Low Carbon Asia Research Network (LoCARNet) 6th Annual Meeting
1-3 November 2017, Century Park Hotel
Bangkok, Thailand

KL LCSBP 2030
Kuala Lumpur Low Carbon Society Blueprint 2030

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Universiti Teknologi Malaysia.
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KUALA LUMPUR LOW CARBON SOCIETY BLUEPRINT 2030
<table>
<thead>
<tr>
<th>Consultancy and Research Team</th>
<th>Universiti Teknologi Malaysia (UTM), Kyoto University (KU), E-KONZAL Japan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Client</td>
<td>Kuala Lumpur, Jurisdiction area falls under Kuala Lumpur City Hall</td>
</tr>
<tr>
<td>Period</td>
<td>2016-2017</td>
</tr>
<tr>
<td>Base year 2010</td>
<td>Target year 2030</td>
</tr>
</tbody>
</table>
Kuala Lumpur, as a vibrant capital city aims to become a world class metropolis that will boast top standards in every aspect of business infrastructure and livable environment that will serve a major global and regional role for the benefit of all its inhabitants, workers, visitors and investors.

Being the national capital, it is only appropriate that Kuala Lumpur lead the way in contributing to honouring Malaysia’s pledge to reduce its carbon emission intensity of GDP by 45% (based on 2005 emission levels) by 2030.
Integrate existing plans and projects in the city of Kuala Lumpur that relate to climate change mitigation and low carbon measures into a comprehensive framework for implementation towards cutting the city’s CO₂ emission intensity by 70% by 2030 without compromising the city’s vision and economic growth targets.
OBJECTIVES

1. To review various related but unconnected existing policies and development plans of Kuala Lumpur.

2. To benchmark Kuala Lumpur with selected major world cities’ low carbon best practices.


4. To propose carbon mitigation measures for reducing carbon emissions, improving livability and ensuring green growth (co-benefits) for Kuala Lumpur.

5. To identify appropriate timeframe and relevant agencies for the proposed carbon mitigation measures implementation of low carbon Kuala Lumpur.
KL can reduce its carbon emission intensity by as much as 70% by 2030.
METHODOLOGY
METHODOLOGY

PROCEDURE TOWARDS KL LCSBP 2030

(1) Setting Framework

(2) Description of socio-economic assumption
(3) Quantification of socio-economic assumption

(4) Collection of low carbon measures
(5) Setting introduction of measures in target year

(6) Estimation of GHG emissions in the target year

(7) Confirming measures set and suggestion of policy recommendations

FGDs
Gathering, Analysing, Assessing Information: Current Political Context, Evidence, Links

KL LCSBP 2030 Drafts

FGDs

Yes

No

Feedback

Iterative Process

Asia-Pacific Integrated Model (AIM)

Meet Targets?

LCS Policy Actions, Sub-actions, Measures, Programs

Kuala Lumpur LCS Goals & CO2 Emission Reduction Targets

Mainstreaming into Existing Development Framework

Ministry of Federal Territories Approval

Kuala Lumpur Structure Plan 2020

Act 267

Kuala Lumpur City Hall

Ministry of Federal Territories

Federal/National Level Development Policies

Planning & Development Control in Kuala Lumpur

Implementation, Monitoring, Enforcement

Kuala Lumpur City Plan 2020

Act 267

Japan Counterparts

Malaysia Counterparts

Research Institutions

Policymaker Representatives
Energy demand
- Transport
- Residential
- Commercial
- Industry

Energy Supply
- Electricity
- Secondary energy

Energy Sector Emission

Waste generation
- Waste composition (% organic)
- Recycling and composting rate
- Treatment technology

Waste Sector Emission

Green area
- Number and species of trees
- Wood density
- Diameter breast height (DBH)

Carbon Sink Sector Emission

GHG Emissions

Kuala Lumpur Low Carbon Society Blueprint 2030
GHGs Emission Modelling
## Introduction

A) Low Carbon Society Blueprint For Kuala Lumpur

B) Low Carbon Society — A Greener Better Kuala Lumpur

C) Kuala Lumpur Socio-economic Scenario

D) Kuala Lumpur Emission Profile

E) Road To Achieving 70 by 30 Goal

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### Actions

**Thrust 1: Prosperous, Robust and Globally Competitive Economy**

- Action 1: Green Growth (GG)
- Action 2: Energy Efficient Spatial Structure (SS)
- Action 3: Green Mobility (GM)
- Action 4: Sustainable Energy System (SE)

