Asia Low Carbon Society Research Project

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LCS activities in Asia

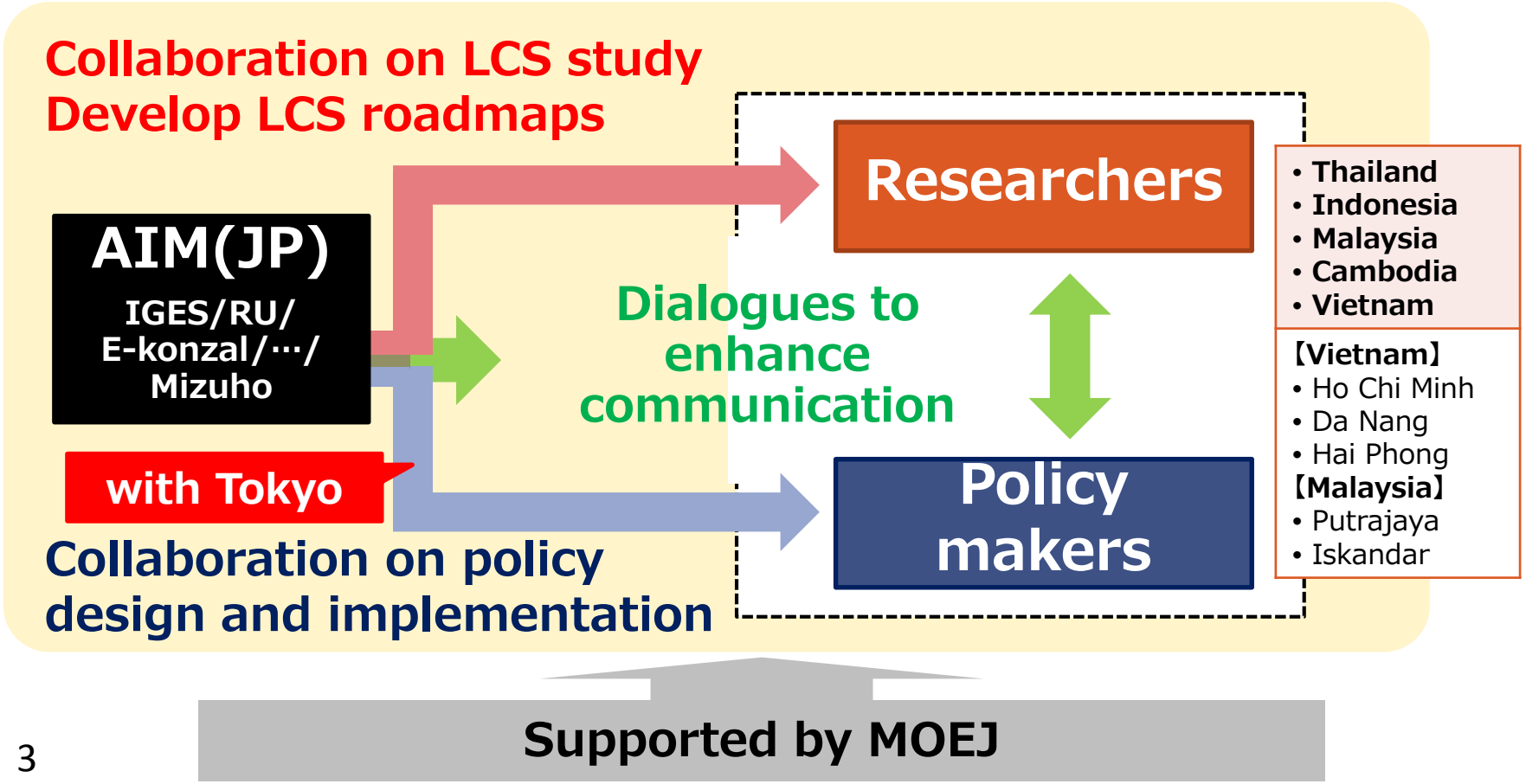
- AIM has contributed processes to formulate climate policy in Japan, and the activities are expanded to Asia. AIM has been involved in formulation processes of low carbon policies through collaboration with Asian researchers.
- Since FY2014, “Asia Low Carbon Society Research (LCSR) Project” which is 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 LCSR Project

- AIM team has collaborated with Asian researchers and policy makers to develop LCS scenarios and roadmaps.
- Practical program for emission reduction targeting building sector has also been designed through collaboration with Tokyo Metropolitan Government.
- Policy dialogues between researchers and policy makers were organized.



