

Developing Effective Mitigation Policies for Cities:

Learning from Tokyo

30 JANUARY 2018 @ KAIUN CLUB

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Mizuho Information & Research Institute Inc.,



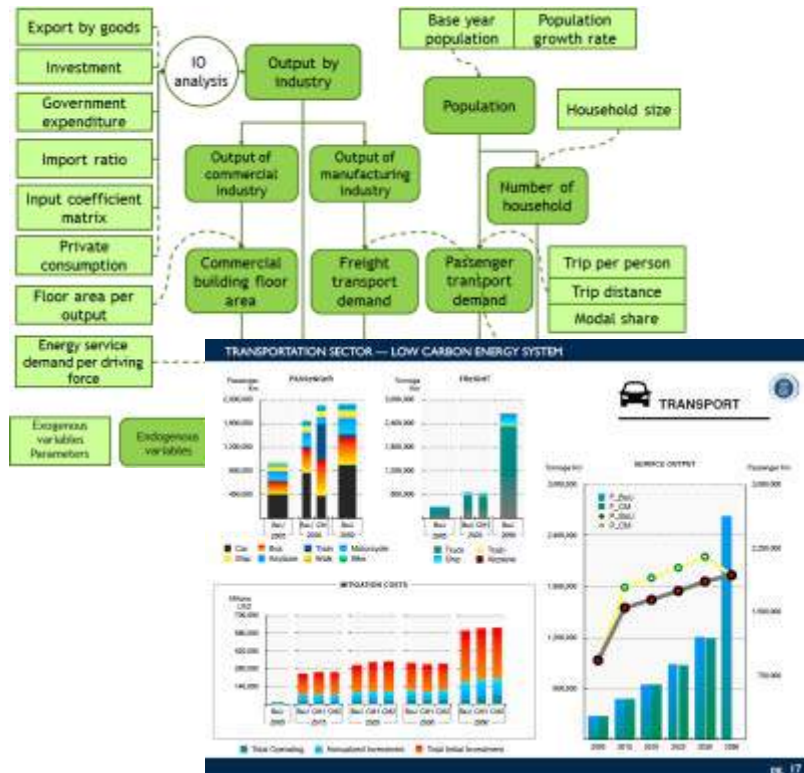
E KONZAL



What is AIM?

- **Asia-Pacific Integrated Model (AIM)** is a family of analytical models which are developed by research institutes in Japan. AIM contributes IPCC reports, discussion on climate change mitigation actions in Japan and Asian countries.
- AIM can be regarded as “**researchers network**”, because AIM is developed and applied through collaboration with researchers in various countries.

Model



Example of AIM's structure and output

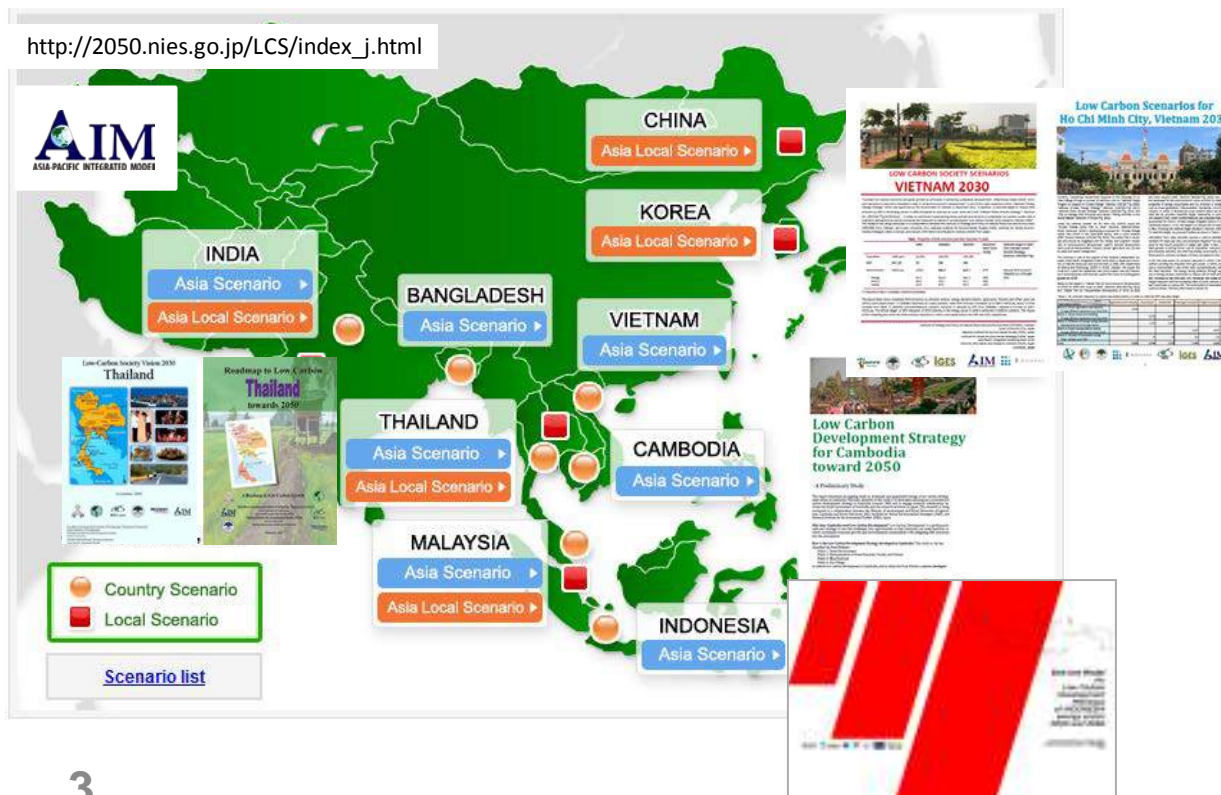
Researchers Network



21th AIM International Workshop

AIM activities in Asia

- AIM has contributed processes to formulate climate policy in Japan, and the activities are expanded to Asia. **AIM has been involved in formulation processes of low carbon policies through collaboration with Asian researchers.**
- Since FY2014, “Asia Low Carbon Society Research (LCSR) Project” which is funded by MoEJ is launched. The project includes **not only making low carbon scenarios but also designing practical programs to realize LCS** in target regions.



