

LoCARNet 3rd Annual Meeting

Institute Pertanian Bogor, Indonesia on November 24-26 2014

Promoting an Integrated Knowledge base system for scientific
Low carbon Development Policy in Asia

Nov 24 2014 session 1530-1730

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

- **Background**
- **Sustainable development policy and framework in Malaysia**
- **New economic model**

Challenges And Solutions

- **SATREPS project**
- **Low Carbon Society Blueprint for Iskandar Malaysia - 12 actions**

LCS Malaysia

- **Way forwards – Focus on implementation/ LPAs**
- **Conclusions**

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

Issues

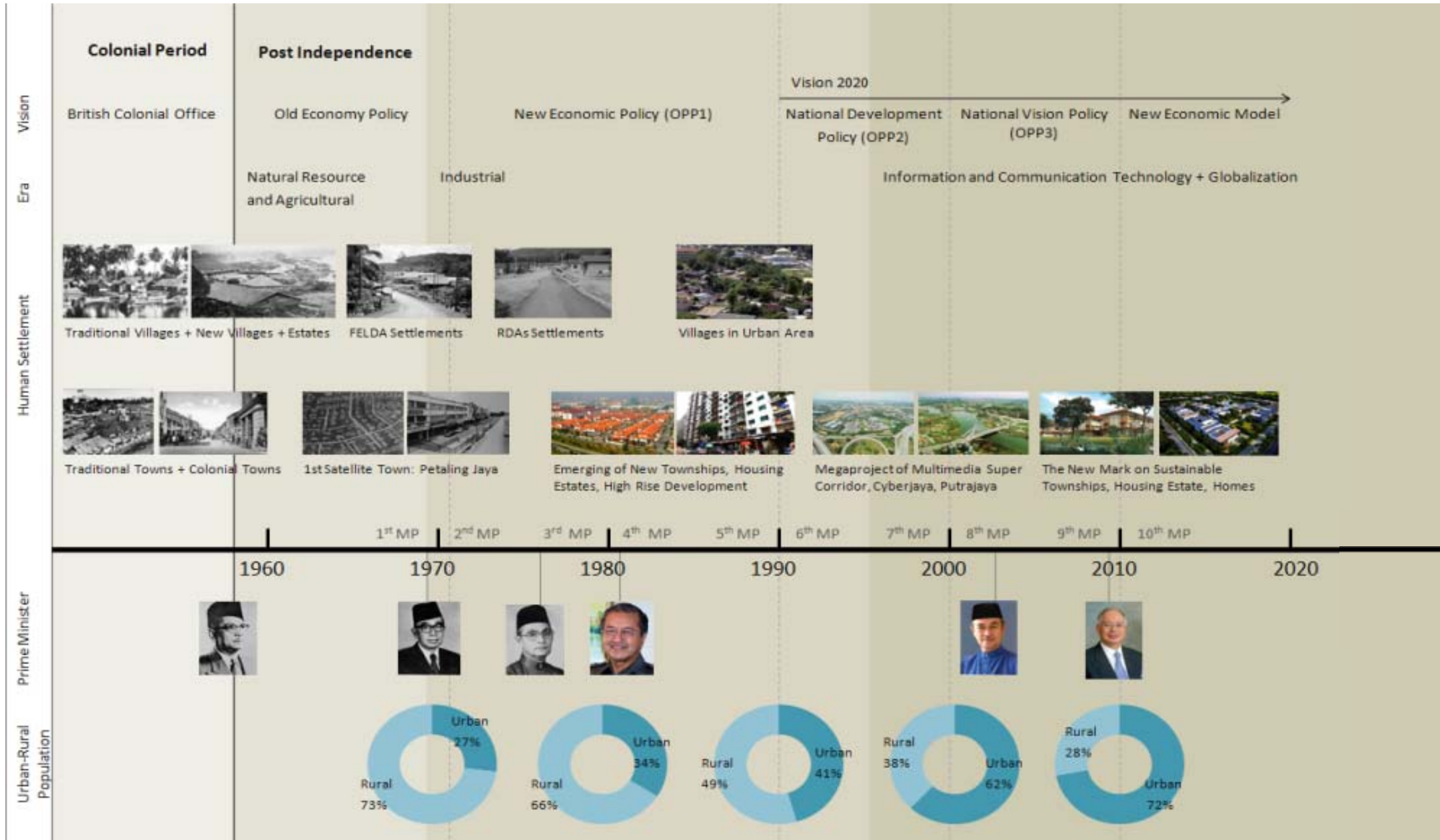
- _ Rapid urbanization and industrialization
- _ Relatively high carbon intensity dependence on fossil fuel
- _ High private car ownership
- _ Low density development and urban sprawl
- _ Low efficiency appliances

Government Policy Directions

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

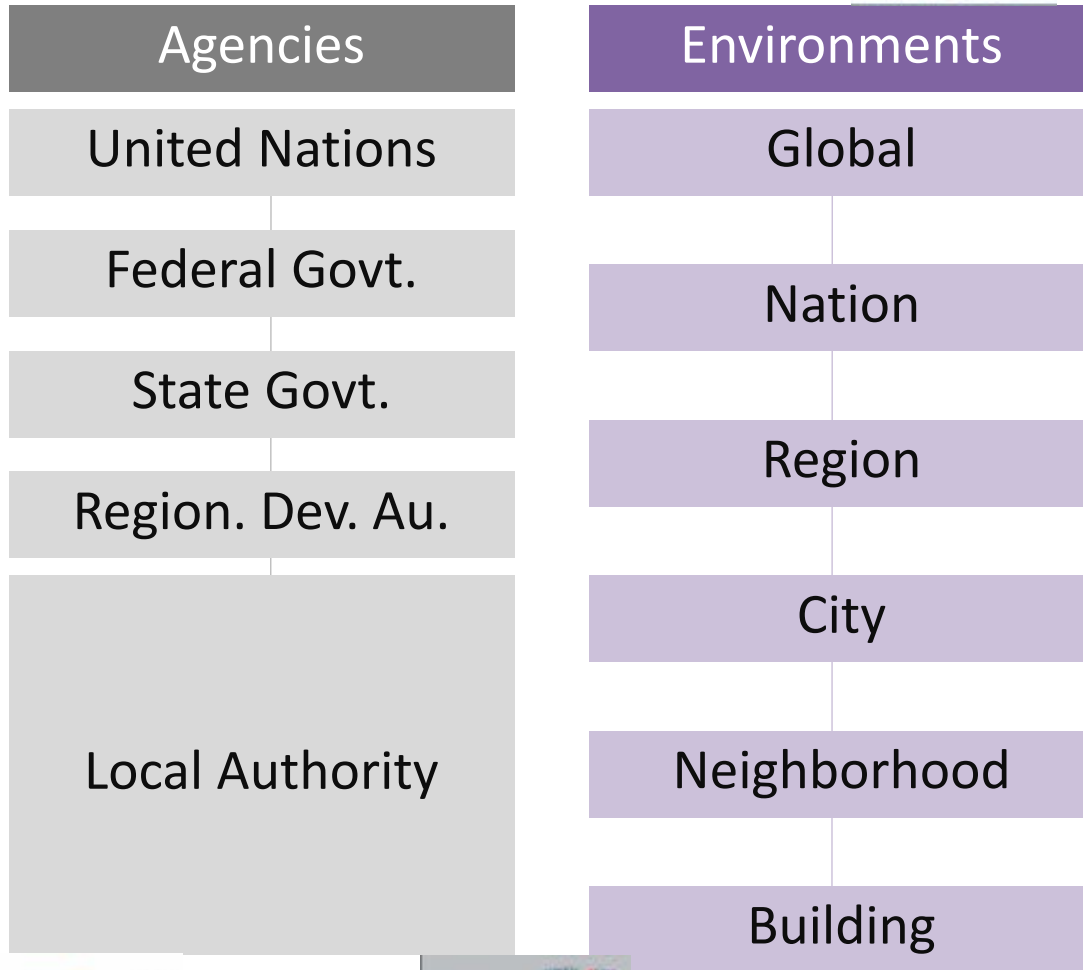
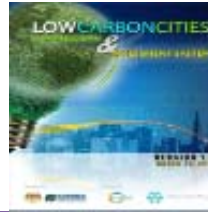
2 Sustainable Development in Malaysia

Moving Towards Sustainable Human Settlement



2 Sustainable Development

Low Carbon Frameworks



Frameworks

United Nations Climate Change Conference (COP 15), Malaysia committed to reduce 40% carbon emission intensity

Malaysia Plan, Economic Transformation Program, National Policy on Climate Change, National Green Technology Policy, National Policy on the Environment , NPP NUP etc

State Structure Plan, Regional Plan, Economic Region Master Plan

Local Plan, Low Carbon Cities Framework and Assessment System

GBI Township Tool

Green Neighbourhood Planning Guideline

Green Building Index, Energy Efficiency in Building Guidelines, Design Strategies for Energy Efficiency in New Buildings (Non-Domestic), Malaysia Industrial Energy Audit Guidelines, Energy Efficiency and Conservation Guidelines for Malaysian Industries



(Source: Carbon Dioxide Information Analy)

Malaysian Outlook

The CO₂ emission per capita and emission intensity of selected countries in 2010

Countries	Emission per capita tones of CO ₂ per capita	Emission Intensity tones of CO ₂ per US\$1000 of GDP
World	4.35	0.73
United States	19.1	0.5
Singapore	9.8	0.3
Japan	9.7	0.2
United Kingdom	8.6	0.3
Malaysia	6.7	1.3
China	4.6	2.5
Thailand	3.5	1.3
Indonesia	1.7	1.6
India	1.2	1.7

The 10th Malaysian Plan (2011-2015) has outlined 2 major National Policies on **Environmental Protection and conservation** :

National Green Technology Policy

- Emphasizes on Sustainable development, development of roadmaps to guide the application of green technologies & establishment of Green Tech Financing Scheme.