Activities of Asia LCSR project

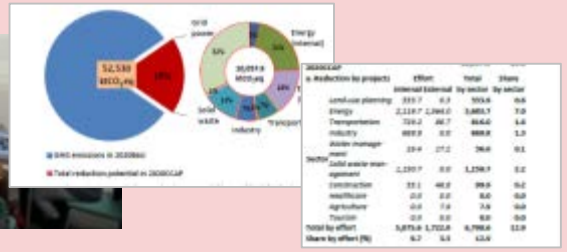
- Components of activities of LCSR project are shown below. Scope and target cities of the activities vary year by year.

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**

LCS Scenario Development

LCS Scenarios Development: Workflow

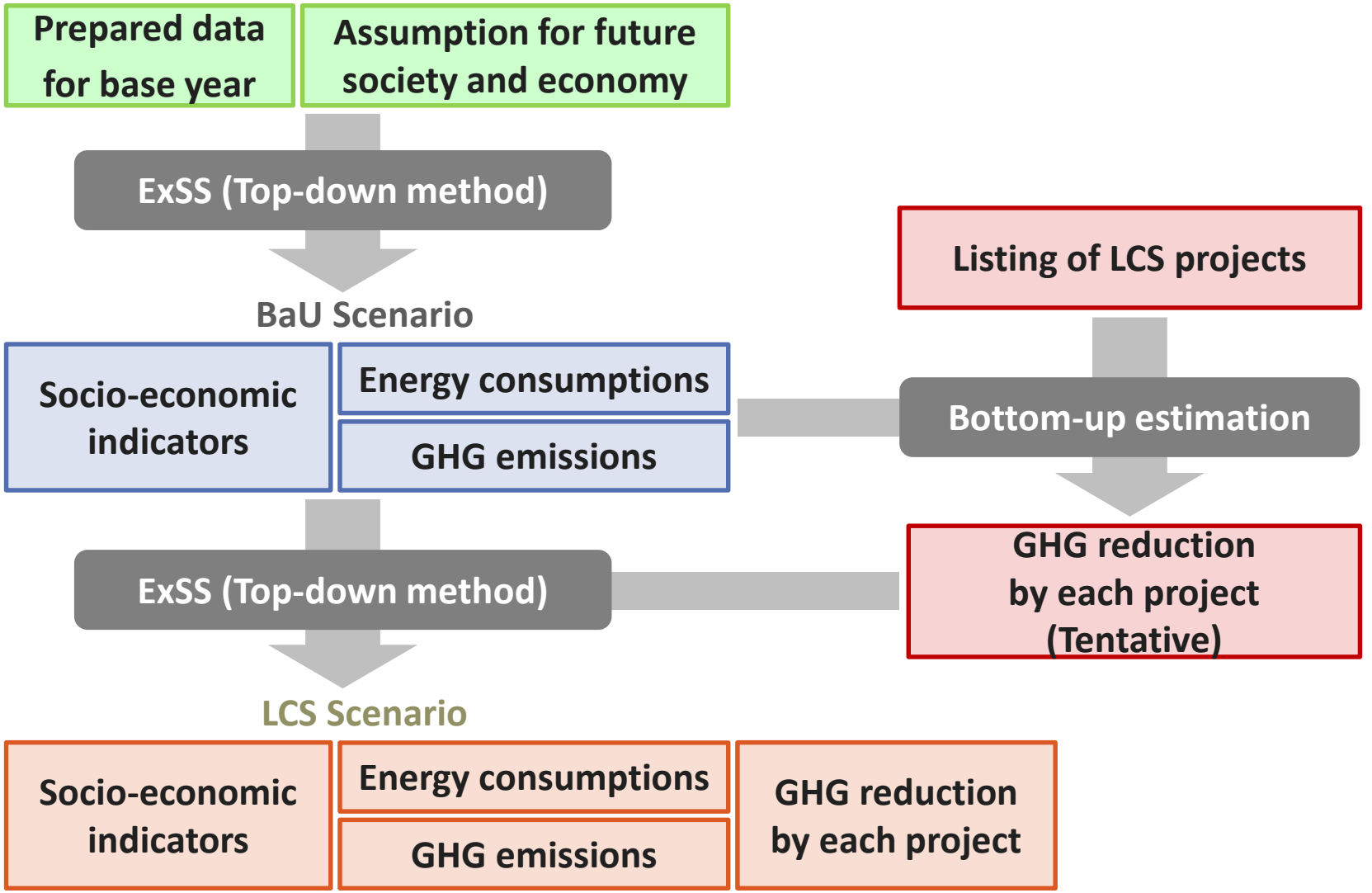
- Procedure and workflow for LCS scenarios development are show as follows.