Target Regions FY2014 -

National

- Thailand
- Indonesia
- Malaysia
- Cambodia
- Vietnam

City

【Vietnam】

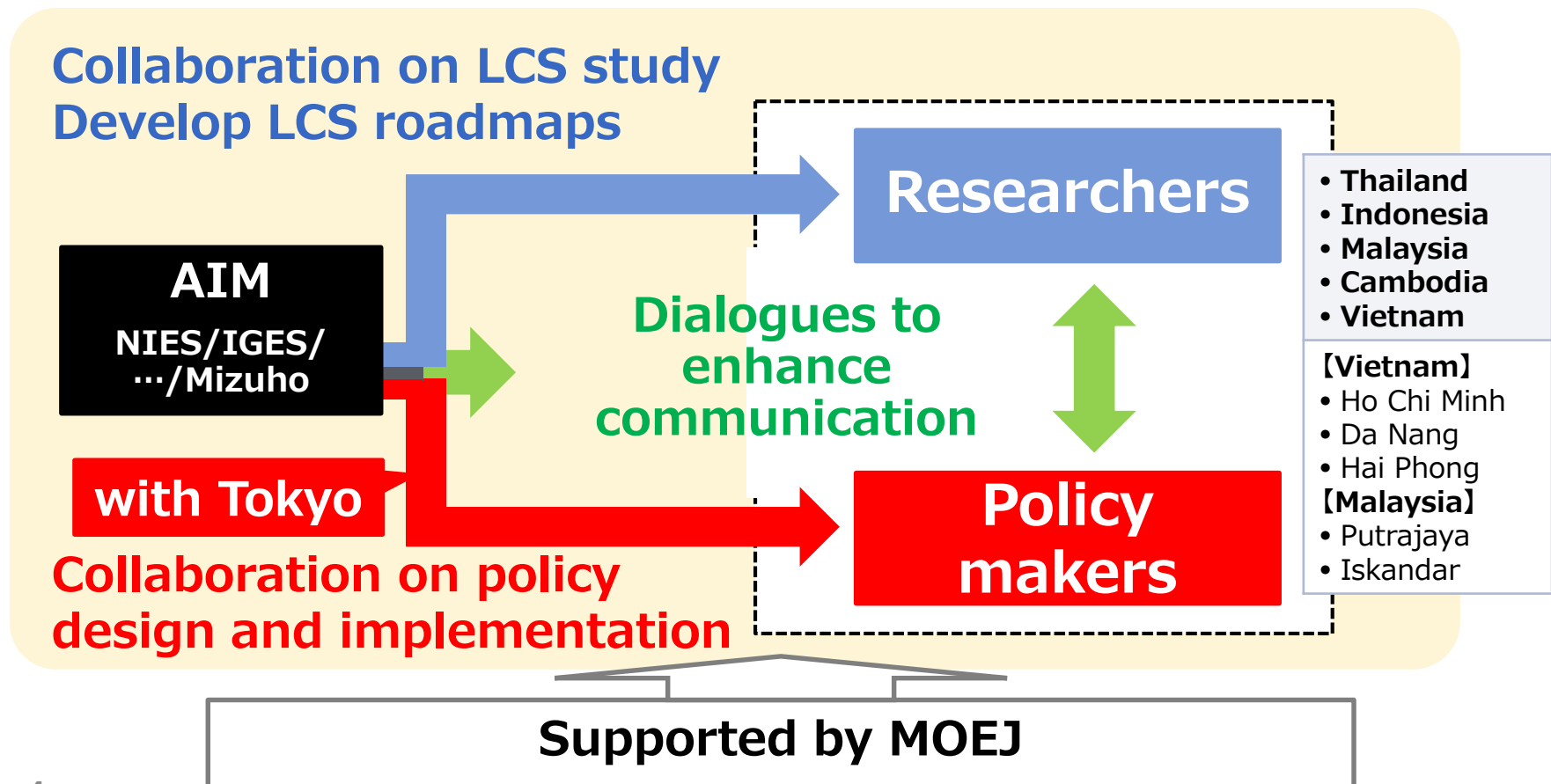
- Ho Chi Minh
- Da Nang
- Hai Phong

【Malaysia】

- Putrajaya
- Iskandar

Asia Low Carbon Society Research Project (MOEJ)

- AIM team has conducted Asia Low Carbon Research Project which is supported by MOEJ.
- The project aims to support developing LCS plans and designing policy instruments to enhance mitigation actions in target regions through collaborative works with Asian researchers and policy makers.



Steps to develop LCS scenarios

- Components of activities of LCSR project are shown below. Scope and target area of the activities vary year by year.

1 Relation building

- a. Find counterparts
- b. Relation building
← **Dialogues, WS**



2 Develop LCS plan

- a. CB of researchers
- b. Quantitative analysis
← **Training, collaboration**



2+ Design program

- a. CB of policy makers
- b. Design practical program
← **Training, collaboration**