National Climate Change Policy

- Coordinate and streamline policy & legislations, stashed inter-ministrial and cross sectoral committee to facilitate and identify options and strategies to achieve a low carbon economy.

Green Neighborhood Guidelines – JPBD 2010

-Smart location, Neighbourhood pattern and design, Green Infrastructure

Green Township Framework

-LCCF Guide Towards LC Cities 2012- Kettha/MIP

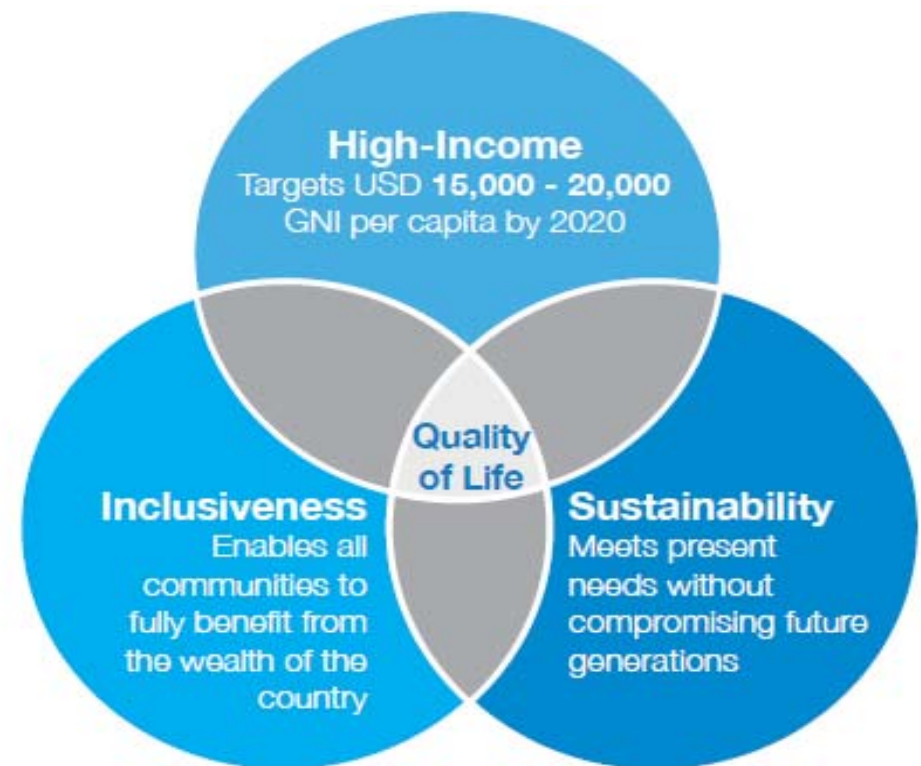
Malaysia: Towards developed nation status

New Economic Model for Malaysia

VISION 2020

1. To move Malaysia forward so that it becomes an advanced, united, and just society with high standards of living for all.

2. To propel Malaysia towards becoming a high-income developed nation.



1 MALAYSIA CHARTING DEVELOPMENT

TOWARDS A HIGH INCOME NATION – National Transformation Policy (2012) and Prospering the Nation and Enhancing well being of rakyat (2013)

- The 2013 budget in line precedent goals on rakyat's welfare and nation's well being , aim to position Malaysia as a **developed and high-income economy** with inclusive and sustainable development, will continue to ensure that the **most conducive socio-economic environment** is created through the **Government Transformation Programme (GTP)** to underpin growth focusing on **Welfare for rakyat, Well Being of the nations**

The 10th Malaysia Plan

- Building an environment that **enhances Quality of Life**
- **New urbanism and compact city**
- Growth concentrated in **urban conurbation**
- **Safe city** initiatives
- **Developing climate resilient growth policy**
- Adaptation measures
- Mitigation measures
- Incentives for **RE and EE**
- Improving **Solid waste management**
- Conserving forest
- Reducing **emission to improve air quality**

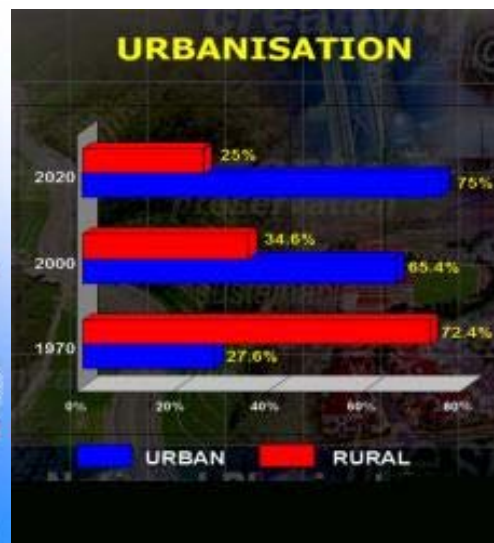


National Physical Plan (NPP1 and NPP2)



CURRENT SPATIAL PLANNING

- The NUP 2 outlines the urban hierarchy of Peninsular Malaysia to promote national growth conurbation policy



MALAYSIA AND ENERGY CONSIDERATION

Since 1970s, Malaysia has introduced a variety of measures to achieve sustainable development goals which have been embodied in relevant policies & all short, medium and long-term development plans RS & RT/ Planning control.

- Five-year national development plans
- The Tenth Malaysia Plan (2011-2015),
- National Physical Plan 1 (2005) and NPP2 (2010)
- National Urbanization Policy (2006) provided policy stronger measures towards better environmental resource management policy strategies.

National Urbanization Policy- Conurbation and Economic growth corridors

Thrust areas

- Thrust 1: Towards an **Efficient and Sustainable Urbanization**
- Thrust 2: Development of a Resilient, Dynamic and Competitive Urban Economy
- Thrust 3: **Towards an Integrated and Efficient Urban Transportation System**
- Thrust 4: Provide Quality Urban Services, Infrastructure and Utility
- Thrust 5: Create a **Conducive Urban Living Environment** with a Distinct Identity
- Thrust 6: Effective Urban Governance

