

## The 24th AIM International Workshop

National Institute for Environmental Studies ,Tsukuba Japan November 5-6, 2018

13:30-15:10 Nov 6 Session 8: Research on Low Carbon Society Development in Asia (2)

## Low Carbon Society Development in Malaysian Cities- From LCS Blueprint to Programs

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## Background Malaysia cities : Key Challenges on SDG goals and LCS



Population: 32 mil. (2016) | 1.32%pa growth rate GDP: 1.321 tril. RM (2016) 5% p.a growth rate

#### Issues

• Rapid urbanization and industrialization (7%pa)

COP15

COPENHAGEN

Voluntary

eduction

emissio intensit

PARIS2

COP21.CMP11

45%

2030

- Relatively high carbon intensity dependence
- on fossil fuel ( 80%^)
- High private car ownership (15% public)
- Low density development and urban sprawl
- Low efficiency appliances and Renewable energy ( 5%) Government Policy Directions
- National Green Technology Policy
- National Policy on Climate Change
- National Renewable Energy Policy and Action Plan
- National Policy on the Environment
- > 11<sup>th</sup> Malaysia Plan (2016-2020) Mid term review
- Green Neighborhood Planning Guideline
- Low Carbon Cities Framework and Assessment System

Alignment to SDG2030 and New Urban Agenda

## UTM-LOW CARBON ASIA RESEARCH CENTRE Department of Urban and Regional Planning, Faculty of Built Environment, University Teknology Malaysia

## PROJECTS

#### 2017

PENGERANG LOW CARBON SOCIETY 2030 INCEPTION REPORT KUALA LUMPUR LOW CARBON SOCIETY 2030 BLUEPRINT

#### 2016

KUALA LUMPUR LOW CARBON SOCIETY 2030 INTERIM REPORT KUALA LUMPUR LOW CARBON SOCIETY 2030 INCEPTION REPORT

CASBEE ISKANDAR FOR BUILDING (TECHNICAL MANUAL PILOT VERSION 2016)

CASBEE ISKANDAR FOR CITY/MUNICIPAL (TECHNICAL MANUAL PILOT VERSION 2016)

CASBEE ISKANDAR FOR URBAN DEVELOPMENT (TECHNICAL MANUAL PILOT VERSION 2016)

#### 2015

LOW CARBON SOCIETY ACTION PLAN 2025 JOHOR BAHRU 2025 : VIBRANT WORLD CLASS COSMOPOLIS OF THE SOUTH

LOW CARBON SOCIETY ACTION PLAN 2025 JOHOR BAHRU TENGAH 2025 : GREEN LIVABLE CITY AND CREATIVE INNOVATION BELT

LOW CARBON SOCIETY ACTION PLAN 2025 KULAI 2025 : SMART INTEGRATED LOGISTIC HUB

LOW CARBON SOCIETY ACTION PLAN 2025 PASIR GUDANG 2025 : GREEN AND CLEAN INDUSTRIAL CITY

LOW CARBON SOCIETY ACTION PLAN 2025 PONTIAN 2025 : CLEAN ENERGY AND AGRO-BIODIVERSITY HUB CASBEE-ISKANDAR PILOT PROJECT

#### 2014

LOW CARBON SOCIETY BILIEPRINT FOR ISKANDAR MALAYSIA THIRD EDITION-SUMMARY FOR POLICIMALERS PASIR GUDANG GREEN AND SMART CITIES ISKANDAR MALAYSIA ECO-LIFE CHALLENGE 2014

#### 2013

Low Carbon Society Scenarios Malaysia 2030 Low Carbon Society Blueprint for Iskandar Malaysia 2025 -Summary for Policymakers Second Edition Low Carbon Society Blueprint for Iskandar Malaysia 2025 -Full Report Iskandar Malaysia: Action For A Low Carbon Future

