



Low Carbon Society Research Network 7th Meeting: Agenda

Urbanization and climate actions in cities 1445-1615

June 15th-16th

Collège des Bernardins ,
20, Rue de Poissy
75005 Paris, France

Implementation of Low Carbon urban development in Malaysia - The case of Iskandar Malaysia

Science into Policy



Ho Chin Siong (UTM)

Faculty of Built environment/ UTM Low Carbon Asia Centre



Project for Development of Low Carbon Society Scenarios for Asian Regions

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Content- Structure of Presentation

Background

- **Urban problem and climate actions in cities**
- **Low carbon solution policy in Malaysia**

Challenges And Solution

- **Low carbon sustainable development Actions**

LCS Malaysia

- **Case Low Carbon Society Blueprint for Iskandar Malaysia**
- **Solution- 12 actions**

Background

Iskandar Malaysia: Key Challenges



Size: 2,216.3 km²

Population: 1.3 mil. (2005) | 3.0 mil. (2025)

GDP: 35.7 bil. RM (2005) | 141.4 bil. RM (2025)



Voluntary
40%
reduction of
CO₂
emission
intensity by
2020

Issue

- Rapid urbanization and industrialization (7%pa)
- Relatively high carbon intensity dependence on fossil fuel (80%^)
- High private car ownership (15% public)
- Low density development and urban sprawl
- Low efficiency appliances and Renewable energy (5%)

Government Policy Directions

- _ National Green Technology Policy
- _ National Policy on Climate Change
- _ National Renewable Energy Policy and Action Plan
- _ National Policy on the Environment
- _ 11th Malaysia Plan (2016-2020)
- _ Green Neighborhood Planning Guideline
- _ Low Carbon Cities Framework and Assessment System

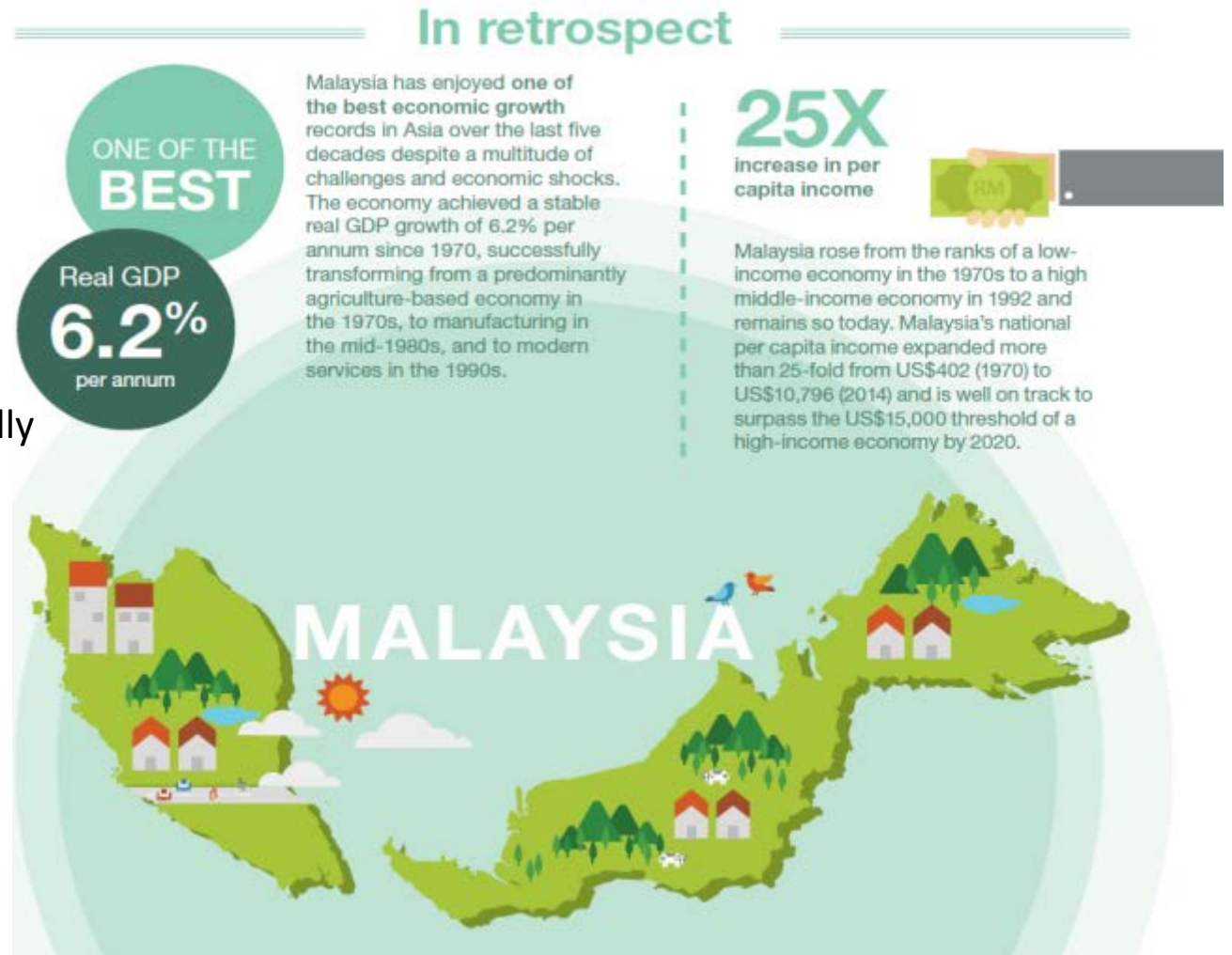
Malaysia- background

Journey realizing Vision 2020- A **fully developed nation** along all dimensions – economically, politically , socially, psychologically and culturally by 2020.

Themes related to sustainability and low carbon development

- **Digital nation,**
- **Green growth cities**
- Competitive cities
- Promote **biodiversity**
- Environmental awareness,
- Enable **energy plan,**
- **Inclusiveness,**

	CO2 emission ('000metric tons	CO2 per capita metric ton	Carbon intensity Kg / kg oil equiv
1990	56,593	3.1	2.6
2000	216,804	7.7	3.0



Eleventh Malaysia Plan 2016-2020 – Six (6) Strategic Thrusts

Six strategic thrusts



Enhancing
inclusiveness
towards an
equitable
society



Improving
wellbeing
for all



Accelerating
human capital
development
for an advanced
nation



Pursuing
green
growth for
sustainability
and resilience



Strengthening
infrastructure
to support
economic
expansion



Re-engineering
economic
growth for
greater
prosperity

Pursuing Green growth for sustainability and resilience (ST4) and Strengthening Infrastructure to support economic expansion (ST5) strategic thrusts have great impact on cities actions/ policies

Strategic thrust 4- Pursuing green growth for sustainability and resilience

Strategic thrust 4:

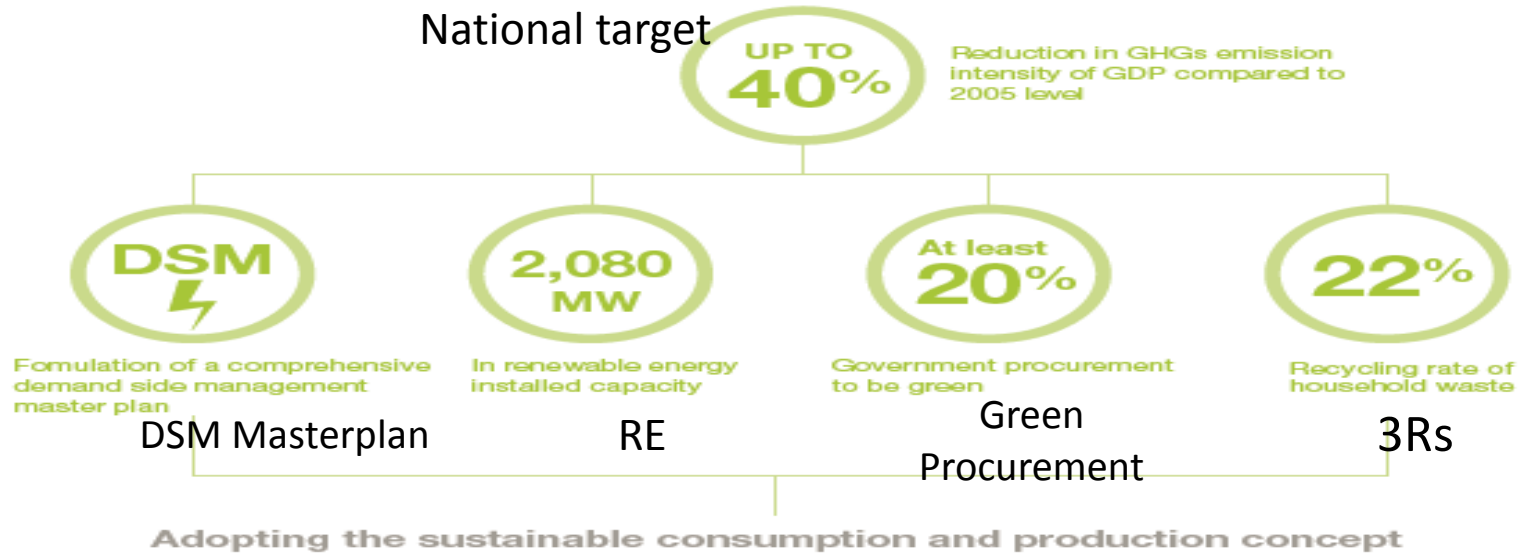
Pursuing green growth for sustainability and resilience



