SUSTAINABLE CONSUMPTION & PRODUCTION IN MALAYSIA

A BASELINE STUDY ON GOVERNMENT POLICIES, INSTITUTIONS AND PRACTICES

EPU
ECONOMIC PLANNING UNIT
PRIME MINISTER'S DEPARTMENT, MALAYSIA

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A BASELINE STUDY OF GOVERNMENT POLICIES, INSTITUTIONS AND PRACTICES

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Preface

Malaysia is undergoing a process of fundamental reform to transform the nation into a high-income and developed nation that is inclusive and sustainable by 2020. Based on this agenda, the Government has embarked on a number of national transformation programmes such as the Government Transformation Programme (GTP), Economic Transformation Programme (ETP), New Economic Model (NEM) and the 10th Malaysian Plan (10MP). These and other national policies have recognized the importance of promoting sustainable development. To achieve this, the Malaysian Government is strengthening its policy and institutional frameworks to bring about a switch to Sustainable Consumption and Production (SCP) patterns.

SCP is a comprehensive cross-cutting concept. SCP aims to do 'more and better with less' by reducing resource use, degradation and pollution along the life cycle of goods and services, to enhance the quality of life for all. The concept of SCP is not to focus only on any one of the three aspects of economic growth, environmental protection or social inclusiveness but to be holistic and combine all three aspects into one integrated concept. Economic progress is set in an inseparable relation with environmental protection and social inclusion in the form of a triple bottom line, as stated in the goals set in Malaysia's NEM to improve the standard of living and achieve a better quality of life for its people.

The Study constitutes the first step in developing a National SCP programme to strengthen the country's policy and institutional framework on SCP, and will lead to the formulation of a comprehensive National SCP Policy Framework. In the mid-term, SCP will be incorporated into the 11th Malaysia Plan (11MP) whilst for the long-term, it is targeted that Malaysia will have a SCP Policy Blueprint to guide the nation along the principles of SCP.

The report at hand shows that Malaysia, in terms of existing policies, has a good starting point to achieve what is considered the dictates of today, namely to change consumers and industry behaviour to more sustainable patterns. Numerous national policies have addressed sustainable issues. However, there are also gaps, inconsistencies, and challenges, such as the need for better coordination between stakeholders, the need to harmonize policy objectives and to synergize the various instruments, initiatives and programmes.

Because of the short timeframe for the study, we recognise that there could be inadvertent omissions. However, we are of the view that the information provided in the report is sufficiently comprehensive to give an overview on the present status of the different spheres and objectives of policies as well as the interactions of the main stakeholders on SCP in Malaysia.

The report is structured in seven (7) chapters. **Chapter 1** briefly explains the methodology, scope and limitations of the Study and presents a framework of SCP-related objective and instruments assisting SCP implementation. **Chapter 2** covers the mapping of the existing government institutional

framework at the national level and existing platforms for the promotion of SCP. **Chapter 3** deals with the mapping of existing policies in Malaysia having elements of SCP-related objectives. **Chapter 4** goes into further detail on actual instruments proposed to implement the policy objectives at national/ federal level. **Chapter 5** examines the existing monitoring mechanisms and impact of the national policies. **Chapter 6** provides key findings of the Study, and **Chapter 7** concludes.

We are grateful to the European Union for co-financing the Study. We want to express our thanks to numerous government ministries and agencies who willingly shared documents, information and opinions. Our special gratitude goes to the SCP core-team members for their invaluable feedback and comments. We also wish to thank Dato' Cheah Kong Wai and the editorial team, in particular Mr. Khoh Joe Bee for their line-editing of the report.

We hope that this report will serve as the basis for further consultations to shaping a comprehensive SCP policy framework for Malaysia. Proactive action in implementing SCP is recommended at all levels of stakeholders as the transformation towards SCP requires their concerted effort, commitment and participation.

Khairul Naim Adham
Karin Merle
Gerhard Weish

EXECUTIVE SUMMARY

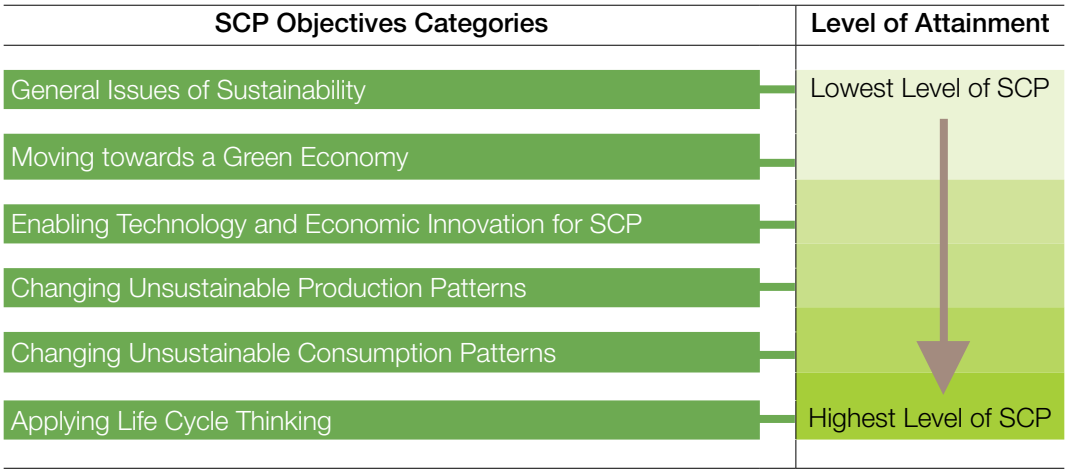
Malaysia's vision is to become a high income fully developed nation which is both inclusive and sustainable by 2020, to enhance the standard of living, quality of life and well-being of its people. In line with the aspiration to be a global leader in the green revolution, Malaysia has been advocating the sustainable consumption and production (SCP) concept for sustainable development and economic growth since the Earth Summit in 1992 and acknowledges that the current resource-intensive practices of production and consumption patterns will impact negatively on the quality of life of the present and future generations, if left unabated.

In this context, the EU-Malaysia SCP Policy Support Programme was commissioned to produce a baseline report, mapping out existing policies and institutional set-ups which contribute towards SCP implementation in Malaysia. The report focuses mainly on national/federal level policies and organizations which are responsible for these policies. The study is based on a comprehensive desk study of 22 documents comprising 4 national development policies and plans, 13 sectoral policies of line ministries and 5 regulations (**Annex 1**), as well as 20 guided expert interviews involving 41 ministries and agencies (**Annex 3**).

Based on the study, six categories of SCP objectives were developed and a framework was established indicating the contribution of each of the SCP objective to the level of attainment of SCP as below:

Framework for SCP objectives and levels of attainment of SCP

(Chapter 1 - Figure 2)



In addition, six types of SCP-related instruments and their tools to support and facilitate SCP implementation were also identified. The tools under the six types of instruments for SCP implementation are listed below:

SCP-related instruments supporting SCP implementation

(Chapter 1 - Figure 8)

SCP Instruments	Tools Supporting SCP
Regulatory	Laws, Regulations, Orders, Circulars, Guidelines
Economics	Loans, Taxes, Cess, Incentives, Subsidies, Grants, Prices, Awards
Educational	Public education activities, Training, R&D, Awareness campaigns, Communications
Informational	Information resources, Labelling, Studies, Auditing, Reporting
Hybrid	Action plans, Pilot projects, Programmes, Strategies, Platforms, Dialogues
Partnering	Networks, Partnerships, Agreements, Multi-stakeholder forum

The analysis on institutions and input from stakeholders reveal a strong government commitment as reflected in the institutional set-up and participation of relevant ministries and agencies in support of SCP implementation. An institutional matrix of key government stakeholders/ agencies championing each of the SCP-related policies and their supporting agencies was developed as below:

Institutional matrix on key government stakeholders and supporting agencies of SCP-related policies

(Chapter 2 - Table 1)

Documents	Champion	EPU	MOF	PEMANDU	MNRE	KeTTHA	MITI	KPKT	KKR	MOA	MPIC
10th Malaysia Plan	EPU	*	*	*	*	*	*	*	*	*	*
Government Transformation Program	PEMANDU	*	*	*		*		*	*		
Economic Transformation Program	PEMANDU	*	*	*	*	*	*	*	*	*	*
New Economic Model	PEMANDU	*	*	*	*	*	*	*	*	*	*
National Physical Plan 2	KPKT	*	*	*	*	*	*	*	*	*	*
National Policy on the Environment	MNRE	*	*		*	*	*	*	*	*	*
National Green Technology Policy	KeTTHA	*	*	*	*	*	*	*	*	*	*
Renewable Energy Policy & Action Plan	KeTTHA	*	*	*	*	*	*	*	*	*	*
National Policy on Climate Change	MNRE	*	*	*	*	*	*	*	*	*	*
National Policy on Biological Diversity	MNRE	*	*		*		*	*		*	*
National Mineral Policy 2	MNRE	*	*		*		*	*			
SME Master Plan	SME	*	*	*	*	*	*	*	*	*	*
Industrial Master Plan 3	MITI	*	*		*		*		*	*	*
Construction Industry Master Plan	KKR	*	*				*	*	*		*
National Commodity Policy	MPIC	*	*	*	*	*	*	*	*	*	*
National Timber Industry Policy	MPIC	*	*	*	*	*	*	*	*	*	*
National Agrofood Policy	MOA	*	*	*	*	*	*	*	*	*	*

* Performance Management and Delivery Unit (PEMANDU) is not considered a key government stakeholder as its main roles and objectives cover various areas (not only related to SCP) to oversee the overall implementation and assess progress of the ETP and GTP.

Apart from government stakeholders identified above, private sector businesses and non-governmental organizations have a role to play in contributing towards SCP implementation. However, their potential contributions have not been fully optimized because of lack of proper engagement by government, absence of clear and explicit roles on how they can contribute towards SCP implementation and the lack of physical and financial support for their participation.

The study shows a strong presence of SCP-related objectives in the national level policies, plans and regulations.

From the exercise of reviewing the 22 policy documents and regulations, together with the 20 guided interview sessions to identify policy statements relating to SCP-related objectives in a policy, and placing them under the respective SCP-related categories irrespective of frequency of occurrences, a matrix (**Table 6**) was formulated to show in a chessboard alpha-numeric form the relationship between the categories of SCP objectives and the SCP-related policies and regulations. **Annex 4** shows the details of the alpha-numeric table.

Matrix of SCP-related objectives and policies and regulations

(Chapter 4 - Table 6)

	Policies/ Legislations	General issues of sustainability	Moving towards a green economy	Enabling technology and economic innovation for SCP	Changing unsustainable production patterns	Changing unsustainable consumption	Applying life-cycle thinking
		(A)	(B)	(C)	(D)	(E)	(F)
1	10MP	A01	B01	C01	D01	E01	F01
2	GTP	A02	B02	C02	-	E02	F02
3	ETP	A03	B03	C03	D03	-	-
4	NEM	A04	B04	C04	D04	E04	F04
5	NPP2	A05	B05	C05	D05	E05	F05
6	NGTP	A06	B06	C06	D06	E06	F06
7	NPCC	A07	B07	C07	D07	E07	-
8	NREPAP	A08	B08	C08	D08	E08	-
9	NPE	A09	B09	C09	D09	E09	-
10	NPBD	A10	B10	C10	-	E10	-
11	NMP2	A11	B11	C11	D11	-	-
12	NAFP	A12	B12	C12	D12	E12	-
13	NATIP	A13	B13	C13	D13	E13	-
14	NCP	A14	B14	C14	D14	-	F14
15	IMP3	A15	B15	C15	D15	E15	F15
16	CIMP	A16	-	C16	-	-	-
17	SMEMP	A17	B17	C17	D17	-	F17
18	EQA	A18	-	C18	D18	-	F18
19	TCPA	A19	B19	-	D19	-	F19
20	EQA(SW)	-	-	-	D20	-	-
21	EQA(LCMG)	-	-	-	-	-	-
22	REA	-	-	-	-	E22	F22

The analysis on policy objective statements in the policy documents shows that the **10MP**, **NEM**, **NPP2**, **NGTP** and **IMP3** have policy statements in all the 6 categories of SCP objectives including the highest level of SCP attainment "applying life cycle thinking" (Category F). Of the 22 policies and regulatory documents, only 11 documents have policy statements listed under the "applying life cycle thinking".

The analysis on existing regulations gives a slightly different scenario. Out of the 5 regulations, only 3 have the highest level of SCP attainment "applying life cycle thinking". Only 2 regulations (**EQA** and **TCPA**) have policy statements which fall under various categories of SCP objectives. The other regulations have policy statements which fall into only 1 or 2 categories of SCP objectives.

The Study shows that Malaysia has put in place a number of policy instruments some of which have incorporated life cycle thinking and are backed by fiscal and economic incentives. The government has recognized the significance of low carbon economy in line with SCP. The private sector has demonstrated its ability to produce green products and services, and for many years have exported to the highly demanding markets in Europe, the US and Japan. Furthermore, the country has gained valuable experience in SCP implementation through related research and pilot projects/initiatives conducted by different agencies.

While educational programmes and promotional campaigns may contribute towards instilling awareness, evidence supports the fact that a high level of awareness does not necessarily lead to behavioural change. Time is the essence to effect a change in a society's lifestyle and behavioural pattern. Awareness campaigns can be more effective and impactful if they are supported by the corporate sector and backed by effective government support through economic incentives.

For various reasons, not many desired effects of the currently implemented SCP-related policies have been realised. In some cases, it is because the policies are quite new and therefore would require more time before the desired results can be seen. In other cases, targets, indicators, timeframes, milestones and implementing tools such as action plan or strategy have not been clearly identified or defined for purposes of monitoring, data gathering and analysis resulting in difficulties in the evaluation and reporting on the implementation of the policies.

Ineffective enforcement is identified as one of the stumbling blocks in the implementation of regulations that supports SCP policy in Malaysia. The lack of financial, institutional, as well as technical capacity in government ministries and agencies compound to the weakness in the evaluation and reporting of the results of policy implementation.

Like many other countries worldwide, the government of Malaysia has multiple priorities. To address the different priorities, different and sometimes conflicting objectives are formulated. Because of the conflicting objectives, it is obvious that some will support while others will hamper SCP behaviour. The Study reveals that some of the requirements set by certain policies are not business friendly and therefore frustrates or even retards SCP implementation or innovation. Bureaucratic red tape can slow down business and discourage the private sector to buy into SCP practices. Loopholes or outdated policy instruments too can hinder the adoption of new green business opportunities. The Study also shows that there is a lack of trade and investment policies such as Government Green Procurement, mandatory ratings and domestic standards that can support SCP.

Despite various awareness campaigns and activities to educate the public on SCP-related elements, the mind-set of consumers and

businesses are still not geared towards supporting the objectives of SCP. A change in the value system and related behaviour takes a long time to materialise. Because of this the industry "follows the market" instead of driving it.

Malaysia's institutional framework for SCP implementation is not without shortcomings. One of the main stumbling blocks faced by the various ministries and agencies is the lack of clear cut mandate, responsibilities and monitoring in the SCP implementation. Another stumbling block is the lack of coordination between ministries and agencies at the Federal level and between ministries/agencies and State agencies at the Federal/State level. At the Federal level, the present working groups at inter-ministerial, ministerial and sub-national levels are scattered initiatives. In the case of the Federal and State coordination, the independent and autonomous position of local government sometimes is the source of problems encountered. Successful implementation of SCP policy also depends on the support from non-governmental organizations and private institutions such as the financial sector, the industry and civil society. Unfortunately, although they are important stakeholders, they are seldom engaged in policy formulation.

Presently, the policy monitoring and implementation mechanisms are carried out by the respective implementing agencies and there is no central or common platform to monitor SCP policy implementation. As **EPU** is a central agency with coordinating function, many respondents are of the view that strengthening **EPU's** role by making it the national SCP focal point within Malaysia's institutional framework of SCP can strengthen the monitoring and implementation process. A large number of government institutions and other stakeholders have yet to optimize their potential to support SCP implementation although they could even become key drivers in their own field. In addition, the multi-stakeholder platforms in the form of national councils could be used as an effective way of putting into action the road map for SCP implementation. These councils could also be used as multipliers to mainstream SCP further and to enhance collaboration among SCP stakeholders. In this respect, clustering the stakeholders based on priority sectors will allow key stakeholders to identify other stakeholders to facilitate the adoption of co-responsibility in advocating SCP.

Further follow-up actions needed for the following matters are:

a) To consider the effectiveness of the voluntary SCP policy instruments if they were made mandatory;

b) To sequence and phase the implementation of policy instruments;

c) To identify the targets and suitable indicators that could be used to analyse Malaysia's SCP development path and national SCP account;

d) To identify other governmental and non-governmental stakeholders' functions and their connections with SCP in order to include them and harness their strengths to further promote SCP;

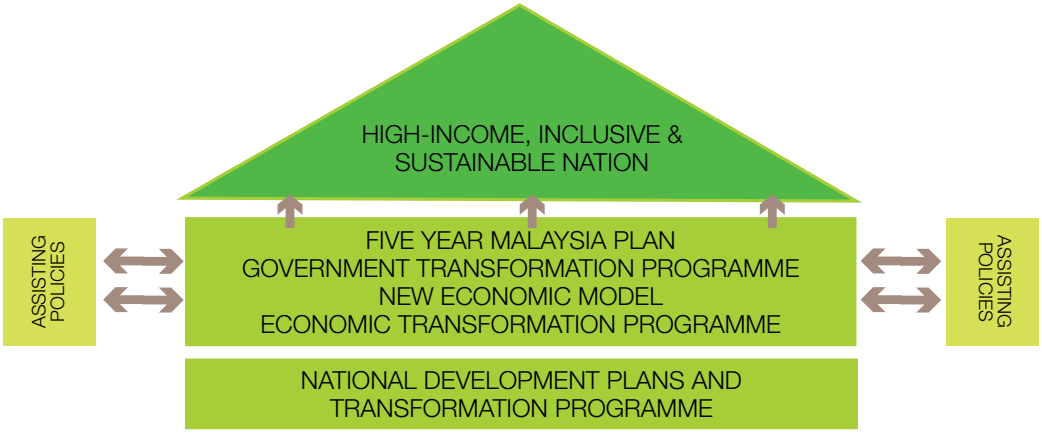
e) To identify factors for low private sector response to SCP; and

f) To increase public awareness and effect a change of behaviour for SCP.

Through improved coordination and capitalising on the vast experiences gained, synergies between initiatives undertaken under the national development programmes and those carried out under the umbrella of the sector policies, a favourable environment for SCP will be created in Malaysia as shown in the "SCP House" developed by the Study team below:

"SCP House"
Synergy of national development programme and assisting policies

(Chapter 6 - Figure 17)



The way people live today has significantly impacted the environment. SCP is one of the solutions to support sustainable development. For this reason, Malaysia needs to address the issue on how to create a conducive policy framework to enable the up-scaling of pilot projects to a national scale. Indeed, evidence has shown that SCP can reduce environmental degradation and enhance the standard of living, quality of life and human well-being. Hence, proactive action in implementing SCP is recommended at all levels. Change must occur in peoples' behaviour, and full commitment and systematic planning and support must be forthcoming from all stakeholders. With such positive factors, it is not impossible for Malaysia to become a lead player in SCP in the near future.

In conclusion, various efforts that have been implemented clearly indicate that the Malaysian Government is committed to ensuring environmental sustainability in implementing its national development plans, in line with SCP goals. Although many national policies have been formulated, and many initiatives which are related to the SCP have been implemented, unfortunately a holistic action plan on SCP in Malaysia has yet to be developed. Certainly, the implementation of SCP will need to address various issues and challenges such as lack of financial, institutional and technical capacity; lack of legislation and enforcement; outdated policy instruments; lack of trade and investment policies; low industry engagement; and bureaucratic red tape. In this regard, the formulation of policies, strategies and action plans in addressing these issues and challenges are vital. The Study constitutes the first step in developing a National SCP programme to strengthen the country's policies and institutional framework on SCP. This report is important as a source of reference for EU-Malaysia SCP Policy Support Programme in designing its overall work plan and provide an understanding to various stakeholders on the present state of the existing SCP-related policy framework and its instruments in Malaysia.

Chapter 1

INTRODUCTION

Chapter 1 based on its terms of references, provides an overview on the Study to map out the existing policies and institutional set-up related to sustainable consumption and production (SCP). It also explains the methodology, scope and limitations of the baseline study. A framework of six-categories of SCP-related objective and their level of attainment of SCP was established. In addition, six types of policy instruments assisting SCP implementation have also been identified.

1.1 Background

The unsustainable consumption pattern and the production methods employed to meet the demands in recent decades have seriously impacted on environmental sustainability. The problem becomes even more crucial because of rapid economic growth and population increase, resulting in the over exploitation of natural resources, generation of waste and environmental pollution. With environmental degradation, peoples' quality of life and well-being have been adversely affected.

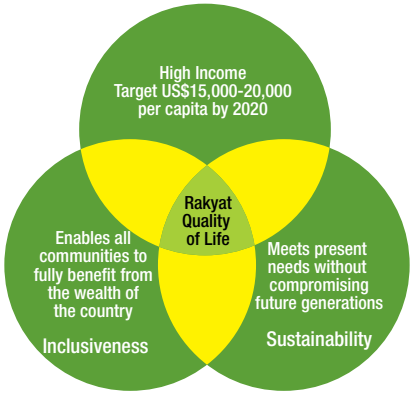
Malaysia has achieved impressive developmental progress over the years, but it is not without a significant negative impact on the environment which needs to be addressed. For instance, the number of clean rivers today has been drastically reduced over the years due to pollution from improper discharge by sewerage treatment plants, agro-based factories, livestock farming, land clearing activities and domestic solid waste disposal. In fact, according to Malaysia's Environmental Quality Report 2010 published by the Department of Environment (**DOE**), the number of polluted rivers increased from 54 in 2009 to 74 in 2010. Malaysia's Second National Communication (NC2) identifies that Malaysia's main contributors to green gas house (GHG) emissions are from energy (66%); land use, land use change and forestry (LULUCF) (13%); waste (12%); agriculture (3%) and industrial processes (6%). In terms of CO_2-equivalent emissions, the energy sector alone contributed to a total of 169,829 $GgCO_2$ in the year 2006. Therefore, there are numerous environmental issues and concerns that Malaysia needs to address.

Although it is commendable that Malaysia in 2011 was ranked 25th in the world in terms of Environmental Performance Index (EPI), there is still a need to step up efforts to reduce environmental degradation. As a developing nation, any measure introduced for development has to take into account environmental protection and the need for socio-economic progress to enhance its people's living standard, well-being and quality of life. Hence, it is imperative to ensure that Malaysia's economic growth and development is harmonized with environmental sustainability as Malaysia's social well-being and economy depends on the sustainability of its natural resources and environmental services. In this regard, policies need to be mainstreamed to impress all parties involved in SCP practices on the importance of balancing the country's future development.

1.2 Sustainable consumption and production

Sustainable Consumption and Production (SCP) is a comprehensive cross-cutting concept. SCP aims to do "more and better with less" by reducing resource use, degradation and pollution along the life cycle of goods and services, to enhance the quality of life and well-being for all. The main concept of SCP is not to focus only on any one of the three aspects of economic growth, environmental protection or social inclusiveness but to be holistic and combine all the three aspects into one integrated concept. Economic progress is set in an inseparable relation with environmental protection and social inclusion in the form of a "triple bottom line", as stated in the goals set in Malaysia's New Economic Model (**NEM**) to achieve a better quality of life for its people (rakyat) as in **Figure 1**:

Figure 1: Goals of Malaysia's NEM



Source: NEAC (2010). New Economic Model, Part 1

Unsustainable patterns of consumption and production have been identified as a major cause of environmental degradation way back in the 1992 Rio Earth Summit. To deal with the worrying scenario, Principle 8 of the Rio Declaration on Environment and Development declared that there was a need to reduce and eliminate unsustainable patterns of consumption and production, and to promote appropriate demographic policies to achieve sustainable development for a higher quality of life globally.

The Oslo Ministerial Roundtable Conference on Sustainable Consumption and Production (Oslo Symposium) in 1994 defined SCP as *"the use of goods and services that respond to basic needs and bring a better quality of life, while minimizing the use of natural resources, toxic materials and emissions of waste and pollutants over the life cycle, so as not to jeopardize the needs of future generations"*. From the business perspective, the World Business Council for Sustainable Development defined SCP as *"efforts by various stakeholders in achieving environmental quality through efficient utilisation of natural resources, minimization of wastes, and optimization of products and services"*. In simple terms, SCP is a holistic approach that encompasses the triple bottom line of sustainable development, focusing on increasing efficiency and preventing unnecessary wastage of resources.

One of the main goals of SCP is to promote consumption and production patterns that reduce environmental stress whilst meeting the basic human need. The concept of SCP is further elaborated in **Chapter 4** of the Local Agenda 21 which states that achieving sustainable development will require both efficiency in the production process as well as changes in consumption patterns. Local Agenda 21, among others, encourages the use of alternative energy sources such as renewable energy; reducing waste through reduce, reuse and recycle practices; providing environmentally related product information such as green labelling; raising consumers' awareness through education and public awareness programmes; and using "economic instrument" such as government procurement to encourage development and diffusion of green products and services.

Ten years after the Rio Earth Summit, the role of SCP was further reiterated at the World Summit on Sustainable Development (WSSD) 2002 in Johannesburg and was articulated in Chapter III of the Johannesburg Plan of Implementation (JPOI). WSSD has agreed that fundamental changes in

the way societies produce and consume are indispensable for achieving global sustainable development and thus governments should play an important role to drive the adoption of SCP practices by consumers and producers.

In the Rio +20 Conference 2012, many critics were disappointed with the outcome of the conference where agreements reached were either weak, vague or lack commitment by developed nations. Earlier decisions on the implementation of proposals regarding protecting the world's natural resources from climate change and globalization have been differed or put-off. Given the global economic slowdown, worsening debt woes in Europe and continuing unrest in the Middle East, it was reaffirmed that governments alone cannot solve national problems faced such as climate change, persistent poverty and chronic energy shortages. Businesses, individuals and civil societies need to play their roles in supporting sustainable development.

Malaysia has been a strong supporter of sustainable development. The country played a key role in the original Rio meeting in 1992, particularly in outlining the accountability differential for developed and developing countries through the principle "common-but-differentiated responsibility". Since then, Malaysia has made extensive efforts and commitments in the implementation of SCP-related policies and is considered as one of the four most progressive economies in sustainable development in South East Asia.

Malaysia has committed to voluntarily reduce its CO_2 emissions intensity of GDP up to 40% of the 2005 level by 2020, and that is conditional upon financial and technological assistance from developed countries. In addition, Malaysia is supporting numerous global environmental protection efforts by signing and ratifying multilateral environmental agreements. Besides the Earth Summit and United Nation Framework Convention on Climate Change (UNFCCC), to name a few, Malaysian has been a forefront stakeholder for several regional and international environment cooperation. The commitment and existence of various policies in advocating SCP provide a favourable platform to mainstream SCP in Malaysia.

1.3 Policy reforms towards sustainable development

Various environmental stewardship efforts have been introduced and implemented to avoid serious environmental degradation in Malaysia. In fact, the importance of environmental protection in Malaysia's economic development was recognised since 1976 when reference was made on the issue of environmental protection in the country's five-year development plans. Subsequently, the efficient management of the environment has been given special attention to ensure a more balanced development during the Sixth Malaysia Plan (6MP; 1991-1995). Under the Seventh Malaysia Plan (7MP; 1996-2000), the economic, social and environmental aspects have been taken into account in the country's development plan to meet the objectives of economic growth and environmental conservation.

The Eighth Malaysia Plan (8MP: 2001-2005) was focused on achieving sustainable growth by promoting the use of cleaner technologies and overall environmental management practices. The Ninth Malaysia Plan (9MP; 2006-2010) further emphasized on the optimal balance between development and the environment through the adoption of green technology. The **9MP** placed greater focus on pollution prevention and intensifying environmental protection efforts. The establishment of the Ministry of Energy, Green Technology and Water (**KeTTHA**); the launch of the National Green Technology Policy (**NGTP**); and the launch of the National Policy on Climate Change (**NPCC**) reflect the Malaysian government's commitment to move towards a low carbon economy.

Malaysia is currently undergoing a massive transformation programme as outlined in the Tenth Malaysia Plan (10MP; 2011-2015), based on the four pillars of national transformation namely 1Malaysia; the **NEM**; Economic Transformation Programme (**ETP**); and the Government Transformation Programme (**GTP**). The transformation programme aims at turning Malaysia into a high-income developed nation that is both inclusive and sustainable by the year 2020.

The green "Gross Domestic Product (GDP)" concept was introduced under the **NEM** to ensure proper consideration on the impact of growth on the environment and appropriate measures to address environmental concerns. In order to achieve environmental sustainability, **NEM** proposes a number of actions such as promoting energy efficiency and green growth; favouring sustainable agriculture; and striving for energy resource sustainability.

1.4 SCP policy support for Malaysia

SCP Policy Support Malaysia is a project funded by the European Union's Programme as part of a wider undertaking in Asian economies. This project provides policy support to the Malaysian government to ensure coordinated and effective SCP actions in Malaysia; to assist the Malaysian government to establish a SCP framework; to drive and encourage consumers and producers to use appropriate SCP techniques; and to support the Malaysian government to strengthen the country's policies and institutional framework regarding SCP.

1.5 Purpose of baseline study

The purpose of this baseline study is to analyze and map the status of the existing SCP-related policy framework and its instruments in Malaysia.

The cataloguing of on-going activities, existing policies and plans related to or linked with SCP in Malaysia constitutes the first step of developing a National SCP programme towards strengthening of the institutional SCP framework.

This study is to identify and highlight the existing SCP-related objectives in the national plans, policies and regulations; identify the institutional set-ups responsible for the implementation of the policies, plans and regulations; and to identify policy instruments to implement and enforce the policies, plans and regulations.

This study is also to evaluate actual achievements against planned results and impacts; to examine the current system, indicators and instruments adopted to monitor SCP-related policy implementation; to identify the strengths, weaknesses, opportunities, and threats (SWOT); to identify specific needs for capacity building measures; and to obtain feedback to mainstream SCP implementation in Malaysia.

1.6 Scope and terminology

Out of the initial 49 documents presented, the study narrowed down its scope to 17 national/ federal policies and plans, and 5 regulations which are considered most related to SCP in Malaysia. The term SCP in this context refers to, as per definition adopted by the Oslo Symposium in January 1994, *"the use of goods and services that respond to basic needs and bring a better quality of life, while minimizing the use of natural resources, toxic materials and emissions of waste and pollutants over the life cycle"*. SCP-related policies refer to policies that decouple economic growth and environmental degradation. More specifically, SCP policies are those which enable a change of behaviour of the key stakeholders, consumers and producers, to apply more sustainable consumption and production practices in order to achieve the effects of sustainability.

1.7 Methodology and approach

The mapping exercise of the Study covers policy strategies, policy instruments, and policy outcomes i.e policy cycle instrumentation. For this purpose, a comprehensive desk study of the national level policy documents were reviewed and further secondary data such as study and research reports, articles, books, annual reports and websites were assessed. Twenty guided interview sessions involving more than 100 people and experts in their fields from 41 ministries and agencies were also held (**Annex 3**). Interview sessions were conducted using prepared guidelines attached in **Annex 2**.

The Study acknowledges that governments worldwide often have multiple priorities and a variety of objectives to be achieved concurrently. The different priorities can and most likely will result in a complex and sometimes conflicting set of objectives.

While policies are being quoted whenever appropriate, the Study team abstained from quoting from the interviews of respondents to assure their anonymity.

1.8 SCP-related objectives

For the purpose of operationalising the SCP definition, the results of the desk study and the interviews, were used to develop six categories of SCP objectives and a framework was established indicating the contribution of each of the SCP objective to the level of attainment of SCP as in **Figure 2**.

Figure 2: Framework for SCP-related objectives and levels of attainment of SCP

According to the framework, the lowest level of attainment of SCP are policy statements which refer to general issues on sustainability whilst the highest level of attainment of SCP are policy statements that explicitly mention the application of life-cycle thinking.

1.8.1 General issues of sustainability

There is no "one size fits all" sustainability policy. The Brundtland Commission, perhaps the most commonly quoted example, defined sustainable development as "... *development that meets the needs of the present without compromising the ability of future generations to meet their own needs"*.

Under the SCP-related objectives, key areas addressed are usually general statement on the environmental impact, supply chain and market place, community investment and social impact, and employment practices. These general policy statements are then assessed on the extent to which they fulfil more generic concepts such as commitment to economic, environment and social inclusiveness; green growth; and improving the quality of life without increasing environmental degradation, or without compromising the resource needs of future generations, to determine whether the policy statement identified is in the "general issues on sustainability" category or is to be placed in a higher category of SCP-related objective.

1.8.2 Moving towards a green economy

According to UNEP, a green economy is one that *"results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities. In its simplest expression, a green economy can be thought of as one which is low carbon, resource efficient and socially inclusive."* Green economy is an *"economy or economic development model based on sustainable development and knowledge of ecological economics that result in improved human well-being and social equity while significantly reducing environmental risks and ecological scarcities"*. To minimise the environmental footprint of economic action, requires a change or modification to products, processes and services that will reduce environmental impact or improve natural resource use.

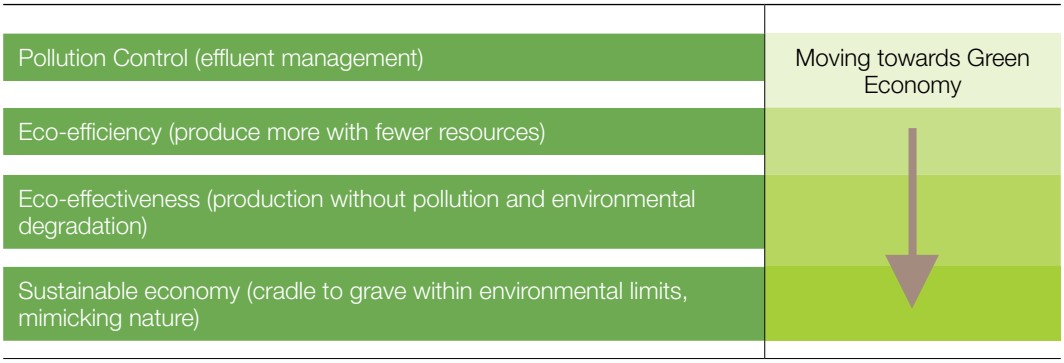
OECD promotes "green growth" by fostering growth and development *"while ensuring that natural assets continue to provide the resources and environmental services on which our wellbeing relies"*. UNESCAP identifies four pillars for the transition to greener growth, namely: eco-tax reform, sustainable infrastructure, the greening of businesses, and sustainable consumption.

To determine SCP-related objective of "moving towards green economy", policy statements are assessed based on the extent to which they reflect resource efficiency and also the extent to which they fulfil the conditions stipulated under the different stages of green economy development i.e. from pollution control, to eco efficiency, to eco-effectiveness and to sustainable economy as shown in **Figure 3**. In general, "green economy" is clustered into six groups namely renewable energies, green building, clean transportation, water management, waste management and sustainable land management. Although Malaysia's key priorities for green economy coincide with the six clusters of grouping, but due to local conditions, two additional groupings namely sustainable economy and sustainable management in the industrial and service sectors have been added, resulting in the adoption of eight clusters of grouping in the Malaysian context[1]. The

[1] The 10MP names 12 New Key Economic Areas (NKEAs), selected on the basis of their contribution to high income, sustainability and inclusiveness which are (1) Oil and gas; (2) Palm oil and related products; (3) Financial services; (4) Wholesale and retail; (5) Tourism; (6) Information and communications technology; (7) Education; (8) Electrical and electronics; (9) Business services; (10) Private healthcare; (11) Agriculture; and (12) Greater Kuala Lumpur (10MP, p. 125); while NGTP aims at the incorporation of "products, processes and systems used to conserve the natural environment and resources, which minimizes and reduces the negative impact of human activities" particularly in the energy, buildings, water and waste, and transportation sector" (NGTP, p.8).

cluster groupings and details under each of the cluster grouping are shown in the **Figure 4**. Policy statements placed under SCP-related objective of "moving towards green economy" are those which reflect energy and resource efficiency under the cluster groups.

Figure 3: The way towards a green economy



Source: Adapted from Ekins; UNESCAP (2008)

Figure 4: Cluster groups for green economy in Malaysia

Cluster Groups	Components
Sustainable Economy	Eco-efficiency, eco-effectiveness (energy and resource efficiency), sustainable economy
Renewable Energies	Solar, wind, geothermal, wave, bio-Gas and fuel cells
Green Buildings	Residential and commercial building, energy and water efficiency, green materials, green design
Clean transportation	Bio fuels and other fuels of the future, electric and hybrid cars, public transportation, ride sharing
Water management	Water recycling, minimization of water use, grey/rainwater systems, low-water landscaping, water purification, storm water planning
Waste Management	Reuse-reduce-recycle-rethink, minimization of environmental pollutants and municipal waste, toxic and hazardous waste, sustainable products, sustainable packaging
Land Management	Organic agriculture, habitat/biodiversity conservation/restoration, forestry/parks, reforestation/aforestation, soil stabilization
Sustainable management in industries and service sectors	Sustainable tourism, palm oil related products, financial services, wholesale and retail, information and communication technology, education, electrical and electronics, business services, private healthcare, and topics related to "sustainable cities" [2]

[2] Extract of all 10 sectors under New Key Economic Areas (NKEAs) (10MP, p.122) except the primary sector (oil/gas, agriculture, palm oil) which in this Project will be only addressed through downstream industries

1.8.3 Enabling technology and economic innovation for SCP

Malaysia aims at becoming a high-income developed nation by 2020. The economic structure required for a high-income economy is based on higher value-added activities and a knowledge based society. In this context, Malaysia strives to shift towards an innovation-driven economy and knowledge-based society with particular focus on the services sector.[3] Its competitiveness will rely on the ability to increase productivity, to build knowledge, to innovate, and to undertake research for development. It is important for Malaysia to capitalise on the first mover position which it currently holds among the South East Asian countries.[4]

An adequate level of skilled human resources and technology development are keys to support innovation and awareness regarding eco-efficiency, eco-effectiveness and green/sustainable growth at a broad level of society. Therefore policy statements identified for this SCP-related objective are assessed based on the extent to which they support green technologies, promote investments in green technologies and energy efficiency or other cluster of groupings under the "green economy" which support the green industry and creation of green jobs.

1.8.4 Changing unsustainable production patterns

This SCP-related objective on "changing unsustainable production patterns" addresses the supply side of an economy as illustrated in **Figure 5**. Thus, policy statements that are placed under this SCP-related objective are those relating to improve the production process and the provision of services that contribute to reduce environmental impact. It also includes statements which address improvements in natural resource use. The statements are assessed based on the role of the actors (target groups) who are identified to make this change happen.

Figure 5: Supply side of the life cycle

Source: SWITCH-Asia Network Facility

1.8.5 Changing unsustainable consumption patterns

This SCP-related objective on "changing unsustainable consumption patterns" addresses the demand side of an economy as illustrated in **Figure 6**. Producers follow the demands of the market. This is why the demand side is particularly emphasised in the SCP nexus. Policy statements that enable changing unsustainable consumption patterns are supported if consumers (public, industry and private) are empowered to choose the products and services of their preference and influence the production through their demand for environmentally friendly and socially inclusive products and services. Sustainable consumption

[3] During the period of the IMP3, the manufacturing sector will continue to remain an important source of growth. At the same time, the services sector will assume a greater role in generating growth, broadening the economic base and contributing to exports (IMP3, p.41)

[4] Malaysia was originally selected as partner country for the EU-Malaysia SCP Policy Support Component as it is one out of four countries – Thailand, Indonesia, the Philippines and Malaysia – which is relatively far when it comes to the design and implementation of policy elements that assist SCP

Figure 6: Demand side of the life cycle

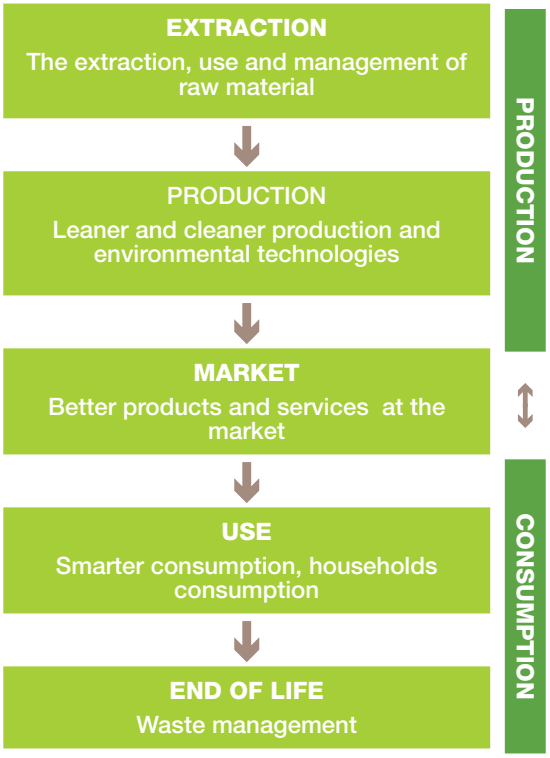
Source: SWITCH-Asia Network Facility

addresses market behaviour such as green buying and life cycle costing; consumption such as energy efficient operation and smart utilization of resources; and end-of-life stages of product life cycle such as reuse and material recovery. Policy statements for this SCP-related objective will be assessed based on the extent to which they encourage a shift in consumption patterns towards goods and services with lower energy and material intensity without compromising on the quality of life. The statements will also be assessed based on the role of the actors (target groups) who are identified to make this change happen.

1.8.6 Applying life-cycle thinking

One of the objectives of SCP is to decouple economic growth and environmental degradation along the entire life cycle of a product or service. Accordingly, the SCP-related objective of "applying life cycle thinking" covers policy statements on the optimization of natural resource use, judicious utilization of toxic materials as well as reduction in pollutant emissions and proper management of waste over the life cycle of products or services. This is a holistic approach that includes sustainable production and consumption pattern of products or services in all stages from extraction, production, market, use, to end-of-life as in **Figure 7**:

Figure 7: Entire life cycle



Source: SWITCH-Asia Network Facility

1.9 SCP-related instruments

For the implementation of SCP policy objectives, proper mechanisms need to be formulated. The mechanisms to support sustainable SCP behaviour can be either directly through incentives or, indirectly through disincentives. For this purpose, the Study grouped the mechanisms identified into six broad instruments namely regulatory, economics, educational, informational, hybrid and partnering. The study also identified the supporting tools of implementation under each of the instrument as in **Figure 8**:

Figure 8: SCP-related instruments supporting SCP implementation

SCP Instruments	Tools Supported SCP
Regulatory	Laws, Regulations, Orders, Circulars, Guidelines
Economics	Loans, Taxes, Cess, Incentives, Subsidies, Grants, Prices, Awards
Educational	Public education activities, Training, R&D, Awareness campaigns, Communications
Informational	Information resources, Labelling, Studies, Auditing Reporting
Hybrid	Action plans, Pilot projects, Programmes, Strategies, Platforms, Dialogues
Partnering	Networks, Partnerships, Agreements, Multi-stakeholder forum

1.9.1 Regulatory instrument

"Regulatory instrument" or "command and control" approaches may take many forms. The most common is regulation by legislation such as laws, regulations, decrees, circulars and guidelines. There may also exist alternative mechanisms such as self and co-regulation. The "regulatory instrument" is prescriptive in nature as it determines pollution reduction targets and defines allowable controlled technologies. Enforcement is done through regulation and can be made mandatory such as mandatory emission standards, process/equipment specifications, limits on input/output/discharges, requirements to disclose information, or audits. The "regulatory instrument" has been occasionally criticised as restricting technology when no incentives are given to the private sector to innovate. However, when the "regulatory instrument" provides for incentives, then it will support the "economic instrument". The Study focuses on the legal character of the "regulatory instrument" on mandatory aspects and guidelines endorsed officially by the government.

1.9.2 Economic instrument

"Economic instrument" or "market-based instrument" is to regulate the free play of the market in order to correct undesired market developments or to influence the market in the desired direction. The "economic instrument" effect change or influence behaviour through the impact on market signals based on consumer demand. "Economic instrument" can be designed in a variety of ways, and for a variety of applications, including:

a) Incentives for investments in innovation and improved environmental technology so that both environmental and financial benefits are generated;

b) Self-regulation

   i) Allocation of property rights and responsibilities of firms, groups or individuals in a way that they are empowered and motivated to act in a more environmentally-responsible manner.

   ii) Reduction of compliance costs by giving polluters or users of natural resources the flexibility to choose the most cost-efficient and environmentally-effective measures; and

c) Disincentives in the form of increasing prices or taxing goods and services that damage health and the environment, as well as

increasing financial returns in the case of more sustainable approaches that foster more environmentally-friendly production and consumption patterns. "Economic instrument" is a means of considering "external costs" i.e. costs to the public incurred during production, exchange or transport of various goods and services, so as to convey more accurate market signals. Those "external costs" may include natural resource depletion, environmental degradation, health impacts and social impacts.

The Study looks into the fiscal and financial incentives such as subsidies, grants, soft loans, prizes and award schemes granted to target groups to encourage R&D investments and activities, to encourage innovation, and to improve environmental management. Other aspects discussed under this category are policies aimed at internalization of external costs such as tariff reforms.

1.9.3 Educational instrument

"Educational instrument" encompasses a wide range of policy tools in the field of formal and informal education, training and advisory services, public education activities, technical training, R&D and campaigns.

1.9.4 Informational instrument

"Informational Instrument" covers any mandatory and/or voluntary reporting, audit or other information reports that are provided to the government, agreement between trade partners or consumer information such as eco-labelling or any other study or informational resources provided through websites.

1.9.5 Hybrid instrument

The term "hybrid instrument" is not precisely defined. It usually combines two or more of the above instruments in alternative forms such as action plans, pilot and demonstration projects, programmes and strategies, platforms, competence centres, and dialogues.

1.9.6 Partnering instrument

Partnering is an instrument that encompasses all forms of bilateral and multilateral agreements, networks and multi-stakeholder forums.

1.10 Limitations

The Study was conducted in a tight timeframe of 8 weeks and because of that it was not possible to analyse all relevant documents. All potential consumers and producers of an economy would also be relevant for such a Study. Therefore, apart from the 41 ministries and agencies and associations visited, there are many other stakeholders involved in SCP such as State governments, local authorities, non-governmental organizations (NGOs) and civil society as a whole that could not be consulted within the limited timeframe. **EPU** highlights the need for a study on other stakeholders involved in SCP as well as up-scaling good practices that are identified at local and state levels to the national level. This is an interesting perspective, but outside the scope of this study.

This study also finds that there are, in addition, other international and regional initiatives such as ASEAN and UNFCCC which also have SCP objectives. These are excluded from the national policy baseline study based on the premise that those initiatives which are considered relevant to SCP would be translated into national practices. For purposes of future harmonization, the Project can identify relevant activities as work packages on a need basis if time is not a constraint and budget is available.

While the Study recognises the importance and the contribution to SCP by the agricultural

and other primary sectors such as mining and forestry, the Study addresses only the downstream activities of the agricultural and primary sectors, i.e. the policies and institutional framework that aim at driving the green aspects of the primary sectors through manufacturing and/or consumer demand.

Chapter 2

MAPPING OF EXISTING GOVERNMENT INSTITUTIONAL FRAMEWORK CONTRIBUTING TO SCP

Chapter 2 covers the mapping of the existing government institutional framework at the national level which is involved in SCP. The Study finds that SCP is cross-cutting in nature, involving multiple government stakeholders. The Study identified the key institutions and their implementing agencies, and other governmental stakeholders relevant for the promotion of SCP, as well as, the existing platforms supporting SCP.

SCP is complex in nature. Institutions that support the implementation of SCP-related policies are essential in realizing the objectives of the national policies. Based on analysis of the documents as well as inputs from various interview sessions, the Study identifies a number of government stakeholders at the Ministry and Agency level whose activities are explicitly or implicitly related to SCP.

The mapping focused only on the institutional framework of Malaysia's SCP government stakeholders, whilst recognizing that there are also a number of non-governmental stakeholders involved in SCP policy implementation such as the financial sector, private sector, universities/ technical institutes and international agencies.

As SCP implementation is cross-cutting, the institutions involved need to be aware and understand the importance and significance of their respective roles and responsibilities and the need for cooperation and coordination for successful implementation of SCP.

2.1 Key Government Stakeholders

To identify the key government stakeholders involved in the existing SCP-related policies in Malaysia, the Study constructed an institutional matrix showing the SCP-related policy documents; the owners or the main players (champions) of the policy documents; and the relevant central agencies and ministries assisting in the SCP implementation. The matrix was completed by filling against the policy documents, the champions of the documents and an asterisk entry under the central agencies and ministries which are involved in the planning and implementation or are directly dealing with SCP-related tasks that significantly contribute to the implementation of SCP (**Annex 4**).

Based on this matrix, key government stakeholders in the context of the Study are the central agencies or ministries that own or champion the SCP-related policy documents; and those which have a great number of asterisks. The SCP Core Team members took part in verifying the institution matrix during the interactive sessions held on 27thJune 2012 and concluded that there are nine (9) key government stakeholders in SCP implementation, namely the Economic Planning Unit (**EPU**); Ministry of Finance (**MOF**); Ministry of Natural Resources and Environment (**MNRE**); Ministry of Energy, Green Technology and Water (**KeTTHA**); Ministry of International Trade and Industry (**MITI**); Ministry of Housing and Local Government (**KPKT**); Ministry of Works (**KKR**); Ministry of Agriculture and Agro-based Industry (**MOA**); and Ministry of Plantation Industries and Commodities (**MPIC**). This is presented in the matrix as in **Table 1**. The matrix also clearly confirms that SCP implementation in Malaysia is cross-sectoral in nature.

Table 1: Malaysia's key government stakeholders on SCP (Institutional Matrix)

Documents	Champion	EPU	MOF	PEMANDU	MNRE	KeTTHA	MITI	KPKT	KKR	MOA	MPIC
10th Malaysia Plan	EPU	*	*	*	*	*	*	*	*	*	*
Government Transformation Program	PEMANDU	*	*	*		*		*	*		
Economic Transformation Program	PEMANDU	*	*	*	*	*	*	*	*	*	*

Documents	Champion	EPU	MOF	PEMANDU	MNRE	KeTTHA	MITI	KPKT	KKR	MOA	MPIC
New Economic Model	PEMANDU	*	*	*	*	*	*	*	*	*	*
National Physical Plan 2	KPKT	*	*	*	*	*	*	*	*	*	*
National Policy on the Environment	MNRE	*	*		*	*	*	*	*	*	*
National Green Technology Policy	KeTTHA	*	*	*	*	*	*	*	*	*	*
Renewable Energy Policy & Action Plan	KeTTHA	*	*	*	*	*	*	*	*	*	*
National Policy on Climate Change	MNRE	*	*	*	*	*	*	*	*	*	*
National Policy on Biological Diversity	MNRE	*	*		*		*	*		*	*
National Mineral Policy 2	MNRE	*	*		*		*	*			
SME Master Plan	SME	*	*	*	*	*	*	*	*	*	*
Industrial Master Plan 3	MITI	*	*		*		*		*	*	*
Construction Industry Master Plan	KKR	*	*				*	*	*		*
National Commodity Policy	MPIC	*	*	*	*	*	*	*	*	*	*
National Timber Industry Policy	MPIC	*	*	*	*	*	*	*	*	*	*
National Agrofood Policy	MOA	*	*	*	*	*	*	*	*	*	*

* Performance Management and Delivery Unit (PEMANDU) is not considered a key government stakeholder as its main roles and objectives cover various areas (not only related to SCP) to oversee the overall implementation and assess progress of the ETP and GTP.

The study also noted that **EPU** which is one of the key stakeholders, has several sections under its jurisdiction that support the implementation of SCP namely the Sections on Environment and Natural Resources Economic; Regional Development; Energy; Agriculture; Value Management; Budget Development; Manufacturing Industry, Science and Technology; and Infrastructure and Utilities.

As a summary, **MOF** is responsible for formulating policies related to economy, tax, finance, budget and government procurement; **MNRE** ensures good management of natural resources and environmental conservation; **KeTTHA** contributes to enhancing the competitiveness of energy, green technology and water industry; **MITI** provides a platform for industry to increase their productivity and competitiveness; **KPKT** is responsible for establishing and implementing a comprehensive and uniform nationwide rural and urban planning framework to strengthen and promote sustainable physical, social, economic and living environment; **KKR** is providing infrastructural development and spearheading the construction industry; **MOA** is promoting higher productivity in farming; the production of crops that are safe for consumption and environmental pollution control; and **MPIC** is ensuring Malaysia's international competitiveness in the commodity-based industries and their contribution towards national development. Key government stakeholders and their SCP-related functions are enumerated in **Table 2**.

Table 2: Key stakeholders and their SCP-related functions

Ministries/Agencies	Functions related to SCP
Economic Planning Unit (EPU)	• Planning, formulating and reviewing policies and strategies related to socioeconomic development, and coordinating and monitoring of its implementation towards achieving sustainable development and enhance quality of life
Ministry of Finance (MOF)	• Formulating and implementing policies related to fiscal and monetary in order to ensure effective and efficient distribution and management of financial resources
Ministry of Natural Resources and Environment (MNRE)	• Legislating policy, laws, procedure and guidelines related to natural resources management and environmental conservation, and monitoring, enforcing, coordinating and assessing its implementation
Ministry of Energy, Green Technology and Water (KeTTHA)	• Drafting, overseeing and implementing strategic planning activities and enhancing the competitiveness of energy, green technology and water industry
Ministry of International Trade and Industry (MITI)	• Planning, formulating and implementing policies on industrial development, international trade and investment
Ministry of Housing and Local Government (KPKT)	• Establishing and implementing a comprehensive and uniform nationwide rural and urban planning framework to strengthen and promote sustainable physical, social, economic and living environment
Ministry of Works (KKR)	• Providing and ensuring high quality development facilities that can assist in generating the country's economy and to improve the people's quality of life
Ministry of Agriculture and Agro-based Industry(MOA)	• Providing guidance and nurturing progressive agriculture entrepreneurs to increase farming productivity and eventually increase the country's agricultural produce • Determining the production of crops that are safe for consumption and control environmental pollution
Ministry of Plantation Industries and Commodities (MPIC)	• Formulating policies and strategies for the overall development of the plantation and the commodity sectors to ensure Malaysia's international competitiveness in the commodity-based industries and their contribution towards national development
Ministry of Transport (MOT)	• Planning, formulating and implementing transport policy for rail, maritime, ports and civil aviation, and coordinating the integration of transport modes to achieve seamless travel.

Above list is non-exhaustive.

2.2 Implementing Agencies

The Study reveals that each of the above key government stakeholders also has agencies under them which are responsible for the actual implementation of SCP. Their functions are listed in **Table 3** under 18 agencies as follows:

Table 3: Agencies and their SCP-related functions

Agencies	Functions related to SCP
Government Procurement Division (BPK) (MOF)	• Formulating and administrating policies related to the management of Government procurement
Budget Management Division (MOF)	• Ensuring the distribution of Federal funds is carried out according to national policies and objectives • Ensuring that allocations provided to ministries and agencies are expended efficiently and effectively
Tax Analysis Division (MOF)	• Formulating policies related to direct, indirect taxes and tax incentives
Department of Environment (DOE) (MNRE)	• Regulating and monitoring (preventing, controlling and abating pollution) through the enforcement of the Environmental Quality Act 1974 and its subsidiary legislation
Energy Commission (EC) (KeTTHA)	• Regulating the energy sector in Malaysia, specifically the electricity supply industry and ensuring reliable, safe and at reasonable prices to consumers.
National Water Services Commission (SPAN) (KeTTHA)	• Overseeing the enforcement of all regulations surrounding the water industry
Malaysia Green Technology Corporation (MGTC) (KeTTHA)	• Acting as focal point for green technology development and climate change mitigations.
National Solid Waste Management Department (JPSPN) (KPKT)	• Restructuring the waste management industry and overseeing the enforcement of the Solid Waste Management and Public Cleansing Act 2007
Solid Waste and Public Cleansing Management Corporation (PPSPPA) (KPKT)	• Enforcing the Solid Waste Management and Public Cleansing Act
Federal Department of Town and Country Planning Peninsular Malaysia (JPBD) (KPKT)	• Encouraging comprehensive, effective and efficient planning system through planning laws, methodologies, research, standards, procedures and planning rules
Malaysian Investment Development Authority (MIDA) (MITI)	• Promoting and facilitating companies which intend to invest in the manufacturing and services sectors (include administrating various incentives for Pioneer status, Investment Tax Allowance, and exemption of customs duty and sales tax)
Malaysia Productivity Corporation (MPC) (MITI)	• Enhancing national productivity, global competitiveness and innovation
Malaysia External Trade Development Corporation (MATRADE) (MITI)	• Promoting Malaysian enterprises and companies at the global front to position Malaysia as a globally competitive trading nation

Agencies	Functions related to SCP
SME Corporation (MITI)	• Promoting the development of competitive, innovative and resilient SMEs through effective coordination and provision of business support.
Public Works Department (JKR) (KKR)	• Dealing with all development and construction of buildings and infrastructure; • Monitoring the technical specifications and requirements of construction projects.
Construction Industry Development Board (CIDB) (KKR)	• Formulating strategies andmechanisms for the development of the construction industry
Construction Research Institute of Malaysia (CREAM) (KKR)	• Conducting technical and economic research of the construction industry
Department of Local Government (JKT) (KPKT)	• Guiding and facilitating Local Authorities in planning and implementing socioeconomic development programmes and municipal services

Above list is non-exhaustive.

2.3 Other Relevant Government Stakeholders Promoting SCP

The study observes that there are many other ministries and agencies which are highly relevant for SCP implementation but have not been actively contributing to SCP-associated activities. Such stakeholders include Ministry of Science, Technology and Innovation (**MOSTI**); Ministry of Domestic Trade, Consumer Affairs and Cooperative (**KPDNKK**); Ministry of Rural and Regional Development (**KKLB**); Ministry of Federal Territories and Urban Wellbeing (**KWPKB**); Ministry of Education (**MOE**); Ministry of Higher Education (**KPT**); Ministry of Youth and Sports (**KBS**); Ministry of Transport (**MOT**) and Ministry of Tourism (**MOTOUR**). Other government stakeholders and their SCP-related functions are listed in **Table 4**.

Table 4: Other government stakeholders and their SCP-related functions

Ministries/Agencies	Functions related to SCP
Malaysian Administrative Modernisation and Management Planning Unit (MAMPU)	• Facilitating the transformation and modernisation of the Public Sector, supporting SCP implementation
Implementation Coordination Unit (ICU)	• Coordinating, monitoring and evaluating the implementation and outcome of Malaysia five-year development plan
Ministry of Science, Technology and Innovation (MOSTI)	• Enhancing societal well-being and improve the standard and quality of life, add value to the existing sources of wealth and create new sources towards elevating national competitiveness and ensuring economic advancement, innovation-related initiatives

Ministries/Agencies	Functions related to SCP
SIRIM (MOSTI)	• Discovering and developing new technologies to help businesses compete better through quality and innovation (include certification and labelling initiatives in the industrial sector)
Ministry of Domestic Trade, Consumer Affairs and Cooperative (KPDNKK)	• Implementing mandatory standards for consumer products and services, consumer awareness (include Consumer Awareness Index)
Ministry of Rural and Regional Development (KKLW)	• Planning, formulating and implementing policies to improve the well-being of rural residents
Ministry of Education (MOE)	• Providing educational opportunities and manpower for the development needs of the nation
Ministry of Higher Education (KPT)	• Enhancing research and innovation trough development of a critical mass of researchers and commercialisation of research findings, integration of SCP-related subjects into the curriculum
Ministry of Youth and Sports (KBS)	• Developing a youth society that is united, morally upright and progressive in the social and economic context towards the nation's unity and development
Ministry of Transport (MOT)	• Planning, formulating and implementing transport policy for rail, maritime, ports and civil aviation, and coordinating the integration of transport modes to achieve seamless travel.
Ministry of Federal Territories and Urban Well-being (KWPKB)	• Planning, managing, implementing, monitoring and evaluating progress and development of Federal Territories, eradicating urban poverty nationwide and implementing urban well-being programmes
Ministry of Tourism (MOTOUR)	• Planning, formulating and implementing polices relating to growth and development of the tourism industry (include agro-tourism and eco-tourism)

Above list is non-exhaustive.

2.4 National Councils

Malaysia is committed to greening its economy. In line with this, the government has established a number of national multi-stakeholder mechanisms in the form of national councils which are chaired by either the Prime Minister or Deputy Prime Minister such as National Green Technology and Climate Change Council (MTHPI), National Physical Planning Council and National Land Council. The status of the council provided by the chairman, gives it clout to make stakeholders implement and mainstream SCP-related matters. National councils and their SCP-related functions are as in **Table 5**.