Urban Hierarchy

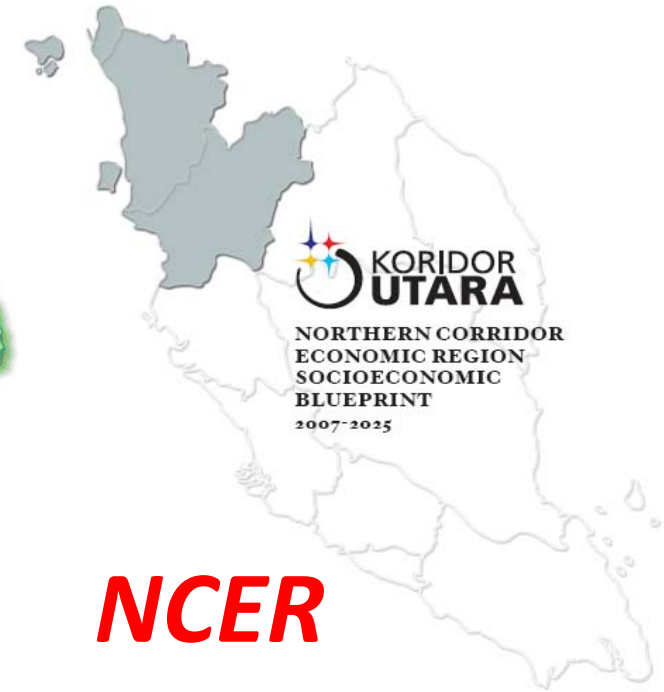


MALAYSIA: KEY ECONOMIC DEVELOPMENT CORRIDORS

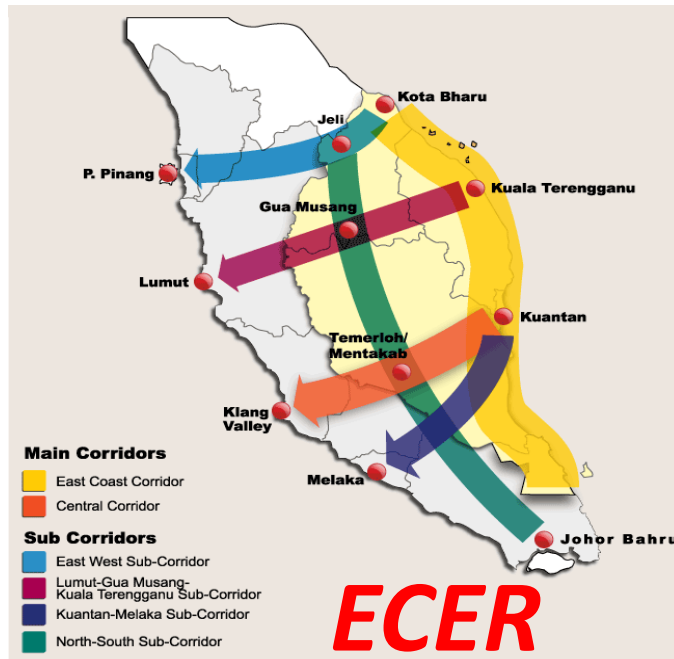
BACKGROUND



IM



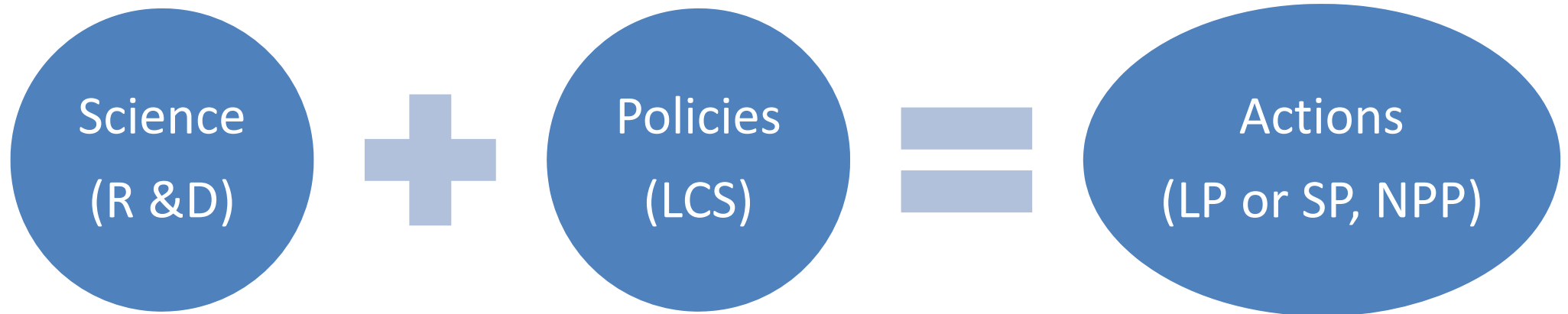
NCER



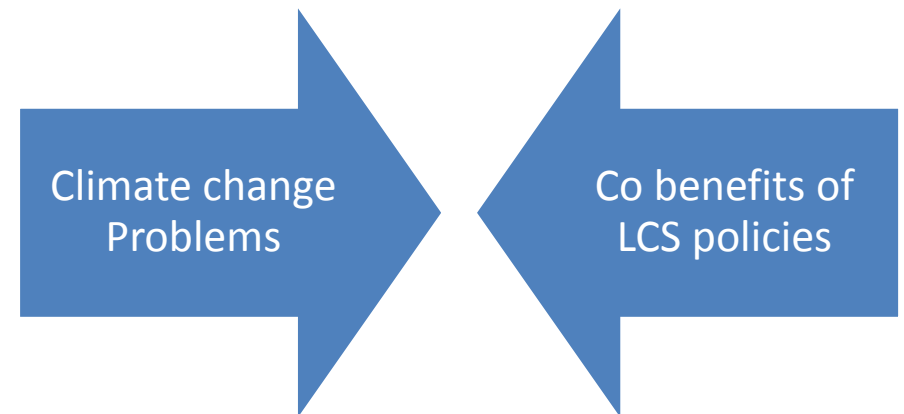
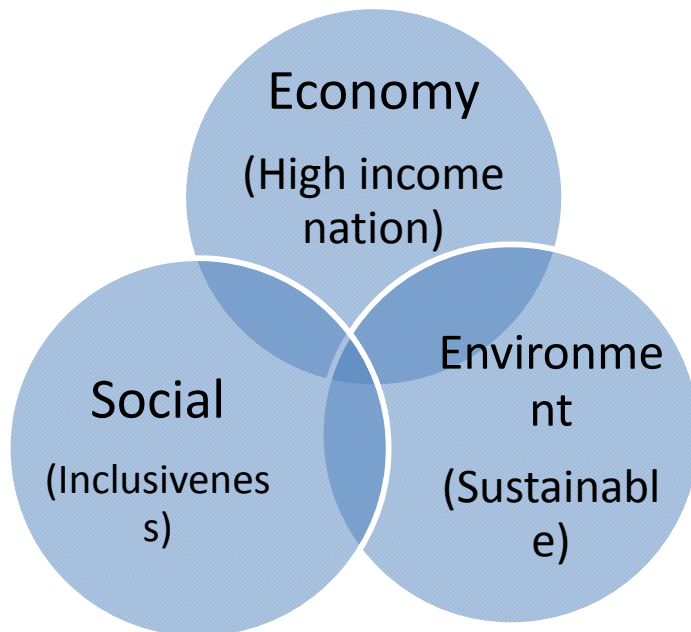
ECER



Role of researchers to promote Low carbon sustainable development approach



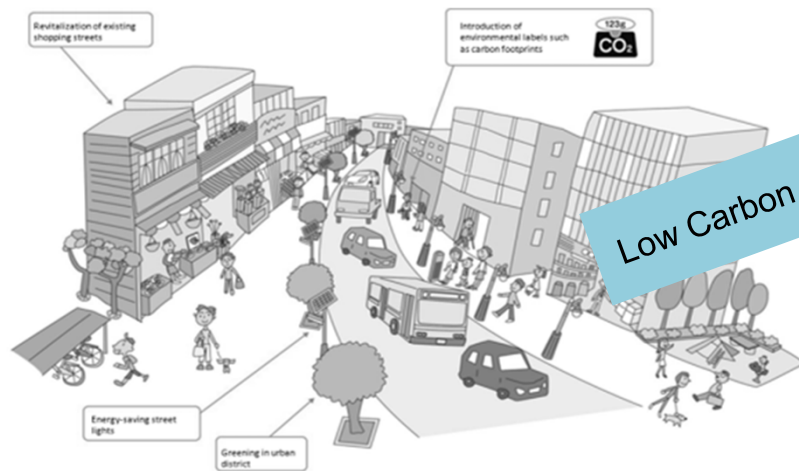
Key element Sustainable development = PRO GROWTH, PRO JOB , PRO POOR and PRO ENVIRONMENT