#### 2012

LOW CARBON SOCIETY BLUEPRINT FOR ISKANDAR MALAYSIA 2025 - SUMMARY FOR POLICYMAKERS 1ST EDITION

#### 2011

PUTRAJAYA GREEN CITY 2025

#### 2009

LOW CARBON CITY 2025 : SUSTAINABLE ISKANDAR MALAYSIA





## MALAYSIA - SDG 2030





## ACHIEVEMENTS TO DATE

## ACHIEVEMENTS TO DATE

#### ABSOLUTE POVERTY & HUNGER:

Absolute poverty reduced from **49.3%** (1970) to **0.6%** (2014) with no reported cases of hunger



#### NATURAL RESOURCES

Laws, regulations, policies and plans in place to better protect and ensure sustainable use of natural assets



EMPLOYMENT

Full employment

since 1992



#### **DISEASES & MORTALITY RATES**

- Child and maternal mortality rates are almost at the level of developed countries; eradicated endemic small pox and polio and reversed the spread of HIV/AIDS.
- Drastic reductions in water-borne diseases, deaths from treatable childhood diseases and malaria

#### EDUCATION

More than 90% enrolment rates for primary and secondary school levels for both boys and girls and 33% for higher education with gender ratio slightly in favour of the girls





#### **BASIC AMENITIES**

Over **95%** coverage for water and sanitation, and electricity supply at national level



#### INCOME INEQUALITIES

Reduced as indicated by lower Gini Coefficient from **0.513** (1970) to **0.401** (2014)

> 14 LIFE BELOW WATER

> > PARTNERSHIPS FOR THE GOALS

15 LIFE ON LAND



#### PARTNERSHIPS IN CONSERVATION

#### As of 2015:

- Maintained more than **50%** forest cover, **10.76%** as terrestrial protected areas and **1.06%** as marine protected areas.
- Carbon intensity reduced by **33%** since 2009, increasing renewable energy capacity.
- Malaysia also participates in international transboundary conservation efforts like the Coral Triangle and the Heart of Borneo initiatives

## EMPIRICAL CASES FOR MALAYSIAN LOW CARBON CITIES

- -One of Fastest growing Economic corridor regions Iskandar Malaysia
- -Federal Government Administrative
- centre of Putrajaya
- -National Capital of Kuala Lumpur
- -Integrated Oil and Gas Hub city of Pengerang







## EMPIRICAL CASES FOR MALAYSIAN LOW CARBON CITIES

## Fast growing region – Iskandar Malaysia

- -5 Local authorities / cities in Iskandar
- Johor Bahru(Vibrant World class Cosmopolitan)
- Puteri Iskandar (Green Livable city &Creative innovation Belt)
- Kulai(Smart Integrated Logistic Hub)
- Pasir Gudang( Green & clean industry city)
- Pontian (Clean energy & Agro Bio Hub)



## Iskandar Malaysia LCS Blueprint 2025





## Iskandar Malaysia

main southern development corridor in Johor, Malaysia

## Recent LCS Events in Malaysia Oct 2018– Mayor Forum, LCS Asia International conference, GAIA awards Prosper-Net Meeting



与依斯于达特区发展机构环境主管波伊德。

■何进松(右起)。陈泓宾与安然与出席者交流。



## Iskandar Malaysia Eco-life Challenge

Group Name: Teacher's Name:







IMELC focuses on energy household accounting. School children track the energy consumption, waste generation and travelling management, choices, frugal consumption and utilizing renewable energy resources (sunlight). The aim is to raise children's awareness level on low carbon aspects.

## **Proposed Johor Low Carbon Council – Management Structure**

## **Science to Action to Implementation to Monitoring:** Strategic Policy, Instruments and Governance structure



## The Putrajaya Green City 2025

## Main features of the Putrajaya Master Plan (4931 ha) :

- Almost 40% of the city area designated as open space: Includes 400 hectares of a man-made lake and 200 hectares of wetlands, created to bring in nature and enhance urban bio-diversity.
- City divided into 20 precincts; with central business district, located on an 'island' surrounded by the lake
- Residential precincts at the peripheral are planned on a neighbourhood planning concept



\*It includes contribution from freight transport (2.7 %) and central power generation (13.5 %).

