

LoCARNet 8th Annual Meeting

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Climate Change Policies and Roles of Research Communities in Malaysia

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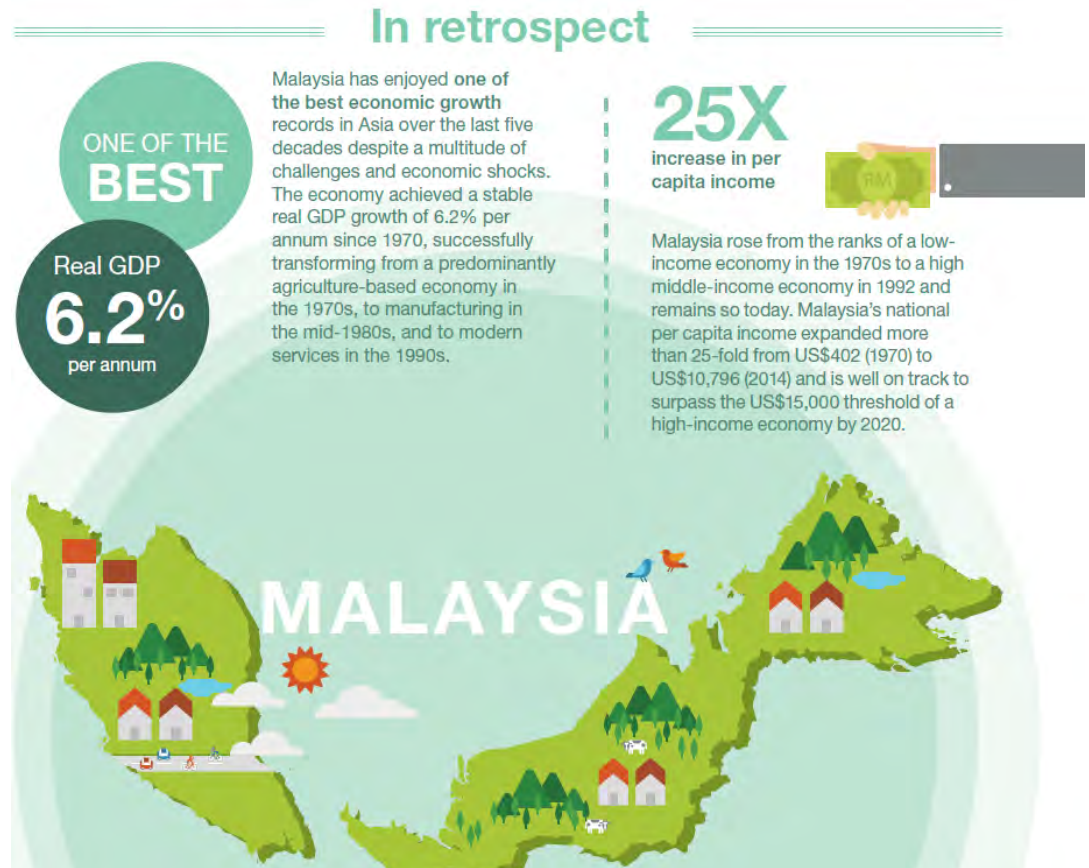


Malaysia- background

Journey realizing Vision 2020- A fully developed nation along all dimensions – economically, politically , socially, psychologically and culturally by 2020.

Themes related to low carbon development

- Digital nation,
- Green growth cities
- Competitive cities
- Promote biodiversity
- Environmental awareness
- Enable energy plan,
- Inclusiveness,
- SDG 2030



	CO2 emission ('000metric tons)	CO2 per capita metric ton	Carbon intensity kg CO2eq/RM
2000	222,990	9.5	0.62 (source NC2 2010)
2014	317,626	10.3	0.3137 kg (source NC2 2018)

Roles of Researcher in Climate change

- S2A SCIENCE TO ACTION
 - Methodology, Baseline modelling, Scenario development
- COMMUNITY ENGAGEMENT
 - Focus Group discussion and Scoping
- COMMON REPORTING SYSTEM
 - Adaptation And Mitigation
- CLIMATE ACTION PLAN
 - LCS Blueprint, LCS Action Plan, Roadmap
- MAINSTREAMING CLIMATE ACTION IN STATUTORY PLANNING
 - CAP into Development Plan system (Local Plan)
- IMPLEMENTATION and MONITORING
 - Education for sustainable development (ESD)
 - CASBEE
 - GAIA awards, Green Protocol reporting
 - Global networks,Media

Selected Climate Action Plans by UTM-LCARC



2009-2018

UTM-LCARC Research Approach



S2A

We believe in

Science

to Action

in making

Low Carbon Society

a Reality

UTM-LCARC S2A Approach



Pro-Growth

SCIENCE

Baseline Inventory &
Scenario Development

GHG Modelling

Community / Stakeholder
Engagement

Policy Framework

POLICY- MAKING

Political / Corporate Buy-ins

Mainstreaming

Capacity
Building

Pro-Job

Pro-Env.

