

# LoCARNet 3<sup>rd</sup> Annual Meeting

Institute Pertanian Bogor, Indonesia on November 24-26 2014

## LOW CARBON AND RESILIENT CITIES Good Practice and Future Action of Low Carbon Society Iskandar Malaysia

Science into Policy – Low carbon Society blueprint



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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

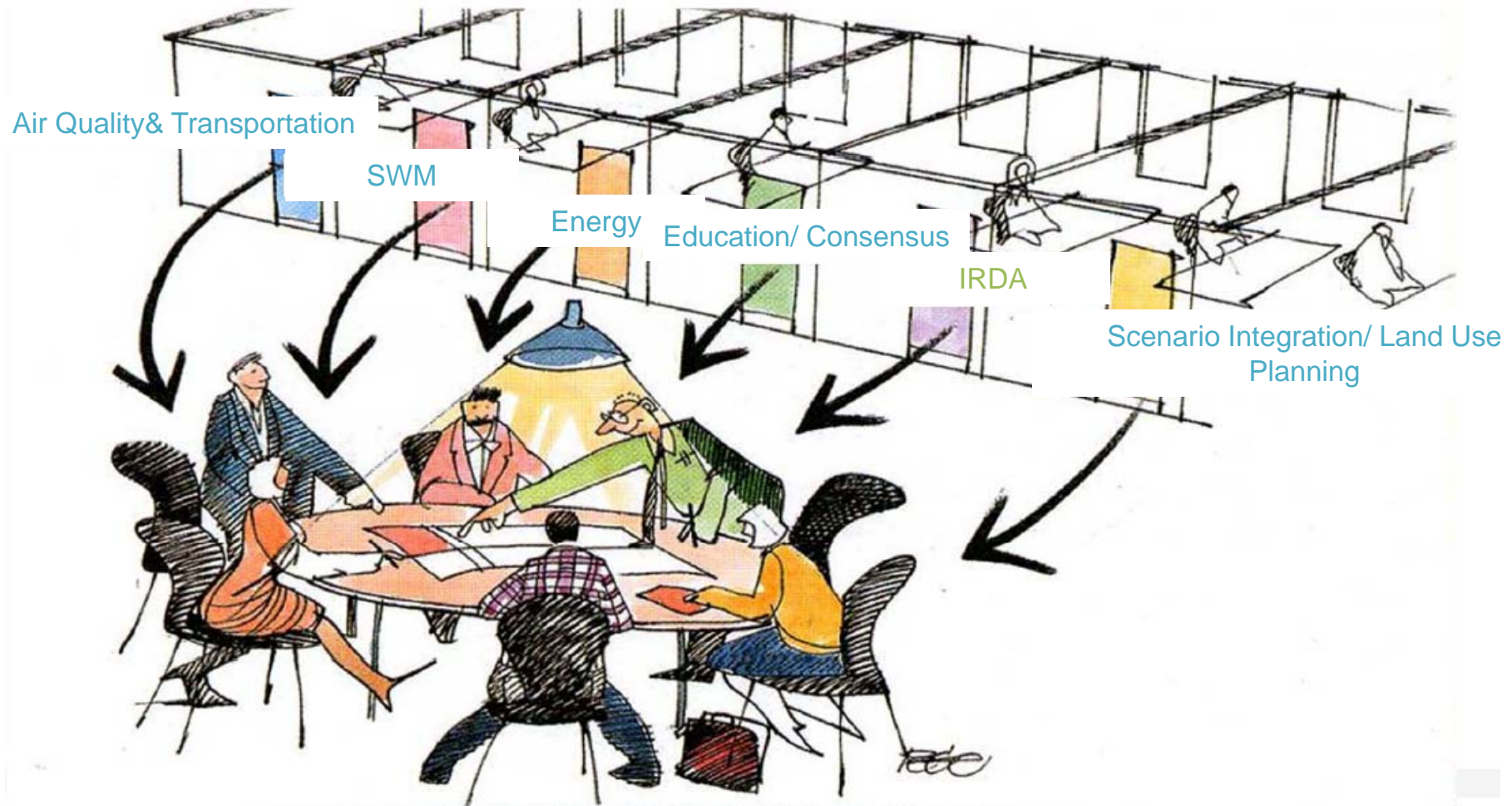
- **Low Carbon Society Blueprint for Iskandar Malaysia**
- **Solution- 12 actions**

