

# LCS-RNet 6<sup>th</sup> Annual Meeting

Hotel Ambasciatori , Rome Italy on 1-2 October 2014

Transition and Global Challenges towards Low Carbon Societies

**Roles of Research community in developing countries  
Implementation of Low Carbon Societies concept**

**The case of Iskandar Malaysia**

SCIENCE INTO POLICY- LOW CARBON GREEN CITY

**SATREPS**

Science and Technology Research Partnership  
for Sustainable Development Program

**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 low carbon solution policy in Malaysia**

## Challenges And Solution

- **Roles of research community**

## LCS Malaysia

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

# ISSUES AND CHALLENGES



**Rapid urbanization and industrialization**



**Relatively high carbon intensity  
dependence on fossil fuel (fuel subsidy)**



**High Private car ownership**



**Low density development and urban  
sprawl**



**Low efficiency appliances and low usage  
of renewable energy.**

# URBAN PROBLEMS and Low carbon SOLUTIONS – Physical planning

## Material and Energy



## Mobility and Green





# URBAN PROBLEMS and Low carbon SOLUTIONS – Socio-economic

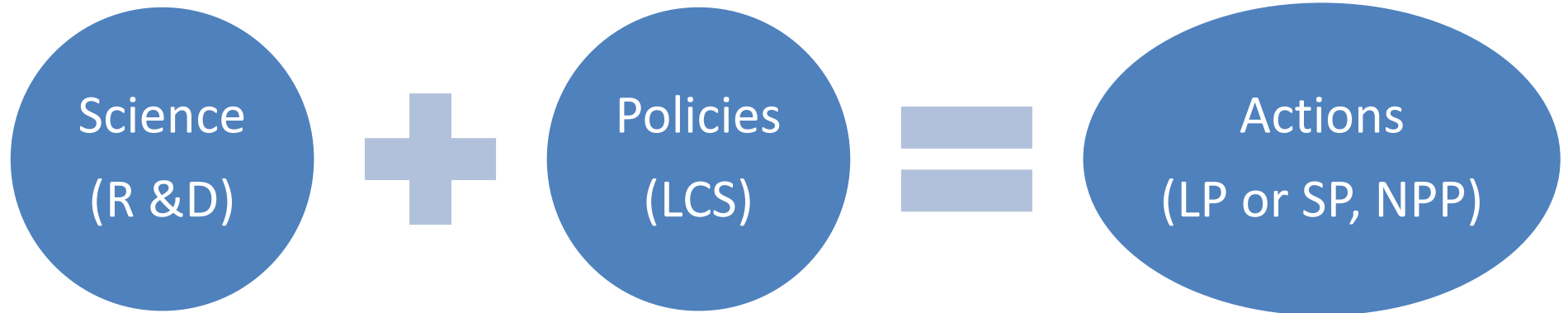
Social/ People



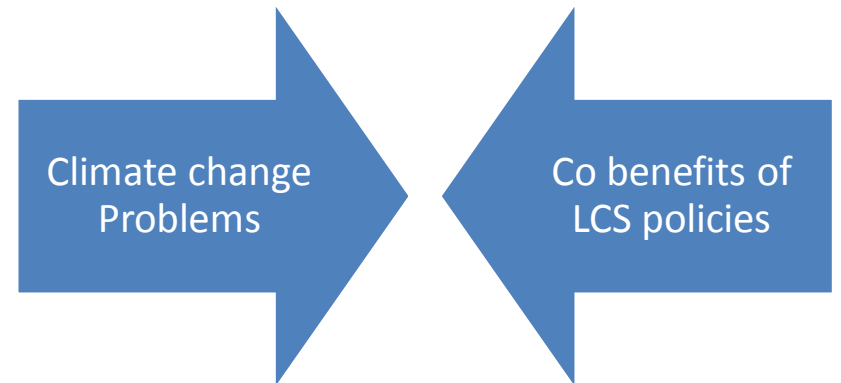
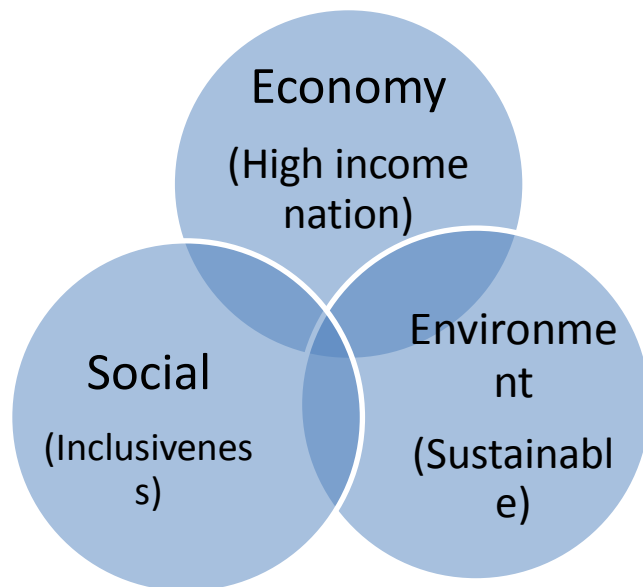
Economy/ Engine of Growth



