

Developing Low Carbon Society (LCS) Scenarios -Iskandar Malaysia -

- 1. If we cannot go to LCS,...**
- 2. LCS offers higher QOL with less energy demand and lower-carbon energy supply**
- 3. LCS needs good design, early action, and innovations**



Designed by Hajime Sakai

Junichi FUJINO On behalf of AIM team

NIES (National Institute for Environmental Studies), Japan

Side Event “**FINANCING, PARTNERSHIP & NETWORKING STRATEGIES for
ACTION-ORIENTED RESEARCH & CAPACITY BUILDING: WHAT DOES/DOESN'T WORK? “**

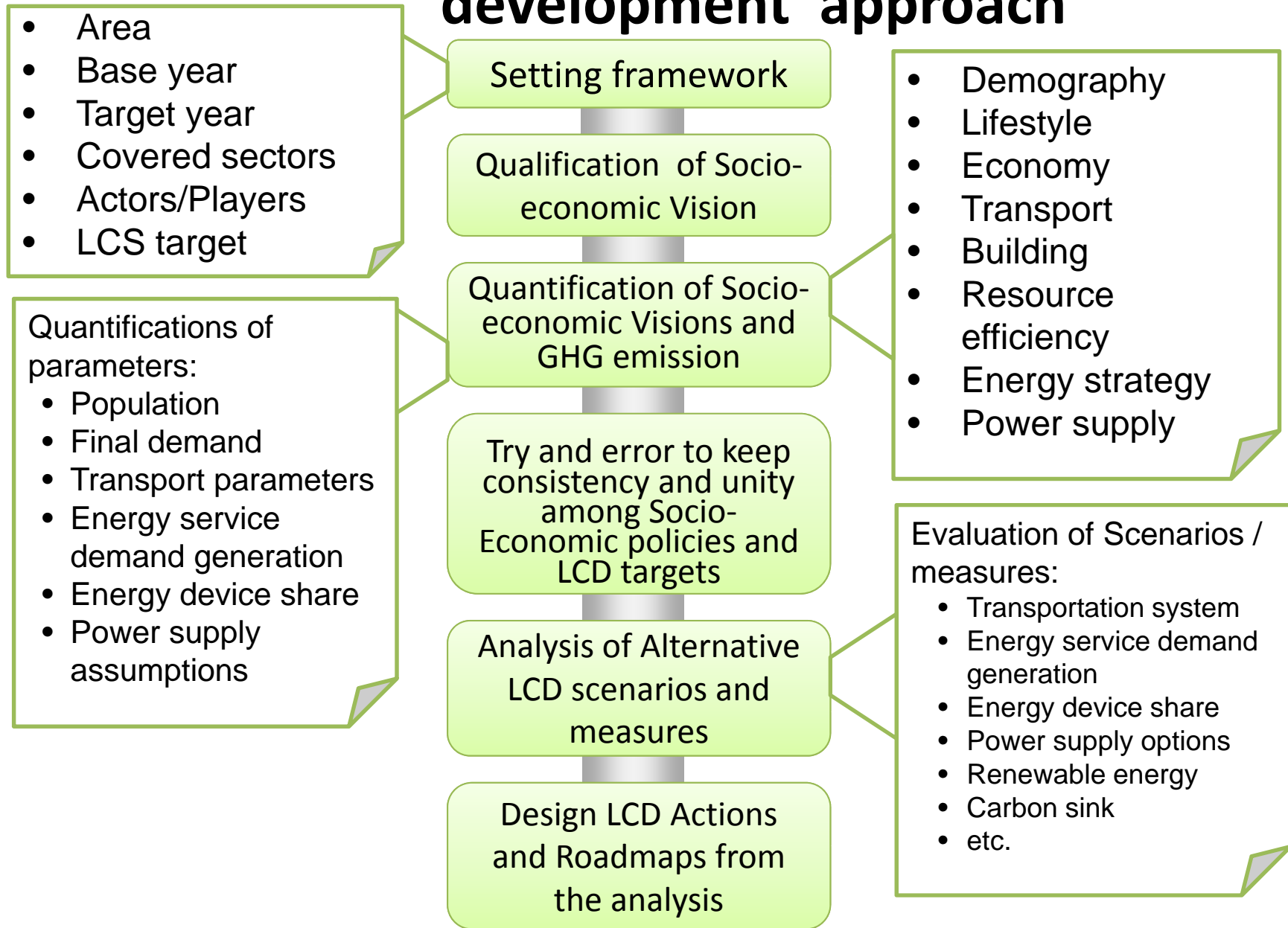
Japan Pavilion in Warsaw, Nov 13, 2013

AIM (Asia-Pacific Integrated Model) since 1990

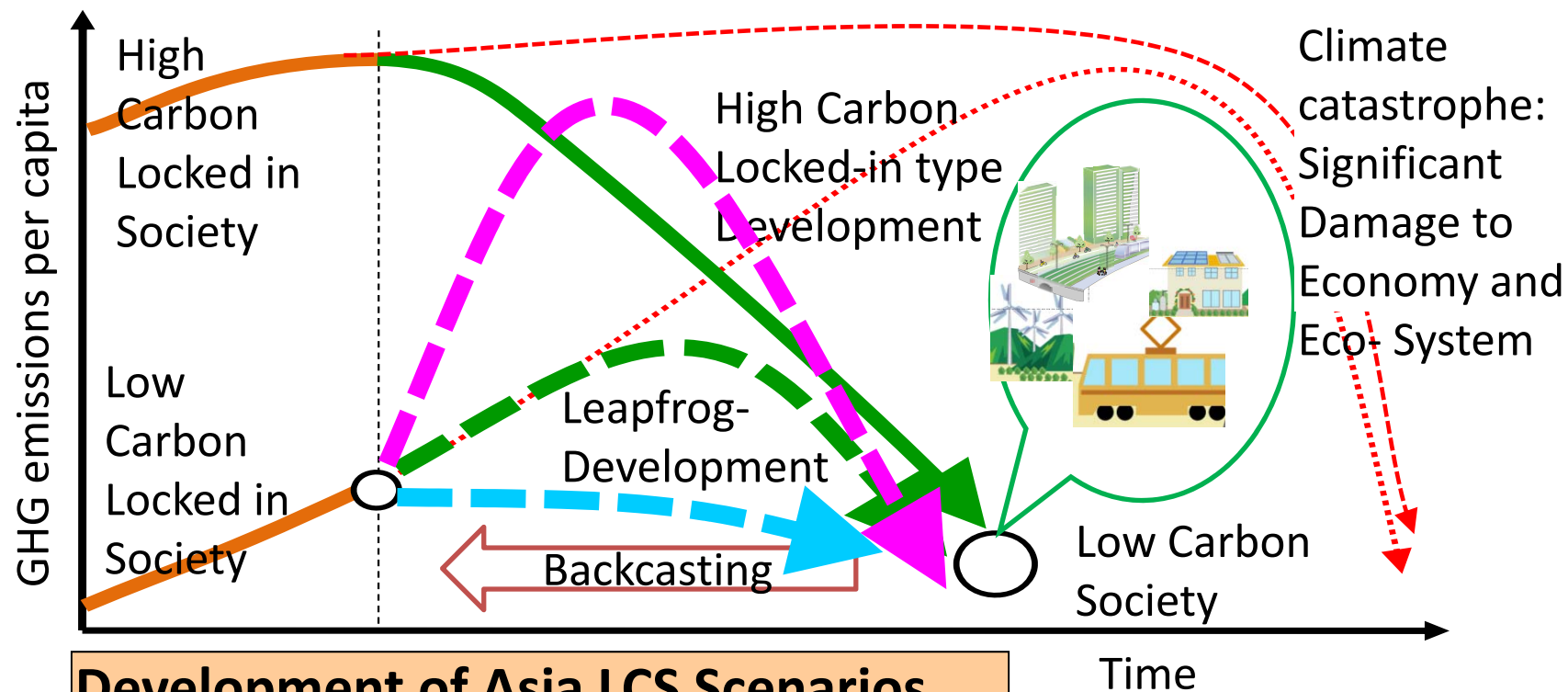
- AIM (Asia-Pacific Integrated Model) is an integrated assessment model to assess mitigation options to reduce GHG emissions and impact/adaptation to avoid severe climate change damages.



