procured a total of 6,160 sets of school desk and chair in 2018.

It is estimated over 564 tons of furniture waste and GHGs equivalent to 1,627 tons of CO2 would have been avoided had the green evaluation scorecard been applied to all these tenders. This calculation is a conservative estimate as it does not include other life cycle waste aspects like recycling of packaging materials, due to project scope limitation.

Experience or Lesson learnt

Experience or Lesson learnt:

- Effective communication between the procurement supervisory body and the procuring entity is the key to Binhai's success. Before kicking off the project, the Binhai Government Procurement Center set up regular coordination meetings to ensure inter-departmental
  coordination and to continuously update officials with project progresses in a timely manner. This early engagement was particularly essential for applying the scorecard with new school furniture tenders as the Binhai Education and Sports Committee was in charge of the school construction projects, while the procurement process was managed separately by the Procurement Center.
- More attention required in informing the market of new bidding rules. The tender documents of the two cases were announced to the market only one month before entering the tender process. Due to the short notice, some qualified suppliers were prevented from meeting new environmental requirements in their full potential. For example, none of the applications could fulfill the need for clean energy vehicle transportation. Learning from this experience, the Binhai government plans to issue a district-wide notice in 2019 to inform the market and general public fully.
- International cooperation opens up new opportunities for GPP in China. Binhai's achievement in GPP would have been more difficult if the district did not join
- the 10YFP on SPP via ICLEI in 2017. Through the project, decision makers and practitioners in Binhai benefited from capacity building opportunities and resources on GPP offered by ICLEI. The influx of new knowledge and technical assistance enabled Binhai to break the longtime standstill in procuring green products and gradually guide market transition towards sizeable purchasing power in such products.

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ICLEI:

ICE STORAGE AIR CONDITIONING PROCUREMENT FOR GREEN BUILDING-GUANGMING DISTRICT, SHENZHEN, CHINA

Background

Shenzhen Guangming District in Southern China will procure an unconventional air conditioning system using ice-storage technology for a public utility in 2019, yielding up to 48% electricity bill cut and 14% carbon emission reduction by balancing energy demand between peak and off peak hours, and using an air conditioning system with higher coefficient of performance (COP).

In 2008, the Chinese central government designated Guangming as one of the country's first Guangming issued a comprehensive set of local construction regulations, standards and guidelines in achieving the target of 100% green building coverage rate by 2020. In 2017 alone, investment in green building amounted to roughly 20% of GDP in the district, entailing a great number of construction work, goods, and services acquisition. Among this, space cooling equipment draws particular attention, given that air conditioning (AC) accounts for the vast majority of energy consumption in building operation phase. The subtropical climate with humid, long and hot summers in Guangming adds to signifcant cooling demands, increasing electricity bills and carbon emissions. In quest for more environmentally friendly AC systems to realize green building, Guangming joined the 10YFP SPP Working Group 1A Project "GPP Tender Implementation and Impact Monitoring" in August 2017 to apply new tender models with the support of ICLEI—Local Governments for Sustainability.

Development Approach

Following the 10YFP pledge made by the Guangming District Government, a GPP baseline assessment survey was conducted by ICLEI in late 2017. The AC procurement of the Guangming Cultural and Arts Center was selected to apply greener tender criteria. Aimed at opening by 2020, the Center is expected to become a landmark public building which meets the highest environmental and energy standards at national level.

Guangming set the bid control price as 22.67 million RMB (3.37 million USD) for acquiring an AC system turnkey solution in the second quarter of 2019, covering design, installation, debugging, training, and warranty. A particular type of technology —ice storage— is required considering its life cycle economic savings and energy efficiency. The ice storage AC system is commercially proven in North America but much less known in China due to market immaturity. The principle of this technology is simple: instead of using conventional air compressors that Guangming set the bid control price as 22.67 million RMB (3.37 million USD) for acquiring an AC system turnkey solution in the second quarter of 2019, covering design, installation, debugging, training, and warranty.

are potentially more energy intensive, the system forms ice during the night for storage, and melts ice to provide cooling during the day when energy demand is higher. Neither national nor industrial environmental standard has been established for ice storage AC systems in China, and the only environmental aspect considered in bidding processes of such systems was the environmental management system (EMS) certification. Through the 10YFP on SPP project, ICLEI and the procuring entity developed an environmental criteria for ice storage AC in the Guangming Culture and Arts Center construction project.