## LCS Malaysia

- **Local authorities**
- **Conclusions**

# 05 Our Research Groups

## Development of Low Carbon Society Scenarios for Asian Regions



# URBAN PROBLEMS and Low carbon SOLUTIONS – Physical planning

## Material and Energy



## Mobility and Green



# URBAN PROBLEMS and Low carbon SOLUTIONS – Socio-economic

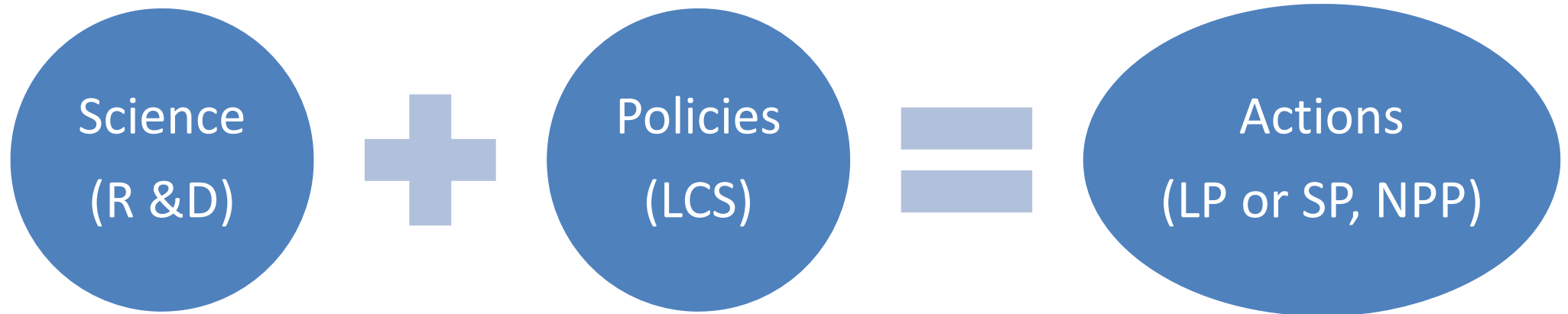
Social/ People



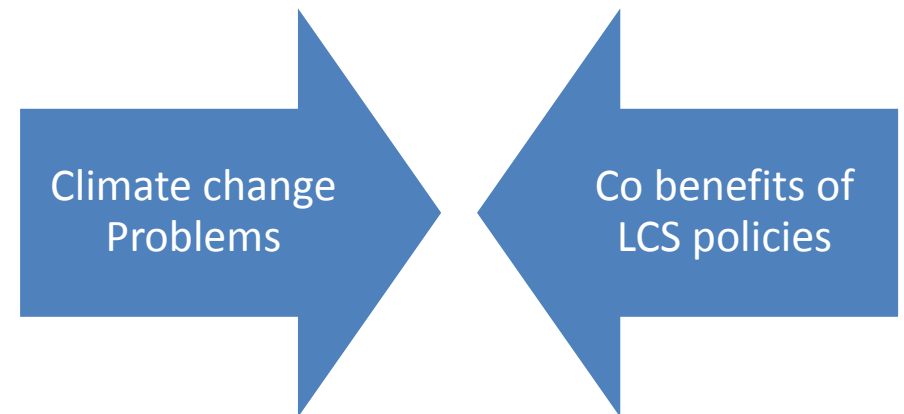
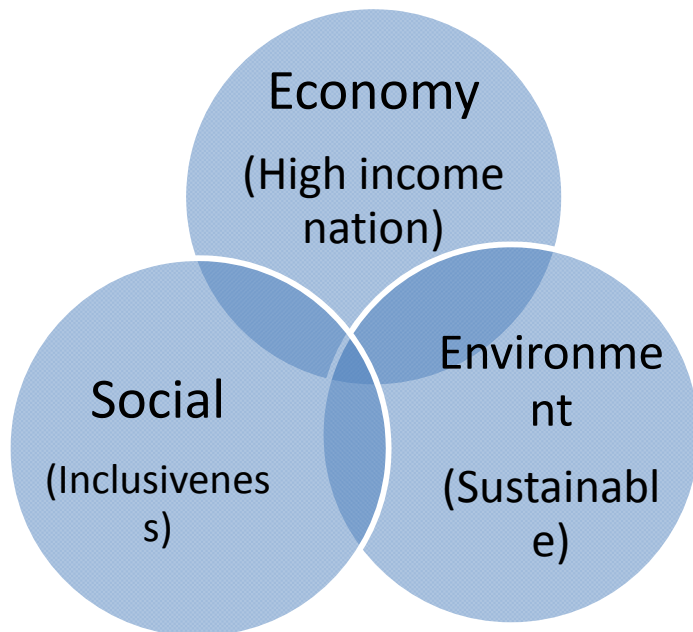
Economy/ Engine of Growth



# Role of researchers to promote Low carbon sustainable development approach

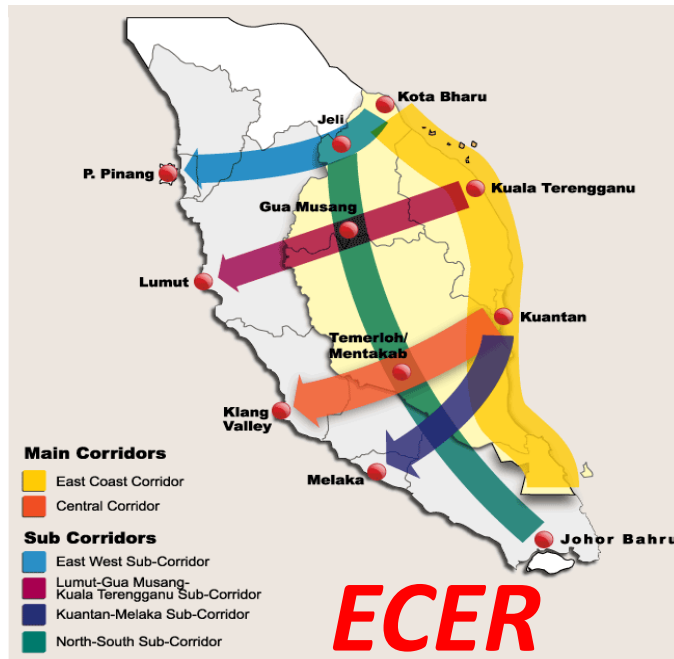
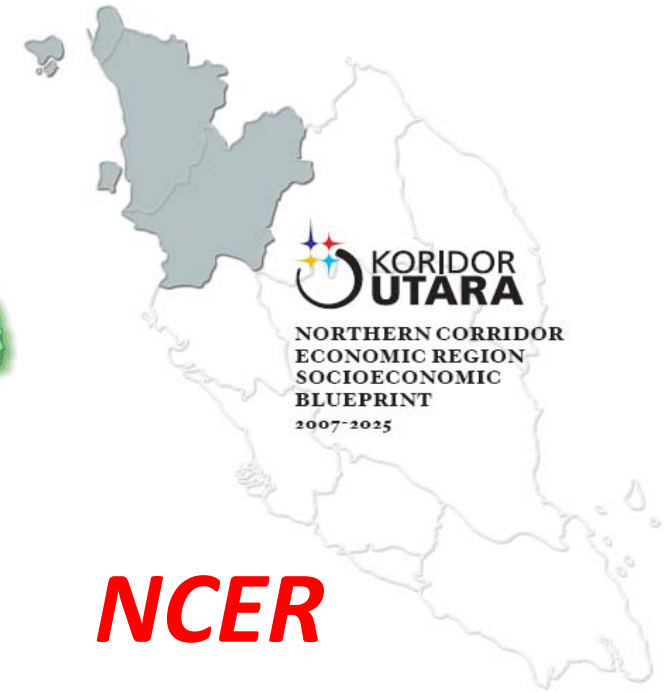