**Thrust 2: Healthy, Creative, Knowledgable and Inclusive Community**

- Action 5: Community Engagement and Green Lifestyle (CE)

**Thrust 3: Ecologically Friendly, Liveable and Resilient Built Environment**

- Action 6: Low Carbon Green Building (GB)
- Action 7: Blue and Green Network (BG)
- Action 8: Sustainable Waste Management (WM)
- Action 9: Sustainable Water & Wastewater Management (WW)

**Kuala Lumpur Low Carbon Society Enabler**

- Action 10: Green Urban Governance

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Explaining the background of KL LCSBP 2030, Kuala Lumpur current scenario and initial profile

Explaining details on actions and programs in KL LCSBP 2030
A. LOW CARBON SOCIETY BLUEPRINT FOR KUALA LUMPUR 2030

YAB Prime Minister Dato’ Seri Najib Tun Razak has made a commitment to reduce Malaysia’s GHG emissions intensity of GDP by up to 40% at COP15 in Copenhagen, Denmark in December 2009.

The target has been revised upward to 45% reduction in emission intensity by 2030 at COP21 in Paris in 2015.
Malaysia’s **global commitment to reducing 45% CO₂ emission intensity by 2030** (based on 2005)

Climate Change /Low Carbon Initiatives

Kuala Lumpur Low Carbon Society 2030 Blueprint

National Physical Plan (NPP-3), RMK-11, NUP, GTP, ETP

Kuala Lumpur Structure Plan 2020

Kuala Lumpur City Plan 2020

DBKL Planning Guidelines

Planning Control

Spatial Development Planning

Greater KL/KV (NKEA) (2010)

Greater KL Land Public Transport Master Plan 2020

DBKL Strategic Plan 2010-2020

ICT Strategic Plan 2015

General (Non-Spatial) Development Policies

Sustainable Development Goal (SDG) 2030

New Urban Agenda (NUA) 2036

Kuala Lumpur City Plan 2020
KL LCSBP 2030 FRAMEWORK

A. LOW CARBON SOCIETY BLUEPRINT FOR KUALA LUMPUR 2030

- **Inception Report**
  - July 2016

- **Focus Group Discussion (FGD1)**
  - 22-23 August 2016

- **Interim Report**
  - October 2016

- **Focus Group Discussion (FGD2)**
  - 27 February 2017

- **Draft of KL LCSBP 2030**
  - 27 February 2017

- **Focus Group Discussion (FGD3)**
  - 31 July 2017

- **KL LCSBP 2030**
  - August 2017

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**Asia-Pacific Integrated Model (AIM)**
- ExSS Tool
- SW Model
- Carbon Sink Model

**Kuala Lumpur Baseline Scenarios (2010, 2020, 2030)**
- Identification of strategic emissions sectors and reduction potential

**Policies Review**
- Global, national and local policies framework
- Identification of existing green/low carbon policies and initiatives

**Low Carbon Cities Best Practices**
- Identification of international and local best practice green/low carbon policy options/packages for adaptation to the context of Kuala Lumpur
The LCS Blueprint for Kuala Lumpur will provide a guide for policymakers, investors, businesses, NGOs and the public to make informed decisions for policies on investments, development, planning for future growth and managing change.
## Kuala Lumpur Socio-Economic Scenario

### Kuala Lumpur Population

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>1.67 Mill</td>
</tr>
<tr>
<td>2020</td>
<td>2.20 Mill</td>
</tr>
<tr>
<td>2030</td>
<td>2.49 Mill</td>
</tr>
</tbody>
</table>

### GDP and GDP Per Capita

<table>
<thead>
<tr>
<th>Year</th>
<th>GDP (mil MYR)</th>
<th>GDP Per Capita (MYR/Capita)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>84,852</td>
<td>50,670</td>
</tr>
<tr>
<td>2020</td>
<td>227,621</td>
<td>103,460</td>
</tr>
<tr>
<td>2030</td>
<td>399,013</td>
<td>160,350</td>
</tr>
</tbody>
</table>
D) KUALA LUMPUR EMISSION PROFILE