Approach results/Outcome

The procurement criteria are expected to bring along advantages, such as lower utility bills, GHGs reduction, toxic substances removal, and improved resource efficiency. Due to the limitation of project scope and data availability, only two aspects of the advantages are evaluated in this project phase.

- Lower Electricity Bill. The intended ice storage AC system is equipped with a dual-chiller system, which runs in ice-making mode during the night to produce ice and store energy, and melts ice during the day to cool the building, with excess cooling demand supplemented by regular refrigerating mode (air compressors) in the peak hours. By taking the advantage of the peak-valley tariff dispersion of local power grid, utility bills could be significantly reduced.
- Reduced Carbon Emission. AC systems with higher refrigerating efficiency require less energy to meet cooling demand, contributing to lower carbon emissions in operation. Using the same scenario, the report compares emissions between the ice storage AC with a SCOP of 3.5 and the conventional system with a SCOP of 3.0.

Experience or Lesson learnt

- Ice storage AC system has great potential for monetary savings and emission reductions. By consuming electricity in the off-peak hours at night, ice storage AC systems could not only reduce the property owner's expenses on electricity for cooling, but could also level the peak load of the domestic power grid during the peak hours-especially on hot summer days. On a broader perspective, a more balanced energy demand within the society could ultimately diminish the need for peaking power generation which is usually less efficient, and could lead to an overall improved energy efficiency. In addition to the reduction of electricity bills by using lower-priced nighttime power, the time distribution of electricity generation sources should also be taken into considerations by local governments that are interested in this technology. With the same refrigerating efficiency, emission reduction effects of ice storage AC systems would be more pronounced when compared to that of conventional alternatives where electricity is generated with clean sources, such as hydro and wind, during the off-peak hours.
- International cooperation pushes the boundary of GPP at local level in China. Resulting from the current imperfect legal and institutional framework, construction work and its associated components are usually excluded from the common understanding of GPP in China. Through participating in the 10FYP on SPP project, Guangming was provided with accesses to capacity building, peer-learning and intensive knowledge sharing opportunities, and received technical tender advice from ICLEI experts and project partners, which allowed the district to move beyond the incomplete definition of GPP in the country.

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ICLEI:

BOOST ENERGY LABEL TAKE UP

Background

Regulation (EU) 2017/1369 aims to promote the uptake of more efficient energy-related products, repealing Directive 2010/30/EU and the first Directive 92/75/EEC.

The EU energy label has been designed to provide consumers with accurate, recognizable and comparable information regarding energy consumption, performance and other essential characteristics of domestic household products.

It allows consumers to identify how energy efficient a product really is and how to assess a product's potential to reduce costs related to energy consumption.

Currently, products are labelled on a scale of A+++ (most efficient) to G (least efficient). In a consumer survey, it emerged that about 85% of European citizens always look at the energy label before buying a product, however, the current one (scale from A +++ to G) is difficult to understand considering that the higher classes are densely populated. Therefore, the label is to be 'rescaled' (scale from A to G): a product showing an A+++ energy efficiency class will, for example, become a B class after rescaling, without any change in its energy consumption. The most efficient class (class A) will initially be left empty to leave room for more energy efficient models. This initiative, combined with eco-design rules, could save 200 TWh of energy annually, which is equivalent to all the energy consumed by the Baltic countries in a year.

The BELT project has the following three main goals:

- to facilitate the transition period to the new rescaled label, informing and training all principal stakeholders and market actors
- to stimulate consumers to choose better energy performing products
- to stimulate manufacturers to research and to further improve their products, thus, stimulating innovation and investment.

A new energy efficiency labelling system is being introduced in all EU countries. Starting in March 2021, it will progressively be rolled out to 9 product categories.