Table 5: National Councils and SCP-related functions

National Councils	Functions
Environmental Quality Council	• Advising MNRE on matters pertaining to the Environmental Quality Act and also on any matter referred to it by the Minister • Providing policy guidance to the Department of Environment (DOE) in the formulation of policies and strategies towards a more holistic approach to environmental management.
Green Technology and Climate Change Council	• The highest level body that looks into green technology and climate change issues (chaired by the Prime Minister) • Setting policies and identifying strategic issues in the development of national green technology policy and climate change as well as coordinating, monitoring and evaluating the effectiveness of the implementation of National Green Technology Policy and national green technology programmes as well as climate change • Having 8 Working Committees: Industry Working Committee (chaired by MITI), Human Capital Working Committee (chaired by KSM), R&D and Innovation Working Committee (chaired by MOSTI), Transportations Working Committee (chaired by MOT), Promotion and Public Awareness Working Committee (chaired by KPKK), Adaptation Working Committee (chaired by NRE), Green Neighbourhood Development Committee (chaired by KeTTHA) • Stakeholders include EPU, KeTTHA, MOF, MITI, MOT, KPKT, MNRE, MOSTI, KPKK, MPIC, KSM, KKR, MAMPU and KPT.
National Planning Council	• The highest level of decision making in economic and socio-economic matters • Members comprise the ministers of key economic ministries, such as MOF, MITI, KPDNKK, MPIC and MOA.
National Physical Planning Council	• To promote town and country planning as an effective instrument for the achievement of sustainable development • To advise the Federal and State governments on matters related to town and country planning. This would include formulation of national policies and matters that are referred to it by State governments and any other Councils and Committees duly established • To approve the Draft National Physical Plan and to review in tandem with the Five Year Development Plans To coordinate physical development at a national and regional level to ensure a sustainable form of development • To establish a Regional Planning Committee where necessary for planning areas that consists of two or more States • To formulate a uniform set of planning rules and guidelines for the country • To advise the State Planning Committees on planning applications and plans which are referred to the council for its advice • To give directions to the Director General of Town and Country Planning consistent with the provisions of the Town and Country Planning Act. • The Council may also perform any other functions incidental or consequential to the Town and Country Planning Act. • The permanent members are: - Chairman, being the Prime Minister - Deputy Chairman, being the Deputy Prime Minister - The Minister - The Minister responsible for housing and local government, if he is not also the Minister responsible for town and country planning - The Minister of Finance

National Councils	Functions
	- The Minister responsible for Land - The Menteri Besar or Chief Minister of every State - The Minister responsible for the Federal Territory - Minister of Works - Minister for Rural and Regional Development - Minister of Transport - Minister of Agriculture and Agro-based Industry - Minister of Energy, Green Technology and Water - Chief Secretary to the Government - Attorney General • The Director General of Town and Country Planning is the Secretary of the Council
National Land Council	• The highest level body under Ministry of Natural Resources and Environment (Chaired by Deputy Prime Minister) • The duty of this council is to formulate, from time to time in consultation with the Federal government, the State government and National Finance Council a national policy for the promotion and control of the utilisation of land throughout the Federation for mining, agriculture, forestry or any other purpose and for the administration of any laws relating thereto; and the Federal and State governments shall follow the policy so formulated.
National Council on Biodiversity	• National Council on Biodiversity comprises of ten cabinet ministers 13 State chief ministers. • The council is the highest body in decision making for biodiversity management in Malaysia • Is the highest body in decision making for biodiversity management in Malaysia
National Water Resources Council	• Set up under Malaysian Federal government under the chairmanship of Deputy Prime Minister • To take over function related to water resources to ensure coordination of various stakeholder between Federal and State government in the management of river basins
National Council for Local Government	• In charge with the formulation of the national policy for the promotion, development and control of local governments throughout Peninsular Malaysia. • This council is made up of a Federal minister, one representative from each of the eleven States of peninsular, and up to ten Federal government representatives • The role of NCLG includes legislate the national policy for the development and the control of Local government from time through discussion with Federal government and State government; to advise Federal and State government in making laws that relate to Local government; and to create uniformity of policy and law.
National SME Development Council	• The highest level body to chart SME policy direction (chaired by the Prime Minister)

Above list is non-exhaustive.

2.5 Other Potential Stakeholders

There are many other potential stakeholders to assist and support SCP. In fact, an effective SCP implementation requires clearly defined co-responsibilities or action by all possible actors such as government, private sector, NGOs and civil society. Ideally all actors should take a stake in the implementation of SCP in Malaysia. Potential future roles with regard to SCP implementation in Malaysia have been discussed during the Study. Possible options of future responsibilities of the ministries, agencies, councils and other stakeholders will be further discussed in **Chapter 6**.

Chapter 3

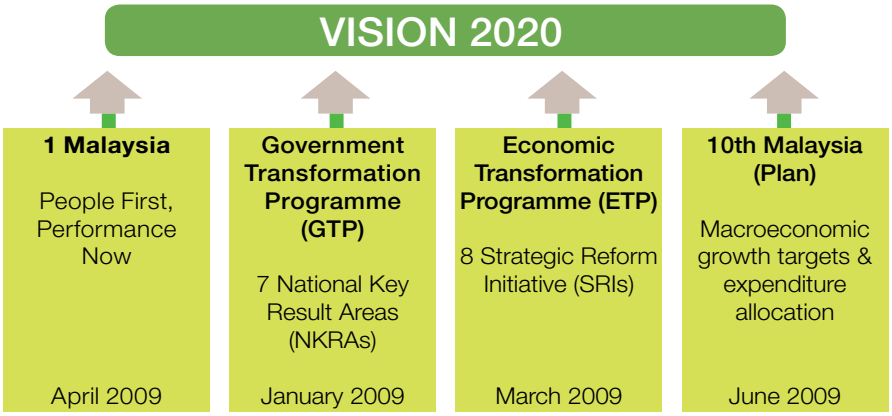
MAPPING OF EXISTING SCP-RELATED POLICIES

Chapter 3 deals with the mapping of existing policies in Malaysia having elements of SCP-related objectives. A selection of 22 national/federal level policy documents and regulations have been reviewed and analysed. In addition, a total of 20 guided interview sessions were conducted involving 41 ministries and agencies. The policies which were assessed comprise 4 overall development policies and plans, 13 sectoral policies of line ministries, and 5 regulations. The documents were analysed for SCP-related objectives based on the 6 categories of SCP-related objectives identified in **Chapter 1**.

National policies describe a broad scope of objectives. They outline the ideal picture and the strategies and timeframes to achieve those objectives. Malaysia's strategic policy framework is given through the transformation programmes summarized as *"Malaysia is transforming into a high-income developed nation that is both inclusive and sustainable by the year 2020"* (**Figure 9**). In the context of sustainability, one of Malaysia's efforts in this direction is its voluntarily commitment to reduce CO_2 emission intensity of GDP up to 40% of the 2005 level by 2020 subject to financial and technological assistance from developed countries.

For the purpose of analyzing the SCP-related objectives, the policy statement in policy documents were assessed to the extent to which they provide for enabling a change of unsustainable behaviour at consumer and/or producer level. In this connection, policy statements were collected and clustered according to the six SCP-related objectives elaborated in **Chapter 1**. Information received through the interviews was utilised to complement the assessment process. While statements in the policy documents were quoted liberally, the Study team abstained from quoting from interviews to assure anonymity.

Figure 9: National Transformation Programmes



Source: NEAC (2010). New Economic Model

3.1 SCP-Related Objectives

A selection of 22 national/federal level policy documents and regulations have been reviewed and analysed. In addition, a total of 20 guided interview sessions were conducted involving 41 ministries and agencies (**Annex 3**). The policies which .were reviewed comprise 4 overall national development policies and plans, 13 sectoral policies of line ministries[5], and 5 regulations (**Annex 1**). This exercise involves identifying all policy statements relating to SCP-related objectives in a policy, irrespective of frequency of occurrences, and placing them under the respective SCP-related categories. From this exercise, a matrix (**Table 6**) was formulated to show in a chessboard alpha-numeric form, the relationship between the SCP-related objectives and SCP categories for the 22 policy documents and regulations reviewed. **Annex 5** shows the details of the alpha-numeric table.

[5] These documents are also known as national development and transformation programmes comprising 10MP, GTP, ETP and NEM. All 4 documents are interrelated. The 10MP is attuned to the GTP, ETP and the NEM. However for the purpose of the Study, the documents are analysed separately. The results for GTP and ETP may be biased as the analysis was based only on the Executive Summary and some of the chapters. NAFP and NCP are available only in the Bahasa Melayu version at the point of this study. Thus, the quotation statements from the NAFP and NCP are English translations from Bahasa Melayu by the authors.

Table 6: Matrix of policy documents and SCP-related objectives

Policies/ Legislations	General issues of sustainability (A)	Moving towards a green economy (B)	Enabling technology and economic innovation for SCP (C)	Changing unsustainable production patterns (D)	Changing unsustainable consumption (E)	Applying life-cycle thinking (F)
10MP	A01	B01	C01	D01	E01	F01
GTP	A02	B02	C02	-	E02	F02
ETP	A03	B03	C03	D03	-	-
NEM	A04	B04	C04	D04	E04	F04
NPP2	A05	B05	C05	D05	E05	F05
NGTP	A06	B06	C06	D06	E06	F06
NPCC	A07	B07	C07	D07	E07	-
NREPAP	A08	B08	C08	D08	E08	-
NPE	A09	B09	C09	D09	E09	-
NPBD	A10	B10	C10	-	E10	-
NMP2	A11	B11	C11	D11	-	-
NAFP	A12	B12	C12	D12	E12	-
NATIP	A13	B13	C13	D13	E13	-
NCP	A14	B14	C14	D14	-	F14
IMP3	A15	B15	C15	D15	E15	F15
CIMP	A16	-	C16	-	-	-
SMEMP	A17	B17	C17	D17	-	F17
EQA	A18	-	C18	D18	-	F18
TCPA	A19	B19	-	D19	-	F19
EQA(SW)	-	-	-	D20	-	-
EQA(LCMG)	-	-	-	-	-	-
REA	-	-	-	-	E22	F22

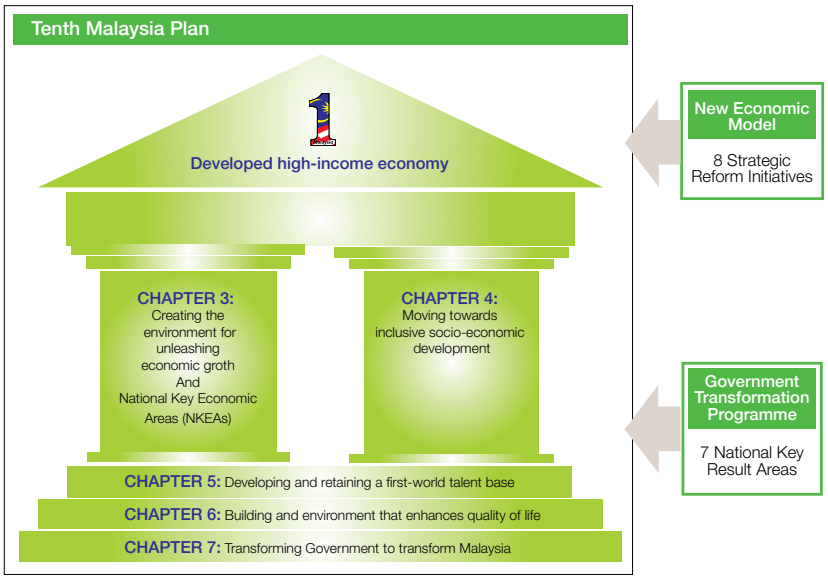
It is not always easy to determine or attribute policy objectives or statements to specific SCP category objectives. It is also possible that a policy statement may be placed under more than one category, e.g. although energy efficiency policies may be seen as clearly rank under "moving towards a green economy", but under detailed analysis it may be ranked under "changing unsustainable production patterns" or "changing unsustainable consumption patterns", depending on the detailed context. In cases where statements can be placed under more than one SCP category, the Study Team placed the statement under the category based on the highest level of SCP attainment of the policy statement.

Based on the above, the Study Team identified policy statements contained in the 22 policy documents and regulations, and placed them accordingly under the six SCP-related categories. For example, all policy statements which are ranked as "general issues of sustainability" are listed under A01 and all statements found in the 10th Malaysia Plan (**10MP**) which relate to "moving towards a green economy" are listed under B01, and so on. The details of policy statements of all the documents and their listing under various categories in the matrix form are in **Annex 5**. The subsequent part of this chapter highlights some of the policy statements of the policy documents and regulations under the six SCP-related categories.

3.1.1 General issues of sustainability

This category is for policy statements which emphasizes on generic concept of sustainable development such as commitment to economic, environment and social inclusiveness; green growth; improving the quality of life without increasing environmental degradation, or without compromising on resource needs of future generations. In the **10MP** (2010), as well as the three national transformation programmes, a large number of references were made on general sustainability. The documents also provide policy framework and strategies towards achieving a high-income, developed, inclusive and sustainable nation by 2020.

Figure 10: Tenth Malaysia Plan strategies

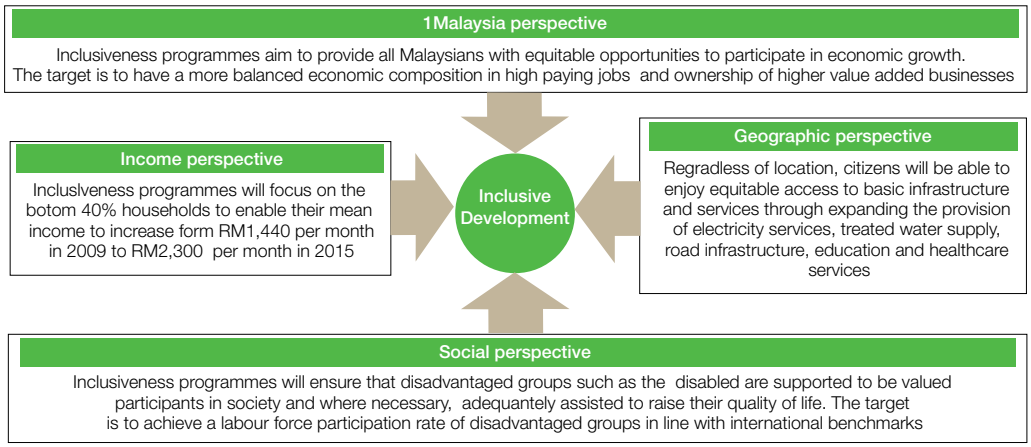


Source: EPU (2010). 10th Malaysia Plan

The economic development strategies for a high-income developed nation designed under the **10MP** is in **Figure 10** whereas the inclusiveness and sustainability aspects, based on the triple bottom line of economy, social and environment, for a developed Malaysia is designed in **Figure 11**.

The **10MP** reflects the government commitment to managing environmental assets and ecological resources in the statement that the Government *"will focus on adaptation strategies to ensure sustainable growth and mitigation strategies to reduce the emission of greenhouse gases"* (p.26). The plan also spells out the strategy to

Figure 11: Inclusiveness from Malaysia's perspective



Source: EPU (2010). 10th Malaysia Plan

mainstream environmental considerations into economic planning to ensure sustainability of resources. It also gives emphasis on valuing environment endowment so that all Malaysians can do their part to preserve the environment *"through prudent management and conservation of existing resources"* (p.247).

The **10MP** addresses improving the quality of life and reduction of social inequalities through its statement that the *"quality of life for Malaysians* [be] *improved through better access to healthcare, public transport, electricity and water. Measures were also taken to create a caring society and promote community well-being. Economic development was based on sustainability principles to ensure that the environment and natural resources are preserved so that growth will not come at a cost to future generations"* (p.48).

The New Economic Model (**NEM**) supports sustainable development through its statement that the *"major benefit of our green, high income and inclusive strategy is that future generations of Malaysians (and world citizens) will continue to enjoy the clean air and water, and natural environment that they deserve and work so hard to preserve and enhance. Malaysians can feel proud that we are setting the pace in treasuring our heritage and delicate ecology for the mutual benefit of all mankind"* (p.70). The **NEM** also calls for *"Malaysia ...* [to] *lead the global green revolution"* (p.69).

The Economic Transformation Programme (**ETP**) refers to sustainable development by reiterating that the Government is *"committed to the stewardship and preservation of the natural environment and resources by ensuring that they are properly priced into the cost of development"* (p.9).

General commitments to sustainable development are also found in all sectoral policies. Although their SCP statements are less explicit, they however, support national development policies on sustainability.

The main functions of National Physical Plan 2 (**NPP2**) is to *"strengthen national development planning by incorporating spatial dimensions*[6] *in tandem with the national socio-economic policies"* (p.1-8). Besides that, **NPP2** provides *"physical planning policies for ensuring sustainable development as well as mitigating and adapting the natural environment and human settlements to climate change"* (p.1-8)

6 Spatial planning and land use management are considered a key of sustainable development in developing countries.

The National Green Technology Policy (**NGTP**), (2009), is generally committed to ensure *"sustainable development and conserve the environment for future generations"* (p.9). It recognises the strategic role of technology in accelerating growth and promoting sustainable development. Technology does not only concern equipment but also products and systems that are *"used to conserve the natural environment and resources, which minimises and reduces the negative impact of human activities"* (p.6). It goes beyond machinery and incorporates innovation of processes and knowledge as a key driver for success to achieve the Malaysian Vision 2020, i.e. *"Green Technology shall be a driver to accelerate the national economy and promote sustainable development"* (p.7).

The National Policy on Climate Change (**NPCC**) (2009) aims at *"mainstreaming climate change through wise management of resources and enhanced environmental conservation resulting in strengthened economic competitiveness and improved quality of life"* (p.3). The **NPCC** consolidates the economic, social and environmental development goals and institutes measures to make development *"climate-resilient through low carbon economy to enhance global competitiveness and attain environmentally sustainable socio-economic growth" (p.6)* and *"adopt balanced adaptation and mitigation measures to strengthen environmental conservation and promote sustainability of natural resources"* (p.6).

The National Renewable Energy Policy and Action Plan (**NREPAP**) (2009), effective since June 2010, aims at drawing more of the nation's electricity supply from renewable energy *"to conserve the environment for future generation"* (p.iii).

The National Policy on the Environment (**NPE**) (2002) aims at continued economic, social and cultural progress and enhancement of the quality of life of Malaysians through environmentally sound and sustainable development. "General issues on sustainability" are highlighted in the statement that *"Malaysia recognises that indiscriminate resource utilisation, over-consumption and other unsustainable development practices will erode the bases of success of the nation, and could jeopardize its continued progress"* (p.2). The **NPE** also *"seeks to integrate environmental considerations into development activities and in all related decision-making processes, to foster long-term economy growth and human development and to protect and enhance the environment"* (p.6).

The **NPE's** objectives is to achieve *"sustainable lifestyles and patterns of consumption and production"* (p.3) through ensuring *"continuous improvement in the productivity and quality of the environment while pursuing economic growth and human development objectives"* (p.4); managing *"natural resource utilisation to sustain the resource base and prevent degradation of the environment"* (p.4); and integrating *"environmental dimensions in Malaysia's planning and implementation of the policies, objectives and mandates of all sectors to protect the environment"* (p.5).

The National Mineral Policy 2 (**NMP2**) (2009) is *"to enhance the contribution of the mineral sector to the socio-economic development of the nation through the efficient, responsible and sustainable development as well as the optimum utilisation of mineral resources"* (p.10). It also encourages the recovery, recycling and reuse of metal and minerals which will have positive impact on the economic prosperity, social well-being and environmental protection.

The National Policy on Biological Diversity (**NPBD**) (1998) emphasizes that biological diversity is *"a national heritage and it must be sustainably managed and wisely utilized today and conserved for future generations"* (p.3). The **NPBD** advises that Malaysia should capitalize on the high abundance of inherited biodiversity and,

by 2020, be transformed into a *"World Centre of Excellence in Conservation, Research and Utilisation of Tropical Biological Diversity"* (p.1). It also calls for conservation of *"Malaysia's biological diversity and to ensure that its components are utilized in a sustainable manner for the continued progress and socio-economic development of the nation"* (p.2). The **NPBD** also touches on the importance of *"economic, technological and social implications for the nation"* (p.5) as well as the negative impact of losing diversity i.e. *"losing diversity means losing the ecosystem resilience, leading to adverse effects on human lives"* (p.9). The policy then stresses the need to incorporate biodiversity considerations into development plans at the planning stage to *"minimize such adverse impacts and to promote the conservation of biological diversity and the sustainable development"* (p.19).

The Industrial Master Plan 3 (**IMP3**) (2006) makes particular reference to general issues on sustainability. **IMP3** emphasizes on creating more balanced regional industrial development and sustainable development in its statement to encourage *"industries to adopt cleaner and environment-friendly technologies and practices"* (p.65). It also mentions the importance of resource efficiency *"to ensure the welfare of future generations"*. The **IMP3** incorporates sustainability in the form of inclusiveness and equitable distribution by stating that *"to be fully developed 'in Malaysia's own mould' by 2020 requires a full partnership and fair economic participation among all ethnic groups and regions in every sphere of development"* (p.31).

The Construction Industry Master Plan (**CIMP**) (2006)[7] makes several references on matters related to general sustainability. **CIMP** addresses issues and recommendations through productivity and quality enhancement, and critical success factors related to environmentally friendly practices. In this regard, the 10 year Roadmap for the Malaysian construction industry addresses sustainability by striving *"for the highest standard of quality, occupational safety and health, and environmental practices"* (p.10) and recommends to *"foster a quality and environment-friendly culture"* (p.12). In addition, in the inclusive development, specific reference is made to reinforce *"Bumiputra entrepreneurs' capabilities and equitable share in the construction value chain"* (p.12).

The Town and Country Planning Act (**TCPA**) (1976, reviewed 2006), supports sustainable development through the function of National Physical Planning Council which is *"to promote in the country, ... town and country planning as an effective and efficient instrument for the improvement of the physical environment ... towards the achievement of sustainable development in the country"* (p.10). The Act also has measures to regulate *"the improvement of the physical living environment, ..., the improvement of socio-economic well-being and the promotion of economic growth"* (p.22), and facilitate sustainable development.

3.1.2 Moving towards green economy

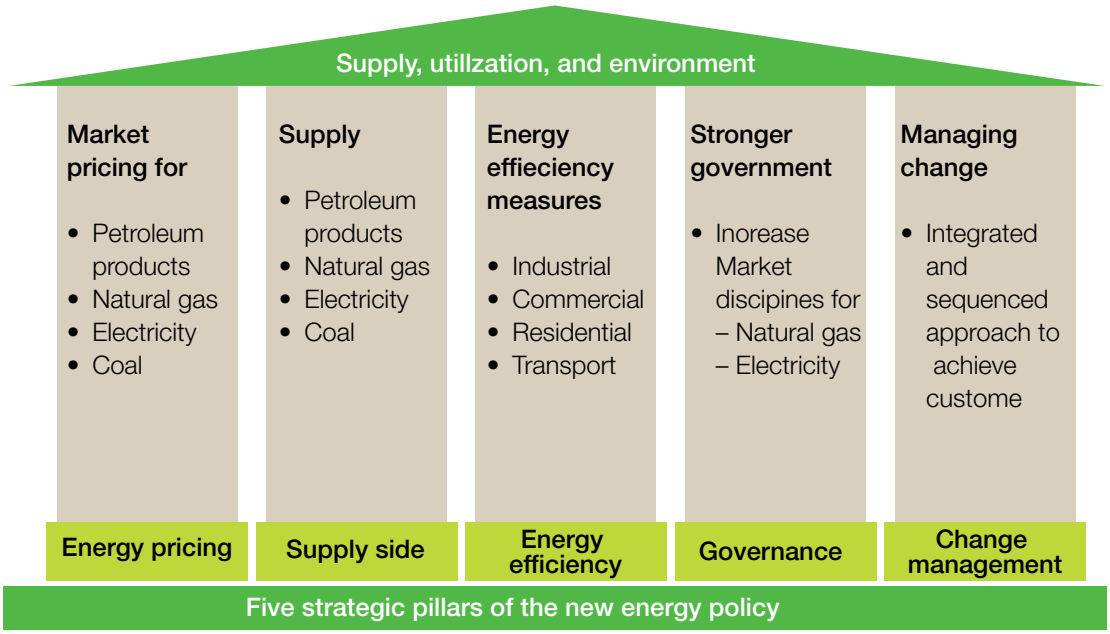
Policy statements in this category are those that relate to any of the themes identified as an indicator for "moving towards a green economy".

The **10MP**, with the support of **NGTP** and **NPCC**, targets to push Malaysia towards a low carbon economy. One of the measures to achieve a low carbon economy is to encourage energy efficiency (EE) practices which are contained in the New Energy Policy (**NEnP**) which not only emphasises

[7] The results may be biased as the analysis was based only on the Executive Summary of the CIMP although the report contains references related to SCP such as productivity and quality enhancement (p.37-41); critical success factors, environment friendly practices (p.78); fostering a quality & environment-friendly culture (p.142-143); promoting environment-friendly practices (p.145-149); continuous evaluation of MS to eventually evolve into environment-friendly standards for building and construction materials (p.165-167); continuous innovation on construction processes and techniques (p.193-196); leveraging on CIDB's CREAM to spur construction R&D (p.214-215); and legal recommendations (p.269-270)

on energy security, but also economic efficiency as well as environmental and social considerations as in **Figure 12**. Measures to encourage efficient use of energy include the formulation of the Energy Efficiency Master Plan (**EEMP**), which requires the setting up of minimum energy performance standards for appliances and development of green technologies.[8] The **10MP** states that these *"measures will encourage industries and consumers to use energy productively and minimize waste to be more competitive in the global market. In addition, new energy intensive industries will not be encouraged while energy efficient and high value added industries will be promoted. In this regard, the electricity tariff structure will be reviewed as a means of attracting high-quality investment. The production of EE related machinery and equipment will also support the development of ancillary industries and services"* (p.113).

Figure 12: Strategic pillars of the New Energy Policy



Source: EPU (2010). 10th Malaysia Plan

[8] NEnP and EEMP are not accessible at the point of this study.

The **10MP** focuses on economic growth efforts based on New Key Economic Areas (NKEAs) which support the SCP category "moving towards a green economy". The 12 NKEAs were identified on the basis of their contribution to high income, sustainability and inclusiveness. The NKEAs are (1) Oil and gas; (2) Palm oil and related products; (3) Financial services; (4) Wholesale and retail; (5) Tourism; (6) Information and communications technology; (7) Education; (8) Electrical and electronics; (9) Business services; (10) Private healthcare; (11) Agriculture; and (12) Greater Kuala Lumpur (p.122). Measures under NKEAs which relate to SCP and green economy are summarised in **Table 7**.

The **NEM** contains policy objectives and measures to ensure green growth. They are outlined as Strategic Reform Initiatives (SRIs). The measures which are related to green economy are shown in **Table 8**.

In the **NGTP**, technology is recognized as a vital driver for Malaysia's low carbon economy. It is built on 4 pillars and focuses on 4 sectors relevant to green economy. The 4 pillars are *"Energy: Seek to attain energy independence and promote efficient utilisation; Environment: Conserve and minimize the impact on the environment; Economy: Enhance the national development through the use of technology;*

Table 7: Objectives related to green economy under NKEAs

NKEAs	Objectives Related to Green Economy
Palm oil and related products	• Promoting Malaysia as a global hub for palm oil and preferred destination for foreign investments in areas such as oleo-chemical based products and R&D • Developing Palm Oil Industrial Clusters into integrated sites for promoting downstream activities such as bio-fuel, oleo-chemicals, speciality food products, nutraceuticals and pharmaceuticals • Encouraging good agriculture practices, agronomic management and mechanization especially among smallholders
Tourism	• Improving maintenance of tourist sites through multiple approaches, including GLCs and corporate sponsorship, stronger enforcement and imposition of gate fees, particularly in environmentally sensitive and heritage sites • Introducing progressively certification of tourism products and activities to ensure quality, sustainability and safety.
Business services	• Streamlining the Green Technology and Climate Change Council to drive the green technology agenda across multiple ministries and agencies which include regulatory aspects, developmental, awareness and promotion • Creating the environment and demand for the green technology industry to spur business opportunities for professional and service providers by (1) Developing and enforcing regulations especially on energy efficiency in buildings for new developments; (2) Promoting investment in renewable energy to provide long-term contracts for renewable energy providers and create spill-over effects on the related domestic service providers; and (3) Promoting culture of conservation and efficiency in energy and water use.
Greater Kuala Lumpur/Klang Valley	• Transforming urban public transportation across greater KL through the Mass Rapid Transit System to ensure seamless interconnectivity links

Table 8: Policy measures towards green economy

Policy purposes	Possible Policy Measures
Preserve natural resources	• Use appropriate pricing, regulatory and strategic policies to manage non-renewable resources sustainably • Encourage all sectors to embrace "green technology" in production and processes • Develop a comprehensive energy policy
Leverage on comparative advantages for high value added products and services	• Increase focus on downstream high value added production and services • Develop a comprehensive energy policy
Meet international commitments	• Reduce carbon footprint in line with government commitment • Enforce clean air and water standards in utilising natural resource, i.e. pollution mitigation
Facilitate bank lending and financing for 'green investment'	• Develop banking capacity to assess credit approvals for green investment using non-collateral based criteria • Liberalise entry of foreign experts specialising in financial analysis of viability of green technology projects • Support green technology investment with greater emphasis on venture capital funds
Ensure sound public finances	• Use appropriate pricing, regulatory and strategic policies to manage non-renewable resources sustainably • Reduce wastage and avoid cost overrun by better controlling expenditure

and Social: Improve quality of life for all" (p.7). The 4 sectors are energy, buildings, water and waste management and transportation (p.11).

The **NPCC** represents an overall acknowledgement that climate change exists and that Malaysia aims at addressing the effects of the possible scenarios. A number of text references on "moving towards a green economy" are made in the policy such as *"facilitate the integration of climate change considerations into planning and implementation of development programmes and decision-making process; to foster sustainable economic …"* (p.6) and *"towards low carbon economy …* [in the] *Energy security; Industries; Transportation; Public infrastructure; Waste management; Human settlements; Forestry; and Agriculture* [sectors]*"* (p.9). The provision of mitigation and adaptation strategies which are strongly linked to green technology, sustainable and inclusive development is evidence that **NPCC** is addressing issues of green economy.

Renewable Energy (RE) promotion in itself is an indicator for "moving towards a green economy". The **NREPAP** encourages *"enhancing the utilization of indigenous renewable energy resources to contribute towards National electricity supply security and sustainable socio-economic development"* (p.iii) and increases *"RE contribution in the national power generation mix"* (p.iii).

Steps towards green economy have been initiated by the **NPE** which outlines "green strategies" since the last decade. It has seven key areas, namely, *"(i) Education and awareness; (ii) Effective management of natural resources and the environment; (iii) Integrated development planning and implementation; (iv) Prevention and control of pollution and environmental degradation; (v) Strengthening administrative and institutional mechanisms; (vi) Proactive approach to regional and global environmental issues; and (vii) Formulation and implementation of action plans"* (p.7). Among other measures taken include

promoting *"energy conservation and the use of energy-efficient technology and processes by appropriate pricing mechanisms, the setting of efficiency standards, promoting technology transfer and providing consumer information"* (p.13). For the transportation sector, the policy promotes investments in cost-effective, efficient, less polluting and safer mass transportation system. For the agriculture sector, the policy encourages agricultural practices and technologies which minimize the use of pesticides and maximise the use of organic fertilisers.

The **NMP2** has five objectives namely, to *"i. ... ensure the sustainable development and optimum utilisation of mineral resources. ii. ... promote environmental stewardship that will ensure the nation's mineral resources are developed in an environmentally sound, responsible and sustainable manner. iii. ... enhance the nation's mineral sector competitiveness and advancement in the global arena. iv. ... ensure use of local minerals and promote the further development of mineral-based products. v. ... encourage the recovery, recycling and reuse of metals and minerals"* (p.11). These objectives are in line with the principles for a low carbon economy. The adoption of sustainable practices by the mineral industry in Malaysia will spur economic growth and provide a better quality of life for people.

Malaysia acknowledges in its **NPBD** that *"biodiversity of biological resources provides direct economic benefits. This biological biodiversity provides timber and non-timber goods in the forestry sector, food and industrial crops in the agricultural sector, and food in the fisheries sector"* (p.5). Furthermore, the tourism industry *"relies on the country's diverse and unspoilt natural beauty, including unique species of plants and animals in national parks, wildlife reserves, bird parks and in marine parks and the adjacent coral reefs"* (p.6). It is acknowledged that even given the important structural transformations, the above sectors remain important as they *"form a base for expanded and value-added activities ...* [in the] *Malaysian industry" (p.6)* and the *"benefits from sustainable management of biological diversity will accrue, directly or indirectly, to every sector of society"* (p.3).

Biological resources are recognized as "natural capital". As a result, their conservation is considered an *"investment that will yield benefits locally, nationally and globally for the present and future* [generations]*"* (p.3). With this economic twist to biodiversity conservation, the country expresses that all sectors that support conserving or re-establishing natural resources i.e. spending resources efficiently and with caution, automatically contribute to Malaysia's move towards green growth. There is a positive economic kick-back effect for those economies that engage in acting more environment friendly, namely to *"optimize economic benefits from sustainable utilisation of the components of biological diversity"* (p.4).

Several explicit references which are made in the **IMP3** can be classified under "green economy". The macro-framework of the **IMP3** targets 12 industries in the manufacturing sector (6 resource based and 6 non-resource based) for further development and promotion. These industries are considered *"strategically important in contributing to the greater growth of the manufacturing sector, in terms of higher: value added; technology; exports; knowledge content; multiplier and spin-off effects; and potential to be integrated regionally and globally"* (p.48). Malaysia gives emphasis to the *"... industries and sub-sectors which have export potential and competitive advantage, such as food products, including halal foods, palm biomass products and oleo-chemical derivatives, and machinery and equipment including engineering support services and biotechnology ..."* (p.154). While the agricultural sector and the manufacturing sector will continue to play a big role in Malaysia,

the services sector shall be positioned as *"a major source of growth"* (p.67). To support the Malaysian industry, the policy suggests *"expanding market access through intensified marketing and the promotion of Malaysia's 'green' image"* (p.439).

IMP3 uses systemic terminology like "Total Factor Productivity"[9] (TFP), technology development/ automation and robotics integrated system rather than the general key terms like "resource efficiency". A number of explicit examples of "green economy" have been identified, such as in *"promoting the efficient and effective management of forest resources and forest plantations"* (p.439); establishing *"... a comprehensive inventory of all the potential supply of wood wastes ..."* (p.441); and organizing *"... a more systematic collection and distribution of these wastes to the industry"* (p.441).

In the **TCPA**, green economy aspects are covered in the functions of the local planning authorities, which is to *"regulate, control and plan the development and use of all lands and buildings within its area"* (p.15). The functions include making decision on the green building sector, infrastructure and also the installation of RE utilities as reflected in the policy statement *"formulating the ... general proposals of the State Authority in respect of the development and use of land in that State, including measures for the improvement of the physical living environment, the improvement of communications, the management of traffic, the improvement of socio-economic well-being and the promotion of economic growth, and for facilitating sustainable development"* (p.22). For further green economy themes that might be related, the Act refers to other policies, such as the *"national physical plan and other principal economic, social, physical and environmental management and conservation policies of the nation"* (p.20) as well as giving *"regard to current policies in respect of the social and economic planning and development and the environmental protection of the State and the nation"* (p.22), which all have to be taken into consideration for land use and building activities at sub national levels in Peninsular Malaysia.

Further reference to the green economy can be found in the Sewerage Services Act 1993, the Solid Waste and Public Cleansing Management Act 2007, the Solid Waste Public Cleansing Management Corporation Act 2007, tree preservation orders and similar regulations.

1.1.3 Enabling technology and economic innovation for SCP

This section summarizes the findings on Malaysia's policy objectives on enabling the technology and economic innovations that are necessary for SCP.

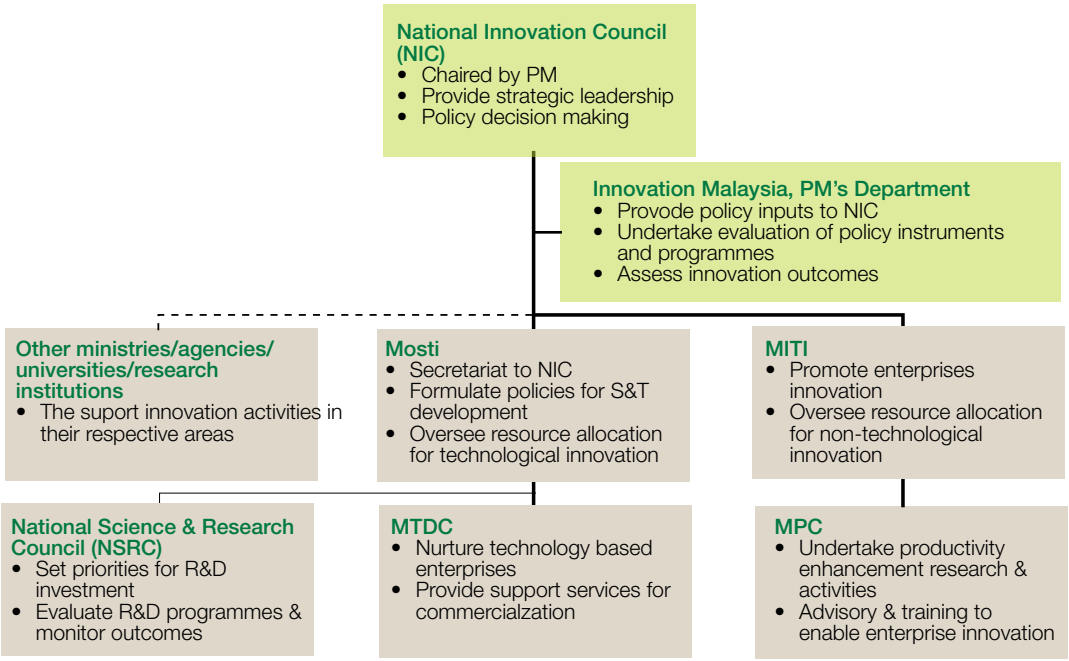
A knowledge based society is a key for creating higher added activities and remaining competitive in an increasingly green world market. Malaysia seeks to *"drive the green technology agenda across multiple ministries and agencies which include regulatory aspects, developmental, awareness and promotion"* (10MP, p.132).

Unleashing productivity-led growth is one of the "10 Big Ideas" under the **10MP**. The idea emphasises on enabling productivity through quality investment in innovation, R&D and venture capital funding to support high value added activities and diffusion of technology. This is reflected in the statement that the *"Government is committed to investing in creativity, including efforts such as stimulating entrepreneurship, revamping school curriculum, focusing on R&D and promoting availability of risk capital"* (p.16). The **10MP** elaborates on how innovation could increase productivity and competitiveness of the

[9] Total Factor Productivity (TFP) is a measure of the efficiency of all inputs to a production process. Increases in TFP result usually from technological innovations or improvements. At macro-level, it can be taken as a measure of an economy's long-term technological change or technological dynamism.

economy, and outlines measures to support innovation which includes developing human capital, investing in innovation infrastructure and nurturing new ventures through incubators. To support innovation-led growth, special focus is given to support innovation across the economy by ensuring that the business environment creates an incentive to innovate (**Figure 13**).

Figure 13: Institutional structure supporting innovation and R&D



Source: EPU (2010). 10th Malaysia Plan

Table 9: Objectives enabling technology and innovation under NKEAs

NKEAs	Objectives Enabling Technology and Innovation
Financial services	• Greater leveraging of technology and innovation in the delivery of financial services. • Fostering greater linkages and collaboration with international standard setting bodies and other jurisdictions, and streamlining R&D development to enhance Malaysia's attractiveness for education, research, training and product innovation.
Electrical and electronics	• Developing key enablers such as up skilling existing talent and increasing supply of relevant talent, strengthening the R&D ecosystem, growing the domestic vendor base and establishing infrastructure.
Agriculture	• Promoting innovation-based growth and production processes that utilise modern farm technology and ICT, including ICT-based Agriculture Flagship Project. • Providing adequate and specific infrastructure, facilities and logistics to support value addition activities based on availability and proximity of resources, particularly in the designated Permanent Food Production Parks and Aquaculture Industrial Zones. • Intensifying collaborative R&D with established agriculture research institutes to leapfrog innovation in the production processes, disease control, safety and quality control, including development of new high-value added products.

A few objectives under NKEAs which target "enabling technology and economic innovation for SCP" in the financial services, electrical and electronics, and agriculture are summarised in **Table 9**.

The existence of the **NGTP**, in the subject matter it represents, indicates that Malaysia is putting emphasis on enabling technology and innovation for green technology. One of the policy objectives is to *"facilitate the growth of the Green Technology industry and enhance its contribution to the national economy"* (p.9). Enhanced availability of green technologies generates the necessary precondition for its uptake by the producers and consumers. Hence it functions as a catalyst to make changes in production and consumption patterns at all levels possible. The potential for new job creation is recognized (p.20) and the intensification of *"Human Capital Development in Green Technology"* (p.17) is envisaged, among others, to *"increase national capability and capacity for innovation in Green Technology development and enhance Malaysia's competitiveness in Green Technology in the global arena"* (p.9).

In the medium-term, to enable technology and economic innovation for SCP, Malaysia envisages increasing its *"Research Development and Innovation of Green Technology by local universities and research institutions"* and seeks to *"commercialize ...* [through] *collaboration with the local industry and multi-national companies"* (p.13). With the latter, a link is made to engage businesses to adopt sustainable production patterns. In the long-run, *"international collaborations between local universities and research institutions with Green Technology industries"* (p.13) will be expanded to further support SCP.

In addressing targeted sectors, the **NPCC** aims specially at stimulating a change in the transport, industrial and building sectors. Clean mobility is to be achieved among others, through the promotion of RE and EE through enforcement of *"... new vehicles engines with higher fuel efficiency"* and increase *"usage of hybrid engines and electric vehicles"* (p.13). In the industrial sectors, it is through the *"adoption of EE practices by new industries"* (p.13). In the building sector, the construction of green buildings will be enhanced in commercial, institutional, industrial and residential sector through the *"application of low or zero energy concepts in the design and construction of new buildings"* (p.14). Further changes envisaged in the sector are retrofitting of *"efficient ventilation and cooling systems as well as lighting systems; Energy conservation practice in buildings; Retrofitting existing buildings to include EE features and generate RE; and Development of a green building index"* (p.14).

Climate change adaptation and mitigation measures mentioned in the **NPCC** are cross-sectoral in nature and, in the case of Malaysia, strongly related to resource efficiency which among others will be achieved through the promotion of *"climate-friendly measures and technologies"* (p.9) to produce low carbon and/or reduce pollution/waste. Special emphasis is made in this regard to the energy sector to *"promote RE and EE ... in the transportation sector through ... R&D on higher fuel efficiency and alternative fuel"* (p.13). For the other sectors, the policy objective is to establish and *"implement a national R&D agenda on climate change ...* [to address] *Agriculture and food security; Water security and services; Forestry and ecosystem services; Sustainable bio-energies; Public health services and delivery; Localised modelling for projection of future scenarios; Innovative socio-economic and financing mechanisms; Vulnerability due to extreme weather events and natural disasters; and Policy analysis harmonizing national and international issues"* (p.16). The potential for green job creation in the rural areas is recognized through the empowerment of *"local communities in basic RE maintenance, especially in rural electrification including mini and micro hydroelectric schemes"* (p.14).

The **NREPAP**[10] promotes R&D as a vehicle to accelerate towards a green economy in Malaysia as reflected in the statement that the *"implementation of a systemic R&D programme that leads to innovative products and services is preferable as this can accelerate the growth of the RE Industry in the country"* (p.iv). It is acknowledged that *"RE is a new technology in Malaysia and there is an urgent need for human capital to be developed to support the emerging RE industries"* (p.iv).

The **NPE** supports technology and economic innovation for SCP. Strategy 4 of the policy clearly indicates that high *"priority will be given to technology transfer and research and development projects in environmental technology to encourage technical innovation and national competitiveness in key areas such as waste minimization, recycling, recovery, treatment and safe disposal, new methods of tackling pollution in priority areas and the development of control measures for the prevention and abatement of pollution"* (p.19). To achieve this, Malaysia is committed to promote the transfer of environmentally sound technologies and establish centres of excellence in research and development in ecological and environmental science and environmental technology. While the policy encourages the use of cleaner fossil fuels and alternatives to fossil fuels, there is a need to increase investment in research and development of clean and renewable sources of energy. Simultaneously, the policy also encourages

[10] At the time of the NREPAP, no specific policy or roadmap for R&D had been focusing on RE. MOSTI is usually in charge for R&D and has taken some initial steps (p.62).

business and industry to increase research and development of environmentally sound technologies and environmental management systems (EMS) in collaboration with the higher learning institutions and research institutes.

The **NMP2** was formulated to *"enhance the mineral sector's contribution to the economy ..."* (p.13). The policy recognises that *"R&D is important to produce new technologies, innovations, techniques and applications that will reduce production cost, value-add mineral materials, discover new uses, mitigate adverse environmental impact, address health and safety aspects and improve the competitiveness of the mineral industry"* (p.16). In order to accelerate R&D, various initiatives could be considered such as *"... the provision of adequate financial resources and incentives; ... the promotion of regional and international collaboration; ... the protection of intellectual property rights and commercialisation of R&D findings; ... strengthening partnerships and fostering cooperation amongst government, industry and institutions of higher learning; and ... the establishment of effective coordinating body ..."* (p.16).

The global economic opportunities in biotechnology (particularly in biosafety) and floriculture (particularly in pharmaceutical products) were underexplored at the time when the **NPBD** was formulated, and that is why the policy acknowledges the *"need to enhance efforts in research and development"* (p.12). The policy states that Malaysia's *"scientific base needs to be developed and strengthened so that opportunities in fields such as genetics, biotechnology, pharmaceuticals, agriculture and fisheries could be fully explored"* (p.12, 13). As a consequence, the policy aims at enhancing *"scientific and technological knowledge and educational, social, cultural and aesthetic values of biological diversity"* (p.4).

IMP3 emphasises the need to intensify R&D for all 12 focus sectors of the Malaysian economy and highlights in particular the biotechnology sector. **IMP3** recognises that *"R&D will continue to be undertaken for the further development of the industry"* (p.442). The R&D areas include, *"production technology to minimise ... waste; and potential new resources, such as oil palm fibre and kenaf, for the production of composites and bio-composites"* (p.442). *"R&D activities will be intensified to ensure Malaysian ... products meet international standards* [especially] *in health and safety. In addition, there will be greater focus on R&D in advanced manufacturing technologies and higher value added products ..."* (p.461). The use of technology is central in all sectors identified in **IMP3**. Technology and innovation have been cited as factors to drive the *"growth of SMEs"* (p.191) as a key strategy for SME Development. In this respect, SMEs are encouraged to *"adopt greater utilisation of ICT to increase their levels of productivity and efficiency in the supply chains ..."* (p.580).

Biotechnology is identified as a driver for SCP. Innovation in biotechnology is through the *"application of technology"* (p.52) and *"emerging technologies, such as ... nanotechnology, to develop new products" (p.514)* or to *"improve ... technology"* (p.514). **IMP3** also suggests to *"develop centres of excellence for biotechnology-based food production and processing"* (p.514). Innovation in a way contributes to product diversification and is a driver for new markets, as can be seen in the oil palm-based industry where the product diversification is from oil palm into biomass, bio-diesel and renewable energy (p.482, 483).

Another key area to address a shift towards an innovation-driven economy is the creation of *"a critical mass of local experts in Science and Engineering"* (p.659). *"The availability of the required talents and expertise ...* [in] *both the manufacturing and services sectors will become important, as industries and services move towards a more knowledge based operating environment"*

(p.68). It is envisaged that there will be an increased in the *"supply of technically skilled, knowledgeable and ICT*[-]*trained workforce" … in targeted industries …* [such as] *ICT, biotechnology, halal industry, petrochemicals, education, … health and eco-tourism, financial services, logistical, and aquaculture and fishery"* (p.658).

In the **CIMP**[11], one of the key areas defined is the continuous innovation of construction processes and techniques as in the objective statement to *"innovate through research and development and adopt new construction methods"* (p.12). Strategic Thrust 3 of **CIMP** also outlines the strategy to *"strive for the highest standard of quality, occupational safety and health, environmental practices"* (p.12)

3.1.4 Changing unsustainable production patterns

While the previous SCP-objectives categories on "green economy" and "technology and economic innovation for SCP" summarized policies addressing SCP on the macro and micro-level, this SCP category looks at policy objectives which are directly and explicitly intended to change unsustainable production patterns and are targeting at different steps of the product life cycle at the supply side. This focuses on policies close to the actual implementation of SCP by producers.

The **10MP** aims at increasing domestic competitiveness and strengthening Malaysia's global competitive position. In order to reach the targets, the government has provided a number of incubator facilities to support the producers to shift towards sustainable production. **10MP** highlights that *"incubators provide ready-to-use facilities that are compliant with international standards such as Good Manufacturing Practices (GMP) and Hazard Analysis and Critical Control Point (HACCP) as well as providing shared facilities such as packaging design, testing centres and marketing support, thereby enabling small businesses to command better premium for their products"* (p.157).

Meanwhile, in the agriculture sector, the appropriate training and advisory services on Good Agricultural Practices (GAP) are provided to the farmers. This GAP practices will enable farmers to increase productivity and produce quality agricultural products and will minimise environmental degradation.

Malaysia's overall agenda in promoting sustainable and environmentally friendly development, which includes incorporating green building designs elements and technology, is another example contributing towards changing producers' paradigm.

The **NGTP** is full of such SCP objectives. Basically, it aims at making green technology accessible at the domestic market level through the envisaged *"growth of the Green Technology industry"* (p.9). At the same time, it also seeks to promote Foreign Direct Investments (FDIs) and Domestic Direct Investments (DDIs) in green technology in the manufacturing and services industry. Its ultimate aim is to apply green technology in various sectors namely energy, buildings, water and waste water and transportation. In the energy sector, green technology is for *"power generation and … energy supply … and utilisation"* (p.11); in the buildings sector, green technology is to be adopted in the *"construction, management, maintenance and demolition of buildings"* (p.11); in the water and waste water sector, green technology is to be adopted in the *"management and utilisation of water resources, waste water treatment, solid waste and sanitary landfill"* (p.11); and in the transportation sector, green technology is to be incorporated in the *"transportation infrastructure and vehicles, in particular, biofuels and public*

[11] The results may be biased as the analysis was based only on the Executive Summary of the CIMP

road transport" (p.11). In the medium term, it is envisaged that green technology has a *"larger local market share against other technologies"* and *"increased production of local green technology products"* (p.13). In the long term, a positive effect is expected especially for local SMEs and SMIs dealing with green technology, as they will be able to access international export markets (p.13). Also, Malaysia as a whole will become *"a major producer of Green Technology in the global market"* (p.13), in line with the **NEM's** objective to establish Malaysia as a leader in the *"global green revolution"* (p.69), and to source for new business opportunities for Malaysia domestically and internationally.

Policy objectives that aim at changing producers' behaviour are included in Malaysia's **NPCC**. A general approach is proposed to institutionalize and strengthen a "low-carbon industry" in Malaysia. This is in the statement to institutionalise a *"stage-based climate-friendly technology transfer programme to nurture self-innovativeness and R&D sustainability in local firms and institutions"* (p.16) and a mechanism *"to facilitate business and industrial responses* [to climate change]*"* (p.10). In the same cross-sectoral way, energy efficiency will be promoted and increased in the industrial sectors (p.13).

Special emphasis in changing unsustainable production patterns is provided in the **NPE**. Industries are encouraged to apply practices that result in operations or products with lower environmental impacts. The policy suggests four approaches to pollution prevention that could be adopted by industries namely *"(i) The application of a combination of corrective, preventive, and precautionary measures, as appropriate; (ii) Control at source for all major emissions to air, land and water; (iii) Adoption of best practicable means for reduction of pollution and promotion of cleaner production technology; and (iv) Application of Polluter-Pays-Principle and other appropriate techno-economic incentive and disincentives"* (p.16, 17). Moreover, each business or industry is encouraged to formulate codes of conduct for self-monitoring, self-evaluation and self-auditing of environmental performance.

The implementation of **NMP2** has direct influence on the mineral industry through *"i. the implementation of the regulatory and self-regulatory environmental management measures including Environmental Impact Assessment, as well as environmental management systems and plans, and audits; ii. the compliance with the appropriate national and State policies, physical plans as well as international agreements; iii. the compliance with the appropriate national and international standards, code and guidelines; iv. ensuring effective implementation of progressive and post mining rehabilitation; v. promoting the recovery, recycling and reuse of minerals, metals and mineral based products; vi. ensuring the implementation of effective mine waste management measures; vii. promoting and disseminating information on the use of best mining practices, public disclosure and corporate responsibility (CSR); and viii. the effective implementation of a Mine Health & Safety Management Plan"* (p.15).

The **IMP3** intends to change unsustainable production patterns of the production sector, aiming *"to enhance its productivity through higher contributions of total factor productivity (TFP) growth"* (p.484). In this context, particular reference is made to encourage local companies, especially *"Bumiputera enterprises ... to utilise more advanced technology and invest in R&D to enhance their TFP and competitiveness."* (p.63). As a concrete example for TFP enhancement, *"sustainable construction practices for safer and cleaner construction sites"* (p.585) are emphasised. Standards compliance is another topic which is considered important for several sectors. At the time of drafting the **IMP3**, new international regulations on e-waste were

redefining the market opportunities for Malaysia's E&E sector which led to the recommendation to encourage *"... the compliance of Malaysian made E&E products with international standards and certifications"* (p.266).

The **IMP3** is a comprehensive document providing background information on the macroeconomic key sectors, the key challenges and strategies. Malaysia has identified that the global trend is going towards "green", for various reasons, while the need for compliance with international trade practices is the most prominent in the industry roadmap. This is in the statement that *"conformance to standards and certification is essential for SMEs to sustain both domestic and export market shares. Adoption of quality management systems such as good manufacturing practices (GMP), good agricultural practices and good regulatory practices, will not only provide assurance to consumers, but also provide the competitive advantage to SMEs"* (p.181). It has been recognised that *"SMEs will need to improve their adherence to environmental standards and requirements by adopting more environment-friendly technologies and practices, such as: green productivity, where both productivity improvement and environmental protection are achieved simultaneously; cleaner production processes; efficient consumption of energy and materials; and better maintenance and waste management"* (p.182).

NREPAP seeks to change production patterns of the energy sector by increasing the generation of RE in the overall energy mix.[12] For this purpose, measures have been designed to address and attract investors and RE market entrants (**Chapter 4**).

3.1.5 Changing unsustainable consumption patterns

Policies intend to change behaviour of unsustainable consumption systematically target different consumer groups of the product life cycle at the demand side. They are also linked with the economic development goals.

The **10MP** identifies the opportunities in the wholesale and retail sectors and recommends to develop further the distributive trade as it is among the biggest sub-sector in the service industry, *"contributing 13.3% to GDP and RM334 billion in terms of sales in 2009"* (p.127). Besides economic value, there are opportunities to raise customer awareness and hence could shift consumer behaviour to demand for green and better products and services.

As example, the strategy to explicitly itemise subsidy values and eventually de-link subsidy from energy use would indirectly lead to a change of consumer behaviour and a growing demand for energy efficient product and service solutions on the end-user (consumer) side. The **NGTP**, in fact, seeks to *"reduce the energy usage rate and at the same time increase economic growth"* (p.9).The policy promotes the *"application of Green Technology in all energy utilization sectors and in demand side management programmes"* (p.11). In the mid-term, *"Green Technology* [will become] *the preferred choice in procurement of products and services"* (p.13). For the wider perspective and in the long run, it is assumed that a *"widespread adoption of Green Technology reduces overall resource consumption while sustaining national economic growth"* (p.13) with a *"significant reduction in national energy consumption"* (p.13) to decrease energy dependency from other economies.

[12] "Power generation" in this sentence covers "generation, distribution and sale of energy" (NREPAP, p.iii)

The **NPCC** aims at influencing a general behavioural change through incentives to promote *"sustainable lifestyles"* (p.19). The policy objectives address topics that would make available feasible alternatives. For clean mobility, *"RE and EE ...* [are promoted] *in the transportation sector through ...* [the development] *of an effective, efficient, integrated affordable public transportation system"* (p.13). For the building sector, **NPCC** encourages *"property and township development that allows movement by cycling, walking and public transport"* (p.13) and the *"construction of green buildings in* [the] *commercial/institutional, industrial and residential sector ..."* (p.14).

To inculcate a caring attitude towards nature, the **NPE** under its "green strategy" outlines a number of approaches in enhancing environmental education and awareness among Malaysians, including comprehensive formal and informal education. At formal level, the policy recommends that education *"... curricula at all levels ... be reviewed to ensure a multidisciplinary approach with environment and development issues"* (p.8). The policy also includes one important measure that can contribute in changing unsustainable consumption patterns by promoting cooperative *"relationships with the media, entertainment and advertising industries ... to mobilize their experience in shaping public behaviour and consumption patterns"* (p.9)

The **IMP3** again uses more subtle formulations to influence consumer behaviour, namely through *"... enhancing the awareness of trends and potential benefits from ... technologies"* (p.696) which is one out of ten Strategic Thrusts that have been established to address the challenges to promote the application of ICT and other potential technologies for industrial development.

3.1.6 Applying life-cycle thinking

This category of "applying life-cycle thinking" is the highest level of SCP attainment. The Study team in reviewing the policy documents endeavoured to identify and establish examples which fit into this category.

The **10MP** mentions three pillars of sustainable development with regard to "applying life-cycle thinking". This means that any action for sustainable development must be holistic and integrated to fulfil the criteria of "applying life cycle thinking". In this regard, the procedures for project development will require stakeholders to examine economic, social and environmental costs and benefits prior to project selection. In addition, the approach also requires *"a holistic assessment of existing facilities and other projects in the same area, while considering the National Physical Plan, State Structure Plans and Local Plans as a guide in planning and sharing of resources, particularly land use, infrastructure, utilities and services"* (p.330). The implementation of value-management analysis and life-cycle cost evaluation for government procurement is also part of "applying life-cycle thinking". It is stipulated that *"development programmes and projects costing RM50 million or more will be subject to value-management analysis"* (p.338). According to the **10MP**, *"this approach requires consideration of various options to arrive at the optimal project design aligned to the desired outcomes. Life-cycle cost evaluation will ensure cost optimization and value-for-money while meeting required performance levels"* (p.338). In addition, promoting efficient public transportation, access to affordable decent housing, facilitating distinctive attractive environment, providing supporting infrastructure and utilities could be considered under this category too.

The **NGTP** advocates the adoption of *"Green Technology in the construction, management, maintenance and demolition of buildings"* (p.11). It clearly addresses several steps of the life cycle.

The **IMP3** has an integrated view on the "applying life cycle thinking" and seeks to draw additional benefit from linkages *"... between the food-based industry with other related industries and support services ...* [to strengthen and encourage] *local manufacturers of machinery and equipment to collaborate with the food based industry to customize their machinery and equipment and ... the packaging ... with the food processing manufacturers, in keeping pace with advances in technologies, to meet rising consumer expectations and new lifestyles, in terms of convenience and aesthetics"* (p.514).

Overall, Malaysia's policy objectives have incorporated sustainability and SCP-related objectives in a great variety of ways. To implement these objectives, instruments have been defined in the policies. The link with SCP practices is discussed in the next chapter.

Chapter 4

MAPPING OF EXISTING INSTRUMENTS ASSISTING SCP

Chapter 4 goes into further detail on actual instruments proposed to implement the policy objectives at national/federal level. A classification into 6 different instrument types was done in **Chapter 1**. Whenever applicable, exemplary references are made to the actual state of play, success factors and obstacles through information received from the interview sessions.

4.1 SCP-Related Instruments

This chapter looks at the various instruments which are applied or proposed to implement the SCP-related objectives (**Chapter 3**). The instruments have been categorized in **Chapter 1** and summarized in **Annex 6**. In simple terms, policy instruments are supposed to translate SCP objectives into action accomplishing certain results or targets defined in a policy. There is a large variety of policy instruments ranging from hard instruments such as regulations, to soft instruments like information. Evaluation is also made as to how far target groups who are supposed to change behaviour, are addressed.

The ultimate objective of SCP-related policy instruments is to change unsustainable behaviour from production and/or consumption to resource efficient and socially responsible. The study assesses the instruments Malaysia is currently utilizing to achieve this objective, and how effectively this has been achieved. The study also attempts to identify the instruments defined in the policies themselves or in their derivatives or which have been additionally mentioned in the interviews as presented in boxes.

4.1.1 Regulatory instrument

Under the "regulatory instrument", a distinction is made between regulations addressing a system change (e.g. market mechanism) and regulations addressing selected target groups (e.g. certain industry or business). The Study looks also at laws, circulars and enforcement to implement the "regulatory instrument".

The importance of regulations to achieve sustainable development is widely recognised by Malaysia's policy framework which preserves *"our natural resources and safeguard*[s] *the interest of future generations ... by applying appropriate pricing, regulatory and strategic policies to manage non-renewable resources efficiently"* (NEM, p.29).

4.1.1.1 Legal review

Malaysia recognizes the importance of having a systematic review and the harmonisation of existing legislation as stated in the statement in the **10MP** to *"establish a legal framework on access and benefits sharing to ensure that the benefits derived are distributed fairly and equitably"* (p.308). This review includes acts in green economy sectors such as *"Agriculture and food security; Natural resources and environment (water, biodiversity, forestry, minerals, soil, coastal and marine and air); Energy security; Industries; Public health; Tourism; Transportation; Infrastructure; Land use and land use change includ*[ing] *land reclamation); Human settlements and livelihood; Waste management; and Disaster risk reduction"* (NPCC, p.8).