Procedure	Work and Events
1. Start of the Story 1.1 Formulation of the region's top initiative 1.2 Resource allocation and team formulation	**Kick-off meeting** Formulate team and decide schedule
	Training workshop Learn how to develop LCS scenario
2. Framework Setting 2.1 Background research 2.2 Framework setting	**Follow-up meeting** Allocate tasks to each member
3. Data Preparation 3.1 Collection of statistical data and future plan 3.2 Estimation of necessary data in base year 3.3 Assumption of future change of the society	**Work** Data collection, modelling and face-to-face discussion with local experts
4. Design of LCS Projects and Projection of Future Scenario 4.1 Projection of BaU scenario by quantification tools 4.2 Listing of LCS projects 4.3 Calculation of emission reduction by project 4.4 Projection of LCS policy scenario by quantification tools 4.5 Adjustment of project-based emission reduction	**Technical meeting** Present preliminary results and discuss how to improve
	Work Revise the scenario based on advice in the technical meeting
5. Bridging the Output to Real World 5.1 Formulation of actions and projects for implementation 5.2 Reporting the result to policy makers	**Final workshop** Present a completed scenario to policy makers, experts, enterprises and universities.

Source: Presentation by Nguen Thai Hoa and Yuki Ochi (Oct. 2017)

LCS Scenarios Development: Workflow

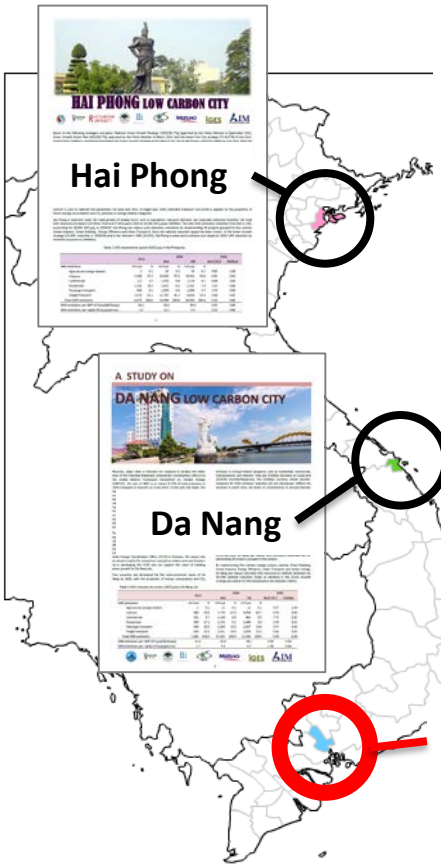
- Quantitative analysis to estimate scenarios by ExSS (Extended Snapshot tool).



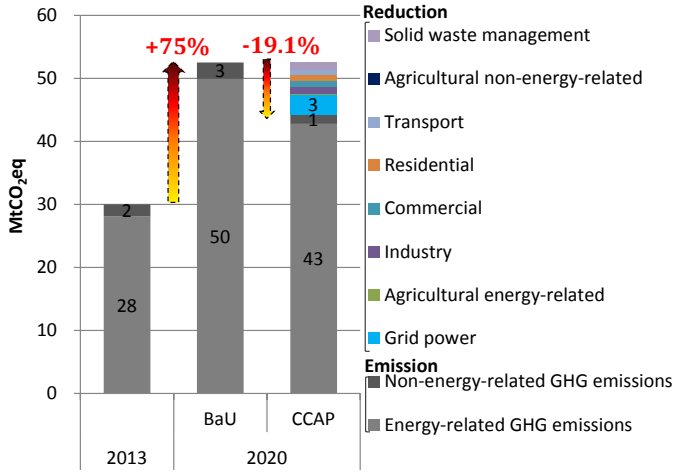
Source: Presentation by Nguen Thai Hoa and Yuki Ochi (Oct. 2017)

Example (Case in Vietnam)

- AIM has supported to develop LCS plans in Ho Chi Minh, Da Nang and Hai Phong cities. GHG reduction potential and possible countermeasures towards 2030 are identified based on quantitative analysis by AIM/ExSS.
- LCS plans were developed through collaborative works and discussions with counterparts.