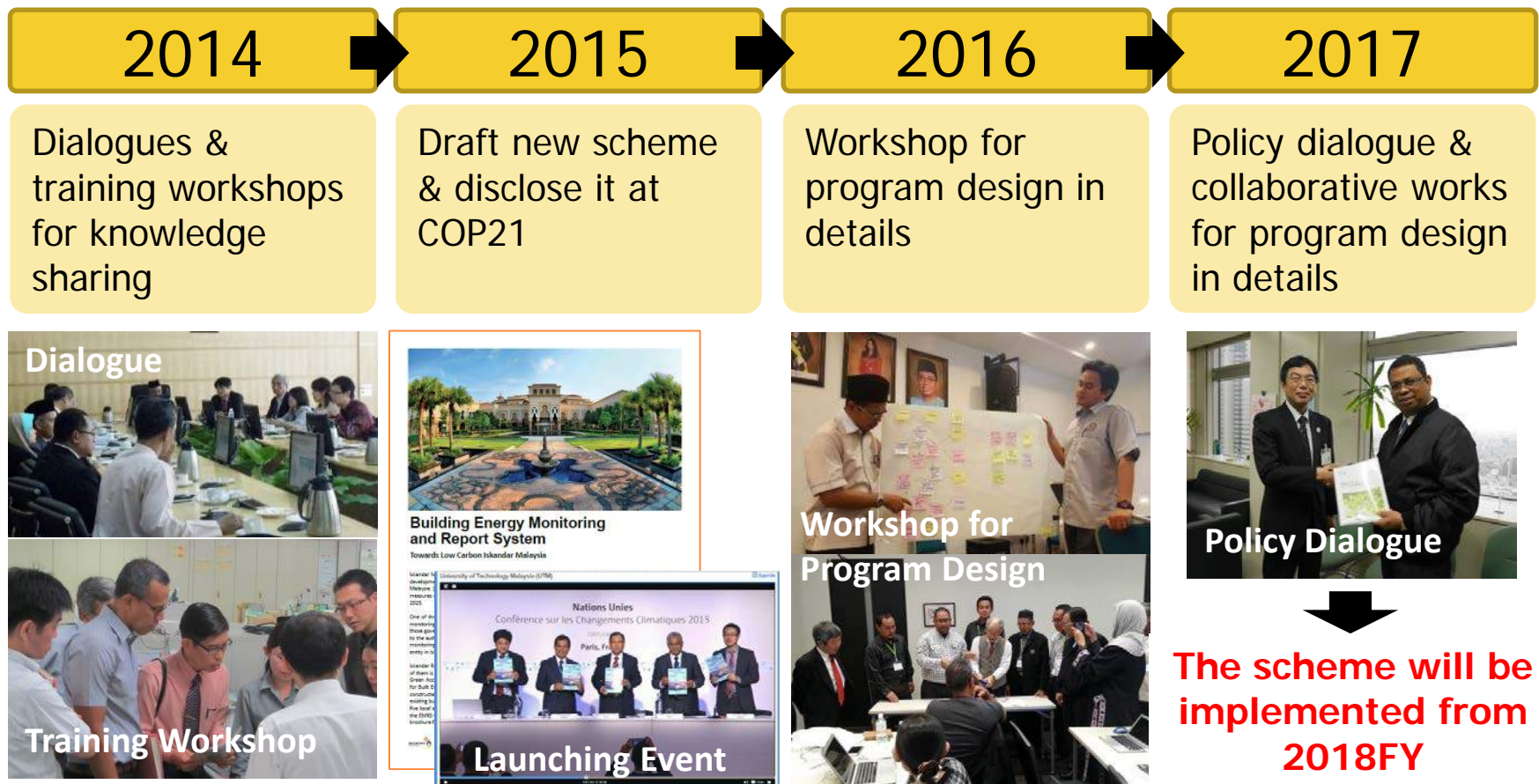
3 Policy dialogue

- a. Input to local authorities
- b. Appeal to various parties
← **International events**



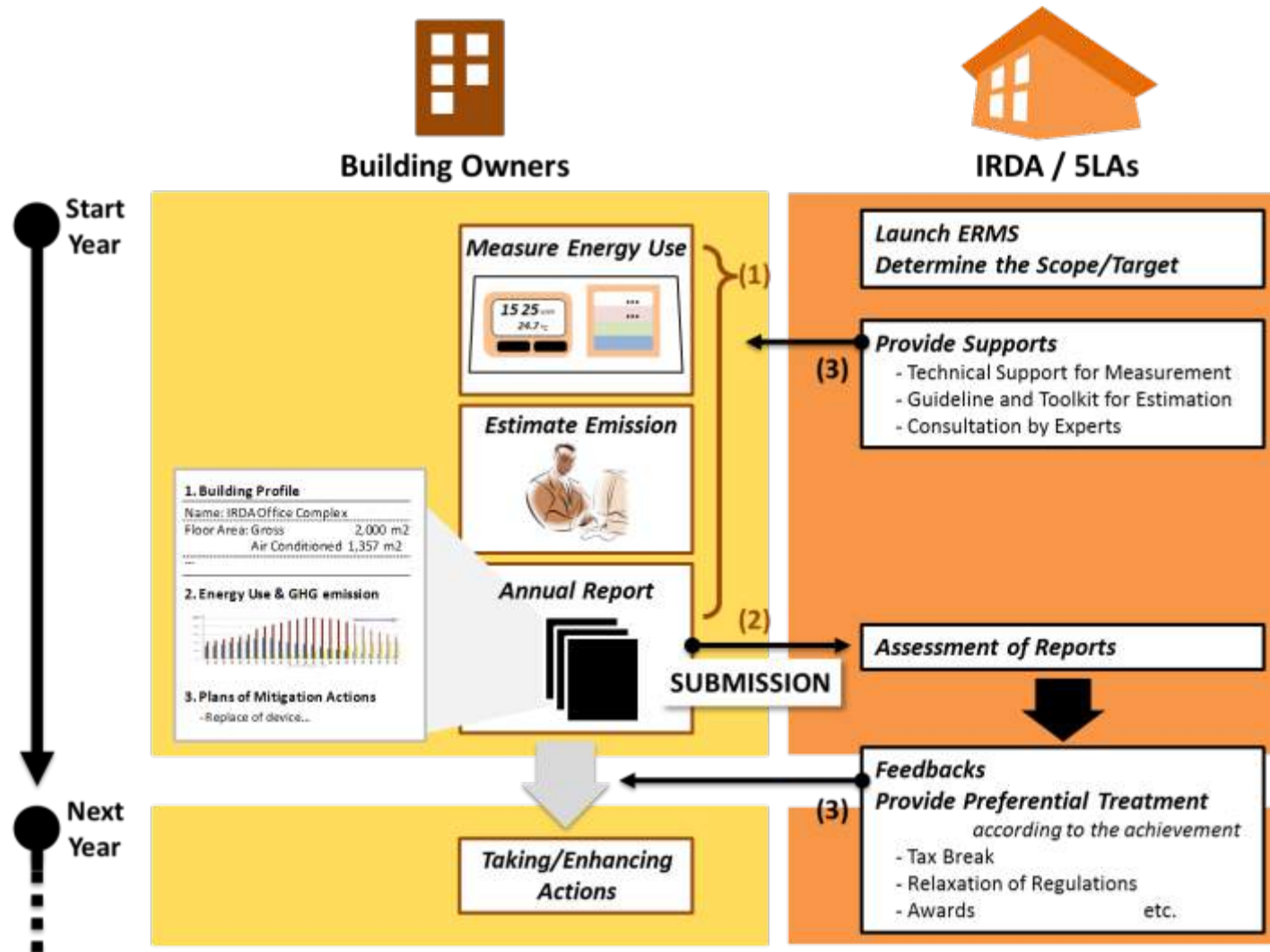
Case in Malaysia

- AIM team has collaborated with Malaysian local authorities to design monitoring and reporting program since 2014.
- **Trainings, workshops** and **intensive discussions** among city staffs, TMG staffs and AIM experts have been conducted for many times.



Case in Malaysia

- For example, Iskandar authority has drafted the **Building Energy Monitoring and Reporting System: BEMRS** by referring policy action implemented in Tokyo.



Source: Brochure disclosed at COP21 by Iskandar Region Development Authority (Dec. 2015)

Case in Malaysia

- Iskandar authority is now conducting energy audit program as pilot phase of BEMRS implementation.
- The program will be started in next year targeting governmental buildings.