GHG EMISSION INTENSITY OF GDP

<table>
<thead>
<tr>
<th>Year</th>
<th>GHG Emission Intensity of GDP (ktCO2/Mln.RM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>0.30</td>
</tr>
<tr>
<td>2020 BAU</td>
<td>0.24</td>
</tr>
<tr>
<td>2020 CM</td>
<td>0.16</td>
</tr>
<tr>
<td>2030 BAU</td>
<td>0.20</td>
</tr>
<tr>
<td>2030 CM</td>
<td>0.09</td>
</tr>
</tbody>
</table>

-47% reduction from 2020 BAU to 2030 CM
70% reduction from 2010 to 2030 CM
E) ROAD TO ACHIEVING 70 by 30

<table>
<thead>
<tr>
<th>Current Vision</th>
<th>WORLD CLASS CITY 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>2030 Vision</td>
<td>WORLD CLASS SUSTAINABLE CITY 2030</td>
</tr>
</tbody>
</table>

**Thrust**
- Thrust 1: Prosperous, Robust and Globally Competitive Economy
- Thrust 2: Healthy, Creative Knowledgeable, Inclusive Community
- Thrust 3: Ecologically Friendly Livable and Resilient built environment

**Triple Bottom line**
- Economy
- Social
- Environment

**Sustainable Development Goals 2030**
- Thrust 1: Goals: 1, 2, 7, 8, 9, 12, 13, 16, 17
- Thrust 2: Goals: 3, 4, 5, 10, 11, 12, 13
- Thrust 3: Goals: 6, 11, 13, 14, 15

**Key Principles KL City Plan 2020**
- Business
- Working
- Living
- Green Environment

**Actions**
- Green Growth
- Energy Efficient Spatial Planning
- Green Mobility
- Sustainable Energy System
- Community Engagement & Green Lifestyle
- Low Carbon Green Buildings
- Blue & Green Network
- Sustainable Waste Management
- Sustainable Water and Wastewater Management

**KL Low Carbon Society Enabler**
- Green Urban Governance
### E) ROAD TO ACHIEVING 70X30

Work breakdown structure of Kuala Lumpur's 10 Low Carbon Actions

<table>
<thead>
<tr>
<th>ACTIONS</th>
<th>Key policy actions needed to achieve the final goal of the plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUB-ACTIONS</td>
<td>Sub-actions needed to produce policy outcomes that jointly lead to the achievement of a key policy action</td>
</tr>
<tr>
<td>MEASURES</td>
<td>Measures that are more detailed breakdown and interpretation of sub-actions into strategies with a clearer implementation dimension</td>
</tr>
<tr>
<td>PROGRAMS</td>
<td>Programs – specific activities, deliverables from which resource requirements, budget, implementation agencies and duration may be identified or estimated</td>
</tr>
</tbody>
</table>
Stages of KL LCSBP 2030
TOWARDS GREENER BETTER KUALA LUMPUR

Key Stage 1: Inception Report

Key Stage 2: Interim Report

Key Stage 3: Final Draft KL LCSBP 2030

Key Stage 4: Final Draft Report

There are three focus group discussions along the making of KL LCSBP 2030

1st FGD

2nd FGD

3rd FGD

Confirmation Actions/ Programs - What, Who, When
OUTCOMES FROM FGD1 & FGD2

1<sup>st</sup> FGD
- Introducing *KL LCSBP2030* to stakeholders
- Identification of Sub-actions, Measures & Programs

2<sup>nd</sup> FGD
- Refinement of Sub-actions, Measures And programs
- Ranking of Proposed programs

3<sup>rd</sup> FGD
- Identification of potential actors/caretaker for each program
- To determine the time frame for implementation for each program
During **FGD2**, every potential project for the development of LCS for Kuala Lumpur was evaluated based on three (3) main criteria:

i) **Significance** (Weightage – 40%)
ii) **Suitability** (Weightage – 20%)
iii) **Feasibility** (Weightage – 40%)

