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### Green Office Management Standard in Mahidol University, Thailand

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### ABSTRACT

Green Office is an environmental service for offices and in the recent decades, there is a growing concern about the green office management standard in Thailand with its goal as to create a healthy environment, conserve energy, and reduce pollution by reducing carbon dioxide emissions and offices' ecological footprint. With its help, workplaces are able to reduce their burden on the environment, achieve savings and slow down climate change. It is a practical environmental management system for the offices applicable both in a small or large organization, in private companies or the public sector, easy to implement in urban environments and which help in reducing the ecological footprint and greenhouse gas emissions of the office. This paper describes the purpose, principles, features, procedure for setting up, and management of green office standard in Thailand with the main aim of describing the growing importance of green office due to the impact of climate change. It also aims to promote sustainable practices, apply the Green Office principles in organizations and offices so as to reduce the emission released by activities in the offices. The study was carried out through EDFR procedure by selecting a panel of 17 experts to get the detail data and opinion for management of green office in Thailand. The study results or contributes to the rationalization and mitigation of climate change through following the adaptive green office strategies and it brings out the importance of human factors and behavioral practices at workplaces and offices.

Keywords: Behavioral practices, EDFR, environmental management, green office, workplace

#### INTRODUCTION

Green Office is a global concept developed and managed by WWF Finland (2016). The term "Green Office" refers to the mentality and practices that help to reduce the environmental impact of our office activities and to make a real difference in

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the environment. Green Office is a practical environmental service or program for offices, easy to implement with a structure that is environmentally responsible and resource-efficient as defined by the United States of America Environmental Agency. The goal of green office is to create a healthy environment, conserve energy and reduce pollution. With its help, workplaces will be able to reduce their burden on the environment, achieve savings and slow down climate change. The basic principle of the Green Office initiative is to promote continuous improvements in the environmental work and results of the involved organizations, reducing the environmental impacts of office work in order to reduce carbon dioxide emissions and offices' ecological footprint and greenhouse gas emissions due to its practical environmental management system applicable in offices both in a small or large organization, in private companies or the public sector. The Green Office initiative inspires employees to adopt environmentally sound habits and leads to high staff motivation. The Green Office logo, provided for certified Green Offices, helps communicate an organization's environmental work to staff, stakeholders and customers (WWF Finland, 2016).

Office premises occupy a key position in energy consumption and in sustainable solutions. Green Office motivates office staff to act in an environmentally friendly way with regard to everyday tasks, and improves environmental awareness and brings cost savings. Following green office standard will benefit both the organization and the environment (WWF-Pakistan, 2016).

The basic principle of the Green Office initiatives is to promote continuous improvements in the environmental working and results of the involved organizations, inspire employees to adopt environmentally sound habits and leads to high staff motivation in order to reduce the environmental impacts of office work (WWF, 2010). The following gives the *main features* of green office as:

# Green Office and Reduction in Energy Consumption

Several activities from using advanced IT solutions to switching off unnecessary lights help to cut down electricity consumption along with use of renewable energy sources (WWF, 2016).

# Green Office and Reduction in Transportation

Most business also required some traveling, but sustainable organizations having green office aims to cut down unnecessary transportation with the help of better solutions such as using phone and video conferences and reduction in air transport could help for distance working and emissions in carbon dioxide to improve environmental situation.

# Green Office and Reduction in Paper Consumption

As the paper production has a large ecological footprint, it affects the future of

the world's forest, endangered species, water resources, climate and people. Reduction in its use saves its impact on the ecology.

# Green Office and Reduction in Water Consumption

Water footprint of human consumption has exceeded sustainable levels in several areas around the world recently. This makes it crucial to reduce both direct and indirect water usage through the practice of green office at work.

## Green Office and Avoiding Waste Generation

Even though, in 2010, the Green Offices did not manage to cut down their waste generation, the amount of waste per employee in the Green Offices decreased by 17.5% in 2010 (information received from 39 offices (WWF, 2016).