Policy Review

Reporting

Monitoring

Tracking

ACTION

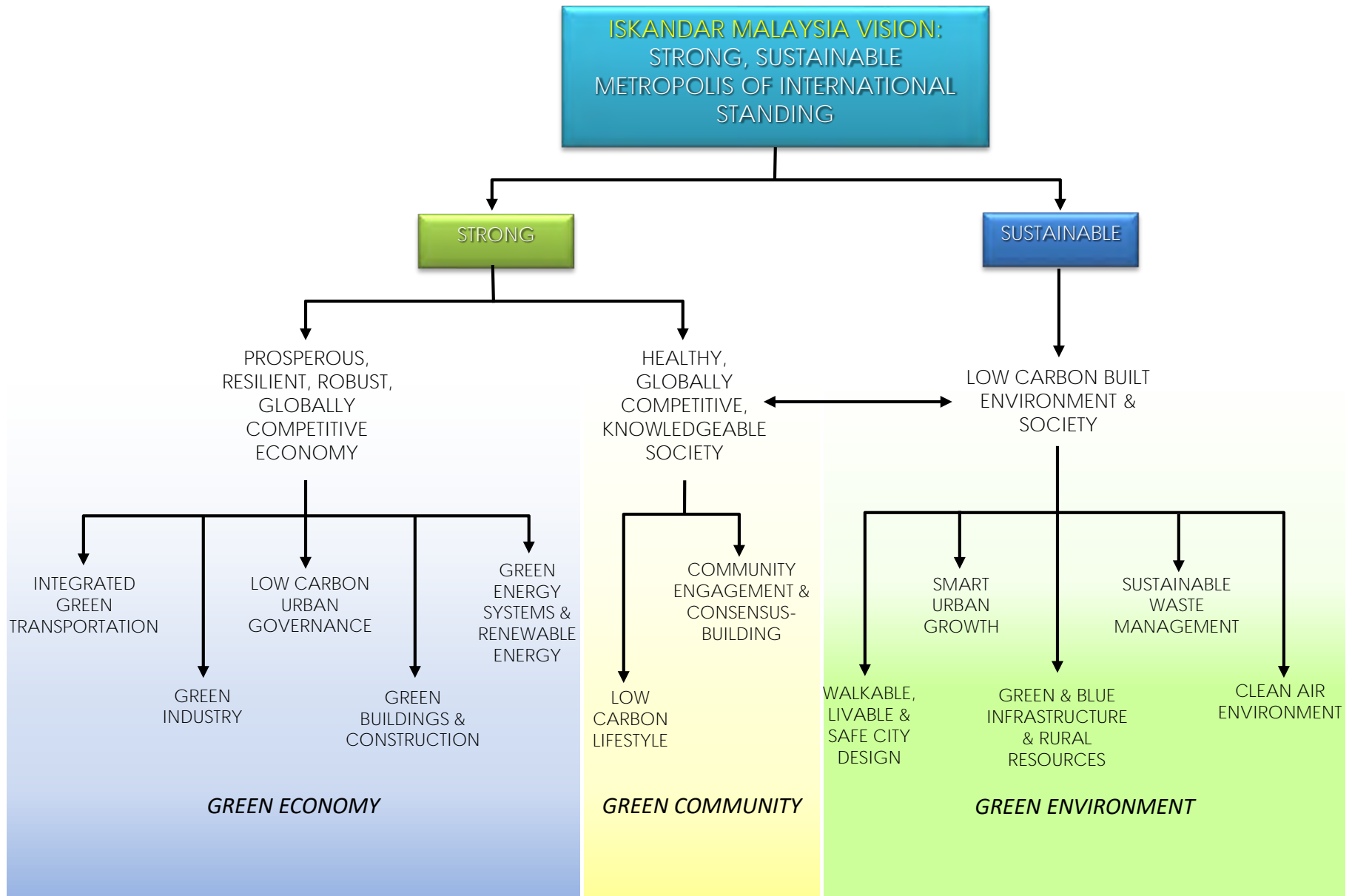
Policy Roadmap

Pro-Poor

S2A



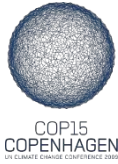
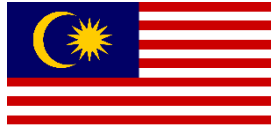
Policy Scoping for IMLCSBP 2025





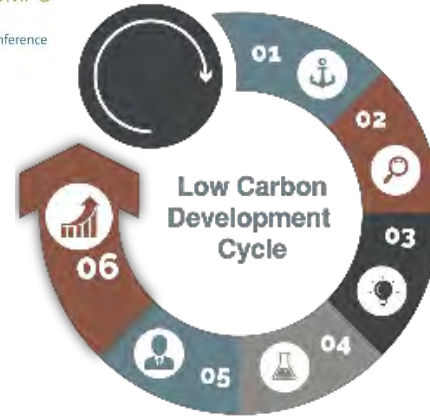
GOVERNMENT OF MALAYSIA

Background



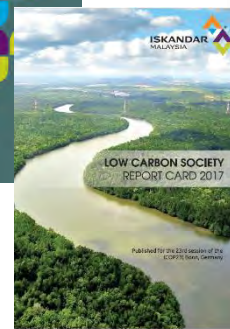
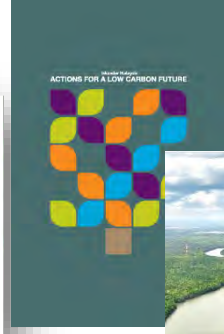
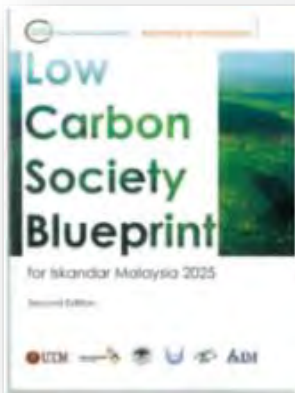
COP15 Copenhagen (17 Dec 2009) – Malaysia’s “... voluntary GHG reduction up-to-40% by emission intensity of GDP by 2020 compared to 2005 levels”.

COP18 Doha (2012) - IRDA globally launched its Low Carbon Society Blueprint for Iskandar Malaysia 2025. GOAL: to reduce Iskandar Malaysia’s GHG intensity emission by 58% by 2025; 40% absolute.



- Step 01: Base year inventory
- Step 02: Future scenario analysis
- Step 03: Target setting
- Step 04: Action plan
- Step 05: Implementation
- Step 06: Tracking performance

IM’s Low Carbon Society approach:



Iskandar Malaysia – Potential CO₂ Reduction

Table 1: Projected main socio-economic variables

	2005	2025	2025 /2005
Population (1000)	1,353	3,000	2.22
Household (1000)	303	706	2.33
GDP (Bill. RM)	35.7	141.4	3.96
Gross output (Bill. RM)	121.4	438.9	3.61
Primary industry	1.5	2.4	1.59
Secondary industry	86.2	274.0	3.18
Tertiary industry	33.7	162.5	4.82
Passenger transport demand (Mill. passenger-km)	9,565	59,524	6.22
Freight transport demand (Mill. ton-km)	8,269	26,054	3.15