1. Integrated City Planning & management ow Carbon 2. Low Carbon Transportation Putrajaya 3. Cutting-Edge Sustainable Buildings 4. Low Carbon Lifestyle 5. More and More Renewable Energy 6. The Green Lung of Putrajaya 7. Cooler Urban Structure & Building Cooler Putrajava 8. Community and Individual Actions to Reduce Urban Temperature 3R Putraiava 9. Use Less Consume Less 10. Think Before You Throw **11. Integrated Waste Treatment** General 12. Green Incentives and Capacity Building



DOM: NOT

PUBLIC AMENITY

**INFRA & UTILITY** 

ROAD

**PARKS & OPEN SPACE** 

6.98

39.15

9.79

18.40

## Putrajaya Green City 2025



## POLICY 5: MOVING PUTRAJAYA TOWARDS GREEN CITY

Moving Putrajaya towards Green City requires improvement plans and road map that will guide the creation of green community, adoption of green technology and sustainable building practices that lead to the reduction of carbon footprint in the city.

Sustainable development practices have been long embedded in Putrajaya in line with its Garden City theme. Putrajaya has designated more than half of its area for parks, recreational areas and water bodies, created green linkages as one its city Putrajaya will be moving towards a Green City through the following initiatives:

- 5.1 Enhance ecology, water body and bio-diversity
- 5.2 Application of green technology, infrastructure and practices in city planning and management
- 5.3 Adopting Sustainable Building Practices
- 5.4 Establish model green community committed to reduction of carbon footprint

#### Green Initiatives by seven focus areas



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## Three quantitative environmental targets



## **City Planning & Building**

- i. Planning principles that contributes towards reduction of carbon emission
- ii. Reuse of Local Resources for Construction
- iii. Green Initiatives for Building Sector by lifecycle







NEW BUILDINGS	EXISTING BUILDING	GS
GREEN BUILDING DESIGN REQUIREMENTS:	BECO <sub>2</sub> R (Building Sector Energy Use & Carbon Reporting Programme)	
- 19 under I construction/design I	Retrofitting (EE & RE) by building owners	Future
DISTRICT PLAN FOR ENERGY EFFICIENCY (Gas District Cooling)	Green practices in building maintenance (e.g: Government Green Procurement )	programme
	Green Building Certification (O&M) by building owners (8 govn bldg)	
Stage 1 – Before Use Phase	Stage 2 – Use Phase (80%-90% of emissions)	Stage 3 – After -Use Phase Building CO <sub>2</sub>
anning, Design, Construction	<b>Operational &amp; Maintenance</b>	Deconstruction/ emissions <sup>(1)</sup> Demolish

Transportation & Mobility

- Extensive Network of Pedestrian Walkways & Cycleways
- Environmental Friendly Public Buses (NGV & EV)
- Electric vehicles for tourist (ECOride)







- Landuse Planning for Open Spaces
- Gazetting Open Spaces
- Putrajaya Greening Programme
- Putrajaya Urban
  Farming Programme



## Solid Waste Management

- Provision of 3R facilities
- Innovation Reuse of Solid Waste
- Separation at Source
- Food & garden waste composting
- Encouraging reuse / upcycling through: Creativity 3R













## City Administration & Management

- Children-led climate change adaptive initiative (GreenROSE@Putrajaya)
- Encouraging Low Carbon Lifestyle
- Fun walk with President PPj on Wednesday.