Five product types will have a new, revised and updated energy label: refrigerators, including wine storage appliances, dishwashers, washing machines and washer dryers, electronic displays, TV and monitor counting, and lighting sources.

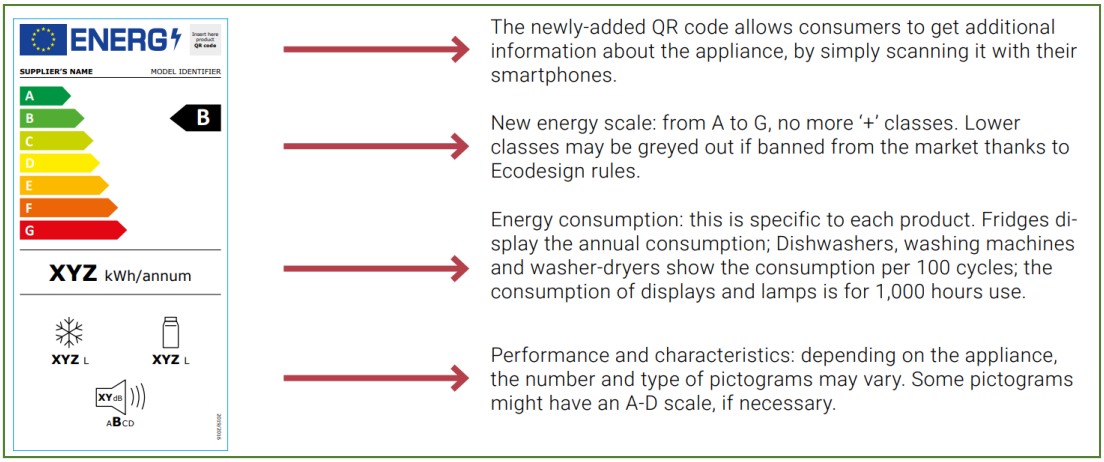
The new labeling will be applied to four groups of appliances starting from March 1, 2021, while the LED lights will be in effect by September 1, 2021.

Depending on the product, the new label will show electrical consumption and, unlike the previous one, also other useful information relating to energy and more, through intuitive pictograms and thanks to a new innovative element, a QR code.

The main elements of the new label are:

- QR code: the addition of the QR code allows consumers to obtain further information on the appliance;
- New energy scale: from A to G, with no more '+' classes;
- Energy consumption: it is specific for each product;
- Pictograms: indicate the performance and characteristics of the product.

ELEMENTS COMMON IN ALL LABELS



Development Approach

The product groups of electronic devices with "rescaled" labels include: air conditioners, dishwashers, washing machines; refrigerators, lighting sources, electronic displays, including televisions monitors and digital signage displays, vacuum cleaners and tumble dryers. Currently, products are labelled on a scale from A+++ (most efficient) to E (least efficient). With the new rules, the existing labels will be rescaled: from A to G.

Approach results/Outcomes - From November 2020 each product included in the rescaling, must be accompanied by the new labels. With the new rules, it will be mandatory to request the new energy labels in all public tenders.

Approach results/Outcome

Thanks to BELT, the transition process to the new rescaled label will be more easily performed providing training and technical guidance to manufacturers, distributors and retailers. Confusion and errors among consumers and public and business procurement staff will be avoided through clear, bespoke and targeted communication campaigns.

BELT will create targeted communication campaigns for all stakeholders, it will organize workshops and events and it will develop training activities. The excellence of BELT stems from its multidisciplinary expertise and geographical coverage, being able to reach 20 million European stakeholders and 4.400 market actors.

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TCO Development:

A CIRCULAR APPROACH TO IT PRODUCTS

Background

In today's society, the linear economy is the norm.

But when you think about it, this economic system makes no sense. It means that we take virgin natural resources and make products from them which we then discard once we're done using them — often after a relatively short time. The products are then replaced by others, made in exactly the same way. The linear economy is based on the assumption that the planet's resources are infinite — that we have an endless supply of oil, water and rare earth metals that we can use freely. We also assume that we and the earth are equipped to deal with large amounts of waste, which is the result of linear thinking. Why do we continue to make things to be thrown away and use materials that last forever in single use products?