The impacts of climate changes in the Earth's environmental system include unpredictable and chaotic weather, rising temperatures, rise in sea levels, mass extinction of wild animal and life of human beings at risk due to drought, flood, deforestation and threats to agriculture due to deforestation and poor agricultural prospects (WWF, 2010). The most recent report of the Intergovernmental Panel on Climate Change (IPCC, 2014) concludes that human beings influence climate change and the changes can be mitigated through the changes in ways of the behavior in the daily life style and at work of human beings. Green Office is one of the ways that people can effectively mitigate the impact

of climate change in their daily lives and work. It also inspires new routines, which have an incalculable as new and more sustainable behaviors. To achieve it, the first step is to launch green building policy as a requirement of sustainable development, including environmental, economic, and social benefits (Holmes & Hacker, 2007; IPCC, 2007; Peia, Lina, Liua, & Zhua, 2015; Urge-Vorsatz, Harvey, Mirasgedis, & Levine, 2007). Studies have found a preference bias for "environmentally friendly" or "green" artifacts and buildings (Holmgren, Kabanshi, & Sörqvist, 2017). In order to maintain green building, the following steps should be taken care of as: Decoration, Cleaning, Maintenance, Office space feeling, Light Environment (Lighting), Sound Environment (Acoustic environment), Office layout, Thermal comfort and Indoor air quality (World Green Building Council, 2016).

## Background and Development of Green Office in Thailand

The green office in Thailand came into existence in the Faculty of Environment and Resource Studies, Mahidol University since 1983 (Mahidol University, 2016). It aims at promoting behavioral change in the office so as to reduce energy consumption while promoting activities that are environmentally friendly, such as reducing the amount of waste by reducing, recycling, reusing, and prohibition of using hazardous goods that are environmentally dangerous. The process of recruitment and operations of the green office passes through

many stages such as training, meeting, assessment, and recruitment of responsible officers. The Department of Environmental Quality Promotion has provided the detailed rules and support for participating in the 2017 "Green Office" program. The program encourages environmental awareness among business operators. The program aims to change the behavior of businesses to reduce energy consumption and engage in environmentally friendly practices, such as reducing waste, avoiding the use of hazardous chemicals, and procuring materials that are environmentally friendly (Pornpimol, 2016) Businesses that are certified by the department of environmental quality as "Green Offices" will receive a certificate of excellence and a gold medal. Since 2015, the program has awarded certifications to 184 businesses (Pantana & Gershon, 2017).

#### **METHODS**

The present study was carried out by the researcher of Mahidol University, Faculty of Environment and Resource studies in collaboration with Department of Environmental Quality Promotion. In March 2015, there was training of participating officers of green office, followed by training of committee auditor in April 2015. During May to June operational data of participating green offices in Thailand were collected along with auditing of each office in order to check the criteria of certification and registrations for the following year. The preliminary assessment report was sent to the Department of Environmental Quality on February 10, 2016. The study focused on the choice of materials, office supplies, and equipment that are environmentally friendly along with the significant reduction of greenhouse gas emissions.

The present study used Ethnographic Delphi Future Research (EDFR) methodology for collecting data from a panel of 17 experts in different professions and organizations in Thailand. Ethnography is defined as "Fieldwork conducted by a single investigator who lives with and lives like those who are studied, usually for a year or more" (Van Maanen, 1996). It includes employing field research, whereby a researcher stays in the field in order to be able to observe the subjects of interest in their natural setting, and to be able to report facts about what they have observed (Genzuk, 1999; Hammersley, 1998). On the other hand, the main objective of the Delphi method is to obtain reliable data from a panel of experts (Dalkey & Helmer, 1963). This is achieved by allowing a group of experts to tackle a complex problem. It is almost similar to a traditional survey, except that it is stronger because instead of using a sampling technique to represent a certain population, a group of experts and stakeholders with a deep understanding of the subjects are chosen to answer the questionnaire. EDFR *Method* is a combination of ethnography and Delphi studies. The present study was conducted in the following manner: The researcher used explicit criteria to select a panel of 17 experts and designed a wellstructured questionnaire concerning the issue under consideration. Panelists were then asked to respond to the questionnaire during a series of rounds. All responses are provided individually and anonymously. Questionnaires were administered through e mail as well as by hand, and panelists were unaware of each other's identity and interact only with the researcher or small research group (two to four members).