# Role of researchers to promote Low carbon sustainable development approach



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



# Low carbon society and sustainability in developing countries like Malaysia ?

## Rationale

- **National Agenda** 40% CO<sub>2</sub> intensity reduction
- Climate change and **sustainability policy issues are embedded** in all spatial planning policies ( NPP/ RS/LP)
- Green as **New Consumer Culture, New Market, New Growth** with Green Credentials  
**Economics + Environment = Green Economy.**
- **Fulfill roles to reduce vulnerability** on disasters (flood) and promote comfort and safety.
- **Money-saving** -Energy conservation and renewable energy

## Why LCS cities?



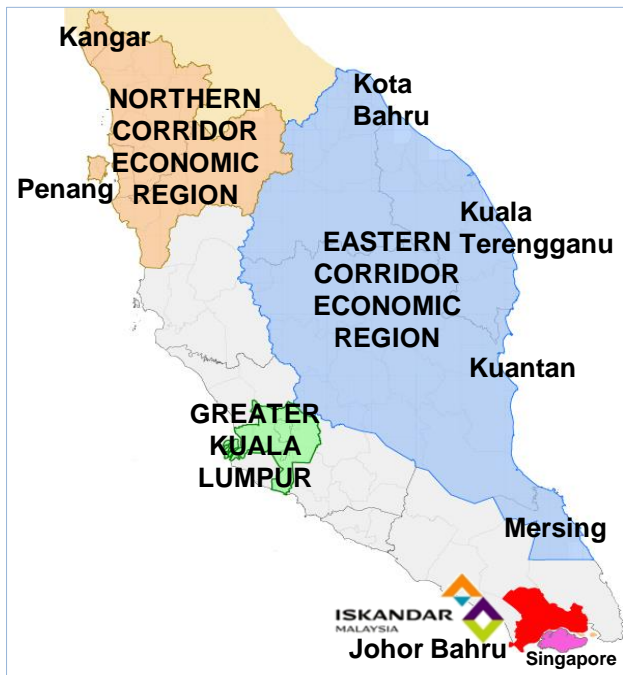
## The Case of Iskandar Malaysia

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



Iskandar Malaysia is Malaysia's economic growth corridor covering a total area of 2,317 sq km (12% of Johor State)

## Iskandar Malaysia in the context of Regional Corridors



*Iskandar Malaysia*



**3 times larger**

*Iskandar Malaysia*



**1.3 times larger**

*Iskandar Malaysia*



**11 times smaller**

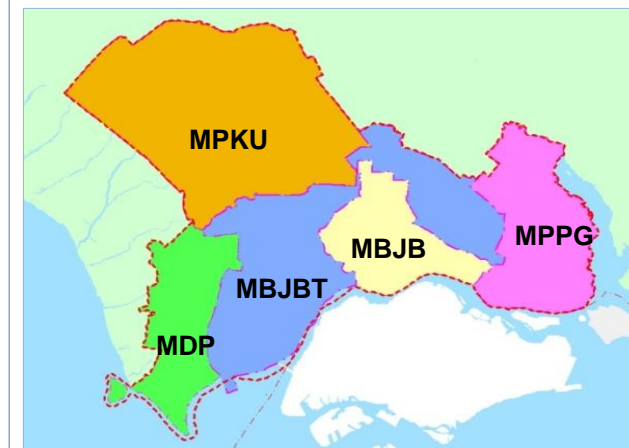
*Iskandar Malaysia*



**30 times smaller**



Iskandar Malaysia covers **FIVE** local planning authorities.



	2005	2010	2025
Population (million)	1.35	1.61	3.00
Labour Force (million)	0.61	0.70	1.43
Employment (million)	0.62	0.72	1.46

Source: CDP 2006 – 2025, Population Census 2010 and consultant estimates

# 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 Langsat Industrial Complex
  - Johor Port
  - Tanjung Langsat Port
  - Pasir Gudang Industrial Park

### FLAGSHIP E

- SENAI-SKUDAI**
- Senai Airport City
  - Senai High-Tech Park
  - Sedenak Industrial Park
  - MSC 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)