Outcomes of Strategic thrust 4

Pursuing green growth for sustainability and resilience

National target



Strengthening resilience against climate change and natural disasters



National crisis and disaster management centre to enhance capacity for disaster preparedness and response



People protected through flood mitigation projects

Conserving natural resources for present and future generations



Terrestrial and inland water areas gazetted as protected areas

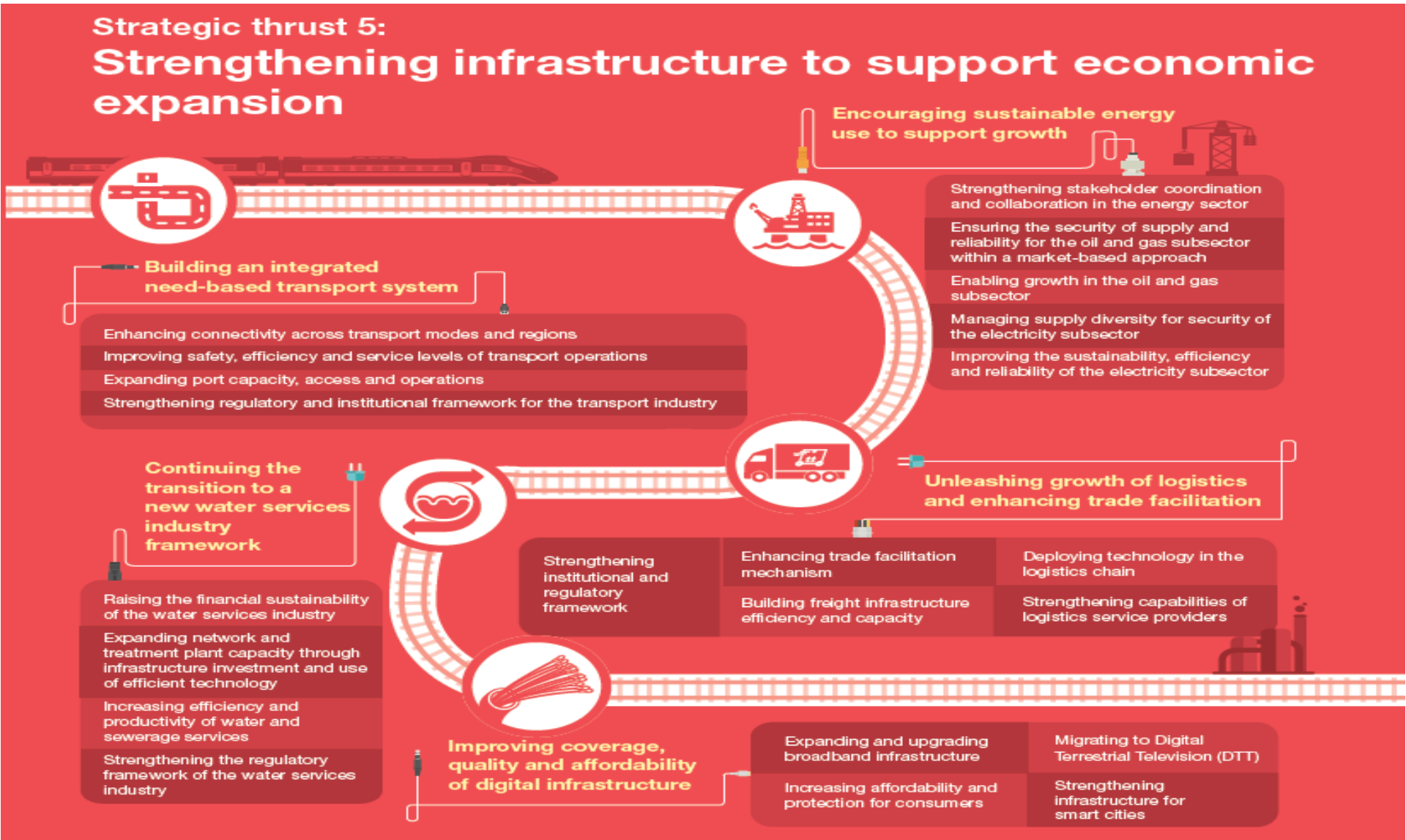


Coastal and marine areas gazetted as protected areas

Strategic Thrust 5- Strengthening infrastructure to support economic expansion

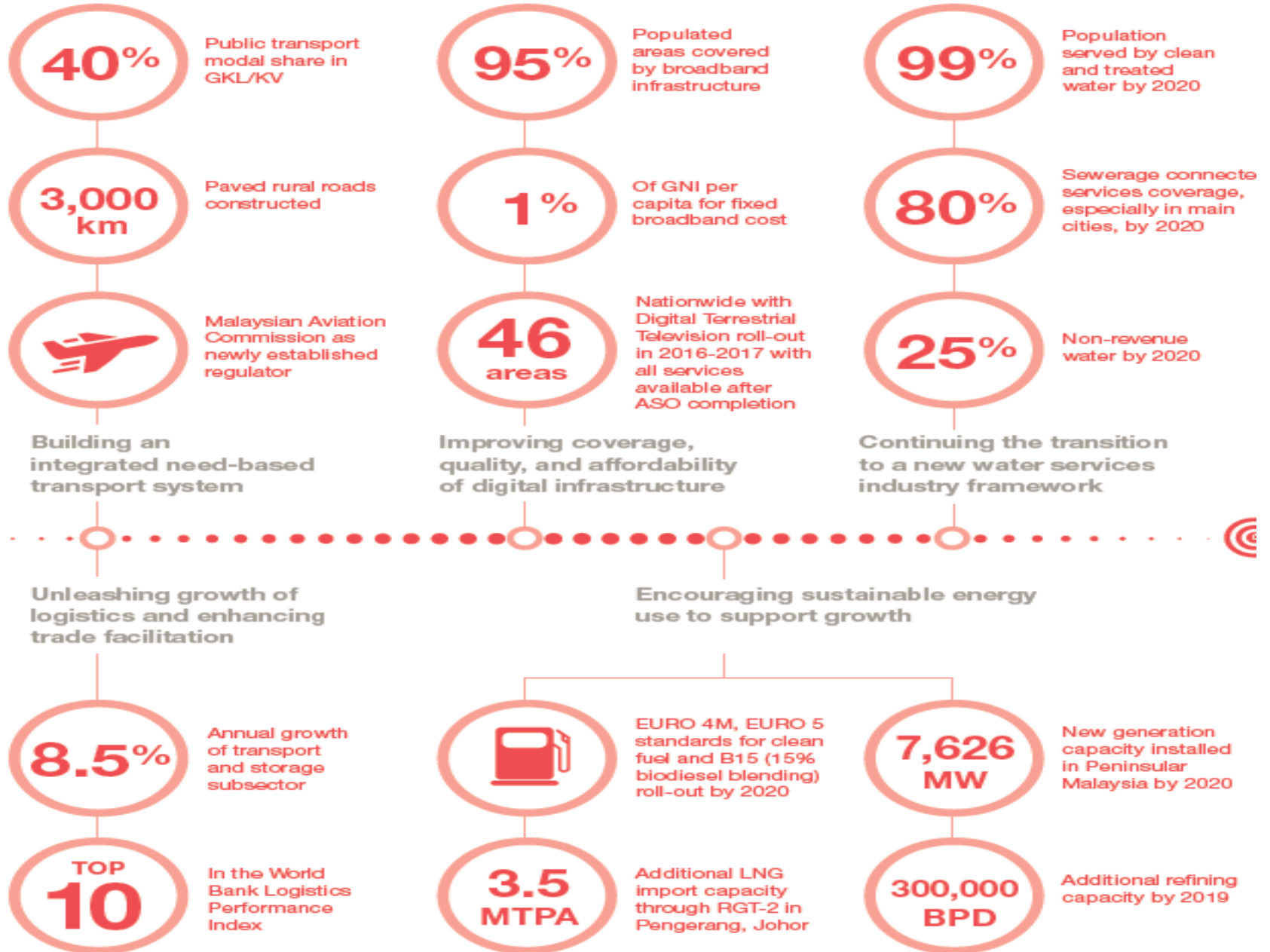
Strategic thrust 5:

Strengthening infrastructure to support economic expansion



Outcomes - Strengthening infrastructure to support economic expansion

SELECTED OUTCOMES



Game changer-Green growth for Sustainability and Resilience

“Growth that is **efficient** in its use of natural resources, **clean** in that it minimises pollution and environmental impacts, and **resilient** in that it accounts for natural hazards and the role of environmental management and natural capital in preventing physical disasters.”
(World Bank)

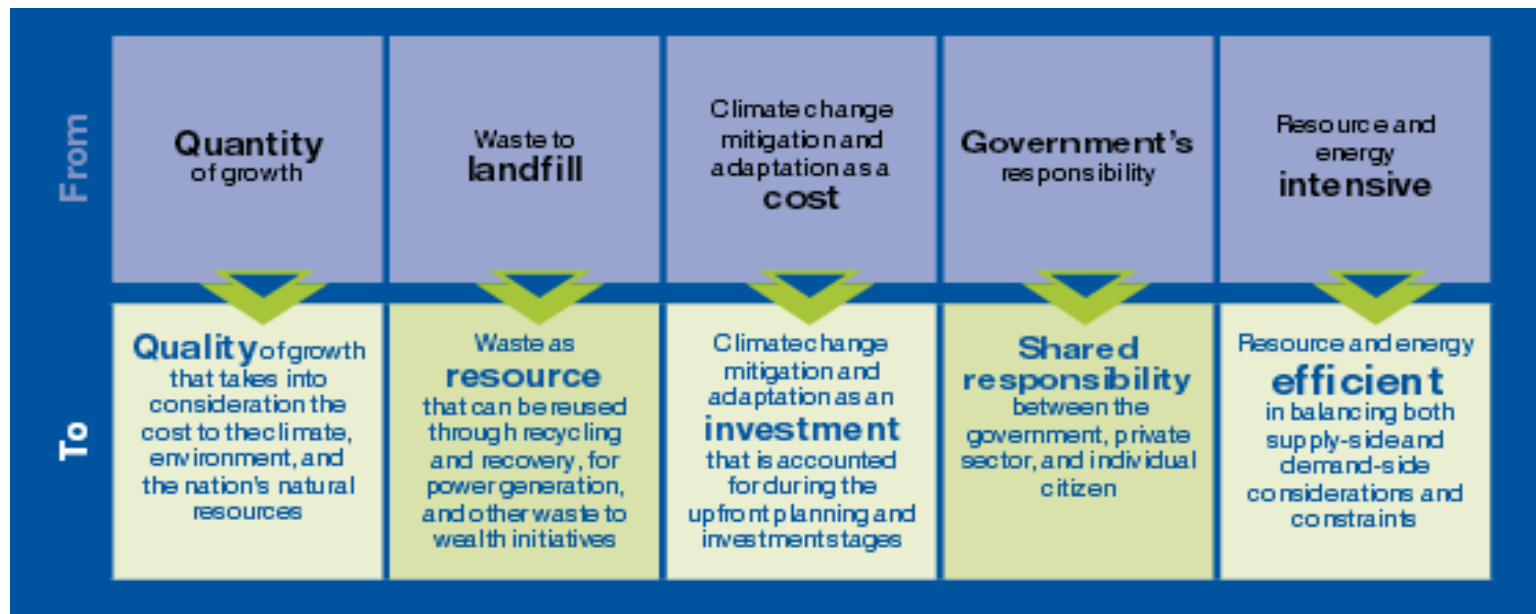
Efficient

+

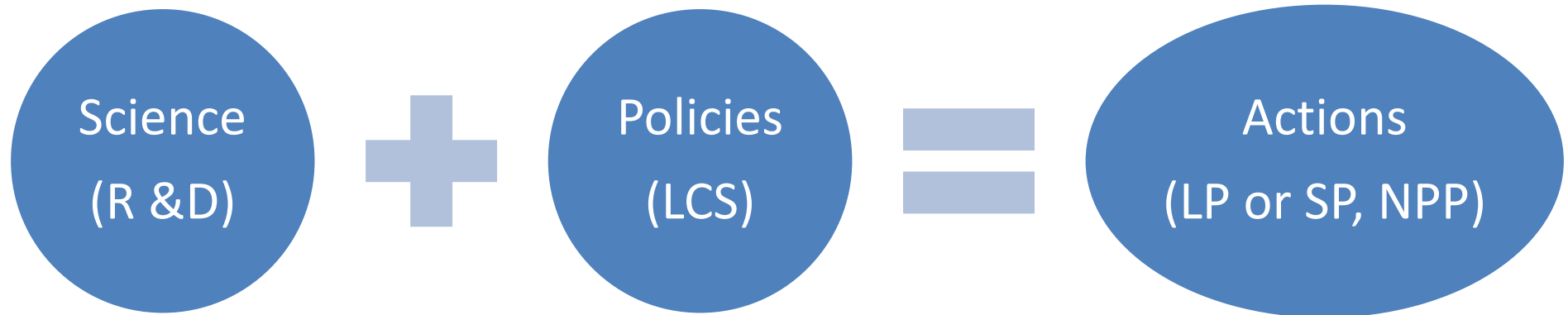
Clean

+

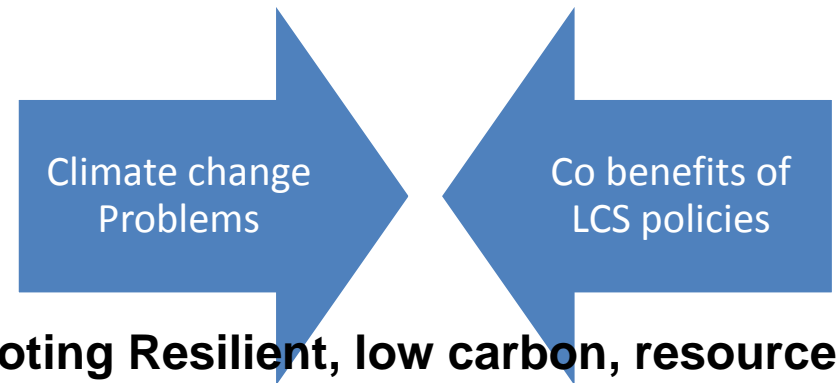
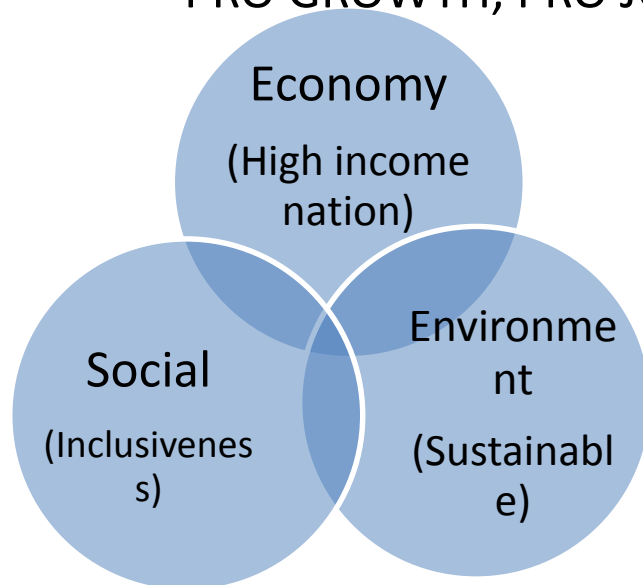
Resilient