Overall research procedure of our LC development approach



How to reach to Low Carbon Society in Asia ?



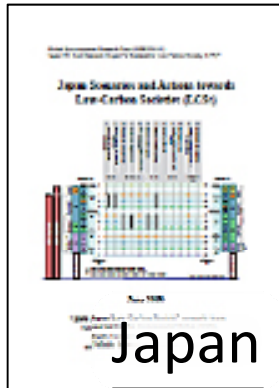
Development of Asia LCS Scenarios

- (1) Depicting narrative scenarios for LCS
- (2) Quantifying future LCS visions
- (3) Developing robust roadmaps by backcasting

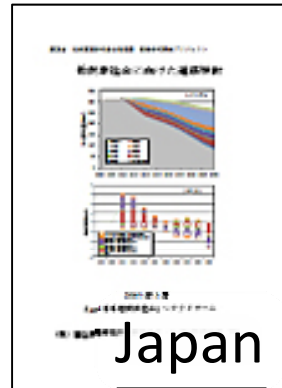
Policy Packages for Asia LCS

Funded by Ministry of Environment, Japan (GERF, S-6) and NIES

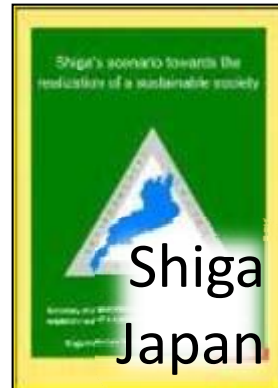
Low-Carbon Society Scenarios in Asia using AIM



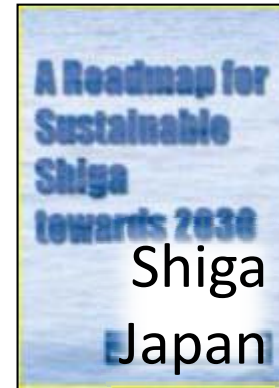
Japan



Japan



Shiga
Japan



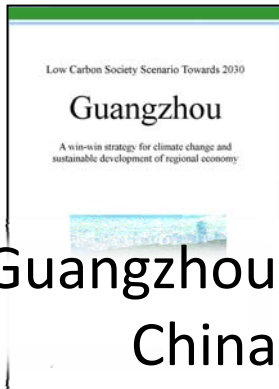
Shiga
Japan



Kyoto
Japan



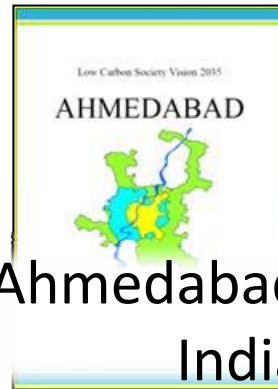
Jilin
China



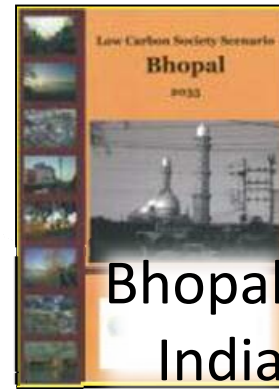
Guangzhou
China



India



Ahmedabad
India



Bhopal
India



Thailand



Indonesia



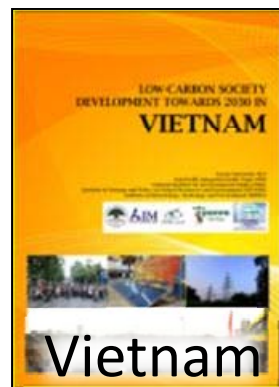
Iskandar
Malaysia



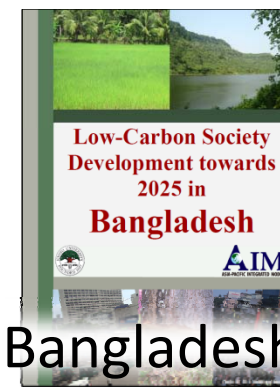
Putrajaya
Malaysia



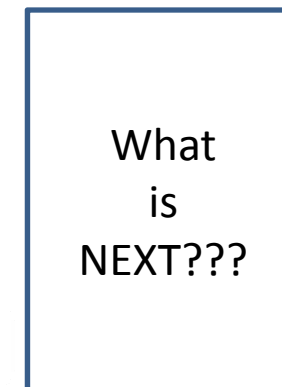
Cyberjaya
Malaysia



Vietnam



Bangladesh



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)