GHG Emission & Reduction



GHG Reduction by Projects

Category code	Project category	Project code	Project name	Effort	Sector	Emission reduction
I	Land-use planning	I-3	Afforestation and greening (parks, roads, pedestrian spaces, riparian and coastal areas)	Internal	CO_2 absorption	333.7
			Build wind channels (green corridors)	External	Commercial	0.2
			TOTAL (I)			**333.9**
II	Energy	II-1	Energy efficiency technology applied to buildings	Internal	Commercial	55.2
		II-2	ESCO (Energy Saving COmpany) Project	External	Total II-2	1,123.7
		II-2	*ESCO (Energy Saving COmpany) Project for commercial buildings*	*External*	*Commercial*	*233.5*
		II-2	*ESCO (Energy Saving COmpany) Project for industries*	*External*	*Industry*	*890.2*
		II-3	High Efficiency Lighting	Internal	Total II-3	688.1
		II-3	*High Efficiency Lighting in public lighting*	*Internal*	*public lighting*	*3.9*
		II-3	*High Efficiency Lighting in commercial buildings*	*Internal*	*Commercial*	*397.3*
		II-3	*High Efficiency Lighting in households*	*Internal*	*Residential*	*287.0*
		II-4	High Efficiency Air Conditioners (such as Air Conditioners with Inverter Controllers)	Internal	Total II-4	176.1
		II-4	*High Efficiency Air Conditioners (such as Air Conditioners with Inverter Controllers) in commercial buildings*	*Internal*	*Commercial*	*47.7*
		II-4	*High Efficiency Air Conditioners (such as Air Conditioners with Inverter Controllers) in households*	*Internal*	*Residential*	*128.4*
		II-5	Energy Efficiency Improvement Facilities to be installed at Small/Medium Enterprises (Compressors, Motors)	Internal	Industry	603.6
		II-6	Introduction of Photovoltaic Power Generation	Internal	Total II-6	6.4
		II-6	*Introduction of Photovoltaic Power Generation to commercial buildings*	*Internal*	*Commercial*	*3.9*
		II-6	*Introduction of Photovoltaic Power Generation to households*	*Internal*	*Residential*	*2.5*
		II-7	Introduction of Solar Water Heater	Internal	Total II-7	315.0
		II-7	*Introduction of Solar Water Heater to commercial buildings*	*Internal*	*Commercial*	*199.6*
		II-7	*Introduction of Solar Water Heater to households*	*Internal*	*Residential*	*115.4*
		II-8	Installation of Energy Saving Glasses	External	Total II-8	129.5
		II-8	*Installation of Energy Saving Glasses to commercial buildings*	*External*	*Commercial*	*80.1*
		II-8	*Installation of Energy Saving Glasses to households*	*External*	*Residential*	*49.4*
		II-9	Regional Energy Supply System	External	Industry	301.3
		II-10	Introduction of Small-scale Hydropower Generation (at water distribution stations, canals)	External	Commercial	1.4
		II-11	Introduction of Wind Power Generation	External	Commercial	8.1
			:			
			Total GHG emissions reduction potential in 2020CCAP			**10,057.9**

Program Design through Collaboration with TMG

Policy Design: Concept

- Local authorities in Malaysia (Putrajaya, Iskandar) completed LCS scenario development through collaborative work with AIM (supported by MOEJ, JICA/ SATREPS)
- Both of the cities are now moving on to implementation of the LCS plans to realize low carbon society.

LCS Planning

through quantitative approach

GHG Emission & Reduction

LCS Policies & Actions

City level LCS Plans

COMPLETED!!