Sustainable development approach/ Climate Actions



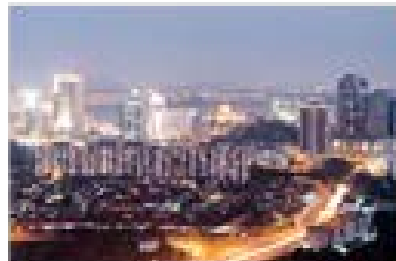
Key element Sustainable development
= PRO GROWTH, PRO JOB , PRO POOR and PRO ENVIRONMENT



Promoting Resilient, low carbon, resource efficient and socially inclusive development

The Case of Iskandar Malaysia

**“Strong and Sustainable Metropolis
of International Standing”**



Flagship A

Johor Bahru City Centre

- Financial advisory and consulting
- Cultural and urban tourism



Flagship B

Nusajaya

- State administration
- Education and medical tourism



Flagship C

Western Gate Development

- Logistic



Flagship D

Eastern Gate Development

- Manufacturing (oleo and petrochemical)
- Oil storage terminal



Flagship E

Senai - Skudai

- Logistic
- Manufacturing (hi-tech)
- Knowledge centre
- Information and

01 Low Carbon Society Scenarios for Iskandar Malaysia

Project Background



FLAGSHIP A

- JOHOR BAHRU CITY CENTRE**
- Central Business District (CBD) as heritage and cultural city
 - Customs, Immigration and Quarantine Complex (CIQ)
 - Johor – Singapore Causeway

FLAGSHIP B

- NUSAJAYA**
- Kota Iskandar
 - EduCity
 - Medical Park
 - International Destination Resort
 - Southern Industrial & Logistics Clusters (SILC)
 - Puteri Harbour

FLAGSHIP C

- WESTERN GATE DEVELOPMENT**
- Port of Tanjung Pelepas (PTP)
 - Tanjung Bin Power Plant
 - 2nd Link Access to Singapore
 - RAMSAR World Heritage Park
 - Tanjung Piai – Southernmost Tip of Mainland Asia
 - Maritime Centre

FLAGSHIP D

- EASTERN GATE DEVELOPMENT**
- Tanjung Lingsat Industrial Complex
 - Johor Port
 - Tanjung Lingsat Port
 - Pasir Gudang Industrial Park

FLAGSHIP E

- SENAI-SKUDAI**
- Senai Airport City
 - Senai High-Tech Park
 - Sedenak Industrial Park
 - MISC Cyberport City
 - Johor Technology Park
 - University Technology Malaysia (UTM)

Site: Iskandar Malaysia

(Iskandar Regional Development Authority)

Objective:

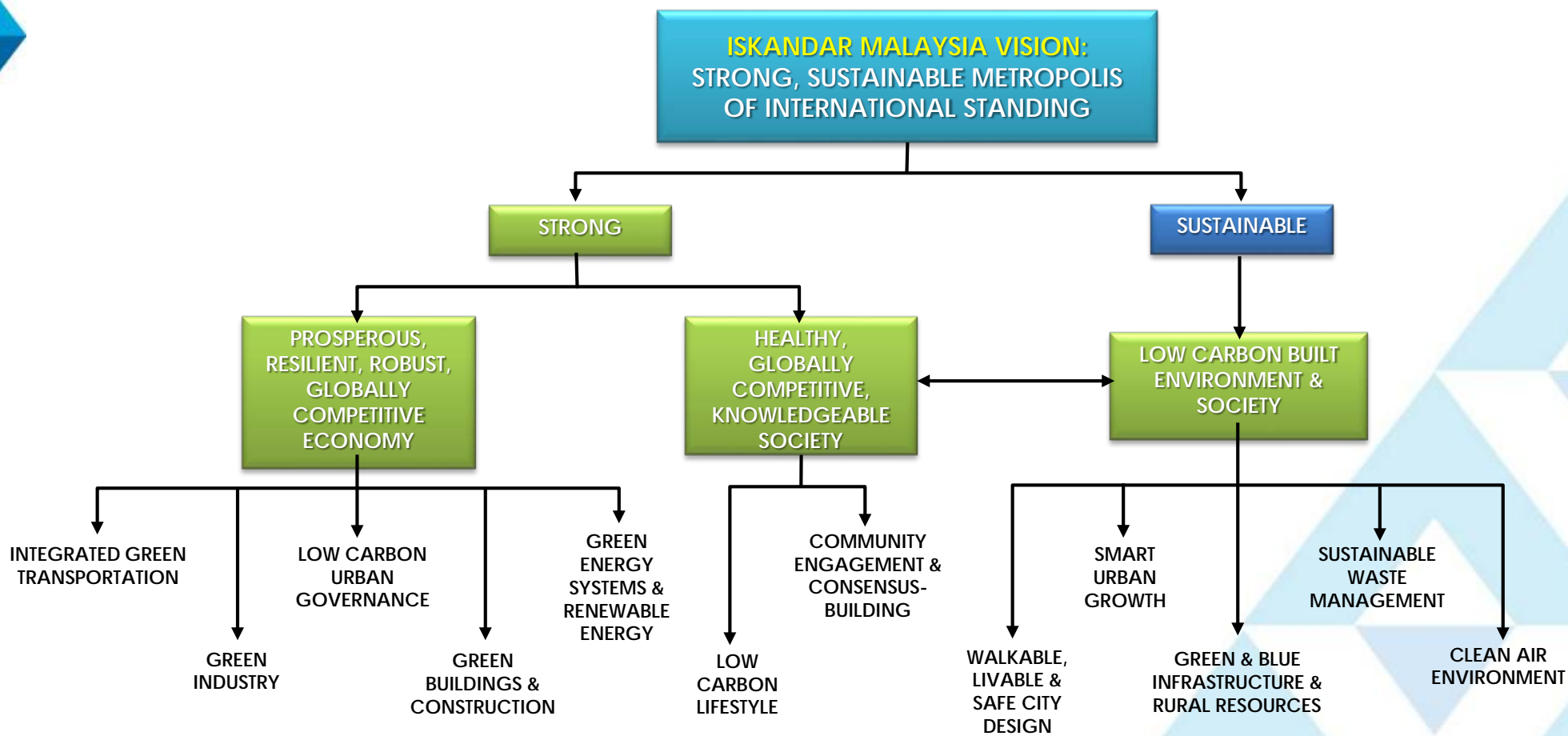
i. To draw up **key policies and strategies** in guiding the development of Iskandar Malaysia in **mitigating carbon emission**. *Transforming Iskandar Malaysia into a sustainable low carbon metropolis by adopting green growth strategies/roadmap.*

ii. To respond to the nation's aspiration for **ensuring climate-resilient development for sustainability**.