Around 170 million notebook computers are produced and sold globally every year. Even though their manufacture requires a large amount of energy as well as a number of finite natural resources, their service life is often short. The typical IT contract is based on a three-to-four-year use cycle. After that, many organizations face difficulties disposing of products, with many of them ending up as e-waste even though they are fully functioning. This way of handling IT products goes against the principles of the circular economy, where products should be kept in use for as long as possible, to save resources and retain value. The good news is the urge to implement more sustainable practices is growing. However, there are many choices to make during a notebook's life cycle and it's not always easy to know what's best. We've looked into this issue to clarify what the most responsible way to manage notebook computers is. How can organizations reduce environmental impact and help promote a more circular life cycle?

Development Approach

Recycling — a less favorable solution in a circular economy

In theory, recycling may seem like a viable way to harvest precious metals and other materials from a notebook. But in reality, a very small amount of the assets included in our IT products are currently recovered in the recycling process. First of all, only around 20 percent of global e-waste actually reaches controlled recycling facilities. The rest may end up in landfill, is incinerated, or illegally exported to regions where e-waste legislation is weak or non-existent.

Even in those cases when a product reaches a controlled recycling facility, materials tend to lose value, or are lost altogether. There are several reasons for this. Notebooks contain a large number of materials and typically, recycling facilities cannot recover them all. Materials that are present in very small amounts are difficult and costly to extract. Rare earth metals and conflict minerals, such as tantalum, are often used in small quantities and are in many cases not recovered at all. Metals, such as gold, cobalt and palladium are only partially recovered during recycling and need to be extracted from the mines continuously to meet the demand. A material that often loses its value during the recycling process is plastic. The output is a downcycled, lower quality product. Plastics in notebooks may also contain harmful flame retardants and plasticizers that cause harmful health effects during recycling processes and make the materials unsuitable to use in new products.

Recycling methods are continually evolving, and in some leading-edge facilities, recycled materials are of higher quality, in some cases even similar to virgin materials. These higher end materials can be reused in the same type of product as they once came from, which meets one key aspect of realizing the circular economy. However, there are very few of these facilities, and

bringing these solutions to scale will take time. For now, the focus must be on avoiding e-waste as much as possible.

By turning natural capital into energy and products, our current, linear way of producing and consuming products has created unprecedented economic growth that has raised millions of people out of poverty. However, it also requires extensive and intense use of natural resources and that is really starting to catch up with us.

What circularity means for IT products

We have caused the climate crisis by generating dangerously high levels of greenhouse gas emissions. Fragile ecosystems have been ruined, leading to the loss of biodiversity, soil degradation, polluted oceans and a lack of fresh water. Valuable natural resources are running low. Ultimately, the damage we do to our planet will undermine its ability to provide us with natural capital, and affect our health and well-being as well as our future economic prospects.

Resources are re-used in the circular economy

The circular economy is a way of making ends meet. The logic is simple — it means that we use natural resources responsibly so that we don't risk exhausting them, reduce greenhouse gas emissions to manageable levels, and protect land and water for the benefit of all in the long term.

IT products are made to have a longer life

When the circular economy is introduced, the linear take, make, use, dispose model, where natural resources are turned into waste, is replaced with a model where products, components and materials are looped back into the system to be used again and again. To enable extended product lifespans and product reuse, IT products are durable and can be upgraded and repaired. Vital components that easily break or lose capacity can be replaced. Products are of high quality and are possible to take apart to allow for refurbishing and remanufacturing solutions. When a product has reached the of its usable life, materials are seen as valuable resources that are recycled to replace virgin materials in the manufacture of new products. The ultimate aim is to eliminate waste altogether.

Key challenge

Lack of a circular mindset

Unsustainable, linear business models persist

Linear business models where the purpose is to sell as many products as possible, are highly profitable in purely financial terms, but fail to account for the true costs of pollution and waste creation. These models must be replaced by circular models, for example where products are offered as a service.