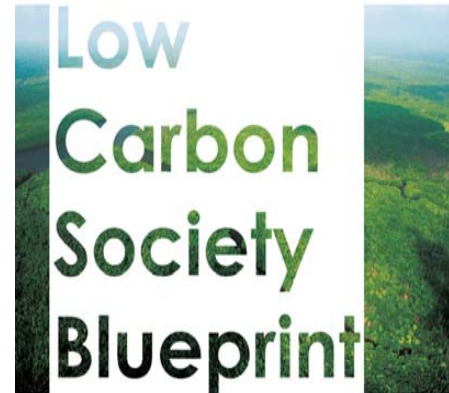
November 2012

Voluntary
40%
reduction
of CO₂
emission
intensity by
2020

Issues

- Rapid urbanization and industrialization
- Higher energy demand and Co2 emission
- Decouple economic growth and emission on fossil fuel

Low Carbon Society Scenarios for Asian Regions Summary for Policymakers



for Iskandar Malaysia 2025

November 2012



Blueprint – 3 main thrusts – Green economy, community and environment.

=12 actions

Joint collaboration work of UTM, KU, NIES under SATREPS program

Background of Project

Development of Low Carbon Society Scenarios for Asian Regions



Research Team: Universiti Teknologi Malaysia (UTM), Kyoto University (KU), Okayama University (OU), National Institute for Environmental Studies (NIES)

Joint Coordinating Committee: Iskandar Regional Development Authority (IRDA), Federal Department of Town and Country Planning (JPBD), Malaysia Green Technology Corporation (MGTC)

Sponsorship: Japan International Cooperation Agency (JICA) , Japan Science and Technology (JST)