Target Year: 2025 (2005 – 2025)

Green-focused Agenda - Rationale

Aligning the Vision with Low Carbon Society Development



Projected Greenhouse Gas Emission Reduction in Iskandar Malaysia

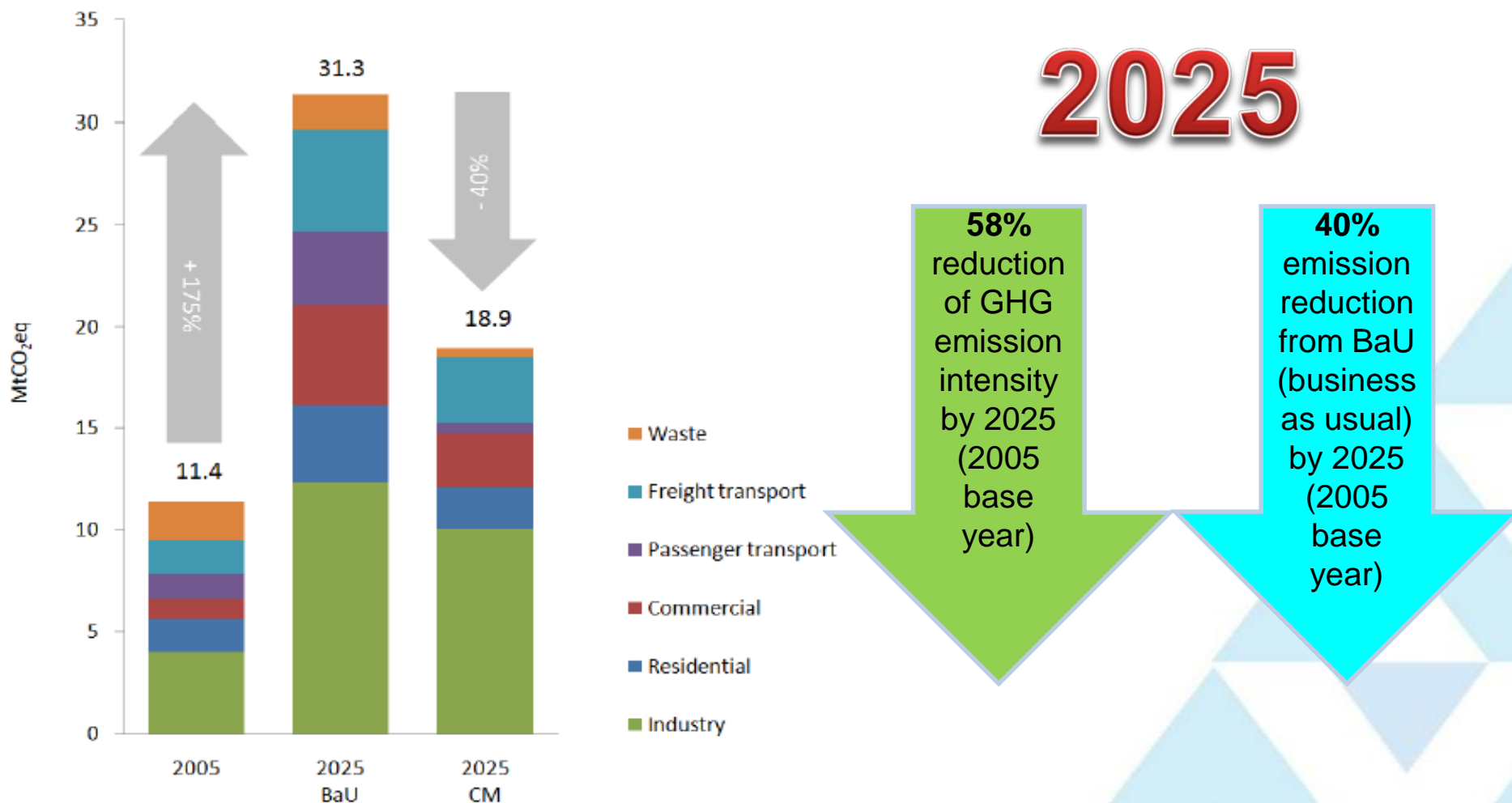


Figure 1: GHG emissions by sectors

In Progress-Developing a Low Carbon Society Roadmap for Iskandar Malaysia

Step 1 Low Carbon Society Blueprint for Iskandar Malaysia
- Clear GHG target for year 2025

Step 2 Low Carbon Society Implementation Roadmap 2015-2025 using Backcasting Tool

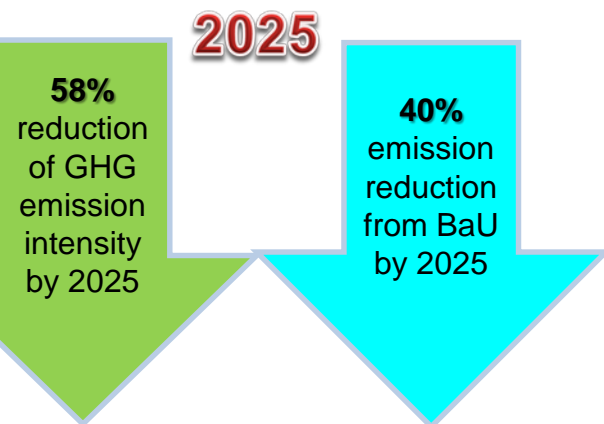
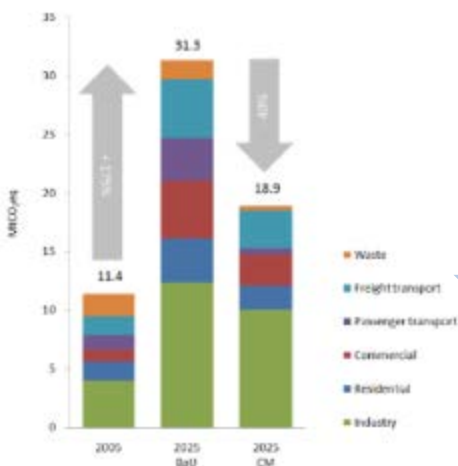
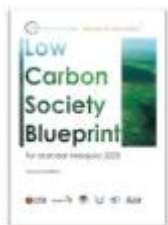


Figure 1: GHG emissions by sectors

A Roadmap towards Low Carbon Iskandar Malaysia 2025



Low Carbon Society Blueprint for Iskandar Malaysia 2025

IRDA's Implementation Plan 2013-2015

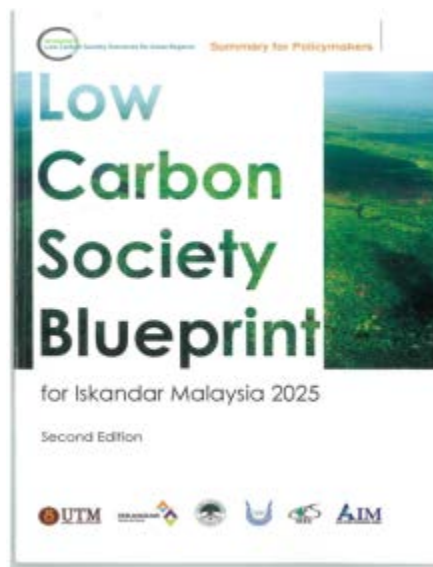


A Roadmap towards Low Carbon Iskandar Malaysia 2025



This Roadmap has been formulated to serve as a complementary document to the LCSBPIM. It provides a pathway to guide the implementation of actions outlined in the LCSBPIM by priority, timeline and related implementation agencies.

Low Carbon Society Blueprint for Iskandar Malaysia 2025



- The LCSBPIM– a quick reference for all policy-makers in both public and private sectors as well as IRDA;
- 12 Actions grouped in 3 parts namely: (Green Economy), (Green Community), and Green Environment);281 programmes;
- Each Chapter contains an analysis, list of programmes and the potential GHG emissions reduction;
- IRDA launched its Low Carbon Society Blueprint for Iskandar Malaysia 2025 on 30 November 2012 at the United Nations Climate Change Conference in Doha, Qatar. The ultimate goal is to reduce Iskandar Malaysia’s carbon intensity emissions by 50 per cent by 2025.
- The Blueprint was subsequently endorsed by the Prime Minister of Malaysia in December 2012

	Action Names	Themes
1	Integrated Green Transportation	GREEN ECONOMY
2	Green Industry	
3	Low Carbon Urban Governance	
4	Green Buildings & Construction	
5	Green Energy System & Renewable Energy	
6	Low Carbon Lifestyle	GREEN COMMUNITY
7	Community Engagement & Consensus Building	
8	Walkable, Safe, Livable City Design	GREEN ENVIRONMENT
9	Smart Growth	
10	Green and Blue Infrastructure & Rural Resources	
11	Sustainable Waste Management	
12	Clean Air Environment	

