## LCS-RNet 6th 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



Ho Chin Siong (UTM)

Faculty of Built environment/ UTM Low Carbon Asia Centre



















## Content- Structure of Presentation

Background

Urban problem and low carbon solution policy in Malaysia

Challenges

And

Solution

Roles of research community

LČS

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.

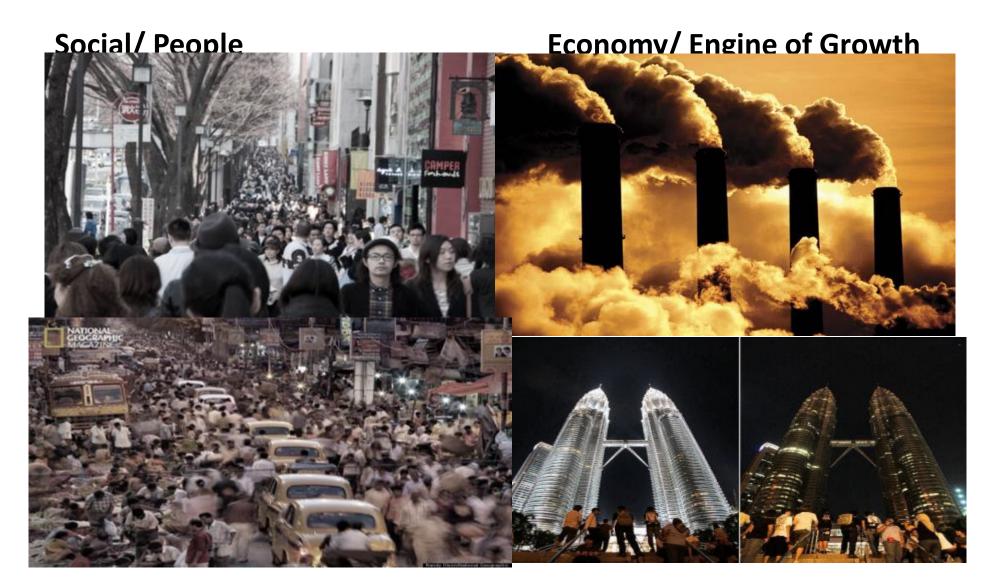
# URBAN PROBLEMS and Low carbon SOLUTIONS – Physical planning

**Material and Energy** 

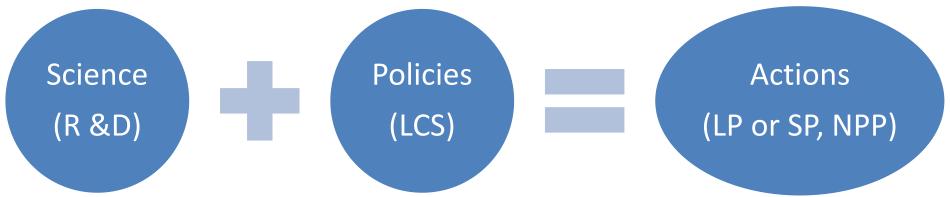




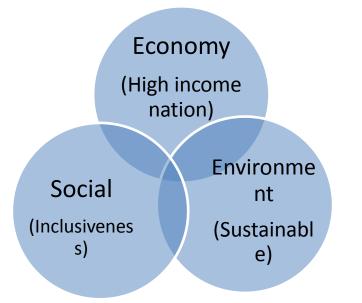
# **URBAN PROBLEMS and Low carbon SOLUTIONS – Socio-economic**

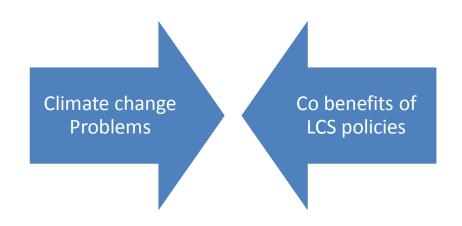


# Role of researchers to promote Low carbon sustainable development approach



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**



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





Iskandar Malaysia

11 times smaller



Iskandar Malaysia

**30** times smaller



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



|                           | 2005 | 2010 | 2025 |  |  |
|---------------------------|------|------|------|--|--|
| Population<br>(million)   | 1.35 | 1.61 | 3.00 |  |  |
| Labour Force<br>(million) | 0.61 | 0.70 | 1.43 |  |  |
| Employment<br>(million)   | 0.62 | 0.72 | 1.46 |  |  |