Towards Low Carbon Iskandar Malaysia 2025

Today and Tomorrow

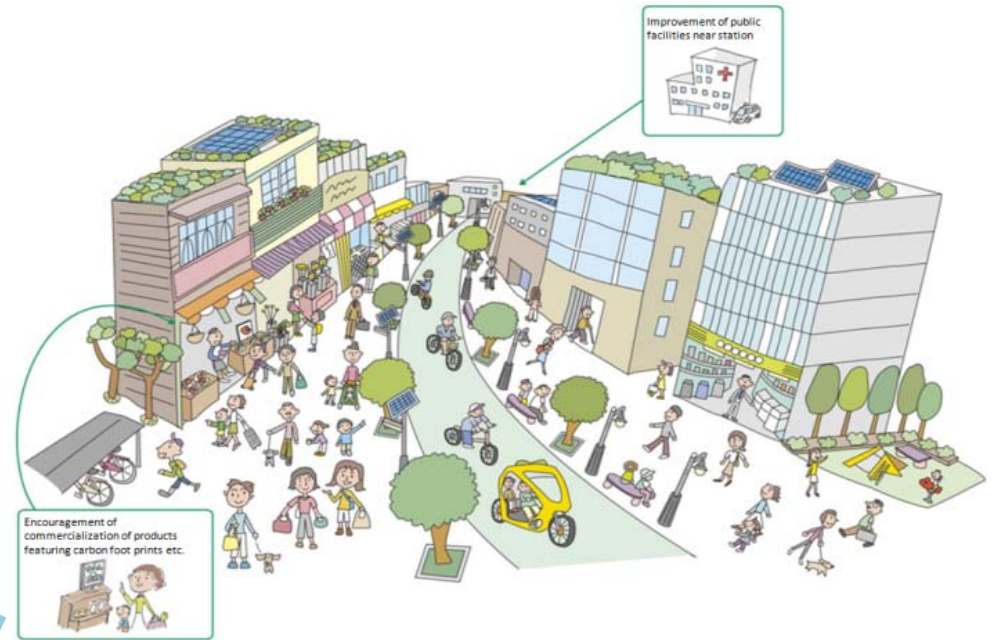
Sustainability



Today Iskandar Malaysia
High Carbon Society, Lower Sustainability

Present
2010

Low Carbon Society



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

Future
2025

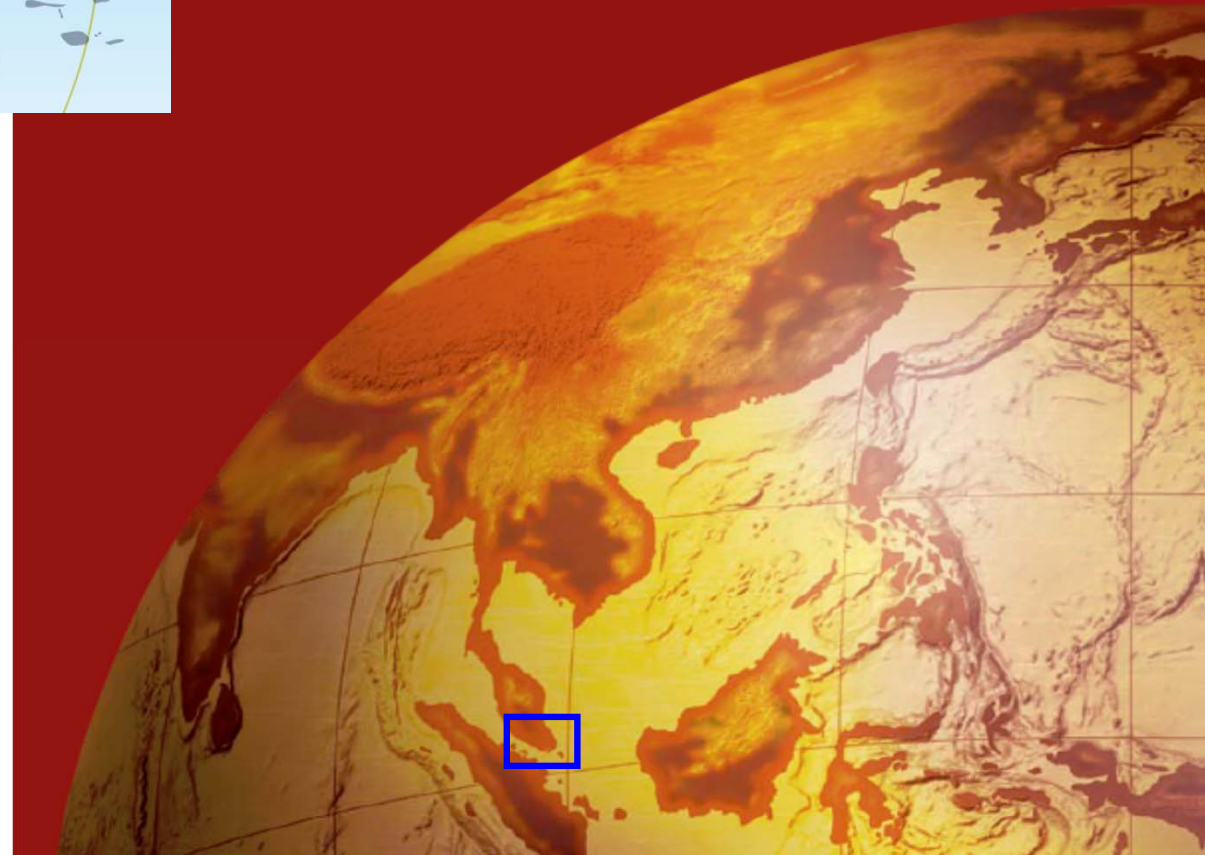
Year

Case study

Iskandar Development Region

2,216 km²

Population 1,353,200



01 Low Carbon Society Scenarios for Iskandar Malaysia

Project Background



Site: Iskandar Malaysia

(Iskandar Regional Development Authority)

Objective:

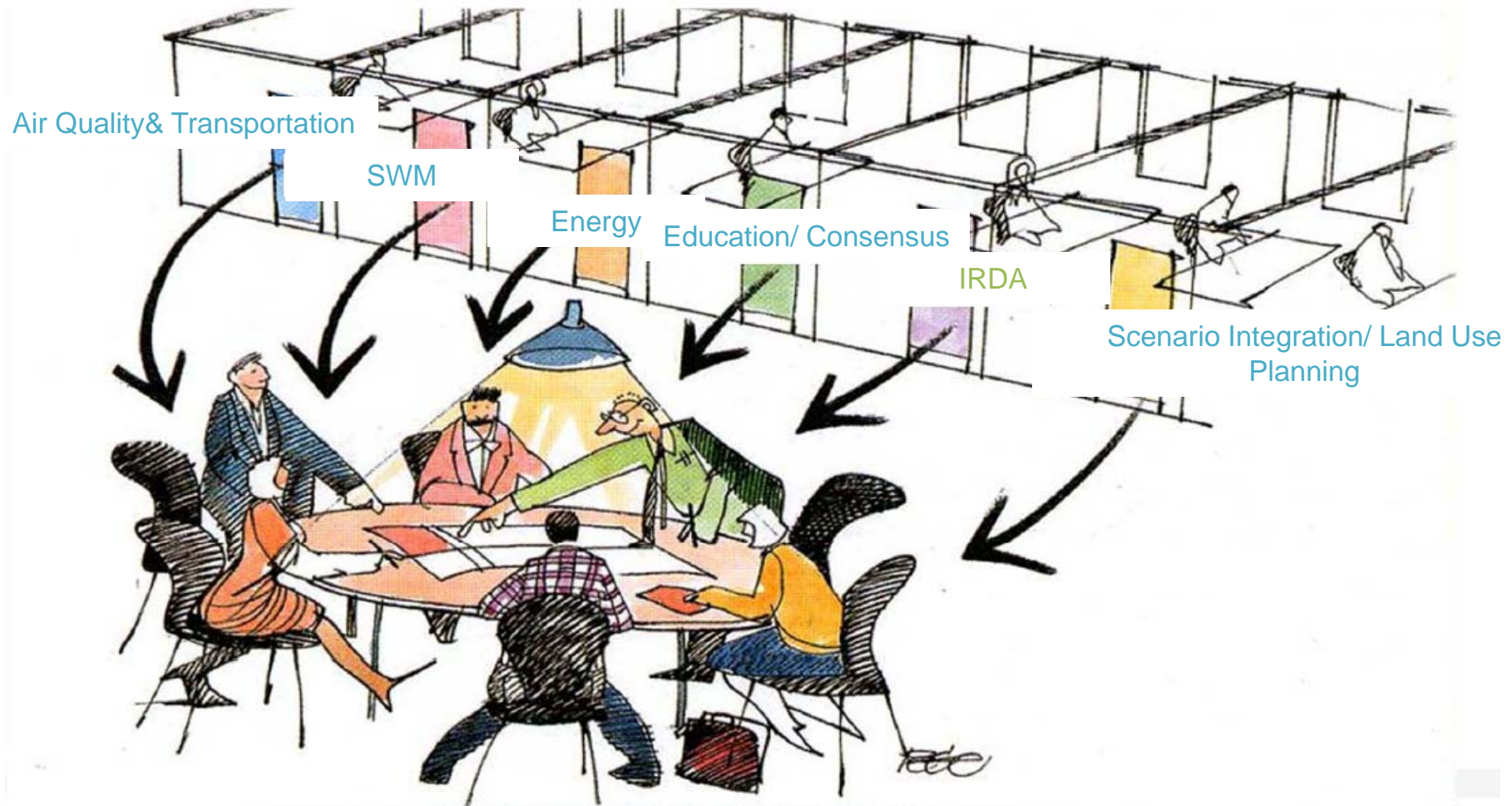
i. To draw up **key policies and strategies** in guiding the development of Iskandar Malaysia in **mitigating carbon emission**. *Transforming Iskandar Malaysia into a sustainable low carbon metropolis by adopting green growth strategies/roadmap.*