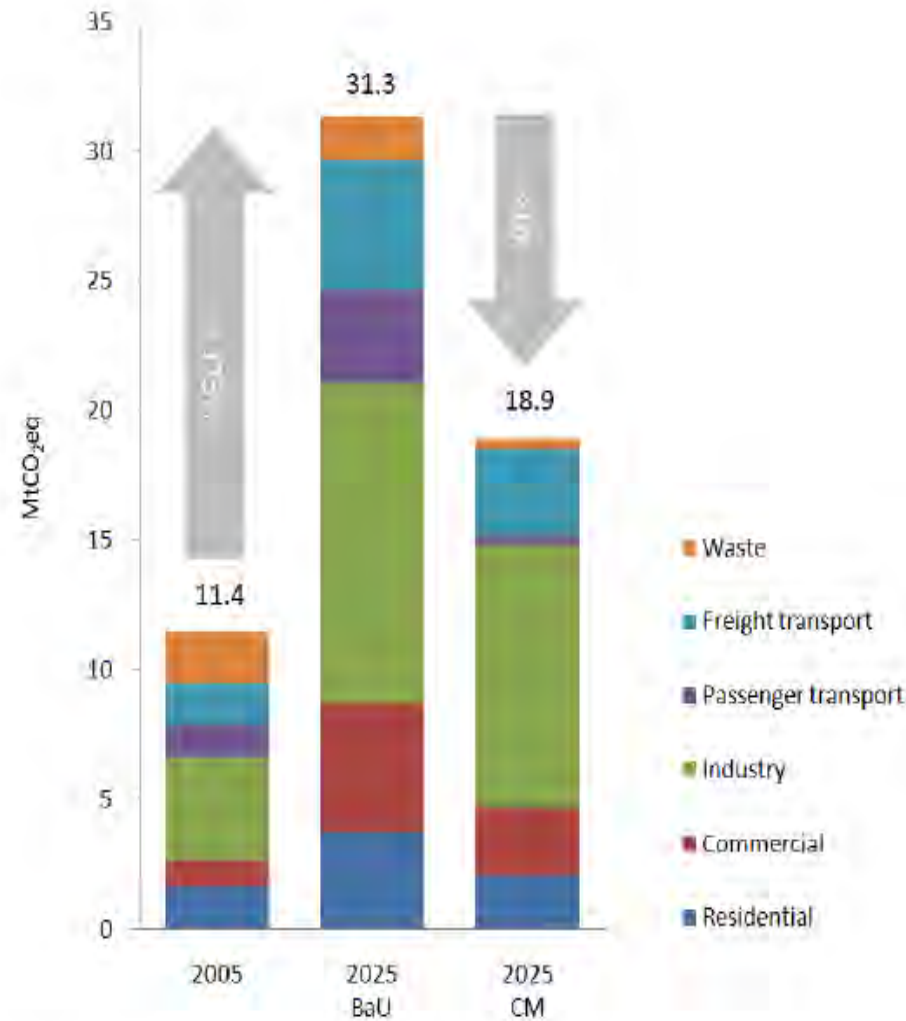
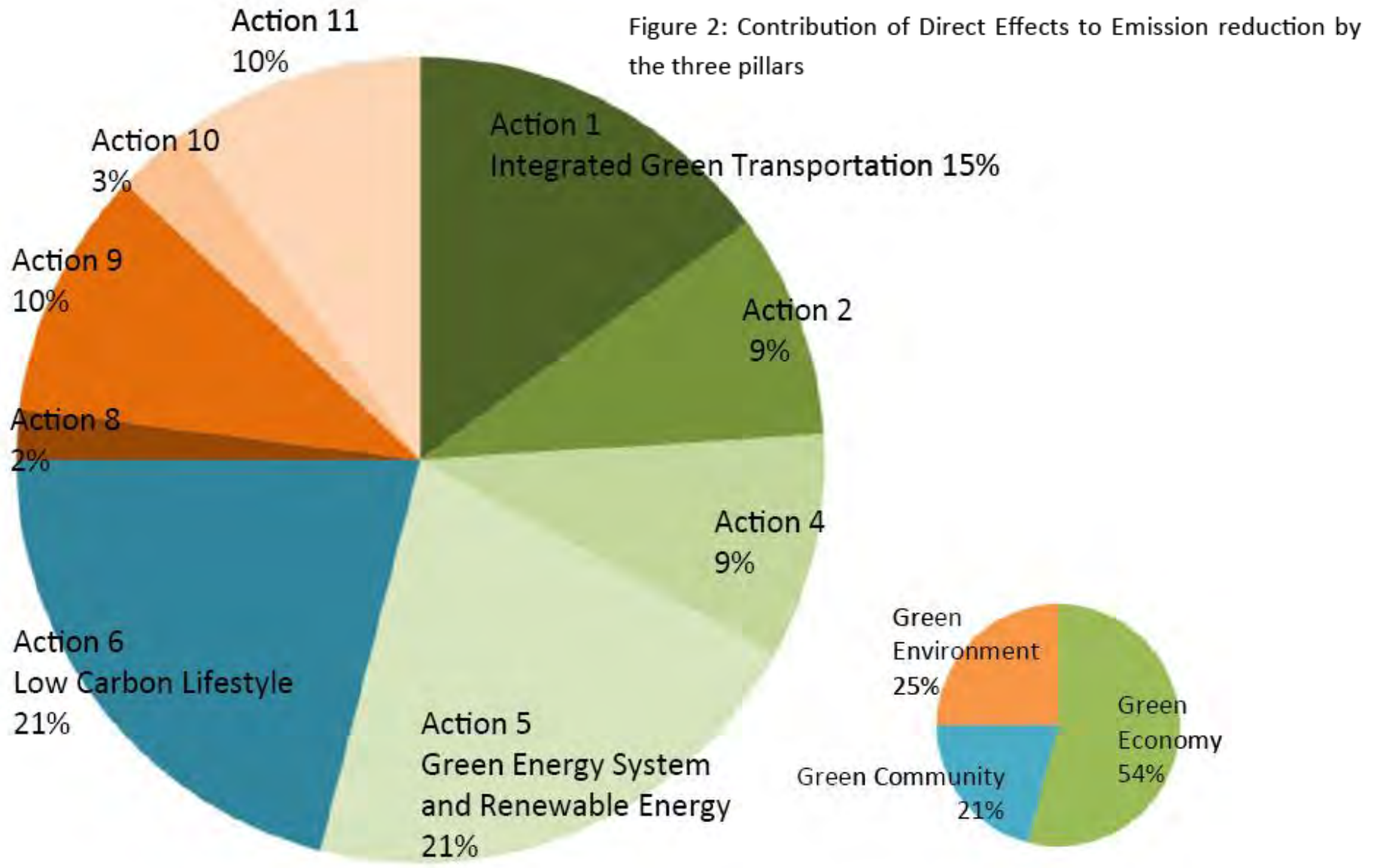


Figure 1: GHG emissions by sectors

LCS Actions for IM by Three Main Themes

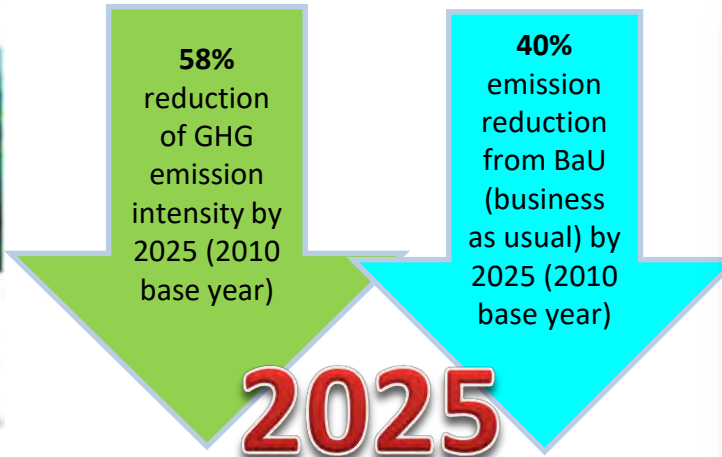
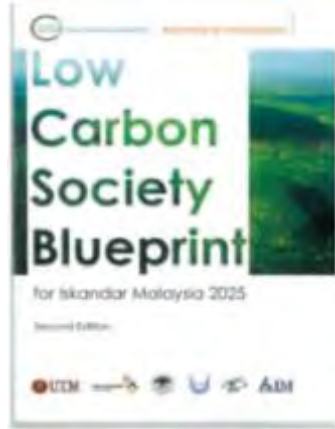
	Action Names	Themes
1	Integrated Green Transportation	GREEN ECONOMY
2	Green Industry	
3	Low Carbon Urban Governance	
4	Green Buildings & Construction	
5	Green Energy System & Renewable Energy	
6	Low Carbon Lifestyle	GREEN COMMUNITY
7	Community Engagement & Consensus Building	
8	Walkable, Safe, Livable City Design	GREEN ENVIRONMENT
9	Smart Urban Growth	
10	Green and Blue Infrastructure & Rural Resources	
11	Sustainable Waste Management	
12	Clean Air Environment	

LCS Actions for IM – Potential CO₂ Reduction





Low Carbon Society Blueprint for Iskandar Malaysia 2025



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	

- The LCSBPIM2025 – a guide for policy-makers, businesses, NGOs and others into going green;
- **12 Actions grouped in 3 parts: Green Economy, Green Community, and Green Environment = 281 programmes;**
- Each Action 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 UNFCCC in Doha, Qatar. **GOAL: to reduce Iskandar Malaysia’s GHG intensity emission by 50% by 2025;**
- Endorsed by the Prime Minister of Malaysia in Dec 2012;
- 2018: 65 programmes implemented.
- 12.9% GHG intensity reduction in 2017.