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

#### REGIONAL DEVELOPMENT

## 01 Low Carbon Society Scenarios for Iskandar Malaysia

#### **Project Background**



Site: Iskandar Malaysia



- NUSAJAYA
  - + Kota Iskandar + EduCity
  - + Medical Park
  - + International Destination Resort . Southern Industrial & Logistics
  - Clusters (SiLC)
  - Puteri Harbour

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

- EASTERN GATE DEVELOPMENT Tanjung Langsat Industrial Complex
- + Johor Port
- . Tanjung Langsat Port
- . Pasir Gudang Industrial Park

- SENAI-SKUDAI Senai Airport City
- · Senai High-Tech Park
- Sedenak Industrial Park · MSC Cyberport City
- · Johor Technology Park
- · University Technology

Malaysia (UTM)

(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



B















#### **Green-focused Agenda - Rationale**

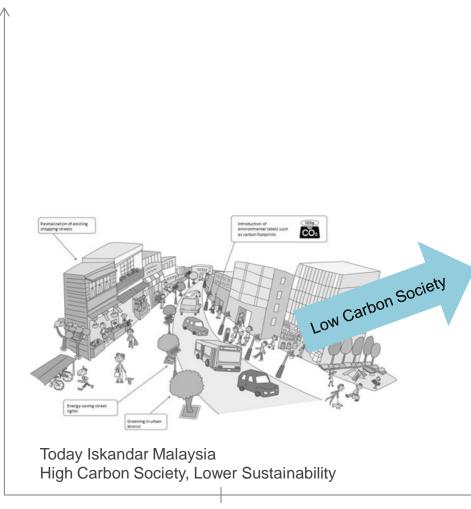
## Aligning the Vision with Low Carbon Society Development





### **Towards Low Carbon Iskandar Malaysia 2025**

## **Today and Tomorrow**



Encouragement of commercialisation of products rearrange action for products rearrange action for prints etc.

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

Present 2010

Future 2025

Year



## Projected Greenhouse Gas Emission Reduction in Iskandar Malaysia

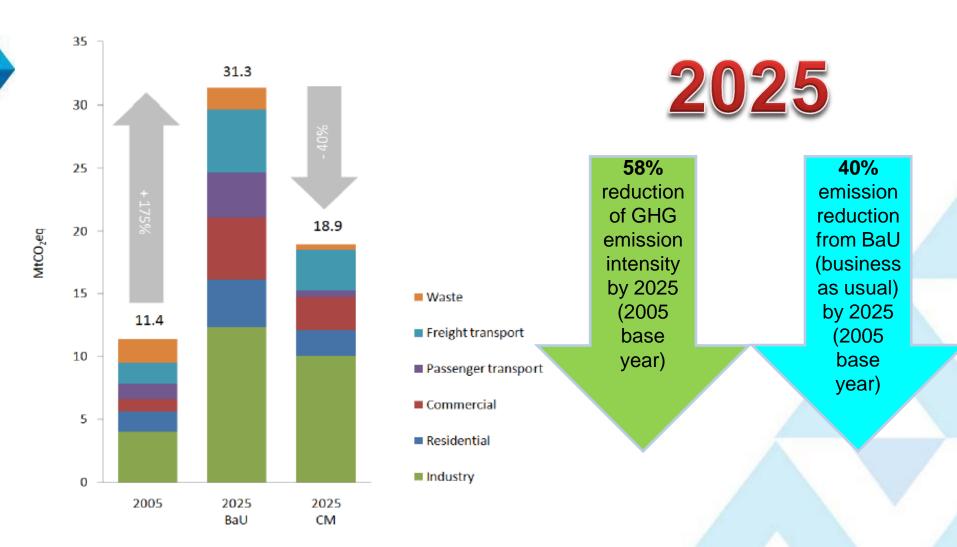


Figure 1: GHG emissions by sectors

## 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





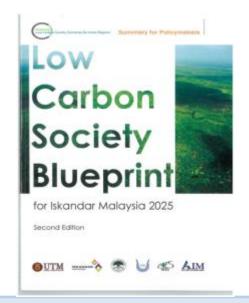


11<sup>th</sup> December 2012
The PM endorses the launching of LCSBPIM at COP 18 during MoA