Lack of supporting legislation and incentives

In most countries, legislation that regulates how e-waste should be handled is lacking or very weak. This needs to change. Other ways of speeding up the transition to the circular economy include financial incentives that encourage the reuse of products, and that makes it economically advantageous to use recycled materials instead of virgin resources.

Used products perceived as inferior

IT brands work hard to attract us to the most recent product models. Today, part of the positive user experience is owning something new, while reused IT products are often perceived as less attractive. Could users focus on functionality instead of looks, and could a second-hand or remanufactured product be perceived as a modern, conscious choice?

Product performance needs vs perception

Until recently, computer software has continually required more hardware performance which has made IT devices obsolete after only two to three years. This is no longer true, and our mindsets need

to change. By purchasing a high-performance product, you can keep it longer, or sell it to a second-hand owner.

Lack of communication

While waste from one industry can be valuable for another, large amounts of resources are lost because of a lack of understanding and communication between different industries. A fully circular value chain requires collaboration between industries throughout the product lifecycle.

Technical obstacles

Concerns about data protection

Fear of confidential data leakage results in many IT products being stored in drawers and basements instead of being made available for reuse. If manufacturers provide users with secure data sanitization software, this can be avoided. Many professional refurbishment companies also offer safe data removal.

Poor battery lifetime

Portable IT products are often discarded because the battery has lost its ability to hold a charge, even though the product is otherwise fully functioning. Batteries should therefore be of good quality and be replaceable.

Barriers to repair or upgrade

Too many IT products are discarded because of single components that stop functioning or that become outdated. We need to promote a repair culture, where products can be disassembled, repaired and upgraded with commonly available tools. Replacement parts and service manuals should be freely available.

Inadequate or lack of warranties

A product warranty provides the brand owner with an economic incentive to design a high quality product. Once the warranty expires, the cost for repairing IT products is difficult for the purchasing organization to estimate, which may lead to those products being replaced. Extensive warranties encourage both durable product design and longer usage time.

Products are too fragile

Mobile products are carried around in pockets and backpacks, which causes a lot of wear and tear. To enable a longer life, IT products must be durable and endure high and low temperatures.

Not enough material reuse

Materials contain hazardous substances

Materials containing hazardous substances are unsuitable for recycling or use in new products. By replacing hazardous substances with safer alternatives, materials can be safely recycled and maintain compliance with increasingly stricter legislation.

Products don’t reach recycling facilities

Only around 20 percent3 of discarded IT-products reach a safe recycling facility. The rest may end up in landfill, is incinerated, or illegally exported to regions where e-waste legislation is weak or non-existent.

Products and materials are not made for recycling

Materials often lose in value in the recycling process. Materials that are present in very small amounts are difficult and costly to extract. Batteries can become a fire hazard in the recycling process if they can’t be removed and end up in the shredder.

Not enough economic incentive for safe recycling

In many countries, it's cheaper to export e-waste than to handle it domestically in accordance with stricter safety regulations. Virgin raw materials are often also cheaper than recycled materials since they don't bear the full cost connected to the sustainability impacts in mining and refining. To make more high-quality recycled materials available on the market, environmental legislation must be stricter, and be enforced

Experience and lesson learnt

Conclusion 1: Extending product life cuts greenhouse gas emissions

Adding two years to product life reduces emissions by 30 percent. As almost 80 percent of emissions occur in the manufacturing phase, extending product life will clearly lead to lower average annual emissions. Let's compare two possible use scenarios, where notebooks are used for either four or six years. How much does adding another two years of use time impact greenhouse gas emissions? When a notebook is replaced every six years instead of every four, you end up with a total of 53.1 kg of carbon dioxide equivalents per year, instead of 74.7 kg. This is a reduction of around 21.6 kg per year, or 28.9 percent.

RECOMMENDATION

Due to the large proportion of greenhouse gas emissions in the manufacturing phase, it's important that notebook computers are given a long life. Choose to buy a durable product that is possible to repair and upgrade and use it for as long as possible. Choose one with enough performance to cover your needs for a long time. High-performance products are also more attractive on the second-hand market.