Sustainable production is supported by promoting and increasing *"EE in industrial sectors through ...* [the] *review and establishment of a legal mechanism for EE application in industries"* (NPCC, p.13). The *"regulations and rules will be strengthened to encourage environment-friendly agricultural and forestry practices and minimise the negative impact of such activities on the environment"* (IMP3, p.636).

Other policies highlight legal review include **NPBD** in the statement that *"review and update existing legislation to reflect biological diversity needs"* (NPBD, p.25). An example of a legal review process is illustrated in the change in solid waste management in Malaysia. Traditionally it has been a local government function, under the jurisdiction of the State government. Since many local governments could not provide satisfactory service, the responsibility was gradually transferred from the State to the Federal government. This process is part of the "regulatory instrument" contributing to SCP as

the *"federalisation of solid waste management and public cleansing services …. facilitate*[s] *the modernisation of waste collection, handling and disposal as well as the upkeep of shared public spaces"* (10MP, p. 309).

Limitations set by "regulatory instrument" in the **TCPA** on the prohibition to *" … fell trees with a girth exceeding 0.8 meter"* (TCPA, p.71). Similarly, limitations on maximum levels of resource intensity support enforcement of *"new vehicles engines with higher fuel efficiency"* (NPCC, p.13) and *"… the Total Maximum Daily Load and carrying capacity of rivers to determine allowable discharge loads, for both point and non-point sources of pollution"* (10MP, p.286).

Other "regulatory instrument" is present in several sectors. Examples would include obtaining planning permission for land use and building (TCPA, p.89) as well as mandatory Environmental Impact Assessment (EIA) for large investment projects where *"regulatory and self-regulatory environmental management measures includ*[e] *… Environmental Impact Assessment, as well as environmental management system and plan, and audit"* (NMP2, p.15).

4.1.1.2 Streamlining and harmonisation

The need for a coordinated approach among different actors has been recognised by the government in view of the cross-sectoral nature of SCP. In this regard, several national policies have emphasized the need to streamline or harmonise policies and legislations. In the **10MP**, it is stated, among others, *"… to allow for more efficient and equitable distribution of water resources"* (p.282) and in the **NPCC** it is *"to address climate change adaptation and mitigation …* [issues]" (p.6). The **NPE** calls for environmental related legislation *"and standards … be reviewed regularly and revised where necessary to ensure the continued effectiveness and coordination of laws"* (p.20) and that *"particular attention … be paid to effective enforcement"* (p.20). This is also in line with statement in the **10MP** for regular *"monitoring and evaluation of outcomes"* (p.330)

4.1.1.3 Enforcement

Enforcement of regulations is key to bring about behavioural change in Malaysia. This has been recognised as a priority in several existing national policy statements to *"ensure the adoption of … practices and standards,* [and] *strict enforcement measures …* [are] *in place"* (CIMP, p.23, 24). The call for enforcement is reflected in statements such as implementing a *"… stronger enforcement and imposition of gate fees particularly in environmentally sensitive and heritage sites"* (10MP, p.128); *"… enforcement of the Biosafety Act 2007 will ensure that potentially adverse impacts on biodiversity and human health from biotechnology that uses* [living modified organisms] *(LMOs) is minimised and properly managed"* (10MP, p.308), ensuring the *"compliance with the appropriate national and state policies, physical plans as well as international agreements"* (NMP2, p.12) and managing *"… raw materials … in a sustainable manner in compliance with the domestic laws and regulations"* (NATIP, p.19). Policies which provide for enforcement need to be reviewed and fine-tuned regularly to ensure that industry supports sustainable behaviour. Another statement to this effect is to improve pollution control through *"strengthening the enforcement on industrial effluents and sewage discharge in line with the revisions to the regulations under the Environmental Quality Act 1974"* (10MP, p.285).

4.1.1.4 Regulatory disincentives

When it comes to encouraging SCP in Malaysia, the comprehensive environmental policy framework **EQA** has sometimes been criticized as being counter-productive to efficiency and innovation because to improve environmental standards to spur innovation, the *"applicable principle legislation (Environmental Quality Act 1974) preserves and supports the externalising of cost of environmental damage, as there is no need for firms to adopt cost-effective technologies to ensure compliance is minimised thereby reinforcing a 'business as usual' thinking"* (NREPAP, p.52).

4.1.1.5 Upgrade voluntary Instruments to mandatory instruments

Voluntary instruments are usually contained in guidelines where its adoption is not compulsory. In the case of mandatory instruments, they are provided by legislation and compliance is compulsory.

In the case of Malaysia, voluntary instruments that are currently in place, amongst others, are *"... the use of certified quality timber ... from legal and sustainable sources ... in government projects"* (NATIP, p.19), *"... energy efficiency in buildings for new developments"* (10MP, p.132), and *" ... Green Guidelines and a Green Rating System"* (10MP, p.279) for environmentally friendly townships and neighbourhoods. To ensure effective implementation of voluntary instruments, there is a need to evaluate and upgrade them to mandatory instruments. This can be done in the forms of regulations. Among other possible voluntary Instruments which can be upgraded to mandatory instruments are in the following:

a) Domestic standards for producers and importers

In the steel products/metals industry, *"the absence of mandatory standards has caused difficulties in ensuring the required quality for locally produced and imported products. There is, therefore, a need* [to introduce] *legislation and* [establish] *institutional infrastructure to enforce standards on steel products."* (IMP3, p.336).

Feedback from the interviews reveals a lack of domestic minimum standards for several products and a weak conformity assessment, resulting in the import of low quality/substandard/ toxic goods, whilst domestic producers, to be competitive globally, are forced to produce high quality products. The domestic producers have shown their ability to meet international standards and be competitive globally.

The Malaysian government is aware of the importance of having a Malaysian Standard for its product and services in line with international requirements. The *"formulation and adaptation of* [a] *Malaysian Standards* [need to be accelerated]*"* together with a strict enforcement of its implementation (IMP3, p.190). Enforcement measures include *"... undertaking ... continuous and systematic quality control through compliance to standards and international requirements ..."* (IMP3, p.585) which in fact, is an element that contributes to the total factor of productivity.

b) Energy rating label

The Energy Commission (**EC**) plans to introduce a mandatory approach to the setting up of the Minimum Energy Performance Standards (MEPS) for selected electrical appliances (10MP, p.304) which is usually the responsibility of a

government energy efficiency body. It may include requirements not directly related to energy to ensure that general performance and user satisfaction are not adversely affected. Malaysia so far has adopted the voluntary energy rating label for air conditioners, refrigerators, lighting, and televisions. Companies which are confident in and capable of producing highly energy efficient product (4-5 stars) have applied for energy rating labels for their products. As rating label is not mandatory, it therefore cannot fully serve as an "informational instrument" for customers and this limit the possibility for customers to influence producers through their purchasing choices. A weak data base and a lack of expertise to develop the standard is seen as a stumbling block for its implementation in Malaysia.

c) Clean air and water standards

In regard to the enforcement of clean air and water standards, **NEM** directs that the utilization of natural resources shall be based on *"clean air and water standards"* (p.29) whilst the **10MP** calls for the revision of *"... the current Water Quality Index to incorporate additional parameters, such as biological parameters, for more accurate river water classification"* (p. 286) and the development of *"... National Marine Water Quality Index to replace the current Marine Water Quality Criteria and Standard ..."* (10MP, p.286)

4.1.2 Economic instrument

In **NEM**, Malaysia supports the "Green GDP" concept. The recent development of the "Green GDP" concept *"will allow proper consideration of the impact of growth on the environment and the appropriate design of measures to address environmental concerns"* (NEM, p.93). The current **10MP** highlights the importance of "economic instrument" in supporting sustainable development by providing financial support and promoting sustainability measures (10MP, p.26).

Malaysia recognises the need for *"reviewing incentive schemes and assistance programmes to promote reinvestments, outsourcing, branding, R&D (including commercialization), design and development (D&D), standards conformance and automation"* (IMP3, p.155).

Feed-in tariffs (FiT) is one of the incentives which falls under "economic instrument" to promote RE generation. Presently, the production of energy from non-fossil fuel and non-nuclear energy generation is costly and economically not viable. However, to encourage private consumers to be co-investors for renewable energy production, the government introduced a FiT scheme where the investors are paid a higher than normal tariff from a FiT allocation fund created in December 2011. The FiT allocation fund is finance through the payment of *"... 1% of the tariffs levied and collected (after deducting discounts) from its consumers in Peninsular* [Malaysia]*"* (Renewable Energy Act 2011, p.24).[13]

Production processes that promote SCP are also given economic incentive. Examples of some of the production processes and their economic supports as mentioned in the **NREPAP** are:

i) Waste to energy using biomass, landfill or sewage gas, and municipal solid waste as fuel source;

ii) Energy efficiency using gas engine technology and steam based electricity;

iii) Resource efficiency for building sector using solar photovoltaic in buildings or building structures; and

iv) Minimisation of carbon footprint using locally manufactured or assembled gas engine technology, gasification technology, solar photovoltaic modules, solar inverters.

[13] The electricity sub-sector is dominated by three integrated utilities, i. e Tenaga Nasional Berhad (TNB) serving Peninsula Malaysia, Sabah Electricity Sdn. Bhd. (SESB) and Sarawak Electricity Supply Corp. (SESCo) and complimented by various independent power producers (IPPs), dedicated power producers and co-generators. NUR (Northern Utility Resources) is part of SESCo and operating in Kedah, a state which is located in the north of Peninsular Malaysia. It is exempt from the REA 2011.

4.1.2.1 Investment in green economy

Economic incentives include government efforts to encourage development and expansion of sectors related to green economy. For this purpose, a range of investments have been made in potential sectors. One of the potential areas is the energy sector namely in RE and EE. In the case of RE, its potential has been recognised in the **10MP** in the statement that investments be made in *"new growth areas such as renewable energy"* (p.26) and that *"long-term contracts* [be given] *for renewable energy providers ...* [to] *create the spill-over effects on the related domestic service providers"* (10MP, p. 132). Similarly, for energy efficiency, investment incentives are given to the users of EE technology and processes, in the form of *"technical and financial assistance"* (NPCC, p.13).

An incentive provided under RE investment, introduced by government, is the FiT mechanisms *"to help finance renewable energy investments"* (10MP, p.26). Under this mechanism, power generators who produced *"electricity ... from RE resources ...* [can sell the electricity] *to power utilities at a fixed premium price and for a specific duration. This will provide a conducive and secured investment environment which will make financial institutions more comfortable in providing loans with longer period (at least 15 years tenure) to finance the renewable energy projects"* (NREPAP, p.45). Generally, the incentive given under FiT is in the FiT rates of an initial RM0.31 to RM0.32 per kilowatt hour of energy supplied to the Grid, tapering down to RM0.27 to RM0.28 per kilowatt hour is much higher than the average RM0.19 per kilowatt hour paid to conventional supply of electricity using coal, gas and diesel. The FiT mechanism will *"a) provide fixed revenue stream for the installed an operated RE systems; b) Only pay for the electricity produced, i.e. promoting RE system owner to install only quality RE systems and maintain the systems properly to generate more revenue;* [and] *c) With a suitable degression rate, the RE manufacturers and installers are motivated to reduce the technology costs while maintaining or improving the quality and efficiency"* (NREPAP, p.45).

The downside of the FiT mechanism is the failure to address the initial high investment cost. However this *"can be addressed through soft loan support or financial packages"* (NREPAP, p.46). Further, **NREPAP** suggests that *"firms which adopt and use locally created or developed R&D for RE should be granted special fiscal reliefs by the Government in order to stimulate the innovation system to produce local RE technology (of comparable quality and cost to international benchmark)"* (NREPAP, p.54). Financing for RE power producers is made available through a financial assistance fund of about *"RM500 million to be used over 5 years"* (NREPAP, p.54).

In the water sector, efforts are taken to *"move the water services industry towards efficiency ... and creating a financially sustainable platform for continued investments ..."* (10MP, p.309).

In the case of the environment sector, there is a restructuring of the *"... public transport licensing and operating framework ... supported by major investments in public transport such as the introduction of the mass rapid transit system in Greater KL"* (10MP, p.309) and the provision to *"the private sector to undertake activities in conservation and sustainable utilization of biological resources"* (NPBD, p.33).

To achieve green economy, **NPCC** suggests that *"adequate financing and appropriate technological measures for promoting low carbon economy through ... Market mechanisms; Financial and*

fiscal incentives and disincentives; Mobilising public-private partnerships; and Involvement of financial and insurance sectors" (NPCC, p.9). **NREPAP** stresses the need to provide a *"conducive environment package* [through the] … *provision of fiscal incentives, indirect assistance in* [the] *form of reducing the transaction costs for financing,* [and] *using GLCs and MNCs to lead the charge, and providing assistance to SMEs to participate in the RE business"* (NREPAP, p.iii).

4.1.2.2 Recognition awards

A recognition award is a SCP "economic instrument" acknowledging a contribution towards SCP. Not many recognition awards have been cited as only three policy documents have referred to such recognition. The **NPBD** envisages to provide *"reward structures and design reward mechanisms to strengthen appropriate fields for education to achieve conservation and sustainable use of biological diversity"* (NPBD, p.32). In the **NPCC**, recognition awards are being established to facilitate business and industrial responses to climate change scenarios (NPCC, p.10). **NREPAP** suggests that *"special rewards should be provided to commercial and agriculture building owners that integrate RE technologies … into their new or refurbish*[ed] *buildings"* (NREPAP, p.57). The suggestion has been implemented under the Renewable Energy Act 2011. In line with the green building rating system, **CIDB** has introduced Green Performance Assessment System in Construction (Green Pass). It is an independent construction industry standard that will assess and rate the impact of building construction and operation to the environment.

4.1.2.3 Fiscal advantages

Malaysia utilises "economic instrument" in the form of tax incentives to encourage industry and private consumers to demonstrate sustainable behaviour in different sectors. In the context of enhancing sustainable consumption, the **10MP** recognises the importance of the building sector and suggests to *"… review tax incentives, such as tax breaks for buildings and designs that are environmentally friendly, incorporating green design elements like solar panels for heating, rain water harvesting facilities and water conservation features"* (10MP, p.279).

Fiscal advantages are given to programmes that address both the production side and consumption side which is linked by a common factor. Such a situation falls into the SCP objective category of "applying life cycle thinking". Fitting into this context is the economic incentive for the rating tool on Green Building Index (GBI) certification introduced in 2010 as in **Box 1**. In this economic incentive, building owners can receive an income tax exemption which is equal to the additional capital expenditure to obtain the GBI certification while home buyers can receive a stamp duty exemption on documents of transfer which is equal to the additional cost to obtain the GBI certificate. The common factor in this case is the GBI certification.

Box 1

Green Building Index (GBI)

Green buildings aim to save energy and resources, recyle materials and minimise the emission of toxic subtances throughout its life cycle; harmonise with the local climate, traditions, culture and the surrounding environment; sustain and improve the quality of human life whilst maintaining the capacity of the ecosystem at local and global levels; make efficient use of resources, have significant operational savings and increases workplace productivity; and send the right message about a company or organization – that it is well run, responsible, and committed to the future. GBI is developed by Green Building Index Sdn. Bhd., (GBISB) a wholly-owned subsidiary of Malaysian Institute of Architects and Association of Consulting Engineers Malaysia. GBI is a green rating tool to promote sustainability in the built-environment and raise awareness of environmental issues amongst developers, architects, engineers, planners, designers, contractors as well as the public. GBI is designed for the tropical climate of Malaysia, and incorporates internationally recognised best practices in environmental design and performance. The buildings are assessed based on six main criteria namely energy efficiency, indoor environment quality, sustainable site planning and management, materials and resources, water efficiency and innovation. There are three categories of buildings namely residential, non-residential and industrial. The buildings are rated based on scores achieved (certified, silver, gold and platinum). The GBI certification process starts with an assessment of the building design by GBISB's certifiers. Currently, many properties are interested in obtaining certification from GBI. GBI can be used as a marketing tool for developers to promote their buildings to buyers.

4.1.2.4 Incentives for research & development

A feasible and successful implementation of SCP practices depends highly on the ability of businesses to innovate and commercialise. Incentives for R&D are necessary to reduce the exposure of risk-taking to carry out R&D activities. In this regard, the government through **NEM** grants *"incentives to support innovation and risk-taking to enable entrepreneurs to develop higher value added products and services"* (NEM, p.101). **MOSTI** also provides *"various incentive schemes …* [such as Commercialisation of R&D Fund, Industry Grant Scheme and MSC Grant Scheme] *to promote R&D activities"* (IMP3, p.158). In regard to commercialization, incentives are provided for *"… commercialisation of new technology uptake …"* (NATIP, p.58). In the plantation and commodity sector *"… special funds* [are given] *by the Government for the R&D projects that have high potential for commercialisation ... such as new fibre resources for the biocomposite industry, utilisation of oil palm biomass, development of new technologies in enhancing performance of biocomposite products, furniture, building and automobile components, and product improvement against bio-deterioration"* (NATIP, p.57). In this regard, **MOSTI** has established a R&D commercialization fund. Under the **NGTP**, there is a provision for R&D, Innovation and Commercialization (NGTP, p.18). **NREPAP** suggests that special fiscal reliefs be granted by government to firms *"which adopt and use locally created or developed R&D for RE"* (NREPAP, p.54) in the form of group tax and "*double deduction of the costs of the local innovation or R&D* …" (NREPAP, p.54).

4.1.2.5 Incentives for green technologies

Fiscal incentives and funding for green technology investments are provided under the **10MP** (10MP, p.26). Under this scheme, government issues credit guarantees of 60% for companies developing or using green technology (10MP, p.83, 299).

The Green Technology Financing Scheme (GTFS) was launched in 2010 by the Prime Minister. A budget of RM1.5 billion was allocated to promote and advance green technology (10MP, p.49, 298, 299, 408). Many ministries and agencies are aware of this fund and are actively promoting it through website and the banking sector. The fund is open to both, producers and users of green technology and applications are channelled through the Malaysian Green Technology Corporation (**MGTC**). Under this scheme, a soft loan up to a maximum of RM50 million is provided to producers, and RM10 million to user companies with the government bearing 2% of the total interest rate. However, only companies incorporated in Malaysia with at least 51% Malaysian shareholding (producer) or 70% Malaysian shareholding (user) are eligible to apply for the GTFS loan.

The uptake of the GTFS has been much slower than initially expected. For the period of 2010-2012, RM1.5 billion was allocated for the GTSF, which was meant to benefit at least 140 companies. While **MGTC** has awarded the Green Certificate to 219 companies which make them eligible for the GTFS loan, only 78 projects have successfully obtained their loan amounting to a total of RM1.077 billion. Overall, the approved GTFS value for financing accounts for only 72% of the available budget.[14] This is because, green technology is a new niche area and banks are slow and cautious at processing the applications as they consider them as high risk projects.[15] To extend the benefit of GTFS, government in its 2013 Annual Federal Budget has extended the GTFS until the end of December 2015 with an additional fund allocation of RM2 billion.

In addition, the government is committed to provide support to Bumiputera enterprises *"for the acquisition of technologies …* [in] *biotechnology, nanotechnology and photonics"* (IMP3, p.63). It is recognised that the various government agencies as well as trade associations need to undertake awareness programmes on a regular basis for the different industries to update them on the latest incentives, financial facilities and grants provided by the government (e.g. on timber industry, NATIP, p.109)

4.1.2.6 Green finance

Malaysia has a long tradition of stimulating the market through financial incentives and subsidies. Businesses – although aware of the benefits of cleaner production and SCP – ask for more economic incentives "to encourage them to switch" to a more sustainable behaviour.

Even though sustainable practices sometimes require high upfront investment, especially for installations of new technologies, in theory, they would over time bring about cost savings. Access to finance is important and in the **NEM**, the Government envisages to *"facilitate bank lending and financing for 'green investment'"*. Banks are considering to approve *"credit … for green investment using non-collateral … criteria"* (NEM, p.146).

A flexible scheme for better access to financing is provided to SMEs to source for financing from several *"… government agencies and financial institution such as SMIDEC, MIDF, SME*

[14] The approved GT value for financing amounts to RM1,077,495,485.00 (GTFS website accessed on 31 December 2012)

[15] Input from MGTC on 11 January 2013

Bank, MATRADE, MARA, BSN and MTDC all of which provide special allocations to Bumiputera entrepreneurs" (NATIP, p.109).

An incentive including the Accelerated Capital Depreciation Allowance is provided for the purchase of equipment for the production of by-products (NAFP, p.72). It can be used to promote the recycling of agricultural wastes into valuable products such as composts for supporting crops, animal feed for livestock, and bio-gas for fuel industries, to generate additional income.

Green operations are further supported by the Industrial Adjustment Fund which *"... provides grants and loans at preferential interest rates to companies undertaking M&As, automation, modernization and upgrading of their production capacities"* (IMP3, p.157). A fund for the adoption of new technologies *"will be considered to assist companies in testing and adopting applications of these technologies into their production processes"* (IMP3, p.158). As an example, **MIDA** has provided fiscal incentives for the setting up of proper facilities to store, treat and dispose toxic and hazardous wastes, as well as for waste water recycling activities which require high value-added technologies. Companies that qualify are eligible for (i) Pioneer Status, with income tax exemption of 70% of the statutory income for a period of five years. Unabsorbed capital allowances as well as accumulated losses incurred during the pioneer period can be carried forward and deducted from the post pioneer income of the company; and (ii) Investment Tax Allowance of 60% on the qualifying capital expenditure incurred within a period of five years. The allowance can be offset against 70% of the statutory income in each year of assessment. Any unutilised allowances can be carried forward to subsequent years until fully utilised.

Other innovative "economic instrument" supported by the necessary monetary and fiscal measures to foster accelerated growth in green technology are being pursued through the establishment of green technology hubs, and industry enhancement programmes.

Sustainable green finance is also carried out through co-finance or *"burden sharing between government and power producers"* (NPCC, p.13). The government *"seeks new and additional incentives, funding sources and mechanisms, both at the national and the international levels, for the implementation of the strategies. Funding sources should include government, non-governmental organisations (NGOs), and the private sector"* (NPBD, p.38). Changing production patterns through private funding of the additional cost will benefit *"society at large* ... [therefore] *society must play its part by contributing towards RE development through a fund to be used to pay for the RE power"* (p.iii, NREPAP) and to monitor the fund closely. Society is also expected to gauge the service level of the RE power generators. This means that all actors have co-responsibility for finance and will have to collaborate to achieve sustainable development and a green economy.

4.1.2.7 Economic incentives for further education and training in relevant fields

Different education and training activities are supported financially or with economic incentives. Subsidies are given to individuals who undergo RE training or education. Besides giving fiscal reliefs for higher education in RE, financial and fiscal incentives are also given to students who pursue studies in green technology disciplines (NREPAP, p.58 and NGTP, p.19). There is also a further suggestion, to allow firms entering the RE generation and RE industry market *"to withdraw their contributions from the HRDF to pay for the cost of retraining of their personnel"* (NREPAP, p.59).

4.1.2.8 Government green procurement (GGP)

Government green procurement (GGP) is a relatively new concept in Malaysia. Presently, there is no policy, regulation or a legal framework on GGP. However, the potential effect of the demand-side on GGP has been recognised in several national policies such as **10MP, ETP, NEM** and **NREPAP**. In the Malaysian context, GGP agenda is not only for environmental preservation, but is also to promote and accelerate national economy since government expenditure constitutes 12-15 percent of GDP. Government procurement has also been regarded as a vital tool to achieve socioeconomic and development objectives, support domestic markets, encourage local and foreign investment, instill business confidence, drive innovation, and encourage small and medium enterprises (SMEs) to develop new products.

Preference is given to *"... green products and services ...* [in] *public procurement"* (10MP, p.83). The purchasing power of government as the biggest consumer group can be used to stimulate the market through the adoption of *"Green Technology in all Government facilities and Government-linked entities"* (NGTP, p.19). GGP will further be introduced to encourage demand for green goods and services, particularly when it is related to RE promotion where *"Government should use its strategic public procurement power to spur RE generation and industry growth"* (NREPAP, p.57). Presently the minimum RE allocation target set for selected GLCs ranges from 3-30% (NREPAP, p.56). The government seeks to combine social inclusiveness with environment friendly economic progress to ensure *"public procurement supports local innovation"* (NEM, p.26, 139).

GGP is still lagging behind in terms of its implementation in Malaysia. While **KeTTHA** and **MOF** are in the midst of finalizing mechanisms and strategies in implementing GGP, initial steps towards its implementation have been initiated by the **MGTC** through its workshop on GGP for government procurers; programme to develop technopreneurs; and publication of a booklet on GGP to create awareness on its implementation in the public sector. **MGTC's** plan for 2012 is to establish another two GGP products/services criteria to add to the existing 40 criteria guidelines; and prepare a training module for GGP and conduct at least four training sessions for both government procurers and government suppliers.

In Malaysia, as in many other countries, GGP can be an important economic tool to stimulate and drive a change at the supply side. At the same time, GGP has a great influence on the consumer side because government as the biggest consumer in the market can dictate a change in consumption pattern by mandatory instructions for all government agencies to purchase green products and services. Once the green product lines have been stimulated and strengthened, private consumers can easily access the same goods and services at the cheaper price. Through GGP, government can act as a good role model for civil society and industry and this reinforces the importance of a "green economy". The Malaysian government acknowledges the importance of green procurement and the first steps have been taken for its implementation.

Malaysia supports "applying life cycle thinking" through the implementation of value management analysis and life-cycle cost evaluation for procurement. This can be seen in the statement that *"development programmes and projects costing RM50 million or more will be subject to value-management analysis. This approach requires consideration of various options to arrive at the optimal project design aligned to the desired outcomes. Life-cycle cost evaluation will ensure cost optimization and value-for-money while meeting required performance levels. Ministries and agencies implementing projects costing less*

than RM50 million will also be encouraged to conduct similar analyses" (10MP, p.338). *"An integrated approach will be adopted that requires all stakeholders to examine economic, social and environmental costs and benefits prior to project selection. This approach also makes a holistic assessment of existing facilities and other projects in the same area, while considering the National Physical Plan, State Structure Plans and Local Plans as a guide in planning and sharing of resources, particularly land use, infrastructure, utilities and services"* (10MP, p.330).

4.1.2.9 Internalising external costs

Internalization of external costs is considered another measure to support SCP implementation. The internalization of external costs involves identifying and recognising *"... the attribute and value of ecosystem services and integrate* [it] *into the development planning process"* (NPCC, p.12). This includes the proper valuation of environmental resources through *"assessing the opportunity cost and environmental impact of public or private investments"* (10MP, p.26) as part of the cost of production. The adoption of the *"... outcome-based budgeting ... will take an integrated view of the financial requirements of the programme, including both development and operating costs. This will allow for more efficient management of resources, assist in eliminating redundancy of programmes and projects and ensure that the nation's resources are allocated proportionately to its priorities"* (10MP, p.330).

4.1.2.10 Rationalising incentives

Incentives for SCP generally are given to increase efficiency and to reduce usage intensity in resources. Incentives, sometimes in the form of subsidies, can be easily negated by other policy instruments that serve a purpose other than SCP. Despite that subsidies are given to support SCP, the **10MP** states that there must be an overall strategy to rationalise subsidies especially in certain identified sectors such as the energy sector through periodic reviews. The Malaysian government has acknowledged the importance of this reform and set the target of reducing energy subsidies to achieve market-based energy pricing by 2015 (10MP, p.113, 114). In this connection, the **10MP** states that *"consumer energy bills will explicitly itemise subsidy values and eventually de-link subsidy from energy use"* (10MP, p.288). Even though energy is a strategic sector, it is also suggested that the incentive given be permanently discontinued by 2019 (NREPAP, p.54). On the other hand, there are now active discussions to *"secure buy-in to the idea of societal payments for a clean environment"* (NREPAP, p.iv).

"Economic instrument" can be effective and has an impact even at short notice. For consumers to avail themselves to the incentives there must be a supportive financial sector and effective government marketing to ensure the available incentives reach the target groups.

4.1.3 Educational instrument

Education and awareness raising activities is one of Malaysia's "green strategies" (NPE, p.8) for environmental protection. To support the SCP efforts, there is a need to build and foster a *"culture of conservation and efficiency in …* [the exploitation and the use of scarce natural resources like] *in energy and water"* (10MP, p.132). This is provided in Malaysia's policy framework to *"promote sustainable lifestyles"* (NPCC, p.19). Building a culture of conservation and efficient resource management can be achieved through awareness campaigns as well as through the formal and informal education as identified in the multiple facets in the "educational instrument".

4.1.3.1 Education on sustainability

Know-how on green economy and SCP topics will be integrated into the formal education system by incorporating *"RE in Technical and Tertiary curricula"* to increase the availability of RE technology courses (NREPAP, p.58). Apart from this, *"Innovativeness* [which includes the possibility of venturing with green technology, green economy etc.] *will be nurtured at an early stage through the education system. Modules of entrepreneurship and entrepreneur related skills will be incorporated into the curriculum at the tertiary level, including universities"* (IMP3, p.193). Further, activities will be put in place for *"formal and informal education and awareness raising ..."* (NPCC, p.19).

4.1.3.2 Training centres and courses

Training opportunities on green economy need to be established in Malaysia. For this purpose, more universities are being encouraged to offer training in related sectors. At the same time training institutes and centres of excellence are being established (NREPAP, p.58). To further enhance capacity building, government also established a *"Fibre and Biocomposite Development Centre (FIDEC), training centre for Wood Industry Skills Development (WISDEC), Institut Kemahiran Mara (IKM) ...* [and] *Akademi Binaan Malaysia (ABM) ..."* (NATIP, p.47). In addition, **KeTTHA** in collaboration with **MGTC**, **SIRIM**, **SME Corporation** and **MARA** has established the Technoprenuers Development Programme to develop ten technopreneurs in green product certification. **DOE** through its training centre, Environment Institute of Malaysia (EiMAS) has been actively promoting cleaner production and other green industry initiatives to Malaysian Industries by conducting seminars, workshops, dialogues and demonstration projects. In term of cleaner production, **DOE** has developed specific courses to train their officers to become experts in giving advisory and conducting audits.

In the **IMP3**, emphasis has been given to *"... quality enhancement of the workforce and development of industrial expertise, through technical training, continual professional development and on-the-job training"* (IMP3, p.585) as well as the *"... implementation of retraining programme and apprenticeship scheme to enhance competency of semi-skilled labour to meet the demands of the Green Technology industry"* (NGTP, p.17).

Technical topics of relevance for green economy include *"biosafety management and practice"* (NPBD, p.35); green technology; renewable energy; (NREPAP, p.58), and forest plantation and management (NATIP, p.89). To enhance technical capacity, **NATIP** suggests to *"... collaborate with the Malaysian Productivity Corporation (MPC) to conduct courses on productivity enhancement ..."* (NATIP, p.90) and with the *"... National Institute of Occupational Safety and Health (NIOSH) to conduct courses on safety and health"* (NATIP, p.90).

4.1.3.3 Expert pool

Through *"training of experts"* (NPCC, p.10) and the brain gain programme, an expert pool of knowledge workers will be developed and made available or enlarged to sustain competitiveness in the global market (NATIP, p.49). In this regard, **NPBD** advocates that a team consisting of "a pool of trained, informed and committed manpower [be produced] in the field of biological diversity" (NPBD, p.25). In this context, the **10MP** recognises the important role played by local communities in conservation and utilisation of environmental resources as they possess a depth and breadth of knowledge and capabilities in matters relating to nature handed down over many generations (10MP, p.307, 308).

Regarding the green sectors, it is intended to encourage increased sustainable production patterns in the building sector through *"increasing the level of knowledge within the construction*

community [which] *will drive or reinforce change in the local market for long term sustainability and will ensure sustainable capabilities across the construction industry value chain"* (CIMP, p.9). Further, there is a *"... focus on palm oil-related downstream industries to develop indigenous technology and innovation or acquire technology to meet new market demands ..."* (NEM, p.27, 141).

4.1.3.4 Research centres

To support **NGTP**, local research institutions and institutions of higher learning are being expanded. Besides that, smart partnerships between the government, industries and research institutions will be established. The aim is to create strong linkages between local research institutions and regional and international centres of excellence in green technology research and development and innovation (RDI). In this regard, **NGTP** in its statements highlights the importance of appropriate mechanisms to expand *"local research institutes and institutions of higher learning to ...* [enhance] *Research, Development and Innovation activities on Green Technology towards commercialisation"* (NGTP, p.10).

4.1.3.5 Research &development, innovation, modernisation

Malaysia seeks to discourage unsustainable consumption and production patterns through Research and development (R&D) and modernization by aligning *"... R&D to national growth objectives particularly in innovative and hi-tech fields ..."* (NEM, p. 26, 139) which include "green technologies". R&D areas cover various subjects such as *"Agriculture and food security; Water security and services; Forestry and ecosystem services; Sustainable bio-energies; Public health services and delivery; Localised modelling for projection of future scenarios; Innovative socio-economic and financing mechanisms; Vulnerability due to extreme weather events and natural disasters; and Policy analysis harmonising national and international issues"* (NPCC, p.16); and *"linking of climate science and policy"* (NPCC, p.17). Modernisation of business processes and thus the strengthening of sustainability measures in production processes are being encouraged through *"stage-based climate-friendly technology transfer programme to nurture self-innovativeness and R&D sustainability in local firms and institutions"* (NPCC, p. 16).

The government is committed to support promotional activities to create a higher awareness on green products, services and business processes by the governmental, industry and private customers based on **IMP3** which states that *the "Government will collaborate with Malaysian-owned companies to: intensify outreach and information sharing to enhance the appreciation by the public of the processes of adoption and adaptation of environment-friendly technologies and practices"* (IMP3, p.636).

Green technology is put at the centre-stage of the Malaysian education and consumer awareness activities through comprehensive roll-out programmes such as promotion, *"education and information dissemination"* (NGTP, p.19) and *"advocacy programmes"* (NGTP, p.10) resulting in *"widespread use"* of green technology (NGTP, p.9) and *"increased public awareness and commitment for the adoption and application of Green Technology"* (NGTP, p.10). Other stakeholders must be involved and made co-actors of this process through effective *"involvement of media, non-governmental organisations and individual stakeholders"* (NGTP, p.19).

Malaysia is exploring the use of alternative energy in the timber industry by utilising *"... solar power to supplement electricity ... especially in powering the convection fans. Alternatively, biomass such as wood residue and agriculture by-products can be transformed into biofuel for energy*

production. This will include the utilisation of bioethanol derived from lignocellulosic materials" (NATIP, p.57)

Many other examples to advocate increasing awareness of green economy and related sustainable behaviour can be found in various areas such as climate change (target groups-specific approach, NPCC, p.19), climate-resilient growth (NPCC, p.10), as well as the enhancement of institutional and public awareness on the value of biodiversity. In this respect, **NPBD** recommends to *"promote and encourage the understanding and participation of the public and institutions for the effective conservation and protection of biological diversity"* (NPBD, p.26) and to increase *"the awareness within the civil service at both federal, state and local government levels as well as in professional bodies and the private sector through courses and training programmes"* (NPBD, p.36). In addition **NREPAP** suggests that advocacy *"programmes … be implemented … to increase the awareness of all stakeholders …* [on] *the benefits and advantages of utilising RE and participation in RE businesses"* (NREPAP, p.iv).

Educational programmes are very effective but it sometimes takes a long time to change a society's lifestyle and behavioural pattern. Awareness campaigns can be quicker in impact, but evidence shows that high awareness does not necessarily lead to a behavioural change.

4.1.4 Informational instrument

A large number of "informational instrument" outlined in Malaysia's national policies build on the premise that increased understanding and empowered consumers lead to sustainable consumption. Products and services qualifying as being "sustainably produced" fall under the conditions of energy and resource efficient, eco-effectiveness, consideration of social equity or other related aspects of green economy. The government *"... will collaborate with Malaysian-owned companies to intensify outreach and information sharing to enhance the appreciation by the public of the processes of adoption and adaptation of environment-friendly technologies and practices"* (IMP3, p.636). Examples of other "informational instrument" addressing SCP, is the identification *"and review* [of] *existing mechanisms to facilitate the exchange of information relevant to the conservation and sustainable use of biological diversity"* (NPBD, p.37). This mechanism also includes platforms ("informational instrument"), excellence information centres ("hybrids instrument") and networks ("partnering instrument") which is contain in the statement establishing and strengthening *"systems for the exchange of such information at national and international levels through networking, and by establishing databases and information centres …"* (NPBD, p.37). While increased consciousness is certainly an essential precondition for sustainable consumption to materialize, increased awareness will not automatically lead to a change in behaviour.

Globally and through international trade partners, there is a growing demand for product certification arising from the concern for sustainability, quality, safety and health. Because of the expanded *"... roles of the forest in meeting the demands of society and also the world-wide concerns for the protection of the environment, forest resources will need to be managed in a sustainable manner in accordance with the agreed international criteria and indicators for SFM* [sustainable forest management]" (NATIP, p.33). These concerns have resulted in specific technical requirements to meet certain standards by importing countries such as CE Marking by Europe. The Malaysian government seeks to stimulate private sector compliance as a form for securing future competitiveness. To achieve this *"the adoption of certification of wood products, according to international trading requirement will be encouraged"* (IMP3, p.440,

441). In fact, Malaysia has been *"recognised as the first tropical timber producer to be able to offer certified timber products under its own Malaysian Timber Certification Scheme (MTCS)"* (NATIP, p.71).

Green accommodation is promoted under the **10MP** where *"tourism products and activities* [are being certified] *to ensure quality, sustainability and safety"* (10MP, p.128). The successful efforts by a number of Malaysian hotels in obtaining ASEAN Green Hotel Award show that they are capable of complying with the strict environmentally friendly criteria set at the regional level as shown in **Box 2.** Ten (10) Malaysian hotels have been awarded the certification.

Box 2

Green Hotel Award's Criteria

- Housekeeping uses non-toxic cleaning agents and laundry detergent
- 100% organic cotton sheets, towels and mattresses
- Non-smoking environment
- Renewable energy sources like solar or wind energy
- Bulk organic soap and amenities instead of individual packages to reduce waste
- Guest room and hotel lobby recycling bins
- Towel and sheet re-use (guests can tell housekeeping to leave these slightly used items to reduce water consumption)
- Energy-efficient lighting
- On-site transportation with green vehicles
- Serve organic and local-grown food
- Non-disposable dishes
- Offers a fresh-air exchange system
- Gray water recycling, which is the reuse of kitchen, bath and laundry water for garden and landscaping
- Newspaper recycling programme
- The hotels (other than eco-hotels) offer modern accommodation built in non-natural environments like a city

Another example is the certification under the FLEGT/VPA negotiations (EU Forest Law Enforcement, Governance and Trade, Voluntary Partnership Agreement) on supporting good environment and forest management practices. Malaysia recognises that products certification will enhance the confidence of consumers and at the same time gain market recognition for Malaysia's timber product where **NATIP** states that such *"initiatives* [in certification] *have to be actively promoted to project Malaysia's image as a responsible long-term producer and exporter of timber and timber product from sustainably managed forests"* (NATIP, p.72).

National policies encourage firms to *"adopt and comply with international standards and requirements on quality, safety and environment to improve market access for their products and services"* (10MP, p.101). National policies recognise

that the *"achievement of these standards requires raising the awareness of its importance among relevant stakeholders and the implementation of a quality management system ...* [especially] *on Occupational Safety and Health Management System (OSHMS), and environmental management and assessment systems"* (CIMP, p.23) for the building sector. Firms are encouraged *"to meet Malaysian Standards and recognised international standards for goods and services ..."* (10MP, p.83) and to develop *"... global best practices through competitive benchmarking and promoting the adoption of international standards and best practices in the services sector"* (IMP3, p.580). Certain markets require the harmonisation of standards and quality, and the government recognises the need to *"intensify efforts to harmonise and standardise product specification and quality"* (NATIP, p.18). The harmonization and standardization of timber products by MTIB is undertaken in collaboration with the Department of Standards Malaysia (**DSM**).

The Study finds that many MNCs and other export-oriented businesses have been adopting international standards and best practices to comply with the requirements of international trade partners. For many years, there is a stable foundation of businesses complying with international standards and best practices. In the electric and electronics (E&E) sector, Malaysian companies have accumulated vast experience through supporting the global multinationals and become exporters in numerous areas namely electronic manufacturing services; wafer fabrication; integrated circuit designs; assembly, packaging and testing; parts and components for electrical products; power/energy generation; solar solutions; LED lighting solutions; consumer electrical items; and IT parts & accessories. In line with the current global trend for green/ environmental friendly products i.e. minimizing waste and pollution, non-hazardous, energy savings as well as the move towards sustainable renewable energy, Malaysian companies are able to meet world standards and produce high quality parts & components for E&E products that can be exported anywhere in the world. Malaysian exporters are also ready to embark on joint venture projects for new products development, innovation, research & development with any interested business partner towards harnessing the future technology. Home-grown brands like "Pensonic", "Khind", "Joven", "Alpha" and "MEC" have also made inroads into the export markets. "Pensonic" based in Penang, is the biggest of these with a valuation of RM300 million and about 10 percent of market share. "Pensonic" products are now exported to the ASEAN countries and the Middle East.

The domestic market in Malaysia does not make it mandatory for domestic products to meet international standards in terms of quality, safety and environment standards. Thus, domestic producers often adopt a two quality standards, one for the domestic market and a separate one for international markets. This practice together with imports that enter the country through a currently weak conformity assessment system - implies that the domestic market receives products and services of substandard or lower quality.

Feedback from several interviews reveals the concern of stakeholders on low or non-existent domestic standard. There are a number of industries producing products which meet international standards and they have been exporting globally. Although capable of producing products which meet required international standards, some of these industries, however produced products which are below international standards for domestic market. At the same time, domestic and international trade policies make it easy for low quality and low cost products to enter the Malaysian market. This is not only frustrating for domestic manufacturers and service providers but is also counter-productive to SCP.

The standards and labelling programme provide reliable information on green products available in Malaysia and its potential to drive sustainable demand for the promotion of green technology. This is in the MyHijau Directory published in 2011 (**Box 3**) which provides a list of *"Green Technology ... products, equipment and systems"* (NGTP, p.6). The **IMP3** recognises standards and labelling as an important precondition to empower consumers *"... with relevant and accurate information on products of the companies to enable them to make informed choices on their purchases"* (IMP3, p.636). To strengthen efforts in the standards and labelling programme, Department of Standards Malaysia has formed a Technical Working Group for the development of Accreditation for Ecolabelling Certification programme where **MGTC** and **SIRIM** are among members of the committee.

Box 3

MyHIJAU Directory

The industry is actively developing green products and services to make them widely available for the society. However, consumers need to be educated and aware of the importance of green products for them to change their purchasing style in making green products as their preferred choice. Therefore, efforts must be made to inform consumers of the availability of the eco-products and services available in the market. MyHIJAU Directory has been in operation since January 2011 and represents a comprehensive guide to a wide range of green products available in Malaysia with further description of the varieties and characteristic of green products according to their categories. The MyHIJAU Directory is a guide for the consumers to make a purchasing decision based on environmental considerations. Hence, the directory is appropriate platform for manufacturers and resellers to promote their green products to the consumers. In order for any product or service to be listed in MyHIJAU Directory, it has to represent quality, safety, energy efficiency, environmental impact and health. All products and services that contribute to environmental sustainability such as minimal use of resource, energy efficiency, improve air or water quality, minimal waste, reduce carbon dioxide emission, improving ecological biodiversity and improve health and well-being. The directory not only promotes green products and services but also those listed in the directory shall also have the opportunity to network and participate in exhibitions, seminars and trainings conducted by the MGTC.

In addition to the "informational instrument" outlined above, energy and resource efficiency related reporting and energy audit are expected to lead to a sustainable behaviour. For instance, **NPCC** refers to the need for energy audit to promote energy efficiency in industrial and building sectors (NPCC, p.13, 14).

For GHG reporting purposes, **NPCC** suggest the establishment of a *"GHG emissions reporting framework for industries with linkage to the Statistics Department to ensure a sustainable and quality assured reporting process"* (NPCC, p.10). **IMP3** also recommends that a comprehensive performance rating system in the building sector be *"introduced to cover key areas such as quality, safety and health, environment and financial strength"* (IMP3, p.584). **CIDB** has been identified to *"become* [the] *...integrated centre for the registration and renewal of licenses of contractors to improve the performance of contractors"* (IMP3, p.584).

Another initiative in the energy sector is the Energy Star Rating. The rating is from 1-5 stars, with 5 stars being the highest rating. It is a voluntary system. Currently only companies that are competitive and are confident of obtaining at least 4 stars will apply to be rated. Companies which are able to qualify for 1-3 ratings only will not apply as they see not benefit from it. This means that, the products in the market are rated either 4 or 5 stars or nothing at all. This makes it difficult for consumers to make informed decisions as there are no products with rating 1-3 stars. The industry has pointed out that the voluntary nature of the system hinders its proper implementation towards SCP and suggests that it be made a mandatory system.

Eco-labelling as an "informational instrument" has been piloted from August 2010 to April 2011 as a voluntary scheme to encourage business to create environmentally friendly products as well as to help consumers to identify environmentally friendly products. The "informational instrument" addresses both, producers to generate their products and services in an environmentally friendly way, and consumers to use only products and services produced sustainably. So far, eco-labels have not yet be given much attention by the business sector. **SIRIM** has come up with 40 product categories for manufactured goods in Malaysia and **CIDB** has come up with 2 document criteria on construction materials. Since the introduction of eco-labelling in Malaysia, 293 products and 46 companies have been Eco-Label. In addition, there are currently 1,391 models of electrical appliances, including the domestic fan and air conditioners, are registered under the Energy Rating.

4.1.5 Hybrid Instrument

4.1.5.1 Strategy development and plans

Malaysia's "green strategies" address the following key areas: "... *(i) Education and awareness, (ii) Effective management of natural resources and the environment, (iii) Integrated development planning and implementation, (iv) Prevention and control of pollution and environmental degradation, (v) Strengthening administrative and institutional mechanisms, (vi) Proactive approach to regional and global environmental issues, and (vii) Formulation and implementation of Action Plans"* (NPE, p.7).

Other strategy development includes the emphasis on *"adaptation strategies to ensure sustainable growth and mitigation strategies to reduce emission of greenhouse gases" (10MP, p.26)* and a *"... long-term strategy for water resource management ..."* (10MP, p.281). This strategic development addresses *"balanced adaptation and mitigation measures into policies and plans"* (NPCC, p.11) as well as to ensure *"compatibility between conservation and sustainable development"* (NPBD, p.31).

The **NPP2** calls for the establishment of an *"efficient, equitable and sustainable national spatial framework to guide the overall development of the country towards achieving a developed and high-income nation status by 2020"* (NPP2, p.2-1). Other Malaysian policies strive at increasing *"efforts to strengthen and integrate conservation programmes"* as well as ensuring *"that all major sectoral planning and development activities incorporate considerations of biological diversity management"* (NPBD, p.25).

The economic effect of sustainability has been integrated into policy considerations as reflected in the statement taking *"mitigating measures to reduce the adverse effects of human activities on biological diversity"* (NPBD, p.25) and *"promoting eco-tourism to create commercial value in sustainability"* (10MP, p.26).

4.1.5.2 Platforms and competence centres

Malaysia's commitment to SCP is expressed in its institutional framework. **KeTTHA** is in charge for **NGTP** while **MGTC** for the coordination of green technology initiatives and programmes was established to strengthen the application of green technology as a driver for green economy in Malaysia. In addition, the MTHPI chaired by the Prime Minister was established. This is a high level *"inter-ministerial and cross-sectoral committee ...* [for coordination among government, private sector and key stakeholders to oversee the planning, implementation and monitoring] *of climate change measures"* (NPCC, p.8).

Similarly a high level institutional framework has been established to address and reinforce biodiversity in terms of *"Biological Diversity Management"* (NPBD, p.24, 29), policy formulation, administration, coordination, private sector and NGO participation, and collaboration between Federal and State authorities. The institutional framework can be strengthened by setting up a national center for biodiversity which can be the *"... technology research powerhouse and centre of excellence ...* [operated] *on a commercial basis ..."* (NEM, p.26, 139).

Overall, this serves the purpose of establishing *"Malaysia as a centre of excellence in industrial research in tropical diversity"* (NPBD, p.24). The **NEM** foresees the setting up a *"technology research powerhouse and centre of excellence run on a commercial basis ..."* (NEM, p.26,139)

4.1.5.3 Studies

Studies are tools that are usually grouped under "hybrid instrument". They provide important insight into existing good practice and provide the opportunity to test new approaches. For example, Malaysia seeks to determine the economic value of its habitat and natural resources through *"survey*[s] *and document*[s on] *the biological diversity in Malaysia, and undertake studies to assess its direct and indirect values ..."* (NPBD, p.24). Similarly, new concepts are being explored in the wood based industry through *"studies cover[ing] areas in both the upstream ...* [for] *forestry and downstream* [for] ... *wood-based products, and technology development and enhancement ... segments"* (IMP3, p.433).

4.1.5.4 Projects and programmes

Apart from policies and strategies, projects and programmes are also part of the instrument mix. Projects and programmes undertaken by government are as below:

a) **KeTTHA's** Smart Partnership Projects (SPP) on Green Jobs, Green ICT and international cooperation with South Korea;

   i) SPP on Green Jobs - **KeTTHA** has been working with the Department of Skills Development (**JPK**), Ministry of Human Resources (**KSM**) to develop the Occupational Analysis (OA) and the National Competency Standard (NCS) on Green Technology, to develop and list out the generic competency of the occupations in order to create the green jobs. The International Labour Organization (ILO) also helped out in preparing a "roadmap" for green jobs development in Malaysia to provide the way forward in creating opportunities and paving a clear direction for the future of green jobs in Malaysia;

ii) SPP on Green ICT provides support to the ICT Policy and Planning Division at **MAMPU** in collecting the input on the application of Green Technology in ICT to help reducing CO_2 emissions; and

iii) SPP Cooperation between Malaysia and South Korea on green technology project is the sharing of information on policy and regulatory framework in the field of green technology.

b) The Central Forest Spine and Heart of Borneo projects are for ensuring the sustainable use of forests and their natural resources by implementing two major initiatives (10MP, p.49, 306);

c) The Forest Plantations Programme (FPP) is to ensure the sustainable supply of raw materials for the timber industry in the long term (NATIP, p.15);

d) Promote projects eligible for carbon credits (10MP, p.26);

e) SME Support programmes

i) *"Specific programmes will be implemented to nurture local SMEs as R&D partners to tap the opportunities of R&D outsourcing by MNCs and GLCs. Measures will also be undertaken to encourage collaborative ventures among MNCs, GLCs and SMEs to facilitate technology transfers and skills development. Existing programmes for enhancing technological capabilities and supporting R&D activities among SMEs will be strengthened. The scope of coverage of the programmes will be expanded to include the acquisition of 'bridging technologies"* (IMP3, p.192);

ii) The Small Renewable Energy Power (SREP) Programme was first launched in May 2001, together with the coordinating and oversight Special Commission on Renewable Energy (SCORE). SREP allows renewable energy projects of up to 10 MW to sell output to the power utility under a 21-year licence agreement. Any renewable energy plant including biomass, biogas, municipal waste, solar, mini-hydropower and wind, may apply to sell energy to the grid on a *"willing seller and willing buyer basis"* (NREPAP, p.77). The first Renewable Energy Purchasing Agreement (REPA) between TNB and a plant owner was signed in 2001. The program is, however, limited to 219 MW in 2011, but will be increased to 1 GW in 2015. The bulk of the generating capacity to be installed is set aside for biomass and mini-hydropower. While participation has steadily increased and the results have been encouraging, the total volume of electricity generated is still small;

iii) *"SMIDEC, in collaboration with technology-based institutions, such as SIRIM Berhad, MTDC, MDeC and Malaysia Bio-Technology Corporation, will introduce technology foresight programmes for SMEs which will enable them to be aware of and take advantage of future technologies"* (IMP3, p.191); and

iv) Provide ready-to-use incubators that are compliant with international standards such as Good Manufacturing Practices (GMP) and Hazard Analysis and Critical Control Point (HACCP) (10MP, p.157).

f) Corporate social responsibility enhancement projects to:

i) Encourage firms to provide support in the establishment and maintenance of green spaces as part of their corporate social responsibility (CSR) programmes (10MP, p.257);

ii) Protect flagship species by initiating public-private corporate social responsibilities (10MP, p.26, 307); and

iii) Establish and promote "green" image through responsible practices in forestry, trade and environment (NATIP, p.72).

Technology-related initiatives including institutional building programmes which have been undertaken and proposed are:

a) High technology parks (IMP3, p.158);

b) Coordinating agency for *"RDI and Centre of Excellence or new research institute for Green Technology development"* (NGTP, p.18);

c) Strategic programmes (stage-based climate-friendly technology transfer programme) (NPCC, p.17);

d) Human resources development (brain gain programmes), advice on business process modernization and promotion of private sector finance for technology investments (NATIP, p.48, 49); and

e) Conduct scientific research, environment protection and conservation in the Exclusive Economic Zone (EEZ) (NPP2, p.3-5).

4.1.5.5 Demonstration projects

The Study finds that Malaysia has substantial experience in SCP implementation through demonstration programmes. Two demonstration programmes in term of green technology applications undertaken by the government are:

a) Green Township pilot project in Cyberjaya and Putrajaya which is a flagship project mentioned in the **10MP** (10MP, p.279); and

b) The Low Carbon Cities Framework and Assessment System (LCCF) (**Box 4**) which include Green Neighbourhood Development.

Box 4

Low Carbon Cities Framework And Assessment System

The low carbon cities framework and assessment system is an assessment tool to assist local authorities, developers and designers in assessing whether development carried out within the city contributes towards reduction or increment in greenhouse gases (GHG) and the roadmap design towards the measurable emission target. It was developed by KeTTHA with supported from the MGTC and Malaysian Institute of Planners in 2011. The assessment is performed based on four main elements namely; urban environment, urban transportation, urban infrastructure and buildings. Within these four main elements, are 15 performance criteria and 42 sub-criteria. During the stakeholders' discussion in the process of framework design, they are allowed to decide either a city based approach or a one system approach. The framework and assessment tool identify a city based approach is the scheme where it enables local government to lead a development process that takes into account their specific circumstances including their local ecology. Meanwhile, a one system approach is another scheme enables cities to realize the benefits of integration by planning, designing and managing the whole urban system. The low carbon cities framework and assessment system is currently evaluating on Putrajaya and Cyberjaya.

Complementing the above instruments, several *"... outreach and awareness programmes targeting various segments of society* [will be expanded]" (10MP, p.286), viz.:

a) Langkawi Award;

b) Rakan Alam Sekitar (**Box 5**);

c) Malaysia Environment Week;

d) Promotion of Cleaner Production to Industries (**Box 6**); and

e) Environmental Debate amongst higher institutions.

Box 5

Rakan Alam Sekitar (Friends Of Environment)

"Rakan Alam Sekitar" was created to increase awareness and urging participation of local communities in the Parliamentary constituencies in environmental conservation and protection as well as combating environmental pollution. Other objectives include increase awareness on environment conservation; instil a sense of responsibility among the community to participate in caring for the environment; and provide a proper channel for the community to air their grouses or views about the environment to the relevant agencies. 61,488 people from 222 Parliamentary constituencies have been registered as members of Rakan Alam Sekitar.

Box 6

Promoting Cleaner Production In The Malaysian Industry

Cleaner Production (CP) refers to the continuous application of an integrated, preventative environmental strategy to processes, products and services to increase eco-efficiency and reduce risks to humans and the environment. CP aims at making more efficient use of natural resources and reducing the generation of wastes and emissions at the source. The most common prevention practices include product modification, input substitution, good housekeeping and on-site recycling. Nowadays, CP has emerged as one of the tools to minimise the environmental impact, improve efficiency and reduce cost. In the context of Malaysia, CP Programme has been implemented by SIRIM since 1996 through its G-G Technical Cooperation Programme in collaboration with Danish International Development Agency (DANIDA) and subsequently with Japan International Cooperation Agency (JICA) in 2002. The DOE became a key player in promoting CP practices in Malaysia since 2001 through its technical cooperation programme in collaboration with SIRIM and Danish Cooperation for Environment and Development (DANCED). SIRIM is appointed by DOE as a consultant to conduct CP audits in industries and technical advisory support to enhance implementation of CP in the Small and Medium Enterprises (SMEs). The use of CP amongst industries in Malaysia contributes towards reducing environmental pollution, improving the industry's compliance with environmental regulations, and improves their overall efficiency and productivity. In 2009, MM Vitaoils Sdn. Bhd. (MMV) was selected for CP Demonstration Project to showcase how CP was implemented in a Malaysian company. MMV produces palm based products such as cooking oil, ghee, margarine shortening and pastry. A total of 254 CP options were generated during the CP audits; among other includes reduce wastage of electricity, water and raw material usage; minimize production of reject products, reduce risk in premise and increase premise productivity. The CP Demonstration Project was further continued in 2011 at Batik manufacturing premise viz. Dagang Batikraf Sdn. Bhd. in Kelantan. The project aimed to establish environmentally friendly and competitive batik industry through adoption of CP.

Another important adaptation measure to increase sustainable consumption is clean mobility, which encourages a greater use of public transportation over private vehicles. For this to happen, there must be effective public transformation in the form of *"... an efficient integrated inter-urban public transportation system featuring high speed train, low fare domestic flight, public buses and highways and city centre transportation hubs. For intra-city travel ... the coverage and efficiency of trains, taxis and buses and inter-connectivity* [will be developed]" (NPP2, p.2-13).

4.1.6 Partnering Instrument

When it comes to "partnering instrument" in existing national policies that relate to SCP, there are multiple forums and networks in place which provide platforms for cooperation to jointly work towards SCP.

4.1.6.1 Multi-stakeholder working groups

Malaysia has emphasized its commitment to SCP-related policy objectives through the establishment of relevant institutions (**Chapter 3**). As SCP is complex in nature, there is a need for good coordination among those involved and this requires the institution of *"a mechanism for coordinating consultation among stakeholders on national positions* [especially if it is for national] *and responses to address current and emerging issues ...* [in] *international negotiations"* (NPCC, p.20).

4.1.6.2 Regional and international collaboration and networks

Malaysia is aware of the trans-boundary issues of SCP-related policies. Among the implementing instruments, regional and international collaboration and cooperation on green economy is considered key to sustainable development. "[R]*egional cooperation* ... [is promoted] *within existing inter-governmental and non-governmental mechanisms"* (NPCC, p.20). Some regional collaboration and cooperation initiatives on biological diversity and trans-boundary issues are related to the "establishment of transfrontier national parks" (NPBD, p.37); *"effects of pollution on biological diversity"* (NPBD, p.37); and *"biological diversity conservation and management"* (NPBD, p.26).

4.1.6.3 Inter-institutional collaboration and networks

In regard to raising awareness on green economy subjects and tools to achieve SCP, Malaysia acknowledges the importance to *"strengthen collaborative networks and capacity of agencies at the federal, state and local government levels"* (NPCC, p.18). Partnership between public agencies and the private sector is expected to support R&D initiatives in many sectors, such as green technology, manufacturing industries and timber industry. Statements supporting collaboration and networks are *"fostering R&D links between the institutions of higher learning and the private sector"* (NEM, p.26, 139); *strengthening "R&D efforts between RIs* [research institutes]*, universities, government agencies and the industry"* (NATIP, p.58); enhancement of *"smart partnerships between the Government, industries, and research institutions* [on green technologies and RDIC]"; and establishment of *"strong linkages between local research institutions and regional and international centres of excellence in Green Technology RDI"* (NGTP, p.18).

Networking provides an opportunity for finance and resource pooling, as well as mutual learning. The construction sector recognises the advantage of stimulating *"... R&D activities through resource-pooling initiative amongst key players and provision of R&D infrastructure"* (CIMP, p.12). According to **IMP3**, the quality of technical training can be improved by *"... enhancing collaboration with institutions of higher learning in: R&D; and designing programmes*

for the continuing education of workers ..." (IMP3, p.661). In addition, the *"upgrading of the quality of the workforce* [can be achieved] *through collaborations between universities and the industry ..."* in the form of *"... internship and exchange programmes to facilitate the matching skills requirements by the industry"* (IMP3, p.267).

The private sector seeks *"closer collaboration with specialized government research institutions and universities"* (IMP3, p.192). The government on the other hand normally *"... collaborate*[s] *with Malaysian-owned companies to ... encourage companies to utilize raw materials and energy more efficiently* [especially] *in their production processes ...* [to] *ensure the sustainable management and utilisation of resources in the pursuit of ... development"* (IMP3, p.636). In the context of driving sustainable production practices, the government engages the existing MNCs that are environmentally conscious and/or friendly and have a *"long standing relationship with local suppliers"* (NREPAP, p.56).

An important factor to bring about change to unsustainable production processes is the access to relevant technology. There is a need to *"facilitate contacts between private sector and public sector in order to improve design and transfer of ... technology, ...* [especially in] *biotechnology"* (NPBD, p.32). For this purpose, *"formation of appropriate joint venture projects with multinational and other corporations to encourage science and technology transfer in enhancing the economic value of biological diversity"* shall be encouraged (NPBD, p.33).

Private sector participation is being promoted *"in biological diversity conservation, exploration and sustainable utilisation"* (NPBD, p.25). In the green construction field, partnering *"may occur in varying degrees, from the traditional design and build method, to project partnering and finally to strategic partnering alliances ..."* (CIMP, p.14).