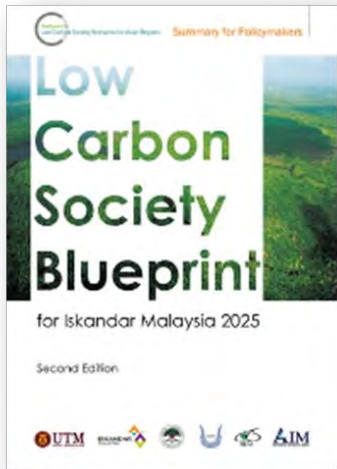


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Low Carbon Society Blueprint For Iskandar Malaysia 2025



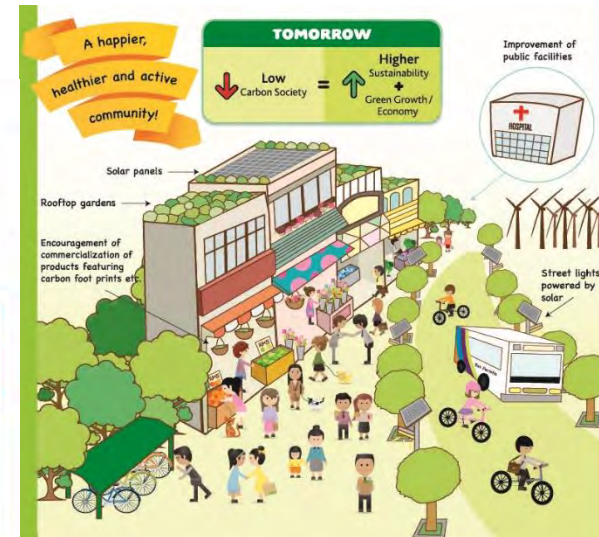
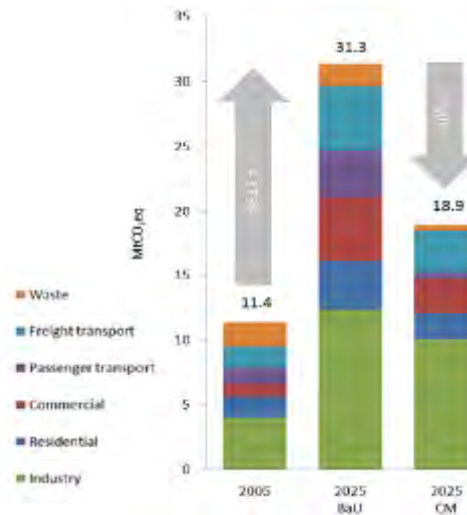
Lima-Paris Action Agenda



58% reduction of GHG emission intensity (2010 base year)

40% emission reduction from BaU (business as usual) (2010 base year)

2025

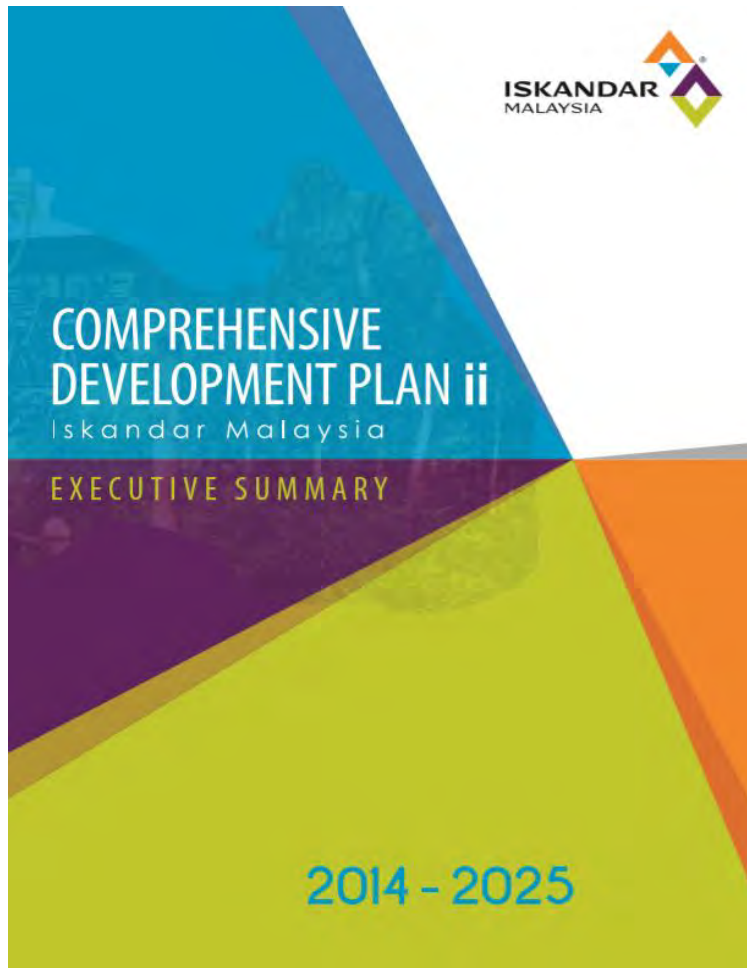


Iskandar Malaysia GHG Emission by Sectors

- Launched on 30 November 2012 at the UNFCCC in Doha, Qatar.
- A guide for policy-makers, businesses, NGOs and others into going green.
- 12 Actions grouped into 3 Themes -> 281 Programmes.
- Each Action contains an analysis, list of programmes and **potential reduction of GHG emission**
- 2018: 60 programmes implemented and completed;
- 2017: **12.9%** GHG intensity reduction.

LCS Mainstreamed into the Iskandar Malaysia Comprehensive Development Plan-2 (CDP-ii)