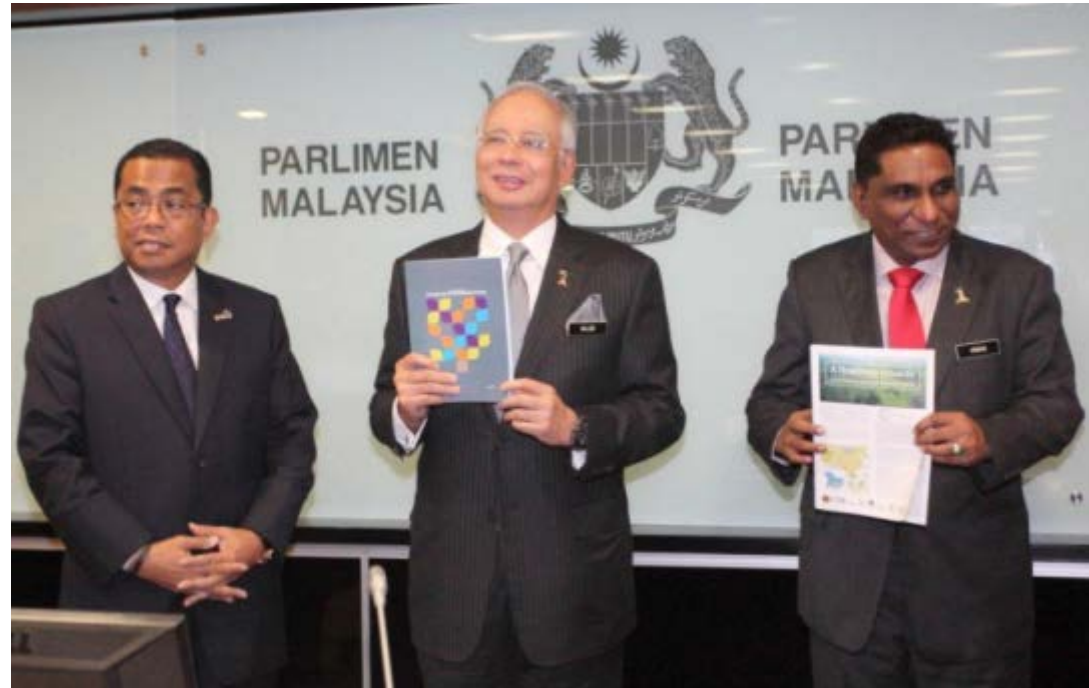
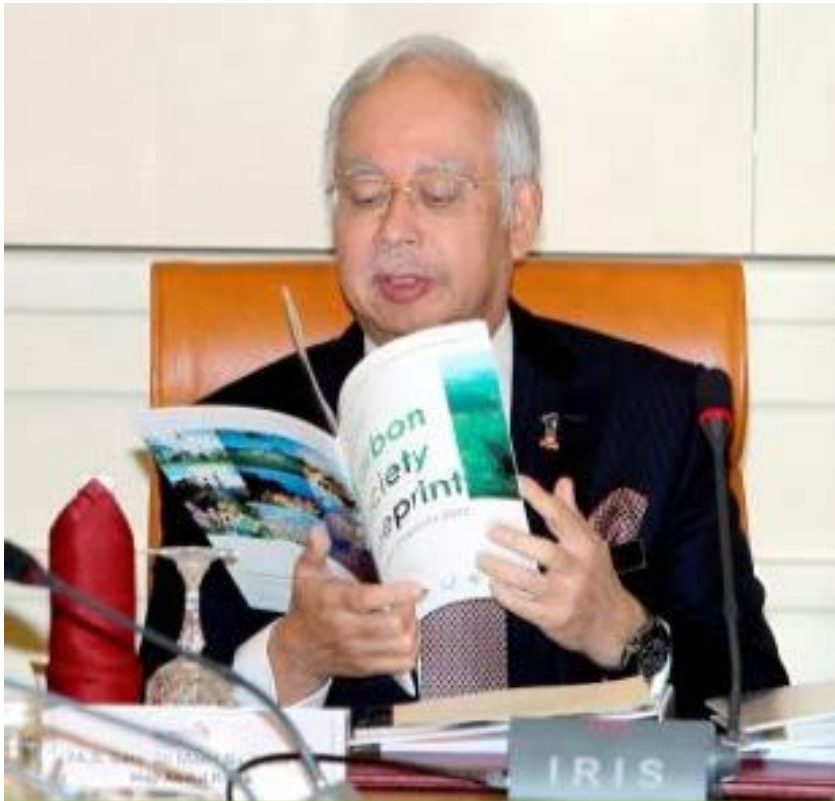
Iskandar Malaysia: Actions For A Low Carbon Future



- The Booklet 'Actions for a Low Carbon Future' – list of 10 programmes which IRDA has started implementing or have been completed.
- On 6th November 2013, the Iskandar Malaysia: Actions for A Low Carbon Future is the implementation booklet which outlines the 10 programmes, was launched by Malaysia Prime Minister Dato' Sri Mohd Najib Tun Abdul Razak.
- On 15th and 18th November 2013, was the subsequent global launching at COP 19, Warsaw, Poland.

	Programmes	PIC
1	Integrated Green Transportation – Mobility Management System	Kamisah Mohd Ghazali
2	Green Economy Guidelines	Ivy Wong Ling Ling
3	Eco-Life Challenge Project for Schools	Isma Ezwan Safri
4	Portal on Green Technology	Choo Hui Hong
5	Trees for Urban Parks/Forests	Boyd Dionysius Joeman
6	Responsible Tourism and Biodiversity Conservation	Boyd Dionysius Joeman
7	Bukit Batu Eco-Community	Hamdi Mohd Yusof
8	GAIA – Green Accord Initiative Award	Ivy Wong Ling Ling
9	Low Carbon Village FELDA Taib Andak	Dr Ibrahim Ngah (UTM)
10	Special Feature: Smart City – Nafas Baru Pasir Gudang: CLEAN AND HEALTHY CITY	Sakurah Jamaluddin , Sharifah Shahidah Syed Ahmad, Muhammad Fadly Muhammad Nor, Choo Hui Hong

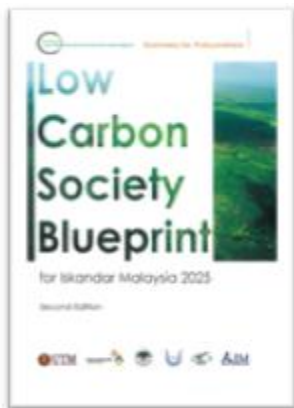
Endorsed by Malaysia Prime Minister - YAB Dato' Sri Mohd Najib bin Tun Abdul Razak



11th December 2012
The PM endorses the launching of
LCSBPIM at COP 18 during MoA

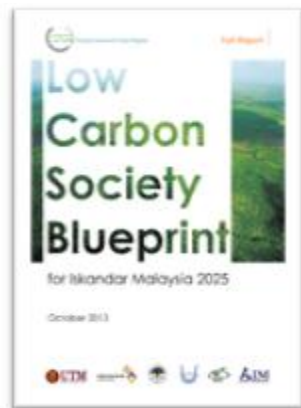
6th November 2013
The PM launched Actions for a
Low Carbon Future during MoA

Low Carbon Society for Iskandar Malaysia Publications



Low Carbon Society
Blueprint for Iskandar
Malaysia 2025- Summary
for Policymakers

<http://irdep.irda.com.my/cms/download/documentSharing/18230>



Low Carbon Society
Blueprint for Iskandar
Malaysia 2025- Full
Report

<http://irdep.irda.com.my/cms/download/documentSharing/26570>



A Roadmap towards Low
Carbon Iskandar Malaysia
2025

<http://irdep.irda.com.my/cms/download/documentSharing/26563>



Iskandar Malaysia: Action
for a Low Carbon Future

<http://irdep.irda.com.my/cms/download/documentSharing/26571>



The Economics of Low
Carbon Cities: Johor
Bahru and Pasir Gudang
Malaysia

<http://irdep.irda.com.my/cms/download/documentSharing/26564>

Quick update :Eco life Challenge Programmes

PLANNED COVERAGE FOR ECO-LIFE CHALLENGE IN ISKANDAR MALAYSIA PRIMARY SCHOOLS



- 2015 is critical as we move for full coverage of primary schools in the economic region
- Mobilize community-led action through IMkiko and volunteers
- Full implementation of practical modules- i.e Rainwater harvesting and tree planting
- Increase AspNet schools to 80 and initiate Unesco program
- Managed communications for IMELC



Quick update :Carbon Sequestration of Tree Preservation

Order (TPO)

- This programme will identify the carbon sink and the tree value.
- Trees help to reduce carbon through carbon storage, thus planting trees is a simple step that everyone can do, which can do wonders to help reduce carbon in our environment. Trees are therefore critical for a major heavy industry city like Pasir Gudang.
- The MPPG has identified 250 trees to be potentially gazetted for sequestration.