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

Target Year: 2025 (2005 – 2025)

05 Our Research Groups

Development of Low Carbon Society Scenarios for Asian Regions



Iskandar Malaysia at a Glance

A



E



B



D

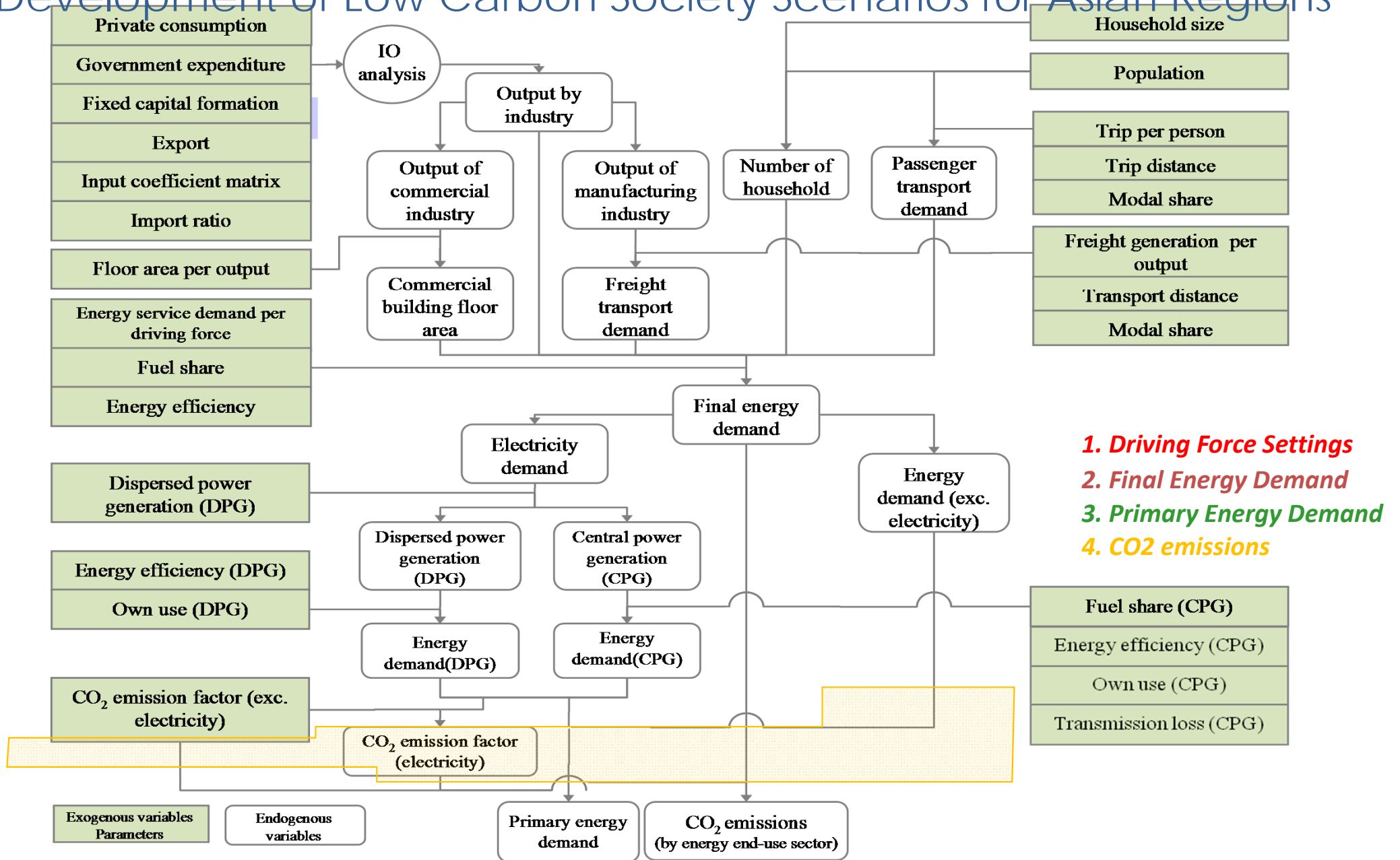
C



IRDA's Strategic Environmental Policy



CO₂ Emission Modeling – Development of Low Carbon Society Scenarios for Asian Regions



Projected Greenhouse Gas Emission Reduction in Iskandar Malaysia

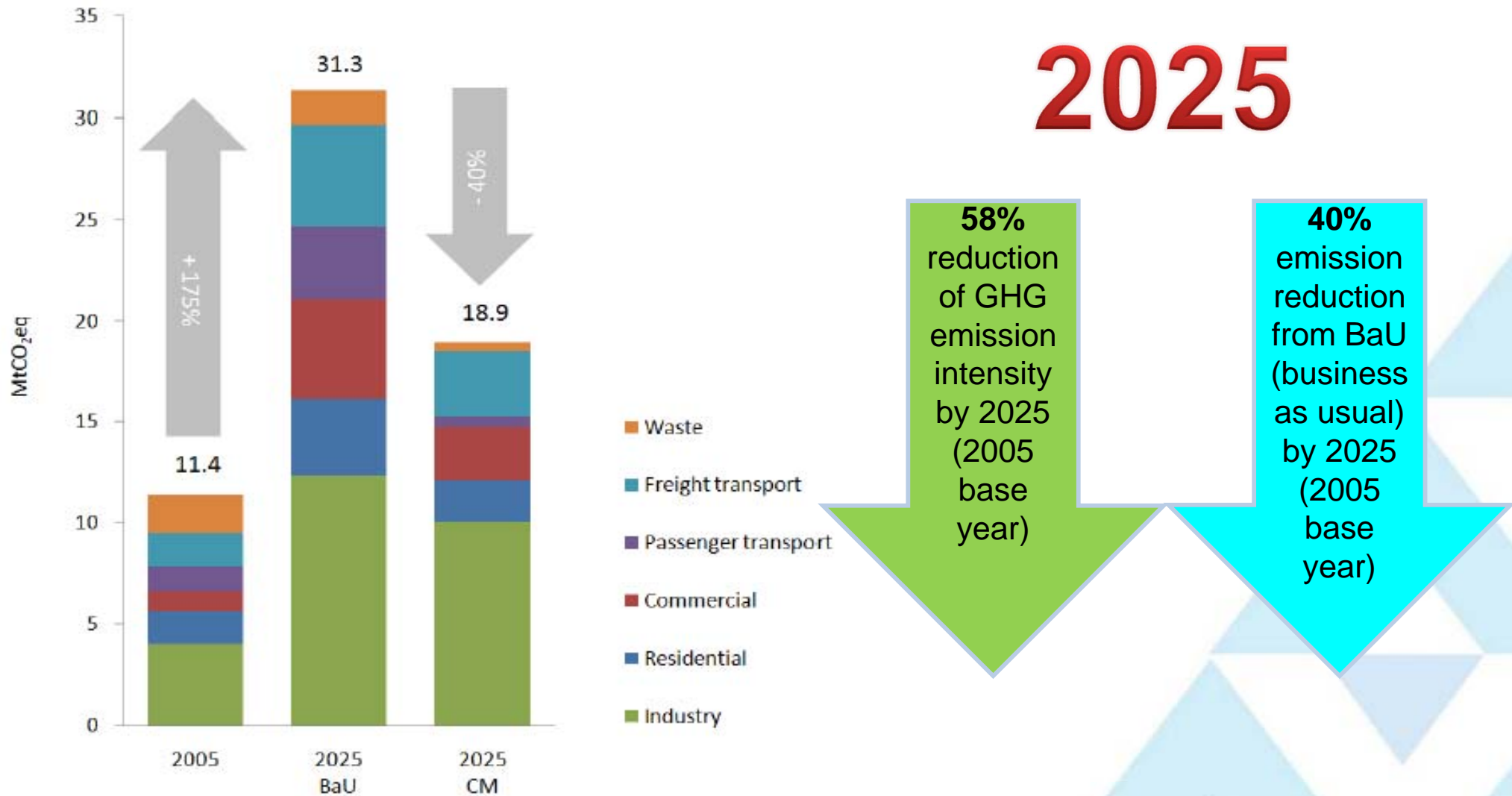


Figure 1: GHG emissions by sectors

04 Potential Mitigation Options for Iskandar Malaysia

12 Actions Towards Low Carbon Future

Mitigation Options	CO2 Reduction	%
Green Economy	7,401	59%
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%
Green Community	2,557	21%
Action 6 Low Carbon Lifestyle	2,557	21%
Action 7 Community Engagement and Consensus Building**	-	-
Green Environment	2,510	20%
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**	-	-
Total	12,467**	100%