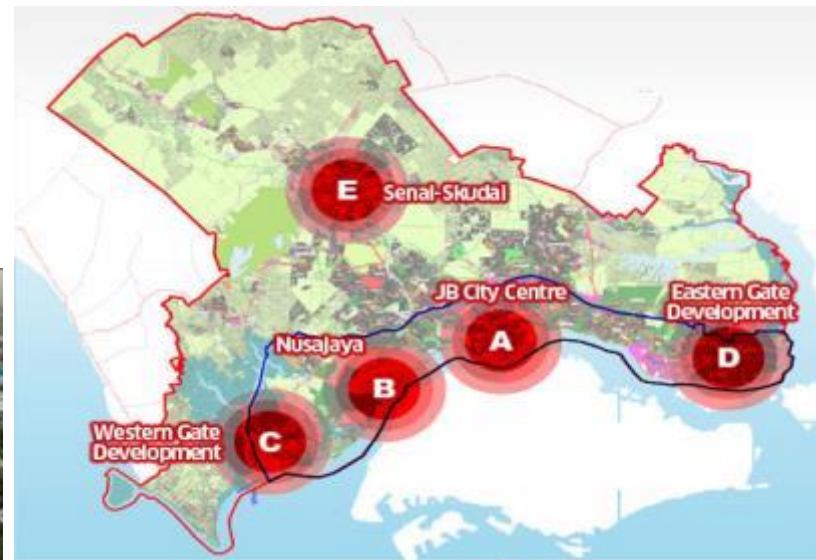


# Iskandar Malaysia at a Glance

A



E



B



C



D



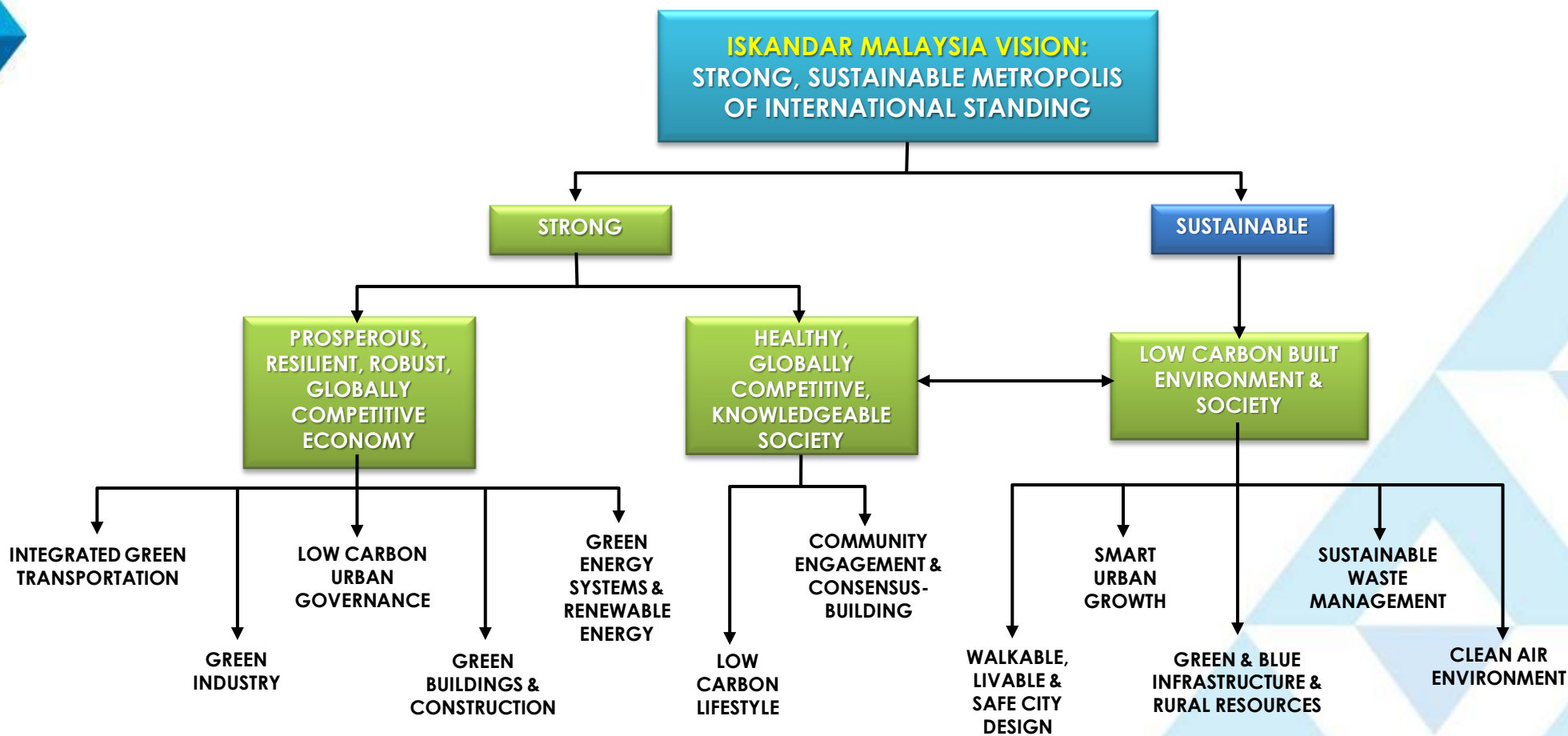






# Green-focused Agenda - Rationale

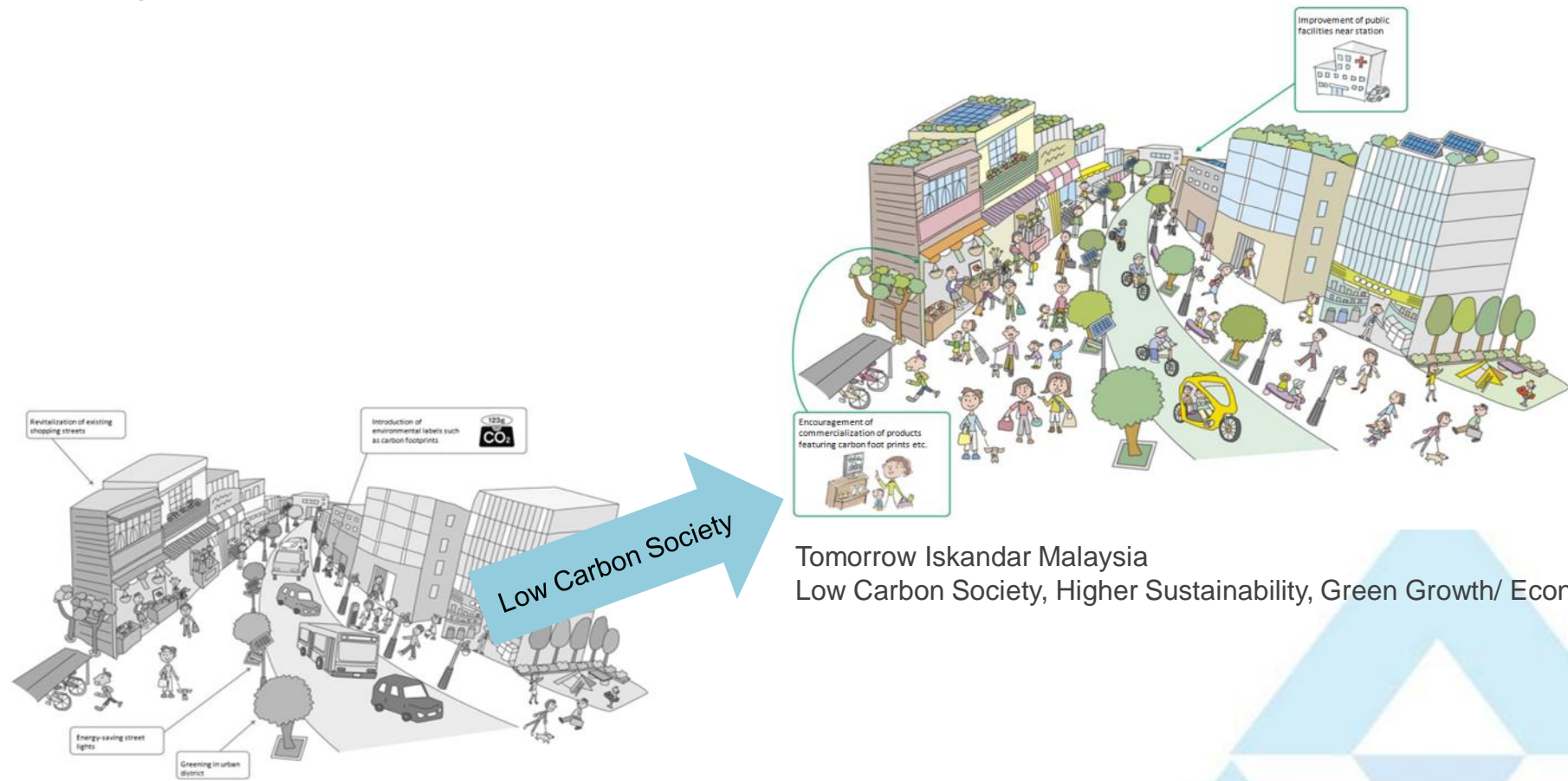
## Aligning the Vision with Low Carbon Society Development



# Towards Low Carbon Iskandar Malaysia 2025

## Today and Tomorrow

Sustainability ↑



Today Iskandar Malaysia  
High Carbon Society, Lower Sustainability

Present  
2010

Tomorrow Iskandar Malaysia  
Low Carbon Society, Higher Sustainability, Green Growth/ Economy