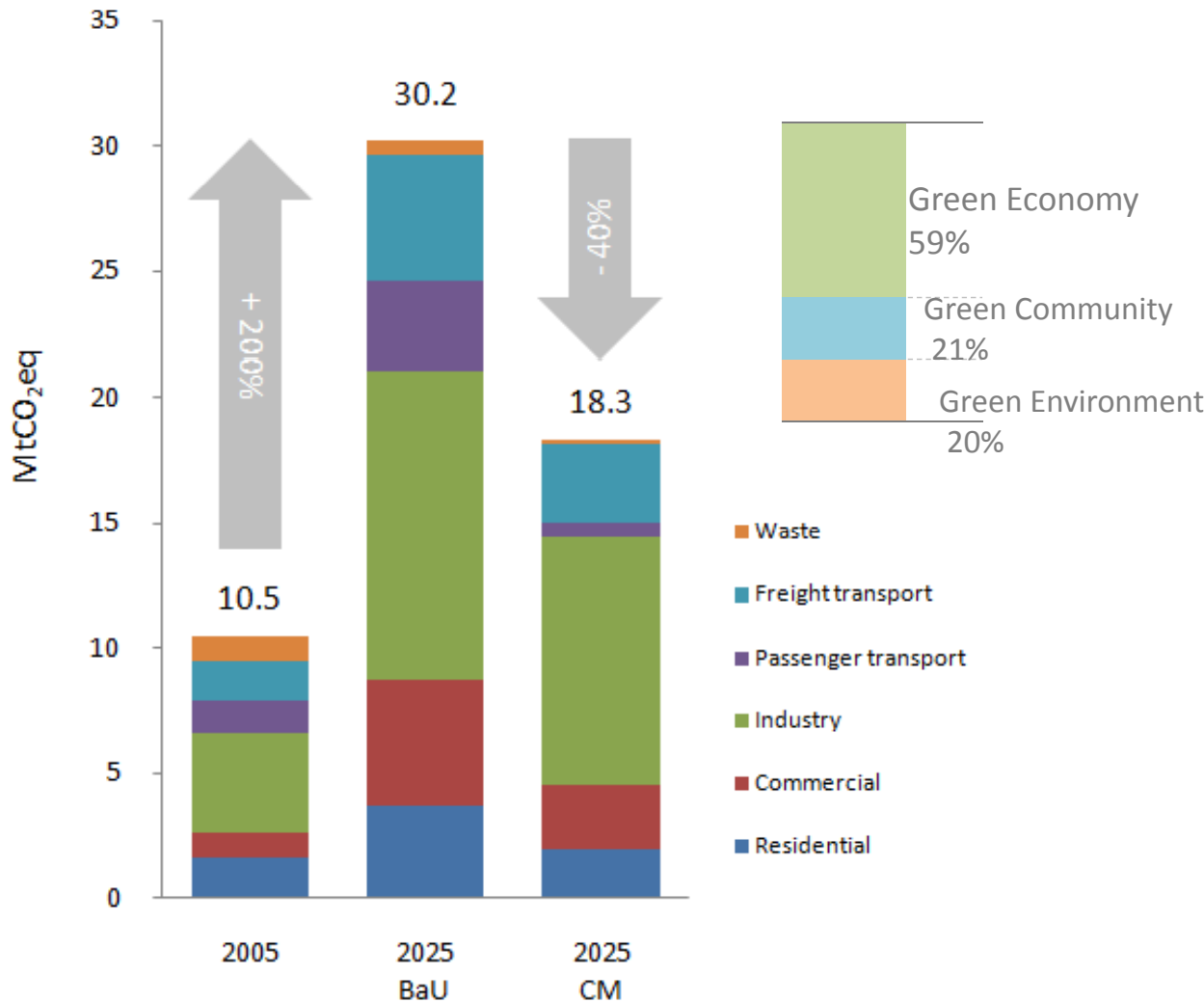
Period: 2011 - 2016

Research Output:

- i. **Methodology** to create LCS scenarios which is appropriate for Malaysia is developed.
- ii. **LCS scenarios** are created and utilised **for policy development** in IM.
- iii. **Co-benefit of LCS policies** on air pollution and on recycling-based society is quantified in IM
- iv. **Organizational arrangement of UTM** to conduct trainings on LCS scenarios for Malaysia and Asian countries is consolidated, and a network for LCS in Asia is established

Potential Mitigation Options for Iskandar Malaysia

Green Economy, Green Community and Green Environment



Unit	2005	2025 BaU	2025 CM	2025BaU /2005	2025CM /2005
Final Energy Demand (Mtoe)	2.5	7.6	5.2	3.11	2.14
GHG emissions (MtCO ₂ eq)	10.5	30.2	18.3	2.88	1.74
Per Capita CO ₂ Emissions (tCO ₂ eq)	7.7	10.1	6.1	1.30	0.78
GHG Intensity (kgCO ₂ eq/RM)	0.29	0.21	0.13	0.73	0.44