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
Total		51	85	275	410

1st LCS Symposium cum Training Workshop

(4th July – 5th July 2011)



2nd LCS Symposium cum Training Workshop

(31st October -1st November 2011)



1st LCS Focus Group Discussion

(21st June 2011)



2nd LCS Focus Group Discussion

(25th November 2011)



Green Education System Focus Group Discussion

(1st December 2011)



Typical Rural Village Technical Tour to Iskandar Malaysia

(2nd November 2011)



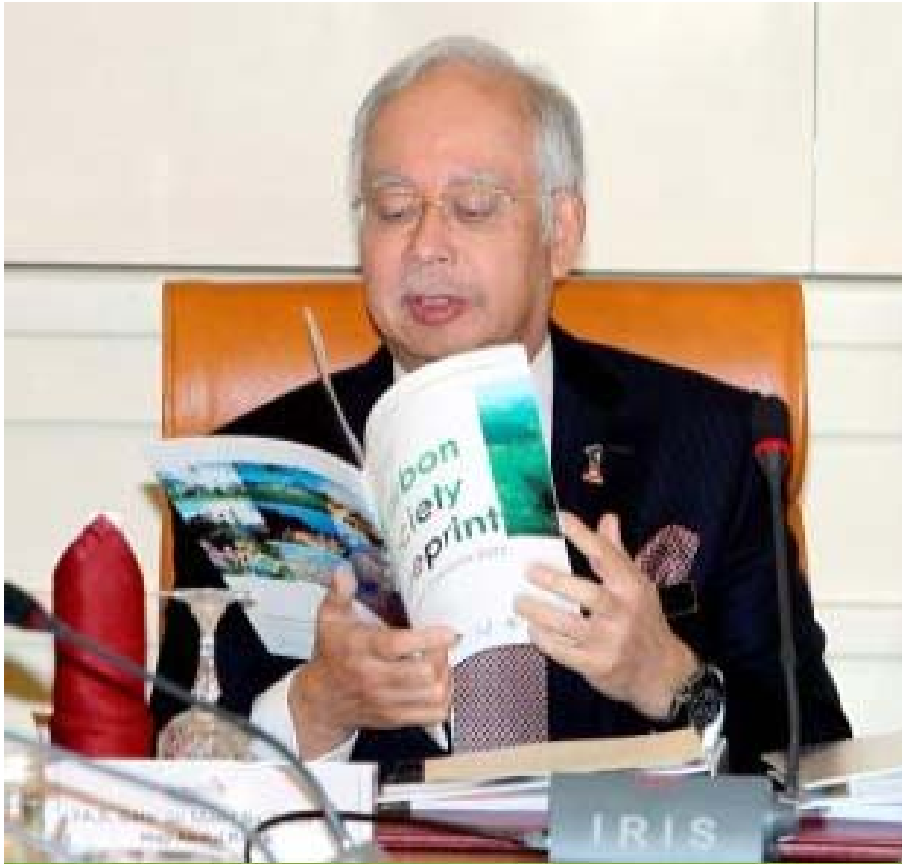
Launching of the LCSBPIM - COP18 Doha, 2012



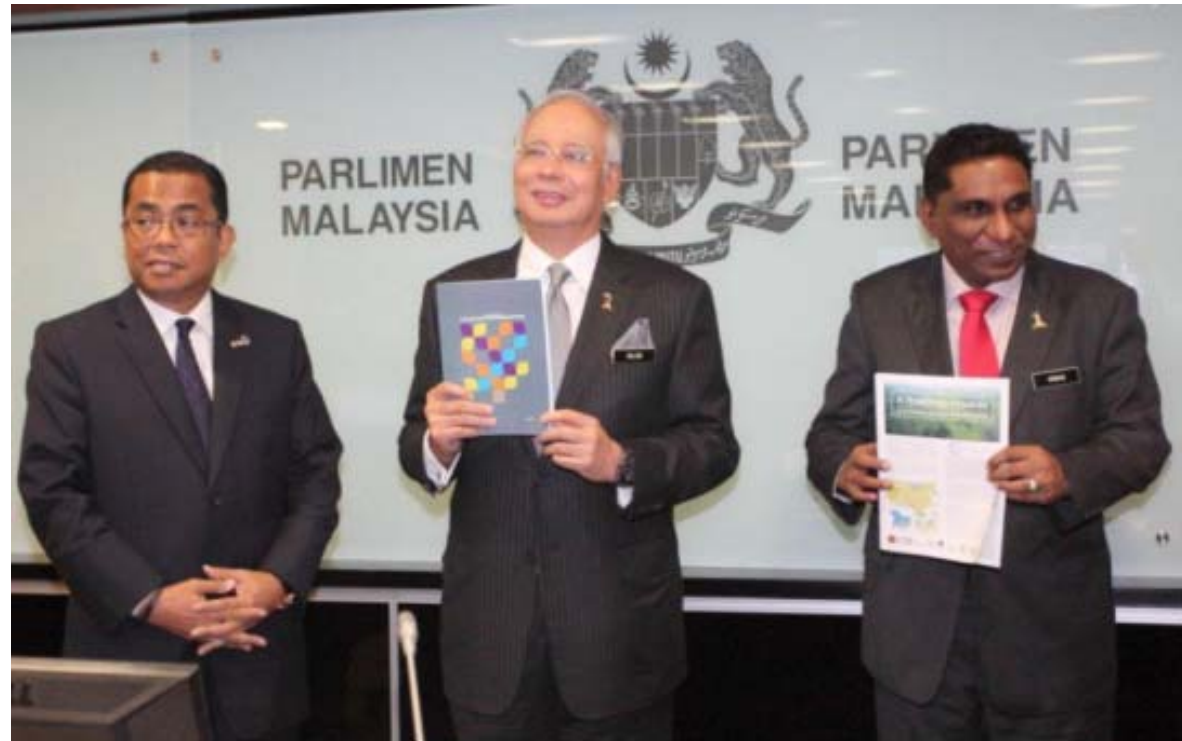
Launching of the LCSBPIM Roadmap & LCS Booklet “Actions for a Low Carbon Future” - COP19 Warsaw, 2013