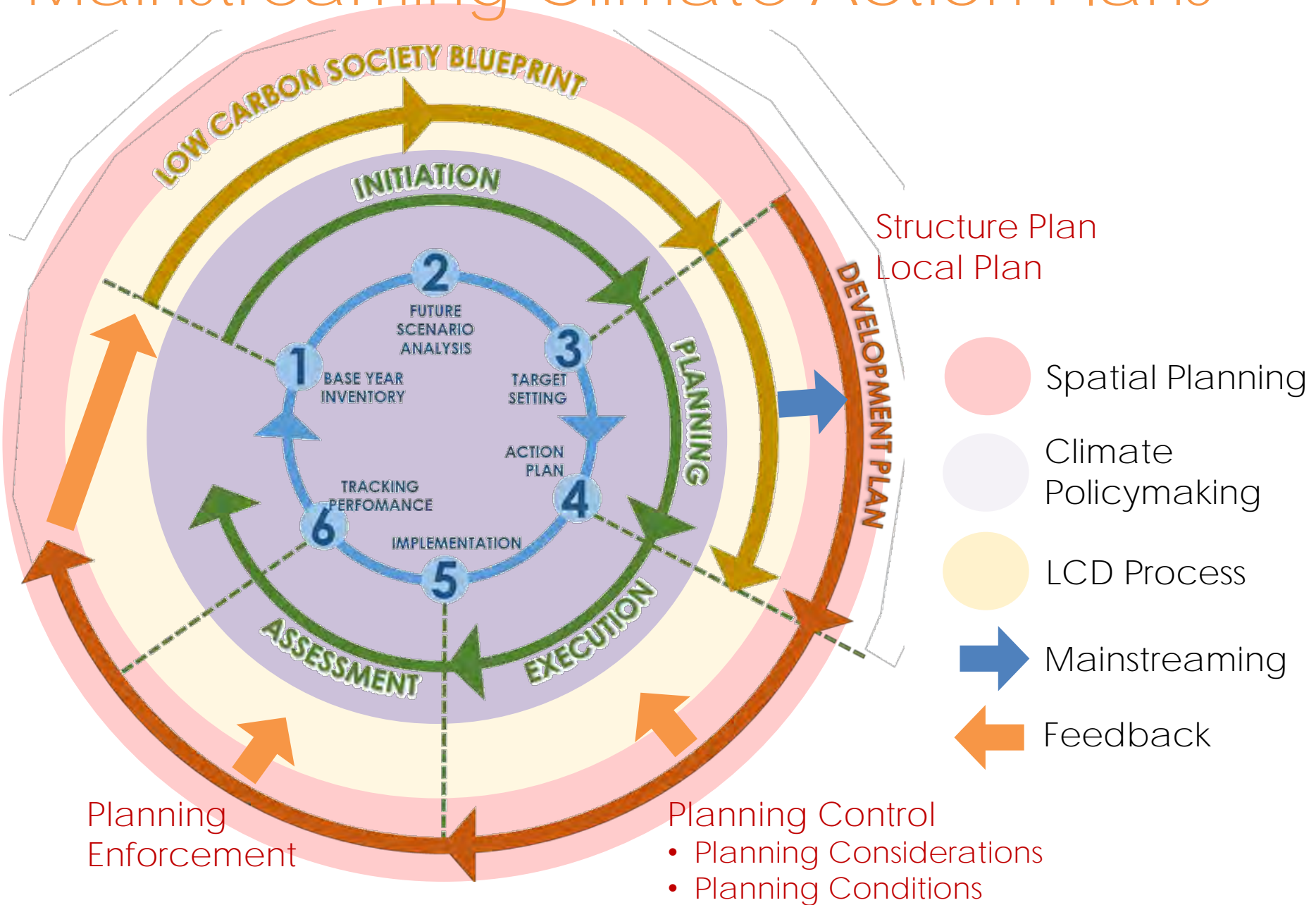
Iskandar Malaysia CDP-ii is a statutory plan prepared under Parliamentary Act No. 664



Iskandar Malaysia
Circle of Sustainability: LCS as one
of the CDP-ii's three main pillars



Mainstreaming Climate Action Plans



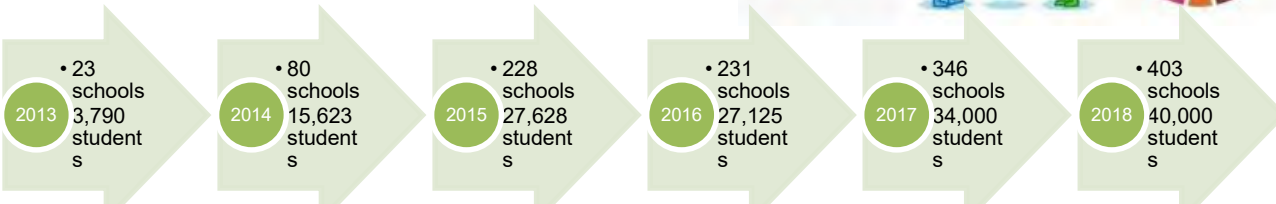


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Iskandar Malaysia Eco-Life Challenge 2018



ISKANDAR MALAYSIA ECOLIFE CHALLENGE



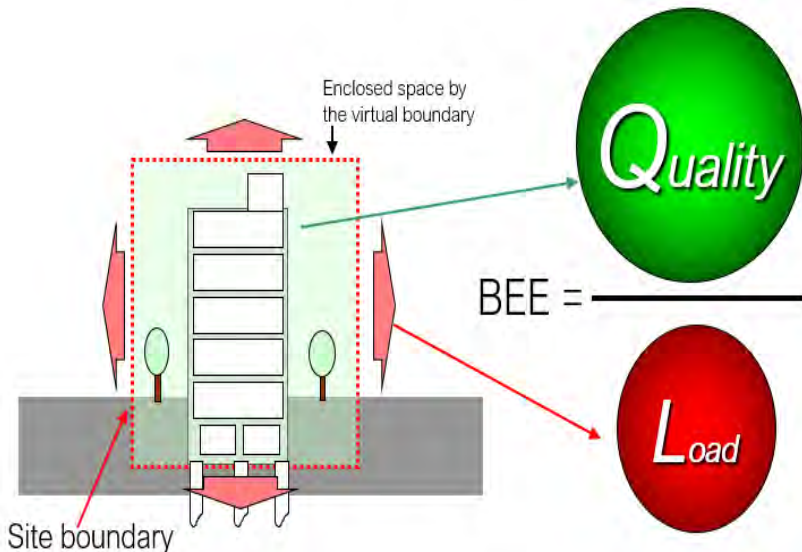
- IMELC objectives are: (a) to educate both students, parents and teachers on low-carbon issues and ideas; and (b) to share the tools with which LCS is developing in Iskandar Malaysia.
- IMELC2018 attracted participations from 403 schools and recorded the involvement of 40,000 students within the Iskandar Malaysia.
- Some of the significant achievements of Eco-Life Challenge initiatives from the committed schools are as follows:
 - The total carbon reduction by participating schools in IMELC 2018 is **590,662.64kgCO₂**;
 - RM174,925.14 electricity bills and RM32,923.82 water bills were saved and RM58,664.55 was collected from recycling.
 - Therefore, **a total of RM266,513.51** was saved and earned by the participating schools in IMELC 2018.



CASBEE Iskandar Malaysia

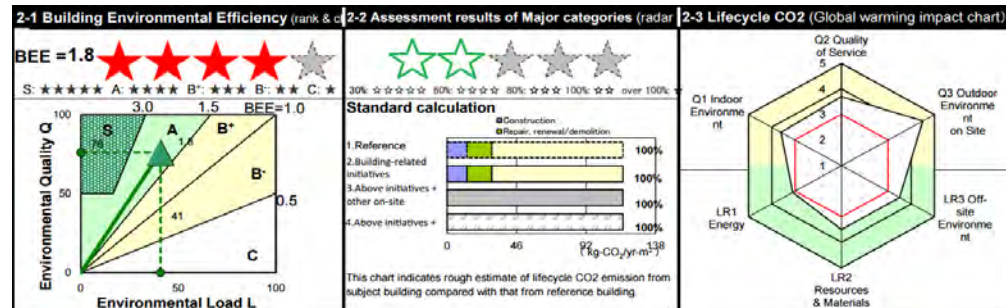
CASBEE is an assessment framework built upon the concept of environmental efficiency or eco-efficiency; evaluating Built Environment Efficiency (BEE) that takes into account the level of quality within the target built environment, while accounting for environmental load outside the target built environment.

CASBEE Iskandar will be the guiding manual for local authorities, developers and business enterprises in developing green cities, neighbourhood and buildings. It is currently being used as an assessment tool for Iskandar Malaysia's Green Accord Initiative Award (GAIA) certification. Takes account of UN's 17 Goals.