Key element Sustainable development = PRO GROWTH, PRO JOB , PRO POOR and PRO ENVIRONMENT



# MALAYSIA: KEY ECONOMIC DEVELOPMENT CORRIDORS

# BACKGROUND



# Background

## Iskandar Malaysia: Key Challenges



Size: 2,216.3 km<sup>2</sup>

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

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



Voluntary  
40%  
reduction of  
CO<sub>2</sub>  
emission  
intensity by  
2020

### Issues

- \_ Rapid urbanization and industrialization
- \_ Relatively high carbon intensity dependence on fossil fuel
- \_ High private car ownership
- \_ Low density development and urban sprawl
- \_ Low efficiency appliances

### Government Policy Directions

- \_ National Green Technology Policy
- \_ National Policy on Climate Change
- \_ National Renewable Energy Policy and Action Plan
- \_ National Policy on the Environment
- \_ 10<sup>th</sup> Malaysia Plan
- \_ Green Neighborhood Planning Guideline
- \_ Low Carbon Cities Framework and Assessment System

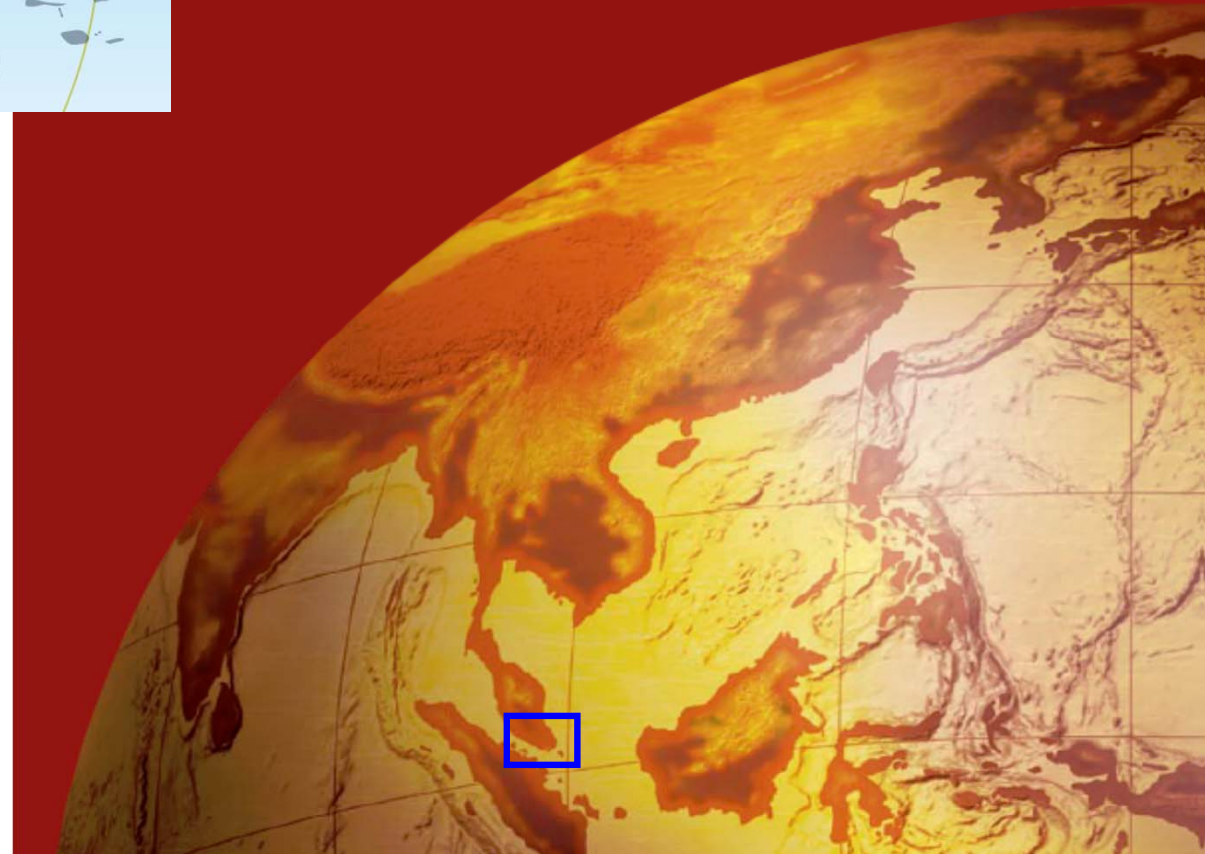


# Case study

## Iskandar Development Region

2,216 km<sup>2</sup>

Population 1,353,200



# 01 Low Carbon Society Scenarios for Iskandar Malaysia

## Project Background



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**.

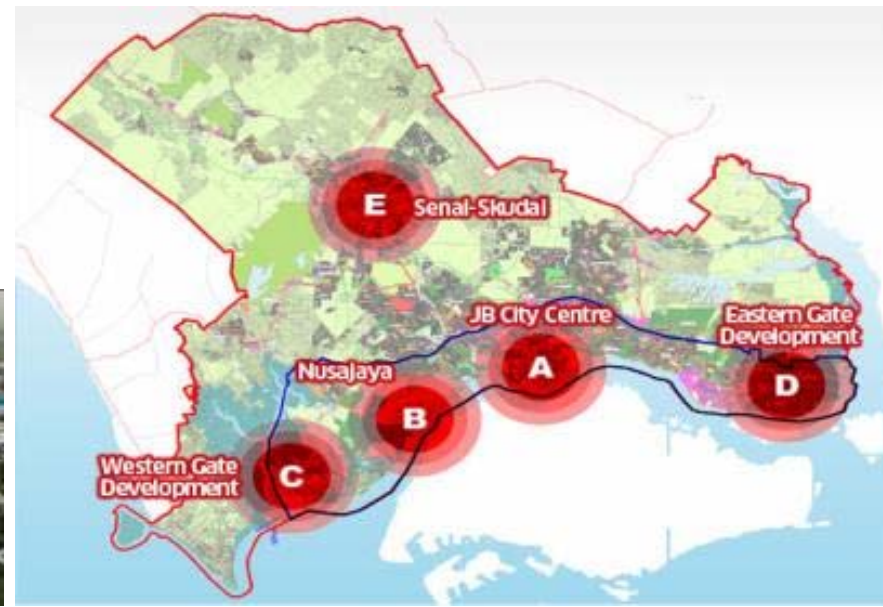
Target Year: 2025 (2005 – 2025)