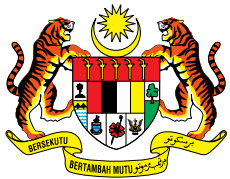


PRIME MINISTER'S DEPARTMENT



Low Carbon Society Blueprint for Iskandar Malaysia: Building Energy Monitoring & Reporting System (BEMRS)

Boyd Dionysius Joeman
Head, Environment Division IRDA
30 January 2018

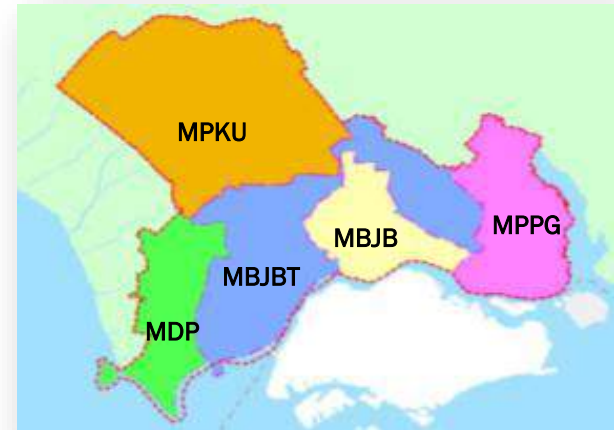
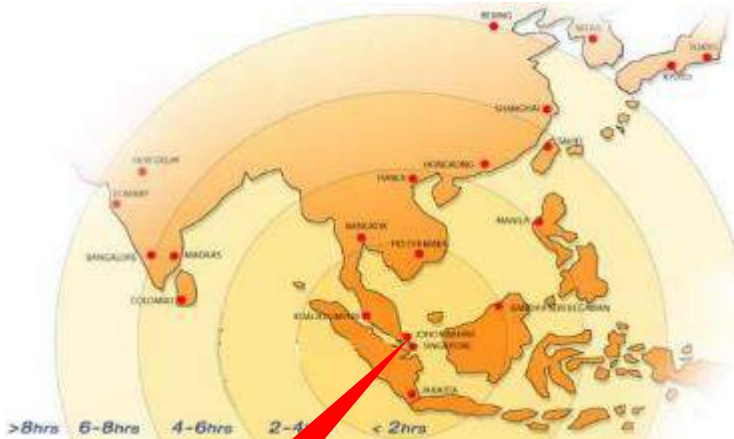


Iskandar Malaysia



Iskandar Malaysia is located in the main southern development corridor in Johor. Total area: 2,217 sq km (12% of Johor State); 3 times the size of Singapore.

Iskandar Malaysia covers FIVE local planning authorities.

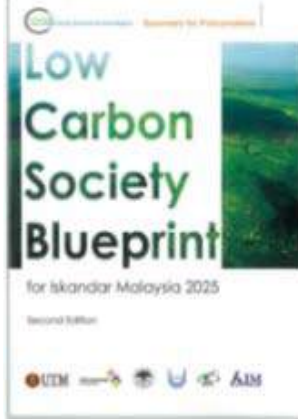
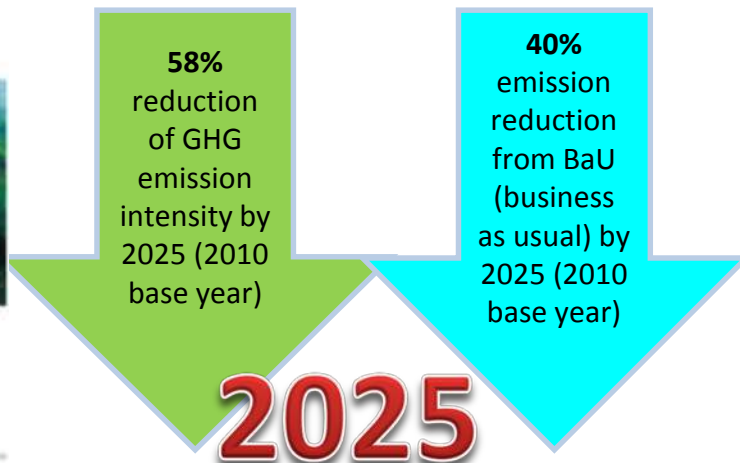


Indicator	2015	2025 (CDP II)
Population (mil)	1.95	3.0
GDP per capita (PPP) in RM	33,634	42,631
Labour Force (mil)	0.94	1.46
Employment (mil)	0.92	1.43

Source: Johor State Economic Report 2015/2016, Johor State Economic Planning Unit



Low Carbon Society Blueprint for Iskandar Malaysia 2025



BEMRS is one of the key actions in the LCSBPIM under Action 3: **Low Carbon Urban Governance**

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;
- 2017: 45 programmes implemented.
- 10.7% GHG intensity reduction in 2016.



BEMRS APPROACH



Request building owners in IM to measure energy consumption, estimate GHG emission and create action plans to achieve carbon footprint reduction.

All this information is to be captured into a standardised reporting template to be submitted annually to IRDA and the local authorities respectively.

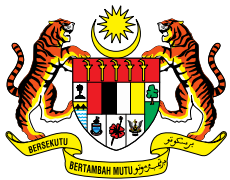
IRDA and the relevant local authorities would then verify and assess the Report, as well as provide feedback on the proposed action plans submitted by building owners.

Owners who have carried out or adopted good practices may be able to receive preferential treatment in the form of financial and non-financial incentives.



Building Energy Monitoring and Report System
Teraserasi Lantai Kedua Iskandar Mahkota Raya

Building Energy Monitoring and Report System (BEMRS) is a software application developed by the Iskandar Regional Development Authority (IRDA) to monitor and report energy consumption and greenhouse gas (GHG) emissions of buildings in Iskandar Mahkota Raya. The system is designed to help building owners and managers to track and reduce their energy consumption and GHG emissions, and to provide a transparent and reliable source of information for IRDA and the relevant local authorities. The system is based on the ISO 14064-1 standard for GHG accounting and reporting, and is compliant with the Malaysian Carbon Footprint Reporting Framework. The system is designed to be user-friendly and easy to use, and to provide a comprehensive overview of energy consumption and GHG emissions for each building. The system is also designed to be scalable and flexible, and to be able to accommodate future developments and changes in the reporting requirements. The system is currently being used by a number of buildings in Iskandar Mahkota Raya, and is expected to be widely adopted in the future.