<table>
<thead>
<tr>
<th>Programs</th>
<th>Significance Institutional Vision/Policy Direction</th>
<th>Suitability Long Geography setting/socio-cultural context</th>
<th>Feasibility Finance/Human Capital/Local Technology/Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE6 Promote the adoption of rainwater harvesting system</td>
<td><img src="image" alt="Score" /></td>
<td><img src="image" alt="Score" /></td>
<td><img src="image" alt="Score" /></td>
</tr>
<tr>
<td>CE7 Promote the adoption of photovoltaic panel</td>
<td><img src="image" alt="Score" /></td>
<td><img src="image" alt="Score" /></td>
<td><img src="image" alt="Score" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Significance (40%)</th>
<th>Suitability (20%)</th>
<th>Feasibility (40%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level</td>
<td>Low</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td>Score</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
FOCUS GROUP DISCUSSION 3 (FGD3)

PURPOSE

- To present, finalise and gain feedback from stakeholders with respect to the Draft Proposal of KL LCSBP 2030

- To present & gain feedback from stakeholders on KL LCSBP 2030 Roadmap
ROADMAP OF KL LCSBP 2030

WHAT?
Action, sub-action, measures and programs in Kuala Lumpur Low Carbon Society Blueprint 2030

WHEN?
To identify implementation timeline for each program based on the result of ranking in the previous FGD (FGD2).

The timeline of implementation are arranged into three; short term (2015-2020), medium term (2021-2025) and long term (2026-2030)

Based on FGD2 feedbacks, the result of ranking are use to indicate the scores (high, medium, low) for each program.

WHO?
To identify potential actor/ caretaker for each program and supporting agencies
### Example

<table>
<thead>
<tr>
<th>SUB-ACTION</th>
<th>MEASURE</th>
<th>PROGRAMS</th>
<th>2015-2020</th>
<th>2021-2025</th>
<th>2026-2030</th>
<th>POTENTIAL ACTORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Kuala Lumpur 1.1.1 Promote New as a Green Business Hub Services</td>
<td>GG 1 Establish Kuala Lumpur as a major global venue for annual exhibitions, conferences and/or workshops on green businesses and investments</td>
<td>GG 2 Promote and attract R&amp;D activities in strategic green sectors that are suited to Kuala Lumpur's economic and business ecosystems</td>
<td></td>
<td></td>
<td></td>
<td>KLCH (City Planning Dept., Socioeconomic Dept., Economic and Development Dept., KeTTHA, MIDA)</td>
</tr>
</tbody>
</table>

**Weighted Scores**

- **High**
- **Medium**
- **Low**
<table>
<thead>
<tr>
<th>Action</th>
<th>No. of Sub-action</th>
<th>No. of Measures</th>
<th>No. of programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1   Green Growth</td>
<td>4</td>
<td>7</td>
<td>23</td>
</tr>
<tr>
<td>2   Energy Efficient Spatial Structure</td>
<td>3</td>
<td>10</td>
<td>36</td>
</tr>
<tr>
<td>3   Green Mobility</td>
<td>5</td>
<td>8</td>
<td>30</td>
</tr>
<tr>
<td>4   Sustainable Energy System</td>
<td>4</td>
<td>6</td>
<td>14</td>
</tr>
<tr>
<td>5   Community Engagement and Green Lifestyle</td>
<td>4</td>
<td>6</td>
<td>29</td>
</tr>
<tr>
<td>6   Low Carbon Green Building</td>
<td>3</td>
<td>12</td>
<td>31</td>
</tr>
<tr>
<td>7   Blue and Green Network</td>
<td>5</td>
<td>11</td>
<td>27</td>
</tr>
<tr>
<td>8   Sustainable Waste Management</td>
<td>3</td>
<td>6</td>
<td>16</td>
</tr>
<tr>
<td>9   Sustainable Water &amp; Wastewater Management</td>
<td>3</td>
<td>7</td>
<td>17</td>
</tr>
<tr>
<td>10  Green Urban Governance</td>
<td>4</td>
<td>10</td>
<td>30</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>38</strong></td>
<td><strong>83</strong></td>
<td><strong>253</strong></td>
</tr>
</tbody>
</table>
Together We Can be Low Carbon

Thank you for your attention!

Thank You Terima Kasih 谢谢 धन्यवाद ありがとう