Delbecq and Van de Ven (1971) had come up with detailed guidelines on how to select the group of experts suitable for the Delphi study. The first step is to structure the experts into different panels, such as academics, practitioners, and government officials. This is because of an assumption that these will have different perspectives. Therefore dividing these experts into panels will allow a chance for comparing these perspectives (Okoli & Pawlowski, 2004). The researchers contacted the experts and explained them about the study subject and asked them to complete a questionnaire. After the responses were received, the researcher administered the questionnaire by narrowing down the original list with all answers to a list with the most important answers. The data were then analyzed quantitatively in order to determine the ranks of the items on the list.

#### Objectives

The objectives of having green office management standard of Thailand are as follows:

• to apply the Green Office principles in organization and offices so as to reduce the consumption of natural resources by improving offices' environmental efficiency;

- to promote sustainable practices by increasing environmental awareness of employees;
- to promote climate change mitigation by requiring energysaving and use of renewable energy source;
- to promote to reuse and recycle in the office so as to help and save office expenditures;
- to reduce the emission released by activities in the offices (Department of Environmental Quality Promotion [DEQP] and Mahidol University, Green Office, 2016).

The article of green office standard in Thailand is divided into the following parts as: *Introduction, Methods, Results and Discussion, and Conclusions.* 

### **RESULTS AND DISCUSSION**

The results of the study of Green Office Management in Thailand are discussed in the following topics: 1. Organization Management; 2. Green Office and Organization Awareness; 3. Energy and Resource; 4. Waste and Waste Water Management; 5. Indoor & Outdoor Environmental; 6. Green Procurement; 7. Continual Improvement (Department of Environmental Quality Promotion [DEQP] and Mahidol University, Green Office, 2016).

The score is given by the auditing committee. The offices or organizations are invited to join the project for getting green office standard certification. Then, the auditing committee visited the participating offices on a fix date and time for evaluation and to give score to each category. Finally, the data were converted to percentage and presented into figures 1 using Microsoft Excel Program. The following figure gives the distribution of qualified green office by the average weight of the green office group, classified in terms as gold, silver and bronze levels.

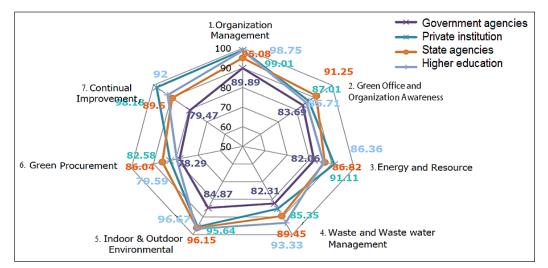


Figure 1. Distribution of environmental management by division of the average weight of organizations

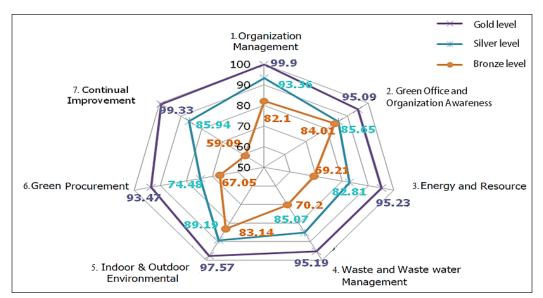


Figure 2: Distribution of qualified green office by the average weight

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### Organization Management of Green Offices in Thailand

Regarding the management of green offices in Thailand, it uses the concept of ISO14001 environmental management system to manage greenhouse gas emissions, procurement of environmentally friendly, reducing waste (waste minimization), environmental protection (pollution prevention) primarily in the direction of environmental management within the office system (Department of Environmental Quality Promotion [DEQP] and Mahidol University, Green Office, 2016). The green office organization management consists of Environmental Policy and Planned Operations

Environmental Policy. Environmental policy is established by the Executive Office for the implementation of environmental management according to the guidelines of the Department of Environmental Quality. A good environmental policy must be clear and easy to explain to employees in the office and for the general interest of all concerned parties. In addition, it should show a commitment to continuous improvement and pollution prevention, as whenever appropriate such as policy for wastewater recycling and reuse, the use of raw materials that are environmentally friendly, reducing or controlling pollution to a minimum and the use of resources and energy efficiently. The organization must raise awareness of environmental issues

by informing and training employees to better understand and comply with the environmental policy.