Carbon Sequestration Training at the Forest Research Institute of Malaysia (FRIM)



Awareness Programme for Sekolah Rendah Kota Masai;



Engagement with Landskap Malaysia on the carbon sequestration impact of forest trees;



Tree Planting programme called Hutan Kita @ Pasir Gudang together with MPPG, Landskap Malaysia, the EXCO member and community of Pasir Gudang. 1,000 forest trees were planted.



LCS Events in 2014



Business Seminar between Japan and Iskandar Malaysia

- 12th February, 2014
- Low Carbon Society feasibility study or Iskandar Malaysia reporting workshop
- Japan companies came to do feasibility studies in IM on Project on Smart Town, Energy Saving, Strategic Promotion of Recovery and Destruction of Fluorocarbons, CO2 Half Water Supply Project.
- IRDA signed 'MOU' with Panasonic for the R+D of its Fujisawa Sustainable Smart Town ideas (residential energy) in IM. Panasonic has since partnered with Ken Holdings for the development of a major mixed development project in JB.



MoU Signing between MGTC and IRDA

- 20th March, 2014
- To implement the Low Carbon Cities Framework and Assessment System (LCCF) in their collective effort to reduce carbon emissions within the Iskandar region Iskandar Malaysia.
- The MOU has led to the implementation of MGTC's Sustainable Flagship project at our PRISMA housing.
- The data resulting from the PRISMA study will be fed into the LCSBPIM GHG calculations.



9th SATREPS Progress Meeting

- 24th April, 2014
- Topics of discussion included results of medium term review of the LCS project, group discussions on projects for 2014-2016, sharing progress and steps forward.
- ELC will go into Phase 2, with more projects with 80 schools in IM in 2014
- LCS Team will prepare technical manuals on (a) energy, buildings, education and consensus-building; (b) Co-benefits assessment manual for Waste management and Air environment.



Launch of the Climate Smart Cities Report for the Cities of Johor Bahru and Pasir Gudang

- 23rd June, 2014
- Launching of the Climate Smart Cities report for the cities of Johor Bahru and Pasir Gudang titled "The Economics of Low Carbon Futures: A Mini-Stern Report for Palembang and Johor Bahru", prepared by the University of Leeds (Centre for Low Carbon Futures and IRDA), and with support from UTM.
- This Study was funded by the UK's Prosperity Funds.

Low Carbon Society Scenarios for Iskandar Malaysia

LCS Blueprints for 5 Local Authorities – First Cuts

The Vibrant Heart of Southern Region

JOHOR BAHRU CITY COUNCIL **MBJB**

Under SATREPS, the project development of Low Carbon Society Scenario for Asian Region comes with a view to define Low Carbon Society (LCS) vision and crafting a roadmap towards LCS at the national and sub-regional levels. Iskandar Malaysia (IM) is targeted to reduce its Carbon Emission by 50% in 2025.

The project is to develop methodology for creating a Low Carbon Society (LCS) scenario and apply it in Malaysia as well as to transfer the research outputs to IM.

This brochure is produced for Carbon Emission Reduction Disaggregation for 5 Local Authorities in IM including Johor Bahru City Council (MBJB) in the context of Current Socioeconomic Scenario for MBJB and in line with the vision of IM for Carbon Reduction. Several actions have to be taken accordingly to the current scenario.

Johor Bahru

'The Vibrant Heart of Southern Region'

Livable Community City

JOHOR BAHRU TENGAH MUNICIPAL COUNCIL **MPJBT**

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The project is to develop methodology for creating a Low Carbon Society (LCS) scenario and apply it in Malaysia as well as to transfer the research outputs to IM.

This brochure is produced for Carbon Emission Reduction Disaggregation for 5 Local Authorities in IM including Pontian District Council (MDP) in the context of Current Socioeconomic Scenario for MDP and in line with the vision of IM for Carbon Reduction. Several actions have to be taken accordingly to the current scenario.

Johor Bahru Tengah

'Livable Community City'

Green Manufacturing Hub

PASIR GUDANG MUNICIPAL COUNCIL **MPPG**

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The project is to develop methodology for creating a Low Carbon Society (LCS) scenario and apply it in Malaysia as well as to transfer the research outputs to IM.

This brochure is produced for Carbon Emission Reduction Disaggregation for 5 Local Authorities in IM including Pasir Gudang Municipal Council (MPPG) in the context of Current Socioeconomic Scenario for MPPG and in line with the vision of IM for Carbon Reduction. Several actions have to be taken accordingly to the current scenario.

Pasir Gudang

'Green Manufacturing Hub'

Smart Logistic Hub

KULAI MUNICIPAL COUNCIL **MPKu**

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Kulai Jaya

'Smart Logistic Hub'

Agrobiodiversity Hub

PONTIAN DISTRICT COUNCIL **MDP**

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Pontian

'Agrobiodiversity Hub'

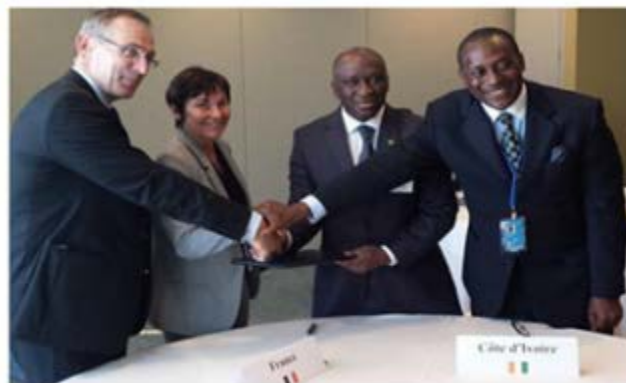


GLOBAL BENCHMARK

Iskandar Malaysia is selected as one of the 10 candidates in the world for **SE4ALL**. Iskandar Malaysia is also the only one in the South East Asia to be selected for SE4ALL, the rest of the candidates including city in China, Europe and America.



SUSTAINABLE
ENERGY FOR ALL



<http://www.iisd.ca/energy/se4all/se/> ---- gives the details of the event

LOCAL and GLOBAL CONNECT

RCE Iskandar based at UTM Low Carbon Asia

The Ubuntu Committee of Peers for the RCEs (hereafter referred to as the “Committee”) held its ninth meeting on 3-4 November 2014 in Okayama, Japan and reviewed 15 applications from all over the world for official acknowledgement. On behalf of the Global RCE Service Centre, I am pleased to formally **notify you that the Committee recommended UNU to acknowledge RCE Iskandar**



R
C
E REGIONAL CENTRE OF EXPERTISE
ON EDUCATION FOR
SUSTAINABLE DEVELOPMENT

ACKNOWLEDGED BY



UNITED NATIONS
UNIVERSITY

The Global RCE Service Centre

Education for Sustainable Development (ESD) Programme

**UNU Institute for the Advanced Study of Sustainability
(UNU-IAS)**

UTM-LOW CARBON ASIA
RESEARCH CENTRE



Renewable Energy & Energy Efficiency Blueprint: Proposed initiatives and action plan: *3 main strategies and 16 initiatives*



STRATEGIC INITIATIVES:

- District cooling and ice-storage
- Co-generation
- GIS for spatial planning
- **Transport design and policy**
- Integrated design and renovation (clusters)

STRATEGIC INITIATIVES:

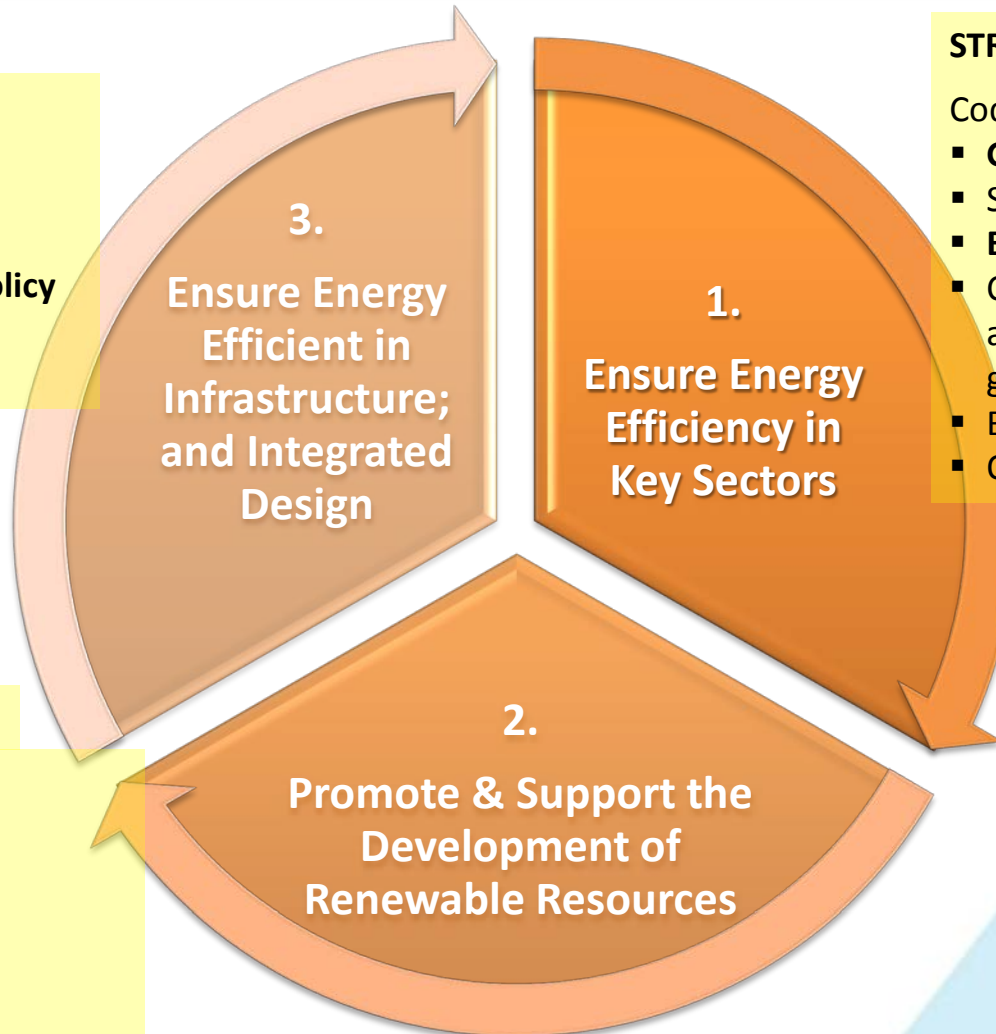
Codes and standards:

- **Green building index**
- Street lighting
- **Education programmes**
- Campaigns (labeling, types of appliances that save energy, good habits)
- Benchmarking
- Operation & maintenance

STRATEGIC INITIATIVES:

IM's own FIT incentives:

- **Solar farms**
- Rooftop solar PV
- **Mini-hydro**
- MSW
- Agricultural wastes
- Liquid wastes

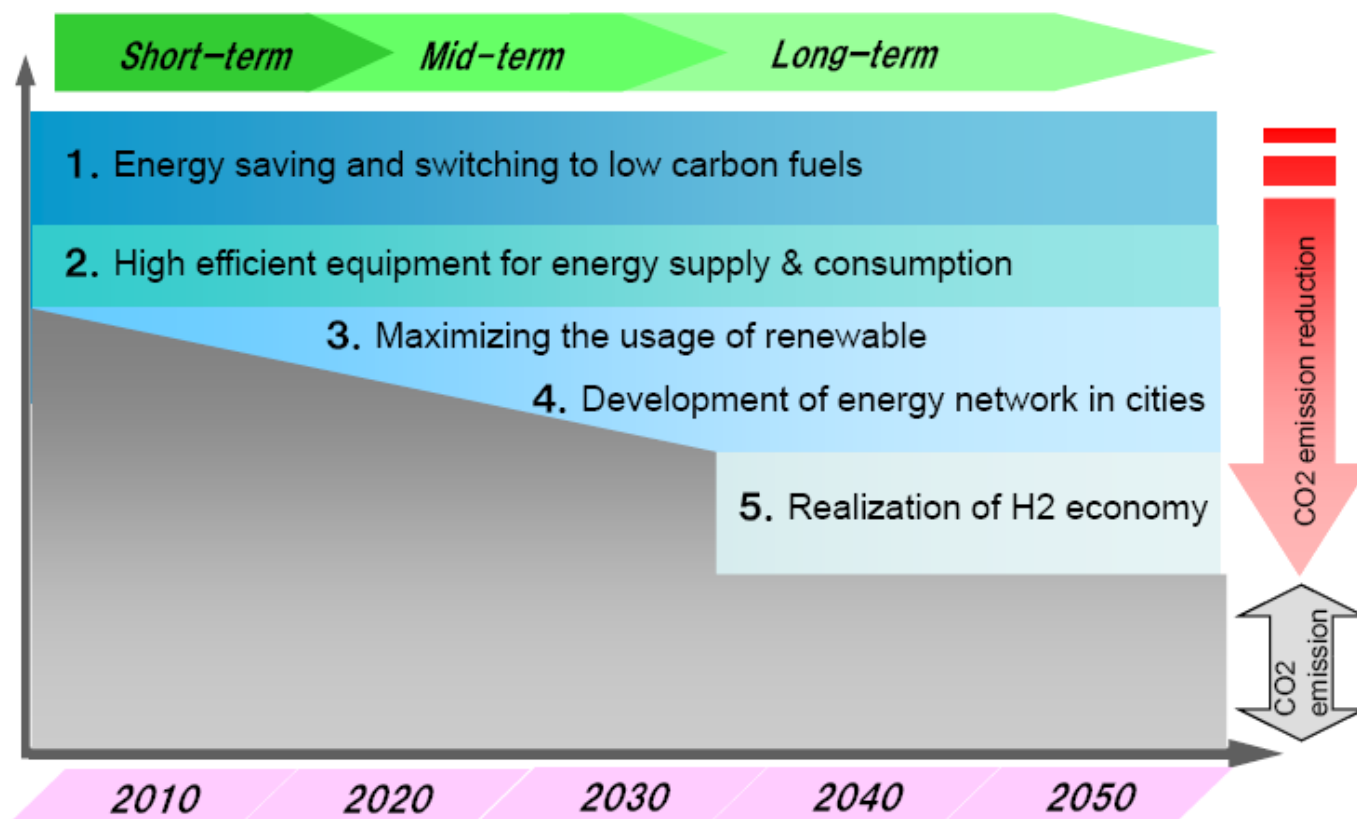


Essential Mechanisms



Transition LCS - Malaysia

Transition to Low Carbon Society



Recent PM's statement on Climate changes and Global warming

Feb 25 2015

- **Climate changes and the global warming phenomena can no longer be viewed lightly** as they have caused **massive damage and loss of lives**,
- Datuk Seri Najib Tun Razak in his opening remarks before chairing the Green Technology and Climate Change Council meeting on Feb 25, 2015



ISKANDAR REGIONAL DEVELOPMENT AUTHORITY (IRDA)

- On the **green technology sector** in Malaysia, it could be the **catalyst for sustainable green technology development**, not only in terms of a **balanced environment, but also socially**.
- “The five key economic sectors, as outlined by the **green technology master plan**, are **energy, transport, buildings, waste and water**.
- Five key economic sectors, could contribute **RM12.7-22.4 bil** to the country's GDP in 2020 and **RM27.9-60 bil** in 2030.

CONCLUSION REMARKS

- City planning needs **Good baseline quantitative study using modelling, consensus building and low carbon blueprint plan** will help to develop an **integrated climate resilient , Low carbon framework** for a city by providing **objective** decision
- **Local climate change action planning** translated into **Low carbon society Blueprint (LCS) blueprint with 12 actions plans.**
- LCS blueprint needs to link with **urban policies (land use and density , compact cities, landscaping, walkable cities)** can complement **global climate policies .**
- In the case of Malaysia, most importantly LCS BP approach helps to **strengthen economic competitiveness and improve quality of life,** and its aspiration for **promoting green economic growth and greater sustainability** in line with national policy
- Ultimately, this will help to reduce **national/global energy demand and CO2 emissions**



Thank You Terima Kasih 谢谢 धन्यवाद ありがとう

Thank you for your attention!

ho@utm.my