Building Energy Monitoring & Reporting System (BEMRS) in Iskandar Malaysia



BEMRS Planning and Target timelines



Pilot Project 1-2
Energy Audit
Showcases in
Government (each
LAs) / IRDA Building
and Develop a friendly
template (Timeline:
2017)



**Phase 1 All Government
Buildings** (Timeline: 2018-
2022)



**Phase 2 All Main
Commercial Buildings** (
Timeline: 2022-2025)



Phase 3 Other Buildings
(Timeline: 2026-2029)

In collaboration with:



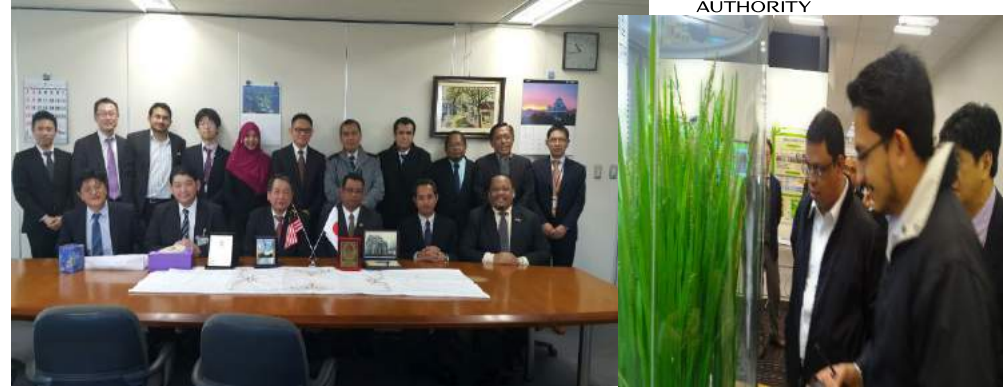
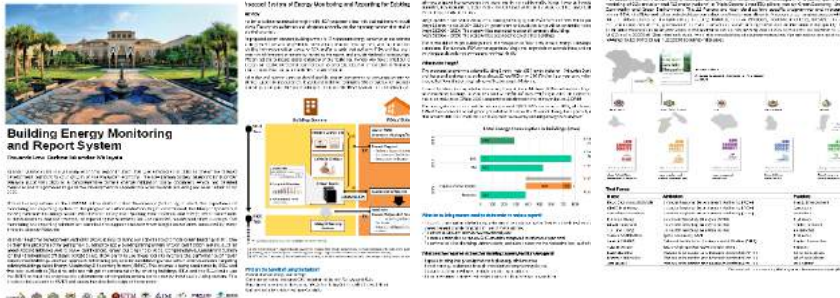
TOKYO
METROPOLITAN
GOVERNMENT

MIZUHO

環境省
Ministry of the Environment



Development of the Building Energy Monitoring & Reporting System (BEMRS) in Iskandar Malaysia



COP 21 Paris (Nov 2015) – a Brochure “Building Energy Monitoring towards Low Carbon Iskandar Malaysia” was launched by IRDA with targeted greenhouse gas emission reductions in building sector

BEMRS’ Training Workshop and Technical Visits for High-Level Administrators of Iskandar Malaysia ,17-20 January 2017

-to exchange information and opinions for implementation of policies relating to BEMRS among the high-level administrators of Tokyo and Iskandar Malaysia



1st Training Workshop organised by TMG & MHIR on 24-26 Feb 2016
-Learned the TMG’s experience in Implementation of BEMRS.



2nd Training Workshop organised by TMG & MHIR on 17-18 Oct 2016
-Crystallized energy audit as pilot project and identified the challenges,



Development of the Building Energy Monitoring & Reporting System (BEMRS) in Iskandar Malaysia (2017~today)



Building Energy Monitoring and Reporting System (BEMRS)

Objektif: soa! selidai ini adalah untuk mengenalpasti data ketersediaan bagi profil bangunan dan keadaan penggunaan tenaga sedia ada di setiap bangunan.

Panduan:

1. Sila isi di ruang berwarna biru dan jingga sahaja.
2. Responden boleh meninggalkan ruang kosong sekiranya tiada maklumat untuk diisi.
3. Sila lampirkan salinan bil elektrik (12 bulan terkini) dan email bersama borang Excel lengkap ini kepada chang@rida.com.my atau hwachong@rida.com.my
4. Untuk sebarang pertanyaan/ keterangan lanjut, sila hubungi En. Alex Pang 07-223 3050 atau En. Ong 07-223 3054.

Ruang untuk diisi compa
Ruang bagi pilihan optional

Bagian A Part A : Profil Responden Profile

1. Nama Responden Name of Respondent	Shahrizan Ibrahim
2. Jabatan & Bahagian Designation & Division	Manager (Asset Management)
3. No. Telefon Telephone	6075501345
4. No. Faks Fax	6075501345
5. Email Email	shahrizan@prisma-harta.com.my
6. Alamat Website	nil

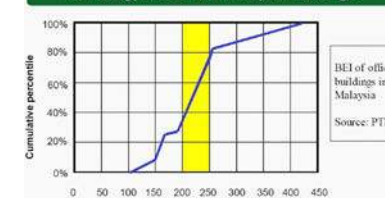
Bagian B Part B : Profil Bangunan Building Profile

1. Nama Bangunan Name of Building	Rumah Iskandar Malaysia
2. Alamat Bangunan Address	Rumah Iskandar Malaysia, Jalan Prima Utama Gelang Patah, 79200 Iskandar Puteri, Johor, Malaysia
3. No. Pendaftaran Bangunan Registration Number	681755-H
4. Tarikh Sijil Perubahan Keayatan Menduduki (CCV/CO)	12-Nov-13
5. Nama Pemilik Bangunan Name of Building Owner	PRISMA HARTA SDN BHD
6. Unit Pemilikan Bangunan Ownership Pattern	
7. Keluasan Lantai Kasar (Gross Floor Area, GFA)	1865 m ²
8. Air Conditioned Area	2054 m ²
9. Keluasan Kawasan Parkir Parking Area	2054 m ²
10. Bilangan Area No. Floor	2 Tingkat
11. Peratusan Penghuni/ Occupancy rate	40 %

Bagian C Part C : Data Penggunaan Tenaga Elektrik Energy Usage

	2016	2017			
1. Januari January	11,495	KWh	1	Form an energy monitoring and reporting committee/task force	Tick [Y] if it is being
2. Februari February	10,706	KWh	2	Determine specific implementation goals and actions	Y
3. Mac March	12,199	KWh	3	Develop implementation status check up system	Y
4. April April	11,828	KWh	4	Improve actions and check system regularly	Y
5. Mei May	12,095	KWh	5	Organise, analysis data and share results to all employees	Y
6. Jun June	11,380	KWh	6	Consult with energy specialist	Y
			7	Gain support and commitment from top management	Y
			8	Provide information and training on energy saving countermeasures and good practice to all employees	Y
			9	Limit of lift usage	Y

How Energy Efficient are Malaysian Buildings?