NEW CASBEE Assessment and Certification for selected buildings - Nong Chik Mosque (NCM) and Johor Port

- ✓ The project was funded by the Johor State Government via Johor State Investment Centre (JSIC) as per Surat Terima Tawaran JSIC/14/94/Bil.2 (30)-2(A)
- ✓ The objective of the project was to conduct assessment and certification for green buildings with using the Comprehensive Assessment System for Built Environment Efficiency (CASBEE).
- ✓ This is **another successful showcase** for knowledge and technology transfer from Japan to Johor.
- ✓ It also increases investors trust and interest to invest in Johor with having this international standard tool.





Low Carbon Society Stocktaking Exercise

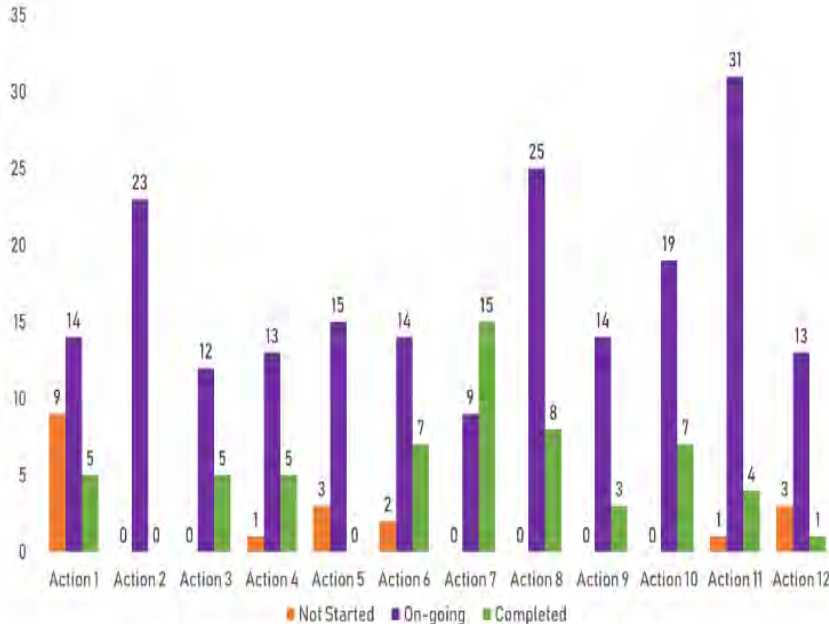


Figure 3.2 : LCSBPIM 2025 implementation status for IM by actions

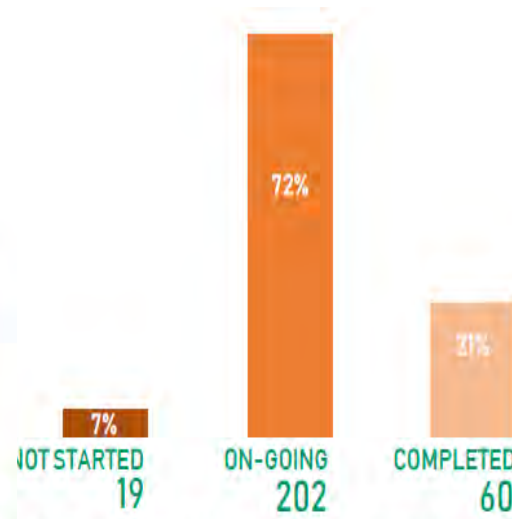


Figure 3.1: LCSBPIM 2025 implementation status for IM

LOW CARBON SOCIETY BLUEPRINT FOR ISKANDAR MALAYSIA STOCKTAKING EXERCISE 2018

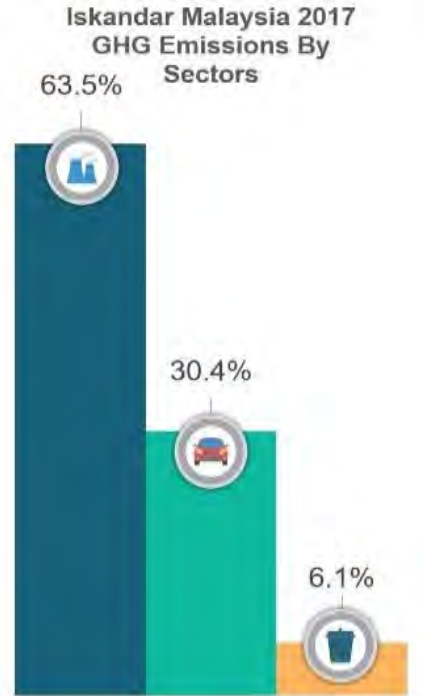
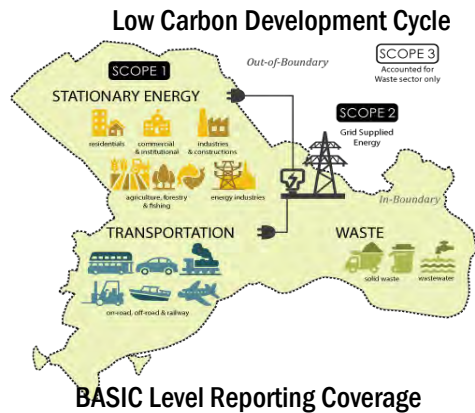
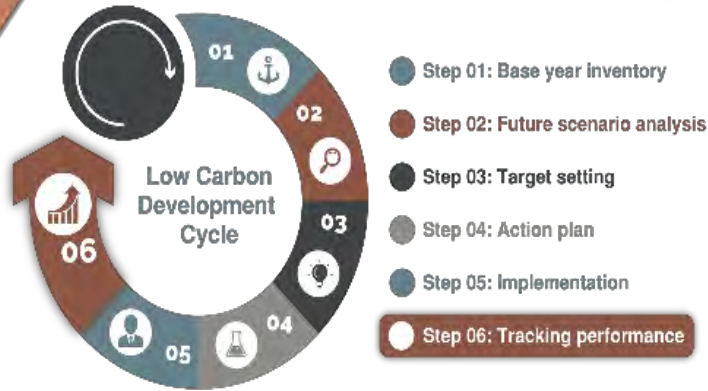
FINAL REPORT JANUARY



- In 2018, IRDA carried out a Low Carbon Society Stocktaking Exercise with assistance from the Low Carbon Asia Research Centre, Universiti Teknologi Malaysia, to review the implementation progress of the LCS programmes in Iskandar Malaysia.
- There are 202 out of 281 LCS programmes that are ‘On-going’ by IM. **It is followed by ‘Completed’ with 60 programmes** and ‘Not started’ with only 19 programmes. The highest number of ‘On-going’ programmes contribute to 72 percent of the assigned LCS programmes for IM. This shows that IM is continuously implementing the LCS programmes for IM.



Iskandar Malaysia Greenhouse Gas (GHG) Inventory 2017



Percentage of GHG emissions by sectors



- Iskandar Malaysia has completed **6 stages** of the **Low Carbon Development Cycle** (2011-2016: Research/Science to 58% targeted reduction by 2025 to programme implementation). **Stage 6** of the cycle – **Tracking Performance of Implemented Low Carbon Society programmes** -→ Iskandar Malaysia Greenhouse Gas Inventory 2017.
- Emission intensity per GDP in 2017 is 0.2164 kilo tonnes of carbon dioxide per million ringgit Malaysia (ktCO₂/RM Million), which marks a **12.9%** reduction compared with 2010 emission intensity of 0.2483 ktCO₂/RM Million.