Planned Operations. The green office organization management should operate in a way that it should show a commitment to the employees to follow the law and the criteria for the green office of the Department of Environmental Quality. Public relations should announce the workshop or conference or other publicity through the website of the company or organization. The policy document should be distributed to each department and so on. The operation of green office should enable to identify and assess environmental problems and resource use. The first procedure is collecting data in order to find out the activity indicator front of the entire office and responsibility assignment for each department or activity of a particular area. The second procedure is: Identification of environmental problems and the use of resources and energy while the third procedure is environmental communication and training regarding the operation of green office. It is important to clarify information, news and data exchange at each level of the organization. It needs the realization and cooperation of the staffs and executives in environmental management office along with an open channel to receive complaints or for communication. So, the environmental policy must be reviewed annually.

Table 1 gives the rating guidelines for the certification of environmental management.

In 2015, altogether 82 offices registered for the certification of Green Office

Certification Project. Out of this, 69 passed in the initial screening test. In the final auditing for certification test, 52 offices have qualified as Certified Green Office.

Table 1

Rating	guidelines	for	green	office	standard	and	certification

Score	Statements/Remarks
0	No skill in management and operational conditions. Not following guidelines on environmental management. No laws and other regulations related to the environment. No documents or records that are used to control the operation. The persons concerned have no knowledge or ability to manage the environment
0.25	Partly fair with regard to organizational management, environmental care and operational level Partly fair with respect to environmental management Partly compliance with legal and other requirements related to environmental management Somewhat fair relating to document or record that is used to control the operation. Partly fair of the person concerned with regard to knowledge and ability to manage the environment
0.50	Moderate in environmental care and operational conditions. Moderate in compliance with legal and other requirements related to environmental as well as office management. Moderate in record keeping and related document used to control the operation. The person concerned had moderate knowledge and ability to manage the environment.
0.75	Good in environmental management and operating condition Good to some extent in compliance with legal and other requirements related to environmental as well office management. The person concerned who managed had good knowledge and ability to manage the environment.
1.0	Very good and perfect in environmental management, care and operational conditions. Very good in compliance with legal and other requirements related to the environment. Very good in office record keeping and related documents used to control the operation The person concerned who managed had very good knowledge and ability to manage the environment.

Table 2	Ta	ble	2
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The assessment and auditing results of the green office certification (2015)

The evaluation criteria	Scores	Assessment of	Percentage
Gold	90+	30	50.85
Silver	80-89	18	30.51
Copper	60-79	11	18.64
Unqualified	- 60	0	0
Total		59	100

Note: The Office participated in 2014 and obtained a new year assessment in 2015.

### Green Office and Organization Awareness

Green office and organization awareness can be done through environmental communication and training, conferences and exhibitions, cleanliness and order in the office, greenhouse gas management, transportation and travel. Communication can be in different ways such as bulletin boards (e.g., environmental policy, environment news, and environmental responsibility), training (Morning talk), and meeting to clarify the operation. Training on raising awareness and control of environmental problems and the employees involved is important. Employees must have a deep understanding of the training and experience. Awareness in an office regarding green office set up can be through conferences, green marketing and green

exhibition. The conference, seminar and exhibition provide guidelines taking into account the principle of sustainability and to reduce the environmental impact caused by greenhouse gas and other pollution. The guidelines take into account the principle of reducing resources, energy savings, friendly and balanced ecology in the environment, and so on. Cleanliness and order in the office is important on the basis of quality, environmental awareness, and safety measures in the office. Cleanliness contributes to the orderly, beauty, and it enhances employee awareness of the partnership and to help each other. It also helps to increase performance of employees as well as to create a good image of the office. Figure 3 shows the office employees cooperation to maintain a clean and tidy office.