Building Energy Saving Countermeasures (No/ low cost measures) Checklist

Organization Policy and Awareness	Actions	Tick [Y] if it is being
1. Form an energy monitoring and reporting committee/task force		Y
2. Determine specific implementation goals and actions		Y
3. Develop implementation status check up system		Y
4. Improve actions and check system regularly		Y
5. Organise, analysis data and share results to all employees		Y
6. Consult with energy specialist		Y
7. Gain support and commitment from top management		Y
8. Provide information and training on energy saving countermeasures and good practice to all employees		Y
9. Limit of lift usage		Y
Operation- Lighting	Actions	Tick [Y] if it is being
1. Turn off lights when not in use		Y
2. Comply to the illuminance as recommended in energy commissioner guideline or relevant document		Y
3. Display lighting map		Y
4. Utilize or maximise natural lights		Y
5. Turn off lights during lunch break		Y
6. Clean and change lights (to energy saving LED) regularly		Y
7. Use high efficiency light bulbs		Y
Operation- Air Conditioner Ventilation	Actions	Tick [Y] if it is being
1. Adjusting air-cond temperature to 24 degree celcius		Y
2. Turn off air conditioner when not in use		Y
3. Reduce air conditioning loads by controlling outdoor air intake		Y
4. Clean up filters in central air conditioners		Y

BEMRS Training and Site Assessment, 15-16 Aug 2017

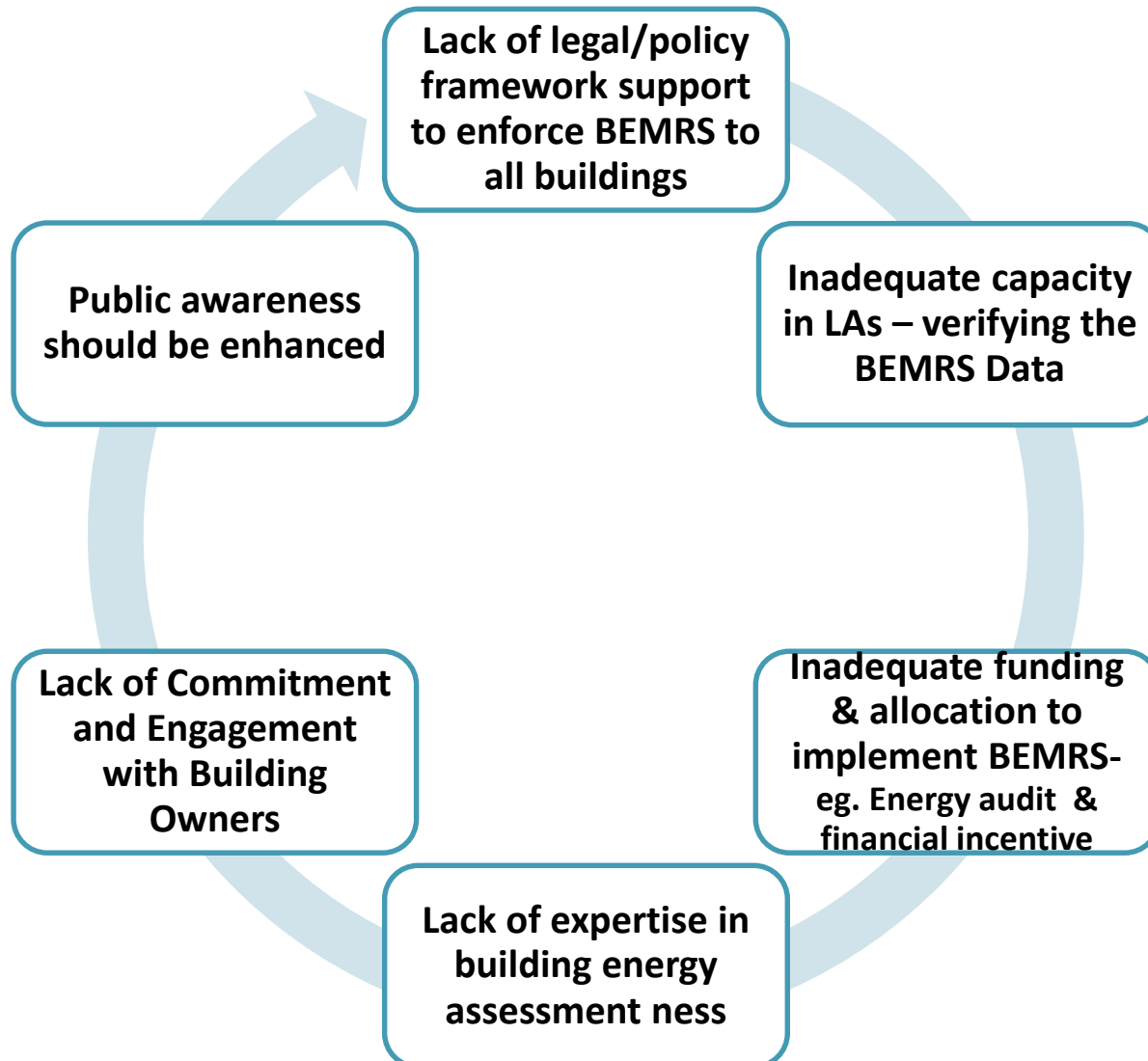
-Conducted building energy assessment to 2 pilot buildings-
Rumah Iskandar Malaysia & MPJBT Office Building; to craft
BEMRS template

Milestone: Develop a IM BEMRS template with aided by TMG & Mizuho

-At least one building was being tested by the BEMRS
friendly template



Issue and Challenges





Way Forward



Circulate BEMRS template to Local Authorities' buildings

- MBBJ, MBIP, MPKu, MPPG and MDP

Propose to conduct energy audit /assessment in public buildings

Conduct more training and knowledge sharing

Integrated BEMRS as criteria in Green Accord Initiative Award (GAIA)

Complement to CASBEE in moving forward to target 70% green certified new buildings in 2025



THANK YOU!

ISKANDAR REGIONAL DEVELOPMENT AUTHORITY (IRDA)

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Bay,
Jalan Skudai 80200
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F. + 607 233 3001

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Jalan Sentral 5,
Kuala Lumpur Sentral,
50470 Kuala Lumpur
T. + 603 2260 6777
F. + 603 2260 7999

www.facebook.com/Iskandar.My

<http://iskandarmalaysia.com.my/green>

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International Environment Cooperation