# Iskandar Malaysia at a Glance

A



E



B



D

C



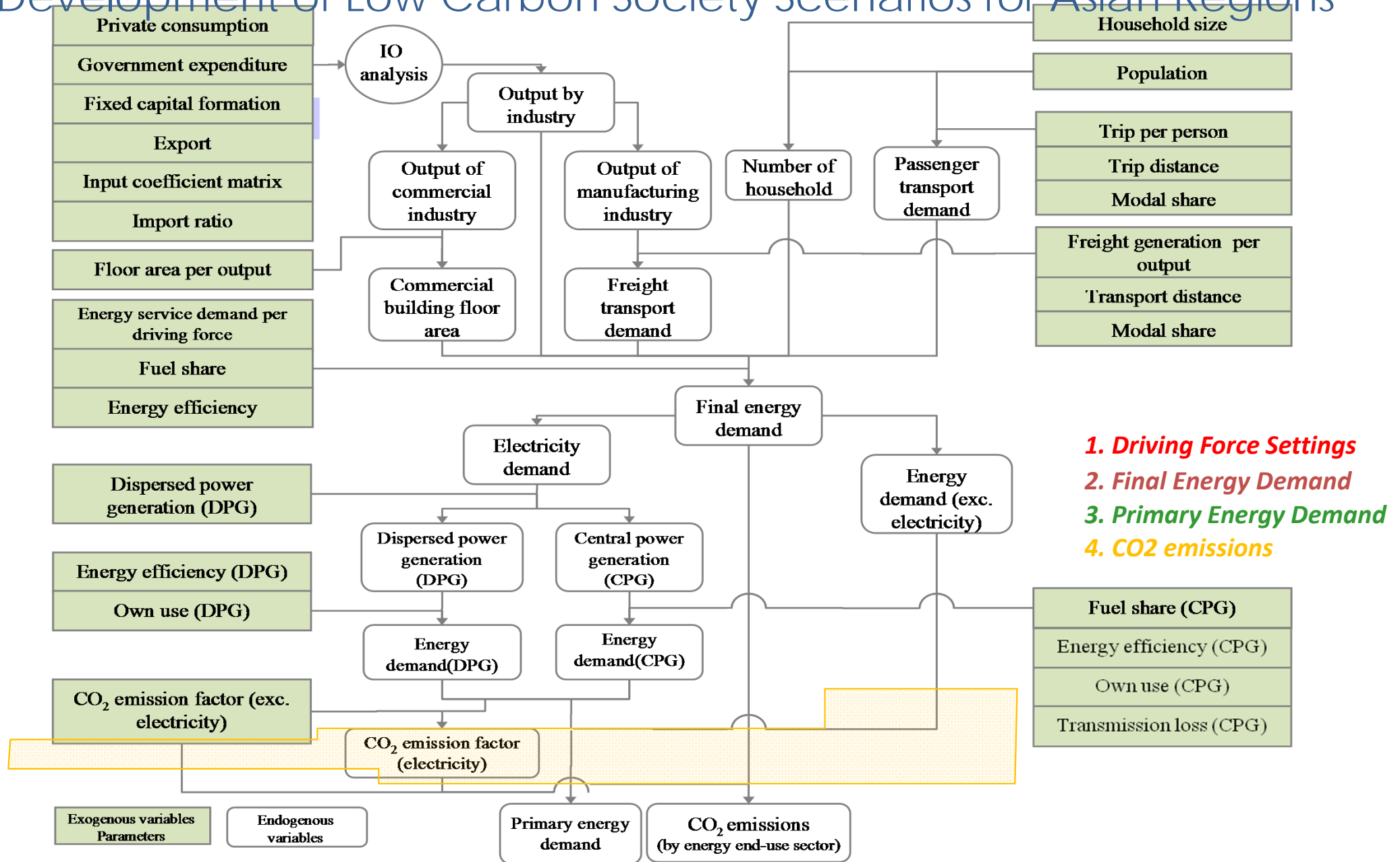
# IRDA's Strategic Environmental Policy



# Proposed Numbers of SC by Actions

	Action Names	Sub-action	Measures	Programs	Total
1	Integrated Green Transportation	6	9	28	43
2	Green Industries	2	6	16	25
3	Low Carbon Urban Governance	4	4	14	21
4	Green Buildings and Construction	5	8	21	34
5	Green Energy System and Renewable Energy	5	7	21	32
6	Low Carbon Lifestyle	5	8	21	34
7	Community Engagement and Consensus Building	4	6	24	34
8	Walkable, Safe, Livable City	4	8	30	42
9	Smart Growth	3	5	17	25
10	Green and Blue Infrastructure	7	11	25	43
11	Sustainable Waste Management	4	9	46	59
12	Clean Air Environment	2	4	12	18
<b>Total</b>		<b>51</b>	<b>85</b>	<b>275</b>	<b>410</b>