GOVERNMENT OF MALAYSIA

Green Accord Initiative Award (GAIA)



Recognition of organisations, companies & businesses operating within Iskandar Malaysia that have contributed towards the adoption of sustainable design, planning, retrofitting, and operation in the built environment.

GAIA is a soft Incentive to give marketability and reputation !

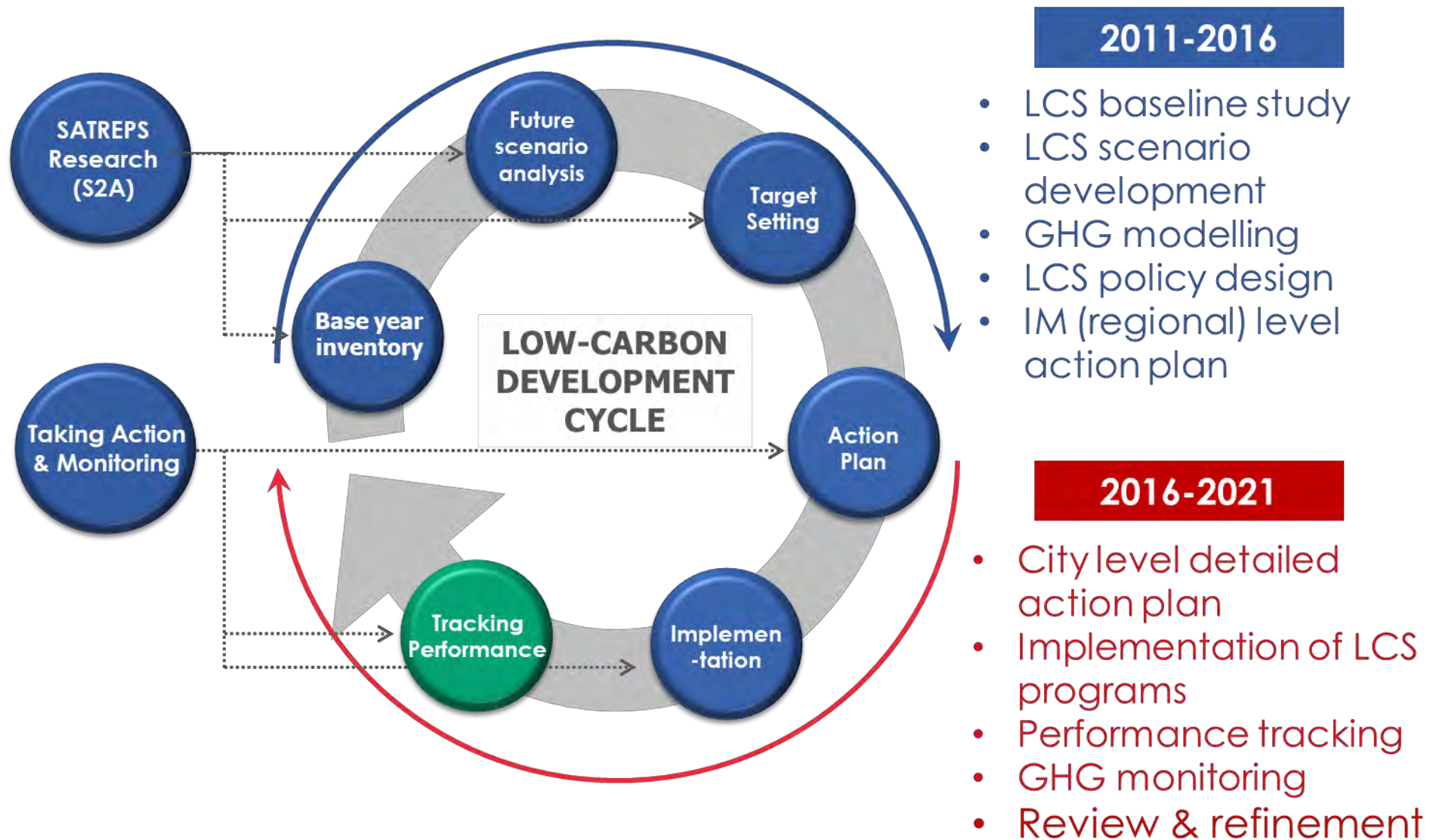
GAIA Eligible Recipient (Category Industry)
Kerry Ingredient (M) Sdn Bhd

Special Mention in GAIA 2018/2019

1. Seri Austin Sales Gallery & Office (Commercial)
2. The Seed, Tanah Sutera (Township)
3. Merlin Entertainment Studio (Industry)



Iskandar Malaysia LCSBP Comes Full Cycle



Example Implementation Roadmap

Action 5 COMMUNITY ENGAGEMENT AND GREEN LIFESTYLE

Programs	2015-2020	2021-2025	2026-2030	Responsible KLCH Department	Key Partners	Implementers
				Measure 5.1.1 Foster Sustainable Consumption Behaviour		
CE 1 Survey sustainable consumption practice				Health & Environment Dept.	KLCH (Branch Services Dept., Information Management Dept.), JPWPKL, HEIs	KLCH (Housing Management & Community Development Dept.), Local research and higher learning institutions, NGOs, Resident's assoc.
CE 2 Stimulate sustainable consumption practice				Health & Environment Dept.	KLCH (Housing Management & Community Development Dept., Branch Services Dept.)	LA21KL, NGOs, Resident's assoc.

2030 Implementation Roadmap

Responsible local authority Dept. :

KLCH department with primary responsibility for initiating, coordinating, liaising with relevant external agencies, monitoring, and/or approving implementation of programs

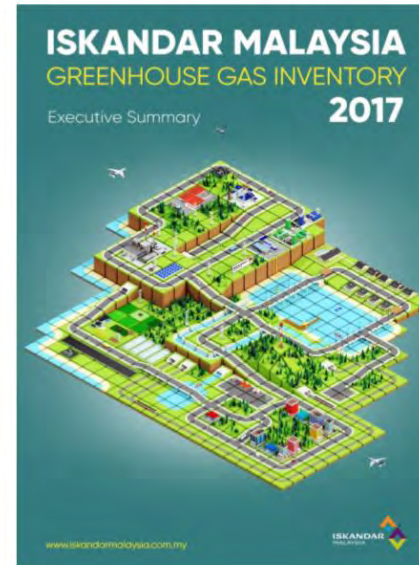
Key Partners:

Technology providers, funding agencies or entities, and relevant government agencies with approving authority for, and/or statutory duty of regulating, facilitating and overseeing implementation of programs