Conclusion 2: Emissions lower when notebooks are upgraded instead of replaced

For most users who work with standard software programs, notebook computers may function well for at least six years without upgrades to hardware such as hard drives, memory or battery. Sometimes though, and especially for users who work with more performance-demanding software, upgrades to hardware are needed in order to extend the notebook's life. How will this affect greenhouse gas emissions?

A 2016 study from the German Öko-Institut looked at the effects of extending the life of notebook computers from three to six years. Fifty percent of the products were upgraded with a new battery, a new internal memory, (from four to eight gigabytes), and had the original hard disk drive replaced with a faster SSD.

The study showed that even though these upgrades were made, the extended life resulted in a reduction of related greenhouse gas emissions by approximately 390 kg CO2 (28 percent) per computer workplace, (including the notebook computer, docking station, external display, keyboard and mouse), over a period of 10 years.

RECOMMENDATION

Maintain and keep your current device longer. Considering the full life cycle, prematurely replacing an old notebook computer with a new and more energy efficient device will lead to more greenhouse gas emissions, not less. The positive effect of saving energy in the use phase is overshadowed by the enormous energy consumption in manufacturing, from raw materials extraction through to assembly.

Conclusion 3: Buying new doesn't compensate for emissions from manufacturing

Many electronic products have become increasingly energy efficient, and in some cases, purchasing new equipment has actually been a way of lowering the environmental impact of the product during its life cycle. Is this also the case for notebook computers today?

Because the production phase of a notebook computer represents a majority of the total greenhouse gas emissions during its life cycle, the answer is no.

Purchasing a new and more energy efficient product will not cut total greenhouse gas emissions, even if the new product is used for a very long time. If energy efficiency improves by 10 percent between

two generations, the new notebook must be used between 33 and 88 years before the reduction in energy consumption in the use phase has made up for the greenhouse gas emissions while producing the product. If energy efficiency improves by 20 percent, that period falls to between 17 and 44 years. The large time span is due to the fact that data varies between calculation models. Irrespective of which end of the scale you look at, no notebook is used for that long.

RECOMMENDATION

If the capacity of your notebook computer no longer meets your needs, or if any part of it is broken, make sure to upgrade or repair it. It could then serve you, or another user, for another few years. Extending the lifespan of notebooks is a choice that can cut greenhouse gas emissions also in those cases where hardware upgrades are necessary.

Conclusion 4: Circular solutions are better also from a financial perspective

Purchasing new IT equipment in short contract cycles is expensive. It is often more costly than it needs to be, especially in the era of "best overall value" procurement, where factors like sustainability and life cycle cost are taken into account in procurement, alongside product price. Also, treating used IT products as waste instead of extending their life or even reselling them is a missed opportunity for cost savings and income.

By extending lifetime from three to six years, the cost of purchasing and using a complete computer workstation can actually be reduced by 28 percent, or 527 euro (570 US dollars), over a period of 10 years, even when the cost for upgrading 50 percent of the notebooks with new RAM, SSD and battery is factored in. Savings also include a reduced cost for purchasing the products, and for administering the procurement process when notebooks are purchased in longer intervals.

RECOMMENDATION

Allow IT products to live longer. Apart from reducing environmental impact, keeping devices for a longer time, buying used products whenever possible and giving them a second life is in most cases also better from a financial perspective, even when service and upgrading costs are included. To get closer to the actual cost of managing notebook computers with a certain lifespan, make sure to include the administrative cost of IT purchasing, installation, and the cost or income from disposal of notebooks in your total cost of ownership model.

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SUPPORTING THE NETWORK

You can help expand green purchasing in the following ways:

- Purchasing green products and services
- Share your initiatives and best practices on the IGPN website
- Exchange your activities undertaking on green purchasing inspiring others
- Developing proposals for green purchasing and environmental products/services
- Collaborate activities or joint event on green purchasing
- Join the International Green Purchasing Network

Interested to become a partner or enquiry on the documents relevant to the International Green Purchasing Network (IGPN), please contact with igpn.secretariat@igpn.org.