# CO<sub>2</sub> Emission Modeling – Development of Low Carbon Society Scenarios for Asian Regions



# Projected Greenhouse Gas Emission Reduction in Iskandar Malaysia

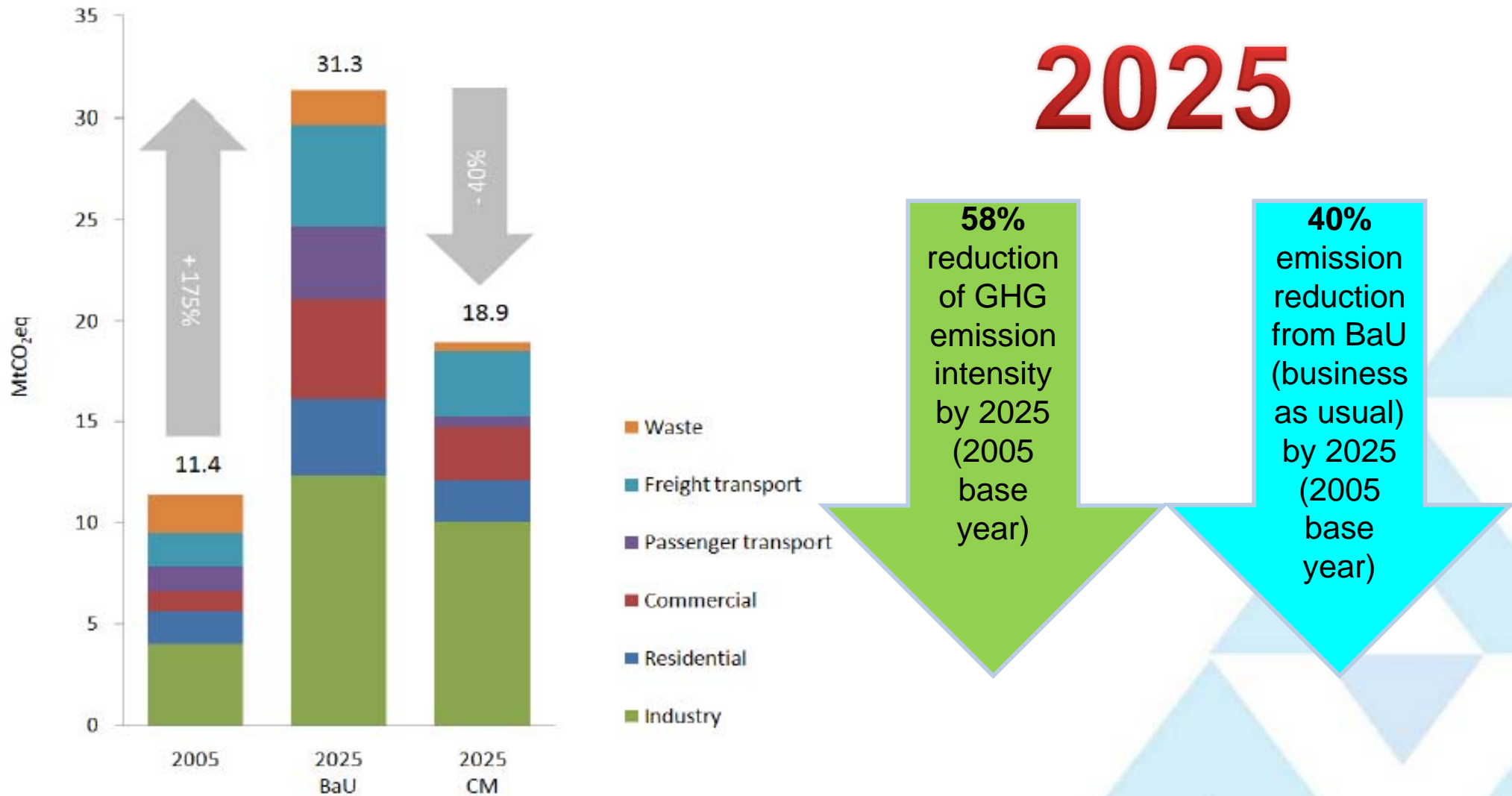


Figure 1: GHG emissions by sectors

# 04 Potential Mitigation Options for Iskandar Malaysia

## 12 Actions Towards Low Carbon Future

Mitigation Options	CO2 Reduction	%
<b>Green Economy</b>	<b>7,401</b>	<b>59%</b>
Action 1 Integrated Green Transportation	1,916	15%
Action 2 Green Industry	1,085	9%
Action 3 Low Carbon Urban Governance**	-	-
Action 4 Green Building and Construction	1,338	11%
Action 5 Green Energy System and Renewable Energy	3,061	24%
<b>Green Community</b>	<b>2,557</b>	<b>21%</b>
Action 6 Low Carbon Lifestyle	2,557	21%
Action 7 Community Engagement and Consensus Building**	-	-
<b>Green Environment</b>	<b>2,510</b>	<b>20%</b>
Action 8 Walkable, Safe and Livable City Design	264	2%
Action 9 Smart Urban Growth	1,214	10%
Action 10 Green and Blue Infrastructure and Rural Resources	620	5%
Action 11 Sustainable Waste Management	412	3%
Action 12 Clean Air Environment**	-	-
<b>Total</b>	<b>12,467**</b>	<b>100%</b>



# 1<sup>st</sup> LCS Symposium cum Training Workshop

(4<sup>th</sup> July – 5<sup>th</sup> July 2011)



# 2<sup>nd</sup> LCS Symposium cum Training Workshop

(31<sup>st</sup> October -1<sup>st</sup> November 2011)



# 1<sup>st</sup> LCS Focus Group Discussion

(21<sup>st</sup> June 2011)



# 2<sup>nd</sup> LCS Focus Group Discussion

(25<sup>th</sup> November 2011)



# Green Education System Focus Group Discussion

(1<sup>st</sup> December 2011)