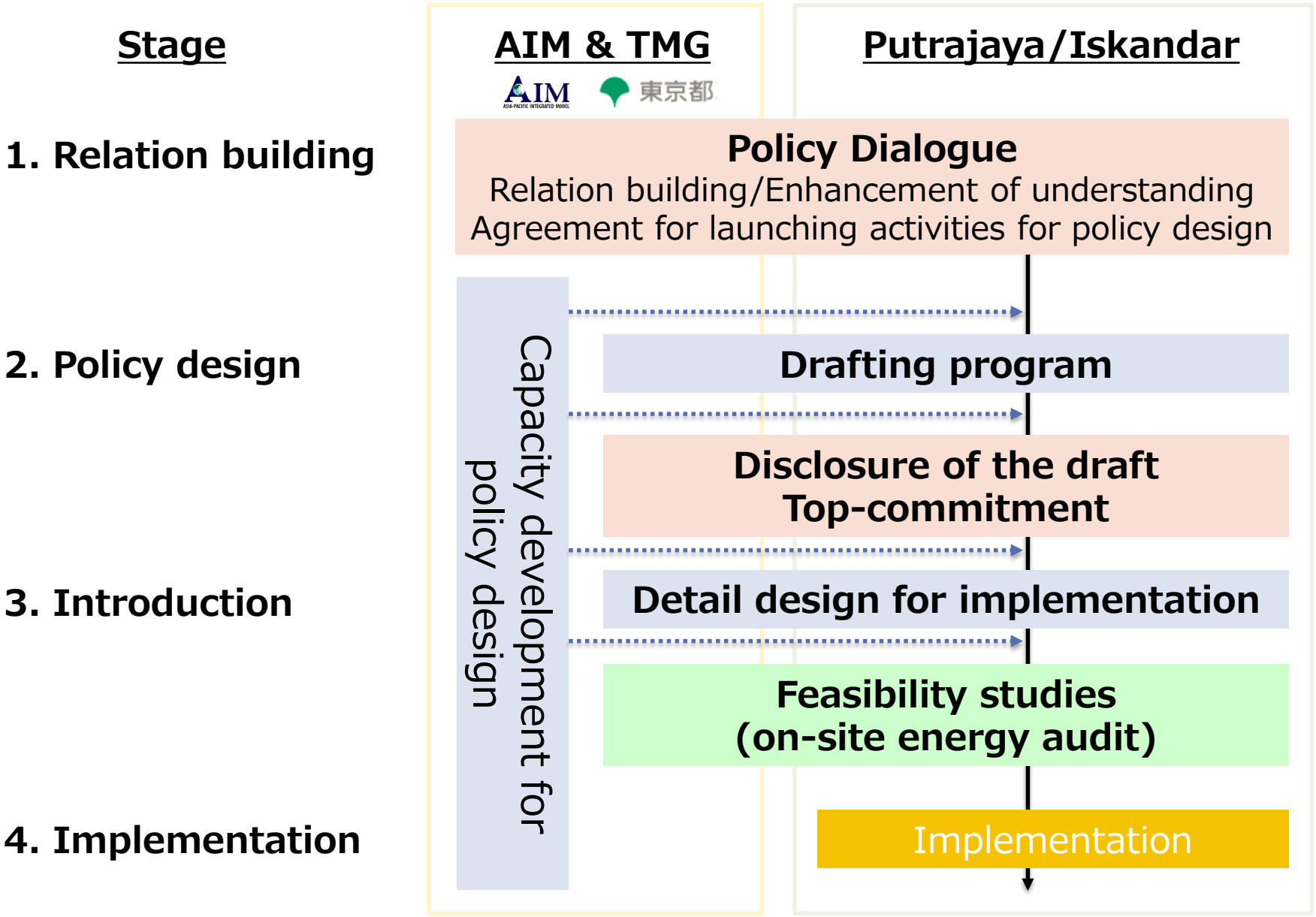
Next Stage

Implementation

Policy design for emission reduction has been conducted through collaboration with Tokyo Metropolitan Government

AIM ASIA-PACIFIC INTEGRATED MODEL 東京都

Policy Design: Workflow



Example (Case in Malaysia)

- AIM team has collaborated with both cities (Putrajaya and Iskandar) 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.

2014	2015	2016	2017
Dialogues & training workshops for knowledge sharing	Draft new scheme & disclose it at COP21	Workshop for program design in details	Policy dialogue & collaborative works for program design in details