Future  
2025

Year →

# Projected Greenhouse Gas Emission Reduction in Iskandar Malaysia

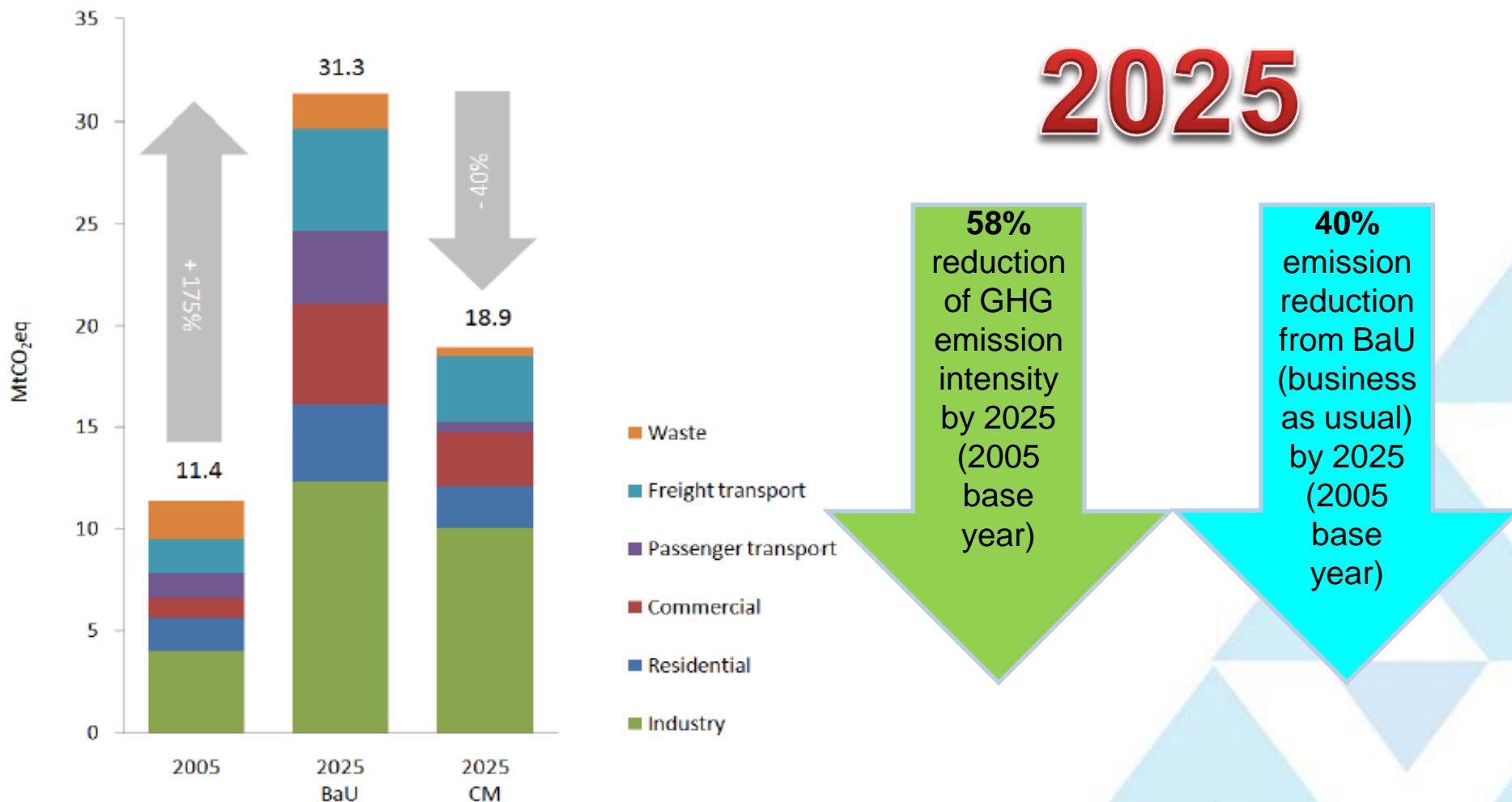


Figure 1: GHG emissions by sectors

# Launching of the LCSBPIM - COP18 Doha, 2012

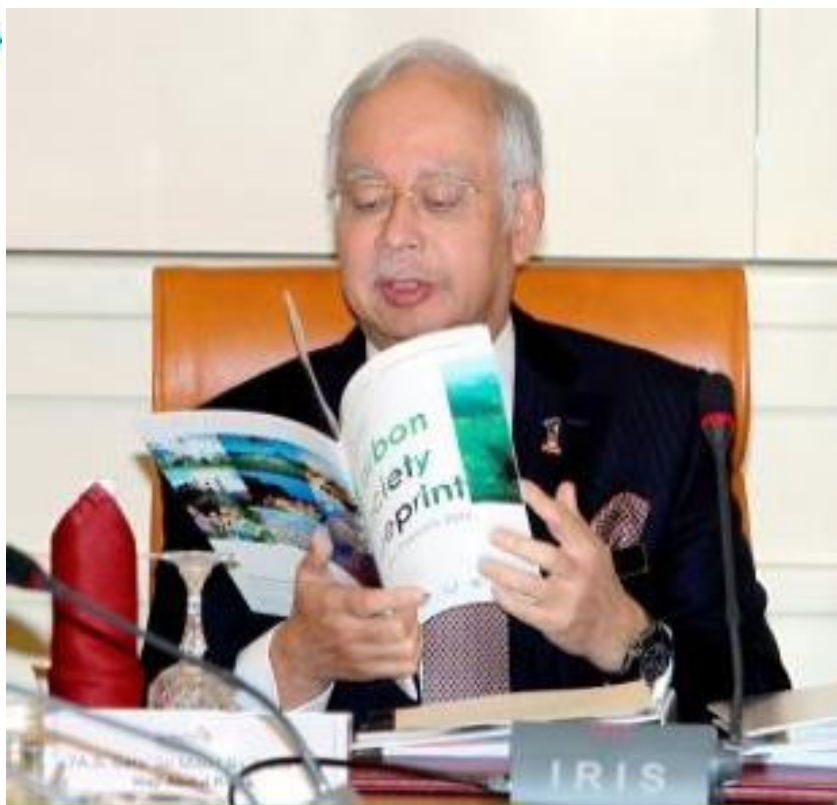




# Launching of the LCSBPIM Roadmap & LCS Booklet “Actions for a Low Carbon Future” - COP19 Warsaw, 2013



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

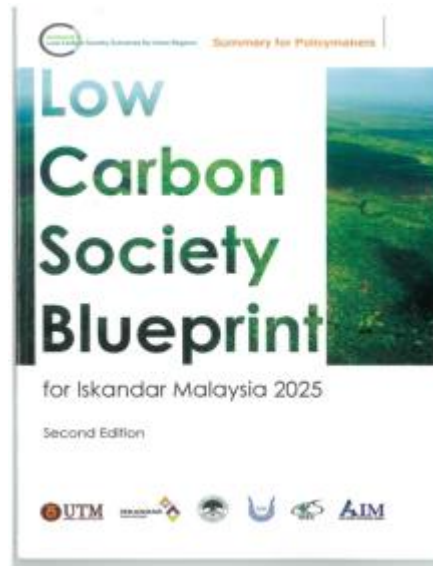


11<sup>th</sup> December 2012  
The PM endorses the launching of  
LCSBPIM at COP 18 during MoA



6<sup>th</sup> November 2013  
The PM launched Actions for a  
Low Carbon Future during MoA