# Typical Rural Village Technical Tour to Iskandar Malaysia

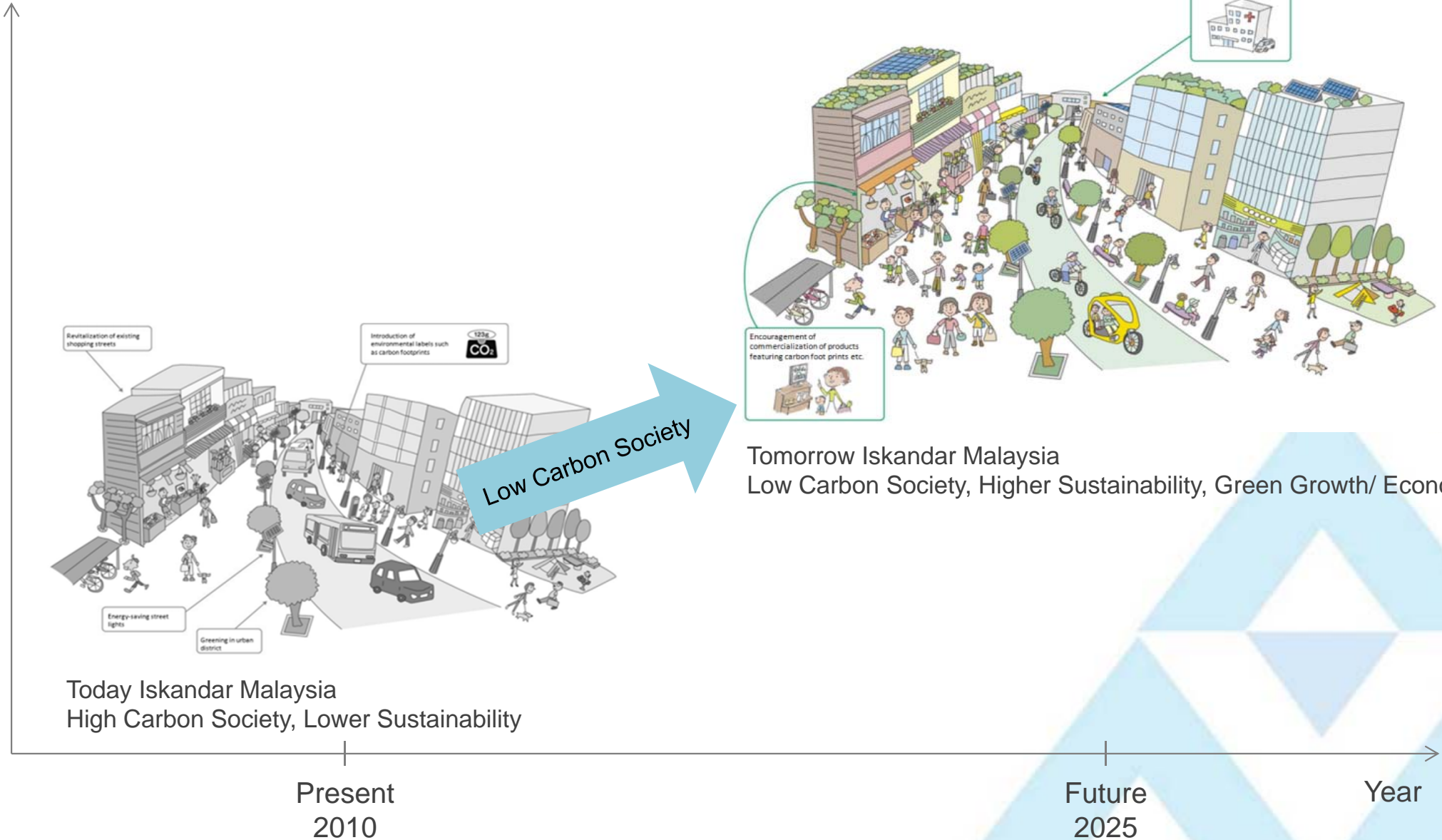
(2<sup>nd</sup> November 2011)



# Towards Low Carbon Iskandar Malaysia 2025

## Today and Tomorrow

Sustainability



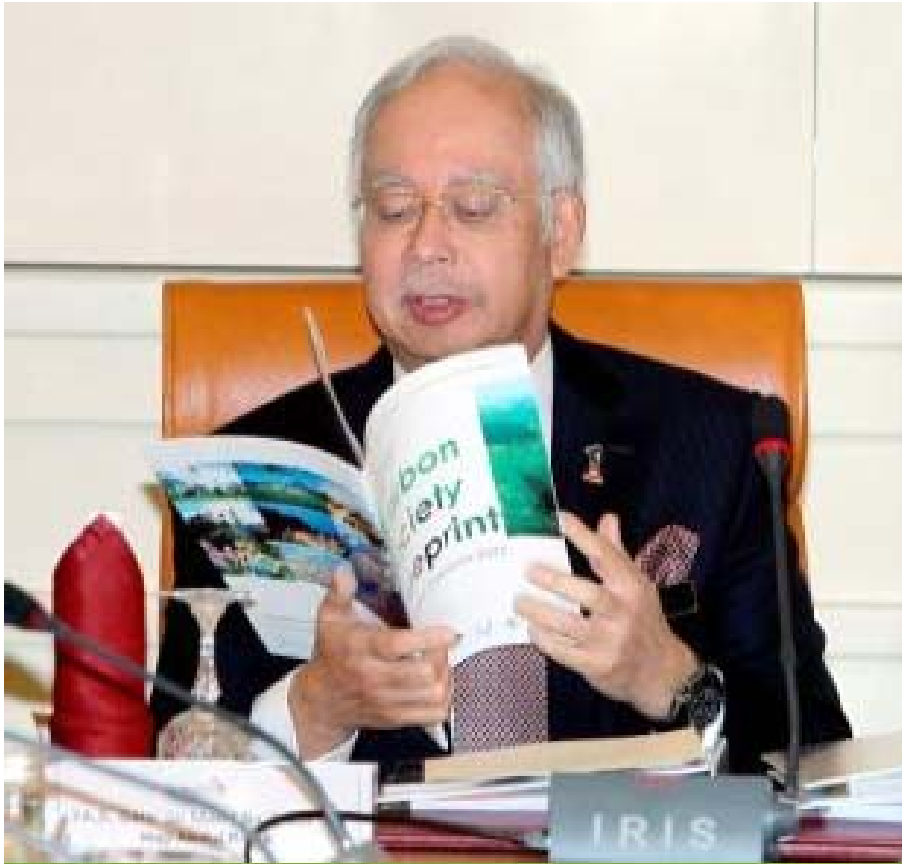
# Launching of the LCSBPIM - COP18 Doha, 2012