Participation of civil society and local communities in different stages of regional development envisaged in the eco-tourism sector will facilitate *"eco-tourism activities"* (10MP, p.26, 306, 308). The involvement of local communities will strengthen the effectiveness of the policy instruments and at the same time empowers the community representatives to have a role to support the change towards SCP in Malaysia.

Regarding the target groups, the different quotations identified make reference to a great variety of different actors such as businesses, government, media, non-governmental organizations and individual stakeholders. Another target area is the green technology sector which includes green building, clean mobility, renewable energies and sustainable cities. Very often, the target group is not directly addressed in the policy statement. This is the reason why the instruments are grouped in the lower levels of SCP objective attainment such as "general issues on sustainability" or "moving towards green economy". Without identifying the target group, there is a lesser chance for the policy objective to effect a change in behaviour of government, industry or private consumers or society's way of life to be able to be grouped in the highest level of SCP attainment "applying life cycle thinking".

Chapter 5

MONITORING SCP POLICY OBJECTIVES

Chapter 5 examines the existing monitoring mechanisms and the impact of the national policies. The assessment of the achievements of existing institutional set-ups on their SCP-related objectives is based on the indicators defined in the policies.

5.1 Current monitoring mechanisms

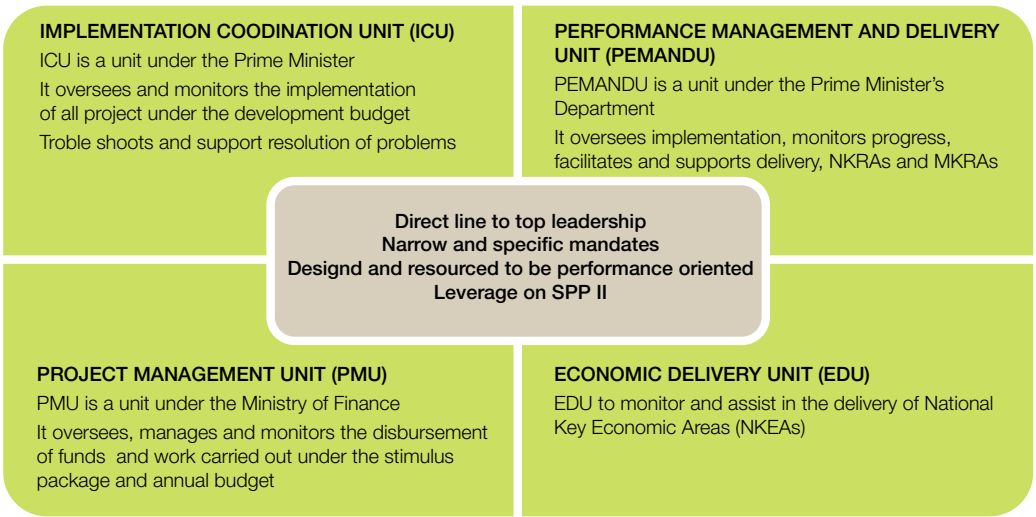
An enabling environment is crucial for policies to achieve their desired objectives. Hence, it is timely to examine how SCP-related policies can effectively meet their objectives. One of the measurement methods is to have appropriate instruments with a good monitoring and evaluation process which can support data analysis and contribute to a good reporting system. The whole process is vital for SCP.

At the onset, it is necessary to determine if the current monitoring arrangements are appropriate to evaluate the measurements of SCP objectives outlined in the policies. The appropriateness of the monitoring system is assessed by the data generated and the ease with which the data can be analysed efficiently. The Study Team was not able to obtain the required information on the monitoring systems implemented at ministerial and agencies level during the period of the Study.

Recognizing the importance of effective implementation, monitoring and delivery, the government established the Implementation Coordination Unit (**ICU**) under the Prime Minister's Department. ICU's main task is to coordinate, monitor and evaluate the implementation and outcome of policies and strategies implemented during the period of the five-year development plans. **ICU's** main focus lies in monitoring the overall development policy at the national level whilst most of the sectoral policies have an assigned "owner" at line-ministry level for monitoring purposes.

Apart from **ICU**, other government monitoring and delivery units include the Project Management Unit (**PMU**), the Performance Management and Delivery Unit (**PEMANDU**) and the new Economic Delivery Unit (**EDU**) as shown in **Figure 14**. **EDU** and **PEMANDU** are in the Prime Minister's Department, and **PMU** is a unit within the Ministry of Finance. According to the **10MP**, the **ICU, PMU, PEMANDU** and **EDU** share four common characteristics as presented in **Table 10**.

Figure 14: Monitoring and Delivery Unit



Source: EPU (2010). 10th Malaysia Plan

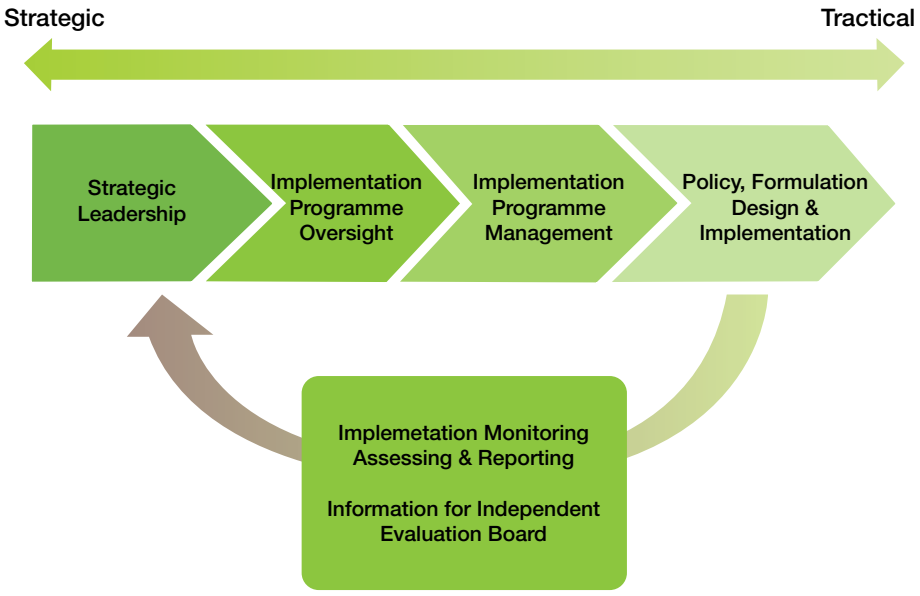
Table 10: Characteristics of ICU, PMU, PEMANDU and EDU

Characteristics	Purposes
Direct line to the highest levels of leadership	Increase speed of decision making based on direct feedback from the monitoring agencies
Narrow and specific mandates	Allowing for quick intervention and remedial actions when required
Designed and resourced to be highly capable and performance-oriented units	Enabling highly capable units, embedding data-driven techniques and performance mindsets
Leverage SPP II (Project Monitoring System)	Providing comprehensive, transparent and up-to-date view of the status of current projects through a common data and reporting system with a single interface enabling comprehensive status reports to be generated when necessary

Source: EPU (2010). 10th Malaysia Plan

The national development plan enhances the government's efforts to establish a "high performance monitoring unit". There are specific provisions in the **10MP** for strengthening the mechanisms on designing, monitoring, reporting and making adjustments to policies underlying the **GTP, ETP** and **NEM**. **PEMANDU** was established in 2010 to accelerate the implementation of the national transformation programme. In line with this, the National Key Result Areas (NKRAs) and Ministerial Key Performance Indicators (MKPIs) have been setup to shift towards an outcome-based approach for planning, monitoring and evaluating of public sector programmes. **PEMANDU** has been mandated to catalyse bold changes in public sector delivery to support the ministries in the planning and delivery process and to provide an independent view of performance and progress to the Prime Minister or Ministers directly. The several facets of the functions of **PEMANDU** are shown in **Figure 15**.

Figure 15: Operationalising PEMANDU's functions

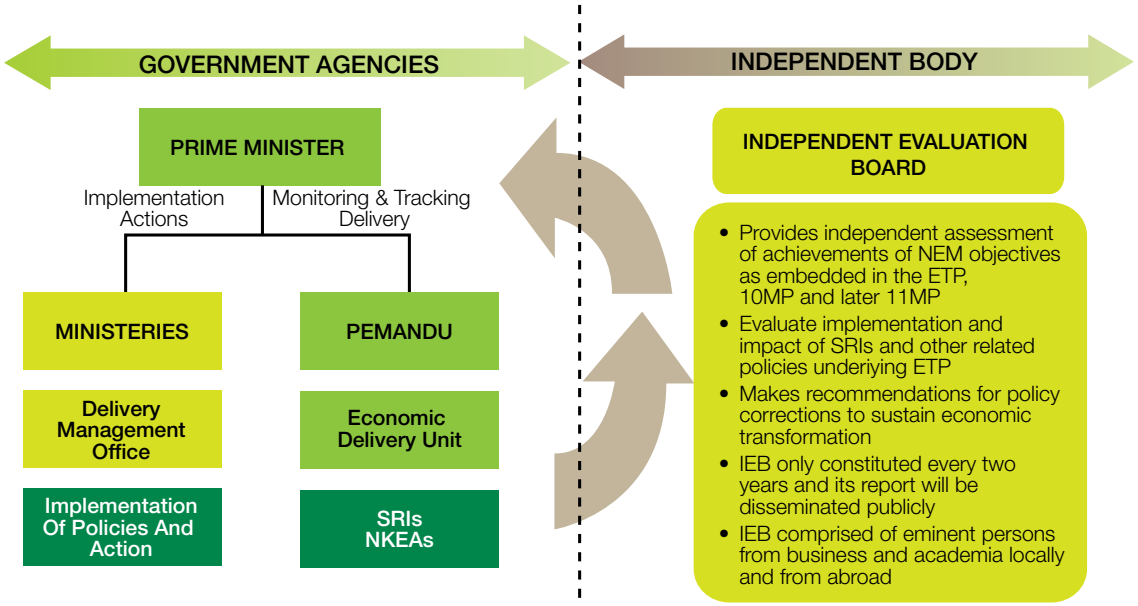


Source: NEAC (2010). New Economic Model

To facilitate the implementation and delivery of the **ETP,** the ETP Unit (**ETPU**) was established as a division of **PEMANDU**. In general, the **ETPU** plays the role as a central facilitation team to bridge disparate units of government, provide linkage to the private sector and present a platform to resolve issues that arise during implementation. The overall role of **ETPU** includes architecting the **ETP** and resolving issues that arise during its implementation, as well as mobilising investment by bringing parties together, and ensuring that implementers perform and accelerate delivery. **ETPU** also monitors the progress of the Entry Point Projects (EPPs) to ensure accountability of both the project owners as well as the supporting government institutions. The Unit is responsible for regular and transparent reporting across NKEAs and the overall **ETP**.

To enhance effective policy monitoring and evaluation, the National Economic Action Council (NEAC) under the **NEM** has proposed an implementation framework as illustrated in **Figure 16**. NEAC has proposed **PEMANDU** to be the central agency with the mandate to coordinate, formulate and design policy mechanisms, monitor the implementation, assess the impact and effectiveness, and, if necessary, suggests remedial measures. Apart from that, NEAC also suggests that the government makes provision for the setting up an independent assessment and evaluation board (IEB), whose main task will be to undertake a two yearly in-depth strategic review on the impact and relevance of the policy measures underlying the Strategic Reform Initiatives (SRIs).

Figure 16: Implementation framework proposed by NEAC



Source: NEAC (2010). New Economic Model

To ensure close monitoring of NKEAs, the **GTP** has established a number of "delivery principles" as listed below:

a) Flashing reports to update the Cabinet on the progress of each National KPI (NKPI) against the set targets;

b) Forming Delivery Task Forces, chaired by the Prime Minister and attended by the lead Minister, relevant Ministers and senior civil servants, to approve delivery plans, monitor progress and refine implementation strategies as required;

c) Holding PM-Minister reviews to assess each Minister's achievements every six months; and

d) Publishing annual reports in the first quarter of every year to report on the progress objectively,

The "delivery principles" allow for a highly efficient and effective monitoring system, good reporting system and a quick feedback mechanism.

5.2 Monitoring SCP-related policies

Successful implementation of SCP-related policies not only depends on the formulation or design of the policy but also on the effective mechanisms to implement and monitor the policies. Monitoring and feedback on the policy cycle should be viewed as an integral component of implementation. Fortunately, most recent national development plans have given emphasis on policy monitoring and reporting by developing KPIs. Unfortunately, no SCP-specific monitoring system is in place at this point in time. A set of specific micro level parameters need to be determined for each SCP-related initiative for monitoring and reporting purposes.

The indicators, targets and the main players or implementers of each SCP strategy should also be identified. The Malaysian government in its policy documents aims at establishing criteria and indices for environmentally sustainable socio-economic growth as follows:

a) Strengthen investment evaluation mechanisms to support a climate-resilient industry;

b) Establish GHG emissions reporting framework;

c) Develop a national carbon accounting system and a baseline study for forest ecosystems;

d) Develop multiple national climate and hydro climate projection models for identifying vulnerabilities and assessing potential impacts of climate change;

e) Develop a data bank to serve integrated environmentally sensitive areas, strategic environmental assessment, economic evaluation of ecological services and sustainable development indicators; and

f) Strengthen national data repository through periodic national inventory on natural disasters and extreme weather events.

5.3 Key performance indicator: Towards effective implementation

Quantifiable indicators are very important to measure the extent the desired targets have been achieved. Building on existing frameworks, indicators for a "green/sustainable economy" are currently being developed by UNEP, the World Bank, OECD and others. They can be roughly divided into the following three groups:

a) Economic indicators: the share of investments or the share of output and employment in sectors that meet a sustainability standard, such as "green GDP".

b) Environmental indicators: resource use efficiency or pollution intensity at either the sectoral or national level, e.g. energy use per capita GDP, or water use per capita GDP.

c) Aggregate indicators of progress and well-being: macroeconomic aggregates to reflect natural capital depreciation, integrated environmental and economic accounting, or broader interpretations of well-being beyond narrow definitions of per capita GDP.

Effective and efficient policies usually put in place adequate performance indicators and target levels, and timeframes within which certain targets will be achieved; assign responsibilities and streamline the role of implementing agencies; establish a regular monitoring and reporting system; and determine the coordination process to be carried out.

The government has established a number of National Key Indicators (NKIs) which are a set of criteria to measure the performance of agencies in implementing policies and initiatives. This allows the government to evaluate the performance through regular feedback and the opportunity to continuously strive for performance improvement and enhancement.

Relevant policy documents were examined and guided expert interviews held to study the extent to which indicators and targets have been outlined in the SCP-related policies. Based on the analysis, it was found that some of the policies have clearly defined indicators and targets (**Table 11**) and some like the **NGTP** has KPIs (**Table 12**). Most of them however do not specify quantifiable targets nor assign roles and functions to specific implementing ministries or agencies. For instance, various strategies and approaches contained in the **NPE** appear to have a positive impact on environment and the economy, but the document does not clearly state the indicators, targets and the main player(s) of each strategy.

Table 11: Indicator, timeframe and quantifiable target for SCP-related policies

Documents	Indicator	Timeframe	Quantifiable Target	Assign Mandate
10th Malaysia Plan	Guiding Document			
Government Transformation Programme	*	*	*	*
Economic Transformation Programme	*	*	*	*
New Economic Model	*	*	*	*
National Physical Plan 2	*	*	*	*
National Green Technology Policy	*	*		
Renewable Energy Policy & Action Plan	*	*	*	*
National Policy on Climate Change	*	*		
National Policy on the Environment	*	*		
National Policy on Biological Diversity	*	*		
National Mineral Policy	*	*		*
Industrial Master Plan 3	*	*	*	*
Construction Industry Master Plan	*	*	*	*

Table 12: Key performance indicators (KPIs) of the National Green Technology Policy

Aspects	KPIs
Environment	• Initial reduction in the rate of increase of GHG emission, and subsequently progressing towards reduction in the annual GHG emission • Progress of the rise in ranking of environmental performance by 2030 • Improvement in air quality and river water quality
Economy	• The Green Technology industry contributes a significant value and percentage to the national GDP • Sizeable amount of investments are made in Green Technology industry through foreign direct investments (FDIs) and domestic direct investments (DDIs) • Increased number of certified Green industries and revenue in the country • The Green Technology industry creates increasing number of jobs in the manufacturing and services sectors, as well as SMEs/SMIs, and • Increasing values of spin-off and supporting industries from the Green Technology industry
Social	• More cities, townships and communities are embracing Green Technology and are being classified on Green Townships • More Malaysians appreciate Green Technology and Green Technology culture becomes a part of their lives • Improve the quality of life in Malaysia

Source: KeTTHA (2010). National Green Technology Policy

Some policies do not have detailed targets and performance indicators. However the targets and performance indicators are sometimes refined into quantifiable indicators in other documents such as in the strategic plans or guidelines. Such a situation can be seen in the **NGTP**. Although the **NGTP** does not mention any quantifiable target, the detailed targets are found in the Entry Point Projects (EPP-4) in the **ETP** as in **Table 13**.

Table 13: ETP further describes National Green Technology Policy

	Descriptions
Aims	• Reducing carbon emissions intensity per GDP by up to 40 percent by 2020, based on 2005 levels • Generating sizable cost savings of RM295 billion by increasing energy efficiency by 40 percent by 2020, • Creating a range of highly-skilled positions and significant number of jobs in green technology industry.
Actions/ Players (KeTTHA)	• Boosting demand for green products and services, • Stipulating that all ministries must reduce electricity and water consumption by 10 percent per year from 2011 to 2013, • Implementing green public procurement which targeting 50 percent of the goods and services purchased by the public sector should be eco-labelled by 2020, • Formulating green public procurement policy by October 2011, • Promoting culture of conservation and efficiency, • Coordinating outreach programmes and incorporating environmental awareness into school curriculums, • Strengthening suppliers of green products and services through accreditation, skills development and access to finance, • Developing an accreditation framework for energy services companies to improve and regulate the quality of energy services companies in 2011,
	• Incorporating Green technology skills into the curriculum of existing courses, including architecture, engineering and urban planning by 2012, • Developing a list of green technology jobs under the NOSS (National Occupational Skills Standard) and SKM (Malaysian Skills Certificate) by mid-2011, • Establishing a common standard for green technology practitioners, • Conducting education seminars with financial institutions to increase knowledge of green projects to boost levels of lending in 2011, • Measuring, monitoring and publicizing environmental progress (such as environmental management annual progress report against KPIs and increase awareness of environmental schemes), • Determining the scope of the database and the indicators that need to be collected as well as communicate roles and responsibilities to the relevant industry associations by mid-2011, • Highlighting improvements in energy and water efficiency across government and the private sector at the national and State levels.
Funding	Total funding required is RM13.5 billion, of which RM10.8 billion will come from the private sector for investment in green buildings and infrastructure. The remaining funding will be used for investment in public sector green buildings over the next 10 years
Impact	Generate RM7.2 billion of additional GNI in 2020 and create over 47,000 jobs.

Source: PEMANDU (2010). Economic Transformation Programme

Other KPIs, target levels or timeframes may have been developed but the Study Team could not access the information during the period of the Study.

Chapter 6

KEY FINDINGS

Chapter 6 is a synthesis of the key findings of Malaysia's performance on SCP policies and instruments, and the state of play by SCP institutional organisations. It takes into account the results of the desk study, interview sessions as well as the feedback from the Project's Core Team members.

6.1 Malaysia's performance in SCP policies and instruments

The study found a strong government commitment in support of SCP which is reflected in the integration of SCP concept into the formulation of national policies to be implemented by relevant ministries and agencies, and the establishment of instruments to operationalise the mechanisms to achieve the policy objectives. In view of the cross-cutting nature of SCP, the institutional framework is further strengthened to achieve SCP through the establishment of national councils chaired by either the Prime Minister or Deputy Prime Minister. Some national councils established for this purpose are the MTHPI; the National Water Resource Council; and the National Biodiversity Council.

With the understanding of the importance of sustainable development for Malaysia's future in terms of potential for export, energy security, food security, health and well-being, these aspects, among others, are incorporated into the four guiding national development and transformation programmes namely **10MP, NEM, ETP and GTP,** as well as the sectoral policies such as **NPP2, NREPAP, NGTP, NPCC** and others that have integrated SCP policy objectives as discussed in **Chapters 3**. They address all the three pillars of sustainable development that is economy, social and environment. In addition, for environmental protection, a comprehensive legal framework is already in existence in the form of the Environmental Quality Act 1974.

Recognizing the adverse impact of unsustainable development, Malaysia has committed to voluntarily reduce its CO_2 emissions intensity of GDP by up to 40% of the 2005 level by 2020. This reduction is conditional upon financial and technological assistance from developed countries. Similarly, the various environmental stewardship programmes implemented by the government reflect its commitment and determination in championing environmental protection. Malaysia has committed and supported global environmental protection efforts by ratifying many of the multilateral environmental agreements. Equally, the government acknowledges the opportunities that come with SCP policy implementation and to take advantage of opportunities available to become one of the first countries in Asia to adopt SCP implementation.

To support the SCP uptake, Malaysia has cooperation with international partner countries through mechanisms such as global hubs of **MIDA** and **MATRADE** to allow easy access to information on SCP-related market opportunities and requirements as well as international donor support for SCP-related activities. In addition and where applicable, Malaysia participates in international standards committees such as Asia Pacific Economic Cooperation Sub Committee on Standards and Conformance (APEC-SCSC), Pacific Area Standards Congress (PASC), ASEAN Consultative Committee on Standards and Quality (ACCSQ), Asian Europe Trade Facilitation Action Plan (ASEM-TFAP) and the Indian Ocean Rim Business Forum (IORBF).

The Study notes that the private sector is self-confident and self-critical, and because of the economic benefits of SCP, the private sector has adopted the cleaner production, environmental management system and EE practices. The private sector also confirms its readiness to produce green products and services to meet green market demand but is adopting a "wait and see" position hoping for additional economic benefits that may be announced by the government for the adoption of SCP-related policy measures. Many businesses possess the know-how to produce green products and

services. In fact, in their own interest, they have been practicing greener production for many years in order to be competitive internationally to export to developed countries in Europe, the US and Japan. They are now also ready to provide the domestic market with sustainably produced goods and services. With the existing SCP policy objectives and instruments, more businesses are envisaged to be encouraged to switch to more sustainable business practices, and consumers are encouraged to support that switch through their demand pattern.

Malaysia has put in place various instruments such as regulatory, economic, educational, informational, hybrids and partnering to achieve SCP policy objectives. Prominent projects which contribute to SCP implementation and which come under "economic instrument" are GTFS, GGP, GBI and IBS. These projects are important as they contribute towards the SCP objective of "applying life cycle thinking" which is the highest level of SCP attainment. Besides that, the country has gained valuable experience and expertise in SCP through the implementation of projects which fall under "educational instrument" and "hybrid instrument" that have been implemented by different agencies. An example of projects under "educational instrument" is the Sustainable Schools programme (CPU-DOE) whilst projects under the "hybrid instrument" are Low Carbon Cities Framework and Assessment System (LCCF; KeTTHA), Sustainable/Liveable cities (KPKT), Green City of Malacca (Malacca State Government), River of life (KL City Council) and Sustainable Forest Management (MNRE-Forestry Department).

SCP-related policy objectives were identified in all the 22 existing policies and regulations as in **Table 6**. The **10MP, NEM, NPP2, NGTP** and **IMP3** has policy statements in all the 6 categories of SCP objectives including the highest level category that is "applying life cycle thinking". Of the 22 policy and regulation documents, only 11 have policy statements under the "applying life cycle thinking".

The effects of the currently implemented SCP-related policies are not clear and sometimes desired outcomes are not realised. This is because, in some cases, the policies are new, and therefore would require more time before the implementation results can be seen. In other cases, monitoring targets, indicators and implementing tools such as in the form of action plan or strategy have not been clearly defined or established for purposes of monitoring, data gathering and analysis resulting in difficulties in the evaluation and reporting on the results on the implementation of the policies (**Chapter 3**). Further investigation is needed, to find out if monitoring is mention in any of SCP-related policies and what could be suitable indicators and targets that could be established to guide Malaysia's development towards national SCP. In this regard, it is observed that most policies are targeted to achieve mainly economic growth. However, for purposes of a holistic approach to development and sustainable growth, policies need to also incorporate and address sustainable issues such as CO_2 emission, Cleaner Production and Eco-labelling.

While Malaysia has gained valuable expertise from research and pilot projects but little uptake was observed. Research projects have remained at the research stage and pilot projects have not being scaled up. This is because the uptake of a pilot project depends on private sector involvement and commitment. In a private sector led economy, the project is usually taken up if there is a strong business case, therefore the requirement for the project is demand driven. Successful pilot project initiated by Federal government can be replicated in other States or local councils, and vice versa.

The lack of enforcement was cited as being one of the major obstacles in the implementation of

regulations, and it can be one of major constraints in the SCP policy implementation in Malaysia. The Federal, State and Local Councils need to work together in pursuing SCP objectives through coordinated and efficient enforcement.

Other factors which have been cited as a hindrance to the SCP implementation is lack of budget and financial capacity; lack of institutional capacity in the form of manpower; lack of technical capacity in the form of skill and expertise; and lack of coordination among government ministries and agencies. Appropriate capacity programmes or training is not yet widely accessible or available.

A case where the lack of financial capacity has affected SCP implementation is the project on "Cleaner Production in Malaysian Industry" undertaken by **DOE**. In this project, **DOE** initiated the pilot project with relatively high resources. While the participating companies informally have confirmed positive outcomes and benefits through the implementation of cleaner production elements but the relatively low financial capacity and lack of funds of the donor agency (DOE/ MNRE), did not allow monitoring of the outcomes or support the up scaling of the pilot project to other businesses or sectors.

A case where the lack of technical capacity has been a constraint to SCP implementation is in the introduction of the minimum energy performance standards (MEPS) for electrical appliances by the Energy Commission (**EC**). Although the **EC** wants to implement this as mandatory requirement, it was unable to do so because of lack of database and expertise on developing the standard.

In addition, the government of Malaysia like other countries worldwide has to address many equally important priorities concurrently. Because of the different priorities, the objectives formulated to achieve the different priorities can be complex and sometimes conflicting and this hinders the uptake of SCP behaviour.

The Study finds that some of the requirements set by policies are not practical and therefore affect SCP implementation or innovation. This is demonstrated in the Efficient Management of Electrical Energy Regulations 2008 (EMEE). Under this regulation, companies consuming 3,000,000 kWh or more in 6 months of annual energy consumption are required to engage an "Energy Manager". The rational for this is to stimulate energy-intensive companies to continuously monitor potential for energy optimization. According to the regulation, only those people with specified academic qualifications and certified by the government can be appointed as "Energy Manager." The study reveals that, in practice, industry faces difficulties to employ such suitable candidates. Out of the 1,500 eligible businesses in Malaysia, only 249 have certified Energy Managers. Suggestions by the industry to solve this problem include allowing staff with long term experience to undergo additional technical training to qualify as "Energy Manager" instead of relying solely on academic qualifications.

Bureaucratic red tape usually slows down business. The private sector is normally quick to respond and adapt to changing environment to remain competitive. Sometimes policy instruments provide for incentives to encourage business to develop and/or expand. But because of bureaucratic red tape or cumbersome and time consuming procedures, businesses find it difficult to take advantage of the incentive or it takes a long time before they can enjoy it. In the case of the fiscal incentives provided by **MIDA** for EE, **FMM** has informed that the technical evaluation and the processing time, in certain case up to 6 months, is too long. Whereas, in the case of rebate vouchers to encourage consumers to choose energy efficient appliances introduced by **KeTTHA** under the Sustainability Achieved Via

Energy Efficiency (SAVE) Programme on 7 July 2011, customers have complained that there is a lot of bureaucratic procedures which have to be complied with before they can claim such rebate vouchers. **IMP3** in addressing bureaucratic red tape and supporting green construction, provides preferential treatment for IBS proposals by giving *"... green-lane approval for building plans utilising the Industrial Building Systems and modular coordination"* (IMP3, p.585).

There are also loopholes and/or outdated policy instruments which can hinder new green business opportunities. Policy instruments that relate to technology, which regulate the state of play are easily outdated due to the rapid advancement and changes in technology. Some of the existing policies have not been updated to keep abreast with the latest available technology and innovations. For instance, the latest technology available for solid waste incinerator is safe and environmentally friendly. The buffer zone for this system is narrower and therefore can be located nearer to residential or industries areas. In Malaysia, because the present regulation still requires 500 meters buffer zone, solid waste incinerator with the latest technology cannot be installed nearer to the residential or industrial areas. In streamlining and harmonizing, those policy instruments which are outdated need to be scrapped while others, in particular those with loopholes, need to be reviewed and be updated to make them current to address additional administrative cost, inefficiency and redundancy in implementing a project or initiative so that it facilitates the ease of doing business for the private sector in pursuing SCP agenda.

The Study shows that there is a lack of trade and investment policies that support SCP. Examples encompass the following:

a) Government green procurement (GGP) has been announced for a long time (since 2010) but has not been implemented as the government feels that there are insufficient local producers in green products and services. Another reason is to provide the environment to stimulate domestic economic growth and to reduce CO_2 footprint. The private sector however "is waiting" for it, and confirms being prepared to produce according to any green demand that may possibly be incorporated into the procurement procedures.

b) Malaysia has adopted the Energy Star Rating for its domestic market. However, the rating is voluntary. Thus, only those industries which consider it a marketing strategy and are confident of obtaining 5 stars (or in worst case scenario 4 stars) will apply for such rating as they want to be competitive. The remaining industries do not apply as rating less than 4 stars do not give them any advantage. The Study recommends that if energy efficiency is to be the center piece of the new value system, the rating needs to be made mandatory to compel all domestic and international producers to categorize their products.

c) The Study found that domestic producers and service providers do not see any benefit for them to comply with SCP in Malaysia because the Malaysian domestic standards are not mandatory and are not as strict as the international standards. In addition, conformity assessment of imported goods is perceived as being less stringent, allowing substandard products to enter the domestic market easily. This discourages domestic producers from excelling in SCP practices. To overcome this, Standards must be made mandatory to all producers including SMEs. However, the SMEs could be given a grace period to enable them to adjust and adopt green production to ensure they produce energy efficient products. In addition, it will also reduce substandard products from

penetrating into the Malaysian market as the same mandatory standards must be used by local and foreign producers.

Some existing policies provide economic incentives. However, to take advantage of these incentives, there are certain requirements and conditions to be fulfilled. Businesses regard this as a disincentive and disadvantage as the requirements and conditions to enjoy the incentive takes time and incur secondary or indirect costs. For instance, there is a waiting time and cost for the application of a standard certification on GBI which is the precondition to enjoy the economic incentive on tax exemption. On the contrary, provision of subsidies in policy is sometimes regarded as countervail to the objective of SCP. For instance, the low water and energy tariff, due to subsidies, does not discourage wasteful use of water and energy. Similarly, fossil fuels subsidies do not discourage the use of fossil fuels despite the negative impacts. However, on the positive side, it is recognized that what are disincentives for SCP can be incentives for other national priorities as the Malaysian government, like all other governments worldwide, has multiple goals to achieve concurrently.

To address disincentives, further studies could look into the "enforcement of SCP-related policy" which can be a very sensitive issue. Further detail studies on enforcement measures are needed to identify the key implementers, the reasons why policy instruments are ineffective, and the factors hindering or slowing down implementation. This will provide a basis for informed decision making for remedial action to improve enforcement.

Despite the various awareness programmes and public education activities on SCP-related objectives, they have not managed to change or influence the mind-set of consumers and businesses to be supportive of SCP. The change of a value system and related SCP behaviour takes time. Currently the Malaysian society still prefers cheaper over more costly quality and eco-products, such as organic food. This has resulted in the industry "following the market" and not driving it. The lukewarm support for SCP, according to feedback, is because of low commitment from top management, and the opportunistic attitude of the industry - hoping to enjoy greater benefits by waiting for higher subsidies or other incentives to be given by the government - despite their readiness to going green. Industry on the other hand says that "one of the biggest challenges is self-regulation". Since there is no requirement to do so, the domestic and foreign industry has provided little financial and technical investment on SCP matters.

The three most prominent factors that shape Malaysia's SCP policy in the short-term are:

a) The climate change mitigation strategies (defining the scenarios of the future and thus determining the framework for sustainable development);

b) The promotion of green technology (driving innovation and creating an economy based on knowledge); and

c) The economic incentives for businesses and individuals (encouraging the faster uptake of SCP policy objectives in many ways through financial and fiscal benefits).

In the long-term, "educational instrument" in driving a change in the society's value system and consumer empowerment in granting consumers the power to determine and define market supply is more impactful. There is an urgent need to look into the issue of the effectiveness of voluntary against mandatory policy instruments to support SCP implementation. In this regard, the private sector, in fact, has requested that the voluntary Energy Star Rating be made mandatory. The sequencing of policy instruments and their

phasing across Malaysia's development path has yet to be studied and it would certainly reveal an interesting perspective.

6.2 Malaysia's state of play regarding SCP institutional framework

As described in **Chapter 2**, the implementation of SCP-related policies in Malaysia is carried out by various ministries, each responsible for guiding the development programmes or sector-specific contributions towards Malaysia's vision 2020. The mandate of relevant ministries and agencies to drive the movement is because of their respective roles in the policy cycle. Other drivers of the SCP concept affirm the conviction that mainstreaming SCP practices would drive Malaysia towards a high income developed nation that is inclusive and sustainable by 2020. In principle, as SCP is cross-cutting in nature, all government stakeholders could potentially be involved in a national SCP institutional framework with some assuming a more prominent role while others playing a supportive role.

The scope of the Study was limited to government stakeholders at the national level. However, in addition to Government stakeholders at the Federal level, State governments and local authorities, the private sector and non-governmental organizations (NGOs) also have an important role to play. They are consumers and producers whose behaviour needs to be changed to a more sustainable pattern. These include industry or sector associations, institutions of higher learning, financial institutions, and chambers of commerce and industry. A further study into this aspect is needed to determine and harness their contributions to further promote SCP.

The **Table 14** shows the ministries and agencies relevant for the implementation of SCP policy objectives as identified in the policy and regulation documents and input from the Core Team members.

Table 14: Relevant SCP implementing ministries and agencies

Documents	Relevant Ministry
10th Malaysia Plan	**EPU,** MOF, MNRE, KeTTHA, MITI, KPKT, KKR, MOA, MPIC, MOT, MOSTI, KPDNKK, KKLW, MOE, KBS, KWPKB, MOTOUR, MOHE
Government Transformation Programme	**PEMANDU,** EPU, MOF, KeTTHA, KPKT, KKR, MOT, KKLW, MOE, KWPKB, MOHE
Economic Transformation Programme	**PEMANDU,** EPU, MOF, MNRE, KeTTHA, MITI, KPKT, KKR, MOA, MPIC, MOT, MOSTI, KPDNKK, KKLW, MOE, KBS, KWPKB, MOTOUR, MOHE
New Economic Model	**NEAC/PEMANDU,** EPU, MOF, MNRE, KeTTHA, MITI, KPKT, KKR, MOA, MPIC, MOT, MOSTI, KPDNKK, KKLW, MOE, KBS, KWPKB, MOTOUR, MOHE
National Physical Plan 2	**KPKT,** PEMANDU, EPU, MOF, MNRE, KeTTHA, MITI, KKR, MOA, MPIC, MOT, MOSTI, KPDNKK, KKLW, MOE, KBS, KWPKB, MOTOUR, MOHE
National Policy on the Environment	**MNRE,** MOF, PEMANDU, KeTTHA, MITI, KPKT, KKR, MOA, MPIC, MOT, MOSTI, MOE, MOTOUR, MOHE

Documents	Relevant Ministry
National Green Technology Policy	**KeTTHA,** EPU, MOF, MNRE, MITI, KPKT, KKR, MOA, MPIC, MOT, MOSTI, MOE, MOHE
Renewable Energy Policy & Action Plan	**KeTTHA,** EPU, MOF, MNRE, , MITI, KPKT, KKR, MOA, MPIC, MOT, MOSTI, MOE, MOTOUR, MOHE
National Policy on Climate Change	**MNRE,** EPU, MOF, KeTTHA, MITI, KPKT, KKR, MOA, MPIC, MOT, MOSTI, MOE, MOTOUR, MOHE
National Policy on Biological Diversity	**MNRE,** EPU, MOF, MOA, MPIC, MOE, MOTOUR, MOHE
National Mineral Policy 2	**MNRE,** EPU, MOF, MITI, KPKT, MOSTI, KPDNKK, KKLW, MOE, KBS, KWPKB, MOTOUR, MOHE
SME Master Plan	**MITI,** MOF, MNRE, KeTTHA, MITI, KPKT, KKR, MOA, MPIC, KKLW, MOTOUR
Industrial Master Plan 3	**MITI,** EPU, MOF, MNRE, KeTTHA, MITI, KPKT, KKR, MOA, MPIC, MOT, MOSTI
Construction Industry Master Plan	**KKR,** MOF, KPKT, EPU, MNRE, KKR, KWPKB
National Commodity Policy	**MPIC,** MOF, PEMANDU, MNRE, KeTTHA, MITI, KPKT, KKR, MOA, MOT, MOSTI, KKLW, MOTOUR
National Timber Industry Policy	**MPIC,** MOF, PEMANDU, MNRE, KeTTHA, MITI, KPKT, KKR, MOA, MOT, MOSTI, KPDNKK, KKLW, MOTOUR
National Agrofood Policy	**MOA,** EPU, MOF, PEMANDU, MNRE, KPKT, KKR, MOA, MPIC, MOT, MOSTI, KPDNKK, KKLW, MOTOUR, MOHE

Bold acronym shows the owner of document

Malaysia's institutional framework for SCP implementation has room for improvement. The working groups at inter-ministerial, ministerial and sub-national levels are mostly scattered initiatives and coordination was reported as being a major stumbling block for SCP implementation. In particular is the coordination between the ministries and agencies at central level, and between the Federal and State authorities.

A holistic approach for the successful implementation of SCP policy must include the involvement and support of non-governmental organizations and institutions such as the financial sector, the industry and civil society.

The Study however found low industry engagement in policy formulation where there were few possibilities and platforms for proper dialogues with the private sector. This is observed in the GTFS, where despite government's subsidy on interest rate and a guarantee of a certain portion of the financing cost, there is still a lack of support from participating private financial sector. Some of the reasons for the slow uptake identified by the Study Team are delays caused by procedures and deadlines, and the lack of knowledge of SCP's return on investment. The government is aware of the concerns of the private financial sector and to address it, has provided training to the financial institutions. Thus it remains to be seen, if and to what extent, the financial sector will still be a bottleneck in the implementation of the scheme.

Apart from the above issues, further investigation is also needed to determine why the private sector response has been low and how to increase public awareness to influence substantial change in SCP behaviour effectively.

Malaysia's institutional framework regarding SCP policy design, implementation and monitoring has yet to be fully understood, although, opinions on how the framework should look like have been highlighted and incorporated in the appropriate parts of this report.

EPU as a central agency can certainly play an important and crucial role in ensuring effective coordination and close monitoring of SCP implementation among stakeholders involved. Currently **EPU** contributes in planning and formulating national policies and strategies in mainstreaming SCP practices in its short, medium and long term plan. Among other measures is the integration of SCP in Malaysia's next five-year national development plan (11th Malaysia Plan; 2016-2020) and the annual federal budget.

Most of the respondents interviewed were of the opinion that **EPU** as the national focal point for sustainable development can play a critical role in mainstreaming SCP as it has played a key role in formulating socio-economic development policies and has been the coordinating agency in managing the national environment and natural resources. **EPU'S** function as a focal point could be strengthened by setting up the SCP Steering Committee to be chaired by the Director General of **EPU** with members consisting of relevant stakeholders i.e. ministries and agencies including relevant sections within **EPU.**

At the Ministerial level, SCP-related institutions could potentially contribute towards mainstreaming SCP in a number of areas as summarized in **Table 15**.

Table 15: Potential areas in mainstreaming SCP

Stakeholders	Potential Areas in Mainstreaming SCP
MOF	• Planning and formulating policies and strategies for the implementation of government green procurement (GGP), providing incentives and disincentive towards low carbon economy
MNRE	• Harmonising environmental related policies and strategies towards assisting or supporting SCP, enforcing legislation (i.e. extended producer responsibility, reverse logistics, buy back scheme), promoting cleaner production and enhancing public awareness
KeTTHA	• Planning and formulating policies and strategies for green technology development, promoting efficient use of energy and water (i.e. LCCF, energy saving appliances in the government properties), promoting the use of clean energy (i.e. renewable energy), increasing the use of green labelling (Star Rating Energy Efficiency)
MITI	• Planning, formulating and implementing policies and strategies on green industrial development (i.e. energy efficiency, waste recovery, standards, certification), promoting local industry (i.e. National Quality Mark), strengthening the credibility of Malaysian goods and services, increasing export of green products and services, enforcing stricter legislation on non-green goods importation
KPKT	• Planning, formulating and implementing policies and strategies on green communities (i.e. environmentally friendly townships and neighbourhoods, sustainable solid waste management), creating awareness (i.e. Local Agenda 21, 3R practices)
KKR	• Planning, formulating and implementing policies and strategies on sustainable construction industry (i.e. green design, IBS), enforcing energy and water audits, providing Green Guidelines and Green Rating System
KPDNKK	• Promoting consumer awareness towards practicing sustainable consumption behaviour (i.e. no plastic bag campaign)

Stakeholders	Potential Areas in Mainstreaming SCP
MOSTI	• Planning, formulating and implementing policies and strategies to encourage green innovation and research, development and commercialisation, enhancing national standards and accreditation
MPIC	• Planning, formulating and implementing policies and strategies to promote the use of modern technology and automation (i.e. zero waste industry, Good Manufacturing Practices and Life Cycle Analysis)
MOA	• Planning, formulating and implementing policies and strategies to promote sustainable agriculture practices (i.e. Good Agriculture Practices), recycling agricultural waste, enhancing awareness (i.e. Standard Organic Malaysia)
MOE	• Planning, formulating and implementing policies and strategies to enhance SCP-related knowledge and understanding (i.e. integration of SCP topics into formal education curricula), promoting awareness and inculcating SCP practices
KPT	• Planning, formulating and implementing policies and strategies to promote SCP-related research and innovation in the higher learning institutions, providing SCP courses and integration of SCP topics into curricula
KBS	• Planning, formulating and implementing policies and strategies to promote SCP practices as one of the youth's lifestyles (i.e. SCP courses for youth in the Youth Training Institution)
MOT	• Planning, formulating and implementing policies and strategies to promote clean transportation (i.e. clean public transport, hybrid car)
MOTOUR	• Planning, formulating and implementing policies and strategies to promote green tourism (i.e. green accommodation, agro-tourism and eco-tourism)

The existing policy monitoring and implementation mechanisms in place such as **PEMANDU** and **ICU** provide a good platform to effectively monitor the implementation of SCP policy objectives. Their effective reporting and access to top level management make the institutions an ideal catalyst to strengthen the implementation of SCP-related policies to potentially produce the desired impact.

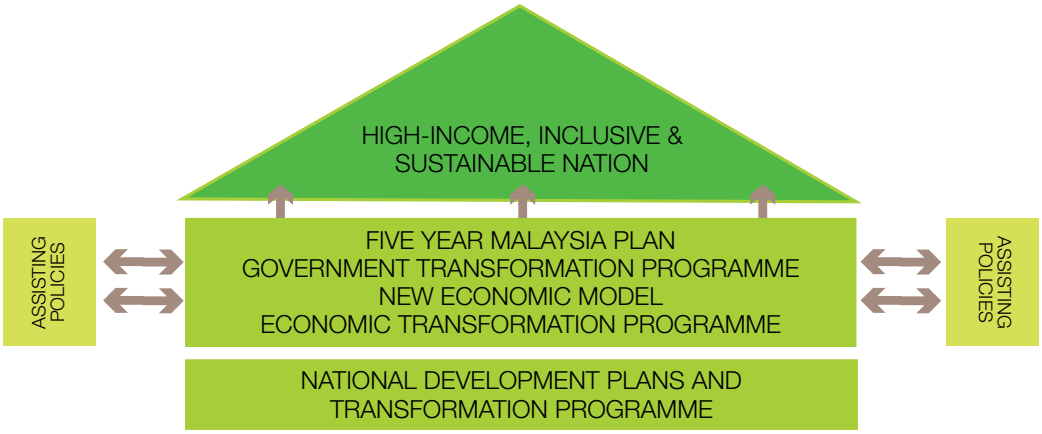
The Study also shows that there is a large number of government institutions and other stakeholders that have not been fully engaged to support SCP implementation. All of them could become additional key drivers in their fields e.g. sector-related SCP policy implementation, consumer information etc. Existing multi-stakeholder platforms, given their status as high level councils and their technical link to SCP, could be an effective way to operationalise the road map for SCP implementation. The forums could be used as multipliers to further mainstream SCP and to enhance collaboration among the actors.

Better understanding of the mandate and tasks of the respective stakeholders is needed to demarcate the functions related to implementation and monitoring at central agency, ministry, State and local levels.

While some of the policy documents have formulated KPIs, which relate to other policy documents or SCP key stakeholders (**Chapter 2**), most of the documents actually do not specify quantifiable targets nor assign specific implementing ministries and agencies. In practice, cooperation between ministries and agencies is given a low priority as respective ministries and agencies focus on achieving their own KPIs at the expense of the overarching national KPIs or development goals.

Through improved coordination between ministries and agencies and valuable experiences gained from research and pilot project, synergy can be created between initiatives undertaken within the scope of the national development programmes and those carried out under the umbrella of sectoral policies, to setup a SCP environment for Malaysia as shown in the "SCP House" developed by the Study team in **Figure 17**.

Figure 17: "SCP House" - Synergy of national development programme and assisting policies



Malaysia should further address the question of how to create a conducive policy framework to enable the up-scaling of pilot projects and lessons learnt so that SCP instruments can be carried out nation wide.

Chapter 7

CONCLUSION

Chapter 7 concludes on the findings of the baseline study based on the objective of becoming a high income developed nation by 2020. While highlighting the need for a comprehensive plan of action for SCP implementation to overcome various issues and challenges, the Chapter also has recommendations on a way forward for SCP development in Malaysia.

Malaysia's overarching goal is to become a high-income developed nation that is sustainable and inclusive by 2020. Based on present global trends, development has to be sustainable. Malaysia sees SCP as the approach to enhance the quality of life and the standard of living for the present and future generations. Sustainable development focuses on economy, society and environment. It aims to reduce carbon emissions, increase efficiency and use natural resources efficiently.

The Study reveals that the Malaysian government has demonstrated strong support and commitment at international as well as at the national level towards achieving sustainable development. This factor could be considered as the most important element for providing the favorable surroundings to mainstream SCP in Malaysia. International level commitment is reflected in the participation at international forums and ratifying multilateral environmental agreements. At the national level, commitment to SCP implementation has been incorporated in various national policy documents. Analysis of these documents shows that these documents have statements which not only relate but also support SCP.

At the national level, SCP principles have been integrated in the national development policies and plans and they are supported by sectoral policies. However, based on the categories of SCP objectives used for policy assessment, the SCP policy statements contain in the national and sectoral policies are grouped mainly at relatively low levels of SCP attainment (**Figure 2**). The assessment also shows that Malaysia does not have a comprehensive plan of actions to implement SCP. For holistic approach to implement SCP, other related documents such as the Rural Transformation Programme, National Water Resource Policy, Energy Efficiency Master Plan, New Energy Policy, National Housing Policy, National Automotive Policy, Urbanisation Policy and the National Biofuel Policy need to be taken into consideration.

The study has identified at least six instruments as shown in **Figure 8** for the implementation of SCP in Malaysia. The list is by no means exhaustive. While recognizing these instruments as significant tools for SCP implementation, there are also other important economic instruments which are still not yet put in place at this point in time because the industry does not agree with the way some of the policies are implemented. Therefore, there is a need to review such policy instruments.

The institutional framework matrix which was constructed in the Study in **Table 1** confirms that SCP activities are cross-cutting in nature and often fragmented as multiple stakeholders are involved. At the governmental level, nine key stakeholders have been identified. Because of this, coordination and monitoring are very critical to ensure effective implementation of SCP. In addition, the mandate and the role of respective agencies must be clearly identified and determined to avoid redundancy and overlapping of tasks and functions. **EPU** as a central agency responsible for the formulation of national development plans can play an important role in strengthening coordination among various stakeholders. Feedback from interviews has suggested that **EPU** be officially appointed as the focal point in the institutional framework for SCP. Coordination, monitoring and enforcement are the weak links in the SCP implementation. Therefore more detailed studies need to be undertaken to address these issues.

The holistic implementation of SCP cannot only involve stakeholders at the national level; it must also include stakeholders at the state and local levels. This will require greater coordination

between the Federal and the State organizations. Although coordination is fostered through national councils which have been set-up and chaired by the Prime Minister or Deputy Prime Minister, there are still shortcomings in the coordination process. For proper coordination to take place, financial and technical support must also be given to facilitate monitoring and enforcement for the implementation of SCP.

Apart from the above, present issues and challenges that need to be addressed are the lack of financial, institutional and technical capacity; lack of legislation and enforcement; outdated policy instruments; lack of trade and investment policies; low industry engagement; and bureaucratic red tape which are faced by industry.

The Study constitutes the first step in developing a National SCP programme to strengthen the country's policies and institutional framework on SCP. This report is important as a source of reference for EU-Malaysia SCP Policy Support Programme in designing its overall work plan and provide an understanding to various stakeholders on the present state of the existing SCP-related policy framework and its instruments in Malaysia. With this, Malaysia will be able to define its way forward on SCP to continue to progress to enhance people's living standard, well-being and quality of life.

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ANNEX 1

LIST OF POLICY DOCUMENTS AND REGULATIONS

1. 10th Malaysia Plan
2. Government Transformation Program
3. Economic Transformation Program
4. New Economic Model
5. National Physical Plan 2
6. National Policy on the Environment
7. National Green Technology Policy
8. Renewable Energy Policy & Action Plan
9. National Policy on the Climate Change
10. National Policy on Biological Diversity
11. National Mineral Policy 2
12. SME Master Plan
13. Industrial Master Plan 3
14. Construction Industry Master Plan
15. National Commodity Policy
16. National Timber Industry Policy
17. National Agrofood Policy
18. Environmental Quality Act 1974
19. Town and Country Planning Act 1976
20. Environmental Quality (Scheduled Wastes) Regulations 2005
21. Environmental Quality (Control of Lead Concentration in Motor Gasoline) Regulations 1985
22. Renewable Energy Act 2011

ANNEX 2

INTERVIEW GUIDES

INTRODUCTION

The baseline study intends to achieve the following results:

- Part 1: Identification and mapping of existing policies assisting SCP in Malaysia
- Part 2: Analysis of identified policies linked with SCP
- Part 3: Monitoring Instruments (of individual policies)
- Part 4: Capacity building needs
- Part 5: Conclusions and Recommendations

These results shall be achieved by means of desktop research and interviews with relevant stakeholders. The following list of questions should help to conduct such stakeholder interviews in a structured manner. Some of the questions can also guide desktop research: ex-ante to prepare for interviews, and ex-post to assess materials handed over or recommended by the met stakeholders to the expert team or identified in the course of the study.

Please note that the order of the sets of questions below is not identical with the order of the 5 study parts. The questions are composed in the natural flow how such interviews can be conducted.
As a starter the first two question sets (1 and 2) should provide information about the stakeholders and their institutional background. The 3rd set of questions should serve as a warm-up exercise to get the stakeholder's attention for the exercise. The next sets of questions (4 and 5) need to be explored with the stakeholders in a collaborative way, some figures as included in the TORs can be used to generate better understanding for the interviewee. It might be necessary to arrange more than one interview/meeting session to get through question set 5, depending on the number of topics identified in the previous step 4. The remaining sets of important questions (6, 7, and 8) are open questions and should serve to complete the picture.

It is up to the expert team to gather, depending on usefulness, more information through other methods, e.g. by collecting written feedback/answers from the stakeholders. However, this can be done only additionally and shall not substitute the personal interview.

All interviews/meetings and results have to be documented properly with minutes. It is suggested to organise minutes along the question list.

SET OF QUESTIONS 1 TO 8

1. Person (Interviewee/stakeholder)

- Name
- Institution
- Education
- Professional record
- Contact

2. Institution (stakeholder)

- What is the mandate of the interviewee's organisation (ministry/agency/etc.)?
- What is the mandate of the interviewee's department?
- What is the interviewee's role/responsibility at work?

3. Experience with SCP

- What is the stakeholder's personal experience with SCP?
- What is the stakeholder's definition/understanding of SCP?
- How does SCP appear in the stakeholder's working experience so far?
- What are the responsibilities of the stakeholder's institution which are actually/ potentially linked with SCP?

4. Which current policies/strategies/plans do have links to SCP to best knowledge of stakeholders?

- In order to reduce resources/energy/water consumption?
- In order to reduce emissions/waste/pollution?
- In order to conserve resources/nature/biodiversity/etc.?
- In order to increase efficiency (decoupling growth from growing resources usage)?
- In order to address life-cycle thinking of products and services (from the cradle to the grave)?
- In order to enhance sustainable production methods?
- In order to enhance green products/eco-labelling/etc.?
- In order to enhance green procurement (government and civil society)?
- In order to support consumers to act/buy/use more responsible?
- In order to raise awareness of consumers/producers?
- In order to support producers to improve their performance and code-of-conducts?
- In order to enable producers to meet (higher) international standards?
- Any other policies/etc. with assumed links to SCP?
- Any incentives to drive SCP?

5. Detailed assessment of identified (see above) policies/strategies/plans (explore each of them together with the stakeholders)

- Where more information can be found regarding these (any law/act/protocol/decision/ etc.)?
- What are the planned/expected results?
- Do objectively verifiable indicators exist to monitor implementation?
- What are the actual achievements?
- What are the sources of information?
- What is the SWOT of the explored policy/etc.?
- What is good, what is less good?
- How to improve/enhance?

6. Are there problems/obstacles/gaps/contradictions existing (in the stakeholder's opinion)?

- What are the main bottlenecks to pursue SCP more effectively in Malaysia?
- Are there direct/indirect disincentives in place to undermine SCP?
- Are there conflicts of interests between certain policies and how would these affect SCP?
- What is missing in the policy framework?
- How to deal with above mentioned problems, if there are such?

7. Stakeholder's expectations and attitudes

- What are the stakeholder's expectations of the project?
- What would be the indicators, whether the project was successful or not?
- About what SCP topics the interviewee would like to know more? And why he/she would like to know more?
- What would be the contributions to the project which the interviewee is ready to make?
- In which way the interviewee would like to be involved (more actively)?

8. Recommendations made by the interviewee/stakeholder

- Which documents to study?
- Which further person to talk with is important?
- Which institutions (government, civil society) should be involved?
- What must be avoided in order not to spoil the project success?
- Anything else (e.g. telling stories)?