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



# Iskandar Malaysia: Actions For A Low Carbon Future

<b>1. Integrated Green Transportation – Mobility Management System</b>	<b>95%</b>	<b>2. Green Economy Guidelines</b>	<b>70%</b>	<b>3. Eco-Life Challenge Project for Schools</b>	<b>Part 1 2013; now part 2</b>
<b>4. Portal on Green Technology</b>	<b>25%</b>	<b>5. Trees for Urban Parks/Forests</b>	<b>40%</b>	<b>6. Responsible Tourism and Biodiversity Conservation</b>	<b>Now in Year 3</b>
<b>7. Bukit Batu Eco-Community</b>	<b>15%</b>	<b>8. GAIA – Green Accord Initiative Award</b>	<b>15%</b>	<b>9. Low Carbon Village FELDA Taib Andak</b>	<b>Now Phase 2</b>
<b>10. Special Feature: Smart City – Nafas Baru Pasir Gudang: GREEN AND HEALTHY CITY</b> I. Green Industry II. Green Community III. Integrated Solid Waste Management IV. Carbon Sequestration of Tree Preservation Order (TPO)				<b>40%</b>	

## Legend



Green Economy



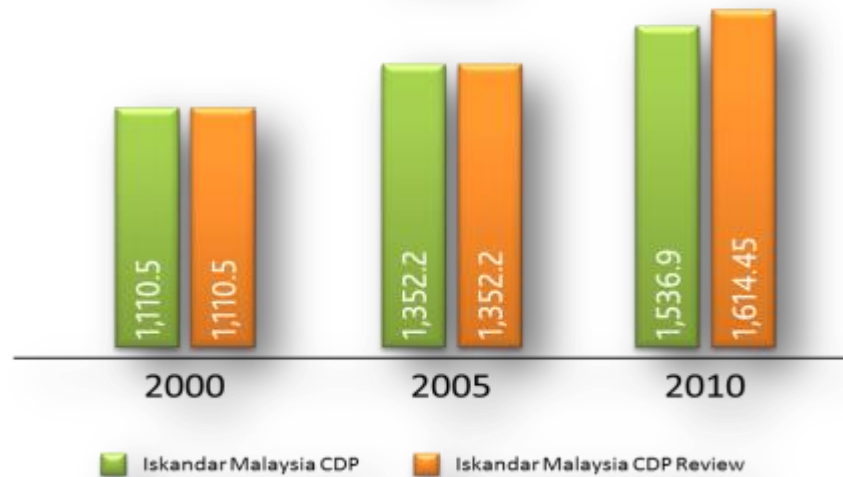
Green Environment



Green Community

# Quick update :Eco life Challenge Programmes

Iskandar Malaysia Population Growth 2000-2010  
( '000)



**198** primary schools,  
Phase 1 - **23** schools

**2014**, additional **80** schools  
involved in ELC programme.



The Iskandar Malaysia Eco-Life Challenge Project focuses on energy household accounting. School children track the energy consumption, waste generation and management, travelling choices, frugal consumption and utilizing renewable energy resources (sunlight). The aim is to raise children's awareness level on low carbon aspects.

# Quick update :Eco life Challenge Programmes



Training for 23 schools teachers



The winners of the Eco-Life Challenge Project for Schools in IM 2013: SJK (C) Chee Tong won a trip to visit Kyoto City, Japan.

## Activities in Kyoto City





# On-going Projects Under Green Agenda



**Master plan and guideline on connected pedestrian walk and cycle lane for Iskandar Malaysia**



**Integrated Coastal Erosion Prevention Plan for Tanjung Piai-**



**Gazettement of Sg Pulau Forest Reserve as a State Park**



**Planned strategic enhancement of Pulau Kukup as a premier ecotourism destination in Iskandar Malaysia**



**Majlis Teknologi Hijau dan Perubahan Iklim Negeri Johor (MTHPI)**



**Framework Strategy to protect sensitive environments in IM**



**Renewable Energy and Energy Efficiency**



**Collaboration with MGTC for LCCF pilot project in Iskandar Malaysia**

# Media Highlights 2012-2013 (LCS AND IM)

**The Daily NTA**  
 日マ共同研究で施策12件発表  
 イスカンダルの低炭素化を支援

【本紙記者】イスカンダルの低炭素化を支援する目的で、IRDAとマレーシアの環境省が共同で実施した「日マ共同研究」の結果、12件の施策を発表した。IRDAは、環境省の支援を受け、イスカンダルの低炭素化を推進している。この共同研究は、環境省の専門家とIRDAの専門家による共同作業の結果として発表された。

**NEW STRAITS TIMES**  
 Najib confident of Iskandar M'sia's investment drawing power

PUTRAJAYA, Prime Minister Datuk Seri Najib Razak yesterday said he was confident Iskandar Malaysia's low-carbon society (LCS) development plan would attract more investment. He said the plan would create jobs and improve the quality of life for the people of Iskandar Malaysia.

**Metro**  
 Cycling for charity  
 Low carbon society

All parties in Iskandar Malaysia have roles to play in transforming the economic growth corridor as a sustainable living place for the well-being of the society.

**This is our place**

IRDA is committed to providing a sustainable living environment for its residents. The use of solar panels on houses is a key initiative to reduce carbon emissions and promote sustainable living.