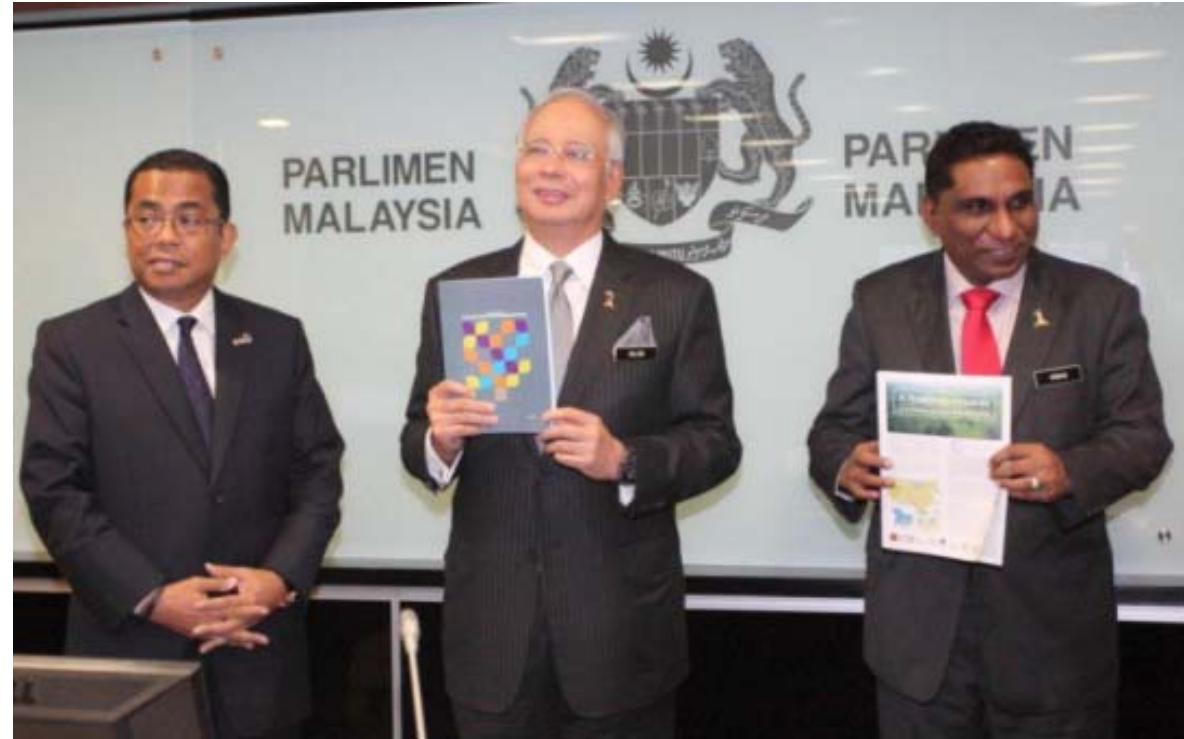
## Launching of the LCSBPIM Roadmap & LCS Booklet “Actions for a Low Carbon Future” - COP19 Warsaw, 2013



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



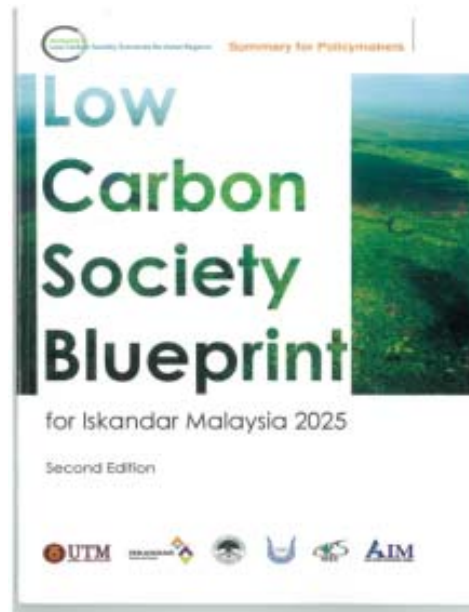
11<sup>th</sup> December 2012  
The PM endorses the launching of  
LCSBPIM at COP 18 during MoA



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

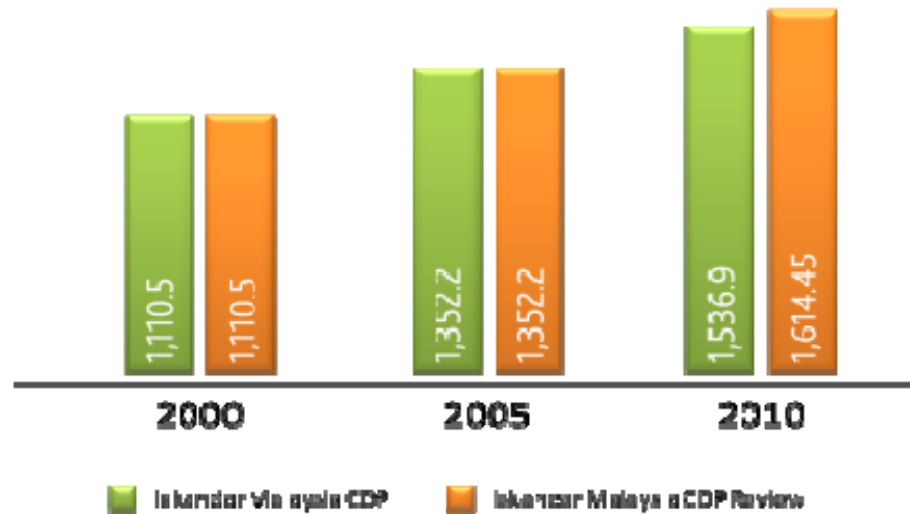


- The Booklet 'Actions for a Low Carbon Future' – list of 10 programmes which IRDA has started implementing or have been completed.
- On 6th November 2013, the Iskandar Malaysia: Actions for A Low Carbon Future is the implementation booklet which outlines the 10 programmes, was launched by Malaysia Prime 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>