ANNEX 3

LIST OF INTERVIEWS

No.	Organisations/Interviewees	Date	Discussion Themes
1.	**Ministry of Environment and Natural Resources (NRE), Environmental Management and Climate Change Division; Minerals and Geosciences Division; Water, Resources, Drainage and Hydrology Division; Biodiversity Management and Forestry Division; Department of Environment** • Dr. Teddy Lian Kok Fei • Ms. Zaharah Yahya Khan • Mr. Wong Chee Chong • Mr. Abdul Aziz Chik • Dr. Gary W. Theseira • Ms.Chitra Subramaniam • Ms. Engku Nor Azura Aini Engku Mustaffa • Dr. Tan Beng Hoe	7 May 2012	• National Policy on the Environment • National Mineral Policy 2 • National Water Resources Policy • COP 15 Commitment • Environmental Quality Act • Clean Development Mechanism • Environmental Awareness - Sekolah Lestari (Sustainable School) - Rakan Alam Sekitar (Friends of Environment)
2.	**Environmental Technology Research Centre and Renewable Energy Research Centre, SIRIM Berhad** • Dr. Chen Sau Soon • Mrs. Wan Mazlina Wan Hussein • Mrs. Nik Marzuriani Nik Mohamed	8 May 2012	• Eco-labelling • Cleaner Production • Technopreneurs Programme • Eco-design
3.	**Construction Industry Development Board Malaysia (CIDB) and Construction Research Institute of Malaysia (CREAM), Ministry of Works** • Ir. Mukhtar Che Ali • Ir. Dr. Zuhairi Abd Hamid • Dr. Kamarul Anuar Mohamad Kamar • Ms. Natasha Dzulkalnine • Ms. Maria Zura Mohd. Zain • Mr. Mohd Syarizal Mohd Noor • Mr. Franky Anak Ambon • Ms. Mashita Abdul Razak • Ms. Mohd Rahimi Bin A. Rahman	11 May 2012	• Construction Industry Master Plan • IBS Roadmap 2011-2015 • GreenPASS • Green Technology Initiative Construction Industry • Green labeling Construction Material
4.	**Agriculture Section, Economic Planning Unit (EPU)** • Ms. Zizi Alias • Ms. Lee Choon Pei • Ms. Nor Faridah Mohd Din • Ms. How Sin Muen	11 May 2012	• National Agrofood Policy • 10th Malaysia Plan – Agriculture Sector • National Policy on Biological Diversity • National Strategies and Action Plan on Agricultural Biodiversity • FAMA (Grading, Packaging and Labelling of Produce) Regulations • Pesticides Act

No.	Organisations/Interviewees	Date	Discussion Themes
5.	**Green Technology Sector, Ministry of Energy, Green Technology and Water (KeTTHA)** • Mr. Mohd Rosli Hj Abdullah • Mr. Asdirhyme Abdul Rasib • Ms. Nor Fathmawati Abdul Wahab	**14 May 2012**	• Low Carbon Cities Framework and Assessment System (LCCF) • International Green Technology and Eco Products Exhibition and Conference(IGEM) • Green technology Roadmap • National Eco-Labelling Scheme • GreenTAG Endorsement Scheme • Tehnopreneurs, SME and Industry Development Program • Malaysian Green Directory • Green Technology Financing Scheme • Government green procurement
6.	**Ministry of International Trade and Industry (MITI), Trade Facilitation and Technology Division; Policy Sectoral and Investment Division; Policy and Consultation Division; Research Section; Service Sector; Standard and Environment Unit; Malaysian Productivity Corporation; Federation of Malaysian Manufacturers; Malaysia External Trade Development Corporation; Malaysian Industrial Development Authority; SME Corporation** • Mr. Amran Sameon • Mr. Mohd Farid Mohd Razali • Mr. Iszam Khail Ishak • Mr. Azlan Kassim • Mr. Mohd Atan • Mrs. Wan Haslina Wan Hussin • Mr. Ahmad Rizal Mohd Hanapiah • Mrs. Norazlila Ismail • Mrs. Wan Syafinaz Wan A. Rahman • Mrs. Thavamani Krishnan • Mrs. Fauziah Ibrahim • Mr. Mohamad Farid Mohd Aris • Ms. Samala Santhappan	**15 May 2012**	• Industrial Master Plan 3 • SME Master Plan • Life Cycle Assessment (LCA) • Material Flow Cost Accounting • Energy Management System • Green Lane Policy • Green Technology Financing Scheme (GTFS) • Green Incentives (MIDA, MATRADE)
7.	**Malaysian Green Technology Corporation, KeTTHA** • Mr. Abd Malik Atan	**21 May 2012**	• Green Technology Roadmap • National Eco-Labelling Scheme • GreenTAG Endorsement Scheme • Tehnopreneurs, SME and Industry Development Programme • Green Technology Financing Scheme • Energy Efficiency Master Plan • Malaysian Green Directory • Government green procurement

No.	Organisations/Interviewees	Date	Discussion Themes
8.	**Environmental Technology Research Centre; Renewable Energy Research Centreand SIRIM QAS International Sdn. Bhd., SIRIM Berhad** • Dr. Chen Sau Soon • Mrs. Wan Mazlina Wan Hussein • Mrs. Nik Marzuriani Nik Mohamed • Mr. Azlan Adnan	**21 May 2012**	• Standard • Certification • Eco-labelling • Cleaner Production
9.	**Ministry of Energy, Green Technology and Water (KeTTHA), Energy Section; Water Section; National Water Services Commission; Energy Commission and Malaysian Green Technology Corporation** • Mr. Asdirhyme Abdul Rasib • Ms. Nor Fathmawati Abdul Wahab • Mrs. Siti Nurshima Mohd Soffee • Mr. Mohd Elmi Alias • Mr. Mohd Hafdzuan Adzmi • Mr. Mohd Syafiq Firdaus Hasbullah • Mrs. Noor Azlin Mahat	**22 May 2012**	• Energy Efficiency Rating • Water Efficiency Rating • MEPS • Electronic Industry Code of Conduct • Efficient Management of Electrical Energy Regulations • SAVE Rebate Programme • National Energy Policy • Energy Efficiency Master Plan • Green Technology Incentives • LCCF Pilot Projects • Malaysia Green Directory • Electric /Hybrid Vehicle Programme
10.	**Regional Development Section, Economic Planning Unit (EPU)** • Mr. Wan Hanafi Bin Wan Mat • Mr. Fadzli Zubi • Mrs. Jasmiah Ismail	**23 May 2012**	• 10th Malaysia Plan – Regional Development • National Physical Plan 2 • Regional Development Corridor • Low Carbon Society • Environmental Impact Assessment • Town and Country Planning Act • Green City, Compact City and Vibrant City Programme • LCCF • Green Building Index • Green Neighbourhood Guidelines • 'River of Life' Project

11.	**Ministry of Domestic Trade, Cooperatives and Consumerism (KPDNKK), Consumerism Policy and Standard Division; Consumerism Standard Division; Policy and Strategic Planning Division**
	• Dato' Mohamed Elias Abu Bakar
	• Mrs. Syahrizzad Abdul Rahman
	• Ms.Thiagaletchumi V. Maniam
	• Mr. Mizool Amir Mat Drus
	• Ms. Nor Bizura Seth
		24 May 2012	• National Consumer Policy
			• National Consumer Masterplan
			• Consumer Protection Act
			• Market Surveillance
			• 'Buy Malaysia' (Malaysian Brand Items) Programme
			• Sustainable Consumption
			• Environmental Awareness
			  - 'No Plastic Bag' campaign
			  - Exhibition, Seminar, Workshop
			  - School Programme
			• Consumer Goods Standard
			• Consumer Satisfaction Index

No.	Organisations/Interviewees	Date	Discussion Themes
12.	**Business Environment Division, Federation of Malaysian Manufacturers (FMM)** • Mrs. Chin Lye Ha • Mrs. Hema Thiruchelvam • Mrs. Wan Haslina Wan Hussin	24 May 2012	• Efficient Management of Electrical Energy Regulations • Malaysian Industrial Energy Efficiency Improvement Project (MIEEIP) • Environmental Quality Act and Regulations • Environmental Quality Council • National Policy on Climate Change • Standard - Product Safety and Quality • FMM Institute • Technical Capacity • Lean Manufacturing • Material Flow Cost Accounting • Life Cycle Assessment • Corporate Social Responsibility • Green Technology Financing Scheme (GTFS) • Government green procurement
13.	**Government Procurement Division, Ministry of Finance (MOF)** • Dato' Hashmuddin Mohamad • Mr. Kumaresan Karrupiah • Mr. Shahrin Ismail	25 May 2012	• Government green procurement
14.	**Industrial Section, Economic Planning Unit, (EPU)** • Mr. Zainal Azman Abu Seman • Mr. Keshminder Singh Ajaib Singh	25 May 2012	• E-waste Management • Extended Producer Responsibility • Recovery Materials • Feed-in tariff (FiT) • 3R Programme • SAVE Rebate Programme
15.	**Ministry of Plantation Industries and Commodities (MPIC), Planning and International Division; Vegetable Oils, Fats and Sago Industries Development Division; Malaysian Palm Oil Board; Timber, Tobacco and Kenaf Industries Development Division; Malaysian Timber Industry Board** • Mr. Tan Beng Swee • Mrs. Roslina Idris • Ms. Sharidah Suleiman • Ms. Dayang Ratnasari Abu Bakar • Ms. Juanita Lourdes Nathan • Ms. Norhairine Md. Nor	30 May 2012	• National Commodity Policy • National Timber Industry Policy • Life Cycle Assessment (LCA) • Zero Waste Industry • Good Agriculture Practices (GAP) • Roundtable Sustainable Palm Oil (RSPO) • MPOB Code of Practice Certification Scheme • International Sustainability and Carbon Certification Scheme • Sustainable Forest Management • Timber Certification Scheme

No.	Organisations/Interviewees	Date	Discussion Themes
16.	**Ministry of Agriculture and Agro-based Industry (MOA), Strategic Planning and International Division; Department of Agriculture; Department of Fisheries; Department of Veterinary Services; MARDI** • Dato' Mohd Hashim Abdullah • Mr. Muhammad Salimi Sajari • Mr. Lee Chee Peng • Mr. Abd Rahman Hj Hussain • Mr. Ismail Mohammed • En. Ahmad Hazizi Aziz • Dr. Sulaiman Abdul Kadir • Mrs. Roslina Ali	31 May 2012	• National Agrofood Policy • Good Agriculture Practices (GAP) • Malaysian Farm Accreditation Scheme (SALM) • Standard Organic Malaysia (SOM) • Veterinary Health Mark • Good Animal Husbandry Practice - Livestock Accreditation Scheme (SALT) • Malaysia's Best • Agriculture Blue Ocean Strategy • 'Bumi Hijau' Programme • Agri Food High Impact Project • FAMA (Grading, Packaging and Labelling of Produce) Regulations • Pesticides Act
17.	**Economics and Policy Planning Division; Programme Coordination Division, SME Corporation** • Mrs. Karunajothi Kandasamy • Mr. Fozian Ismail • Mr. Mohd Atan	13 June 2012	• SME Master Plan • National SME Development Council • One Referral Centre (ORC) • SME infoPortal • Industrial Energy Efficiency for Malaysian Manufacturing Sector (IEEMMS) • Energy Management Standard (ISO 50001; EnMS) • SME Innovation Award • 1-InnoCERT • Green Lane Policy • SCORE
18.	**National Solid Waste Management Department, Policy Division, Ministry of Housing and Local Government; Policy and Planning Division; Facilities Unit, Approval and Licensing Unit** • Dato' Dr. Nadzri Yahaya • Mr. Azizan Ariffin • Mr. Mohd Yusri Yusof • Mr. Faizal Ariffin • Mr. Faisal Mohammad • Mr. Mohd Akhir Abdul Rahman	20 June 2012	• National Solid Waste Management Policy • Solid Waste and Public Cleansing Management Act 2007 • Solid Waste and Public Cleansing Management Corporation Act • Local Government (Amendment) Act • Street, Drainage and building (Amendment) Act • Town and Country Planning (Amendment) Act • 3R Programme • Waste Collection Pilot Project

No.	Organisations/Interviewees	Date	Discussion Themes
19.	**Cleaner Technology Unit; Enforcement Unit; Communication Strategic Unit, Department of Environment (DOE)** • Mr. Ramli Abd Rahman • Mr. Abdul Aziz Chik • Mrs. Nor Azah Bt Masrom • Mr. Mohd Rashdan Topa • Mrs. Ling Liang Chui	**21 June 2012**	• Cleaner Production • Sustainable School • Friends of Environment
20.	**Federal Department of Town and Country Planning Peninsular Malaysia (National Physical Planning Division; Natural Rural Physical Planning Policy Unit; National Urbanization Policy Unit) and Regional Development Section, Economic Planning Unit)** • Mrs. Rokibah Abdul Latif • Mr. Zainuddin Nali • Ms. Nina Izurin Yahya • Mrs. Marhamah Ab. Ghaffar • Mr. Adi Iskandar Zulkarnian Nordin • Mrs. Ydira Ibrahim • Mrs. Jasmiah Ismail		• National Physical Plan 2 • National Urbanisation Policy • Green Neighbourhood

ANNEX 4

INSTITUTIONAL MATRIX

Documents	Champion	EPU	MOF	PEMANDU	MNRE	KeTTHA	MITI	KPKT	KKR	MOA	MPIC	MOT	MOSTI	KPDNKK	KKLW	MOE	KBS	KWPKB	MOTOUR	MOHE
10th Malaysia Plan	EPU	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Government Transformation Program	PEMANDU	*	*	*		*		*	*			*			*	*		*		*
Economic Transformation Program	PEMANDU	*	*	*	*	*	*	*	*	*	*	*	*	*	*			*	*	
New Economic Model	PEMANDU	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		*	*	*
National Physical Plan 2	KPKT	*	*	*	*	*	*	*	*	*	*	*	*	*	*			*	*	
National Policy on the Environment	MNRE	*	*		*	*	*	*	*	*	*	*	*	*		*	*		*	*
National Green Technology Policy	KeTTHA	*	*	*	*	*	*	*	*	*	*	*	*			*			*	*
Renewable Energy Policy & Action Plan	KeTTHA	*	*	*	*	*	*	*	*	*	*	*	*						*	*
National Policy on Climate Change	MNRE	*	*	*	*	*	*	*	*	*	*	*	*			*			*	*
National Policy on Biological Diversity	MNRE	*	*		*		*	*		*	*					*			*	*
National Mineral Policy 2	MNRE	*	*		*		*	*								*				*
SME Master Plan	SME	*	*	*	*	*	*	*	*	*	*			*		*			*	
Industrial Master Plan 3	MITI	*	*		*		*		*	*	*		*							
Construction Industry Master Plan	KKR	*	*				*	*	*		*									
National Commodity Policy	MPIC	*	*	*	*	*	*	*	*	*	*				*					*
National Timber Industry Policy	MPIC	*	*	*	*	*	*	*	*	*	*	*	*	*	*				*	*
National Agrofood Policy	MOA	*	*	*	*	*	*	*	*	*	*	*	*	*	*				*	*

* Performance Management and Delivery Unit (PEMANDU) is not considered as key government stakeholder as its main roles and objectives cover various areas (not only related to SCP to oversee the overall implementation and assess progress of the ETP and GTP.

ANNEX 5

POLICY MATRIX AND DETAILS ON SCP-RELATED OBJECTIVES

Policies	General issues of sustainability (A)	Moving towards a green economy (B)	Enabling technology and economic innovation for SCP (C)	Changing unsustainable production patterns (D)	Changing unsustainable consumption (E)	Applying life-cycle thinking (F)
10MP	A01	B01	C01	D01	E01	F01
GTP	A02	B02	C02	-	E02	F02
ETP	A03	B03	C03	D03	-	-
NEM	A04	B04	C04	D04	E04	F04
NPP2	A05	B05	C05	D05	E05	F05
NGTP	A06	B06	C06	D06	E06	F06
NPCC	A07	B07	C07	D07	E07	-
NREPAP	A08	B08	C08	D08	E08	-
NPE	A09	B09	C09	D09	E09	-
NPBD	A10	B10	C10	-	E10	-
NMP2	A11	B11	C11	D11	-	-
NAFP	A12	B12	C12	D12	E12	-
NATIP	A13	B13	C13	D13	E13	-
NCP	A14	B14	C14	D14	-	F14
IMP3	A15	B15	C15	D15	E15	F15
CIMP	A16	-	C16	-	-	-
SMEMP	A17	B17	C17	D17		F17
Legislations						
EQA	A18	-	C18	D18	-	F18
TCPA	A19	B19	-	D19	-	F19
EQA(SW)	-	-	-	D20	-	-
EQA(LCMG)	-	-	-	-	-	-
REA	-	-	-	-	E22	F22

DETAILS ON SCP-RELATED OBJECTIVES

Reference No.	SCP-Related Objectives
A01 (10MP)	• ... ensure that Malaysia's environmental assets and ecological resources are managed sustainably ... (p.26) • Mainstream environmental considerations will be undertaken, particularly in economic planning to ensure sustainability of resources (p.26) • The biggest risk to sustainability arises from the under pricing of resources, particularly oil and gas as well as (p.26) • ... significant opportunities in monetising or creating value from environmental endowments (p.26) • ... bio-diversity protection ... [and] environmental conservation (p.26) • ... Improving the standard and sustainability of quality of life (p.48) • Economic development ... based on sustainability principles to ensure that the environment and natural resources are preserved so that growth will not come at a cost to future generations (p.48) • ... move towards a low carbon economy and achieve sustainable development (p.49) • Identify options and strategies to achieve low carbon economy (p.298) • The goal of improved governance of the energy sector to raise productivity and efficiency (p.114) • ... to enable the farmers to increase productivity and produce quality agricultural products (p.155) • ... Build environment that enhances quality of life (p.245) • Ensuring access to quality and affordable housing (p.247) • Providing efficient public utilities and services ... reliable services for water and sewerage, electricity, ... waste management and public cleansing (p.247) • ... prudent management and conservation of existing resources (p.247) • Cities need to grow in a sustainable manner as they build the infrastructure and institutions needed to uplift the quality of life (p.249) • Building world-class vibrant and liveable cities (p.250) • ... expanding imperative to minimise ... [cities] ecological footprints (p.251) • Urban projects account for the environmental cost of development (p.252) • Waste is a resource to be recycled and reused, for example via waste-to-energy initiatives (p.252) • ... requiring large-scale coordinated efforts in cleaning the rivers, reviving the ecosystem and protecting the rivers ... (p.257) • ... promoting sustainable and environmentally friendly development ... (p.278) • ... to deliver high quality and environmentally sustainable housing ... (p.278) • ... to establish robust and efficient public utilities and services that are sustainable from both an operating and environmental perspective (p.281) • ... emphasis will be directed towards ... Managing water endowment and supply ... and Restructuring solid waste management (p.281) • ... ensuring sustainable water supply ... [in particular] three areas of focus ... [namely] Developing a long-term strategy for water resource management to achieve water security; Continuing efforts to restructure the water services industry; and Protecting rivers from pollution (p.281) • ... [formulate] National Water Resources Policy ... to ensure efficient and effective [water] management (p.282) • ... streamlining policies and legislations to allow for more efficient and equitable distribution of water resources (p.282) • ... expanding the implementation of the Integrated Water Resources Management and Integrated River Basin Management approaches in planning, managing, protecting and rehabilitating water resources (p.282) • ... to improve the quality of water and reduce losses in water supply [by replacing of pipes and old meters] (p.284)

Reference No.	SCP-Related Objectives
B01 (10MP)	• ... to provide end to end connectivity for commuters and pedestrians [expansion of Kuala Lumpur Light Rail Transit coverage, implementation of a high capacity Mass Rapid Transit Systems, extension the network of feeder buses and covered walkways] (p.20) • ... [Formulate] New Energy Policy (2011-2015) ... [that] encourage energy security and economic efficiency ... [and] adoption of market-based energy pricing (p.112) • Energy security will be enhanced through the development of alternative resources, particularly hydro ... [and mandatory requirements for] blending of bio-fuel (p.112) • The application of super critical coal technology will be explored to reduce carbon emissions (p.112) • ... move towards a low carbon economy and achieve sustainable development (p.49) • Identify options and strategies to achieve low carbon economy (p.298) • ... the formulation Energy Efficiency Master Plan [to encourage efficient use of energy] (p.113) • Environmental management as an incipient industry with substantial growth potential in green technology and ... [its] spin off ... (p.132) • ... [formulate] National Water Resources Policy ... to ensure efficient and effective [water] management (p.282)
C01 (10MP)	• Regulatory change as a key driver of innovation ... to develop new products that are more efficient, greener and safer (p.83) • ... to incorporate Green Building design elements and technology ... [in housing design] (p.278) • ... research and development efforts will be intensified in area of conservation of water resources to support efforts to develop a sustainable water sector for the national economy (p.282) • The potential of implementing a Smart Grid system ... to minimize losses, reduce costs and increase reliability (p.287)
D01 (10MP)	• ... will move towards market pricing of gas by 2015 ... (p.26) • ... to rationalise subsidies ... where gas prices for the power and non-power sectors will be revised every six months to gradually reflect market prices (p.113, 114) • ... water tariffs will be restructured towards full cost recovery (p.26) • ... encourage industries and consumers to use energy productively and minimise waste to be more competitive in the global market (p.113) • ... energy efficient and high value added industries will be promoted (p.113) • The production of EE related machinery and equipment ... [to] support the development of ancillary industries and services (p.113) • ... the formulation of Energy Efficiency Master Plan, setting the minimum energy performance standards for appliances and development of green technologies ... [to encourage efficient use of energy] (p.113) • Encouraging good agriculture practices, agronomic management and mechanisation especially among smallholders (p.124) • Creating the environment and demand for the green technology industry to spur business opportunities for professional and service providers ... (p.132) • .... the introduction of integrated water and sewerage tariffs (p.283) • ... link sewerage charges to water consumption ... (p.284)
E01 (10MP)	• ... to provide end to end connectivity for commuters and pedestrians [expansion of Kuala Lumpur Light Rail Transit coverage, implementation of a high capacity Mass Rapid Transit Systems, extension the network of feeder buses and covered walkways] (p.20) • ... will move towards market pricing of gas by 2015 ... (p.26) • ... to rationalise subsidies ... where gas prices for the power and non-power sectors will be revised every six months to gradually reflect market prices (p.113, 114) • ... water tariffs will be restructured towards full cost recovery (p.26) • ... encourage industries and consumers to use energy productively and minimise waste to be more competitive in the global market (p.113) • ... the formulation of Energy Efficiency Master Plan, setting the minimum energy performance standards for appliances and development of green technologies ... [to encourage efficient use of energy] (p.113) • ... to invest in infrastructure to make public transport the mode of choice (p.247) • .... the introduction of integrated water and sewerage tariffs (p.283) • ... link sewerage charges to water consumption ... (p.284)

Reference No.	SCP-Related Objectives
F01 (10MP)	• Restructuring of the public transport licensing and operating framework to be led by the commission for land public transport or SPAD (p.309) • The Commission for Land Public Transport ... was established ... to improve long term integrated planning for a safe, reliable, and affordable land-based public transport system (p.49) • Making well-being, quality of life and liveability the core of any urban project (p.252) • ... to encourage living, working and leisure activities within the same compact area (p.252) • ... creating a seamless network of interconnected green spaces within the cities, connecting major activity hubs and housing sites, and be equipped with facilities such as amphitheatres, cycling and pedestrian pathways and other amenities (p.257)
A02 (GTP)	• Public transport is one of the perennial irritants for urban Malaysians. For example, in Klang Valley today, there is high congestion during peak periods (e.g. commuters in KTM Komuter trains suffer from more than 40% over-capacity), often unreliable service with frequent delays and cancellations, poor connectivity between modes in certain areas (e.g., between monorail and LRT stations at KL Sentral) and poor access to public transport services (e.g., only about 61% of Klang Valley's population lives within 400 metres of a bus route). This, in combination with continued growth in the number of private vehicles, has contributed to public transport modal share in Klang Valley falling steadily from 34% in 1985, to 20% in 1997; today it is closer to 10–12% (p.32)
B02 (GTP)	• We aim to ... Raise the modal share to 13% by 2010 and to 25% by 2012 during the morning peak period of 7 AM to 9 AM in Klang Valley. We will subsequently adapt and apply successful initiatives to Penang and Johor Bahru ... Improve reliability and journey times ... Enhance comfort and convenience ... Improve accessibility and connectivity such that the percentage of the population, living within 400 metres of a public transport route increases from 63% to 75% in 2010 (p.32) • ... Streamline capacity of a system already at its limits: By 2012, we will increase capacity on the KTM Komuter and LRT lines by 1.7 to 4.0 times (depending on specific line). This will involve refurbishments and purchases of rolling stock and trainsets (e.g. 26 new four-car trains for the Kelana Jaya LRT line). We will also introduce dedicated rights-of-way for buses across 12 major corridors in Klang Valley by 2012 (four in 2010). These 12 corridors will in total carry 35,000 to 55,000 passengers during the morning peak hours, or 6% to 9% of total public transport ridership by 2012. We will increase the size of the existing bus fleet by 850 buses by 2012 (200 in 2010). This will improve services on current routes and provide service to 53 new routes to address currently unserved areas (p.33) • Divert heavy vehicles from the Central Business District: We will create three major integrated transport terminals outside the city core, beginning with the southern ITT Bandar Tasik Selatan in 2010. This will be supported by ITT Gombak by the end of 2010 (which will divert more than 750 inter-city buses from the north and east from the city core every day) and then a third terminal, potentially in Sungai Buloh, to serve the northern inter-city express buses beyond 2012. Within the city centre, there will be two types of public transport hubs – first, the intra-city terminal hubs at Pasarama Kota, Plaza Rakyat and Pudu to facilitate the flow of traffic from the suburbs into the city, and second, 14 Hentian Akhir Bandars that will facilitate the movement of passengers and public transport vehicles within the city centre to reduce congestion and streamline overlapping routes (p.33)
C02 (GTP)	• ... Using innovative, quick and least-cost ways of delivery. For example, building standard-design houses, leveraging distributed power generation technologies such as solar hybrid power generation or micro hydro-electricity for areas distant from electricity generation and transmission infrastructure and using alternative solutions such as tube wells, gravity wells, or rain water recovery for areas that are distant from reticulation networks (piped water supplies) ... (p.31)
D02 (GTP)	- No Entry -

Reference No.	SCP-Related Objectives
E02 (GTP)	• ... Stimulate demand to attract people to public transport: Initiatives include introducing an integrated ticketing platform and fare structure (introducing the 1Ticket, 1Seamless Journey concept across all 16 operators in Klang Valley), adding roughly 6,800 new parking spaces by 2012 (4,000 in 2010) across 14 rail stations outside the urban core, enhancing feeder services into rail stations and upgrading high-traffic stations, terminals and bus stops. We will also increase physical connectivity between modes, e.g., via completely enclosed walkways (p.33) • ... Manage demand: Once public transport modal share is above 25% and the public transportation system has been improved in terms of reliability, journey times, comfort, accessibility and connectivity, we will accelerate initiatives to increase the relative attractiveness of public transport vis-à-vis private vehicles. One example is congestion pricing, which has been implemented successfully in London and Singapore (p.33, 34)
F02 (GTP)	• ... Using innovative, quick and least-cost ways of delivery. For example, building standard-design houses, leveraging distributed power generation technologies such as solar hybrid power generation or micro hydro-electricity for areas distant from electricity generation and transmission infrastructure and using alternative solutions such as tube wells, gravity wells, or rain water recovery for areas that are distant from reticulation networks (piped water supplies) ... (p.31)
A03 (ETP)	• ... the Government is committed to the stewardship and preservation of the natural environment and resources by ensuring that they are properly priced into the cost of development (p.9) • The Government is aiming for Malaysia to become a high income nation that is both inclusive and sustainable by 2020. These goals will be reached jointly. The Government will not seek short-term progress on one goal at the expense of delaying progress on the others (p.7) • The way in which Malaysia grows to achieve this high-income target will be inclusive in nature, enabling all Malaysians to share in the benefits (p.8) • Ensuring growth is achieved sustainably - the measures to achieve high-income status must be sustainable in both economic and environmental terms, meeting present needs without compromising those of future generations. We will achieve growth without running down Malaysia's natural resources. Additionally, we will reduce our dependence in oil and gas as the primary economic contributor. Our fiscal position will be made sustainable, with a stronger focus on private sector-led investment to avoid reliance on public funding. In environmental terms, the Government is committed to the stewardship and preservation of the natural environment and resources by ensuring that they are properly priced into the cost of development (p.9) • ... Tenth Malaysia Plan. The Tenth Malaysia Plan outlines the Government's development plan for the next five years. It focuses on unleashing economic growth, promoting inclusive socio-economic development, developing and retaining talent, building an environment that enhances quality of life and transforming government. It identified the 12 NKEAs that will receive prioritised policy and investment focus (p.11) • By 2020 agriculture will be transformed into agribusiness, moving towards a model that is inclusive but simultaneously anchored on market needs, economies of scale and value chain integration. Malaysia will focus on large global markets with high growth potential such as aquaculture and premium processed foods, while maintaining a strong presence in strategic sub-sectors such as paddy and livestock to ensure national food security. To do so, we will need to capitalise on natural resources while enhancing productivity and adopting a truly demand-driven approach (p.41) • EPP 4: Jump-starting a Vibrant Green Technology Industry (p.416) • Rationale - Green technology is defined as products and services that reduce energy consumption and minimise pollution. Some segments like alternative energy are experiencing rapid growth of 30 to 40 percent per annum globally (p.416)

Reference No.	SCP-Related Objectives
B03 (ETP)	• ... growth will be achieved in a sustainable manner, without cost to future generations, through initiatives such as building alternative energy generation capacity and conserving our environment to promote eco-tourism (p.5) • Greater KL/KV new places: High potential destinations within Greater KL/KV will be identified as attractions and upgraded to enhance liveability for residents and draw tourists and migrants looking to visit or relocate to Greater KL/KV. For instance, downtown KL City is blessed with two rivers and valuable waterfronts that will be exploited as retail and commercial centres. In addition, we will increase the amount of green space essential to improving the city's overall quality of life. Also, Greater KL/KV has many natural assets that can be leveraged as points of attraction (e.g. the old Pudu Jail site with its iconic gate). Strategic redevelopment with sharply defined boundaries has the potential to create more iconic places within Greater KL/KV. (p.29) • Greater KL/KV connect - regional connectivity will be accelerated by deploying a high-speed rail system to connect Greater KL/KV and Singapore. At the same time, intra-city connectivity will be improved with a mass rapid transit system (p.29) • Greater KL/KV enhanced services - gaps in basic services will be addressed to ensure a well-functioning and liveable city. Pedestrian walkways within KL city are woefully inadequate and not integrated. Fixing this will enhance not only the liveability of the city, but also boost tourism and commercial potential. We will also improve provision of adequate solid waste management collection and processing (p.30) • Building a sustainable energy platform for growth: Malaysia will diversify its energy sources beyond gas to fuel growth and honour our commitment to lower carbon emissions. Alternative sources such as solar and nuclear power will be developed, while at the same time energy efficiency measures will also be undertaken (p.31) • Logistics. To support the success of the ETP, we will upgrade existing infrastructure such as roads, ports and airports and construct new logistics infrastructure if there is a sufficient business case in order to facilitate the efficient movement of people and goods (p.47) • With the recent growth in energy consumption, Malaysia has experienced high growth in greenhouse gas (GHG) emission levels, compared with peers. Therefore alternative energy sources such as nuclear, power and solar will become more attractive in the future, as Malaysia strives to reduce its carbon emissions (p.174) • Four EPPs have been identified to improve Malaysia's energy security and efficiency … EPP 9: Improving energy efficiency … EPP 10: Building up solar power capacity … EPP 11: Deploying nuclear energy for power generation; and … EPP 12: Tapping Malaysia's hydroelectricity potential (p.176) • … focus on five relevant levers to improve energy efficiency in Malaysia: (1) the Government will lead by example on energy-efficiency practices and philosophy, (2) stimulate sales of energy-efficient appliances, (3) the Government will work with TNB to make co-generation economically viable, (4) regulate better insulated buildings and (5) stimulate the sale of energy-efficient vehicles (p.190) • The key performance indicators … are: saving targets for government buildings, sale targets for energy-efficient electrical appliances, co-generation targets for electricity, implementation of an improved energy-regulatory framework and a market share target for energy-efficient cars (p.193) • Solar power should be considered as a viable energy alternative because of its many advantages, such as independence from fossil fuels and zero carbon gas emissions, increased energy security, high job creation potential and significant foreign direct investment … Furthermore, Malaysia has ample supply of natural sunlight which is currently not utilised to its full potential (p.197) • Hydroelectricity has many advantages: it is a renewable energy, it helps reduce carbon dioxide emissions and it is a proven technology providing a secure, long-term supply of electricity (p.197) • Creating a green technology industry in Malaysia will be beneficial for the following reasons: Help achieve Malaysia's emission reduction targets: Malaysia has announced plans to reduce carbon emissions by 40 percent by 2020, based on 2005 levels. Growing the supply and demand of green products and services will be vital to achieving these targets; Generate sizable cost savings: It is estimated that increasing energy efficiency by 40 percent by 2020 would result

Reference No.	SCP-Related Objectives
	in cost savings of RM295 billion; and Create a significant number of jobs: Building a vibrant green technology industry will bring with it the creation of a range of highly-skilled positions, as has been the case in other nations that have made similar investments. For example, green employment in Scotland is anticipated to produce as many as 60,000 green sector jobs by 2020 (p.416)
C03 (ETP)	• In order for Malaysia to offer competitive personal and corporate tax rates and invest in education, research, public services and infrastructure, it will need to strengthen its fiscal position substantially (p.10) • The economy will be driven by innovation and a shift to higher value-add activities, such as higher margin downstream food products for the palm oil sector. While we continue to innovate, there will also be a much greater focus on quality and on improving standards (p.20) • Moving towards high-income will also require a marked increase in labour productivity. Initiatives such as introducing new harvesting techniques in oil palm plantations can potentially increase labour productivity by a factor of four (p.20) • ... Solar: With a strong start in solar and solid experience in the similarly structured semiconductor industry, Malaysia has a promising future in a promising technology. By 2011, we will have the third largest market share in the world. A concerted effort to increase the number of silicon, wafer, cell and module producers will allow us to leap into second place of a much larger industry by 2020 (p.37) • ... Light-emitting diodes: Malaysia has a strong lead in solid-state lighting, one of the fastest growing segments. We need to move up the value chain from packing and testing to chip and application research and development by creating a cluster of international and domestic companies (p.37) • Our aspiration is to jump-start the green technology sector in Malaysia, in order to build a vibrant green technology industry and create jobs in this fast-growing sector and, in the process, generate substantial cost savings and reduce Malaysia's carbon footprint (p.417) • Impact - By taking a coordinated effort to jump-start a vibrant green technology industry in Malaysia, we can generate RM7.2 billion of additional GNI in 2020 and create over 47,000 jobs. This incremental GNI is driven primarily by growth in revenue from renewable energy service providers (p.417)
D03 (ETP)	• ... Upstream productivity and sustainability: These EPPs will focus on improving upstream productivity and transforming Malaysia's oil palm plantations by accelerating the replanting of aging oil palms, mechanizing plantations using equipment such as Cantas™, stringently enforcing best practices to enhance fresh fruit-bunch yield, implementing strict quality control parameters to enhance oil extraction rate and developing biogas facilities at palm mills to capture the methane gas released during the milling process (p.34) • ... Downstream expansion and sustainability: These EPPs will target capturing the lucrative downstream segment where Malaysia has little presence today by focusing on developing finished segments that generate high value, including oleo-derivatives and selected food and health-based segments, as well as commercialising second-generation bio fuels from the resulting bio mass that is generated in the industry (p.34) • ... Capitalising on Malaysia's competitive advantage: We aim to unlock value from Malaysia's biodiversity, including developing our diverse natural herbs into premium herbal products, commercialising our unique native seaweed varieties, expanding swiftlet nest-production, farming through integrated cage aquaculture systems and rearing cattle in oil palm estates (p.42) • ... Ensuring food security objectives are consistent with increasing GNI: The Government will ensure that food security objectives are met. As the population continues to grow, these EPPs will scale up and strengthen productivity of paddy farming and cattle ranching as well as establish local dairy clusters with the help of foreign players to help meet increasing demand (p.42) • The main objective of this initiative is to shift national production from basic oleochemicals to higher value oleo derivatives from the current 1 percent share to a forecasted 40 percent by 2020. This will be achieved by focusing on five key products: agrochemicals, surfactants, bio lubricants, bio polyols and glycerol derivatives (p.298) • EPP 5: Developing Biogas at Palm Oil Mills … The objective of this initiative is to ensure that mills capture methane gas to generate electricity for supply to the national grid or for their own use. Mills should start developing biogas plants immediately to capture additional income from the incentives offered by the Clean Development Mechanism (CDM) programme … (p.296)

Reference No.	SCP-Related Objectives
E03 (ETP)	- No Entry -
F03 (ETP)	- No Entry -
A04 (NEM)	• We urgently need a radical change in our approach to economic development which will be sustainable over the long-term, will reach everyone in the country and will enable Malaysia to reach high income status (p.4) • The ETP is designed to drive Malaysia forward from its current stagnant situation to be a high income economy which is both inclusive and sustainable ... (p.4) • Our economic growth has come at considerable environmental cost and has not benefited all segments of the population (p.4) • Historically, it has been much easier for a low income country to make the transition to middle income status when they make good use of their natural resources or low cost advantage to attract investment. But the low cost advantage is a fleeting moment that ends when other low-cost centres emerge. Without new niches and strategic reform plans, many countries have been unable to break out of the middle income category – a phenomenon that has been termed the 'middle income trap' (p.7) • The main goals of the NEM are that Malaysia will become a high income advanced nation with inclusiveness and sustainability by 2020. No one goal should be achieved at the expense of the others. In striving to achieve those goals, we cannot take the short-cut of pump-priming with wealth from natural resources, which is not sustainable (p.9, 85) • Inclusiveness will enable all communities to contribute to and share in the wealth of the country (p.10, 89) • An economically and environmentally enduring solution (p.11, 92) • The sustainability component of the NEM is meant to ensure that all of the proposed measures defined under the new model must be sustainable in both economic and environmental terms. Malaysia's dependence on natural resource consumption as the primary engine of growth is clearly not sustainable on either dimension. This is not to suggest that exploitation of natural resources should not be a key component of national production. But it does mean that under the new model, investment and policy decisions will only be made after full consideration of their long-term impact on the society, the economy as a whole, and of course the environment (p.11, 92) • All rakyat will feel included as a result of ... Living and working in safe, surroundings ... Equal and easy access to information ... Mutual respect and individual dignity ... Every part of the nation – be it a state, a city, a town or a village – matters ... The poor will not be forgotten (p.12) • A sustainable approach will provide the rakyat with ... Confidence in the government ... Improved environment ... Sustained growth ... Sound management and preservation of resources (p.12) • Piecemeal and incoherent introduction of policy would be inconsistent with the cross-cutting nature of the SRIs. The policy measures in line with the SRIs must move in tandem to deliver high income in an inclusive and sustainable manner (p.17) • Malaysia should lead the global green revolution ... As one of the top 17 mega-biologically diverse countries in the world, with rainforests covering 60% of our landmass, Malaysia is at the frontier of the global environmental and climate change debate (p.69) • The major benefit of our green, high income and inclusive strategy is that future generations of Malaysians (and world citizens) will continue to enjoy the clean air and water, and natural environment that they deserve and work so hard to preserve and enhance. Malaysians can feel proud that we are setting the pace in treasuring our heritage and delicate ecology for the mutual benefit of all mankind (p.70)
B04 (NEM)	• Malaysia's rich biodiversity can be harnessed to generate economic benefits from tourism, recreation, pharmaceutical applications and nutritional products (p.9, 81) • The NEM seeks sustainable growth that meets the ongoing needs of the population without compromising future generations by effective stewardship and preservation of the natural environment and non-renewable resources. This new approach will be particularly relevant to the management of water, and oil and gas resources (p.11, 93) • Move into alternative energy generation as well as energy saving products and services (p.28, 141)

Reference No.	SCP-Related Objectives
C04 (NEM)	• Good infrastructure has contributed to the leadership that Malaysia enjoys in E&E manufacturing and major natural resource exports, which can be leveraged for more high value added activities. It also provides Malaysia with the potential to further develop its logistics sector (p.8) • It is now poised to make the next technological leap to more innovative and higher value added, cutting-edge technology industries (p.8, 79) • Have sound institutional framework for better monitoring and effective implementation (p.10) • In a high income economy, the rakyat can expect ... More choices and higher purchasing power ... Better quality of life ... Opportunities for upward mobility ... Reward for innovation and creativity ... Greater confidence in the robustness of the economy (p.12) • The economy will be market-led, well-governed, regionally integrated, entrepreneurial and innovative (p.14) • The NEM will provide the framework and environment to engender the entrepreneurial spirit to make the most of growth opportunities from available financing. Innovative and state-of-the-art technology will generate high value added products, services and creative processes in the technical, social and institutional areas (p.14) • New approach ... Growth through productivity. Focus on innovative processes and cutting-edge technology, supported by healthy level of private investment and talent, for high value added goods and services (p.15) • Create eco-system for entrepreneurship and innovation (p.19) • Promote SME growth ... Provide support for SMEs in innovative and technologically advanced areas ... Facilitate timely access to funding for business activities (p.19, 118) • Malaysia must build on its strategic location together with the comparative advantages arising from its natural resource endowment to establish production platforms which drive high value added growth with spill over effects. There must be a focus on economies of scale through growth corridors to energise promising expansions into new markets such as downstream agricultural outputs, ecotourism, alternative energy generation and climate change mitigation ... (p.27) • Create value from first mover and other comparative advantages (p.27, 141) • Identify E&E subsectors to build depth and foster new niche industries, and to capture a greater share as a distributional hub as intra-regional trade expands (p.27) • Focus on palm oil-related downstream industries to develop indigenous technology and innovation or acquire technology to meet new market demands (p.27, 141) • Harness innovation potential (p.28, 142) • Adopt an open innovation system to acquire technology and expand networks (p.28, 142) • Support rapid transformation of SMEs with potential for innovation (p.28, 142) • ... promote an environment for innovation (p.26, 37, 139) • Ensure protection of intellectual property rights (p.26, 139) • The private sector will be the main driver of growth in a market environment that rewards innovation and creativity while the government will generally be the provider of public goods and the custodian of public interests through an effective regulatory framework. Well-governed and leaner government institutions will be held accountable to performance-based outcomes in line with the GTP (p.35, 36) • Improve maritime and port services, leveraging on technology (p.28, 141) • Expand service-oriented industries to regional markets based on Malaysia's inherent biodiversity (p.28, 141)
D04 (NEM)	• Encourage upstream technology innovation to develop higher yielding fresh fruit bunches (p.27, 141) • Incentivise firms to embrace technology and move up the value chain (p.26, 139) • Encourage all sectors to embrace 'green technology' in production and processes (NEM, p.29, 146)

Reference No.	SCP-Related Objectives
E04 (NEM)	• The pricing of essential goods and services in Malaysia does not reflect market prices. The mispricing leads to excessive consumption and wastage. At the same time, the large government outlay on subsidies – mostly funded by petroleum proceeds – is not sustainable. The subsidies were meant to support the vulnerable groups but it has benefited a wider group, including the well off. It is time for a more targeted approach rather than broad-based subsidies (p.7) • In recent years, global awareness of environmental deterioration, especially the impact of climate change, has become pivotal to international social and economic policy debate. There is global consensus that excess consumption and waste are major factors contributing to excessive pressures on resource supply, resulting in commodity price spikes as well as the rapid depletion of non-renewable natural resources. Improper management of water and energy resources has contributed to social conflicts and unrest. Sustainable growth can only be attained by properly nurturing a healthy ecosystem and protection of our precious natural environment. There is already a fundamental shift in mind set and attitude of global citizens that is calling for profound changes in lifestyle and stewardship of nature (p.69)
F04 (NEM)	• Environmental sustainability will be achieved by rejecting the traditional approach to economic growth that has grossly neglected the environment. Although there has been a veneer of concern for the environment, past policies focussed on delivering growth first, and dealing with the environment later. In the future, equal emphasis must be placed on both protection of the environment and economic growth. The conventional GDP measurement of economic growth does not take into account the costs to society arising from environmental degradation. The recent development of the 'Green GDP' concept will allow proper consideration of the impact of growth on the environment and the appropriate design of measures to address environmental concerns (p.11)
A05 (NPP2)	• In general, the town planning system has served the country well in facilitating rapid development and enhancing the quality of life without compromising the environmental quality and heritage resources of the locality. The planning system is however continuously evolving to respond positively to new emerging trends and changes, such as increasing demand for more public engagements and appropriate spatial adaptations to combat climate change, to face the wider uncertainties of the 21st century (p.1-2) • Convention on Biological Diversity: The Convention on Biological Diversity primarily aims at conserving the biological diversity and promoting sustainable use of genetic resources while carrying out economic development. To contribute to biodiversity conservation, substantial efforts have been made by the Malaysian government to protect ecosystems, to maintain natural habitats particularly the tropical rainforest and wetlands, and to establish wildlife corridors (p.1-3) • Regional Planning Committees serves to inform and assist the State Planning Committees and the Local Planning Authorities within the region on appropriate development measures for the region aimed at sharing and optimising the use of capital-intensive infrastructure and social facilities, coordinate development, avoid duplication of investments and promote the conservation of natural resources (p.1-5) • ... spending and infrastructure investment priorities to support sustainable growth, job creation and income generation in focused areas. As such, it will contribute significantly towards facilitating private initiatives and enterprises to accelerate long-term economic growth with equity, enhancing global competitiveness, promoting sustainable physical development and conserving biodiversity (p.1-9) • The goal, objectives and principles of NPP-2 reflect the desire of the nation, as interpreted from the Town and Country Planning Act 1976 (Act 172), to promote in the improvement of the physical environment towards the achievement of sustainable development in the country (p.2-1) • The goal of NPP-2 is: The establishment of an efficient, equitable and sustainable national spatial framework to guide the overall development of the country towards achieving a developed and high-income nation status by 2020 (p.2-1) • ... ii. To optimise utilisation of land and natural resources for sustainable development and biodiversity conservation (p.2-2)

Reference No.	SCP-Related Objectives
	• ... iv. To enhance spatial and environmental quality, diversity and safety for a high quality of life and liveability (p.2-2) • ... v. To facilitate efficient integrated inter-state connectivity and public common users' space provision for social interaction and sustainable communities in line with the 1Malaysia concept (p.2-2) • ... society is dependent on the well-being of the economy; and in turn, both society and the economy are dependent on the well being of the environment (p.2-3) • The core objective of land use planning is to contribute to the achievement of sustainable development. Most activities occur on land. For the same piece of land, there are normally many competing uses (p.2-3) • Objective 4: To enhance spatial and environmental quality, diversity and safety for a high quality of life and liveability - The environment includes the built-environment of cities and towns, the rural environment of farms and plantations, and the natural environment of forests and wetlands. The country must protect and conserve the quality of its environment in all these three areas (p.2-5) • ... to conserve what remains of the natural environment for the edification and survival of the present and future generations and for the overall enhancement of the national environment (p.2-9) • Objective 5: To facilitate efficient integrated inter-state connectivity and public common users' space provision for social interaction and sustainable communities in line with 1Malaysia concept (p.2-9) • ... spatial planning should seek to create and maintain mixed-communities, green and common spaces in living areas e.g. sport facilities, public parks and schools which all Malaysians regardless of race and religion can share comfortably and happily (p.2-10) • .... in contributing to the achievement of the sustainable development objective (p.2-10) • Appropriate mitigating measures and safeguards must be in place to ensure spatial policies are consistent with the set principles (p.2-10) • P2 Deliver Sustainable Land Use Planning And Development - The core principle underpinning spatial planning is sustainable development. It is a fundamental determinant of the quality of places and people's lives. It shapes the liveable human settlements, creates sustainable communities which recognises the needs of everyone, protects the productive rural areas and unspoiled natural environment. Sustainable development also supports a vibrant and prosperous economy which is important to generate growth and jobs (p.2-11) • ... iv. Protecting effectively the environment and using prudently the natural resource (p.2-11) • ... v. Developing and conserving agricultural and tourism resources (p.2-11) • Efforts should also be taken to encourage more urban regeneration and infill development to reduce the speculative opening up of green field sites. This move will reduce greenhouse gas emission and protect forested 'carbon sink' in combating climate change (p.2-12) • Sustainable development is also the bottom line underlying spatial planning. There should be greater resolve from all quarters to conserve the fast depleting natural resources and biodiversity of the country such as the environmentally sensitive areas and marine ecosystems; and manage them in a sustainable manner (p.2-12)
B05 (NPP2)	• Convention on Climate Change - The Convention on Climate Change essentially targets at lowering the industrial and other greenhouse gases emissions, especially carbon dioxide, which adversely affect and change the climate system, particularly global warming. As such, the principal spatial strategy adopted by the Malaysian government is to maintain an effective sustainable forest management program, decreasing the urban footprint and to encourage the use of public transport (p.1-2) • A more compact urban footprint as opposed to current urban sprawl is most desirable to promote viable public transport and to protect the open countryside and forested areas as carbon sink in combating climate change (p.2-4) • Promoting Efficient Public Transport by integrating land use and transportation planning to reduce the need to travel and minimise journey to work. Also important is the need to promote a coordinated and efficient public transportation system particularly multi and inter modal transportation hubs in major urban areas (p.2-7)

Reference No.	SCP-Related Objectives
	• Facilitating Distinctive Attractive Environment in cities that promote clean air and water, safety and security particularly low crime rate and less car accidents. Cleanliness and hygiene especially litter and vandalism including attractive green spaces and public spaces for families to work, play and relax, together with arts and leisure opportunities should also be enhanced (p.2-7) • The rich biodiversity (the array of ecosystems, habitats, plants and animals and their genes) found throughout the country is an integral part of our survival and natural heritage and also provides the country with a competitive edge in such fields as tourism and biotechnology (p.2-12) • Spatial planning should play a positive role in assisting not only to reduce carbon emissions but also to use more green technology, like renewable energy, in mitigating and adapting to climate change. An important adaptation measure is to encourage the higher use of public transport over private vehicle. This will require the development of an efficient integrated inter-urban public transport system featuring high speed trains, low fare domestic flights, public buses on highways and city centre transportation hubs. For intra-city travel, more efforts shall be made to develop further the coverage and efficiency of trains, taxis and buses and their inter-connectivity. Wherever possible, walking and cycling at local level must be promoted (p.2-13) • ... lead to an energy-efficient compact city form that will help to curb urban sprawl and to reduce greenhouse gas emissions and is amenable to rail-based public transport systems. The spatial distribution, location and design of new development and townships should be planned wisely to minimise the future vulnerability of climate change. Appropriate mitigation and adaptation considerations in a changing climate should be integrated in all spatial planning strategies and in the formulation process of development proposals (p.2-13) • Urban regeneration or new development on brown field (previously developed) sites within existing large urban centres and key economic development corridors will provide opportunities to use optimally the existing and committed infrastructure, thus enabling the use of scarce resources efficiently and the reduction of the cost of doing business/production. Within such strategic development areas, it is therefore crucial for physical planning to create a quality living environment with an integrated and efficient infrastructure, particularly public transport (p.2-2)
C05 (NPP2)	• To meet this challenge, sustainable growth in Malaysia needs to be driven by enhancing productivity, innovativeness and competitiveness in which the creation of a K-economy is crucial (p.1-3) • ... ensure that the national spatial planning policies and strategies remain up-to-date and relevant in keeping abreast with the fast changing economic, social, physical and technological changes and trends as well as capable in responding proactively to the emerging international issues and future challenges like climate change, biodiversity and conservation (p.1-7, 1-8) • Agriculture for example, faces the necessity to increase productivity rather than expansion in acreage while the forestry sector is faced with the need to increase the acreage of forest plantations in order to meet global demand for tropical timber (p.2-4) • Greater community participation and social inclusiveness will be encouraged to ensure more inclusive planning at the local levels. Liveable cites attract and retain knowledge and innovative workers who in turn draw in cutting edge firms that will drive high income economic growth (p.2-8) • The framework consisting of the economy, social and environmental aspects will become the foundation of the country's physical setting thus achieving the best results for national spatial development (p.3-1) • In resolving internal development issues, the government must take cognisance of the world current economic financial crisis and international convention commitments such as biodiversity and climate change (p.3-1) • The spatial aspect of the NPP-2 will guide more effective national development planning to ensure that the national resources are used efficiently and sustainably, in particular making optimum use of existing capital and human resources (p.3-1) • At the same time, the government has identified several strong emerging clusters as new sources of growth including tourism in particular medical and education, Islamic finance, biotechnology, renewable energy, logistics, and ICT (p.3-3)

Reference No.	SCP-Related Objectives
	• To transform successfully the Malaysian economy into the knowledge-based and technology-driven tertiary sector, it is necessary to focus and promote innovation, creativity and high value-added elements (p.2-14) • Malaysia, which has its own recognised strengths and potentials in the global setting, will look forward in seeking every opportunity to promote and attract more Foreign Direct Investments (FDI), adopt new national growth strategies, venture into new sources of economic growth and accelerate the rate of transformation to knowledge and high technology-based economies (p.3-1) • Changing climate phenomenon is considered the greatest long-term potentially catastrophic threat to the world. Evidences indicate that uncontrolled human activity is changing the global climate, particularly man-made carbon emissions which have contributed to global warming resulting not only in permanent detrimental changes to the natural environment, but also significant challenges to worldwide economic growth and social stability (p.3-4) • The country will eventually progress to the innovation era which is knowledge driven and producing knowledge based goods and services ... (p.3-3) • Innovative technologies are indispensable productive tools, particularly ICT and biotechnology, to enhance economic efficiency and quality of life; and have impacts on people, places and potentials (p.3-3)
D05 (NPP2)	• ... provide opportunities to use optimally the existing and committed infrastructure, thus enabling the use of scarce resources efficiently and the reduction of the cost of doing business/ production (p.2-2)
E05 (NPP2)	• ... to create a quality living environment with an integrated and efficient infrastructure, particularly public transport (p.2-2)
F05 (NPP2)	• ... the NPP-2 aims to take pre-emptive measures by ensuring that national land use planning incorporates the appropriate adaptation and mitigation measures to combat climate change (p.2-9) • The main physical components of the NPP-2, involves the creation of an efficient hierarchy of settlements (such as international gateways and strategic urban hubs/centres), an integrated national transportation network (such as national and regional expressways, high-speed railways, and ports) as well as key infrastructure systems including basic utilities and facilities (such as broadband communication, IT, energy, water, knowledge, schools and health facilities). At the same time, environmentally sensitive areas (such as forests and wetlands) and countryside (such as rural agriculture areas) will also be conserved and preserved (p.1-8) • ... to address the need for conserving or restoring ecologically valuable natural resource and environmentally sensitive areas, and their implications to urban form and pattern. For example, in order to stop urban sprawl and encroachment into forest and wetlands areas, smaller urban footprint development with higher densities and more mixed-uses/multiple-uses development must be encouraged. It is also important to give higher priority on the use of public transport, cycling and walking to reduce greenhouse gas emissions and establishing ecological linkages to reconnect fragmented forest complexes (p.3-5) • ... to create a better quality and efficient physical environment in the cities, towns and rural areas that will be the foundation for the higher quality of life and better place to live in. This is supported by economic prosperity, environmental stability, social vibrancy and integration as envisioned in Vision 2020. Subsumed within this overall objective is the integral need to increase competitiveness, productivity, innovativeness, social inclusiveness, regional balance, sustainability and a strong global positioning of the country (p.2-1) • By developing each part of the country to its full potential, it is envisaged that the creation of safer, greener and liveable places inhabited by healthier, smarter, richer and sustainable communities will be achieved (p.2-1)
A06 (NGTP)	• To ensure sustainable development and conserve the environment for future generations (p.9) • Green Technology shall be a driver to accelerate the national economy and promote sustainable development (p.7) • Green Technology is the development and application of products, equipment, and systems used to conserve the natural environment and resources, which minimises and reduces the negative impact of human activities (p.6)

Reference No.	SCP-Related Objectives
	• Green Technology refers to products, equipment, and systems which satisfy the following criteria and more detailed: It minimizes the degradation of the environment; It has a zero or low green house gas (GHG) emission; It is safe for use and promotes healthy and improved environment for all forms of life; It conserves the use of energy and natural resources; and It promotes the use of renewable resources (p.6) • Inculcation of Green Technology in Malaysian culture (p.13) • Improvement of Malaysia's ranking in environmental ratings (p.13)
B06 (NGTP)	• Green Technology shall be a driver to accelerate the national economy and promote sustainable development (p.7) • The national Green Technology Policy is built on four pillars: Energy: Seek to attain energy independence and promote efficient utilisation; Environment: Conserve and minimize the impact on the environment; Economy: Enhance the national development through the use of technology; and Social: Improve quality of life for all (p.7) • Significant progress and major improvements in the following four (4) key areas: Energy Sector: ... Building Sector ... Water and Waste Management Sector: ... Transportation Sector (p.11)
C06 (NGTP)	• To facilitate the growth of the Green Technology industry and enhance its contribution to the national economy (p.9) • To increase national capability and capacity for innovation in Green Technology development and enhance Malaysia's competitiveness in Green Technology in the global arena (p.9) • The Green Technology industry creates increasing number of jobs in the manufacturing and services sectors, as well as SMEs/SMIs (p.20) • Enhancement of smart partnership between Government, industries, and research institutions (p.18) • Expansion of local research institutes and institutions of higher learning to expand Research, Development and Innovation activities on Green Technology (p.10) • Establishment of strong linkages between local research institutions and regional and international centres of excellence in Green Technology RDI (p.18) • Increased Research Development and Innovation of Green Technology by local universities and research institutions and are commercialized in collaboration with the local industry and multi-national companies (p.13) • Expansion of international collaborations between local universities and research institutions with Green Technology industries (p.13) • Intensify Human Capital Development in Green Technology (p.17)
D06 (NGTP)	• To facilitate the growth of the Green Technology industry and enhance its contribution to the national economy (p.9) • Increase Foreign and Domestic Direct Investments (FDIs and DDIs) in Green Technology manufacturing and services sectors (p.10) • Application of Green Technology in power generation and in the energy supply side management ... (p.11) • Adoption of Green Technology in the management and utilisation of water resources, waste water treatment, solid waste and sanitary landfill (p.11) • Incorporation of Green Technology in the transportation infrastructure and vehicles, in particular, biofuels and public road transport (p.11) • Green Technology has a larger local market share against other technologies ... (p.13) • Increased production of local green technology products (p.13) • Expansion of local SMEs and SMIs on Green Technology into the global market (p.13) • Malaysia becomes a major producer of Green Technology in the global market (p.13)
E06 (NGTP)	• To reduce the energy usage rate and at the same time increase economic growth (p.9) • To enhance public education and awareness on Green Technology and encourage its widespread use (p.9) • Application of Green Technology in all energy utilisation sectors and in demand side management programmes (p.11) • Green Technology becomes the preferred choice in procurement of products and services (p.13) • Widespread adoption of Green Technology reduces overall resource consumption while sustaining national economic growth (p.13) • Significant reduction in national energy consumption (p.13)

Reference No.	SCP-Related Objectives
F06 (NGTP)	• Adoption of Green Technology in the construction, management, maintenance and demolition of buildings (p.11)
A07 (NPCC)	• Ensure climate-resilient development to fulfil national aspirations for sustainability (p.1) • Mainstreaming climate change through wise management of resources and enhanced environmental conservation resulting in strengthened economic competitiveness and improved quality of life (p.3) • Integration of responses into national policies, plans and programmes to strengthen the resilience of development from arising and potential impacts of climate change (p.3) • Integrate climate change responses into national development plans to fulfil the country's aspiration for sustainable development (p.5) • Strengthen implementation of climate change actions that contribute to environmental conservation and sustainable use of natural resources (p.5) • Institute measures to make development climate-resilient through low carbon economy to enhance global competitiveness and attain environmentally sustainable socio-economic growth (p.6) • Adopt balanced adaptation and mitigation measures to strengthen environmental conservation and promote sustainability of natural resources (p.6)
B07 (NPCC)	• Support climate-resilient development and investment including industrial development in pursuit of sustainable socio-economic growth (p.6) • Consolidate the energy policy incorporating management practices that enhances renewable energy (RE) and energy efficiency (EE) (p.6) • Inclusion of RE in generation mix by power producers (p.13) • Promotion of RE generation by small and independent developers including local communities (p.13) • Identify and recommend options towards a low carbon economy for the following sectors: Energy security; Industries; Transportation; Public infrastructure; Waste management; Human settlements; Forestry; and Agriculture (p.9) • Promote RE and EE for power generation ... (p.13) • Promote RE and EE to reduce GHG emissions in the transportation sector ... (p.13) • Conserve and enrich carbon pools … through sound management practices and land use planning (p.12) • Integrate measures into policies, plans, programmes and projects in the following areas: Agriculture and food security; Natural resources and environment (water, biodiversity, forestry, minerals, soil, coastal and marine, and air); Energy security; Industries; Public health; Tourism; Transportation; Infrastructure; Land use and land use change (include land reclamation); Human settlements and livelihood; Waste management; and Disaster risk reduction (p.15) • Promote RE and EE for power generation ... transportation sector ... industrial sectors ... [and] construction of green building [to reduce GHG emissions] (p.13, 14)
C07 (NPCC)	• Incorporate and facilitate implementation of climate-friendly measures and technologies ... (p.9) • Promote RE and EE in the transportation sector through ... promotion of water transportation ... (p.13) • Promote RE and EE in the transportation sector through ... R&D on higher fuel efficiency and alternative fuel (p.13) • Establish and implement a national R&D agenda on climate change taking into account the following areas: Agriculture and food security; Water security and services; Forestry and ecosystem services; Sustainable bio-energies; Public health services and delivery; Localized modelling for projection of future scenarios; Innovative socio-economic and financing mechanisms; Vulnerability due to extreme weather events and natural disasters; and Policy analysis harmonizing national and international issues (p.16) • Institutionalize … stage-based climate-friendly technology transfer programme to nurture self-innovativeness and R&D sustainability in local firms and institutions (p.16) • Empower local communities in basic RE maintenance, especially in rural electrification including mini and micro hydroelectric schemes (p.14)

Reference No.	SCP-Related Objectives
D07 (NPCC)	• Institutionalize a mechanism, ... to facilitate business and industrial responses ... (p.10) • Promote RE and EE to reduce GHG emissions in the transportation sector through: Enforcement of new vehicles engines with higher fuel efficiency; ... (p.13) • Promote RE and EE to reduce GHG emissions in the transportation sector through: ... Increase usage of hybrid engines and electric vehicles; ... (p.13) • Promote and increase EE in industrial sectors ... (p.13) • Promote construction of green buildings in commercial/institutional, industrial and residential sector through ... [the] application of low or zero energy concept in the design and construction of new buildings; Retrofitting efficient ventilation and cooling systems as well as lighting systems; Energy conservation practice in buildings; Retrofitting existing buildings to include EE features and generate RE; and Development of a green building index (p.14) • Institutionalize … stage-based climate-friendly technology transfer programme to nurture self-innovativeness and R&D sustainability in local firms and institutions (p.16) • Promote RE and EE for power generation ... (p.13)
E07 (NPCC)	• Promote RE and EE to reduce GHG emissions in the transportation sector through ... Development of an effective, efficient, integrated affordable public transportation system; ... (p.13) • Promote RE and EE to reduce GHG emissions in the transportation sector through ... Property and township development that allows movement by cycling, walking and public transport; ... (p.13) • Promote construction of green buildings in commercial/institutional, industrial and residential sector ... (p.14) • Promote sustainable lifestyles and explore incentives that encourage them (p.19)
F07 (NPCC)	- No Entry -
A08 (NREPAP)	• To conserve the environment for future generation (p.iii)
B08 (NREPAP)	• Enhancing the utilisation of indigenous renewable energy resources to contribute towards National electricity supply security and sustainable socio-economic development (p.iii) • To increase RE contribution in the national power generation mix (p.iii) • To facilitate the growth of the RE industry (p.iii)
C08 (NREPAP)	• RE is a new technology in Malaysia and there is an urgent need for human capital to be developed to support the emerging RE industries (p.iv) • ... the implementation of a systemic R&D programme that leads to innovative products and services is preferable as this can accelerate the growth of the RE Industry in the country (p.iv) ... FiT mechanism will … b) only pay for the electricity produced, i.e. promoting RE system owner to install only quality RE systems and maintain the systems properly to generate more revenue; c) with a suitable degression rate, the RE manufacturers and installers are motivated to reduce the technology costs while maintaining or improving the quality and efficiency (p.45)
D08 (NREPAP)	• The regulatory framework would be the primary vehicle for the fed-in-tariff (FiT) mechanism which will act as catalyst for the progressive entry of RE power generation businesses and other related aspects of RE development (p.iii) • … the society at large benefits. This would mean that society must play its part by contributing towards RE development through a fund to be used to pay for the RE power (p.iii) • Provide conductive environments for RE businesses (p.53) • Feed-in tariff … allows electricity produced from RE resources to be sold to power utilities at a fixed premium price and for a specific duration. This will provide a conducive and secured investment environment which will make financial institutions more comfortable in providing loans with longer period (at least 15 years tenure) to finance the renewable energy projects (p.45) • ... the FiT mechanism will: a) provide fixed revenue stream for the installed an operated RE systems (p.45) • The disadvantage of FiT mechanism is that it does not address the first cost barrier of high incremental cost. However this can be addressed through soft loan support or financial packages (p.46)

Reference No.	SCP-Related Objectives
	• Firms which adopt and use locally created or developed R&D for RE should be granted special fiscal reliefs by the Government in order to stimulate the innovation system to produce local RE technology (of comparable quality and cost to international benchmark) (p.54) • Special rewards should be provided to commercial and agriculture building owners that integrate RE technologies ... into their new or refurbishment buildings (p.57) • Advocacy programmes … should be implemented … to increase the awareness of all stakeholders of the benefits and advantages of utilising RE and participation in RE businesses (p.iv)
E08 (NREPAP)	• Government should use its strategic public procurement power to spur RE generation and industry growth (p.57)
F08 (NREPAP)	- No Entry -
A09 (NPE)	• Malaysia recognises that indiscriminate resource utilisation, over-consumption and other unsustainable development practices will erode the bases of success of the nation, and could jeopardize its continued progress (p.2) • ... seeks to integrate environmental considerations into development activities and in all related decision-making processes, to foster long-term economy growth and human development and to protect and enhance the environment (p.6) • Ensure continuous improvement in the productivity and quality of the environment while pursuing economic growth and human development objectives (p.4) • Manage natural resource utilisation to sustain the resource base and prevent degradation of the environment (p.4) • Integrate environmental dimensions in Malaysia's planning and implementation of the policies, objectives and mandates of all sectors to protect the environment (p.5)
B09 (NPE)	• ... Energy conservation and the use of energy-efficient technology and processes by appropriate pricing mechanisms, the setting of efficiency standards, promoting technology transfer and providing consumer information (p.13)
C09 (NPE)	• ... High priority will be given to technology transfer and research and development projects in environmental technology to encourage technical innovation and national competitiveness in key areas such as waste minimization, recycling, recovery, treatment and safe disposal, new methods of tackling pollution in priority areas and the development of control measures for the prevention and abatement of pollution (p.19)
D09 (NPE)	• ... The application of a combination of corrective, preventive, and precautionary measures, as appropriate ... Control at source for all major emissions to air, land and water ... Adoption of best practicable means for reduction of pollution and promotion of cleaner production technology; and ... Application of Polluter-Pays-Principle and other appropriate techno-economic incentive and disincentives (p.16, 17)
E09 (NPE)	• ... Education curricula at all levels will be reviewed to ensure a multidisciplinary approach with environment and development issues (p.8). • ... Cooperative relationships with the media, entertainment and advertising industries will be promoted to mobilize their experience in shaping public behaviour and consumption patterns (p.9)
F09 (NPE)	- No Entry-
A10 (NPBD)	• To transform Malaysia into a world Centre of Excellence in Conservation, Research and Utilisation of Tropical Biological Diversity by the Year 2020 (p.1) • To conserve Malaysia's biological diversity and to ensure that its components are utilized in a sustainable manner for the continued progress and socio-economic development of the nation (p.2) • Biological diversity is a national heritage and it must be sustainably managed and wisely utilized today and conserved for future generations (p.3) • ... To ensure long-term food security for the nation (p.4)