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

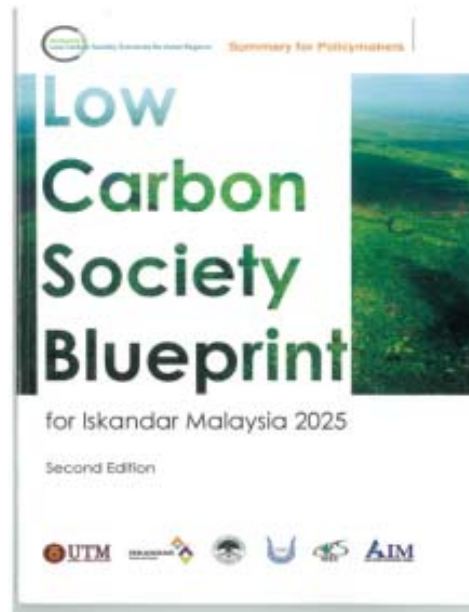


11th December 2012
The PM endorses the launching of
LCSBPIM at COP 18 during MoA



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

Low Carbon Society 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	

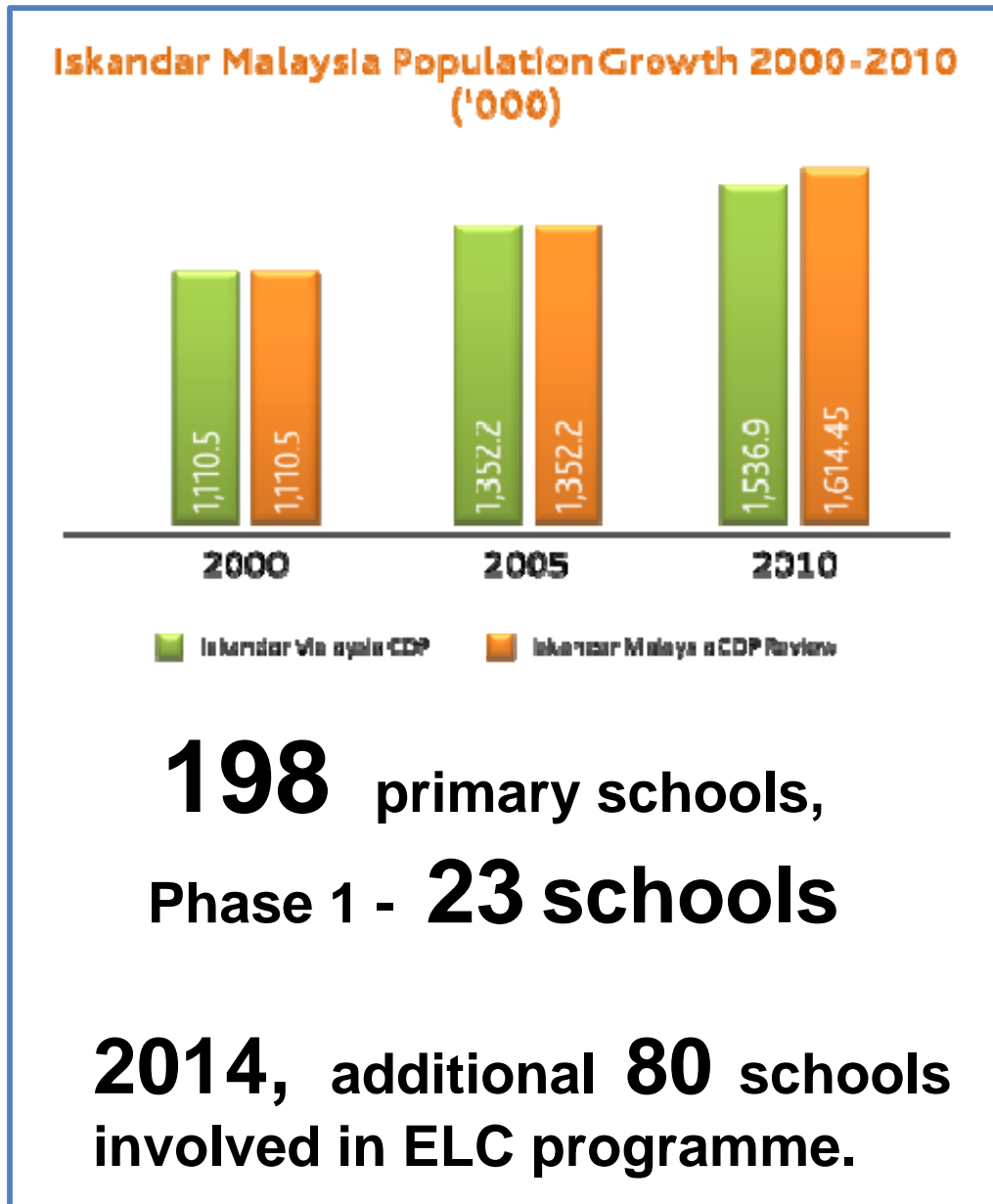
Iskandar Malaysia: Actions For A Low Carbon Future



- 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

Quick update :Eco life Challenge Programmes



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



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, Sustainable for Asian Region, comes with a view to reduce Low Carbon Society (LCS) impact and cutting a methane source's CO₂ in the natural and atmospheric system, towards Net-zero (Net-zero target) to reduce Carbon Emission by 30% in 2030.

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 widely in SE.

The initiative is provided by Carbon Emission Reduction Organization for 5 Local Authorities in SE including Pontian District Council (MDP) in the context of Carbon Emission Reduction. Beyond the MDP, and in line with the vision of SE for Carbon Reduction, several other parties are 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'

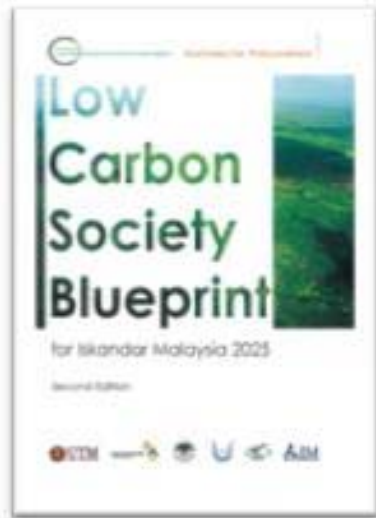
'Livable Community City'

'Green Manufacturing Hub'

'Smart Logistic Hub'

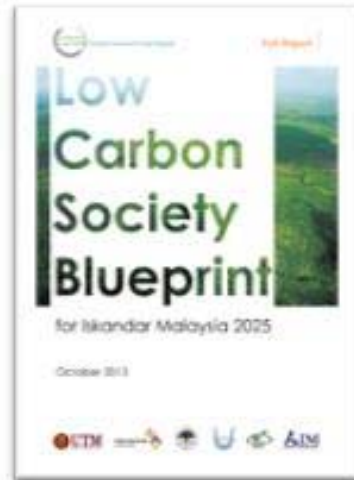
'Agrobiodiversity Hub'

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

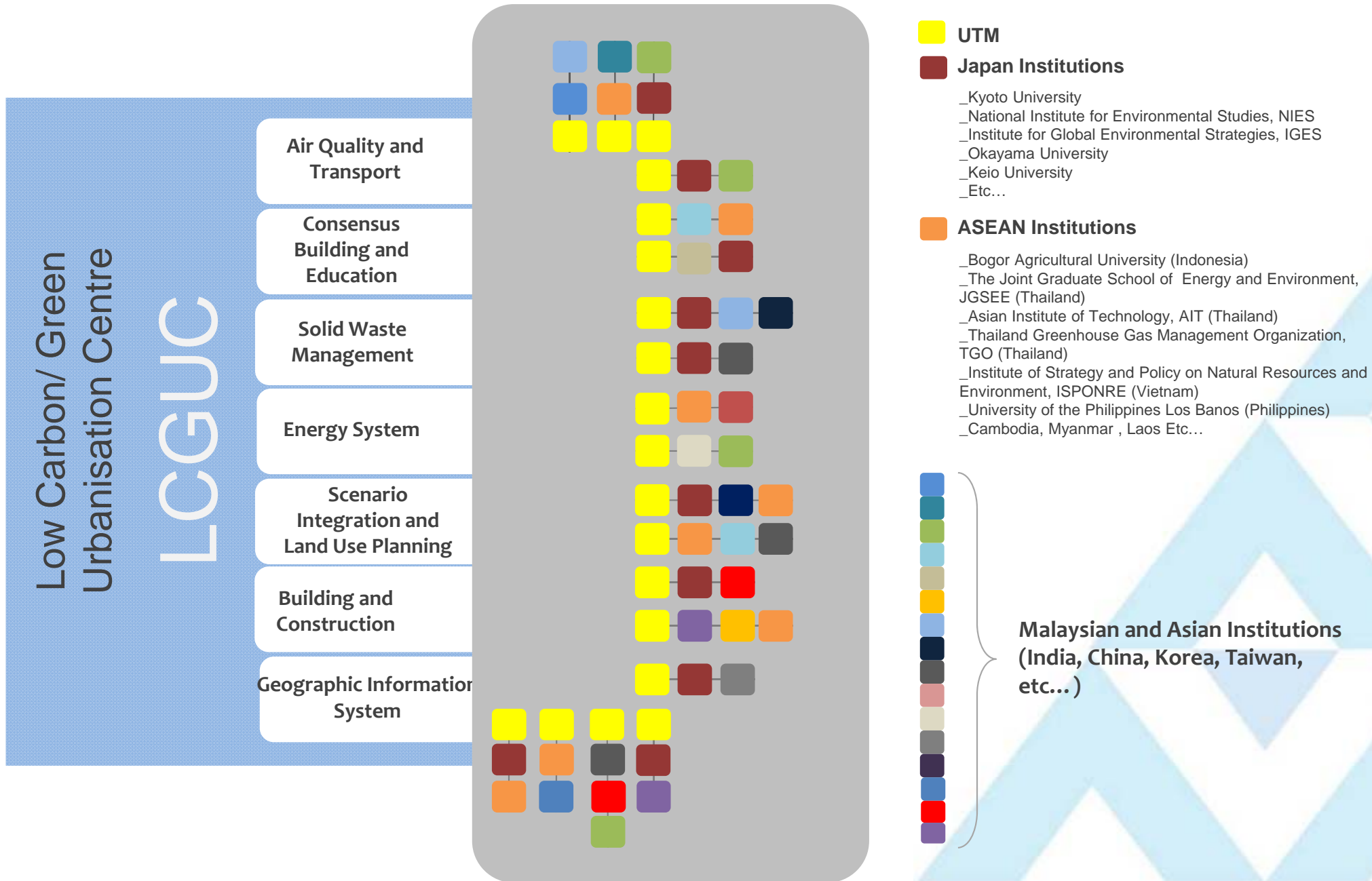
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Iskandar Malaysia: Action for a Low Carbon Future