## 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.

# 03 Low Carbon Society Proposal Plans for 5 Municipalities

## Integrating Iskandar Malaysia and 5 Local Municipalities

Top - down

Low Carbon Society Blueprint for Iskandar Malaysia 2025

Bottom - up

Low Carbon Society Action Plan for Johor Bahru 2025

Low Carbon Society Action Plan for Johor Bahru Tengah 2025

Low Carbon Society Action Plan for Pasir Gudang 2025

Low Carbon Society Action Plan for Kulai Jaya 2025

Low Carbon Society Action Plan for Pontian 2025

Iskandar Malaysia

- Direction, Guide and Policy

ISKANDAR  
MALAYSIA



FIVE (5) Local Municipalities

- Detail Local Action
- Priority and Preference
- Correct Data through Survey
- Chose Implementable measures on the ground
- Pioneering Activities through Pilot Projects



# 03 Low Carbon Society Proposal Plans for 5 Municipalities

## Local Action Plan: Cover and Theme (Example)



JOHOR BAHRU CITY COUNCIL **MBJB**

JOHOR BAHRU TENGAH MUNICIPAL COUNCIL **MPJBT**

PASIR GUDANG MUNICIPAL COUNCIL **MPPG**

KULAI MUNICIPAL COUNCIL **MPKu**

PONTIAN DISTRICT COUNCIL **MDP**

Under SATREPS, the project development of Low Carbon Society, Strategy for Asian Region, comes with a view to reduce Low Carbon Society (LCS) impact and cutting a methane source's CO<sub>2</sub> in the natural and atmospheric system, towards Net-zero (Net-zero) target to Carbon Emission by 2050-2055.

The project is to develop a methodology for creating a Low Carbon Society (LCS) impact and apply it to Singapore as well as to expand the concept to other cities.

The initiative is provided by Carbon Emission Reduction Organization for 5 Local Authorities in the Strategic Plan, State Council (SP) in the context of Carbon Emission Reduction. Several other factors to be taken accordingly to the current scenario.

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Johor Bahru

Johor Bahru Tengah

Pasir Gudang

Kulai Jaya

Pontian

*'The Vibrant Heart of Southern Region'*

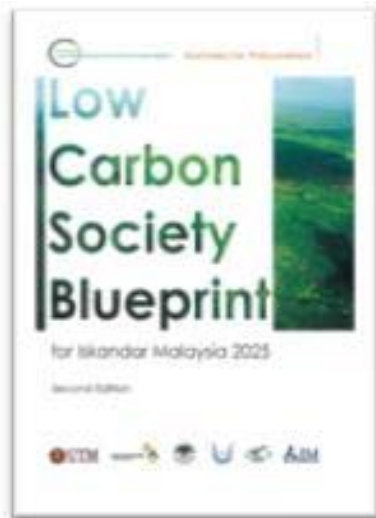
*'Livable Community City'*

*'Green Manufacturing Hub'*

*'Smart Logistic Hub'*

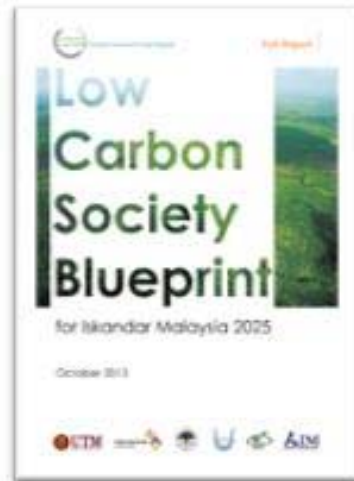
*'Agrobiodiversity Hub'*

# 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>

# 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

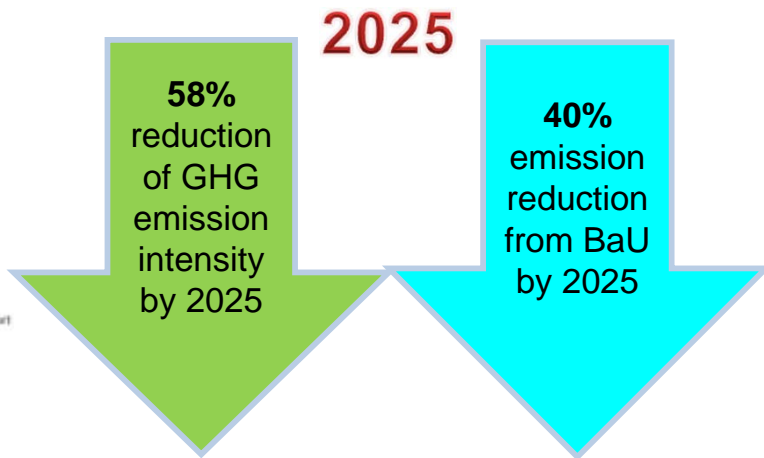
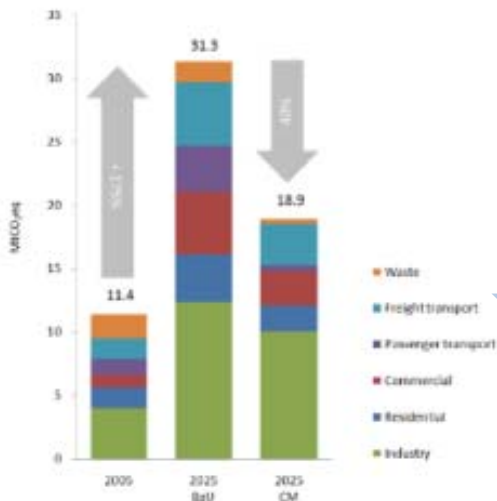


Figure 1: GHG emissions by sectors

## Conclusion- Way forward

**a) GOOD PRACTICE and ACTION  
INTEGRATED and MULTI DISPLINARY  
SCIENCE-KNOWLEDGE-POLICY- IMPLEMENTATION (completing PDCA cycle)**

### **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.**

**c) MEDIA and BUY- IN  
Stakeholder participation**

### **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