**Balanced approach**  
 Cooperate to transform Iskandar Malaysia for sustainable living

IRDA and the Malaysian government are working together to create a balanced and sustainable living environment in Iskandar Malaysia. This involves a mix of economic development, social services, and environmental protection.

**Cooperate to transform Iskandar Malaysia for sustainable living**

IRDA and the Malaysian government are working together to create a balanced and sustainable living environment in Iskandar Malaysia. This involves a mix of economic development, social services, and environmental protection.

**Ismail says Iskandar corridor moving in right direction but more work needed**

PUTRAJAYA, Deputy Prime Minister Datuk Seri Ismail Sabri Paetao yesterday said the Iskandar Malaysia development plan was moving in the right direction but more work was needed to ensure it was a sustainable living place.

**Cooperate to transform Iskandar Malaysia for sustainable living**

IRDA and the Malaysian government are working together to create a balanced and sustainable living environment in Iskandar Malaysia. This involves a mix of economic development, social services, and environmental protection.

**Cooperate to transform Iskandar Malaysia for sustainable living**

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**LEGOLAND**  
 Fun and excitement for all ages.

**Cooperate to transform Iskandar Malaysia for sustainable living**

IRDA and the Malaysian government are working together to create a balanced and sustainable living environment in Iskandar Malaysia. This involves a mix of economic development, social services, and environmental protection.

**Cooperate to transform Iskandar Malaysia for sustainable living**

IRDA and the Malaysian government are working together to create a balanced and sustainable living environment in Iskandar Malaysia. This involves a mix of economic development, social services, and environmental protection.

**thestar.com.my**

**PM Najib: Iskandar Malaysia has exceeded expectations**

PUTRAJAYA, Prime Minister Datuk Seri Najib Razak yesterday said Iskandar Malaysia had exceeded expectations and was a model for sustainable living.

**Cooperate to transform Iskandar Malaysia for sustainable living**

IRDA and the Malaysian government are working together to create a balanced and sustainable living environment in Iskandar Malaysia. This involves a mix of economic development, social services, and environmental protection.

**Cooperate to transform Iskandar Malaysia for sustainable living**

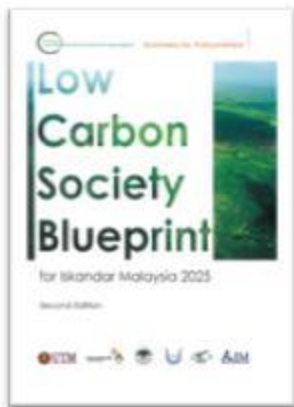
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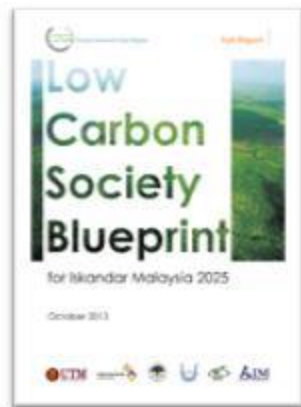


# Low Carbon Society for Iskandar Malaysia Publications



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>



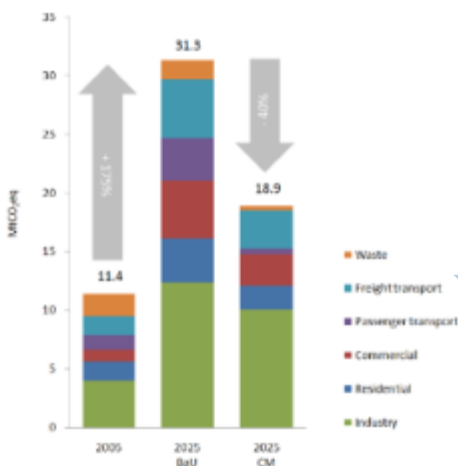
The Economics of Low  
Carbon Cities: Johor  
Bahru and Pasir Gudang  
Malaysia

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

# 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



**58%** reduction of GHG emission intensity by 2025

**2025**

**40%** emission reduction from BaU by 2025

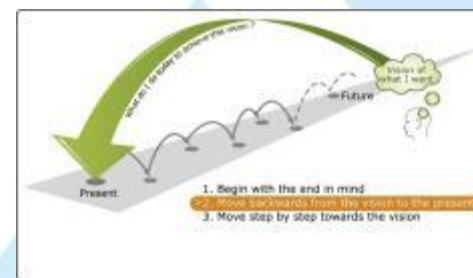
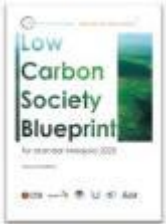