Akiko Matsumoto

Senior Director for Policy Coordination

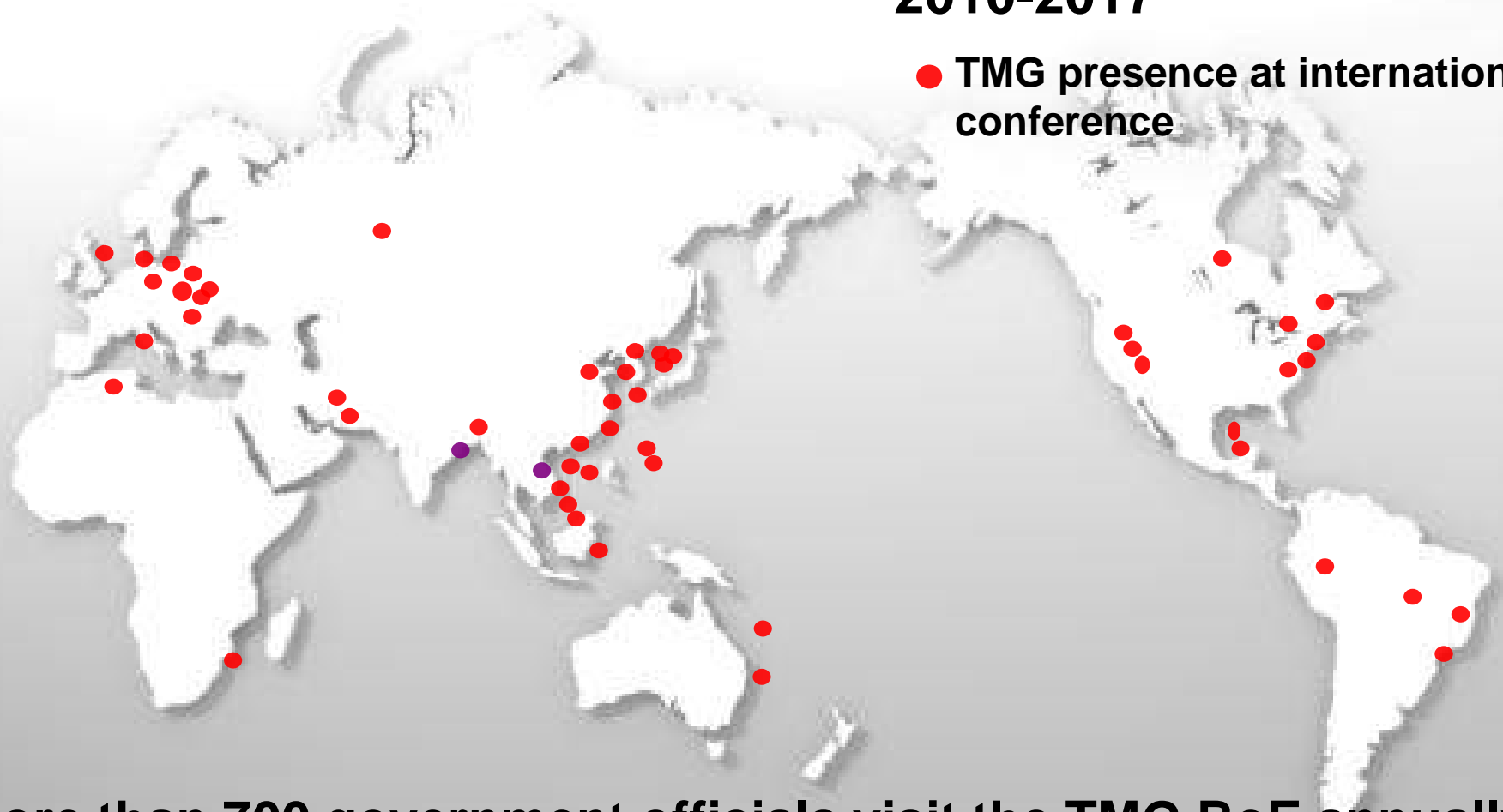
Bureau of Environment

Tokyo Metropolitan Government

Knowledge Sharing on a Global Level

**137 (116 climate change conferences)
2010-2017**

● TMG presence at international conference



More than 700 government officials visit the TMG BoE annually

International Environmental Cooperation

- ◆ Why focus on cooperation at the city level?
City level policy transfer can be the most useful
'knowledge' and fundamental for policy development

- ◆ Major Topics

1. Climate change - building energy efficiency policies
2. Waste management
3. Air pollution



Tokyo Forum May 21-23, 2018



- ◆ Local Leaders Tokyo Forum for Sustainable Urban Development
- ◆ SDGs and Cities: Waste Management and Air Pollution
- ◆ May 21-23, 2018
- ◆ Tokyo, Japan



THE WORLD BANK



2018 30th of January – CtC Seminar

Policy Transfer called Tokyo BEEP Model for Malaysia

Ken Tabei

Climate Change & Energy Division



Tokyo Metropolitan Government

Outline

1. What is “Tokyo BEEP Model”?

2. Tokyo & Malaysian cities’ project



1. What is “Tokyo BEEP Model”?

- BEEP stands for

Building Energy Efficiency Policy

- Tokyo BEEP Model includes 3 main programs.

Cap & Trade Program

Carbon Reduction Reporting Program

Green Building Program

- Tokyo BEEP Model has 3 features.

Wide coverage for building sector (Large+SMFs)