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



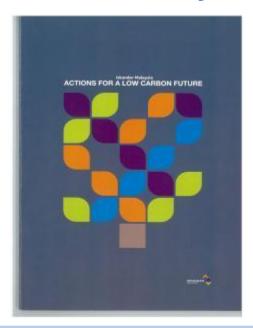


- The LCSBPIM— a quick reference for all policy-makers in both public and private sectors as well as IRDA;
- 12 Actions grouped in 3 parts namely: (Green Economy), (Green Community), and Green Environment);281 programmes;
- Each Chapter contains an analysis, list of programmes and the potential GHG emissions 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                 |                     |  |  |
| 2  | Green Industry                                  |                     |  |  |
| 3  | Low Carbon Urban Governance                     | CREEN ECONOM        |  |  |
| 4  | Green Buildings & Construction                  | GREEN ECONON        |  |  |
| 5  | Green Energy System & Renewable Energy          |                     |  |  |
| 6  | Low Carbon Lifestyle                            | CDEEN               |  |  |
| 7  | Community Engagement & Consensus Building       | GREEN<br>COMMUNITY  |  |  |
| 8  | Walkable, Safe, Livable City<br>Design          |                     |  |  |
| 9  | Smart Growth                                    | CDEEN               |  |  |
| 10 | Green and Blue Infrastructure & Rural Resources | GREEN<br>ENVIRONMEN |  |  |
| 11 | Sustainable Waste Management                    |                     |  |  |
| 12 | Clean Air Environment                           |                     |  |  |
|    |   | 10                  |  |  |

#### 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  | <b>Green Economy Guidelines</b>   | 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<br>Award   | Ivy Wong Ling Ling   |  |  |
| 9  | Low Carbon Village FELDA Taib<br>Andak  | Dr Ibrahim Ngah (UTM)  |  |  |
| 10 | Special Feature: Smart City –<br>Nafas Baru Pasir Gudang:<br>CLEAN AND HEALTHY CITY | Sakurah Jamaluddin , Sharifah<br>Shahidah Syed Ahmad,<br>Muhammad Fadly Muhammad<br>Nor, Choo Hui Hong |  |  |

### Iskandar Malaysia: Actions For A Low Carbon Future



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

Legend

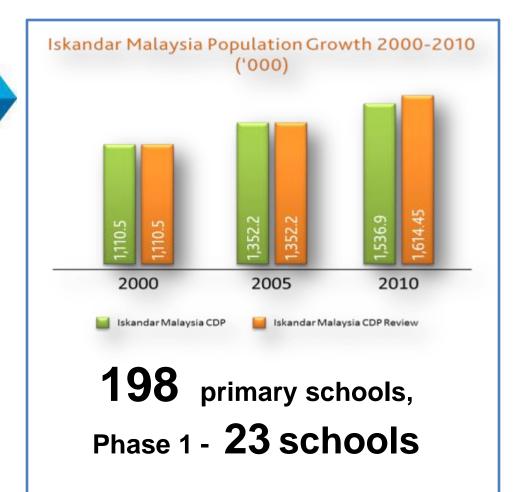


Green Environment



## **Quick update : Eco life Challenge Programmes**





**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.









### **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 PiaiGazettement of Sg Pulai 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)



#### 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

Metro

Low carbon society









#### NEWSTRAITSTIMES

#### LATEST NEWS

#### investment drawing power "

All parties in Iskandar Malaysia have roles to play in transforming the economithe nexty is entered takendar Mataysia Line Carton Society (LCS) Sheprint has the polarital to attract more interest growth corridor as a sustainable living place for the well-being of the society. > among investors of Seance/Malayers as an investment

#### Najib confident of Iskandar M'sla's

#### **Balanced approach**

Cooperate to transform Iskandar Malaysia for sustainable living

#### マレーシアに「日本式」環境都市ーCOC賞で協力ーCOP16

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#### Ismail says Iskandar corridor moving in right direction but more work



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#### Cooperate to transform Iskandar Malaysia for gnivit eldenisteus





PM Najib: Iskandar Malaysia has exceeded expectations

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## Media Highlights 2013-2014 (LCS AND IM)









#### 1,000 trees planted in Iskandar

GO GREEN: Residents of Sungo: Buildh Recreational Park plant

tree applies to reduce the carbon footprints

PASK OLDANO. It as affect to reduce the carties forgoints in

#### NewStraitsTimes 'Services, logistics investments rising'

BULLISH MOOD: Iskandar has been enjoying 7pc-8pc annual growth, says Irda head

resent Auchority (Infat in Ar-her is witnessing growing in-estrectes in the services and br-

Its chief executive Datas Issuell Insulain said be expects the rest se-sen to contribute the most investone in the bileauther region.