Reference No.	SCP-Related Objectives
	• ... To maintain and improve environmental stability for proper functioning of ecological systems (p.4) • ... To ensure preservation of the unique biological heritage of the nation for the benefit of present and future generations (p.4) • This biological diversity has important economic, technological and social implications for the nation. Of particular significance are: (i) Economic Benefits (ii) Security (iii) Environmental Stability (iv) National Biological Heritage (v) Scientific, Educational and Recreational Values, [and] (vi) Biosafety (p.5) • ... Losing diversity means losing the ecosystem resilience, leading to adverse effects on human lives (p.9) • To minimize such adverse impacts and to promote the conservation of biological diversity and the sustainable development of its components ... (p.19)
B10 (NPBD)	• ... To optimize economic benefits from sustainable utilization of the components of biological diversity (p.4) • ... Biological resources are natural capital and their conservation is an investment that will yield benefits locally, nationally and globally for future generations (p.3) • ... The benefits from sustainable management of biological diversity will accrue, directly or indirectly, to every sector of society (p.3) • This biodiversity of biological resources provides direct economic benefits … [such as] timber and non-timber goods in the forestry sector, food and industrial crops in the agricultural sector, and food in the fisheries sector (p.5) • ... The tourism industry relies on the country's diverse and unspoilt natural beauty, including unique species of plants and animals in national parks, wildlife reserves, bird parks and in marine parks and the adjacent coral reefs (p.6) • ... form the base for expanded and value-added activities throughout Malaysian industry ... (p.6) • ... There is therefore, a need for the nation, endowed with rich biological diversity and steeped in a traditional healing culture, to develop the economic potential of the medicinally useful plants (p.7) • A variety of beneficial organisms and their habitats are important for ensuring the protection and productivity of our crops. Bats and weevils are important pollinators of durian and petai, and oil palm respectively (p.8) • ... Loss of genetic resources, floods, deterioration in quantity and quality of water supply, decline in food supply, loss in productive soils, and loss in potentially useful biological resources are some of the detrimental effects of the reduction in or loss of biological diversity (p.9)
C10 (NPBD)	• In the utilisation of biological diversity, including the development of biotechnology, the principles and practice of biosafety should be adhered to (p.3) • ... To enhance scientific and technological knowledge, and educational, social, cultural and aesthetic values of biological diversity (p.4) • Now not much remains of this forest type due to mainly to agricultural expansion (p.11) • ... There is a need to enhance efforts in research and development. Our scientific base needs to be developed and strengthened so that opportunities in fields such as genetics, biotechnology, pharmaceuticals, agriculture and fisheries could be fully explored (p.12, 13)
D10 (NPBD)	- No Entry -
E10 (NPBD)	• ... Public awareness and education is essential for ensuring the conservation of biological diversity and the sustainable utilisation of its components (p.3)
F10 (NPBD)	- No Entry -
A11 (NMP2)	• To enhance the contribution of the mineral sector to the socio-economic development of the nation through the efficient, responsible and sustainable development as well as the optimum utilisation of mineral resources (p.10)

Reference No.	SCP-Related Objectives
B11 (NMP2)	• The objectives of the National Mineral Policy 2 are as follows: i. To ensure the sustainable development and optimum utilisation of mineral resources. ii. To promote environmental stewardship that will ensure the nation's mineral resources are developed in an environmentally sound, responsible and sustainable manner. iii. To enhance the nation's mineral sector competitiveness and advancement in the global arena. iv. To ensure the use of local minerals and promote the further development of mineral-based products. v. To encourage the recovery, recycling and reuse of metals and minerals (p.11)
C11 (NMP2)	• To enhance the mineral sector's contribution to the economy ... (p.13) • R&D is important to produce new technologies, innovations, techniques and applications that will reduce production cost, value-add mineral materials, discover new uses, mitigate adverse environmental impact, address health and safety aspects and improve the competitiveness of the mineral industry (p.16)
D11 (NMP2)	• ... i. the implementation of the regulatory and self-regulatory environmental management measures including Environmental Impact Assessment, as well as environmental management systems and plans, and audits; ii. the compliance with the appropriate national and state policies, physical plans as well as international agreements; iii. the compliance with the appropriate national and international standards, code and guidelines; iv. ensuring effective implementation of progressive and post mining rehabilitation; v. promoting the recovery, recycling and reuse of minerals, metals and mineral based products; vi. ensuring the implementation of effective mine waste management measures; vii. promoting and disseminating information on the use of best mining practices, public disclosure and corporate responsibility (CSR); and viii. the effective implementation of a Mine Health & Safety Management Plan (p.15)
E11 (NMP2)	- No Entry-
F11 (NMP2)	- No Entry-
A12 (NAFP)	• Eight Main Ideas of National Agrofood Policy, sustainable agricultural development (p.2) • This Issue is expected to be more challenging due to the effects of climate change, limited production factors and increase in input costs as well as competitive use of food for biofuel production (p.2) • Use and management of natural resources such land and water in a sustainable manner in food production is critical to ensure optimum and continuous production (p.4) • Malaysia's rich biodiversity, especially new species will be explored in sustainable manner to ensure that resources are not endangered and yields are maximized (p.4) • To ensure the implementation of the Agriculture NKEA achieve the target of generating a total of RM49.1 billion GNI by 2020, support in term of policy and regulations, incentives, R & D, extension services, supply of raw materials, manpower as well as infrastructure and info structure will be provided. In addition, existing agricultural programmes and projects will be coordinated in an integrated manner to support these activities (p.26) • In this regard, the approach taken is to strengthen the value chain that connects a variety of activities from upstream to downstream level with focus on increasing the competitiveness and sustainability in term of economic, social, environmental and institutional value (p.29, 30)
B12 (NAFP)	• The main initiatives that will be implemented to ensure the country's food supply are: Increase food production through land use, sustainable intensive farming and large scale rice farming in granary areas (p.3) • Optimum land use and efficient water management: the use of agricultural land should be optimized because of the limited areas for food production activities (p.28) • Adequate water supply and efficient water management will be enhanced to ensure that agricultural productivity can be maximized (p.28) • Underground water resources and rain water would be utilised for agricultural activities to ensure sustainable use of water (p.28) • Among the strategies identified to complement the agrofood industry value chain are: Integration of sustainable practices and product tracking system as part of the value chain (p.30)

Reference No.	SCP-Related Objectives
	• Strategies of Paddy and Rice Industry, 2011-2020 - Development of paddy and rice industry along the value chain will be strengthened through the following strategies: Increase productivity and quality of paddy and rice, Increase the effectiveness of mechanization and automation, Intensity the use of paddy by-products (p.50) • Intensify the Use of Paddy By-products - Efforts will be intensified to promote the use of ancillary such as straw and rice husks to produce by-products including animal feed, building material, biofuel, potting media and organic fertilizers for development of sustainable paddy and rice industry (p.51) • Sustainable Modernization and Transformation of Capture Fisheries Industry - This industry must transformed with focus on modernization of capturing technology, upgrading of fish landing and marketing infrastructures, strengthening the capability of the fisherman, compliance with international standards of fish handling and landing operations as well as management of sustainable fishery resources (p.54) • Strategies of Capture Fisheries Industry, 2011-2020 - Strategies to modernize and transform the capture fishing industry are: Development of efficient and sustainable capture fishing industry (p.55) • Development of Efficient and Sustainable Capture Fisheries Industry -Enhance the sustainable management of fishery resources through conservation efforts, the use of environmentally friendly fishing equipment, ecosystem-based resources management, development of artificial reefs, fish refuge and gazette protected and seasonal fishing areas (p.55) • Promoting Agrotourism Products - The national focus for the development of agricultural activities has opened a new chapter for the tourism sector, particularly agro-tourism activities (p.108)
C12 (NAFP)	• Modernization of agriculture driven by research and development (R & D), technology and innovation (p.2) • Private Investment as Catalyst in Transformation of Modern Agriculture - The country requires more active participation of the private sector, especially in large scale and high technology agriculture with the best agronomic management, Apart from providing agricultural infrastructure and facilities for the investors, innovative measures will be implemented to improve existing incentives and provide new incentives in agricultural activities at the upstream and downstream levels (p.5) • Development of knowledgeable and skilled human capital will be emphasized in line with the policy to reduce foreign workers and encourage intensive food production through technology and innovation (p.6) • To encourage innovation among agriculture entrepreneurs, recognition will be given to the proceeds of the best innovations in the district, state and national levels (p.6) • The increase was due to the use of labour-saving technologies through mechanization and automation of food production activities and cultivation technologies such as fertigation (p.14) • The increase was attributed to the use of the latest technology including mechanization and automation, intensification of sustainable and balanced use of agricultural factor and more widespread use of good farm management practises (p.20) • Increased production will be achieved by increasing intensity of cultivation and the use of efficient agricultural practices, high yielding breeds and up-to-date technology applications (p.20) • Strategic Directions of National Agrofood Policy - Strategic directions outlined to achieve the NAP objectives are; Strengthen R & D activities, innovation and usage of technologies (p.22) • Expand the use of up-to-date technologies and mechanization: the use of the latest technologies as well as mechanization and automation will be enhanced and expanded to increase productivity of the agrofood industry. Labour and cost saving technologies such as precision farming system, wireless sensor network, fertigation, greenhouses and intensive aquaculture farming systems and sonar system for deep sea fishing will be extended among farm operators. To encourage the use of technology and mechanization in agrofood industry (p.28) • Using good quality and certified agricultural inputs: to improve agricultural productivity focus will be given in supplying certified seed and good quality agricultural productivity focus will be given in supplying certified seeds and good quality agricultural inputs. In this regard, R & D in the production of breeds, high quality seeds and clones with specific characteristics such as high-yielding, short maturity period as well as disease and pest resistance will be intensified (p.28)

Reference No.	SCP-Related Objectives
	• The value chain approach will be supported by components such as human capital management, technology development and innovation as well as resources (p.30) • Recruitment of foreign experts will also be considered for critical positions such as agricultural scientists to promote transfer of knowledge and technology and spur innovation (p.35) • Strategic Direction V: Strengthen R & D Activities, Innovation and Usage of Technologies -Effort to transform the agrofood industry into a modern high technology sector should be supported with robust R & D activities and innovation to improve productivity and reduce production cost. R & D activities and innovation will be more based on industry demand and planned based on a more proactive innovation in comparison to adaptive innovation which is more focused on solving current problems. In this regard, several initiatives have been identified to strengthen the R & D and innovation and increase the use of modern technology in agriculture as follow: Creating conductive environment for stimulating creativity and innovation, Intensify commercialization of R & D and develop innovative products; and Expand mechanization and automation and effective technology transfer (p.36) • Efforts will be made to transfer and commercialized technologies and innovations and more widely through licensing, franchising, use of incubators and test beds to companies and entrepreneurs who pioneered the technologies. In addition, R & D in new product will be enhanced to produce to produce green products that can generate additional income (p.36) • Stimulate the use of modern technology by expanding the reinvestment of all agricultural activities: Transfer and commercialization of modern technology such as precision farming, the use of ICT and biotechnology will be enhanced by giving continuous encouragement to the entrepreneurs so as to stimulate the use of large technology in farm and food processing industries. In this case, the reinvestment will extended to all food production activities which used modern technologies in the agro-based production and processing activities (p.38) • In addition, infostructure facilities such as Agriculture Flagship and Supply and Demand Virtual Information System (SDVI) will be upgraded to broaden access and encourage e-commerce (p.38) • Facilitate the needs of agriculture-related formalities through online services: ICT facilities will be fully utilised to simplify and expedite the delivery of services including application procedures, registration, licensing and business permits as well as distribution of funds (p.38) • Application for Agriculture Flagship cover e-registration of agro-business including the business license and permit applications, provision of incentives, transactions and recruitment (p.38) • Commercial production in controlled environment with semi-automation will be promoted for selected types of mushrooms with high market price (p.97) • Strengthen R & D Activities - The Mushroom Germplasm Culture Storage Centre will be established to assist R & D activities especially to identify potential mushroom varieties for commercialization as fresh and processed products for use in industries including nutraceutical, cosmeceutical, pharmaceutical and other. In this regard, the development of extraction technologies in mushroom bioactive contents will be emphasized. Research related to suitable formulation of media mushroom cultivation using agricultural waste materials such as oil palm waste, rice straw, sugarcane bagasse, sawdust and coconut husks will be intensified (p.97) • Enhance Technology Development and Innovation - The local agro-based industry entrepreneurs will be encouraged to produce quality products with efficient processing method. The use of technology and innovation in food preservation methods that take into account the aspects of safety and cleanliness will be enhanced. Enhancement in the use of these methods is in line with the growing demand for minimally processed foods that is safe for consumption (p.105) • Technology and innovations related to handling, packaging and transportation of products will be development to ensure the level of quality for global market. For food ingredients and functional food, the technologies for extraction of bioactive substances involving processes such as fermentation, mechanical and immersion will be developed. A national technology and innovation plan for a wide range of products based on the taste of Asian food will be provided in accordance with the identified markets (p.105) • Expend the use of precision farming technologies and good agriculture practices in granary areas and areas outside the granary which have irrigation system (p.50) • Enhance the use of efficient mailing machine to minimized postharvest losses (p.51) Livestock

Reference No.	SCP-Related Objectives
	farming activities will be further strengthened by encouraging the use modern technology and compliance with good animal husbandry practices such as using enclosed pens and automation (p.62) • Develop technologies to increase and improve the quality of the birds, production and life feeding method, methods to separate feathers from the nest and technology to defect adulteration of products (p.81) • Strategies of Herbs and Spices Industry, 2011-2020 - Increase in productivity will be generated by using technologies, mechanization and automation in cultivation, yield collection, postharvest handling, grading and packaging (p.89) • Strengthen the Support Services of Floriculture Industry - In addition, extension services will be intensified to promote and expand the use up-to-date technologies among floriculture producers in an effort to increase productivity and ensure efficient postharvest handling (p.95) • Strengthen R & D Activities - R & D activities be intensified, especially in germplasm collection, production of new varieties and improvement in quality of floriculture products to create a competitive floriculture industry. R & D activities will also be targeted to produce cost-effective production technologies including mechanization and automation, efficient postharvest handling technologies and processing of high-value product. In addition, focus will be given on the use of biotechnology in the development of the floriculture industry (p.95)
D12 (NAFP)	• Ventures in high-value agriculture activities will also increase income of agricultural producers and maximise existing resources (p.4) • In addition, agricultural practices also need to consider the use of environmentally friendly agricultural inputs such as fertilizers, pesticides and drugs efficiently and according to needs. For this purpose, good agricultural practices will be required in the agriculture and livestock concentration areas such as the Permanent Food Production Park (TKPM) and Aquaculture Industrial Zone (ZIA) (p.4) • Accordingly, land use would be optimised through intercropping with short term corps and livestock integration with oil palm, development of idle land and zoning of food production areas (p.4) • Accordingly, the focus will be to improve the quality and food safety by expanding the Good Agricultural Practice (GAP), Good Manufacturing Practice (GMP), Hazard Analysis and Critical Control Point (HACCP), Sanitary and Phytosanitary (SPS) and Halal accreditation and improve the quality grading, packaging, labelling branding (p.26) • Emphasis will be also be given to the needs to comply with the requirement and regulations of the importing country (p.26) • The use of ancillary materials and wastes will be optimized to create a sustainable agricultural industry with zero waste. Recycle agricultural wastes into valuable products such ascomposts, animal feed and bio-gas are capable of supporting the crops, livestock and fuel industries as well as generate additional income (p.31) • Production of rice in the granary areas and outside the granary areas will be enhanced through the provision of adequate irrigation and drainage infrastructures, use of quality and high yielding rice seed, adoption of precision farming technology and more efficient agronomic management (p.50) • Strengthen the effectiveness of water management by increasing the intensity of irrigation water in the granary from 20 meters to 50 meters per hectare while ensuring an efficient infrastructure maintenance (p.50) • Ensure Consistent Supply of Quality Raw Materials for Downstream Industries - Implement strategic sourcing from a recognized supplier to ensure the importation of adequate quality raw materials for the local herbs and spices industry, Enforce the Food Act and Regulation as well as create new accredited laboratory to increase the capacity of screening imported material (p. 90) • Extend the Good Manufacturing Practices - Manufacturer will be encouraged to meet the GMP requirement for processing activities and to obtain the HACCP accreditation to be competitive in the international markets. Factories that meet the GMP standard will serve as anchors in contract manufacturing network with small and medium enterprises (p.90)

Reference No.	SCP-Related Objectives
	• Floriculture industry player will also encouraged to comply with the term and conditions of importing countries such as SPS and GAP requirement (p.95) • Promote Zero Waste Practices - Zero waste practices will be promoted in the mushroom industry to get full benefit from the waste materials. This will enable the mushroom industry waste to be recycled into bio-fertilizers and exporting local mushrooms (p.97) • Develop Agro-Based Food Industry Cluster - The development of sustainable and integrated agro-based industries will be implemented through the creation of specific cluster zones including at the halal hub. The agro-based industry entrepreneurs will be linked with raw material producers through contracts to ensure a consistent supply to inputs. The One District One Industry Programme will be expanded to develop more micro entrepreneurs and agro-food SMEs (p.103) • The transformation of the livestock industry will be focussed on the commercial livestock industry, the production of quality livestock breeds, the expansion of Good Animal Husbandry Practices (GAHP) and the production of quality livestock feed formulations at competitive practices (p.60) • Increase meat production based intensive livestock farming practices and intensify the practice of zero waste utilizing by-products to strengthen the supply chain and reduce pollution (p.62) • Increasing consumer awareness in aspects of health care is expected to open up opportunities to increase vegetables including vegetable juices, functional foods, frozen vegetables, high fibre vegetables and pickled vegetables (p.68) • Strategies of Vegetables Industry, 2011-2020 - The national vegetable production will be enhanced to reduce dependence on vegetable imports through the following strategies; Strengthen the organic vegetable market (p.69) • Strengthen the Organic Vegetable Market - Awareness among consumers of vegetables that are free and safe from chemicals is expected to increase demand for organic vegetables including herbs and traditional vegetables. Efforts will be intensified to encourage the production of organic vegetables with a premium price of the Malaysia Organic Scheme (SOM) certification (p.69)
E12 (NAFP)	• Awareness and demand of the global community for safe agricultural products produced in a sustainable manner is a challenge to agricultural producers to comply with standards (p.4) • Ensure Food Safety and Nutrition - The increase in consumer income and demographic change are expected to change the diet and eating patterns of people more concerned about food safety and nutrition (p.26) • Integration of Sustainable Practices and Product Tracking System as Part of the Value Chain - Expanding the sustainable agricultural practices: increased awareness towards reservation of the environment and health posed a challenge to agricultural entrepreneurs to produce agricultural products that meet sustainable standards (p.31) • Strategies of Vegetables Industry, 2011-2020 - The national vegetable production will be enhanced to reduce dependence on vegetable imports through the following strategies; Strengthen the organic vegetable market (p.69) • Strengthen the Organic Vegetable Market - Awareness among consumers of vegetables that are free and safe from chemicals is expected to increase demand for organic vegetables including herbs and traditional vegetables. Efforts will be intensified to encourage the production of organic vegetables with a premium price of the Malaysia Organic Scheme (SOM) certification (p.69)
F12 (NAFP)	- No Entry -
A13 (NATIP)	• ... The rapid growth of the timber industry has bought about new challenges relating to its future competitiveness and sustainability. To enhance the continued dynamism of the industry, the current structure of the timber industry needs to be restructured to meet the target of RM53 billion in annual exports earning by 2020 ... (p.14) • ... Policy direction ... the future trend in wood production, on a global scale, will be towards output from planted trees rather than managed natural forest. The shrinking area of natural forest, sustainable management and environmental concerns will require research on potentially high yielding varieties of wood as well as efficiency in growing, harvesting and ensuring uniformity in product size and technical specifications (p.39) • The policy direction for the supply of raw materials should give due emphasis to the assurance of a steady flow of timber from the natural forests, forest plantations, biomass and composite to enable strategic plans to be developed for the long term sustainable froth and competitiveness of the timber industry (p.39)

Reference No.	SCP-Related Objectives
B13 (NATIP)	• Applying alternative energy for the timber industry ... Exploring the use of alternative energy in the timber industry, for example the utilisation of solar power to supplement electricity in kiln drying especially in powering the convection fans. Alternatively, biomass such as wood residue and agriculture by-products can be transformed into biofuel for energy production. This will include the utilisation of bioethanol derived from lignocellulosic materials (p.57) • In order to maintain Malaysia's competitiveness as a major wood producer and to address the issues and challenges, steps must be taken to ensure that the supply of raw materials are available at competitive prices for Malaysian manufacturers [include] ... Sustainability of the natural forest resources ... In view of the expanded roles of the forest in meeting the demands of society and also the world-wide concerns for the protection of the environment, forests resources will need to be managed in a sustainable manner in accordance with the agreed international criteria and indicators for SFM (p.33) • ... Encouraging the use of biomass as a supplementary resources ... There are about 4.2 million hectares of oil palm plantation, estimated that about 18.4 million tonnes of empty fruit bunches (EFB) and 43.3 million tonnes of fronds are being produces annually. Hence, there exists a large volume of oil palm biomass to be commercialised in the country … (p.34) • There are a number of [other biomass and composite] such as coconut trunks, Kenaf plant and other agricultural residues which have show potential (p.35) • Malaysia has also been recognised as the first tropical timber producer to be able to offer certified timber products under its own Malaysian Timber Certification Scheme (MTCS) (p.71) • ... ensure the continued growth and competitiveness of the timber industry, by adding value, developing OBMs, promoting the green image, protecting the environment and researching into new product ... (p.74) • ... encourage the growth of the domestic market through intensive promotional activities (p.74)
C13 (NATIP)	• ... Greater emphasis should be given to the development of new clones and identification of more species suitable for planted forest. The industry is also encouraged to maximise the wood recovery rates through improvements in technology in current processing technique. Wood residues should be further utilised to meet the supply requirements of the industry (p.15) • ... The timber industry must take the initiatives to undertake R&D programmes to move up the value chain and to produce innovative higher value added products to enables the expansion of downstream activities. Focus will also be given to R&D programmes that produce products which will take into consideration the concerns related to health and environment both at international and domestic levels (p.17) • ... To remain competitiveness in the global market, continuous efforts must be made to explore new markets and to promote Malaysian brands of product from the timber industry (p.17) • ... Enlarging the pool of k-worker ... To attract quality workers, the industry will have to provide the enabling environment in term of cleanliness and safety (p.54) • ... Competitiveness in manufacturing maintained trough the adoption of innovation and technology and adaptability to the changing raw materials. These raw materials are increasingly derived from planted forest, producing not only timber but also as base materials for re-engineered wood and biocomposite. This will require a greater degree of automated processing technology in order to maximise the processing yield. Failure to keep abreast with the latest technology or the inability to capitalise fully on the available technology can adversely affect the future competitiveness of the timber industry (p.54) • ... In manufacturing, the intense competition from low-end product's manufacturers forces the industry to move up the value-chain from OEM to ODM-based manufacturing, by adopting modern processing technology. These include the adoption of automation, manufacturing flexibility, digital and scanning technology capable of producing high quality, original design and diversified product (p.54) • ... Enhancing market creation through branding on quality, design and value-creation ... This strategy calls for branding of Malaysia's timber products based on the quality of its products and services, as well as design excellence (p.72)

Reference No.	SCP-Related Objectives
	• ... Intensifying the marketing of potential/new products (lesser promoted species, bio composite product, and non-wood forest products) ... The manufacture of enhanced of fortified wood composite from oil palms, coconut trunks and Kenaf, as substitutes to solid woods by the industry will greatly increase in the immediate future as the production of logs decline in line with sustainable forest management practices (p.73) • ... enhance the competitiveness of Malaysia timber products through market and value creation ... (p.74) • ... increase Malaysia's market share in the international market for timber and timber products and be a leading global supplier of quality timber products (p.74) • ... identify marketing strategies to project the strength of the Malaysia timber industry, taking into account the changing environment of the international market (p.74)
D13 (NATIP)	• ... the Government will promote the use of landscaping timber and encourage the usage of alternative materials such as biomass and bio composite to meet the needs of the industry (p.15) • ... encourage the timber industry to use alternative materials such as biomass, bio composite, Kenaf, orchard and landscaping timber ... (p.19) • ... using alternative energy for the development of the industry (p.58) • ... Enhance productivity and competitiveness ... [through] conduct more training modules on Good Manufacturing Practices (GMPs) ... conduct more in-house and customised courses on quality and innovations at the factory premises ... collaborate with the Malaysian Productivity Corporation (MPC) to conduct courses on productivity enhancement ... collaborate with the National Institute of Occupational Safety and Health (NIOSH) to conduct courses on safety and health (p.90) • ... Creating a competitive working environment (p.90)
E13 (NATIP)	• ... With the growing global concerns on the protection of the environment and health, consumers are increasingly demanding for timber products that come from sustainable sources which also taken into account the social, environment, health and economic aspect in the long-term management of forest resources (p.72)
F13 (NATIP)	- No Entry -
A14 (NCP)	• ... based on sustainable development and balance in term on economic, environment and community well-being ... [in line] with Government Transformation Programme (GTP), New Economic Model (NEM) and Economic Transformation Programme (ETP) ... towards achieving vision 2020 (p.12)
B14 (NCP)	• [Key challenge related to the environment for commodity industry] is to sustain existing market and improve national commodity industry competitiveness (p.11) • ... focus to enhance productivity, efficiency and innovation in developing high value added environmentally-friendly products ... (p.11) • Thrust 4 Generate new source of income ... the implementation of waste to wealth concept will be developed and promoted continuously through R&D activities. The by-products of palm oil industry, rubber, cocoa, and sago could be potentially developed to produce new environmentally-friendly and sustainable products (p.16, 17) • ... implementing Sustainable Forest Management (SFM) ... to ensure continuous supply of raw materials (p.36) • ... enhance the use of biomass and composite materials as sustainable raw materials(p.36) • ... encourage the use of ... rattan and bamboo as alternative raw materials (p.36)
C14 (NCP)	• Thrust 5 Enhance competitiveness and expand market ... to enhance competitiveness through products branding based on quality, sustainable and environmentally- friendly requirement ... by using the ICT (p.17)

Reference No.	SCP-Related Objectives
D14 (NCP)	• ... to modernise and transform the commodity industry to become more competitive and sustainable (p.16) • ... enhance commodity industry in the national economic development ... focus on improvement of production efficiency along the industry's value chain including optimum use of resources (p.16) • ... diversifying the production of high value added products (p.16) • ... strengthening the existing market and explore new market .... branding of Malaysian palm oil products as quality, nutritious, safe, sustainable and halal (p.24) • ... encourage palm oil industry to comply with the international standards (p.24) • ... to increase the productivity and sustainability of rubber production (p.29) • ... to increase the productivity ... by the replanting programme (p.29) • ... to increase the productivity by planting high yield rubber clones (p.29) • ... encourage the concept of zero waste in the rubber industry (p.30) • ... switch from Original Equipment manufacturing (OEM) to Own Brand Manufacturing (OBM) and Own Design Manufacturing (ODM) (p.36) • ... intensify efforts in branding the Malaysian timber product as sustainable and environmentally-friendly (p.36) • .... develop Malaysian brand names based on the sustainability and environmentally friendly product (p.57)
E14 (NCP)	- No Entry -
F14 (NCP)	• ... Spur the modernisation of commodity industry ... encourage the use modern technology, mechanisation and automation [such as Good Agriculture Practices (GAP), Good Manufacturing Practices (GMP) and Life Cycle Analysis (LCA)] to increase productivity and easy access in the international market (p.16) • Establishing sustainable and environmentally-friendly palm oil Industry ... to take into account environmental regulations and Life Cycle Assessment (LCA) implementation ... to apply GAP and enforce CoP [Code of Practices] MPOB certification in order to increase productivity and standardise the production process of palm oil products ... to ensure the plantation of palm oil will not degrade the environment ... to enforce the Best Practices Code ... practice the Good Manufacturing Practices (GMP) ... to recognise premises that implement GAP at the nationally and international levels ... to provide fiscal incentives for the use green technology ... to encourage the sustainable production of palm oil trough Roundtable on Sustainable on Sustainable Palm Oil (RSPO)/International Sustainability and Carbon Certification (ISCC)/ Round Table on Sustainable Biofuel (RSB) (p.25)
A15 (IMP3)	• The five thrusts of the National Missions are to: move the economy up the value chain; raise the capacity for knowledge and innovation and nurture 'first class mentality'; address persistent socio-economic inequalities constructively and productively; improve the standard and sustainability of the quality of life; and strengthen the institutional and implementation capacity (p.55) • To be fully developed 'in Malaysia's own mould' by 2020 requires a full partnership and fair economic participation among all ethnic groups and regions in every sphere of development (p.31)
B15 (IMP3)	• ... promoting the efficient and effective management of forest resources and forest plantations ... (p.439) • Measures will be undertaken to establish a comprehensive inventory of all the potential supply of wood wastes in the country. In addition, a more systematic collection land distribution of these wastes to the industry will be organized (p.441) • ... focusing on the industries and sub-sectors which have export potential and competitive advantage, such as food products, including halal foods, palm biomass, products and oleo-chemical derivatives, and machinery and equipment including engineering support services and biotechnology ... (p.154) • ... expanding market access through intensified marketing and the promotion of Malaysia's 'green' image ... (p.439)

Reference No.	SCP-Related Objectives
C15 (IMP3)	• ... Intensifying Research and Development [in all 12 sectors is a prominent focus, in particular highlighting the contribution of biotechnology] (p.514) • ... leverage upon emerging technologies, such as biotechnology and nanotechnology, t develop new products and improve the technology in food processing; and develop centres of excellence for biotechnology-based food production and processing (p.514) • The availability of the required talents and expertise by both the manufacturing and services sectors will become important, as industries and services move towards a more knowledge based operating environment (p.68) • Driving the Growth of Small and Medium Enterprises through Technology and Innovation (p.191) • ... R&D will continue to be undertaken for the further development of the industry. Areas include: … production technology to minimize wood waste; and potential new resources, such as oil palm fibre and kenaf for the production of composites and bio-composites (p.442) • ... R&D activities will be intensified to ensure Malaysian latex products meet international standards in health and safety. In addition, there will be a greater focus on R&D in advanced manufacturing technologies and higher value added products, such as: … environment friendly rubber products (p.461) • ... Bio-diesel and renewable energy ... Bio-technology based products,[and] Biomass products (p.482, 483) • ... SMEs will be encouraged to adopt greater utilisation of ICT to increase their levels of productivity and efficiency in the supply chains ... (p.580) • ... increasing the supply of highly skilled workforce [knowledgeable and ICT trained] … in targeted industries ... include ICT, biotechnology, halal industry, petrochemicals, education, tourism, including health and eco-tourism, financial services, logistical, and agro-based industries, including aquaculture and fishery (p.658) • ... creating a critical mass of local experts in the scientific and Engineering fields (p.659) • ... Enhancing the Human Capital of Small and Medium Enterprises (p.193) • ... Nurturing Innovative and resilient Small and Medium Enterprises (p.193)
D15 (IMP3)	• Total factor productivity (TFP) is a critical component for economic and industrial growth. Companies will be encouraged to take advantage of technological developments, as well as adopt better management and skills upgrading practice (p.44) • ... Bumiputra enterprises will be encouraged to utilise more advanced technology and invest in R&D to enhance their TFP and competitiveness (p.63) • ... encouraging the compliance of Malaysian made E&E products with international standards and certifications (p.266) • ... To sustain its competitiveness the industry will be encouraged to enhance its productivity through higher contributions of total factor productivity (TFP) growth (p.484) • ... Enhancing total factor productivity ... Measures include undertaking ... sustainable construction practices for safer and cleaner construction sites ... (p.585)
E15 (IMP3)	• Ten strategic thrusts have been set to address the challenges and further promote the application of ICT and other potential technologies in industrial development ... [among which] enhancing the awareness of trends and potential benefits from technologies ... (p.696)
F15 (IMP3)	• ... linkages between the food-based industry with other related industries and support services will be strengthened, including: encouraging local manufacturers of machinery and equipment to collaborate with the food based industry to customize their machinery and equipment; and the packaging industry to collaborate with the food processing manufacturers, in keeping pace with advances in technologies, to meet rising consumer expectations and new lifestyles, in terms of convenience and aesthetics (p.514)
A16 (CIMP)	• ST3: Strive for the highest standard of quality, occupational safety and health, and environmental practices (p.12) • 3.1 Foster a quality and environment-friendly culture (p.12) • Enabling Recommendations ... 3.0 Reinforce Bumiputra entrepreneurs' capabilities and equitable share in the construction value chain (p.12)

Reference No.	SCP-Related Objectives
B16 (CIMP)	- No Entry -
C16 (CIMP)	• ST5: Innovate through research and development and adopt new construction methods (p.12)
D16 (CIMP)	- No Entry -
E16 (CIMP)	- No Entry -
F16 (CIMP)	- No Entry -
A17 (SMEMP)	• The aim is to achieve high income by 2020 that is both inclusive and sustainable. Income levels will be raised through productivity gains, while at the same time inclusiveness strengthened to benefits all Malaysians, and to ensure sustainability so that meeting present needs would not be at the expense of future generations (p.17)
B17 (SMEMP)	• However, SMEs should also leverage on the wide selection of tourism products such as eco-tourism, edu-tourism, business tourism, event tourism and sport tourism (p.75) • Amidst the growing concern on climate changes and quest for environment friendly and sustainable development, the new growth drivers are in niche design and consulting such as green building, integrated sustainability solution, and renewable energy projects (p.77)
C17 (SMEMP)	• The master plan has proposed a new framework to align SME development to the broader national aspirations of achieving a high income economy by 2020 via innovation-led and productivity-driven growth (p.10) • Innovation and technology adoption – encourage greater innovation and technology adoption by SMEs (p.66) • It will be characterised by a gradual shift in all sectors of the economy to higher value-added activities that are knowledge-intensive, driven by innovation and productivity (p.72) • Future areas that hold opportunities for SMEs are due to emergence of innovations in healthcare services and entrance of new services providers along the value chain (p.78) • Emphasis will be on greater deployment of technology and machinery as well as investment of technology improves efficiency, processes and method (p.79) • Opportunities exist in the form of adaptive and innovative R&D; high-end product development; contract manufacturing across semiconductors; solar; light emitting diode (LED); industrial electronic and electrical hope appliances which are expected to result in deepening the capabilities of SMEs in higher value-added activities (p.80)
D17 (SMEMP)	• Among the key characteristics of the desired SME ecosystem are: Existence of a strong enterprise culture which favours productivity, efficiency, environmental consciousness, quality jobs, equitable social practices, as well as sound labour and industrial relations (p.22)
E17 (SMEMP)	- No Entry -
F17 (SMEMP)	• Transition to an 'innovation' economy would entail inclusion of all strata of society and enterprises of all sizes. Inclusive innovation will not only enhance productivity among the low- income population, but would also assist these communities to access basic necessities such as utility services, housing, education, healthcare and telecommunication at low-cost and better quality (p.97)
A18 (EQA)	• An Act relating to the prevention, abatement, control of pollution and enhancement of the environment, and for the purpose connected therewith (p.3)
B18 (EQA)	- No Entry -
C18 (EQA)	• Research cess - For the purpose of conducting, promoting or co-coordinating research in relation to any aspect of pollution or the prevention thereof, the Minister, after consultation with the Minister of Finance and the Council, may make an order for the imposition and collection, or variation or cancellation of an imposition, of a cess on the waste generated (p.39)

Reference No.	SCP-Related Objectives
D18 (EQA)	• Power to control use of substance and product and to state environmental labeling ... The Minister, after consultation with the Council, may by order published in the Gazette - (a) prescribe any substance as an environmentally hazardous substance which requires the substance to be reduced, recycled, recovered or regulated in the manner as specified in the order; and (b) prescribe any product as a prescribed product for sale and that the product shall contain a minimum percentage of recycled substances and to carry an appropriate declaration on its recycled constituents, method of manufacture and disposal (p.31) • ... Any order made under subsection (1) may specify rules on the use, design and application of the label in connection with the sale of the substance or product which claims to be environmentally friendly (p.31) • Power to prohibit use of any material or equipment - The Minister, after consultation with the Council, may by order published in the Gazette - (a) prohibit the use of any materials for any process, trade or industry; (b) prohibit whether by description or by brand name the use of any equipment or industrial plant, within the areas specified in the order (p.29) • Power to require owner or occupier to install, operate, repair, etc. ... Where any environmentally hazardous substances, pollutants or wastes are being or are likely to be emitted, discharged or deposited from any vehicle, ship or premises irrespective of whether the vehicle, ship or premises are prescribed under section 18 or otherwise, or from any aircraft, the Director General may by notice in writing require the owner or occupier of the vehicle, ship or premises, or aircraft, to - (a) install and operate any control equipment or additional control equipment; (b) repair, alter or replace any equipment or control equipment; (c) erect or increase the height of any chimney; (d) measure, take a sample of, analyse, record and report any environmentally hazardous substances, pollutants, wastes, effluents or emissions containing pollutants; (e) conduct a study on any environmental risk; (f) install, maintain and operate monitoring programme at the expense of the owner or occupier; or (g) adopt any measure to reduce, mitigate, disperse, remove, eliminate, destroy or dispose of pollution, within such time and in such manner as may be specified in the notice (p.32)
	• ... Notwithstanding any other provisions to the contrary, the Director General may by notice direct the owner or occupier of any vehicle, ship, or premises, or aircraft to emit, discharge or deposit environmentally hazardous substances, pollutants or wastes during such periods of day as he may specify and may generally direct the manner in which the owner or occupier shall carry out his trade, industry or process or operate any equipment, industrial plant or control equipment therein (p.33)
E18 (EQA)	- No Entry -
F18 (EQA)	• Requirement and approval of plans ... Every application to carry out any work, building, erection or alteration specified in section 19 shall be submitted to the Director General and shall be accompanied by - (a) the plans and specifications of the proposed work, building, erection or alteration together with details of the control equipment, if any, to be installed; (b) a lay-out plan indicating the site of the proposed work, building, erection or alteration which will take place in relation to the surrounding areas; (c) the details of the trade, industry or process proposed to be carried on in such premises; (d) descriptions of waste constituents and characteristics; and (e) such other information which the Director General may require, and the applicant shall pay the prescribed fee (p.24)
A19 (TCPA)	• ... to promote in the country, within the framework of the national policy, town and country planning as an effective and efficient instrument for the improvement of the physical environment and towards the achievement of sustainable development in the country (p.10)
B19 (TCPA)	• ... formulating the policy and general proposals of the State Authority in respect of the development and use of land in that State, including measures for the improvement of the physical living environment, the improvement of communications, the management of traffic, the improvement of socio-economic well-being and the promotion of economic growth, and for facilitating sustainable development (p.22)
C19 (TCPA)	- No Entry -

Reference No.	SCP-Related Objectives
D19 (TCPA)	• To regulate, control and plan the development and use of all lands and buildings within its area (p.15) • ... monitor the implementation of standards, guidelines and procedures in facilitating the development of the region ... (p.17)
E19 (TCPA)	• To regulate, control and plan the development and use of all lands and buildings within its area (p.15)
F19 (TCPA)	• ... formulating the policy and general proposals of the State Authority in respect of the development and use of land in that State, including measures for the improvement of the physical living environment, the improvement of communications, the management of traffic, the improvement of socio-economic well-being and the promotion of economic growth, and for facilitating sustainable development (p.22)
A20 EQA(SW)	- No Entry -
B20 EQA(SW)	- No Entry -
C20 EQA(SW)	- No Entry -
D20 EQA(SW)	• Provision a proper operation of sewage treatment system – an owner or occupier of any premises shall operate and maintain a sewage treatment system in accordance with sound engineering practices for the treatment of sewage and ensure that all components of the sewage treatment system are in good working condition (p. 3887) • Competent person – the operation of a sewage treatment shall be supervised by a competent person, a competent person shall be a person who has been certified by the Director General that he is duly qualified to supervise the operation of a sewage treatment system, an owner or occupier of any premises shall ensure that a competent person is on duty at any time the sewage treatment system is in operation (p. 3887)
E20 EQA(SW)	- No Entry -
F20 EQA(SW)	- No Entry -
A21 EQA(LCMG)	- No Entry -
B21 EQA(LCMG)	- No Entry -
C21 EQA(LCMG)	- No Entry -
D21 EQA(LCMG)	- No Entry -
E21 EQA(LCMG)	- No Entry -
F21 EQA(LCMG)	- No Entry -
A22 (REA)	- No Entry -
B22 (REA)	- No Entry -
C22 (REA)	- No Entry -
D22 (REA)	- No Entry -

Reference No.	SCP-Related Objectives
E22 (REA)	• ... Bonus feed-in tariff rate [will be given for those RE installations that meet the criteria that transform waste to energy or have increased resource efficiency] (p.5145) • Bonus feed-in tariff rate criteria [waste to energy] … Biomass ... Use of gasification technology ... Use of landfill or sewage gas as fuel source … Use of municipal solid waste as fuel source (p.5145) • Bonus feed-in tariff rate criteria [energy efficiency] ... Use of gas engine technology with electrical efficiency of above 40% … Use of steam-based electricity generating systems with overall efficiency of above 14% (p.5145) • Bonus feed-in tariff rate criteria [resource efficiency for building sector] ... Solar photovoltaic ... Use as installation in buildings or building structures ... Use as building material ... (p.5145) • Bonus feed-in tariff rate criteria [minimisation of carbon footprint through bonus for locally produced equipment] ... Use of locally manufactured or assembled gas engine technology … Use of locally manufactured or assembled gasification technology … Use of locally manufactured or assembled solar photovoltaic modules … Use of locally manufactured or assembled solar inverters (p.5145)
F22 (REA)	• [A FiT allocation fund is being created through] ... one per centum of the tariffs levied and collected, after deducting any applicable discount ... from its consumers in Peninsular Malaysia (p.5103)

ANNEX 6

DETAILS ON SCP-RELATED INSTRUMENTS

Instruments	SCP-Related Instruments
Regulatory	**General issues of sustainability** • ... streamlining policies and legislations to allow for more efficient and equitable distribution of water resources (10MP, p.282) • Regular monitoring and evaluation of outcomes (10MP, p.330) • The Government will establish a legal framework on access and benefits sharing to ensure that the benefits derived are distributed fairly and equitably (10MP, p.308) • Effective enforcement of the Biosafety Act 2007 will ensure that potentially adverse impacts on biodiversity and human health from biotechnology that uses [living modified organisms] (LMOs) is minimised and properly managed (10MP, p.308) • For [solar power development] to succeed ... a regulatory framework needs to be developed ... (ETP, p.197) • The policy measures in line with the SRIs must move in tandem to deliver high income in an inclusive and sustainable manner (NEM, p.17) • ... The policy direction for the supply of raw material should give due emphasis to the assurance of a steady flow of timber from the natural forests, forest plantations, biomass and composite to enable strategic plans to be developed for the long term sustainable froth and competitiveness of the timber industry (NATIP, p.39) • The establishment of an efficient, equitable and sustainable national spatial framework to guide the overall development of the country towards achieving a developed and high-income nation status by 2020 (NPP2, p.2-1) • ... Environmental-related legislation and standards shall be reviewed regularly and revised where necessary to ensure the continued effectiveness and coordination of laws. Particular attention will be paid to effective enforcement (NPE, p.20) • Review and establish legal mechanisms to foster an accelerated growth of Green Technologies in line with National Objectives and Goals (NGTP, p.15) • These include areas designated for conservation or set aside for the protection of water resources. This is important as it ensures that the national spatial planning policies and strategies remain up-to-date and relevant in keeping abreast with the fast changing economic, social, physical and technological changes and trends as well as capable in responding (NPP2, p.1-7) • To provide physical planning policies for ensuring sustainable development as well as mitigating and adapting the natural environment and human settlements to climate change (NPP2, p.1-8) • Certain sectoral land allocations for example water supply system and infrastructure network alignment such as high-speed rail, need to be set aside now and safeguarded for development beyond the year 2020 (NPP2, p.1-10) **Moving towards a green economy** • ... stronger enforcement and imposition of gate fees, particularly in environmentally sensitive and heritage sites (10MP, p.128) • ... formulating government policies to mandate the use of certified quality timber that are from legal and sustainable sources of timber in government project (NATIP, p.19) • Balance the technology-driven innovation approach with market led policies such as global procurement through technology intermediaries (NEM, p.26, 139) • Preserving our natural resources and safeguarding the interest of future generations must be facilitated by applying appropriate pricing, regulatory and strategic policies to manage non-renewable resources efficiently (NEM, p.29, 117) • Develop a comprehensive energy policy (NEM, p.29, 146)

Instruments	SCP-Related Instruments
	• Use appropriate pricing, regulatory and strategic policies to manage non-renewable resources sustainably (NEM, p.29, 30, 146) • Enforce clean air and water standards in utilising natural resource (NEM, p.29, 146) • Boost demand for green products and services. Government will take the lead in raising efficiency and growing the green technology industry. First, the Ministry of Energy, Green Technology and Water (KeTTHA) will set efficiency targets stipulating that all ministries must reduce electricity and water consumption by 10 percent per year from 2011 to 2013 (ETP, p.417) • Government will also examine available policy levers to reduce Malaysia's environmental impact and spur growth of the green technology industry (ETP, p.417) • ... effective national development planning to ensure that the national resources are used efficiently and sustain ably, in particular making optimum use of existing capital and human resource (NPP2, p.3-1) • Conduct systematic review and harmonise existing legislations, policies and plans ... balanced adaptation and mitigation measures, to address ... Agriculture and food security; Natural resources and environment (water, biodiversity, forestry, minerals, soil, coastal and marine and air); Energy security; Industries; Public health; Tourism; Transportation; infrastructure; Land use and lands use change, Human settlements and livelihood; Waste management; and Disaster risk reduction (NPCC, p.8) • Harmonise existing legislation policies, plans to address climate change issues (NPCC, p.8) • ... Diverting heavy vehicles from the Central Business District (10MP, p.262) • Enforcement and monitoring efforts will be critical to ensuring operators adhere to minimum service and operational standards. In order to achieve this, we will initiate efforts to integrate backend IT systems and launch joint on-the-ground enforcement efforts, across all major enforcement agencies – the 10 local authorities, Commercial Vehicles Licensing Board (CVLB), JPJ and PDRM (GTP, p.33) • Regulatory restructuring: We will ensure that the proposed Land PublicTransport Authority (SPAD – Suruhanjaya Pengangkutan Awam Darat) is fully operational by the end of 2010. A prerequisite for success will be the creation of a single point of accountability for policy planning and regulatory oversight. This is currently lacking with 12 ministries and various agencies currently involved indifferent aspects of public transport, and no single industry captain to coordinate efforts across the entire public transport system (GTP, p.33) **Enabling technology and economic innovation for SCP** • Revising the current Water Quality Index to incorporate additional parameters, such as biological parameters, for more accurate river water classification (10MP, p.286) • Assessing the Total Maximum Daily Load and carrying capacity of rivers to determine allowable discharge loads, for both point and non-point sources of pollution (10MP, p.286) • Developing the National Marine Water Quality Index to replace the current Marine Water Quality Criteria and Standard ... (10MP, p.286) • ... Developing R&D guidelines to assist the industry to expand its product/services in the face of rapid changes in technology, shorter product life cycles and commoditisation (the different types of commodities/composite serving the same function). This is a pre-requisite if the timber industry is to transform into an equitable and sustainable growth sector, offering quality and specialised products (NATIP, p.56) **Changing unsustainable production patterns** • ... setting of minimum energy performance standards [(MEPS)] for appliances and development of green technologies (10MP, p.113) • Environmentally friendly townships and neighbourhoods will be encouraged through the introduction of Green Guidelines and a Green Rating System (10MP, p.279) • Strengthening the enforcement on industrial effluents and sewage discharge in line with the revisions to the regulations under the Environmental Quality Act 1974 (10MP, p.285)

Instruments	SCP-Related Instruments
	• Developing and enforcing regulations especially on energy efficiency in buildings for new developments (10MP, p.132) • … regulate better insulated buildings … (ETP, p.190) • Regulate better insulation for new buildings and renovated buildings. This would bring an expected RM1.3 billion of GNI by 2020. Existing regulations on insulation of buildings are not adequate to encourage more efficient energy use, and as a result, developers are constructing properties (residential, commercial and industrial) that do not have proper insulation, thus creating a need for additional air conditioning. Going forward, better insulated properties will be ensured by (1) improving customer awareness via large-scale awareness campaigns, (2) enforcement measures through the approval process of building plans. In each, the Government will take a leadership role to ensure implementation. In time, better insulated buildings will also improve the living environment in low-cost premises where occupants cannot afford air conditioning and thus suffer heat-related stress that will lead to possible health problems (ETP, p.191) • Second, KeTTHA will set the target across ministries that 50 percent of the goods and services purchased by the public sector should be eco-labelled by 2020 (ETP, p.417) • KeTTHA will develop an accreditation framework for energy services companies to improve and regulate the quality of energy services companies in 2011. The framework will take into account the level of technical expertise, capital base and depth of services offered by companies (ETP, p.417) • … It is important for Malaysia to ensure the timber products are manufactured from legal and sustainable sources of timber to meet the increasing global demand for such product. The MTCS has been established to ensure that the timber used in the manufacturing of timber product is from legal and sustainable sources of timber (NATIP, p.18) • … Increasing global demand for green timber and timber product require that the Malaysian timber industry ensure that materials used in the manufacturing of high value-added products are from legal and sustainable sources of timber (NATIP, p.18) • … raw materials to be managed in a sustainable manner in compliance with the domestic laws and regulations … (NATIP, p.19) • As a major producer and exporter of tropical timber products, there is a need for image building and national branding to project Malaysia as a practitioner of sound and responsible environmental and sustainable forest management practices. The MTCS provides added advantages to Malaysia's timber products by providing the assurance of legality and sustainability (NATIP, p.72) • … to increase the production of crude palm oil (CPO) from 17 million in 2010 to 25.3 million in 2020 through increasing of productivity by implementing of Cod of Practices (CoP), use of high yield clone and replanting programme (NCP, p.20) • Increasing the upstream activity … implementing GAP trough CoP MPOB (NCP, p.23) • … encourage zero waste practices … by using biomass as an alternative power, bio-organic pesticide, food for livestock, raw materials for furniture industry, higher value chemical products … diversify high value palm oil product (NCP, p.23) • Increase production and competitiveness of pepper … to increase productivity … to establish specific Code of Practices (CoP) for pepper cultivation and production (NCP, p.48) • … to increase the competitiveness of tobacco production … to increase the implementation of Good Agricultural Practices (GAP) … to enhance the infrastructure … (NCP, p.53) • … to increase the productivity and production of Kenaf … through implementation of Good Agriculture Practices (GAP) and Good Manufacturing Practices (GMP) (NCP, p.57) • … to commersialise sago production activity … to establish Code of Practice (CoP) for sago cultivation (NCP, p.63) • Emphasis on compliance with international instruments in the management of fisheries resources such as the FAO Code Of Conduct For Responsible Fisheries 1995, Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IUU Fishing) and EC Regulation 1005/2008 (NAFP, p.55)

Instruments	SCP-Related Instruments
	• Enforce Compliance with Swiftlet Industry Development Guidelines - Compliance with bird's nests industry guidelines will be enforced to ensure that the development of this industry is orderly and well planned (NAFP, p.80) • Extend the Good Production Practices - Efforts will be undertaken to promote good production practices of bird's nest through certification schemes at the farm level and processing plant. Standard Swiftlet Malaysia will be development that meet the level of global standards and market requirement (NAFP, p.81) • Enforce strict adherence to global standards and benchmarks (NEM, p.26, 139) • ... the implementation of the regulatory and self regulatory environmental management measures including Environmental Impact Assessment, as well as environmental management system and plan, and audit (NMP2, p.15) • Sustainable forest management approaches, water resources management based on the concept of Integrated River Basin Management (IRBM) and shoreline management through Integrated Coastal Zone Management System (ICZM) should be exercised and enforced (NPP2, p.2-12) • Regulations and rules will be strengthened to encourage environment-friendly agricultural and forestry practices and minimize the negative impact of such activities on the environment (IMP3, p.636) • The formulation and adaptation of Malaysian standards for products and services, in line with international requirements, will be accelerated and their enforcement enhanced (IMP3, p.190) • The absence of mandatory standards [in the steel products and metals industry] has caused difficulties in ensuring the required quality for locally produced and imported products. There is therefore a need for the introduction of legislation and the establishment of the institutional infrastructure to enforce standards on steel products (IMP3, p.336) • Enhancing Total Factor Productivity: ... Measures include undertaking ... continuous and systematic quality control through compliance to standards and international requirements ... (IMP3, p.585) • Enforcement of new vehicles engines with higher fuel efficiency ... (NPCC, p.13) • Increase EE in industrial sectors through the review and establishment of legal mechanism for EE application in industries (NPCC, p.13) • ... No person shall use or pemit to be used any land or building otherwise than in conformity with the local plan (TCPA, p.37) • ... All developments intended exclusively for religious, educational, recreational, social, welfare, or charitable purposes and not for pecuniary profit are exempted from the payment of all charges and fees ... (TCPA, p.88) • ... the control of the density, floor area, plot ratio, plinth area, and use of land and buildings ... [to enhance a value of the land] (TCPA, p.89) • Prohibition to fell ... tree with girth exceeding 0.8 metre (TCPA, p.71) • To ensure the adoption of these practices and standards, strict enforcement measures need to be in place (CIMP, p.23, 24) • ... formulating government policies to mandate the use of certified quality timber that are from legal and sustainable sources of timber in government project (NATIP, p.19) • ... raw materials to be managed in a sustainable manner in compliance with the domestic laws and regulations (NATIP, p.19) • ... Global demand for certified timber products ... It is important for Malaysia to ensure the timber products are manufactured from legal and sustainable sources of timber to meet the increasing global demand for such product. The MTCS has been established to ensure that the timbers used in the manufacturing of timber product are from legal and sustainable sources of timber (NATIP, p.18) • Increasing global demand for green timber and timber products require that the Malaysian timber industry ensure that materials used in the manufacturing of high value-added products are from legal and sustainable sources of timber (NATIP, p.18)

Instruments	SCP-Related Instruments
	• As a major producer and exporter of tropical timber products, there is a need for image building and national branding to project Malaysia as a practitioner of sound and responsible environmental and sustainable forest management practices. The MTCS provides an added advantage to Malaysia's timber products by providing the assurance of legality and sustainability (NATIP, p.72) • ... (a) to administer this Act and any regulations and orders made thereunder; (b) to be responsible for and to co-ordinate all activities relating to the discharge of wastes into the environment and for preventing or controlling pollution and protecting and enhancing the quality of the environment; (c) to recommend to the Minister the environment protection policy and classifications for the protection of any portion of the environment or any segment of the environment with respect to the uses and values, whether tangible or intangible, to be protected, the quality to be maintained, the extent to which the discharge of wastes may be permitted without detriment to the quality of the environment, long range development uses and planning and any other factors relating to the protection and enhancement of the environment; (d) to control by the issue of licences the volume, types, constituents and effects of wastes, discharges, emissions, deposits or other sources of emission and substances which are of danger or a potential danger to the quality of the environment or any segment of the environment (EQA, p.13) • ... (n) to report to the Minister upon matters concerning the protection and enhancement of the environment and upon any amendments he thinks desirable to any law affecting pollution and environment and upon any matters referred to him by the Minister (EQA, p.15) • ... (c) shall not grant any application for a licence in respect of any premises the use whereof as such would contravene any town planning scheme, or any law respecting the use or development of land (EQA, p.19) • The Director General shall, before varying any condition attached to the licence or attaching new conditions thereto, take into consideration: (a) whether it would be practicable to adapt the existing equipment, control equipment or industrial plant to conform with the varied or new condition; (b) the economic life of the existing equipment, control equipment or industrial plant, having regard to the date of purchase; (c) the quantity or degree of cut-back of emission, discharge or deposit of wastes to be achieved by the varied or new condition; (d) the estimated cost to be incurred by the licensee to comply with the varied or new condition; and (e) the nature and size of the trade, process or industry being carried out in the premises (EQA, p.19) • Power to specify conditions of emission, discharge, etc. ... The Minister, after consultation with the Council, may by regulations specify the acceptable conditions for the emission, discharge or deposit of environmentally hazardous substances, pollutants or wastes or the emission of noise into any area, segment or element of the environment and may set aside any area, segment or element of the environment within which the emission, discharge or deposit is prohibited or restricted (EQA, p.25) • Restrictions on pollution of the atmosphere ... No person shall, unless licensed, emit or discharge any environmentally hazardous substances, pollutants or wastes into the atmosphere in contravention of the acceptable conditions specified under section 21 (EQA, p.25) • Restrictions on noise pollution ... No person shall, unless licensed, emit or cause or permit to be emitted any noise greater in volume, intensity or quality in contravention of the acceptable conditions specified under section 21 (EQA, p.26) • Restrictions on pollution of the soil ... No person shall, unless licensed, pollute or cause or permit to be polluted any soil or surface of any land in contravention of the acceptable conditions specified under section 21 (EQA, p.26) • Restrictions on pollution of inland waters ... No person shall, unless licensed, emit, discharge or deposit any environmentally hazardous substances, pollutants or wastes into any inland waters in contravention of the acceptable conditions specified under section 21 (EQA, p.27)

Instruments	SCP-Related Instruments
	• Prohibition of discharge of oil into Malaysian waters ... No person shall, unless licensed, discharge or spill any oil or mixture containing oil into Malaysian waters in contravention of the acceptable conditions specified under section 21 (EQA, p.28) • Prohibition of discharge of wastes into Malaysian waters ... No person shall, unless licensed, discharge environmentally hazardous substances, pollutants or wastes into the Malaysian waters in contravention of the acceptable conditions specified under section 21 (EQA, p.28) • Prohibition on open burning ... Notwithstanding anything to the contrary contained in this Act, no person shall allow or cause open burning on any premises (EQA, p.29) • Power to require owner or occupier to install, operate, repair, etc. ... Where any environmentally hazardous substances, pollutants or wastes are being or are likely to be emitted, discharged or deposited from any vehicle, ship or premises irrespective of whether the vehicle, ship or premises are prescribed under section 18 or otherwise, or from any aircraft, the Director General may by notice in writing require the owner or occupier of the vehicle, ship or premises, or aircraft, to ... (a) install and operate any control equipment or additional control equipment; (b) repair, alter or replace any equipment or control equipment; (c) erect or increase the height of any chimney; (d) measure, take a sample of, analyse, record and report any environmentally hazardous substances, pollutants, wastes, effluents or emissions containing pollutants; (e) conduct a study on any environmental risk; (f) install, maintain and operate monitoring programme at the expense of the owner or occupier; or (g) adopt any measure to reduce, mitigate, disperse, remove, eliminate, destroy or dispose of pollution, within such time and in such manner as may be specified in the notice (EQA, p.32) • Notwithstanding any other provisions to the contrary, the Director General may by notice direct the owner or occupier of any vehicle, ship, or premises, or aircraft to emit, discharge or deposit environmentally hazardous substances, pollutants or wastes during such periods of day as he may specify and may generally direct the manner in which the owner or occupier shall carry out his trade, industry or process or operate any equipment, industrial plant or control equipment therein (EQA, p.33) • Prohibition order, etc. ... The Minister, after consultation with the Council, may by order published in the Gazette specify the circumstances whereby the Director General may issue a prohibition order to the owner or occupier of any industrial plant or process to prevent its continued operation and release of environmentally hazardous substances, pollutants or wastes either absolutely or conditionally, or for such period as he may direct, or until requirements to make remedy as directed by him have been complied with (EQA, p.33) • ... The Minister, in circumstances where he considers that the environment, public health or safety is under or likely to be under serious threat, may direct the Director General ... (a) to issue an order requiring a person to cease all acts that have resulted in the release of environmentally hazardous substances, pollutants or wastes; and (b) to effect and render any machinery, equipment, plant or process of the person inoperable (EQA, p.33) • Owner or occupier to maintain and operate equipment ... The owner or occupier of any vehicle, ship or premises irrespective of whether the vehicle, ship or premises are prescribed under section 18 or otherwise, or aircraft shall maintain any equipment or control equipment installed on the vehicle, ship or premises, or aircraft in good condition and shall operate the equipment or control equipment in a proper and efficient manner (EQA, p.34) • Power to prohibit or control licensed persons from discharging, etc., of wastes in certain circumstances ... Where several persons are licensed under this Act to emit, discharge or deposit environmentally hazardous substances, pollutants or wastes into the same segment or element of environment and appears to the Director General that each of such persons is complying with the conditions of the licence but nevertheless the collective effect of the aggregate of such wastes is likely to cause a worsening of condition in that segment or element of the environment such as to affect the health, welfare or safety of