Figure 3. Office employees cooperating to maintain a clean and tidy office

It is important to make the employees aware of self-help in office management. There should be plan and check-up of every office rooms such as the condition of the bathroom, office room, and other premises. Office workers should be encouraged to spare 15 minutes of their time early morning every day in cleaning and arranging room for maintaining cleanliness. To be a certified green office, it needs to be checked in a written form whether all office rooms, bathroom, materials and other infrastructures are neat, clean and in an orderly manner. Another issue is greenhouse gas that is a major cause of rising global temperatures and these are emitted from the use of energy resources and waste from work activity in the office. If no steps are taken to reduce the emission of greenhouse gas, the problem will accelerate from bad into even more severe. Therefore, many operations aim to reduce greenhouse gas emissions.

 Table 3

 The distribution of sample calculation report of monthly emission

Item	Unit volume/month	Emission factor (Kg CO <sub>2</sub> )	Emission volume/ month
Paper	10 kg	0.735	7.35 kg CO <sub>2</sub>
Electricity	KWh	0.5813	58.1 kg CO <sub>2</sub>
Waste food	kg	2.5300	12.65 kg CO <sub>2</sub>

Greenhouse gas emissions should be calculated on a monthly basis and it varies according to the number of employees. It is important to compare the trends in greenhouse gas emissions that will provide a measure to conserve resources and energy as well as reducing the amount of waste. The trend of greenhouse gas emissions must be reported to the executives, including senior executives to make them aware and acknowledge. In addition, it is important for all employees to be communicated and informed by the managers so as to encourage the staffs to realize the importance to work together for reducing greenhouse gases.

Unnecessary travel leads to greenhouse gas emission and more fuel energy consumption and hence it should be avoided. It is important to encourage employees to participate in the organization to help reduce unnecessary travel, such as communicate by phone, video conferencing or contact via e-mail or facilitate the travel of public transportation, including trains and so on instead of private and encouraging usage of public transport. In addition, the engine should be turned off when the car is parked for a long time, tire pressure should be checked regularly and alternative fuel as biofuels, biodiesel, or ethanol should be used.

#### **Energy and Resource Utilization**

The main mission of the green office in Thailand is to improve and conserve the environment, and to optimize the use of resources to reduce pollution and waste. Most offices are accountable for the use of water resources, energy resources, and other resources. The economical use of these resources and energy will be able to cultivate appreciation and control office expenditures thereby resulting to maximize economy and benefits to the society at large. The green office in Thailand strive to implement various green housekeeping measures in daily office operations with a view to maintaining a green workplace and setting a good example for other departments. The main focus of the green office management is reducing on energy, water and paper consumption and other

resources so as to cultivate appreciation and controlled economy. The use of energy and resources must be identified and evaluated to the table to identify and assess environmental problems. The management review is an essential part of the energy and resource management. To identify and assess environmental problems and resource use, the first step is collecting data on:

- 1. Activity indicator in front of the entire office.
- 2. Responsibility assignment for each department or activity of the area.

The second step is to identify the related environmental problems due to the continuous use of energy and other resources in the office. A survey on environmental issue can be seen in the form of Table 4 and 5 on a survey on environmental issues.

In response to the aims of the Green office and Environment, the office management in Thailand has exerted great effort in promoting and encouraging staff cooperation in electricity saving. Green Office of Mahidol University organized energy saving campaign - Light out. Staff members were encouraged to save energy in unnecessary power consumption on computer use, lightening, printing, and excessive air-conditioning. Posters were designed to appeal for staff cooperation. Next is to bring awareness to all employees on the use of water resource and their duties to maintain a clean environment with little use of resources. Finally is management on paper consumption and other resources. Paper, ink, printing equipment, stationery and office equipment are resources vital to the activities of the office. Most importantly,

Input	Activity Process	Output
Paper	Office process and printing	Used paper
Ink	Printing	Ink for printer
Electricity	Printing, cooling, lightening, and computer use	Used in printing, AC, refrigeration, computer
Water	Drinking and cleaning	Waste water
Cleanser	Cleaning of toilet	Dust, debris