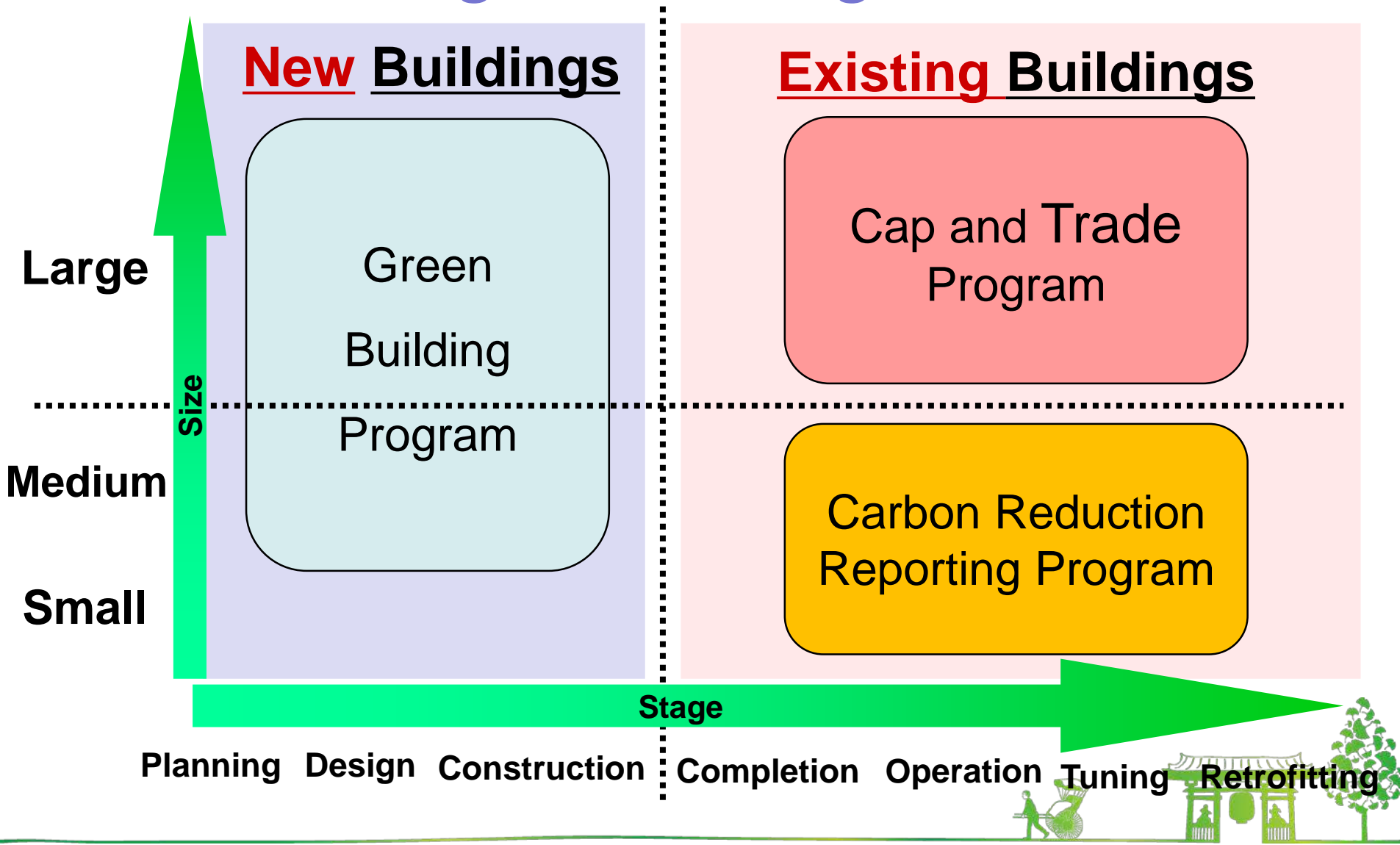
Hop, step & jump!

Supporting programs + regulatory policies



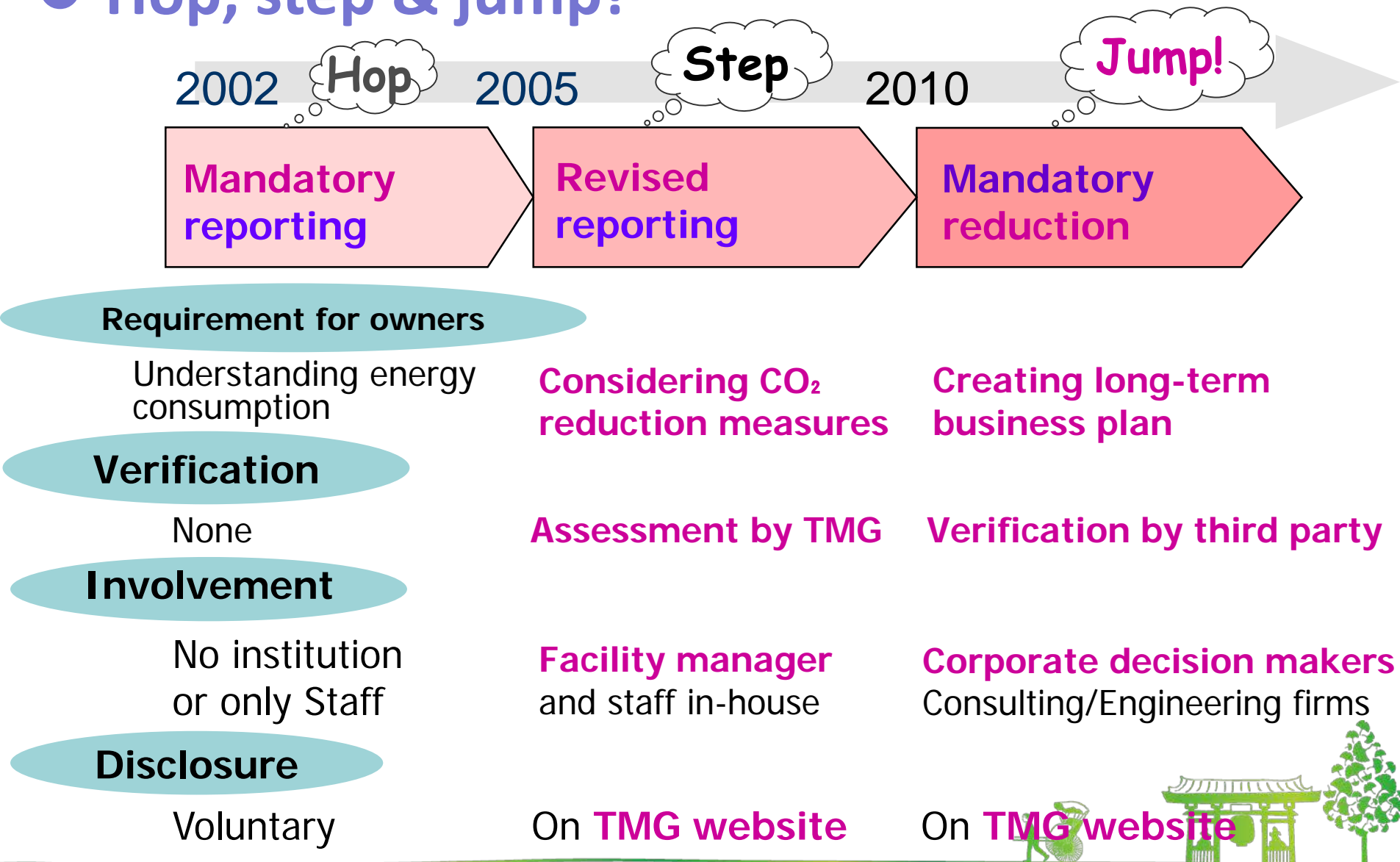
1. What is "Tokyo BEEP Model"?

- Wide coverage for building sector



1. What is "Tokyo BEEP Model"?

● Hop, step & jump!

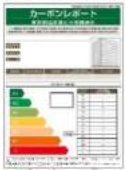


1. What is “Tokyo BEEP Model”?

● Supporting programs + regulatory policies



Advisory team



Benchmark

Feedback report



Seminars

Textbooks and Animations



Awards



Financial incentives

**Mandatory
reporting**

**Mandatory
reduction**

**Meet
criteria**



2. Tokyo- Malaysian Cities Projects

We can provide effective approaches and various menu for the solution

- Required process for the policy implementation
- How to design the policy
- How to deliver the policy



2. Tokyo- Malaysian Cities Projects