The scheme will be implemented from 2018FY

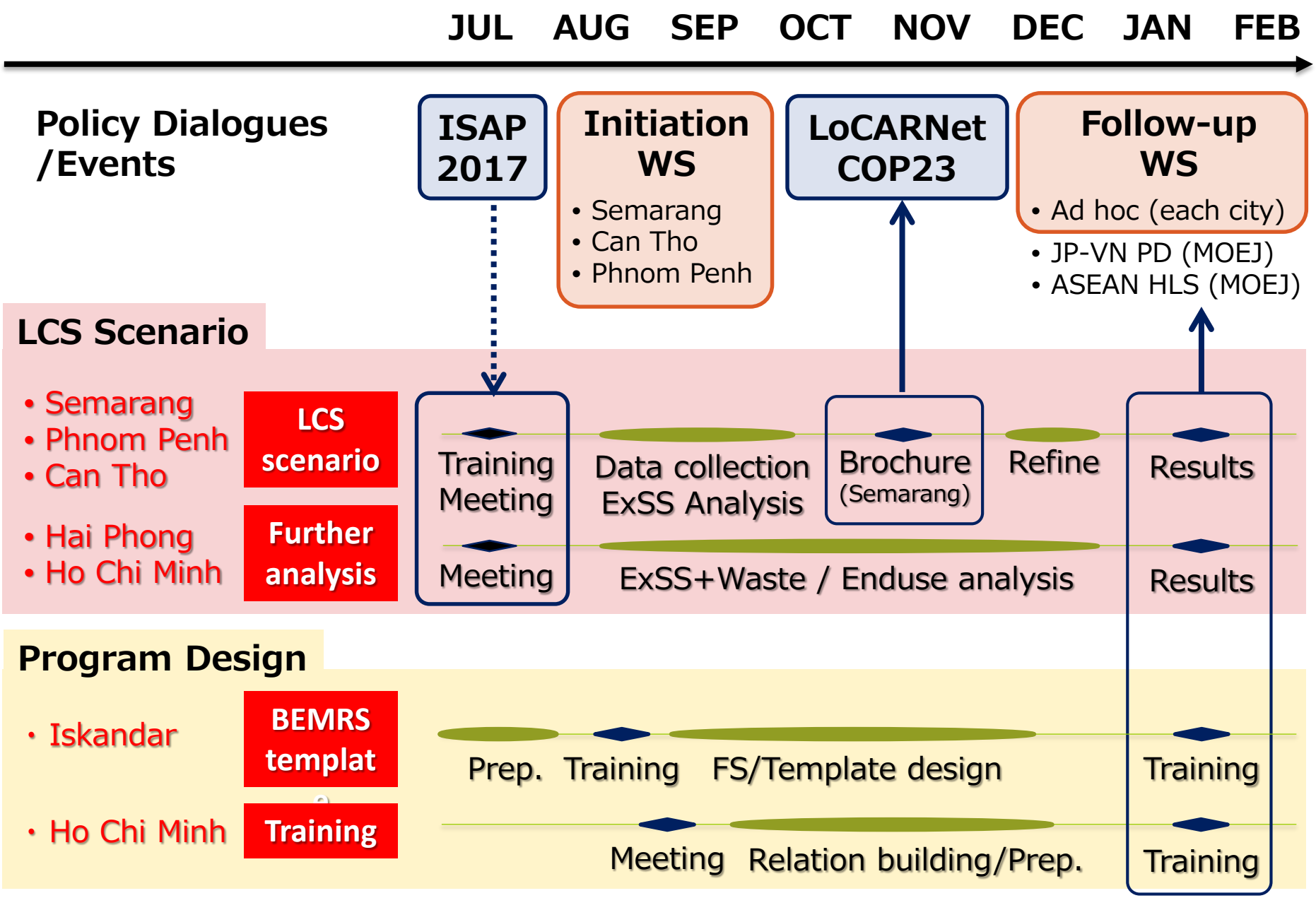
Example (Case in Malaysia)

- Iskandar authority drafted the **Building Energy Monitoring and Reporting System: BEMRS** by referring policy action implemented in Tokyo.
- The authority is conducting energy audit program as pilot phase of BEMRS. The program will be started in next year targeting governmental buildings.

Source: Presentation at MOEJ of Mr Boyd (Jan. 2017)

Activities in FY2017 and Future Plans

Activities in FY2017



Future Plans

Expand target regions

- Prospected cities in FY2018
  > Hanoi and Quezon: LCS scenario development
  > HCMC: policy design & implementation.

Further analysis of LCS scenario

- Analysis on not only energy sector but also other sectors are required in ASEAN cities.
- Cost analysis is also required to policy processes in not only target cities but also Japan to find actual project.

Support on policy design and implementation

- Sharing knowledge/experiences of policy design with ASEAN cities (other than Iskandar and Putrajaya)
- Co-work on policy implementation (BEMRS in Iskandar)

Thank you for your attention!