Table 4Survey on environmental issues

Table 5

The environmental assessment on the use of resources and energy in order to understand the significance of the issue

<b>Environmental problems</b>	Significantly low	Significantly medium	Significantly high
Direct pollution	24–48	49–72	+72
Indirect pollution	28-56	57-84	+84
Direct resource usage	12-30	37-60	+60
Indirect resource usage	13–45	46-75	+75

Source: Green Office, Mahidol University, Faculty of Environment and Resource Studies.

the use of large quantities each day of these resources must be taken care of in order to reduce wastage from such actions. Over the past few years due to the advocacy of environmental conservation, staff awareness on paper saving has been highly enhanced and staff members have developed good practices by adopting the green office initiatives as using recycled paper in office operations, printing and photocopying on both sides of paper, reusing single-side used paper for drafting, printing and receiving fax, avoiding printing or photocopying documents unless hard copy is absolutely necessary, distributing softcopies by emails, diskettes or CD-ROMs instead of print-outs, sharing office equipment such as scissors, a cutter, a stapler, and so on.

#### **Office Waste Management**

To solve the environmental problems and to be certified as a green office, green office organizations have pledged to adopt office waste management measures as: the sight of garbage bins should be made clear with a well-written note or display and it should be placed in a designated spot, all trash should be placed in a convenient area and it should be covered with a lid, the waste materials should be specified whether it is general, hazardous, recyclable or re-useable replacement equipment and kept accordingly in the office, the monthly amount of garbage should be recorded and if hazardous waste, there should be a sign to take caution and there must be a legal disposal. There should be a smear campaign about waste management. Sewage

problem in most offices is similar to waste from households. Water containing waste from washing, cleaning, cooking, and excreta that contaminate organic matter may be a pathogen that could spread into the environment. So, the wastewater should be treated before being released into the environment.

### **Indoor and Outdoor Environmental**

The office building with intense impurities and used for a prolonged duration may cause harm to the health of the office occupants infected with disease or getting sick with buildings syndrome caused by presence of bacteria, mold compounds VOCs (volatile organic compounds) and pollution in the office decor paint, carpet, wall, and so on. Thus, the office weather needs to be purified so as to be free from pollution with fresh air so that the atmosphere in the office is fresh, congenial, and healthy for the staff to work in. To maintain a pollution-free atmosphere, the following steps need to be taken care of as: routine cleaning of air conditioner to reduce the pathway of disease, periodic maintenance and renovation of construction and office building, a certified green products should be used for painting the walls or other furniture of the office, ventilation of the room along with regular cleaning with baking soda is essential to reduce odor in the room.

In order to control air pollution outside the environment, tall trees such as Pine Pradipat should be planted to help trap dust that can come into the office, complaints should be made to the contractor to control dust particles that come into the office. Along with this, needs training and communications of staffs so that they acknowledge the issues of environmental pollution.

Bioremediation technique should be used in the green office as it is a waste management technique that involves the use of organisms to remove or neutralize pollutants from a contaminated site. Finally, there should be plantation of ferns as Dieffenbachia Dracaena in order to purify the air and measures to control air pollution within the office should be clearly written along with posting of communication campaign at various points in the office as a sign to stop smoking in the office area and employees must adhere strictly to the rules or pay penalty for disobedience.

In order to be a green office, the office should be managed to provide adequate lighting in the office premises. In addition, there should be periodic checking of the office lightening equipment such as lamps, switch, tube, plug, wiring, and sockets. Dust and mites from old lamps should be cleaned from time to time so that the panels reflect light evenly. If the room is dark or there is sufficient lightening for office work, it will affect the eyes of the employees. Therefore, measures should be taken up to provide brightness in the room by improving or installing additional lights. To illuminate more in the office at work, the height of the bulb should be reduced. Walls, ceiling lamp, and other space should be cleaned. At the time of buying office lightening equipment, there should be selection that has the high efficiency, energy saving, environmentally friendly, and a certified brand.