Instruments	SCP-Related Instruments
	human beings, or to threaten the existence of any animals, birds, wildlife, fish or other aquatic life, the Director General may, by notice serve on each of the licensees, requiring each of them to abate such emission, discharge or deposit in the manner and within the period specified in the notice (EQA, p.34) • Prohibition against placing, deposit, etc., of scheduled wastes ... No person shall - (a) place, deposit or dispose of, or cause or permit to place, deposit or dispose of, except at prescribed premises only, any scheduled wastes on land or into Malaysian waters; (b) receive or send, or cause or permit to be received or sent any scheduled wastes in or out of Malaysia; or (c) transit or cause or permit the transit of scheduled wastes, without any prior written approval of the Director General (EQA, p.37) • These regulations shall apply to any premises which discharge sewage onto or into any soil, or into any inland Malaysian waters, other than any housing or commercial development or both having a population equivalent of less than one hundred and fifty (EQASW, p.3887) • Notification for new source of sewage discharge or release - no person shall, without prior written notification to the Director General, discharge or release or permit to discharge or release of sewage onto or into any soil, or into any inland waters or Malaysian waters (EQASW, p.3887) • Acceptable conditions of sewage discharge – no person shall discharge sewage which contains substances in concentration greater than limits of … (EQASW, p.3888) • Licence to contravene acceptable conditions for sewage discharge –an owner or occupier of premises may apply for licence under subsection 25(1) of the Act to contravene the acceptable conditions of sewage discharge as specified in Regulations 5 (EQASW, p.3889) • An application for a licence under subregulation (1) shall be made in accordance with the procedures as specified in the Environmental Quality (Licencing) Regulations 1977 and shall be accompanied by (a) report on sewage characterisation study, and (b) a licence fees as specified in Regulation 24 (EQASW, p.3888) • Prohibition against sewage discharge through by-pass – no person shall discharge or cause or permit the discharge of sewage onto and into any soil, or into any inland waters of Malaysian waters through a by-pass (EQASW, p.3890) • Spill or accidental discharge of sewage – in the event of the occurrence of any spill or accidental discharge of sewage from any premise, which either directly or indirectly gains or may gain access onto or into any soil, or into any inland waters or Malaysian waters, the owner or occupier of the premises shall immediately and not more than 6 hours from the time of the occurrence inform the Director General of the occurrence (EQASW, p.3890) • An owner or occupier of the premises shall, to every reasonable extent, contain, cleanse or abate the spill or accidental discharge of sewage in a manner that satisfies the Director General (EQASW, p. 3891) • Prohibition against discharge of sludge into inland waters or Malaysian waters – no person shall discharge or cause or permit the discharge of any sludge that is generated from any sewage treatment systems into any inland waters or Malaysian waters (EQASW, p.3891) • Restriction on the disposal of sludge into land – no person shall discharge or cause or permit the disposal of sludge generated from any sewage treatment systems onto or into any soil or surface of any land without the prior written permission of the Director General (EQASW, p.3892) • Restriction on import of manufacture - No person shall import or manufacture any motor gasoline which contains lead or lead compounds expressed as lead in excess of 0.40 gramme per litre on and after the date following the date of publication of these Regulations in the Gazette (EQALCMG, p.3) • Restriction on possession – no person shall be in possession, offer or exhibit for sale, sell, deliver for use or exchange for use any motor gasoline which contains lead or lead

Instruments	SCP-Related Instruments
	compounds expressed as lead in excess of 0.40 gramme per litre on or after the 1st January 1986 (EQALCMG, p.3) • Restriction on import – Notwithstanding the provision in Regulations 3 and 4, no person shall import, manufacture, posses, offer or exhibit for sell, deliver for use or exchange for use any motor gasoline which contains lead or lead compounds expressed as lead in excess of 0.15 gramme per litre on or after the 1st January 1990 (EQALCMG, p.4) **Changing unsustainable consumption patterns** • ... to drive green the technology agenda across multiple ministries and agencies which include regulatory aspects, developmental, awareness and promotion (10MP, p.132) • Second, KeTTHA will set the target across ministries that 50 percent of the goods and services purchased by the public sector should be eco-labelled by 2020 (ETP, p.417) **Applying life-cycle thinking** • Major shifts in housing policies with a new emphasis on the entire life-cycle of housing provision from construction to maintenance, with the introduction of a Housing Maintenance Fund (10MP, p.309) • Completing the federalisation of solid waste management and public cleansing services to facilitate the modernisation of waste collection, handling and disposal as well as the upkeep of shared public spaces (10MP, p.309) • To address this global environmental issue, appropriate spatial policies and measures must be taken to adapt to and mitigate its adverse effects on Malaysia. For example, impact of climate change is a key consideration in preparing all development plans including incorporating policy measures to ensure that no urban development be allowed in low lying coastal areas vulnerable to marine flooding due to rising sea-level. At the same instance, the protection of forested areas to act as carbon sink, and the promotion of energy efficient and eco-friendly urban development must not be neglected (NPP2, p.3-4)
Economic	**General issues of sustainability** • ... to finance and promote sustainability measures ... (10MP, p.26) • Steps have already been taken in Malaysia to grow the green technology sector. However, progress has been held back by fuel subsidies, which increase the relative costs of green technology, leading to low levels of awareness among businesses and consumers, a lack of available finance for green services companies and a limited of supply of green products and services. For example, since 2004, only 15 products have been submitted for eco-labelling (ETP, p.416) • ... to maintain Malaysia's competitiveness as a major wood producer and address the issues and challenge (NATIP, p.33) • ... providing further incentives for the commercialisation of new technology uptake ... (NATIP, p.58) • ... To optimise utilisation of land and natural resources for sustainable development and biodiversity conservation (NPP2, p.2-2) • Existing fiscal and non-fiscal incentives such as tax exemptions and technology practices incentives will be continued (NAFP, p.97) • Seek new and additional incentives, funding sources and mechanisms, at both the national and the international levels, for the implementation of the strategies. Funding sources should include government, non-governmental organisations (NGOs) and the private sector (NPBD, p.38) **Moving towards a green economy** • ... proper valuation of environmental resources, through assessing the opportunity cost and environmental impact of public or private investments (10MP, p.26) • ... investments in new growth areas such as renewable energy ... (10MP, p.44) • Introducing Feed-in tariff mechanisms to help finance renewable energy investments (10MP, p.26)

Instruments	SCP-Related Instruments
	• ... green products and services becoming the preferred choice for public procurement (10MP, p.83) • ... to rationalise subsidies ... with the goal of achieving market pricing by 2015 (10MP, p.113, 114) • Adopting outcome-based budgeting. This approach will take an integrated view of the financial requirements of the programme, including both development and operating costs. This will allow for more efficient management of resources, assist in eliminating redundancy of programmes and projects and ensure that the nation's resources are allocated proportionately to its priorities (10MP, p.330) • Continuing efforts to move the water services industry towards efficiency in operations and creating a financially sustainable platform for continued investments in the sector (10MP, p.309) • Restructuring of the public transport licensing and operating framework to be led by the commission for land public transport or SPAD, and supported by major investments in public transport such as the introduction of the mass rapid transit system in Greater KL (10MP, p.309) • The recent development of the 'Green GDP' concept will allow proper consideration of the impact of growth on the environment and the appropriate design of measures to address environmental concerns (NEM, p.11, 93) • Facilitate bank lending and financing for 'green investment' (NEM, p.29, 146) • Develop banking capacity to assess credit approvals for green investment using non-collateral based criteria (NEM, p.29, 146) • Funding - Total funding required is RM13.5 billion, of which RM10.8 billion will come from the private sector for investment in green buildings and infrastructure. The remaining funding will be used for investment in public sector green buildings over the next 10 years (ETP, p.418) • ... With the growing global concerns on the protection of the environment and health, consumers are increasingly demanding for timber products that come from sustainable sources which also taken into account the social, environment, health and economic aspect in the long-term management of forest resources (NATIP, p.72) • This includes creating a corporate centralized management entity providing complete infrastructures and incentives to rice farmers to surrender their land management to the centralized management to ensure efficiency and agricultural practices (NAFP, p.24) **Enabling technology and economic innovation for SCP** • Management information systems will be strengthened to enable systematic and regular performance monitoring, evaluation and reporting (10MP, p.330, 331) • ... Greater emphasis should be given to the development of new clones and identification of more species suitable for planted forest. The industry is also encouraged to maximise the wood recovery rates through improvements in technology in current processing technique. Wood residues should be further utilised to meet the supply requirements of the industry (NATIP, p.15) • ... The timber industry must take the initiatives to undertake R&D programmes to move up the value chain and to produce innovative higher value added products to enables the expansion of downstream activities (NATIP, p.17) • The government will undertake efforts through FRIM, Rubber Research Institute of Malaysia (RRIM), MTIB, among others, to promote more R&D exploring alternatives for the use of timber such as in the production of energy and biofuel (NATIP, p.17) • In order to accelerate and increase the amount of available wood as well as improvement in its quality, in the shortest time possible, R&D should be undertaken to increase the production of raw materials both from natural forests as well as from forest plantation and alternatives (NATIP, p.38)

Instruments	SCP-Related Instruments
	• ... Improving intensive planting method ... to increase the supply of raw materials ... [by] the adoption of the intensive Tropical Forest Management System. This system combines improved intensive planting method of promising indigenous tree species in degraded areas with the integration of sustainable utilisation on non-timber forest produce (NATIP, p.38) • ... The future trend in wood production, on a global scale, will be towards output from planted trees rather than managed natural forest. The shrinking area of natural forest, sustainable management and environmental concerns will require research on potentially high yielding varieties of wood as well as efficiency in growing, harvesting and ensuring uniformity in product size and technical specifications (NATIP, p.39) • ... prioritising R&D to develop higher yields for existing and potential resource of raw materials to obtain sustainability and meeting requirements of the industry (NATIP, p.40) • ... enhancing the development of R&D in biomass and composite materials for commercial applications (NATIP, p.40) • ... R&D focused on enhancing the competitiveness of forest product, diversifying the use of timber product, improving production technology and the quality of wood. R&D efforts would also be undertaken to maximise the utilisation of wood wastes and agriculture by-products for the production of bio composite, and pulp and paper, which would be used as resources for production of alternative energy (NATIP, p.47) • ... developing and improving quality of existing product that conforms to international standards. R&D on wood-based product will also include waste recycling and control of the emission of carbon dioxide (NATIP, p.47) • ... Establishing special funds by the government for the R&D projects that have high potential for commercialisation ... [such as] new fibre resources for the bio composite industry, utilisation of oil palm biomass, development of new technology in enhancing the performance of biocomposite products, furniture, building and automobile components, and product improvement against bio-deterioration (NATIP, p.57) • The manufacture of enhanced of fortified wood composite from oil palms, coconut trunks and Kenaf, as substitutes to solid woods by the industry will greatly increase in the immediate future as the production of logs decline in line with sustainable forest management practices (NATIP, p.73) • ... A flexible scheme for better access to financing ... SME can source financing from government agencies and financial institution such as SMIDEC, MIDF, SME Bank, MATRADE, MARA, BSN and MTDC all of which provide special allocation to Bumiputera entrepreneurs. The SME therefore have to seize the opportunities provided, to develop their companies and compete in the global market (NATIP, p.109) • ... provide incentives for green rubber products such as ekoprena and pureprena commercialisation and marketing (NCP, p.31) • Among the agrofood industry incentives offered under the fiscal incentive are: Pioneer Status (PS), Investment Tax Allowance (ITA), Incentives for High Technology Projects, Incentives for Research and Development (R & D) (NAFP, p.39) • Improve Access to Funding and Risk Sharing - Adequate soft loans will be provided and access to financing simplified, especially in high-value agriculture industry to boots private investment in agriculture activities. In this regard, the funds for high-value agricultural activities with attractive interest rates and loan conditions will be provided by the government through Agrobank and the Venture Group Economic Fund (TEKUN) (NAFP, p.39) • Diversity Floriculture Products - Incentive will be given to develop quality products including handicrafts and interior decoration products through the use of flowers and foliage preservation technologies. Use of preservation technologies will also be expanded for development of potpourri and fragrant product (NAFP, p.95) • Expand the use Endorsement Brand of 1 Malaysia Best for marketing Malaysian food products in and outside the country through the provision of incentives including promotional grants (NAFP, p.104) • Promote SME growth - Provide support for SMEs in innovative and technologically advanced areas, Facilitate timely access to funding for business activities (NEM, p.19, 118)

Instruments	SCP-Related Instruments
	• Move into alternative energy generation as well as energy saving products and services (NEM, p.28, 141) • Ensure public procurement supports local innovation (NEM, p.26, 139) • A tracking system for agricultural products from farm to consumers will be developed in stages, especially for the export market. Sistem ini akan memudahkan penjejakan sumber, meningkatkan daya saing dan keyakinan pengguna terhadap tahap keselamatan dan status halal makanan.This system will facilitate tracking of resources, increase competitiveness and consumer confidence on the safety and halal status of food (NAFP, p.73) • Reviewing incentive schemes and assistance programmes to promote reinvestments, outsourcing, branding, R&D (including commercialisation), design and development (D&D), standards conformance and automation (IMP3, p.155) • ... various incentive schemes are provided to promote R&D activities, including grants under the Ministry of Science, Technology and Innovation [such as] Commercialisation of R&D Fund; Industry Grant Scheme; and MSC Grant Scheme. There is a need to review and consolidate these grant schemes (IMP3, p.158) • Support will be provided [to Bumiputra enterprises] for the acquisition of technologies such as biotechnology, nanotechnology and photonics (IMP3, p.63) • Establishment of Green Technology funding mechanism (NGTP, p.16) • Provision of financial and fiscal incentives for students to pursue Green Technology disciplines at undergraduate and postgraduate levels (NGTP, p.17) • Provision of financial grants or assistance to public and private sector in RDIC [Research, Development, Innovation and Commercialization] (NGTP, p.18) • Introduction and implementation of innovative economic instruments, supported by the necessary monetary and fiscal measures to foster accelerated growth of Green Technology in line with the National objectives and goals (NGTP, p.16) • Strengthening the understanding of local players in Green Technology industries and their value chain, including the supporting industries through various industries' enhancement programme (NGTP, p.16) • Establishment of strategic Green Technology hubs throughout Malaysia ... (NGTP, p.16) • Firms entering the RE generation and RE industry market should be permitted to withdraw their contribution from the HRDF to pay for the cost of retraining of their personnel (NREPAP, p.59) • ... Establishing dedicated funding and incentives ... Establishing special funds by the government for the R&D projects that have high potential for commercialisation ... [such as] new fibre resources for the bio composite industry, utilisation of oil palm biomass, development of new technology in enhancing performance of bio composite product, furniture, building and automobile components and product improvement against bio-deterioration (NATIP, p.57) • ... granted special fiscal reliefs [such as group tax relief and double deduction of the costs of the local innovation or R&D in the RE technology used] by the Government in order to stimulate innovation system to produce local RE ... (NREPAP, p.54) • ... provision of a subsidy for RE technical training and/or fiscal reliefs to individuals who pay the course fees for graduate courses in RE at institutes of higher learning ... (NREPAP, p.58) • ... providing further incentives for the commercialisation of new technology uptake ... (NATIP, p.58) **Changing unsustainable production patterns** • Provide fiscal incentives and funding for green technology investments (10MP, p.26) • ... Green Technology Financing Scheme amounting to RM1.5 billion was established to promote green technology (10MP, p.49) • ... continue to issue credit guarantees of 60% for companies developing or using green technology (10MP, p.83)

Instruments	SCP-Related Instruments
	• Promoting investment in renewable energy to provide long-term contracts for renewable energy providers and create the spill over effects on the related domestic service providers (10MP, p.132) • … the Government will make a move to gradually rationalise the subsidy on electricity to create an incentive for both industries and consumers to adopt more energy-efficient practices (ETP, p.190) • For [solar power development] to succeed … adequate business models need to be developed, including financing … (ETP, p.197) • … A pre-commercialisation investment fund to finance pre-commercialisation plants for the target product segments … a technology acquisition fund … dedicated to assist Malaysian oleochemical companies to acquire new technologies from abroad; and … a foreign acquisition tax incentive to encourage existing companies to expand overseas … (ETP, p.298) • MPOB and Malaysian Palm Oil Council (MPOC) will support local oleo derivative development through the setup of pre-commercialisation investment and technology acquisition funds … (ETP, p.298) • [The EPP4 of Palm Oil and Rubber] will be implemented with five key activities … Supporting local oleo derivative companies to expand domestic production … Helping major oleochemical companies to lead investments in recommended product segments … and Encouraging foreign investors to set up factories … in Malaysia (ETP, p.298) • To support local companies to set up joint ventures abroad, … [the government] will provide tax incentives for foreign acquisitions (ETP, p.298) • To this end, a green public procurement policy shall be put in place by October 2011, to give preference to local producers, establish buying guidelines for eco-labelled products and specify the required energy efficiency certification for specific products (ETP, p.417) • Focus will also be given to R&D programmes that produce products which will take into consideration the concerns related to health and environment both at international and domestic levels (NATIP, p.17) • … the Government through its agencies such as SMIDEC and the Malaysian External Trade Development Corporation (MATRADE) has provided various financial incentives … to develop and promote … [Malaysian] own brands to become super brands or global brands rather than remain as contract manufacturers for internationally renowned brands (NATIP, p.17) • … encourage the timber industry to use alternative materials such as biomass, bio composite, Kenaf, orchard and landscaping timber to be utilised by the timber industry (NATIP, p.19) • The government through the … MPIC is now aggressively implementing commercial forest plantation programmes that require the planting 0f 375,000 hectares of trees over the next 15 years (2006-2020) … The private sector is encouraged to participate in these programmes and as an incentive, long term financing will be made available to the investor at low interest rates (NATIP, p.33) • … Encouraging the use of biomass as supplementary resources (NATIP, p.34) • … using alternative energy for the development of the industry (NATIP, p.58) • … ensure the continued growth and competitiveness of the timber industry, by adding value, developing OBMs, promoting the green image, protecting the environment and researching into new product (NATIP, p.74) • The various Government agencies such as MTIB and STIDC as well as trade associations need to undertake awareness programmes on a regular basis for the timber industry in order to update them on the latest incentives, financial facilities and grants provided by the Government (NATIP, p.110) • Economic transformation in the industrial, agricultural and services sectors is a process requiring continuous innovation and productivity growth with significant technological advancement and entrepreneurial drive. The adoption of processes in line with best practices and international standards will improve the chances for Malaysian firms to succeed in the global market place (NEM, p.25, 117)

Instruments	SCP-Related Instruments
	• Recycled agricultural wastes into valuable products such as composts, animal feed and bio-gas are capable of supporting the crops, livestock and fuel industries as well as generate additional income. Bagi menggalakkan aktiviti tersebut, insentif termasuk Elaun Susut Nilai Modal Dipercepat (Accelerated Capital Depreciation Allowance) akan disediakan bagi pembelian peralatan untuk pengeluaran produk bahan sampingan. To promote these activities, incentives including the Accelerated Capital Depreciation Allowance will be provided for the purchase of equipment for production of by-products (NAFP, p.72) • In many countries, government have played a major role in supporting SME product through specific government procurement policy (SMEMP, p.100) • Provide financial support to enable SMEs to comply with market standards and certification (SMEMP, p.101) • Integrated farming practices will be promoted with assistance given to farmers who replant more than two types of agricultural commodities including livestock (NAFP, p.24) • Incentives in the form of import tax exemptions and soft loans will be provided to enable the procurement of equipment at affordable prices by agricultural entrepreneurs (NAFP, p.28) • To promote these activities, incentives including the Accelerated Capital Depreciation Allowance will be provided for the purchase of equipment for production of by-products (NAFP, p.31) • Create soft loan and matching grant incentives for acquisition of appropriate equipment including the provision of machinery for rent at reasonable rates (NAFP, p.51) • Upgrade Basis Facilities, Accommodation and Transportation in Agrotourism Centres Incentive such as soft loans will be provided through Agrobank to encourage agrotourism operators to upgrade the basic facilities (NAFP, p.112) • The [Industrial Adjustment] fund provides grants and loans at preferential interest rates to companies undertaking M&As, automation, modernization and upgrading of their production capacities (IMP3, p.157) • Automation Fund to encourage industries to modernize and automate their manufacturing processes. Allocations for the fund will continue to be provided by the Government during the subsequent five year Malaysia Plans (IMP3, p.157) • ... Fund for the Adaptation of New Technologies ... will be considered to assist companies in testing and adopting applications of these technologies into their production processes (IMP3, p.158) • ... granting green-lane approval for building plans utilizing the Industrial Building Systems and modular coordination ... (IMP3, p.585) • ... providing assistance to the companies to undertake testing to meet international standards ... (IMP3, p.107) • ... SMEs will be encouraged to conform to international standards and regulations to gain access to the export market (IMP3, p.190) • ... SMEs will be encouraged to adopt best business and management practices, such as supply chain management, customer relationship management and enterprise resource planning, to gain competitive edge (IMP3, p.188) • ... Financial incentives ... [and] Recognition awards [to facilitate business and industrial responses (NPCC, p.10) • ... Burden sharing between government and power producers ... (NPCC, p.13) • ... Increase EE in industrial sectors through: ... Provision and promotion of technical and financial assistance or incentives to the industry using EE technology and processes ... (NPCC, p.13) • Allocate adequate financing and appropriate technological for promoting low carbon economy through ... Market mechanisms; Financial and fiscal incentives and disincentives; Mobilizing public-private partnerships; and Involvement of financial and insurance sectors (NPCC, p.9)

Instruments	SCP-Related Instruments
	• ... the government through its agencies such as SMIDEC and the Malaysian External Trade Development Corporation (MATRADE) has provided various financial incentives to facilitate and develop and promote Malaysian own brands to become super brands or global brands rather than remain as contract manufacturers for internationally renowned brands (NATIP, p.17) • Provide incentives to the private sector to undertake activities in conservation and sustainable utilization of biological resources (NPBD, p.33) • The conducive environment package … provision of fiscal incentives, and indirect assistance in form of reducing the transaction costs for financing, using GLCs and MNCs to lead the charge, and providing assistance to SMEs to participate in the RE business (NREPAP, p.iii) • ... the introduction of feed-in-tariff (FiT) mechanism which will act as a catalyst for the progressive entry of RE power generation businesses and other related aspects of RE development (NREPAP, p.iii) • ... offer financial assistance [estimated to be RM 500 million to be used over 5 years) (NREPAP, p.54) • Fiscal incentives (the action plan suggests to permanently discontinue these fiscal incentives by 2019) (NREPAP, p.54) • Financial rewards (tax relief, special expenditure relief, reduction of import duties) for RE technologies in new buildings (NREPAP, p.54) • Feed-in tariff needs to be introduced through a legal instrument to guarantee success and effective implementation (NREPAP, p.47) • ... A Flexible scheme for better access to financing ... SME can source financing from government agencies and financial institution such as SMIDEC, MIDF, SME Bank, MATRADE, MARA, BSN and MTDC all of which provide special allocation to Bumiputera entrepreneurs. The SME therefore have to seize the opportunities provided, to develop their companies and compete in the global market (NATIP, p.109) • The Minister after consultation with the Council may prescribe the fees payable in respect of a licence, any transfer or renewal thereof (EQA, p.22) • Different fees may be prescribed according to any one or more of the following factors: (a) the class of premises; (b) the location of such premises; (c) the quantity of wastes discharged; (d) the pollutant or class of pollutants discharged; (e) the existing level of pollution (EQA, p.22) • Where upon inspection it is ascertained that the pollutants or class of pollutants discharged, emitted or deposited is different from or the quantity of wastes discharged, emitted or deposited is greater than, that declared by the occupier in his application for or renewal of licence, the Director General may recover such fees as would have been payable in respect of that pollutant or class of pollutant or extra quantity of discharge, emission or deposit (EQA, p.23) • In calculating the fees payable under subsection (3), the occupier shall be deemed to have discharged, emitted or deposited that pollutant or class of pollutants or that quantity of wastes for a period of six months preceding the inspection or, if the application for or renewal of licence was made less than six months before the inspection, for the period beginning from the application up to the inspection (EQA, p.23) • Power to specify rules on deposit and rebate schemes - The Minister, after consultation with the Council, may specify the guidelines and procedures on deposit and rebate schemes in connection with the disposal of products that are considered - (a) environmentally unfriendly; or (b) causing adverse constraint on the environment, for the purpose of collecting the products efficiently in order to ensure that the recycling or disposal of the products is done in an environmentally sound manner (EQA, p.32) • Research cess - For the purpose of conducting, promoting or co-coordinating research in relation to any aspect of pollution or the prevention thereof, the Minister, after consultation with the Minister of Finance and the Council, may make an order for the imposition and collection, or variation or cancellation of an imposition, of a cess on the waste generated (EQA, p.39)

Instruments	SCP-Related Instruments
	Changing unsustainable consumption patterns • ... explicitly itemise subsidy values [in consumer energy bills] and eventually delink subsidy from energy use (10MP, p.288) • ... review tax incentives, such as tax breaks for buildings and designs that are environmentally friendly, incorporating green design elements like solar panels for heating, rain water harvesting facilities and water conservation features (10MP, p.279) • ... the Government will make a move to gradually rationalise the subsidy on electricity to create an incentive for both industries and consumers to adopt more energy-efficient practices (ETP, p.190) • ... the Government will request for energy-efficiency plans from [ministries, universities and hospitals]. This programme will be led by KeTTHA and will follow a clear process for energy-efficiency improvement. Firstly, plans will be put into place for the electricity budgets of these entities to be reduced over time. In return, they will be given allocations to invest in energy-efficient practices (light bulbs, new chillers, etc.). Each entity will nominate an Energy Efficient Champion who will be in charge of devising the entity's action plan to reduce electricity consumption. KeTTHA will mentor and monitor this group of champions in continuously achieving their targets (ETP, p.190) • Stimulate sales of energy-efficient appliances ... Consumers will receive rebates on particular appliances that account for the biggest part of household electricity bills ... This initiative will offer a 7 to 10 percent rebate on selected appliance models and for a limited number of units. These targeted appliances are refrigerators, air conditioners and light bulbs (ETP, p.190) • Stimulate the sales of energy-efficient vehicles by offering rebates to encourage adoption of hybrid or electric vehicles ... hybrid vehicles are currently still considered a luxury in Malaysia due to their lack of cost-competitiveness. The Government will promote the use of hybrid vehicles by reducing the import tax on these vehicles. As a start, the price of hybrid cars will be made more competitive so the Rakyat can comfortably choose hybrid cars instead of conventional imported cars. Most importantly, while this move will not undercut car prices of our local manufacturers, it will create healthy competition and urge our local manufacturers to develop hybrid or electric vehicles for the local market (ETP, p.192) • Strengthen suppliers of green products and services through accreditation, skills development and access to finance. KeTTHA will develop an accreditation framework for energy services companies to improve and regulate the quality of energy services companies in 2011. The framework will take into account the level of technical expertise, capital base and depth of services offered by companies (ETP, p.417) • To this end, a green public procurement policy shall be put in place by October 2011, to give preference to local producers, establish buying guidelines for eco-labelled products and specify the required energy efficiency certification for specific products (ETP, p.417) • Green projects rely on knowledgeable lenders. KeTTHA will run education seminars with financial institutions in 2011, to increase knowledge of green projects to boost levels of lending. These seminars will focus on the payback structure of energy efficiency projects (ETP, p.417) • An important adaptation measure is to encourage the higher use of public transportation over private vehicle. This will require the development of an efficient integrated inter-urban public transportation system featuring high speed train, low fare domestic flight, public buses and highways and city centre transportation hubs. For intra-city more develop the coverage and efficiency of trains, taxis and buses and inter-connectivity (NPP2, p.2-13) • Provide reward structures and design reward mechanisms to strengthen appropriate fields for education to achieve conservation and sustainable use of biological diversity (NPBD, p.32) • ... to secure buy-in to the idea of societal payments for a clean environment (NREPAP, p.42)

Instruments	SCP-Related Instruments
	• Government should use its public procurement power strategically to spur RE generation and industry growth (NREPAP, p.57) • In many countries, government have played a major role in supporting SME product through specific government procurement policy (SMEMP, p.100) **Applying life-cycle thinking** • An integrated approach will be adopted that requires all stakeholders to examine economic, social and environmental costs and benefits prior to project selection. This approach also makes a holistic assessment of existing facilities and other projects in the same area, while considering the National Physical Plan, State Structure Plans and Local Plans as a guide in planning and sharing of resources, particularly land use, infrastructure, utilities and services (10MP, p.330) • Implementing value-management analysis and life-cycle cost evaluation for procurement. Development programmes and projects costing RM50 million or more will be subject to value-management analysis. This approach requires consideration of various options to arrive at the optimal project design aligned to the desired outcomes. Life-cycle cost evaluation will ensure cost optimization and value-for-money while meeting required performance levels. Ministries and agencies implementing projects costing less than RM50 million will also be encouraged to conduct similar analyses (10MP, p.338) • Key building blocks for livable cities and sustainable communities [in broad sense, livability has the common nations of enhancing 'quality of life', as well 'well being', 'economic competitiveness and growth] (NPP2, p.2-6) • Promoting efficient public transportation ... access to affordable decent housing ... facilitating distinctive attractive environment ... providing supporting infrastructure and utilities ... attracting and retaining talent [and] skill workers and establishing quality knowledge centres (NPP2, p.2-7) • Identify and recognise the attribute and value of ecosystem services and integrate into the development planning process (NPCC, p.12)
Educational	**General issues of sustainability** • The Government will encourage employment-rich growth that creates 3.3 million new jobs, of which half will require diploma or vocational qualifications. The investments made in education and training will ensure that more Malaysians are able to participate in these new opportunities (ETP, p.8) • ... Reinforce Bumiputra entrepreneurs' capabilities and equitable share in the construction value chain (CIMP, p.12) **Moving towards a green economy** • Local communities play an important role in conservation and utilisation of environmental resources as they possess a depth and breadth of knowledge and capabilities in matters relating to nature handed down over many generations (10MP, p.307, 308) • Green technology requires new skills for new jobs such as carbon traders, environmental engineers, smart grid consultants, sustainability consultants, wind turbine designers, Clean Development Mechanism consultants and energy managers. Green technology skills will be incorporated into the curriculum of existing courses, including architecture, engineering and urban planning by 2012. In addition, a list of green technology jobs under the NOSS (National Occupational Skills Standard) and SKM (Malaysian Skills Certificate) will be developed by mid-2011, establishing a common standard for green technology practitioners (ETP, p.417) • ... Enlarging the pool of K-worker (NATIP, p.54) • Organising structured training programmes and providing clear guidance career development opportunities (NATIP, p.90) • Malaysia's green strategies will be directed towards the ... key areas ... Education and awareness ... Effective management of natural resources and the environment ... Integrated development planning and implementation ... Prevention and control of pollution and environmental degradation ... Strengthening administrative and institutional mechanisms ... Proactive approach to regional and global environmental issues and ... Formulation and implementation of Action Plans (NPE, p.7)

Instruments	SCP-Related Instruments
	• Inculcation of a culture that appreciates Green Technology among students at all levels through the development of effective syllabus in the education system (NGTP, p.19) • Develop training programmes in biosafety management and practice (NPBD, p.35) • Promote Agrotourism Entrepreneurship - Agrotourism industry will be promoted more widely as revenue generators to entrepreneurs. Potential locations and activities as well as viable products to venture will be identified and developed. To strengthen the competencies among the agrotourism entrepreneurs, the National Agriculture Training Council (NATC) will provide training modules on agrotourism as a reference for training institutes, including the Malaysian Assosiation of Tour and Travel Agents (MATA) (NAFP, p.112) • ... a variety of skills in various fields of production and support services are required to [enhance the viability of the timber industry] (NATIP, p.82) • ... more universities will be encouraged to offer training courses in forest plantations and management ... The scope of training in forest plantation for diploma and degree programmes need to be upgraded and strengthened to encompass new development. The scope of these programme need to cover nursery practices, silviculture management and harvesting technology for the new forest plantation species that have been identified (NATIP, p.89) • ... organising structured training programmes and providing clear guidance career development opportunities (NATIP, p.90) • (f) to conduct, promote and co-ordinate research in relation to any aspect of pollution or the prevention thereof and to develop criteria for the protection and enhancement of the environment (EQA, p.14) • (l) to provide information and education to the public regarding the protection and enhancement of the environment (EQA, p.14) **Enabling technology and economic innovation for SCP** • The Government will establish a legal framework on access and benefits sharing to ensure that the benefits derived are distributed fairly and equitably. This framework will be supported by an institutional arrangement to enhance awareness and disseminate information (10MP, p.308) • For example, the quality of skills training will be improved through industry-led bodies that will set standards, issue guidelines on content and harmonise the skills-training curriculum across sectors (ETP, p.20) • Measure, monitor and publicise environmental progress. To provide the basis for an environmental management annual report, KeTTHA will track Malaysia's environmental impact and progress of the green technology sector in a database. By mid-2011, KeTTHA will determine the scope of the database and the indicators that need to be collected as well as communicate roles and responsibilities to the relevant industry associations (ETP, p.417) • Starting in 2011, KeTTHA will publish an environmental management annual report to track Malaysia's progress against KPIs and increase awareness of environmental schemes. The report will benchmark Malaysia internationally, highlighting improvements in efficiency across Government and the private sector at the national and state levels. It will also discuss the impact of any existing subsidies for energy and water (ETP, p.418) • ... the Government has established a Fibre and Bio composite Development Centre (FIDEC) ... training centre such as Wood Industry Skills Development Centre (WISDEC), Institut Kemahiran Mara (IKM), Akademi Binaan Malaysia (AM) ... to enhance capacity building ... (NATIP, p.47) • ... Competitiveness in manufacturing maintained through the adoption of innovation and technology and adaptability to the changing raw material. These raw materials are increasingly derived from planted forest, producing not only timber but also as base materials for re-engineered wood and bio composite. This will require a greater degree of automated processing technology in order to maximise the processing yield. Failure to keep abreast with the latest technology or the inability to capitalise fully on the available technology can adversely affect the future competitiveness of the timber industry (NATIP,

Instruments	SCP-Related Instruments
	• ... Exploring the use of alternative energy in the timber industry, for example the utilisation of solar power to supplement electricity especially ... in powering the convection fans. Alternatively, biomass such as wood residue and agriculture by-products can be transformed into biofuel for energy production. This will include the utilisation of bioethanol derived from lignocellulosic materials (NATIP, p.57) • The scope of training in forest plantations for diploma and degree programmes needs to be upgraded and strengthened to encompass new development. The scope of these programme need to cover nursery practices, silviculture management and harvesting technology for new forest plantation species that have been identified (NATIP, p.89) • Thrust 6 Advancing small farmers and entrepreneurs ... to encourage replanting activities ... provide technical assistance and enhance the use of mechanisation (NATIP, p.17) • ... capacity building through training, skills enhancement and technology transfers (NCP, p.17) • ... intensify the R&D&C focusing on the pre-commercialization activity, use of green technology, high value products development and processing technology (NCP, p.24) • ... strengthen R&D&C to enhance the competitiveness of rubber industry ... to commercialise environmentally-friendly rubber-based products such as green tyre ... strengthen the co-operation between industry and higher learning institutions ... (NCP, p.30) • .... intensify research, development and commercialisation to produce high value added Kenaf products (NCP, p.57) • ... to enhance cooperation with research agencies to increase new and existing technology (NCP, p.63) • Promote SME products in countries like Japan, the Middle East and Europe to introduce Malaysian agro-based industry products (NAFP, p.104) • Strategic partnership between the private sector research institutions within and outside the country will also be given emphasis (NAFP, p.97) • Strategies of Mushroom Industry, 2011-2020 - The following strategies have been identified for developing the mushroom industry: Promote zero waste practices, Strengthen R & D activities (NAFP, p.97) • Strengthen Market of Herbs and Spices - The industrial economic base of herbs and spices will enhanced through research and networking with international pharmaceutical companies, especially in identifying the species, variety or accession of herbs and spices for development of high-value products such as cosmeceutical and phytomedicine (NAFP, p.92) • Strategies of Floriculture Industry, 2011-2020 - The development of the country's floriculture industry will be implemented through the following strategies: Strengthen R &D activities (NAFP, p.94) • Strengthen R & D Activities - Researches and technology generation to support activities along the value chain will be strengthened through the following efforts: Stimulate the production of high yielding materials with high content of active ingredients through a structured innovation approach using biotechnology and nanotechnology, Strengthen research in disease and pest control biologically and organically to improve productivity and reduce production cost (NAFP, p.90) • Intensity R & D in mechanization and automation (NAFP, p.51) • Creating a Conducive Environment for Stimulating Creativity and Innovation - ...enable of innovation and R & D: A conductive environment in term of institutional structures, legislation, funding, especially in agrofood industry. In the NAP period, R & D activities will focus on selected areas especially the development of high yielding varieties, application of technology and farm mechanization and the development of high-value products, especially green technology and products (NAFP, p.36) • The courses will emphasize the use of good agricultural practices and animal husbandry as well as basic education on entrepreneurship (NAFP, p.34)

Instruments	SCP-Related Instruments
	• Development of agricultural entrepreneur's capability through training in entrepreneurial skill and special programmes: Training and continuous upgrading of skill will be strengthened so that agricultural entrepreneurs are equipped with product knowledge and market requirement in term of compliance with international standards (NAFP, p.35) • In this case, agricultural education programmes in public institutions of higher learning and agricultural colleges will be strengthened and improves to produce more professional workforce in focussed areas such as biotechnology, mechanization and agricultural engineering, horticulture, supply management and farm management. The curriculum in agriculture in schools and university will also be strengthened and coordinated jointly by the NATC in line with the National Occupational Skill Standards (NOSS) in an effort to produce more knowledgeable and skilled agricultural workers and entrepreneurs (NAFP, p.34) • Modernisation of Agriculture Driven by Research and Development, Technology and Innovation - The low usage and transfer of technology such as precision farming, information and communication technology (ICT), biotechnology and mechanization becomes an obstacle in the modernization and transformation of agrofood industry, The use of technology and mechanization, especially in large scale farming areas will be expanded to modernize the agrofood industry (NAFP, p.6) • R&D activities will be undertaken selectively, based on customer needs and focus on producing products and technologies that can improve productivity and further modernize the agrofood industry. Agricultural research and extension agencies will also be encouraged to improve the efficiency of the transfer of technology so that technologies developed can be transmitted quickly to agricultural operators for adoption. For these purposes, the transfer of technology from the production stage to application will be implemented within the stipulated time (NAFP, p.6) • The focus will be on capability development of the extension officer through training and exposure to the latest agricultural technologies and practices (NAFP, p.7) • Set up a technology research powerhouse and centre of excellence run on a commercial basis (NEM, p.26, 139) • Focus on palm oil-related downstream industries to develop indigenous technology and innovation or acquire technology to meet new market demands (NEM, p.27, 141) • Encourage upstream technology innovation to develop higher yielding fresh fruit bunches (NEM, p.27, 141) • Fostering R&D links between the institutions of higher learning and the private sector (NEM, p.26, 139) • Align R&D to national growth objectives particularly in innovative and hi-tech fields (NEM, p.26, 139) • Exclusive Economic Zone (EEZ), gives the right to country to explore, scientific research, environment protection and conservation such as maritime park (NPP2, p.3-5) • Enhancing total factor productivity … Measures include undertaking ... quality enhancement of the workforce and development of industrial expertise, through technical training, continual professional development and on the job training (IMP3, p.585) • Innovativeness will be nurtured at an early stage through the education system. Modules of entrepreneurship and entrepreneur related skills will be incorporated in to the curriculum at the tertiary level, including universities (IMP3, p.193) • ... to facilitate business and industrial responses [through] ... Training of experts ... (NPCC, p.10) • Establish and implement a national R&D agenda on climate change taking into account the following areas: Agriculture and food security; Water security and services; Forestry and ecosystem services; Sustainable bio-energies; Public health services and delivery; Localised modelling for projection of future scenarios; Innovative socio-economic and financing mechanisms; Vulnerability due to extreme weather events and natural disasters; and Policy analysis harmonising national and international issues (NPCC, p.16) • Institutionalise measures to strengthen effective linking climate science and policy (NPCC, p.17)

Instruments	SCP-Related Instruments
	• ... technology transfer programme to nurture self-innovativeness and R&D sustainability in local firms and institutions (NPCC, p.16) • Design and enhancement of training and education programmes to improve human resource capacity related to Green Technology (NGTP, p.17) • Implementation of retraining programme and apprenticeship scheme to enhance competency of semi-skilled labour to meet the demands of the Green Technology industry (NGTP, p.17) • Formulation of grading and certification mechanisms for competent personnel in Green Technology (NGTP, p.17) • Incorporate RE in Technical and Tertiary curricula [to increase the availability of RE technology courses] (NREPAP, p.58) • Development of Training Institutes and Centre of Excellence (NREPAP, p.58) • ... Conducting more courses on the Japanese model of 5S ... and Total Quality Management (TQM) to improve the working environment in the factories and mills (NATIP, p.90) • ... The government will undertake efforts through FRIM, Rubber Research Institute of Malaysia (RRIM), MTIB, among others, to promote more R&D exploring alternatives for the use of timber such as in the production of energy and biofuel (NATIP, p.17) • ... to accelerate and increase the amount of available wood as well as improvement in its quality, in the shortest time possible, R&D should be undertaken to increase the production of raw materials both from natural forests as well as from forest plantations and alternatives (NATIP, p.38) • ... Improving intensive planting method ... to increase the supply of raw materials is the adoption of the Intensive Tropical Forest Management System. This system combines improved intensive planting methods of promising indigenous tree species in degraded areas with the integration of sustainable utilisation on non-timber forests produce (NATIP, p.38) • ... enhancing the development of R&D in biomass and composite materials for commercial application ... (NATIP, p.40) • ... prioritising R&D to develop higher yields for existing and potential resource of raw materials to obtain sustainability and meeting requirements of the industry (NATIP, p.40) • ... developing new products and improving the quality of existing products that conform to international standards. R&D on wood-based product will also include waste recycling and control of the emission of carbon dioxide (NATIP, p.47) • The timber industry must take the initiative to undertake R&D programmes to move up the value chain and to produce innovative higher value added products to enables the expansion of downstream activities. Focus will also be given to R&D programmes that produce products which will take into consideration the concerns related to health and environment both at international and domestic levels (NATIP, p.17) • ... R&D is focused on enhancing the competitiveness of forest products, diversifying the use of timber products, improving production technology and the quality of wood. R&D efforts would also be undertaken to maximise the utilisation of wood wastes and agriculture by-products for the production of biocomposite, and pulp and paper, which would be used as resources for production of alternative energy (NATIP, p.47) • ... the Government has established a Fibre and Biocomposite Development Centre (FIDEC) ... training centre such as Wood Industry Skills Development Centre (WISDEC), Institut Kemahiran Mara (IKM), Akademi Binaan Malaysia (AM) ... to enhance the capacity building ... (NATIP, p.47) • ... Developing R&D guidelines to assist the industry to expand its products/services in the face of rapid changes in technology, shorter product life cycles and commoditisation (the different types of commodities/composite serving the same function) (NATIP, p.56) **Changing unsustainable production patterns** • Promote culture of conservation and efficiency in energy and water use (10MP, p.132)

Instruments	SCP-Related Instruments
	• … the Government will launch large-scale education campaigns to help industries and consumers identify and apply energy-efficient practices (ETP, p.190) • Moreover, MPOC and Malaysian Industrial Development Authority (MIDA) will provide key market knowledge and enhance collaboration with investors, technology providers and key research centres in universities abroad (ETP, p.298) • MPOB and Malaysian Palm Oil Council (MPOC) will support local oleo derivative development through the setup of pre-commercialisation … through the provision of global market knowledge and research support (ETP, p.298) • For [solar power development] to succeed … skills and learning need to be built in the form of small amounts of solar generation by leveraging the feed-in tariff mechanism … (ETP, p.197) • Strengthen suppliers of green products and services through accreditation, skills development and access to finance. KeTTHA will develop an accreditation framework for energy services companies to improve and regulate the quality of energy services companies in 2011. The framework will take into account the level of technical expertise, capital base and depth of services offered by companies (ETP, p.417) • … To attract quality workers, the industry will have to provide the enabling environment in term of cleanliness and safety. The adoption of GMP's, attainment of the ISO 9001:2000 Certification and the offer of student's internships are some of the ways of instilling professionalism and upgrading the quality of the workforce in the timber industry (NATIP, p.54) • … a variety skills in various fields of production and support services are required [to increase the production of value-added timber production, especially for export] … skills-based training programmes for the timber industry, namely … Wood Industry Skills Development Centre (WISDEC) … Furniture Industry Technology Centre (FITEC) … Terengganu Timber Industry Training Centre (TTITC) … Sarawak Timber Industry Development Corporation (STIDC) and … Forest Research Institute Malaysia (FRIM) (NATIP, p.82) • … Enhance productivity and competitiveness [through] … conduct more training modules on Good Manufacturing Practices (GMPs) … conduct more in-house and customised courses on quality and innovations at the factory premises … collaborate with the Malaysian Productivity Corporation (MPC) to conduct courses on productivity enhancement; and … collaborate with the National Institute of Occupational Safety and Health (NIOSH) to conduct courses on safety and health (NATIP, p.90) • … conducting more courses on the Japanese model of 5S … and Total Quality Management (TQM) to help improve the working environment in the factories and mills (NATIP, p.90) • Among the key characteristics of the desired SME ecosystem are: Strong entrepreneurial and innovation culture shaped through social and cultural changes (positive attitude to risk taking) by way of education and entrepreneurial development (SMEMP, p.22) • Among the assistance provided would be in penetrating the export market; undertaking innovation; R&D activity and technology upgrade; financial management and financing option (SMEMP, p.69) • Support SMEs to undertake R&D, technology adoption and acquisition (SMEMP, p.98) • Enhance the training of machine operators and farmers to increase the effectiveness of machinery and reduce harvest losses (NAFP, p.51) • Among the aspects of training that will be emphasized include the development of high quality and competitive products, the latest production technology, business management and product marketing (NAFP, p.35) • Training programmes and exposure to the latest technologies including the incubator will be enhanced to increase awareness and use of technology (NAFP, p.28) • Regulation 3P (Grading , Packaging and Labelling) will be implemented for the tracking of vegetables and fruits (NAFP, p.32) • Favour technologically capable industries and firms. Grant incentives to support innovation and risk-taking to enable entrepreneurs to develop higher value added products and services (NEM, p.15, 101)

Instruments	SCP-Related Instruments
	• Increased awareness towards preservation of the environment and health posed a challenge to agricultural entrepreneurs to produce agricultural products that meet sustainable standards (NAFP, p.45) • Promote and increase EE in industrial sectors through ... energy audit in industrial and building sectors ... (NPCC, p.13) • Promote and increase EE in industrial sectors through ... technology needs assessment ... (NPCC, p.13) • Adopt systematic and targeted formal and informal education and awareness raising on climate change ... (NPCC, p.19) • Promote private sector participation in biological diversity conservation, exploration and sustainable utilisation (NPBD, p.25) • ... increasing the level of knowledge within the construction community will drive of reinforce change in the local market for long term sustainability and will ensure sustainable capabilities across the construction industry value chain (CIMP, p.9) • The achievement of these standards requires raising the awareness of its importance among relevant stakeholders and the implementation of a quality management system, on Occupational Safety and Health Management System (OSHMS), and environmental management and assessment systems (CIMP, p.23) • Personnel training – an owner or occupier of any premises equipped with sewage treatment systems , (a) shall ensure that his or its employees attend training on environment requirements and on the best practices in the operation and maintenance of sewage treatment systems before they begin work, (b) shall ensure that the training for his or its employees include re-training on updates for new, revised and existing requirements and procedures, and … (EQASW, p.3892) **Changing unsustainable consumption patterns** • ... to drive green technology agenda across multiple ministries and agencies which include regulatory aspects, developmental, awareness and promotion (10MP, p.132) • Promote culture of conservation and efficiency in energy and water use (10MP, p.132) • Expanding outreach and awareness programmes targeting various segments of society, such as the Langkawi Award, Rakan Alam Sekitar, Malaysia Environment Week, Promotion of Cleaner Production to Industries and Environmental Debate amongst higher institutions (10MP, p.286) • … stimulate sales of energy-efficient appliances … (ETP, p.190) • … stimulate the sale of energy-efficient vehicles … (ETP, p.190) • … the Government will launch large-scale education campaigns to help industries and consumers identify and apply energy-efficient practices (ETP, p.190) • KeTTHA will promote a culture of conservation and efficiency. It will coordinate outreach programmes and incorporate environmental awareness into school curriculums in 2011, for example through the promotion and encouragement of activity books produced by Centre for Training Renewable Energy and Energy Efficiency (ETP, p.417) • Awareness and demand of the global community for safe agricultural products produced in a sustainable manner is a challenge to agricultural producers to comply with the standards (NAFP, p.28) • Participate in Consumer Fair and organize Malaysia Food Sales and In-store Promotions to promote the local agro-based industry products (NAFP, p.104) • Guarantee food safety and nutrition through the Food-based Social Safety Network Programme and nutrition awareness campaigns (NAFP, p.3) • Nutrition awareness campaigns about the advantages and benefits of local food products will be enhanced in cooperation with Ministry of Health, Education Ministry and related ministries (NAFP, p.26)

Instruments	SCP-Related Instruments
	• Special campaigns to those who have nutrition-related health problems will be expanded. This includes campaigns and awareness programmes in schools to educate students to choose local fruits and vegetables towards a healthy diet. Food-based Social Safety Net Programme will be implemented to ensure safe and adequate food supply to specific groups such as children and pregnant women (NAFP, p.26) • ... Outreach communication programmes; ... (NPCC, p.10) • ... formal and informal education and awareness raising on climate change ... (NPCC, p.19) • Promote sustainable lifestyles ... (NPCC, p.19) • Effective, continuous promotion, education and information dissemination through comprehensive roll-out programmes to increase public awareness on Green Technology (NGTP, p.19) • Promote and encourage the understanding and participation of the public and institutions for the effective conservation and protection of biological diversity (NPBD, p.26) • Increase awareness within the civil service at both federal, state and local government levels as well as in professional bodies and the private sector through courses and training programmes (NPBD, p.36) **Applying life-cycle thinking** - No Entry -
Informational	**General issues of sustainability** • Malaysia has also been recognised as the first tropical timber producer to be able to offer certified timber products under its own Malaysian Timber Certification Scheme (MTCS) (NATIP, p.71) • Identify and review existing mechanisms to facilitate the exchange of information relevant to the conservation and sustainable use of biological diversity (NPBD, p.26) • Establish or strengthen systems for the exchange of such information at national and international levels through networking, and by establishing databases and information centres ... (NPBD, p.37) • Among the factors that cause weakening of the value chain are non-market oriented production, less widespread use of market information, non-transparent pricing practices, less systematic product management (grading, packaging and labelling), incomplete market infrastructure, multi-layered marketing channels and less effective branding (NAFP, p.5) **Moving towards a green economy** • Introducing progressively certification of tourism products and activities to ensure quality, sustainability and safety (10MP, p.128) • To remain competitiveness in the global market, continuous efforts must be made to explore new markets and to promote Malaysian brands of products from the timber industry (NATIP, p.17) • ... Realising that certain markets require the harmonisation of standards and quality, the Government will intensify efforts to harmonise and standardise product specification and quality for timber and timber products through its agencies such as the Department of Standards Malaysia (DSM) and MTIB (NATIP, p.18) • ... expanded roles of the forest in meeting the demands of society and also the world-wide concerns for the protection of the environment, forests resources will need to be managed in sustainable manner in accordance with the agreed international criteria and indicators for SFM (sustainable forest management) (NATIP, p.33) • Enhancing market creation through branding on quality, design and value-creation ... This strategy calls for branding of Malaysia's timber products based on the quality of its products and services, as well as design excellence (NATIP, p.72) • Monitoring and evaluation - Among the key tasks of this function would be: Developing strategies for M&E and reporting tools (SMEMP, p.68)

Instruments	SCP-Related Instruments
	• Strategies of Agrotourism Industry, 2011-2020 - The development of agrotourism industry will be driven through the following strategies: Agrotourism product diversification, Provide special tour packages according to country, Strengthen the quality and safety of agrotourism industry, Upgrade basic facilities, accommodation and transportation in the agrotourism centres, Promote agrotourism as a field of entrepreneurship, Provide calendar and directory of agro-tourism, Strengthen cooperation among stakeholders of agrotourism (NAFP, p.109) • ... Establishing and promoting the 'green' image through responsible practices in forestry, trade and the environment (NATIP, p.72) • (e) to undertake surveys and investigations as to the causes, nature, extent of pollution and as to the methods of prevention of pollution and to assist and co-operate with other persons or bodies carrying out similar surveys or investigations (EQA, p.10) • (g) to recommend to the Minister standards and criteria for the protection of beneficial uses and the maintenance of the quality of the environment having regard to the ability of the environment to absorb waste without detriment to its quality and other characteristics (EQA, p.14) • (i) to publish an annual report on environmental quality not later than 30 September of the following year and such other reports and information with respect to any aspect of environmental protection (EQA, p.14) • (l) to provide information and education to the public regarding the protection and enhancement of the environment (EQA, p.14) • (iv) at his own expense, to conduct a monitoring programme designed to provide the Director General with information concerning the characteristics, quantity or effects of the emission, discharge or deposit in respect of which the licence is issued, which information recorded by such programme shall be supplied to the Director General at such time and in such manner as may be specified by the Director General (EQA, p.20) • Environmental audit ... The Director General may require the owner or occupier of any vehicle, ship or premises, irrespective of whether the vehicle, ship or premises are prescribed under section 18 or otherwise, to carry out an environmental audit and to submit an audit report in the manner as may be prescribed by the Minister by regulations made under this Act (EQA, p.34) **Enabling technology and economic innovation for SCP** • ... Continuous efforts are being made to increase the number of laboratories in the RIs and the universities for the purpose of international accreditation. Accreditation for these local institutions by the Japanese Agricultural Standards/Japanese Industrial Standards (JAS/JIS) and the European Certification (CE) marking for example will facilitate timber exports to the Japanese and European markets. In response, FRIM and other local institutions have taken the initiative to certify its laboratories under ISO 9001: 2000 and ISO/IEC 17025 to provide quality testing services in forestry and forests products (NATIP, 48) • Establish a register and expand the pool of climate change experts (NPCC, p.20) • Formulation of grading and certification mechanisms for competent personnel in Green Technology (NGTP, p.17) **Changing unsustainable production patterns** • Firms will be also be encouraged to meet Malaysian Standards and recognised international standards for goods and services such as Hazard Analysis and Critical Control Points and Good Manufacturing Practice (10MP, p.83) • ... the National Mark quality certification will be further promoted (10MP, p.97) • Firms will be also encouraged to adopt and comply with international standards and requirements on quality, safety and environment to improve market access for their products and services (10MP, p.101)

Instruments	SCP-Related Instruments
	• ... Tapping premium markets: We will focus efforts on expanding production of premium grade fruit and vegetables and certified shrimps for export as well as developing premium processed foods and introducing a fragrant rice variety for non-irrigated areas (ETP, p.42) • Strengthen suppliers of green products and services through accreditation, skills development and access to finance. KeTTHA will develop an accreditation framework for energy services companies to improve and regulate the quality of energy services companies in 2011. The framework will take into account the level of technical expertise, capital base and depth of services offered by companies (ETP, p.417) • Among the initiative that SMEs can benefits under the NKEA include: The enforcement of Green Building Index (GBI), coupled with the carbon credit initiative are envisaged to incentives stakeholders to become more serious in adopting green principles (SMEMP, p.77) • ... Globally, there is a growing demand for product certification arising from the concern for quality, safety and health. Such concerns have resulted in specific technical requirements to meet certain standards by importing countries. The requirements by Japan for imports of plywood and fibreboard as well as the need for Conformite Europeene (CE Marking) by Europe are such examples ... MTIB will be provided with necessary resources to establish a quality assurance system (NATIP, p.18) • The 'SME Quality Management Enhancement Plan' should be initiate to help SMEs raise their international competitiveness through adoption of new quality standards and certification, dissemination of quality management knowledge and benchmark against top performers. At the same time, Government needs to ensure that the Malaysian standards are aligned to international product standards, and that SME's comply with these standards. Such standards will be useful in improving the public perception of the quality of products and services offered by SMEs (SMEMP, p.101) • Strengthen the Quality and Safety of AgroTourism Industry - Certification and rating for agrotourism products and locations will be introduced to ensure the quality, safety and sustainability of agrotourism industry. MOA will cooperate with the Ministry of Tourism to set Standards for this certification (NAFP, p.112) • SMEs will be encouraged to improve quality and strengthen method of packaging, labelling and branding of products, and ensure consistency of product supply for the market opportunities offered by the supermarket, hypermarkets and export market (NAFP, p.104) • Improve Food Quality and Safety - Emphasis will be given on food quality and safety aspects to enhance competitiveness and market shares of agro-based industry products. Quality and food safety will be enhanced through the expansion of GMP and HACCP and encouraging entrepreneurs to obtain halal certification (NAFP, p.104) • Increase Supply of Quality Seed - The private sector will be encouraged to operate seed production centres that comply with SOPs provided by the Government, for the production of high quality mushroom seeds. These production centres will be accredited under the Seed Certification Scheme. The Government through the Mushroom Germplasm Storage Centre will work the private seed production centres to provide cultures and basic seed (NAFP, p.98) • Ensure Consistent Supply of Quality Seed - Herbs and spices seed producing centres are required to comply with the SOP for seed production and obtain accreditation under Seen Certification Scheme (NAFP, p.89) • Encourage operator to comply with good agricultural and manufacturing practices through certification schemes such as Malaysia Farm Practices Scheme (SALM) (NAFP, p.97) • Agricultural entrepreneurs will be encouraged to practice innovation in the upstream and downstream activities in order to reduce production costs and improve the quality and attractiveness of agricultural products, especially in terms of packaging and branding (NAFP, p.6)

Instruments	SCP-Related Instruments
	• Facilitate market access: to gain greater market access, the quality of agricultural products will be enhanced to comply with the prescribed international standards. In this case, good agricultural practices will be extended in the upstream level. The 3P regulation for grading, packaging and labelling of agrofood product will be expanded to the local agricultural produce and imports to ensure quality, safety and enhance the competitiveness of agricultural products (NAFP, p.31) • Intensify the promotion and nurturing of practices, method of handling, distribution and marketing of a cleaner fish and fishery products, quality and safe to eat as well as compliance with international standards. These include the use of food grade insulated fish boxes, clean sources of ice supply, method of packaging and labelling according to standards and prevent the use of illegal preservatives (NAFP, p.56) • ... developing global best practices through competitive benchmarking and promoting the adoption of international standards and best practices in the services sector (IMP3, p.580). • The greater utilisation of wood products will be promoted through the introduction of new applications of wood products in the export market (IMP3, p.441). • The CIDB will become an integrated centre for the registration and renewal of licenses of contractors. To improve the performance of contractors, a comprehensive performance rating system will be introduced to cover key areas such as quality, safety and health, environment and financial strength (IMP3, p.584) • The Government will collaborate with Malaysian-owned companies to ... intensify outreach and information sharing to enhance the appreciation by the public of the processes of adoption and adaptation of environment-friendly technologies and practices (IMP3, p.636) • Establish a greenhouse gas (GHG) emissions reporting framework for industries with linkage to the Statistics Department ... (NPCC, p.10) • ... a one-stop centre for approvals of ancillary matters should be set up to address the regulatory concern of the additional compliance cost ... (NREPAP, p.51) • Create an RE Center for SMEs [cost estimates RM20 million over 5 years] (NREPAP, p.55) • Advocacy programmes ... should be implemented ... to increase the awareness of all stakeholders of the benefits and advantages of utilizing RE and participation in RE businesses (NREPAP, p.iv) • ... Globally, there is a growing demand for product certification arising from the concern for quality, safety and health. Such concerns have resulted in specific technical requirements to meet certain standards by importing countries. The requirements by Japan for imports of plywood and fibreboard as well as the need for Conformite Europeene (CE Marking) by Europe are such examples ... MTIB will be provided with necessary resources to establish a quality assurance system (NATIP, p.18) • ... Realising that certain markets require the harmonisation of standards and quality, the Government will intensify efforts to harmonise and standardise product specification and quality for timber and timber products through its agencies such as the Department of Standards Malaysia (DSM) and MTIB (NATIP, p.18) • Continuous efforts are being made to increase the number of laboratories in the RIs and the universities for the purpose of international accreditation. Accreditation for these local institutions by the Japanese Agricultural Standards/Japanese Industrial Standards (JAS/JIS) and the European Certification (CE) marking for example will facilitate timber exports to the Japanese and European markets. In response, FRIM and other local institutions have taken the initiative to certify its laboratories under ISO 9001: 2000 and ISO/IEC 17025 to provide quality testing services in forestry and forests products (NATIP, p.48) • Monitoring of sewage discharge – an owner or occupier of a premises that discharges sewage onto or into any soil, or into any inland waters or Malaysian waters shall at his own expense – (a) monitor the concentration of the parameters specified in the first column of the Second Schedule and install flow-meters, sampling equipment and recording equipment (EQASW, p.3889)