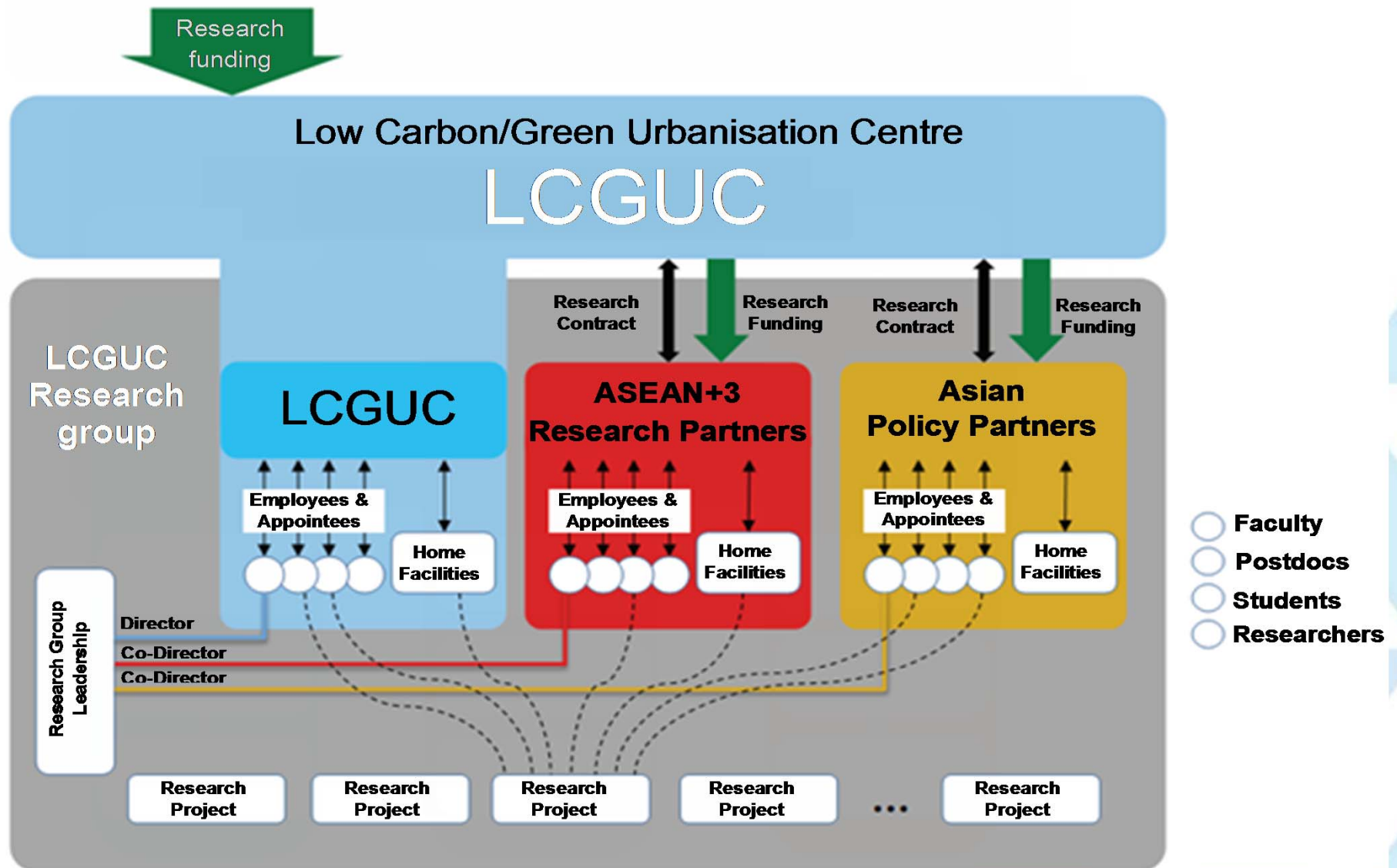
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5 Conceptual Architecture of Low Carbon/ Green Urbanisation Centre

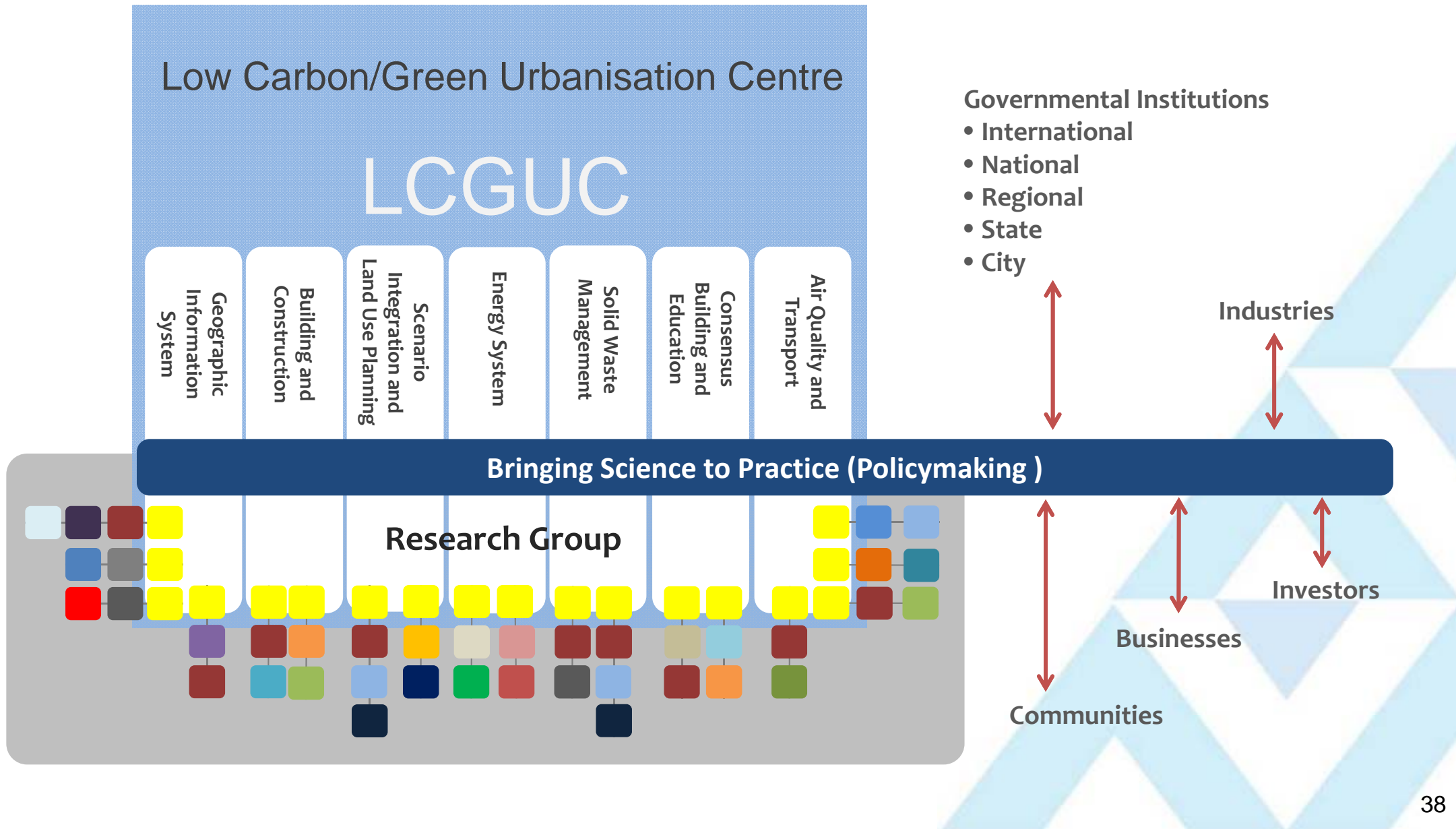


5 Operation and Administration of Low Carbon/ Green Urbanisation Centre

MOEJ, JICA, ADB, USAID, UNDP, UNEP, UNESCAP, World Bank and Malaysian Government



5 Low Carbon/ Green Urbanization Centre: Strengthening Science based Policymaking



Conclusion- Lesson learned

a) **KNOWLEDGE CREATION**

Appropriate green growth agenda based on Sustainable development (TBL) and Low Carbon society (LCS)

b) **Education and Capacity Building**

S2A Approach (Science to Action) where Good **baseline quantitative study, consensus building are vital to prepare low carbon blueprint plan** to guide city managers for **objective decision**.

c) **Multi disciplinary approach**

LCS requires multi disciplinary approach as it involved engineering, social science Environmental /urban planning and design

d) **Media – dissemination of information**

Different stakeholders – IRDA Community, Local Authority, Business Community and NGOs

e) **Network of COEs**

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



Thank you for your attention!
ho@utm.my

Thank You Terima Kasih 谢谢 धन्यवाद ありがとう