The office should be managed to have a congenial working condition with no loud noise in the office's and nearby surrounding Noise caused by the work could be controlled by using sound proof. Noise within the office such as printer can be managed by maintaining the printer regularly or purchase a printer that is quiet or noiseless. In the case of noise produced by a construction site office, there should be complaints to the contractor to assist in the control of noise into the office or request them to work at night. In order to have a green office, the office environment at work should be convenient, spacious, clean and proper, such as increasing green space and controlling infected animals as birds, mice, cockroaches, etc. This will help to make the work area clean and free from infection for having a clean, congenial atmosphere, and comfortable work place.

#### **Green Procurement**

Green Purchasing means purchasing or hiring products or services having regard to the appropriate quality, price, delivery of the product or service as scheduled to reduce environmental impact. Environment friendly products mean products that have less harmful impact to the environment when compared to other products. From the environmental label products, selection should be environmentally friendly products available in the market, which provide environmental information of the product to the consumers. Thailand has used the word "Green Label" instead of "environmental label". Green label or Eco-label is a label that shows the product quality having less environmental impact as compared to other products that do not have this label (http:// www.tei.or.th/greenlabel/about.html).

To be a green office, it is important to purchase office equipment such as recyclable laser printer toner cartridges and box files made of recycled paper, photocopiers, and printers with energy efficiency label. Unnecessary packaging is discouraged in support of environmental conservation. Responsible person should check whether the product is environmentally friendly (Green Label Thailand, 2017).

The following are some examples of product labels that are environmentally friendly as shown in Figure 4.



Figure 4. Examples of product labels that are environmentally friendly

#### Continual Improvement through Environmental Projects

As a mechanism to resolve problems and improve environmental effectiveness, efficiency and sustainability, the office is necessary to prepare environmental projects to indicate attention and raise awareness on environmental issues that occurs in an office. A good project can solve the problems of the office or agency. For this purpose, details of ongoing projects should have practical and consistent relationship with the master plan of the office. It should maintain correct and true information that has been carefully analyzed along with the support from the management side. In particular, the necessary resources to be maintained or recorded are as follows:

- Period in the course such the start and end dates.
- Accessibility.
- The results should be sustainable.
- The project format should identify the problems in the area or in the office, the cause or causes of the problem, the purpose of the project, the target, scope of activities, areas, and importance.
- The benefits expected to be derived from the project.
- How to proceed the project carefully.
- Financial analysis (if applicable).
- Payback period
- Profit (Benefit– Cost Analysis).
- Plan (Gant chart or Timeline).
- Procedures

#### CONCLUSION

Green Office is a program operated by WWF Finland that aims to offer offices a simplified environmental management and certification system, with a special focus on CO<sub>2</sub> emissions. The main objective and goal of the study is to bring awareness of the growing importance of green office management standard and is thus to apply the Green Office principles in organization and offices so as to reduce the consumption of natural resources by improving offices' environmental efficiency. The study has highlighted how green office practices can be promoted in the offices and the benefits of having green office standard in the office. With this, it will help to promote green office in the work places through behavioral changes and human resources management practices in order to combat climate change through energy efficiency and renewable, reduce natural resource use, and promote sustainable lifestyles through enhanced employee awareness.

The green office certification in Thailand's target group includes office facilities in Thailand that wish to improve their environmental management. Currently, 52 offices in different organizations have been qualified as Certified Green Office in Thailand. The study of Green Office in Thailand aims to bring awareness of the office certification or standard, which provides participants with information about how to achieve energy and environmental savings, and provides their stakeholders with information about which offices can be considered "green," that is, good partners to co-operate with or attractive employers to work for. Arguments for offices to adopt the system include environmental benefits, cost savings, increased staff motivation and enhanced reputation of the certified organizations. In order to obtain a certified green office standard in Thailand, the following practices should be adopted as: office staff and management need behavioral changes, should be responsible for the Green Office management, set up an environmental program through environmental communication and training. Finally, it can be concluded that green office management standardization will help to promote sustainable environmental practices such as recycle waste, reduce CO<sub>2</sub> emissions, by making an increasing environmental awareness, communication, behavioral practices, and commitment to the employees.

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