LCS Actions for IM by Three Main Themes

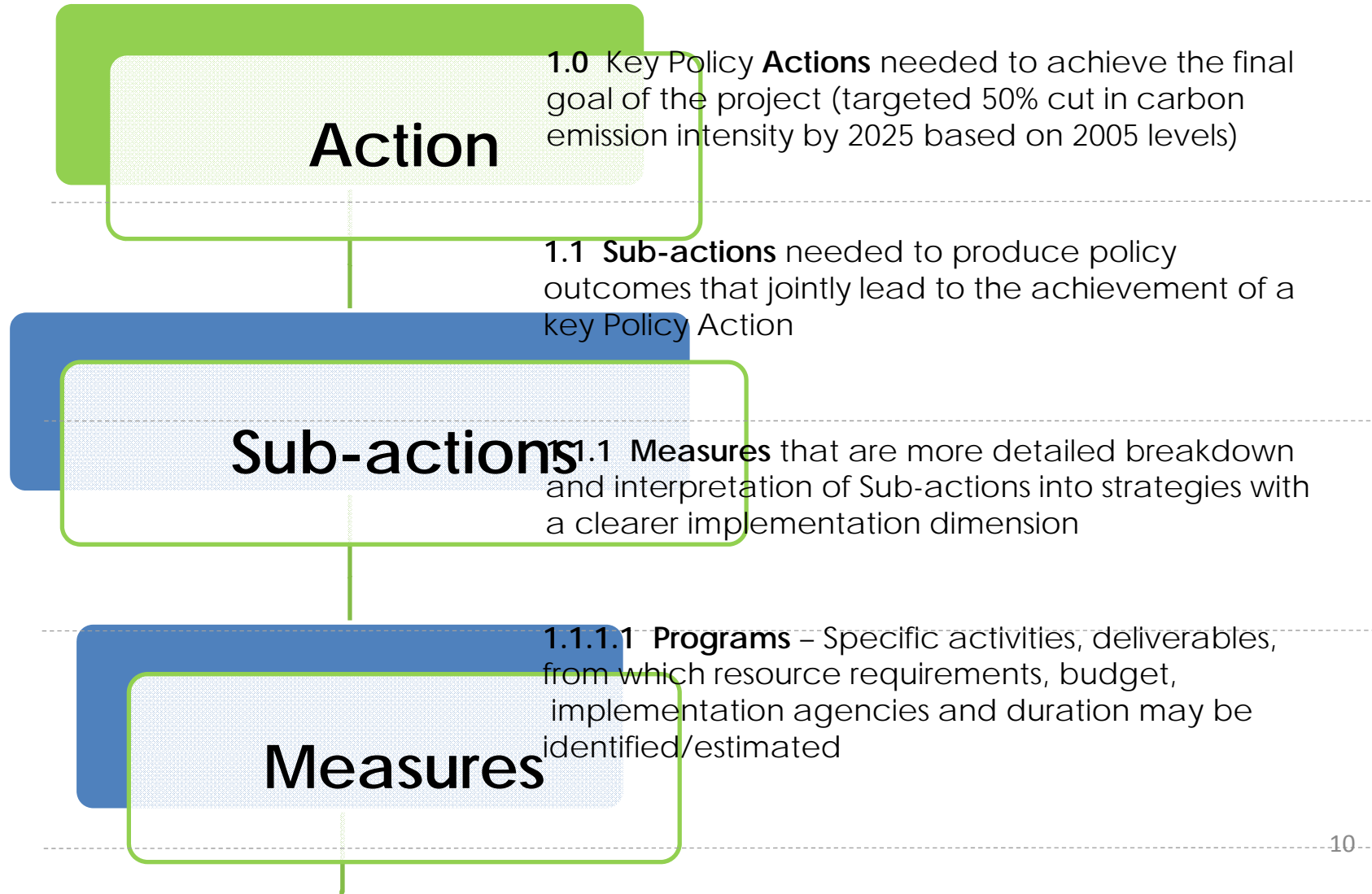
Development of Low Carbon Society Scenarios for Asian Regions

	Action Names	Themes
1	Integrated Green Transportation	GREEN ECONOMY
2	Green Industry	
3	Low Carbon Urban Governance	
4	Green Building & 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	Green and Clean Environment	