Instruments	SCP-Related Instruments
	Changing unsustainable consumption patterns • To achieve our target, we will act to boost demand for green products and services, strengthen suppliers and measure, monitor and publicise Malaysia's environmental progress (ETP, p.417) • Among the initiative that SMEs can benefits under the NKEA include: The enforcement of Green Building Index (GBI), coupled with the carbon credit initiative are envisaged to incentives stakeholders to become more serious in adopting green principles (SMEMP, p.77) • Develop branding of 'Home Garden Produce' as organic product: Presently, 80% of food production is contributed by smallholders. The 'Home Garden Produce' programme will be introduced as a side activity for rural communities and the development of the programme will be planned in an integrated manner along the value chain involving activities such as seed preparation and marketing. Land belonging to the smallholders will be developed as a modern home garden reorganized under the brand name 'Home Garden Produce' to meet consumers demand for products such as organic fruits and vegetables, herbs and spices and mushrooms (NAFP, p.27) • ... provide consumers with relevant and accurate information on products of the companies to enable them to make informed choices on their purchases (IMP3, p.636) • The Government will collaborate with Malaysian-owned companies to ... intensify outreach and information sharing to enhance the appreciation by the public of the processes of adoption and adaptation of environment-friendly technologies and practices (IMP3, p.636) • Increased public awareness and commitment for the adoption and application of Green Technology through advocacy programmes (NGTP, p.10) • Widespread availability and recognition of Green Technology in terms of products, appliances, equipment and systems in the local market through standards rating and labelling programmes (NGTP, p.10) • Effective, continuous promotion, education and information dissemination through comprehensive roll-out programmes to increase public awareness on Green Technology (NGTP, p.19) • Effective involvement of media, non-governmental organizations and individual stakeholders in promoting Green Technology (NGTP, p.19) **Applying life-cycle thinking** - No Entry -
Hybrid	**General issues of sustainability** • ... adopt a dual strategy in addressing climate change impacts: firstly, adaptation strategies to protect economic growth and development factors from the impact of climate change; and secondly, mitigation strategies to reduce emission of greenhouse gases (10MP, p.300) • The National Climate Change Policy and National Green Technology Policy were adopted in 2009 to address the pressing issue of climate change (10MP, p.49) • Developing a long-term strategy for water resource management to achieve water security (10MP, p.281) • ... the Government will lead by example on energy-efficiency practices and philosophy ... (ETP, p.190) • ... the Government will lead by example and apply energy-efficient practices in its own premises ... (p.190) • ... These measures include, enhancing the SFM as well as the Forest Plantations Programme (FPP), to ensure the sustainable supply of raw materials. In addition, the Government will promote the use of landscaping timber and encourage the usage of alternative materials such as biomass and biocomposite to meet the needs of the industry (NATIP, p.15) • Encourage all sectors to embrace 'green technology' in production and processes (NEM, p.29, 146)

Instruments	SCP-Related Instruments
	• Among the key characteristics of the desired SME ecosystem are: Effective M&E system to assess impact to all initiative (SMEMP, p.23) • ... the compliance with the appropriate national and state policies, physical plans as well as international agreements (NMP2, p.15) • Develop and implement plans for public-private, NGOs and communities collaboration on climate change (NPCC, p.11) • Identify and encourage the optimum use of the components of biological diversity, ensuring fair distribution of benefits to the nation and to local communities (NPBD, p.24) • Take mitigating measures to reduce the adverse effects of human activities on biological diversity (NPBD, p.25) • Develop mechanism for ensuring compatibility between conservation and sustainable development (NPBD, p.31) **Moving towards a green economy** • ... Promoting eco-tourism to create commercial value in sustainability ... (10MP, p.26) • ... to increase the productivity and sustainability of agro-based activities through the adoption of modern agricultural technology and expansion of contract farming (10MP, p.153) • ... establishing modern agriculture businesses in the rural areas such as environmentally sustainable aquaculture and organic farming. This will include building facilities, establishing markets, obtaining the required certification and establishing processes based on good agricultural practices (10MP, p.155) • ... initiate green townships in Putrajaya and Cyberjaya (10MP, p.299) • ... the FPP [Forest Plantation Programme] is to be enhanced in order to ensure that there is a sustainable and sufficient supply of raw materials for the timber industry in the long term ... (NATIP, p.19) • ... Establishing and promoting the 'green' image through responsible practices in forestry, trade and the environment (NATIP, p.72) • Malaysia must build on its strategic location together with the comparative advantages arising from its natural resource endowment to establish production platforms which drive high value added growth with spillover effects (NEM, p.27, 117) • Capture a greater share of the education, medical tourism and ecotourism markets through domestic and regional partnerships (NEM, p.27, 141) • Provide spatial planning strategy for enhancing international competitiveness, and the framework for strengthening national development cohesion and discipline (NPP2, p.5-1) • Malaysia's green strategies will be directed towards the ... key areas ... Education and awareness ... Effective management of natural resources and the environment ... Integrated development planning and implementation ... Prevention and control of pollution and environmental degradation ... Strengthening administrative and institutional mechanisms ... Proactive approach to regional and global environmental issues and ... Formulation and implementation of Action Plans (NPE, p.7) • Incorporate climate change as a priority area in the National Development Planning Council (NPCC, p.8) • Integrate balanced adaptation and mitigation measures into policies and plans on environment and natural resources (NPCC, p.11) • Establish an inter-ministerial and cross-sectoral committee to enable the implementation of climate change measures (NPCC, p.8) • Enhance the coordination mechanism to oversee the planning, implementation and monitoring of climate change measures (NPCC, p.15) • Survey and document the biological diversity in Malaysia, and undertake studies to assess its direct and indirect values ... (NPBD, p.24) • Establish and reinforce the mechanisms for planning, administration and management of biological diversity (NPBD, p.24) • Ensure that all major sectoral planning and development activities incorporate considerations of biological diversity management (NPBD, p.25)

Instruments	SCP-Related Instruments
	• ... strengthening the structure of timber industry to make Malaysia the top supplier of high quality timber products ... (NATIP, p.58) • ... The government has introduced various measures to ... [ensure sustainable supply of raw materials] ... These measures include, enhancing the SFM as well as the Forest Plantations Programme (FPP) .... (NATIP, p.15) • ... the FPP is to be enhanced in order to ensure that there is a sustainable and sufficient supply of raw materials for the timber industry in the long term ... (NATIP, p.19) • ... encouraging active planting programmes for good quality timber in the natural forests ... (NATIP, p.40) **Enabling technology and economic innovation for SCP** • In manufacturing, the intense competition from low-end product's manufacturers forces the industry to move up the value-chain from OEM to ODM-based manufacturing, by adopting modern processing technologies. These include the adoption of automation, manufacturing flexibility, digital and scanning technology capable of producing high quality, original design and diversified products (NATIP, p.55) • More universities will be encouraged to offer training courses in forest plantations and management (NATIP, p.89) • Among the key tasks of this function would be: Ensuring M&E is an integral part of programme design, Updating action plan based on outcome indicators – to carry on the 'live' nature of the plan, Report on progress of initiative in the action plan to the national SME Development Council (NSDC) (SMEMP, p.68) • Specific programmes will be implemented to nurture local SMEs as R&D partners to tap the opportunities of R&D outsourcing by MNCs and GLCs. Measures will also be undertaken to encourage collaborative ventures among MNCs, GLCs and SMEs to facilitate technology transfers and skills development. Existing programmes for enhancing technological capabilities and supporting R&D activities among SMEs will be strengthened. The scope of coverage of the programmes will be expanded to include the acquisition of 'bridging technologies' (IMP3, p.192) • ... establishing specialised high technology parks for certain promoted industries ... (IMP3, p.153) • The studies covered areas in both the upstream (forestry) and downstream (wood-based products, and technology development and enhancement) segments (IMP3, p.433) • Incorporate and facilitate implementation of climate-friendly measures and technologies ... (NPCC, p.9) • ... stage-based climate-friendly technology transfer programme ... (NPCC, p.17) • Expansion of local research institutes and institutions of higher learning to expand Research, Development and Innovation activities on Green Technology towards commercialization through appropriate mechanisms (NGTP, p.10) • Exploitation of brain gain programmes to strengthen local expertise in Green Technology (NGTP, p.17) • Establishment of an effective coordinating agency for RDI and Centre of Excellence or new research institute for Green Technology development (NGTP, p.18) • Establish Malaysia as a centre of excellence in industrial research in tropical diversity (NPBD, p.24) • (h) to co-opt any persons or bodies to form panels of experts whom he considers capable of assisting him in relation to special problems (EQA, p.14) • (m) to establish and maintain liaison and co-operation with each of the State Authorities in Malaysia and with other countries with respect to environment protection, pollution control and waste management (EQA, p.14) • (o) to promote, encourage, co-ordinate and carry out planning in environmental management, waste management and pollution control (EQA, p.15)

Instruments	SCP-Related Instruments
	Changing unsustainable production patterns • Two major initiatives were launched to ensure sustainable use of forests and their natural resources ... [by implementing] the Central Forest Spine ... and Heart of Borneo ... (10MP, p.49) • Promoting projects eligible for carbon credits (10MP, p.26) • ... enhancing market visibility and strengthening the credibility of Malaysian goods and services (10MP, p.101) • ... provide ready-to-use facilities that are compliant with international standards such as Good Manufacturing Practices (GMP) and Hazard Analysis and Critical Control Point (HACCP) ... (10MP, p.157) • ... the Government will work with TNB to make co-generation economically viable ... (ETP, p.190) • Government will work with TNB to make co-generation economically viable. This initiative is expected to generate RM1.3 billion of GNI by 2020 and will require a review of the TNB tariff on three fronts: (1) increasing the overall tariff by rationalising current subsidies to create a greater urge for more energy efficiency, (2) decreasing the stand-by tariff to encourage more users to use this option and lastly, (3) increasing the buy-back tariff to make it more attractive for industries to co-generate electricity and sell the excess energy back to TNB (ETP, p.191) • [The EPP4 of Palm Oil and Rubber] will be implemented with five key activities ... Incentivising local companies to set up plants through joint ventures abroad ... Exploiting synergies with petrochemical companies; and Encouraging foreign investors to set up factories or enter into joint ventures in Malaysia (ETP, p.298) • For [solar power development] to succeed ... adequate business models need to be developed, including ... public-private partnerships and the role of the Government, the incumbent generator, TNB and private operators ... (ETP, p.197) • The government through ... (MPIC) is now aggressively implementing commercial forest plantation programmes that require the planting 0f 375,000 hectares of trees over the next 15 years (2006-2020) ... The private sector is encouraged to participate in these programmes and as an incentive, long term financing will be made available to the investor at low interest rates (NATIP, p.33) • ... encouraging more active private sector investments and participation in the forest plantations programme ... (NATIP, p.40) • ... encouraging active planting programmes for good quality timber in the natural forests ... (NATIP, p.40) • 8 Entry Point Project (EPP) under the NKEA ... to accelerate replanting activities of palm oil plant, increasing the outcome of FFB, increasing the oil extraction rates, develop Biogas in palm oil factory, developing the derivative of oleo chemical, commercialising the bio-material fire second generation and accelerate the growth of downstream segment base on the food and health (ETP, p.21) • Strengthen Market of Herbs and Spices - The industrial economic base of herbs and spices will enhanced through research and networking with international pharmaceutical companies, especially in identifying the species, variety or accession of herbs and spices for development of high-value products such as cosmeceutical and phytomedicine (NAFP, p.92) • Enhancement cooperation with the state government: Cooperation between the ministries and department in the central and state government will be enhanced to facilitate private investment in agriculture, particularly in terms of procedures and regulations relating to agro-business including the availability of land suitable for agriculture (NAFP, p.38) • Smart partnership between government research agencies, university and industries will be intensifies to spur market oriented R & D and ensure the transfer and commercialization of R & D is more smoothly. Networking between researchers, extension officers and target grouping will be strengthened through demonstration farm or demonstration plots in

Instruments	SCP-Related Instruments
	commercial fields to accelerate technology transfer. Dialogues and seminars on exchange on exchange of information related to innovation required by the industry will be implemented on a periodic basis with the participation of research agencies and institutions concerned (NAFP, p.36) • The private sector and cooperatives will also be encourages to rent out equipment and provide services to expand the use of agricultural technology and mechanization especially among agricultural entrepreneurs who have no financial ability or skill to use these technologies (NAFP, p.28) • Strengthen the Quality and Safety of AgroTourism Industry - Certification and rating for agrotourism products and locations will be introduced to ensure the quality, safety and sustainability of agrotourism industry. MOA will cooperate with the Ministry of Tourism to set Standards for this certification (NAFP, p.112) • SMEs will be encouraged to improve quality and strengthen method of packaging, labelling and branding of products, and ensure consistency of product supply for the market opportunities offered by the supermarket, hypermarkets and export market (NAFP, p.104) • Improve Food Quality and Safety - Emphasis will be given on food quality and safety aspects to enhance competitiveness and market shares of agro-based industry products. Quality and food safety will be enhanced through the expansion of GMP and HACCP and encouraging entrepreneurs to obtain halal certification (NAFP, p.104) • Increase Supply of Quality Seed - The private sector will be encouraged to operate seed production centres that comply with SOPs provided by the Government, for the production of high quality mushroom seeds. These production centres will be accredited under the Seed Certification Scheme. The Government through the Mushroom Germplasm Storage Centre will work the private seed production centres to provide cultures and basic seed (NAFP, p.98) • Ensure Consistent Supply of Quality Seed - Herbs and spices seed producing centres are required to comply with the SOP for seed production and obtain accreditation under Seen Certification Scheme (NAFP, p.89) • Encourage operator to comply with good agricultural and manufacturing practices through certification schemes such as Malaysia Farm Practices Scheme (SALM) (NAFP, p.97) • Agricultural entrepreneurs will be encouraged to practice innovation in the upstream and downstream activities in order to reduce production costs and improve the quality and attractiveness of agricultural products, especially in terms of packaging and branding (NAFP, p.6) • Facilitate market access: to gain greater market access, the quality of agricultural products will be enhanced to comply with the prescribed international standards. In this case, good agricultural practices will be extended in the upstream level. The 3P regulation for grading, packaging and labelling of agrofood product will be expanded to the local agricultural produce and imports to ensure quality, safety and enhance the competitiveness of agricultural products (NAFP, p.31) • Intensify the promotion and nurturing of practices, method of handling, distribution and marketing of a cleaner fish and fishery products, quality and safe to eat as well as compliance with international standards. These include the use of food grade insulated fish boxes, clean sources of ice supply, method of packaging and labelling according to standards and prevent the use of illegal preservatives (NAFP, p.56) • ... nurturing exemplary corporate social responsibility (IMP3, p.628) • SMIDEC, in collaboration with technology based institutions, such as SIRIM Berhad, MTDC, MDeC and Malaysia Bio-Technology Corporation, will introduce technology foresight programmes for SMEs which will enable them to be aware of and take advantage of future technologies (IMP3, p.191) • ... provide appropriate support programmes to enable industry to adopt environment-friendly technologies (IMP3, p.636)

Instruments	SCP-Related Instruments
	• Promote and increase EE in industrial sectors through ... the adoption of EE practices by new industries (NPCC, p.13) • Increased Foreign and Domestic Direct Investments (FDIs and DDIs) in Green Technology manufacturing and services sectors (NGTP, p.10) • Demonstration programmes of effective Green Technology applications (NGTP, p.19) • Adoption of Green Technology in all Government facilities and Government-linked entities (NGTP, p.19) • Strengthen Cooperation Among Stakeholders of Agrotourism - Collaboration between Government agencies and agrotourism industry players will continue to be strengthened to spur the growth of this industry (NAFP, p.112) • The following strategies have been identified for developing the food agro-based industries: Strengthen global marketing and networking (NAFP, p.103) • An owner or occupier of a premises shall submit a program to the Director General and implement such program to ensure that all existing sewage treatment systems, except the communal septic tanks and imhoff tanks ... (EQASW, p.3888) **Changing unsustainable consumption patterns** • ... the negotiation for a Malaysia-EU Forest Law Enforcement, Governance and Trade, Voluntary Partnership Agreement (FLEGT, VPA) will enhance market access to the EU for Malaysia's timber products. These initiatives, supported by good environment and forest management practices, would increase the confidence of consumers and gain further market recognition for Malaysia's timber product. Such initiatives have to be actively promoted to project Malaysia's image as a responsible long-term producer and exporter of timber and timber product from sustainably managed forests (NATIP, p.72) • ... encourage the growth of the domestic market through intensive promotional activities (NATIP, p.74) • Guarantee food safety and nutrition through the Food-based Social Safety Network Programme and nutrition awareness campaigns (NAFP, p.3) • Programmes and campaigns sponsored by corporate sector will be promoted to disseminate information relating to nutritional value of various local foods (NAFP, p.26) **Applying life-cycle thinking** - No Entry -
Partnering	**General issues of sustainability** • Initiating public-private CSR [corporate social responsibilities] initiatives around protection of flagship species (10MP, p.26) • ... strengthening the structure of timber industry to make Malaysia the top supplier of high quality timber products (NATIP, p.58) • ... identify marketing strategies to project the strength of the Malaysia timber industry, taking into account the changing environment of the international market ... (NATIP, p.74) • The Indonesia-Malaysia-Thailand Growth Triangle (IMT-GT); seamless, progressive, prosperous and peaceful sub-region with improve quality of life (NPP2, p.3-10) • The Brunei Darulssalam-Indonesia-Malaysia-Philippines East ASEAN Growth Area (BIMP-EAGA); goals to increase trade, investments and tourism in the sub-region by facilitating (NPP2, p.3-10) • Identify and review existing mechanisms to facilitate the exchange of information relevant to the conservation and sustainable use of biological diversity (NPBD, p.37) • Establish or strengthen systems for the exchange of such information at national and international levels through networking, and by establishing data bases and information centres ... (NPBD, p.37)

Instruments	SCP-Related Instruments
	Moving towards a green economy • Facilitating greater participation of local communities in eco-tourism activities ... (10MP, p.26) • Establish an inter-ministerial and cross-sectoral committee to enable the implementation of climate change measures (NPCC, p.8) • Promote international cooperation and collaboration in order to enhance national efforts in biological diversity conservation and management (NPBD, p.26) • Promote regional collaboration in biological diversity in particular on transboundary issues e.g. establishment of transfrontier national parks, and the effects of pollution on biological transfer (NPBD, p.37) **Enabling technology and economic innovation for SCP** • ... Expanding participation in the regional value chain: We aim to expand our participation in the region by acquiring foreign firms, undertaking contract farming activities overseas and providing regional services in niche areas such as molecular marker discovery and validation for breeding (ETP, p.42) • By mid-2011, KeTTHA will determine the scope of the database and the indicators that need to be collected as well as communicate roles and responsibilities to the relevant industry associations (ETP, p.417) • ... strengthening R&D efforts between RIs [research institutes], universities, government agencies and the industry ... (NATIP, p.58) • ... enhancing collaboration with institutions of higher learning in ... R&D; and designing programmes for the continuing education of workers ... (IMP3, p.661) • ... closer collaboration with specialised Government research institutions and universities ... (IMP3, p.192) • ... upgrading the quality of the workforce through collaborations between universities and the industry ... (IMP3, p.267) • ... undertaking internship and exchange programmes to facilitate the matching skills requirements by the industry (IMP3, p.267) • Revitalise role of overseas trade offices - Malaysia's overseas trade office can play a greater active role in assisting SMEs to internationalise their product and services (SMEMP, p.107) • –... strengthen the role of the Institute Plantation and Commodity Malaysia (IMPAC) including engagement with the industry (NCP, p. 17) • .... enhance environmentally-friendly rubber products commercialisation such as ecoprena for green tyre production and pureprena for engineering industry, automotive, marine and medical applications (NCP, p.30) • ... strengthen the cooperation between industry and higher learning institution ... integrated environmentally-friendly processing technology (NCP, p.30) • .... strengthen R&D&C sinergy amongst research institutions, higher learning institutions, government agencies and industry towards continuously increase the value added of products such as glulaminated timber (glulam) and Industrialised Building System (IBS) wood-based in the higher engineering construction sector (NCP, p.36) • ... intensify research, development and commercialisation (R&D&C) (NCP, p.57) • ... encourage cooperation with research institutions, higher learning institutions and industry for R&D&C to produce high value added Kenaf based products (NCP, p.57) • ... enhance cooperation with research agencies to increase existing and new technology (NCP, p.63) • Strengthen collaborative networks and capacity of agencies at the federal, state and local government levels (NPCC, p.18) • Institutionalise a mechanism for coordinating consultation among stakeholders on national positions and responses to address current and emerging issues for international negotiations (NPCC, p.20)

Instruments	SCP-Related Instruments
	• Promote regional cooperation on climate change within existing inter-governmental and non-governmental mechanisms (NPCC, p.20) • Enhancement of smart partnerships between the Government, industries, and research institutions [on green technologies and RDIC] (NGTP, p.18) • Establishment of strong linkages between local research institutions and regional and international centres of excellence in Green Technology RDI (NGTP, p.18) • Facilitate contacts between private sector and public sector in order to improve design and transfer of appropriate technology, including biotechnology (NPBD, p.32) • Encourage the formation of appropriate joint venture projects with multinational and other corporations to encourage science and technology transfer in enhancing the economic value of biological diversity (NPBD, p.32) • Encourage partnering approach to provide total solutions ... Partnership may occur in varying degree from the traditional design and build method, to project partnering and finally to strategic partnering alliances ... (CIMP, p.14) • ... Stimulate R&D activities through resource-pooling initiative amongst key players and provision of R&D infrastructure (CIMP, p.12) • ... strengthening R&D efforts between RIs [research institutes], universities, government agencies and the industry ... (NATIP, p.58) • In addition, the negotiation for a Malaysia-EU Forest Law Enforcement, Governance and Trade, Voluntary Partnership Agreement (FLEGT, VPA) will enhance market access to the EU for Malaysia's timber products. These initiatives, supported by good environment and forest management practices, would increase the confidence of consumers and gain further market recognition for Malaysia's timber product. Such initiatives have to be actively promoted to project Malaysia's image as a responsible long-term producer and exporter of timber and timber product from sustainably managed forests (NATIP, p.72) **Changing unsustainable production patterns** • ... to provide support in the establishment and maintenance of green spaces as part of their corporate social responsibility programmes (10MP, p.257) • The Government will collaborate with Malaysian-owned companies to … encourage companies to utilize raw materials and energy more efficiency in their production processes; ensure the sustainable management and utilization of resources in the pursuit of agricultural and forestry development (IMP3, p.636) • ... identifying GLCs and specifying the RE targets [ranging between 3-30%] (NREPAP, p.56) • Involve Existing MNCs in RE Activities ... [as they] have a long standing relationship with local suppliers. ... This requires KeTTHA or the Government appointed agency to engage with MNCs to discuss ways by which they can help and what Government can offer as incentives (NREPAP, p.56) • ... Encourage more private sector participation in forest plantation - ... the government through Ministry of Plantation Industries and Commodities (MPIC) is now aggressively implementing commercial forest plantation programmes that require the planting 0f 375,000 hectares of trees over the next 15 years (2006-2020) ... the private sector is encouraged to participate in these programmes and as an incentive, long term financing will be made available to the investor at low interest rate (NATIP, p.33) • ... encouraging more active private sector investments and participation in the forest plantation programme (NATIP, p.40) **Changing unsustainable consumption** - No Entry - **Applying life-cycle thinking** - No Entry -

ANNEX 7

SCP-RELATED INCENTIVES

No.	SCP-Related Initiatives	Implementer	Target Groups/Sectors	Brief Description of the Incentives/Objectives
1.	Fiscal Incentives For Waste Water (Storage, Treatment and Disposal of Toxic and Hazardous Wastes)	MIDA	Companies that are directly involved in Storage, Treatment and Disposal of Toxic and Hazardous Wastes	Incentives to encourage the setting up of proper facilities to store, treat and dispose of toxic and hazardous wastes. Companies that are directly involved in these three activities in an integrated manner qualify for: • Pioneer Status, with income tax exemption of 70% of the statutory income for a period of five years. Unabsorbed capital allowances as well as accumulated losses incurred during the pioneer period can be carried forward and deducted from the post pioneer income of the company; or • Investment Tax Allowance of 60% on the qualifying capital expenditure incurred within a period of five years. The allowance can be offset against 70% of the statutory income in each year of assessment. Any unutilised allowances can be carried forward to subsequent years until fully utilised.
2.	Fiscal Incentives For Waste Water (Waste Recycling Activities)	MIDA	Companies undertaking waste recycling activities that are high value-added and use high technology	Companies undertaking waste recycling activities that are high value-added and use high technology are eligible for Pioneer Status or Investment Tax Allowance. These activities which include the recycling of agricultural wastes or agricultural by-products, recycling of chemicals and the production of reconstituted wood-based panel boards or products are eligible for: • Pioneer Status, with income tax exemption of 70% of the statutory income for a period of five years. Unabsorbed capital allowances as well as accumulated losses incurred during the pioneer period can be carried forward and deducted from the post pioneer income of the company; or • Investment Tax Allowance of 60% on the qualifying capital expenditure incurred within a period of five years. The allowance can be offset against 70% of the statutory income in each year of assessment. Any unutilised allowances can be carried forward to subsequent years until fully utilised.

No.	SCP-Related Initiatives	Implementer	Target Groups/Sectors	Brief Description of the Incentives/Objectives
3.	Fiscal Incentive for Energy (Companies Providing Energy Conservation Services)	MIDA	Companies Providing Energy Conservation Services	These activities which include the recycling of agricultural wastes or agricultural by-products, recycling of chemicals and the production of reconstituted wood-based panel boards or products are eligible for: • Pioneer Status with income tax exemption of 100% of the statutory income for a period of ten years. Unabsorbed capital allowances as well as accumulated losses incurred during the pioneer period can be carried forward and deducted from the post pioneer income of the company; or • Investment Tax Allowance of 100% on the qualifying capital expenditure incurred within five years. The allowance can be offset against 100% of the statutory income for each year of assessment. Any unutilised allowances can be carried forward to subsequent years until fully utilised. • The companies must implement their projects within one year from the date of approval. • Applications received by 31 December 2015 are eligible for this incentive
4.	Fiscal Incentive for Energy (Energy Generation Activities Using Renewable Energy Resources)	MIDA	Companies undertaking generation of energy using biomass, hydropower (not exceeding 10 megawatts) and solar power that are renewable and environmentally friendly	• Pioneer Status with income tax exemption of 100% of statutory income for ten years. Unabsorbed capital allowances as well as accumulated losses incurred during the pioneer period can be carried forward and deducted from the post pioneer income of the company; or • Investment Tax Allowance of 100% on the qualifying capital expenditure incurred within five years. The allowance can be offset against 100% of the statutory income for each year of assessment. Any unutilised allowances can be carried forward to subsequent years until fully utilised. • With effect from 8 September 2007, other companies in the same group are eligible for the same incentives as above even though one company in the same group has been granted the incentive. • For the purpose of this incentive, 'biomass sources' refer to palm oil mill/estate waste, rice mill waste, sugar cane mill waste, timber/ sawmill waste, paper recycling mill waste, municipal waste and biogas [from landfill, palm oil mill effluent (POME), animal waste and others], while energy forms refer to electricity, steam, chilled water, and heat. • Companies must implement their projects within one year from the date of approval. • Applications received by 31 December 2015 are eligible for this incentive.

No.	SCP-Related Initiatives	Implementer	Target Groups/Sectors	Brief Description of the Incentives/Objectives
5.	Fiscal Incentive for Energy (Generation of Renewable Energy for Own Consumption)	MIDA	Companies which generate energy from renewable resources for its own consumption	• Investment Tax Allowance of 100% on the qualifying capital expenditure incurred within five years. The allowance can be offset against 100% of the statutory income for each year of assessment. Any unutilised allowances can be carried forward to subsequent years until fully utilised. • Applications received by 31 December 2015 are eligible for this incentive.
6.	Fiscal Incentive for Energy (Solar Photovoltaic System Equipment)	MIDA	Companies which generate energy from renewable resources for its own consumption	• Import duty and sales tax exemption on solar photovoltaic system equipment for the usage by third parties is given to importers including photovoltaic service providers approved by the Energy Commission; and • Sales tax exemption is given on the purchase of solar heating system equipment from local manufacturers.
7.	Fiscal Incentive for Energy (Energy Efficiency Equipment)	MIDA	Companies which generate energy from renewable resources for its own consumption	• Import duty and sales tax exemption on energy efficiency (EE) equipment such as high efficiency motors and insulation materials to importers including authorised agents approved by the Energy Commission; and • Sales tax exemption is given on the purchase of locally manufactured EE consumer goods such as refrigerator, air conditioner, lightings, fan and television.
8.	Fiscal Incentive for Energy (Utilisation of Oil Palm Biomass)	MIDA	Companies that utilise oil palm biomass to produce value-added products such as particleboard, medium density fibreboard, plywood, and pulp and paper	New Companies • Pioneer Status with income tax exemption of 100% of the statutory income for a period of ten years. Unabsorbed capital allowances as well as accumulated losses incurred during the pioneer period can be carried forward and deducted from the post pioneer income of the company; or • Investment Tax Allowance of 100% on the qualifying capital expenditure incurred within a period of five years. The allowance can be offset against 100% of the statutory income for each year of assessment. Any unutilised allowances can be carried forward to subsequent years until fully utilised.

No.	SCP-Related Initiatives	Implementer	Target Groups/Sectors	Brief Description of the Incentives/Objectives
				Existing Companies that Reinvest • Pioneer Status with income tax exemption of 100% of the increased statutory income arising from the reinvestment for a period of ten years. Unabsorbed capital allowances as well as accumulated losses incurred during the pioneer period can be carried forward and deducted from the post pioneer income of the company; or • Investment Tax Allowance of 100% on the additional qualifying capital expenditure incurred within a period of five years. The allowance can be offset against 100% of the statutory income for each year of assessment. Any unutilised allowances can be carried forward to subsequent years until fully utilised.
9.	Fiscal Incentive for Energy (SAVE Rebate Program)	MIDA	Final end user through the retailers of electronic appliances	To create a culture of efficient energy usage among general public and business entities. This initiative targets the final end user through the retailers of electronic appliances and will generate up to 7,300 GWh of energy saved by the year 2020. Year Granted 2011. Incentives • 100,000 rebate vouchers for 5-Star rated refrigerators and 65,000 vouchers for 5-Star rated air conditioners have been allocated to states across Malaysia, calculated based on the total budget allocation for 2011. • Rebates will be awarded on a first-come, first-served basis to qualified domestic consumers who purchase 5-Star rated refrigerators, air conditioners or chillers during the rebate offer period through participating retailers.
10.	Fiscal Incentive for Energy (Feed-in Tariff; FiT)	SEDA		Introduction of the Feed-in tariff (FiT) to Malaysia began as early as 2004, and in 2011, the years of effort finally culminated in the passing of the two laws related to sustainable energy. The result is the dawn of a new era for Malaysia in a move towards achieving energy autonomy and mitigating climate change. Year Granted 2011. Incentives The applicable FiT rate will depend on the following factors: • The type of renewable resource used - Biomass (inclusive of municipal solid waste), biogas (inclusive of landfill/sewage), small hydro and solar photovoltaic. The rationales for selecting these renewable resources are based on proven technologies and technical potential under the local environment.

No.	SCP-Related Initiatives	Implementer	Target Groups/Sectors	Brief Description of the Incentives/Objectives
				- • The installed capacity of the renewable energy (RE) installation - The maximum installed capacity of all eligible RE installations is 30MW unless special approval from the Minister is obtained. The FiT rate is lower as installed capacities increase, due to cost optimization from economies of scale. - The FIT Scheme is not financed by the government. Instead it will be financed by the electricity consumers themselves who will contribute an additional one percent (1%) of their total electricity bills through a tariff adjustment formula when the gas price for power generation and the associated utility tariffs are revised in due course. However, those customers who consume 200 units of electricity or less will not have their tariffs raised to accommodate this mechanism to pay towards the fund. • Whether the RE installation will meet any criteria entitling it to additional bonus FiT rates - Additional FiT rates will be given for those RE installations that meet the criteria entitling it to additional bonus FiT rates. • The date the RE installation is completed connected to the grid and ready to produce RE for commercial sale i.e. the FiT Commencement Date. - The FiT rates for all renewable resources (except for small hydropower) will decrease with time according to their respective annual degression rates. The degression occurs at the start of each new calendar year from 2013 onwards. The degressed or reduced FiT rate for each RE installation is determined by the applicable rate at the time of its FiT Commencement Date. Thus RE installations that are completed in later years will have a lower FiT rate. However, the rate will not be reduced any further once the FiT Commencement Date has been achieved. The basis of the degression rate is that the costs of the RE technologies just like any other technologies are expected to drop as the technologies mature. The digressions rate therefore reflects the maturity and the existing cost reduction potential of all renewable resources (except for small hydropower).

No.	SCP-Related Initiatives	Implementer	Target Groups/Sectors	Brief Description of the Incentives/Objectives
11.	Fiscal Incentive for Building (Building Obtaining Green Building Index Certificate)	MIDA	Owners of buildings awarded the GBI certificate; and buyers of buildings and residential properties awarded GBI certificate bought from real property developers	In order to widen the usage of green technology, the Government has launched the Green Building Index (GBI) on 21 May 2009. GBI is a green rating index on environment-friendly buildings. The index is based on certain criteria amongst which are: • Energy and water efficiency; • Indoor environmental quality; • Sustainable management and planning of building sites in respect of pollution control and facilities for workers; • Usage of recyclable and environment friendly materials and resources; and • Adoption of new technology. Incentive • Owners of buildings awarded the GBI certificate, are eligible for tax exemption equivalent to 100% of the additional capital expenditure incurred to obtain the GBI certificate. The exemption is allowed to set-off against 100% of the statutory income for each year of assessment. The incentive is applicable for new buildings and upgrading of existing buildings. • Buyers of buildings and residential properties awarded GBI certificate bought from real property developers are eligible for stamp duty exemption on instruments of transfer of ownership of such buildings. The amount of stamp duty exemption is on the additional cost incurred to obtain the GBI certificate. The incentive is given only once to the first owner of the building. • For owners of buildings awarded the GBI certificate, the incentive is given only for the first GBI certificate issued in respect of the building. • This incentive is effective for buildings awarded with GBI certificates from 24 October 2009 until 31 December 2014. • For buyers of buildings and residential properties awarded GBI certificate bought from real property developers, the incentive is effective for sales and purchase agreement executed from 24 October 2009 until 31 December 2014.

No.	SCP-Related Initiatives	Implementer	Target Groups/Sectors	Brief Description of the Incentives/Objectives
12.	Fiscal Incentives for Environment (Environmental Management)	IRB/KeTTHA	Companies using environmental protection equipment. These companies are: • Waste generators and wish to establish facilities to store, treat and dispose off their wastes, either on-site or off-site; and • Undertake waste recycling activities	• Companies using environmental protection equipment are eligible for an initial allowance of 40% and an annual allowance of 20% on the qualifying capital expenditure. Thus, the full amount can be written off within three years. • In the case of companies that incur capital expenditure for conserving their own energy for consumption, the write-off period is accelerated by another one year. • Applications should be submitted to IRB with a letter from the KeTTHA certifying that the related equipment is used exclusively for the purpose of energy conservation
13.	Fiscal Incentives for Environment (Reduction of Greenhouse Gas Emission)	MOF	Companies involved in Certified Emission Reductions (CERs) certificate trading	• Income derived from trading of Certified Emission Reductions (CERs) certificate is given tax exemption
14.	Fiscal Incentive for Transportation (Electric Vehicle/ Hybrid Cars)	MOF	Local car manufacturers and assemblers	Generally, the importation of completely built-up (CBU) cars including hybrid cars below 2000cc is subject to import duty, excise duty and sales tax that range from 10% to 80%. Incentive • To promote Malaysia as a regional hub for hybrid cars and as an incentive for local car manufacturers and assemblers to prepare for assembly of such cars domestically, franchise holders of hybrid cars are given 100% exemption on import duty and 50% exemption of excise duty on new CBU hybrid cars. Criteria and conditions • Hybrid cars should comply with the United Nations definition – 'A vehicle with at least two different energy converters and two different energy storage systems (gasoline and electric) on-board the vehicle for the purpose of vehicle propulsion' • Limited to new CBU hybrid passenger cars with engine capacity below 2000 cc; • Engine specification of at least Euro 3 Technology; Hybrid cars certified by the Road Transport Department, obtaining Vehicle Type Approval and certified to have achieved not less than a 50% increase in the city-fuel economy or not less than a 25% increase in combined city highway fuel economy relative to a comparable vehicle that is an internal combustion gasoline fuel; and • Emission of carbon monoxide of less than 2.3 gram per kilometre. • From 30 December 2011 until 31 December 2013 is eligible for these incentives.

No.	SCP-Related Initiatives	Implementer	Target Groups/Sectors	Brief Description of the Incentives/Objectives
15.	Fiscal Incentives for Green Business (Green Technology Financing Scheme; GTFS)	MGTC	Producer and user of green technology	GTFS is a special financing scheme introduced by the government to support the development of Green Technology in Malaysia. It was announced in the Budget 2010 with a total loan allocation of RM 1.5 billion. • Purpose - Producer of Green Technology - The Scheme granted shall be for the purpose of financing investments in production of green technologies that meets the Scheme objective. - User of Green Technology - The Scheme granted shall be for the purpose of financing investments in utilisation of green technologies that meets the Scheme objective. - To any case, the purpose shall not be to refinance existing credit facilities. • Scope of Funding/Form of Grant/Forms of Assistance - The Green technology Financing Scheme exists to help incorporating green technology elements in specific project related to the identified sectors. - These projects must be located within Malaysia, utilising local and imported technology. - This scheme is only eligible for new project, retrofitting or expansion that incorporates GT elements which have not been funded and partly funded. The GTFS cannot accept applications for projects which are already underway, in construction phase (physical progress) or which have already been completed • Eligibility - Producer of Green Technology – Legally registered Malaysian owned companies (at least 51%) in all economic sectors.

No.	SCP-Related Initiatives	Implementer	Target Groups/Sectors	Brief Description of the Incentives/Objectives
				- User of Green technology - Legally registered Malaysian owned companies (at least 70%) in all economic sectors (Energy Sector, Building and Township Sector, Water & Waste Management Sector) • Terms and Conditions/Agreement Application Process 1) Project Certification (Technical) - All application shall be submitted to Malaysian Green Technology Corporation (MGTC). - MGTC will process upon receive of complete and valid application. - MGTC will issue Notification Letter of to the successful and non successful applicant. - Successful applicant will receive Project Certificate. - Applicant shall furnish explanation or additional information during the evaluation period that are necessary to support the application within 3 working days. 2) Financing Application - Successful applicant shall be able to submit financing application with Project Certificate and its relevant documents to any participating financial institutions. - All applicants should follow and comply with the procedures and guidelines of the respective financial institutions. - The respective Financial Institutions will issue a Letter of Offer (LO) to successful applicant. The government will bare 2% of the total interest rate or profit. 3) Guarantee Approval - Credit Guarantee Corporation Malaysia Berhad (CGC) will provide a guarantee of 60% on the financing amount. Upon guarantee approval, the CGC will issue a Letter of Guarantee to Applicant and guarantee fee of 0.5% per annum to total guarantee applies. Copy of the letter will be send to the respective Financial Institutions and MGTC. 4) Financing Execution (Agreement and Documentation) - Upon receipt of the acceptance of Letter of Guarantee by the CGC, the respective Financial Institutions will proceed with financing agreement. - Fund Disbursement - Fund disbursement/repayment of Financing will follow the respective financial institutions procedures.

No.	SCP-Related Initiatives	Implementer	Target Groups/Sectors	Brief Description of the Incentives/Objectives
				5) Project Outcome - Project Monitoring and Verification Applicant shall submit Project Progress Report to MGTC during project implementation. - Upon commissioning, applicant shall submit Project Outcome Report every three month to MGTC with format and period specified by MGTC. - Project Impact upon completion of Project Monitoring and Verification, applicant shall submit project Impact study with format specified by MGTC. 6) Approval criteria - The technology has clearly defined utility for R&D or other biotechnology-related undertaking in at least three named entities within the BioNexus network (including BioNexus partners); - The technology has identifiable advantage(s) over facilities already available within the BioNexus network, either by offering new capabilities or by giving measurable benefits in terms of speed, accuracy, capacity or any other suitable parameter; - The technology has defined function in the development of potentially commercialisable products or services; - The technology is expected to have a long-term role in the development of the biotechnology industry within Malaysia; and - The acquired technology is to be located at the relevant national research institutions or institutes of higher learning. • GTFS Application can only be made online www.gtfs.my.
16.	Fiscal Incentives for Green Business (Non-ICT Fund - Venture Capital)	MTDC	Malaysian companies dealing with life sciences and biotechnology project.	Focus on start-up and expansion projects for life sciences and biotechnology. Also include green technology, waste-to-wealth technology and high precision manufacturing. • Eligibility Criteria - The minimum return required (IRR) is 25% per annum. Must have Malaysian centricity (manufacturing plant, etc) in business plan. Must have a clear exit plan whether IPO, trade sales or MBO. • Terms and Conditions/Agreement - Companies must sign Shareholders and Subscription Agreements. To a certain extent, a Put-option Agreement is required. - Companies must submit comprehensive Business Plan with detailed Financials (forecast Profit & Loss, Balance Sheet and Cash Flow) and exit plan. - Grant Provider: In the form of loans from the MOF.

No.	SCP-Related Initiatives	Implementer	Target Groups/Sectors	Brief Description of the Incentives/Objectives
17.	Fiscal Incentives for Green Business (Commerce Technology Ventures Funds)	CTVSB	High technology companies engaged in products/services related to Promoted Activities as defined under Promotion of Investment Act 1986 for Pioneer Status, Investment Tax Allowance and Multimedia Super Corridor-related projects. The following are the broad industry categories for investment participation: • Information and Communication Technology Software • Internet • Digital Media & Entertainment • Computer Telephony and others • Advanced Manufacturing • Electronics • Advanced Materials, Automation &Flexible Manufacturing • Opto-electronics and others • Life Sciences Biotechnology • Healthcare • Pharmaceutical • Environmental Technology and others	Commerce Technology Ventures Sdn. Bhd. (CTVSB) represents the partnership of Bank Negara Malaysia and the Commerce Group in promoting and developing technology financing in Malaysia. CTVSB is a venture capital company providing equity and mezzanine capital to viable, innovative, high-growth and emerging companies. It seeks to support talented entrepreneurs in realising their vision of building and nurturing competitive and resilient technology-based companies. • Strategic Partnership - CTV subscribes to the Commerce brand of a focused, active and disciplined investment process combined with synergistic networking. The investment philosophy is one based upon active, hands-on equity investments with growth management through value creation. The partnership seeks to deliver value through strategic business planning, fund-raising, financial modelling, corporate exercises, exit route planning, networking, business plan development and valuation. • Form Of Assistance - CTV is a RM150 million fund with a ten-year life. Its investments may cover businesses at various stages of development from start-up, early stage to expansion. Investment size ranges from RM0.5 - 5.0 million for start-up and early stage and up to RM10 million for later stage businesses. • A business plan, which may follow the format below, is required: - Executive Summary - Business History - The Product or Service - The Market/Marketing - The Competition - Manufacturing and Research & Development Operations (if applicable) - Management - Financial Projection • A sound business plan requires a lot of time and resources. It is of paramount importance that the entrepreneur and the management team are involved in every aspect of its development. Only then will the business plan be the total embodiment of the entrepreneur's vision and spirit.

No.	SCP-Related Initiatives	Implementer	Target Groups/Sectors	Brief Description of the Incentives/Objectives
				• A business plan is a proposal to sell investors on the management and the venture. The business plan represents the company's strategies, planning and visions. It should contain the essence of a realistic vision and strategy for the company. They both must reflect the initial 'process' in which management subjects a creative idea to the intellectual discipline of logic, analysis and good business sense.
18.	Green Lane Policy	MOF	Certified companies by SME Corporation (through 1-InnoCERT Certification), Malaysian Biotechnology Corporation (Biotech), Multimedia Development Corporation (MDeC) and Malaysian Technology Development Corporation (MTDC)	Financial Facility • 2% interest rebate a year subject to maximum RM200,000 per year • Stamp Duty exemption on the loan agreement • Priority for Government Procurement • Tax Incentives (Single deduction on cost related to certification fees for the first time) • Fast track registration of e-procurement • Priority for Government Offset Programme • Consideration to be listed in the Central/Panel Contract • MKD Procurement (Priority in procurement of 100% MOF owned companies)
19.	Market Development Grant (MDG)	MATRADE	Companies, trade associations and professional bodies undertake activities for the development of export	Companies can obtain a 50% reimbursable matching grant on the approved cost of the eligible claims and activities Eligibility • SMEs - Incorporated under the Companies Act 1965; - At least 60% equity held by Malaysians; • Manufacturing and agricultural sector - Having an annual sales turnover not exceeding RM 25 million (based on the latest financial report) or not more than 150 full-time employees (based on latest EPF Statement) • Trading and services company (except for tourism, financial and insurance and property development) that meet the following conditions: - Having an annual sales turnover not exceeding RM 5 million (based on latest financial report) or not more than 50 full-time employees (based on latest EPF Statement); and - Exporting Made in Malaysia products or services. • Professional services (sole proprietor or partnership), that registered under associated Ministry or Professional Services Bodies. • Trade and Industry Associations and Professional Bodies

No.	SCP-Related Initiatives	Implementer	Target Groups/Sectors	Brief Description of the Incentives/Objectives
				• Trade and industry associations and professional bodies that registered under the Registrar of Society (ROS) or associated Professional Body. Grant • Claim for a maximum of RM 30,000.00 per year (e.g. 1 January – 31 December) and subject to first come first serve basis and availability of MDG fund.
20.	Claimable Expenses For SMEs	MATRADE	Small and Medium Enterprises (SMEs)	a) Participation in International/Local Trade Fair or Exhibition • Participation fee (if applicable). • Economy class airfare for two persons. Cost include return ticket (economy), fuel surcharge and airport tax. • Two hotel rooms not exceeding RM200 per night per room for local international trade fairs and RM1,000 per night per room for overseas trade fairs. Claimable period of accommodation is subject to a maximum of five (5) days for the whole duration of the event and two (2) additional days before or after the event. • Rental of standard booth which is limited to 18 square meters (sqm). • Advertisement in official trade fair show directory. For local international trade fair is subject to maximum cost of RM 1,000. For claims related to participation in Local International Trade Fairs, organizer of the event must submit the original trade fair audited report which audited by external auditor or chartered accountant with a copy of certificate of practice of the auditor and show directory booklet within two (2) months upon completion of the event. The report must certify that the fair conducted is an international standard trade fair by fulfilling the criteria follows: • Minimum space occupied for the fair must be at least 1,000 sq. meters - Mandatory (gross space) and; any one of the criteria below: • At least 10% of visitors must be foreign visitors, or • At least 20% net space is rented to foreign exhibitors, or • At least 20% of exhibitors are foreign exhibitors.

No.	SCP-Related Initiatives	Implementer	Target Groups/Sectors	Brief Description of the Incentives/Objectives
				Note: Companies are not eligible to claim any of the eligible expenses under MDG if any of the cost such as booth rental, airfare and accommodation is already borne by any government agency or the event organizer. b) Participation in International/Local Trade Fair or Exhibition particularly for Fashion Designer • Participation fee (if applicable). • Economy class airfare for two persons. Cost include return ticket (economy), fuel surcharge and airport tax. • Two hotel rooms not exceeding RM 200 per night per room for local international trade fairs and RM 1,000 per night per room for overseas trade fairs. Claimable period of accommodation is subject to a maximum of five (5) days for the whole duration of the event and two (2) additional days before or after the event. • Rental of standard booth which is limited to 18 square meters (sqm). • Advertisement in official trade fair show directory. For local international trade fair is subject to maximum cost of RM1,000. • Runway show cost and model services. The cost does not include taxes. c) Participation in Trade and Investment Mission or Specialized Marketing Mission Overseas • Participation fee • Economy class airfare for two persons. Cost include return ticket (economy), fuel surcharge and airport tax. • Two hotel rooms not exceeding RM 1,000 per night per room for overseas trade fairs. Claimable period of accommodation covering the whole duration of the event (still subject to MDG Committee approval) and two (2) additional days before or after the event. Note: • Trade and Investment or Specialise Marketing Mission must be organised by any Malaysian government agency, trade association or professional body that registered in Malaysia. It is compulsory that the organiser to submit the full report of the mission within two (2) months upon completion of the activity by using the MDG report format as been stipulated in MDG guidelines. If organiser fail to submit and comply to the report requirement, will cause rejection of company application.

No.	SCP-Related Initiatives	Implementer	Target Groups/Sectors	Brief Description of the Incentives/Objectives
				• Company participating in the mission must submit MDG application individually and still subject to MDG guidelines and requirements. d) Participation in Industry and Professional Related International Conferences Overseas. • Participation fee (if applicable). • Economy class airfare for two persons. Cost include return ticket (economy), fuel surcharge and airport tax. • Two hotel rooms not exceeding RM 1,000 per night per room for overseas conferences. Claimable period of accommodation is subject to a maximum of five (5) days for the whole duration of the event and two (2) additional days before or after the event. e) Participation in Malaysia Export Exhibition Center (MEEC) • Participation fee. Claimable Expenses For Trade And Industry Association And Professional a) Organizing International Trade Fair or Exhibition or Trade and Investment Mission or Specialized Marketing Mission Overseas. • Economy class airfare for two persons. Cost include return ticket (economy), fuel surcharge and airport tax. • Two hotel rooms not exceeding RM 1,000 per night per room for overseas trade fairs or trade missions. Claimable period of accommodation covering the whole duration of the event (still subject to MDG Committee approval) and two (2) additional days before or after the event. • Rental of standard booth which is limited to 18 square meters (sqm). • Advertisement in official trade fair show directory. b) Participation in International Trade Fair or Exhibition • Participation fee (if applicable). • Economy class airfare for two persons. Cost include return ticket (economy), fuel surcharge and airport tax.

No.	SCP-Related Initiatives	Implementer	Target Groups/Sectors	Brief Description of the Incentives/Objectives
				• Two hotel rooms not exceeding RM 1,000 per night per room for overseas trade fairs. Claimable period of accommodation is subject to a maximum of five (5) days for the whole duration of the event and two (2) additional days before or after the event. • Rental of standard booth which is limited to 18 square meters (sqm). • Advertisement in official trade fair show directory. c) Participation in Trade and Investment Mission or Specialized Marketing Mission Overseas • Participation fee. • Economy class airfare for two persons. Cost include return ticket (economy), fuel surcharge and airport tax. • Two hotel rooms not exceeding RM 1,000 per night per room for overseas trade missions. Claimable period of accommodation covering the whole duration of the event (still subject to MDG Committee approval) and two (2) additional days before or after the event. Eligible Activities for SMEs: a. Participation in Local or Overseas International Trade Fair/ Exhibition. b. Participation in Local or Overseas International Trade Fair/ Exhibition particularly for Fashion Designer. c. Participation in Trade and Investment Mission or Specialized Marketing Mission Overseas. d. Participation in Industry and Professional Related International Conferences Overseas. (The nature of the activity must be only for business networking or relationship purposes and it does not include training, workshop or “seminar” for acquiring skill and knowledge or product knowledge and development) e. Participation in Malaysia Export Exhibition Centre (MEEC), MATRADE. For Trade Association/Professional Body: a. Organizing International Trade Fair or Exhibition and Trade and Investment Mission Overseas. b. Participation in International Trade Fair or Exhibition Overseas. Participation in Trade and Investment or Specialize Marketing Mission Overseas.

No.	SCP-Related Initiatives	Implementer	Target Groups/Sectors	Brief Description of the Incentives/Objectives
				Application & Claim Procedures • Market Development Grant application form MDG 1/2011, can be downloaded for free at MATRADE website. Please log on to www.matrade.gov.my • MDG application and claim must be submitted within two (2) months upon completion of the activity. • Completed application and claim form must be attached together with the required supporting document as per checklist and claim document such as original receipt/bank statement/credit card statement/telegraphic transfer note or copies of these document which certified true copy by external auditor/chartered accountant/ authorised bank's officer/the issuer of the receipt together with invoices (in detail) for each claimed expenses. • It is mandatory to complete the MDG Evaluation Form. Fail to complete the form will cause delays in reimbursement of the grant. • Company must attach all supporting document required during the submission of MDG application and claim for entitlement of this grant. Delays in submitting the supporting document required will cause delays in reimbursement of the grant, whereas failure to provide the document within the stipulated period will cause rejection of the said application and claim without further notice. Changes to the new eligibilities, activities and claimable expenses under market development grant (MDG) scheme are effective on 1st January 2011 and these changes are subject to MDG terms and conditions on and changes from time to time and also availability of the fund.
21.	SME Innovation Award	SME CORP [SIRIM]		• Developed to identify suitable and capable SMEs who are eligible be placed in a Fast Track Programme (FTP)/Green Lane Policy to shorten time-to-market by providing ready access to capital risk, including for technology acquisition • The premier award to recognise the most innovative SME, out of six (6) sectors as follows: Green Technology Manufacturing Services ICT & Software Development Engineering & Industrial Design Biotechnology And Agro Technology

No.	SCP-Related Initiatives	Implementer	Target Groups/Sectors	Brief Description of the Incentives/Objectives
				• RM 1 million for Top Prize Winner • RM 200,000 for category Winner Qualifying Criteria • Must be a Malaysian registered SME and fulfil the definition of SMEs • At least 51% of the equity held by Malaysians • Certified as 1-InnoCERT At least 2 years in business (able to provide 1 year Audited Financial Statement)
22.	1-InnoCERT	SME CORP		• To foster and support innovative SMEs and enterprises to be global innovative competitive players • To identify and certify innovative SMEs and enterprises in Malaysia • Adopted from Korean model • Implement CERTIFICATION FOR INNOBIZ since 2001. • Passing mark of 700 and above out of 1000 points considered innovative SMEs Criteria • Innovation ability • Commercialisation ability • Innovation management • Innovation outcome Fee New Applicant • RM5,000 • Not including logistic cost of the auditors Re-Audit (After 2 years) • RM3,000 • Not including logistic cost of the auditors Benefit • Organization Ability to Innovate • Organization Ability to Produce and Commercialise • Management Ability to Plan, Manage, Respond to Change and Innovate • Organization Achievement (Financial, IPs, etc)

No.	SCP-Related Initiatives	Implementer	Target Groups/Sectors	Brief Description of the Incentives/Objectives
23.	Green Productivity	MPC		Green Productivity (GP) is a strategy for enhancing productivity and environmental performance for sustainable socio-economic development. It is the application of appropriate productivity and environmental management tools, techniques, technologies to reduce the environmental impact of organization's activities for products and services. Benefit • Cost reduction through increased resource and process efficiency • Enhanced customer value through environmentally friendly image • Increased competitiveness over other companies without environmental mandates • Reduced environmental impact as well as an improvement to health and safety risk management • Potential increased attractiveness in Europe and Japan where green products are more aggressively sought out
24.	Material Flow Cost Accounting (MFCA)	MPC		• It is one of the major tools of Environment Management Accounting (EMA) • EMA is a set of procedures used within corporations and other organizations for linking environmental considerations with economic pursuits • Covers not only the monetary calculation regularly handled by accounting but also extends to the calculation of materials on a physical basis. Internal Benefits: • Increased profit • Improving productivity External Benefits: • Reducing environmental impacts

Source: KeTTHA (2012)

Tables

Figures

Boxed Articles

Acronyms

ABM	Akademi Binaan Malaysia/Malaysian Building Academy
BPK	Bahagian Perolehan Kerajaan/Government Procurement Division
BSN	Bank Simpanan Nasional/National Saving Bank
DOE	Department of Environment
EC	Energy Commission
EDU	Economic Delivery Unit
EE	Energy Efficiency
EMEE	Efficient Management of Electrical Energy Regulations 2008
EPI	Environmental Performance Index
EPP	Entry Point Project
EPU	Economic Planning Unit
ETP	Economic Transformation Programme
EQA	Environmental Quality Act
EQA (SW)	Environmental Quality (Sewage) Regulations 2009
EQA (LCMG)	Environmental Quality (Control of Lead Concentration in Motor Gasoline) Regulations 1985
ETPU	Economic Transformation Programme Unit
FIDEC	Fibre and Biocomposite Development Centre
FMM	Federation of Malaysian Manufacturers
IEAB	Independent Assessment and Evaluation Board
IKM	Institut Kemahiran MARA/MARA Skills Institute
CIDB	Construction Industry Development Board
CP	Cleaner Production
CREAM	Construction Research Institute of Malaysia
CSR	Corporate Social Responsibility
DSM	Department of Standards Malaysia
EiMAS	Environment Institute of Malaysia
GAP	Good Agricultural Practices
GBI	Green Building Index
GDP	Gross Domestic Product
GHG	Green House Gas
GLC	Government Link Company
GTFS	Green Technology Financing Scheme
GTP	Government Transformation Programme
GGP	Government Green Procurement
GMP	Good Manufacturing Practices

Green Pass	Green Performance Assessment System in Construction
FIDEC	Fibre and Bio composite Development Centre
FiT	Feed-in Tariff
FPP	Forest Plantations Programme
HACCP	Hazard Analysis and Critical Control Point
HRDF	Human Resource Development Fund
ICU	Implementation Coordination Unit
IKM	Institut Kemahiran MARA/MARA Skills Institute
IMP3	Industrial Master Plan 3
JKR	Jabatan Kerja Raya Malaysia/Public Works Department
JKT	Jabatan Kerajaan Tempatan/Department of Local Government
JPBD	Jabatan Perancangan Bandar dan Desa Semenanjung Malaysia/Federal Department of Town and Country Planning Peninsular Malaysia
JPK	Jabatan Pembangunan Kemahiran/Department of Skills Development
JPSM	Jabatan Perhutanan Semenanjung Malaysia/Forestry Department Peninsular Malaysia
JPSPN	Jabatan Pengurusan Sisa Pepejal Negara/National Solid Waste Management Department
KBS	Kementerian Belia dan Sukan/Ministry of Youth and Sports
KETTHA	Kementerian Tenaga, Teknologi Hijau dan Air/Ministry of Energy, Green Technology and Water
KKLB	Kementerian Kemajuan Luar Bandar dan Wilayah/Ministry of Rural and Regional Development
KKR	Kementerian Kerja Raya/Ministry of Works
KPDNKK	Kementerian Perdagangan Dalam Negeri, Koperasi dan Kepenggunaan/ Ministry of Domestic Trade, Cooperatives and Consumerism
KPI	Key Performance Indicator
KPKT	Kementerian Perumahan dan Kerajaan Tempatan/Ministry of Housing and Local Government
KPT	Kementerian Pengajian Tinggi/Ministry of Higher Education
KSM	Kementerian Sumber Manusia/Ministry of Human Resource
KWPKB	Kementerian Wilayah Persekutuan dan Kesejahteraan Bandar/Ministry of Federal Territories and Urban Wellbeing
LCCF	Low Carbon Cities Framework and Assessment System
MAMPU	Malaysian Administrative Modernisation & Management Planning Unit
MARA	Majlis Amanah Rakyat/Council of Trust for the People
MATRADE	Malaysia External Trade Development Corporation
MIDA	Malaysian Industrial Development Authority
MIDF	Malaysian Industrial Development Finance Berhad
MGTC	Malaysia Green Technology Corporation

MITI	Ministry of International Trade and Industry
MKRA	Ministerial Key Result Area
MNC	Multi National Company
MNRE	Ministry of Natural Resources & Environment
MOA	Ministry of Agriculture and Agro-based Industry
MOE	Ministry of Education
MOF	Ministry of Finance
MOSTI	Ministry of Science, Technology and Innovation
MOT	Ministry of Transport
MOTOUR	Ministry of Tourism
MPC	Malaysia Productivity Corporation
MPIC	Ministry of Plantation Industries and Commodities
MTCS	Malaysian Timber Certification Scheme
MTHPI	National Green Technology and Climate Change Council
NATIP	National Timber Industry Policy
NCP	National Commodity Policy
NCS	National Competency Standard
NEAC	New Economic Action Council
NEM	New Economic Model
NEnP	National Energy Policy
NGO	Non-Governmental Organisation
NGTP	National Green Technology Policy
NIOSH	National Institute of Occupational Safety and Health
NKRA	National Key Result Area
NMP2	National Mineral Policy 2
NOSS	National Occupational Skills Standard
NPBD	National Policy on Biological Diversity
NPCC	National Policy on Climate Change
NPE	National Policy on the Environment
NPP2	National Physical Plan 2
NREPAP	National Renewable Energy Policy and Action Plan
OA	Occupational Analysis
OECD	Organisation for Economic Cooperation and Development
OSHMS	Occupational Safety and Health Management System
PEMANDU	Performance Management and Management Unit
PMU	Project Management Unit
PPSPPA	Perbadanan Pengurusan Sisa Pepejal dan Pembersihan Awam/Solid Waste Management & Public Cleansing Corporation

RE	Renewable Energy
REA	Renewable Energy Act 2011
SEDA	Sustainable Energy Development Authority
SCP	Sustainable Consumption and Production
SFM	Sustainable Forest Management
SIRIM	SIRIM Berhad
SKM	Sijil Kemahiran Malaysia/Malaysian Skills Certificate
SME CORP	SME Corporation Malaysia
SME	Small and Medium Enterprise
SCORE	Special Commission on Renewable Energy
SPAD	Suruhanjaya Pengangkutan Awam Darat/Land Public Transport Commission
SPAN	Suruhanjaya Perkhidmatan Air Negara/National Water Services Commission
SREP	Small and Renewable Energy Programme
SRI	Strategic Reform Initiative
TCPA	Town and Country Planning Act
UNFCCC	United Nation Framework Convention on Climate Change
UNEP	United Nation Environment Programme
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
WISDEC	Wood Industry Skills Development Centre
6MP	6th Malaysia Plan
7MP	7th Malaysia Plan
8MP	8th Malaysia Plan
9MP	9th Malaysia Plan
10MP	10th Malaysia Plan
11MP	11th Malaysia Plan

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