Figure 1: GHG emissions by sectors

# A Roadmap towards Low Carbon Iskandar Malaysia 2025

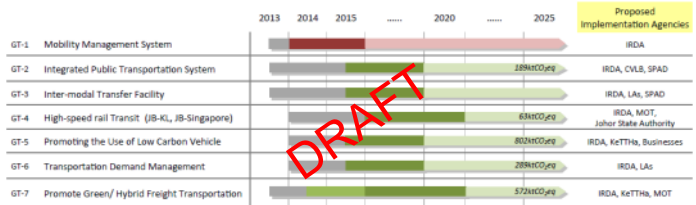


Low Carbon Society Blueprint for Iskandar Malaysia 2025

IRDA's Implementation Plan 2013-2015



A Roadmap towards Low Carbon Iskandar Malaysia 2025

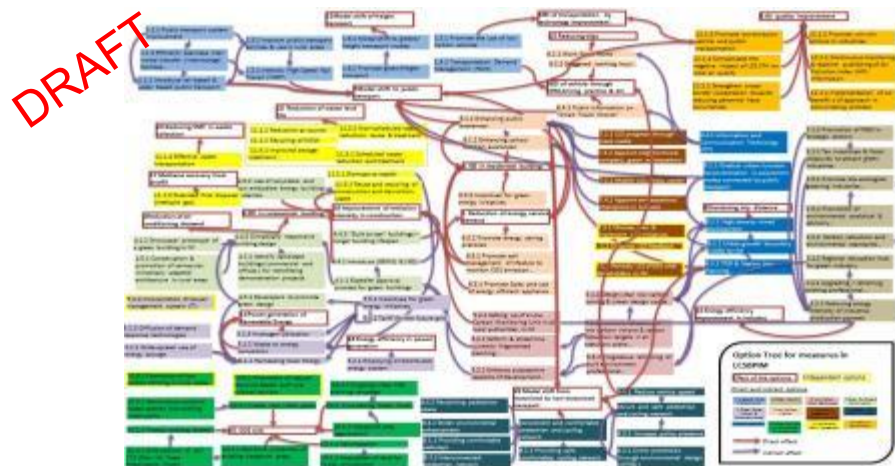


This Roadmap has been formulated to serve as a complementary document to the LCSBPIM. It provides a pathway to guide the implementation of actions outlined in the LCSBPIM by priority, timeline and related implementation agencies.

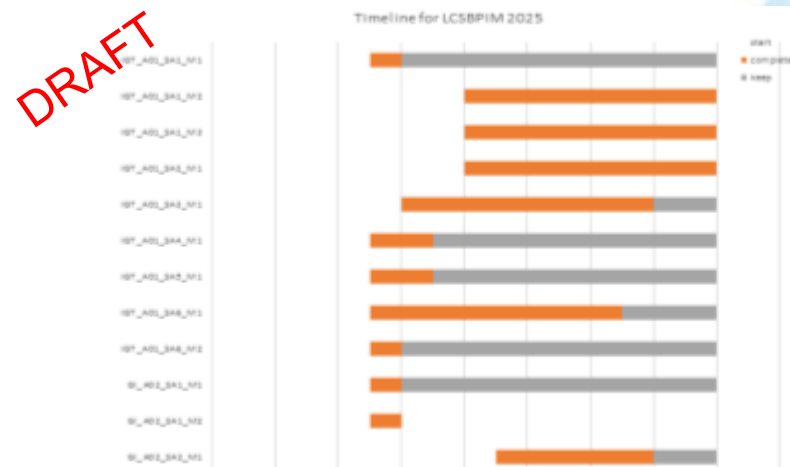


# Low Carbon Society Implementation Roadmap 2015-2025

- ❖ LCS Implementation Roadmap will serve as a complementary document to the LCSBPIM 2025.
- ❖ It provides pathways to guide the implementation of programmes recommended in the LCSBPIM 2025 by outlining according to the given priority, timeline and related implementation agencies.
- ❖ It will provide answers to the following questions: Which policies should come first? How long should the implementation period be? When should these policies be implemented? Who are the potential agencies involved in these policies?



Option Trees for LCSBPIM 2025  
- Relationship between 97 measures  
(Output from Kyoto University Training- July 2014)



Timeline for 97 measures in LCSBPIM 2025  
(Output from Kyoto University Training- July 2014)

## Way Forward

### Current projects: (to be completed by end Oct 2014 and to be announced/launched at COP20 Lima, Peru in December 2014)

- ❖ 1. LCSBPIM Roadmap (updated draft) with defined agency roles, proposed costs and funding, and timelines.
- ❖ 2. LCSBPIM Public Leaflets – currently being designed by consultant designer.
- ❖ 3. Preparation of 2 Technical Manuals: (i) Low-carbon society scenario manual (150 pages covering Integration, Energy, Building, Education & Consensus building); (ii) Co-benefits assessment manual (120 pages, including Waste management, Air environment)
- ❖ 4. Outline of LCS training programme to be conducted at UTM LCS Centre. Syllabus to be discussed with IRDA (completed by end Dec)
- ❖ 5. Proposed Eco-Partner projects between IM and Japanese cities: (a) MBBJ-Kyoto City (Eco-Life Challenge project); (b) MPPG-Kitakyushu City (Air Quality, and other pollution issues); (iii) Kulai-Senai-Tsukuba City (green technology/science innovation); and (iv) Pontian?-Toyama City (public transportation).

## a) DEVELOPMENT APPROACH

In a rapid urbanization of developing countries, **Sustainable economic corridor development/ conurbation planning**( consists of several local authorities) is a important component to facilitate green environment, green economy and green community.

## b) METHODOLOGY

Good **baseline quantitative study, 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.

-Looking beyond policy – **SCIENCE-KNOWLEDGE-POLICY- IMPLEMENTATION (completing PDCA cycle)**

## c) NETWORK

The **researchers/scientists** have to work with **local implementation agencies** and **international collaboration** for **capacity building opportunities**.





*Thank you for your attention!*  
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Thank You Terima Kasih 谢谢 धन्यवाद ありがとう