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#### lskandar Malaysia akan lancar sistem pengurusan mobiliti

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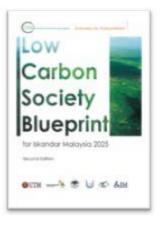
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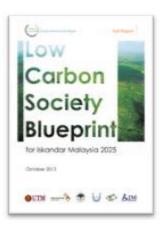
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## Low Carbon Society for Iskandar Malaysia Publications













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

> http://irdep.irda.co m.my/cms/downlo ad/documentShari ng/18230

Low Carbon Society Blueprint for Iskandar Malaysia 2025- Full Report

http://irdep.irda.co m.my/cms/downlo ad/documentShari ng/26570 A Roadmap towards Low Carbon Iskandar Maaysia 2025

> http://irdep.irda.co m.my/cms/downlo ad/documentShari ng/26563

Iskandar Malaysia: Action for a Low Carbon Future

http://irdep.irda.co m.my/cms/downlo ad/documentShari ng/26571 The Economics of Low Carbon Cities: Johor Bahru and Pasir Gudang Malaysia

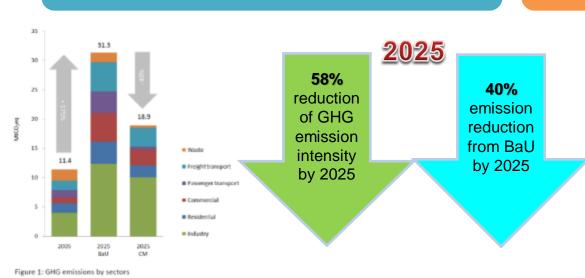
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## In Progress-Developing a Low Carbon Society Roadmap for Iskandar Malaysia

Blueprint for Iskandar
Malaysia

- Clear GHG target for year 2025

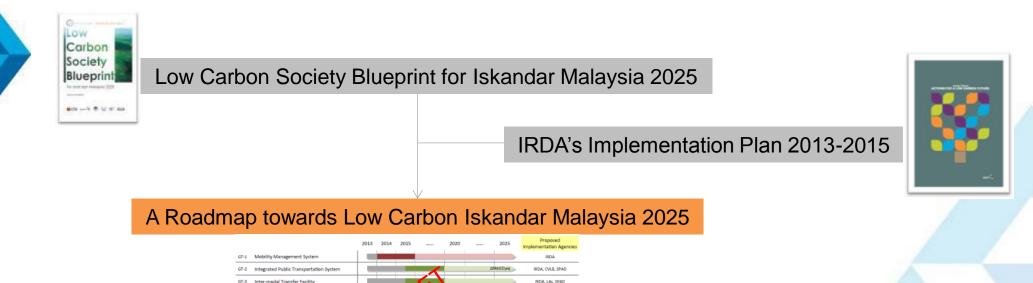
Low Carbon Society
Implementation
Roadmap 2015-2025
using Backcasting
Tool







## A Roadmap towards Low Carbon Iskandar Malaysia 2025

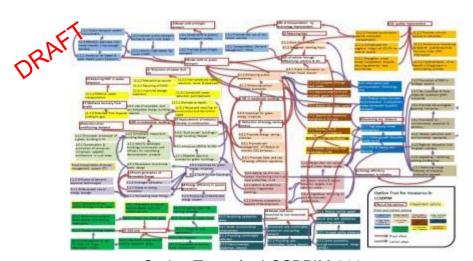


This Roadmap has been formulated to serve as a complementary document to the LCSBPIM. It provides a pathway to guide the implementation of actions outlined in the LCSBPIM by priority, timeline and related implementation agencies.



#### Low Carbon Society Implementation Roadmap 2015-2025

- LCS Implementation Roadmap will serve as a <u>complementary document</u> to the LCSBPIM 2025.
- ❖ It provides <u>pathways to guide the implementation</u> 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) MBJB-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).

## Conclusion- Way forward



#### 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.

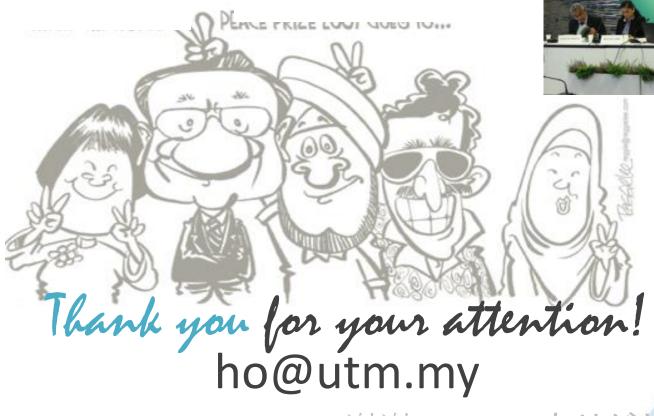
#### b) METHODOLOGY

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 Terima Kasih 谢谢 धन्यवाद ありがとう