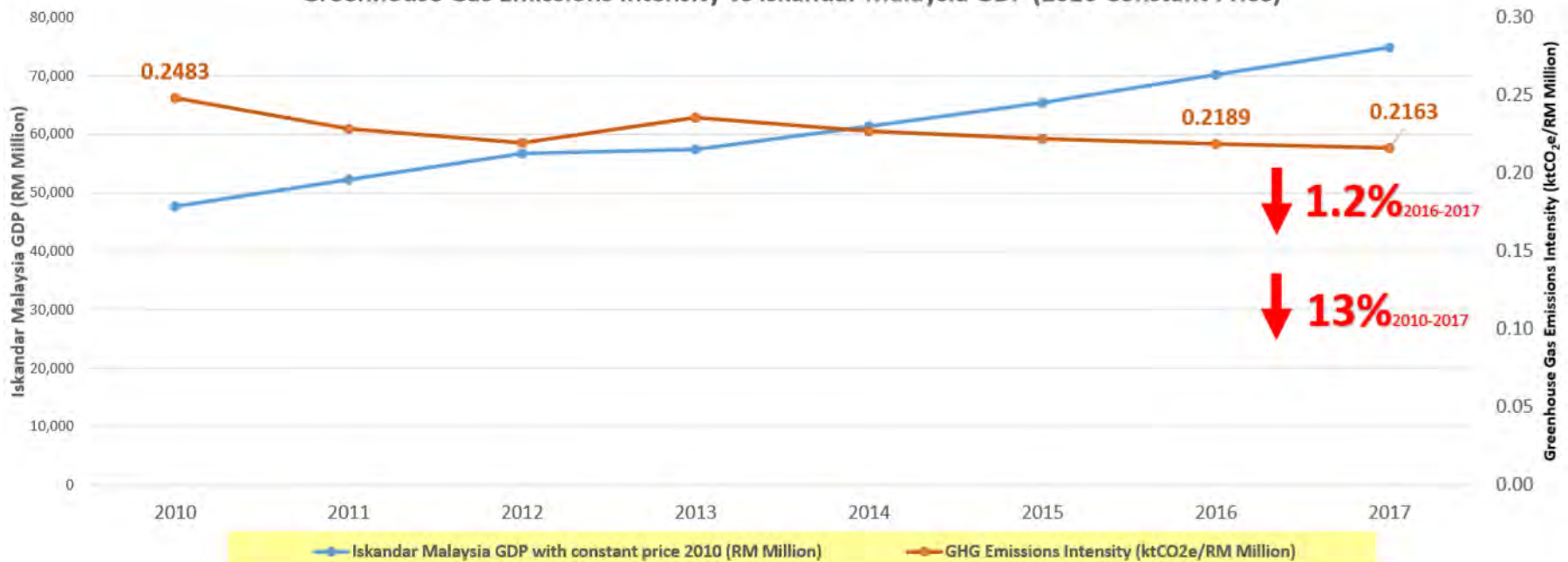
Implementers:

Agencies, entities and/or parties that implement, or are needed to implement, programs due to their statutory duty, ownership rights, institutional responsibility, and/or effective serving of communal interests

Iskandar Malaysia LCSBP Comes Full Cycle



Greenhouse Gas Emissions Intensity vs Iskandar Malaysia GDP (2010 Constant Price)





Low Carbon Publications

2009

2012

2013

2014

2015

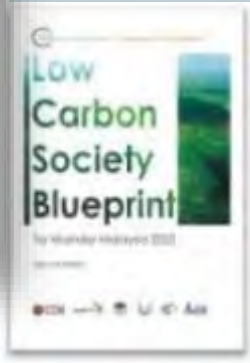
2016

2017

- * Preliminary Study: Brochure Low Carbon City 2025 Sustainable Iskandar Malaysia



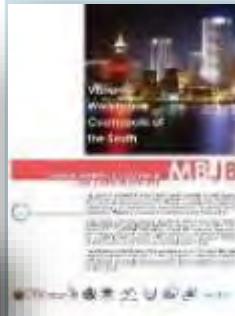
- * Low Carbon Society Blueprint for Iskandar Malaysia 2025 - Summary for Policymakers



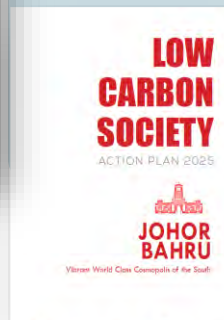
- * LCSBPIM2025 Full Report
- * A Roadmap towards Low Carbon Iskandar Malaysia 2025
- * Iskandar Malaysia: Actions for a Low Carbon Future



- * Low Carbon Society Brochures for 5 Local Authorities



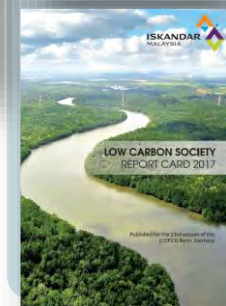
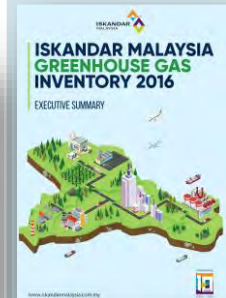
- * Low Carbon Society Action Plan 2025 for 5 Local Authorities in Iskandar Malaysia (Johor Bahru, Johor Bahru Tengah, Pasir Gudang, Kulai & Pontian)
- * IMELC
- * Green Economy Guidelines



- * Iskandar Malaysia Greenhouse Gas Inventory 2015
- * CASBEE Manuals
- * PESISIR



- * Iskandar Malaysia Greenhouse Gas Inventory 2016
- * GAIA Award
- * LCS Report Card 2017



City Climate Action Impacts (some KL examples)



Malaysian LCS at COP 24





Global Covenant of Mayors for Climate and Energy (GCoM) in Malaysia



- Global Covenant of Mayors for Climate and Energy (GCOM) is a global coalition of city leaders dedicated to reducing their greenhouse gas (GHG) emissions, make their communities more resilient to climate change, and regularly report their progress publicly. The coalition comprises more than **9,500 cities across 6 continents and 127 countries**.
- In March 2019, IRDA co-hosted the inaugural GCoM event held at the Doubletree by Hilton Hotel, Johor Bahru. The event started the 1 of 4 training modules on the **preparation of Climate Action Plans for cities in Malaysia**. DBKL-CityNet hosted Module 2. Module 3 will be hosted by **Penampang District, Sabah (18-20 July)** and Module 4 in Oct in Penang.

Accelerating Climate Actions in Malaysian Cities (towards 2030 and beyond)

COP 21 National Target: 45% Reduction*

COP 15 National Target: 40% Reduction*

**All reduction targets are in terms of GHG emissions intensity of GDP*

UTM-LCARC
S2A

- Tawau CAP (GCoM CRF)
- Penampang CAP (GCoM CRF)
- Ipoh (GCoM CRF)
- Kampung Bahru CAP (GCoM CRF)
- Muar CAP (GCoM CRF)

RTD Muar 2030 (Target: 65% Reduction*)

PLCSBP 2030 (Target: 50% Reduction*)

KL LCSBP 2030 (Target: 70% Reduction*)

PGC 2025 (Target: 60% Reduction*)

LCSBP-IM 2025 & 5LAs LCSAP (Target: 58% Reduction*)

2005 2009 2015 2020 2025 2030

CONCLUSION

- 1) Use S2A methodology is important for objective and informed decision making to combat climate change.
- 2) Promote Stakeholder involvement - Community engagement with local authorities , NGOs and Business communities
- 3) Prepare relevant documents for planning (CAP) and implementation and monitoring
- 4) Mainstreaming CAP into statutory development plans
- 5) Promote local and global climate action network
- 6) Carry out capacity building and research & publication activities

Thank you for your attention!

Thank You Terima Kasih 谢谢 धन्यवाद ありがとう