LCS Actions for IM – Work Breakdown Structure

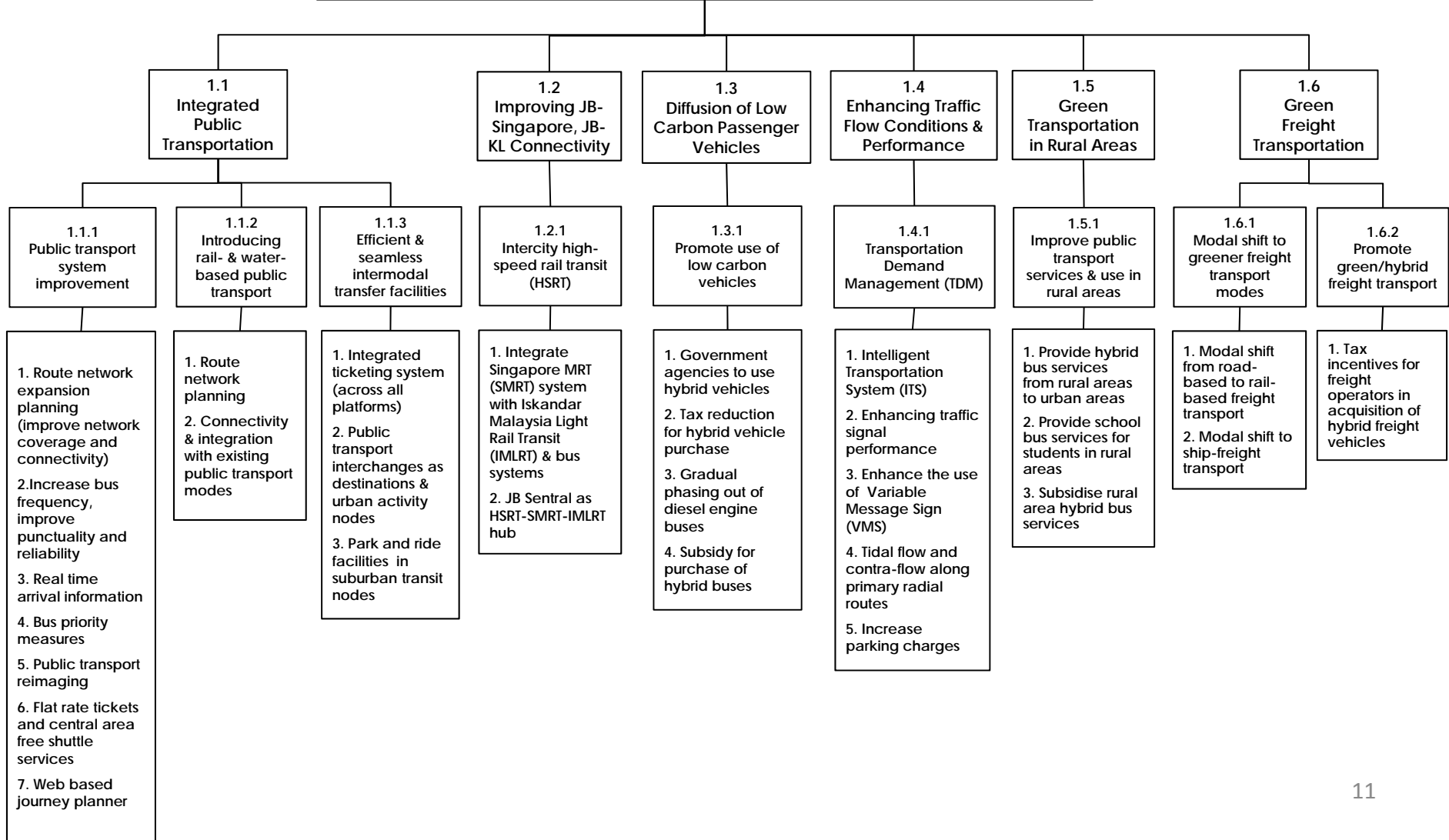
Development of Low Carbon Society Scenarios for Asian Regions

Work Breakdown Structure of 12 LCS Actions



LCS Actions for IM – WBS Diagram by Action (WBS: Work Breakdown Structure)

Action 1: Integrated Green Transportation



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%

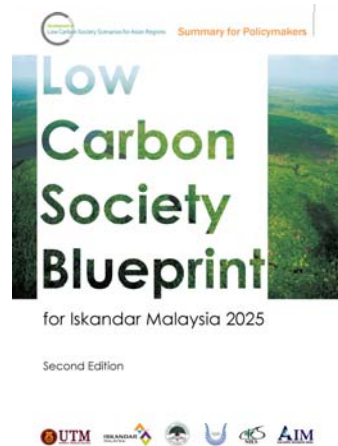
*Contribution to GHG emission reduction from 2025BaU to 2025CM ** Action 3, 7 and 12 does not have direct emission reduction, but their effect is included in other Actions. *** Since contribution of Action 10 includes carbon sink by forest conservation and urban tree planting, the total of contribution of the 12 Actions is greater than difference of the GHG emissions between 2025BaU and 2025CM in Figure 2 and Table2.

Launching of the LCSBPIM – COP18 Doha 2012



Launching of Low Carbon Society Blueprint at CO18

After the Low Carbon Society Blueprint – What's Next?



The *Low Carbon Society Blueprint for Iskandar Malaysia 2025*, officially launched by the Prime Minister of Malaysia and adopted by the Iskandar Regional Development Authority (IRDA) in 2012, sets a target for 58% carbon intensity reduction in 2025 as compared to the 2005 level and recommends a total of 283 strategic policies towards minimising carbon emissions in Iskandar Malaysia (IM).

Taking the blueprint into the implementation phase poses several questions:

Which policies should come first?

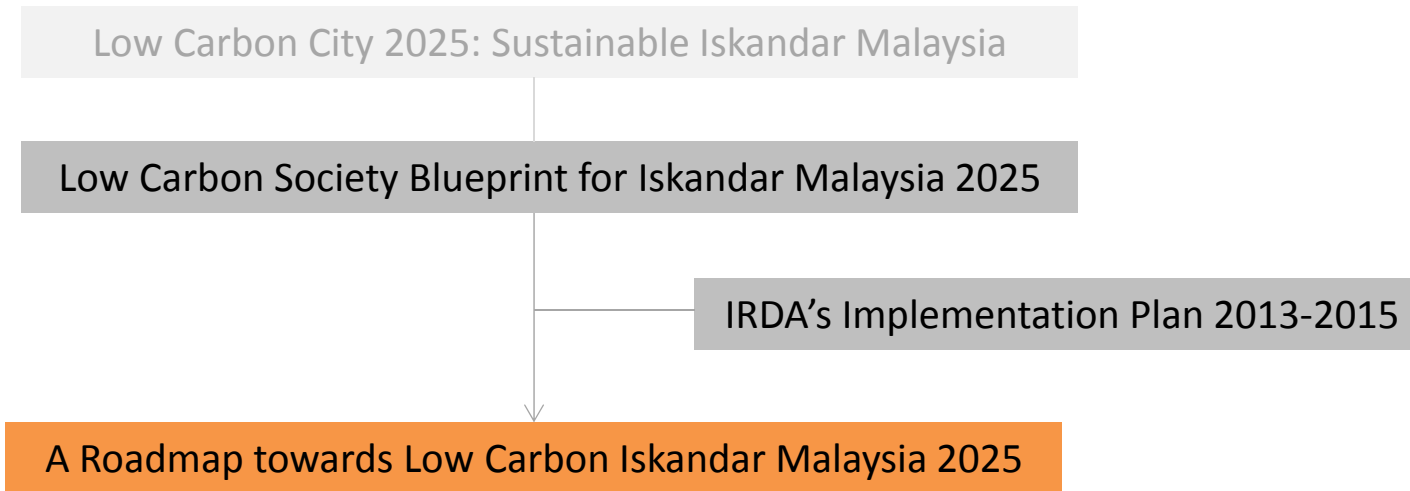
How long should the implementation period be?

When should these policies be implemented?

Who are the potential implementation agencies involved with these policies?

Introduction

A Roadmap towards Low Carbon Iskandar Malaysia 2025



This roadmap has been formulated to serve as a **complementary document** to the blueprint. It provides a **pathway to guide the implementation of policy** actions proposed in the blueprint by **outlining implementation programmes** according to the **given priority, timeline and related implementation agencies, including the 10 implementation plans that IRDA has identified for 2013-2015 period.**

Low Carbon Society Blueprint for Iskandar Malaysia: **Actions for a Low Carbon Future**

1. Integrated Green Transportation – Mobile Management System
2. Green Economy Guidelines
3. Eco-Life Challenge Project for Schools
4. Portal on Green Technology
5. Trees for Urban Parks/Forests
6. Responsible Tourism and Biodiversity Conservation
7. Bukit Batu Eco-Community
8. GAIA – Green Accord Initiative Award
9. Low Carbon Village FELDA Taib Andak
10. Special Feature: Smart City – Pasir Gudang ‘NAFAS BARU’:
CLEAN AND HEALTHY CITY

our side events...

Nov 13th (Wed) 15:00-16:30 at Japan Pavilion

“Pathways toward low carbon societies in Asia by 2050 and contribution of Japan to their realization”

Nov 15th (Fri) 11:30-13:00 at Room Wroclaw

“Roadmap and Actions toward Low Carbon Societies in Malaysia and throughout Asia”

Nov 18th (Mon) 9:00-10:00 at Japan Pavilion

“Low Carbon Implementation in Asia – Launching Iskandar Malaysia Low Carbon Implementation Plan”