#### **BASIC PROFILE**

#### Area

242km² (24,221 hectares)

#### Population (2010) 1,674,621 (2020 Projected) 2.198,400 (2030 Projected) 2,488,399

Gross Demestic Product RM 84,852 million (2010) RM 227,621 million (2020) RM 399,013 million (2030)

#### Location

On the central west coast of Peninsular Malaysia, enclave within the State of Selangor and Klang Valley

#### Function

National capital of Malaysia. One of the major cultural, commercial, education, entertainment, financial, healthcare and lourism centres of Asia.

OUTM - E KONZAL



#### ROAD TO ACHIEVING 70 BY 30 GOAL

Current Vision KLSP 2020 Draft KLCP 2020	VLORLD GLASS GITV 2020 WORLD GLASS BUSTAINABLE OTTY 2030 70 by 30: A Generic Better Kuala Lumpur			
LCS Vision for Kuala Lumpur				
Triple Bottom line of sustainability	Economy	Social	Environment	
Thrusts	Timus: 1 Prosperous, Robust and Globally Competitive Economy	Thrust 2 Healby, Creative Knowledgeable and Inclusive Community	Tinust 3 Eostogically Friendy Livesble and Recilient Built Environment	
Sustainable Development Goals 2030	Goale: 1.2.7,8.3,11,12,13,17	Gasts: 3,4,5,10,11,12,13,16,17	Goals: 6,11,13,14,15,17	
New Urban Agenda Transformative Commitments	Sustainable and Inclusive urban prosperity and opportunities for all	Sustainable orban development for social inclusion and ending poverty	Environmentally sustainable and resilient urban development	
Key Principles Draft KL City Plan 2020	World-slass Business Environment	World-class Working Environment	World-class Living Environment	
	World-class Governance			
KL Low Carbon Society Actions	Green Growth	Community Engagement and Green Lifestyle	Low Carbon Green Buildings	
	Flanning		Green and Bike Network	
	Green Nability		Bustanable Waste Management	
	Bustainable Energy Bystem		Sustainable Water and Waslewater Nanagement	
	-	Oteen Listan Bowmanne	A	

#### **GHG EMISSION INTENSITY BY GDP**



#### MITIGATION POTENTIAL OF KUALA LUMPUR 2030



HCO,

#### EMISSION REDUCTION CONTRIBUTION BY ACTION



Malaysia's global commitment to reducing 45% CO<sub>2</sub> 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, NUP2,GTP, ETP

Kuala Lumpur Structure Plan 2020

Kuala Lumpur City Plan 2020

> DBKL Planning Guidelines

> > Planning Control

Spatial Development Planning Sustainable Development Goal (SDG) 2030 New Urban Agenda (NUA) 2036

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

## **FRAMEWORK OF KL LCSSBP 2030**

Current Vision KLSP 2020 Draft KLCP 2020	WORLD CLASS CITY 2020			
LCS Vision for Kuala Lumpur	WORLD CLASS SUSTAINABLE CITY 2030 70 by 30: A Greener Better Kuala Lumpur			
Triple Bottom line of sustainability	Economy	Social	Environment	
Thrusts	Thrust 1 Prosperous, Robust and Globally Competitive Economy	Thrust 2 Healthy, Creative Knowledgeable and Inclusive Community	Thrust 3 Ecologically Friendly Liveable and Resilient Built Environment	
Sustainable Development Goals 2030	Goals: 1,2,7,8,9,11,12,13,17	Goals: 3,4,5,10,11,12,13,16,17	Goals: 6,11,13,14,15,17	
New Urban Agenda Transformative Commitments	Sustainable and Inclusive urban prosperity and opportunities for all	Sustainable urban development for social inclusion and ending poverty	Environmentally sustainable and resilient urban development	
Key Principles Draft KL City Plan	World-class Business Environment	World-class Working Environment	World-class Living Environment	
2020	World-class Governance			
KL Low Carbon Society Actions	Green Growth Energy Efficient Spatial Planning Green Mobility Sustainable Energy System	Community Engagement and Green Lifestyle	Low Carbon Green Buildings Green and Blue Network Sustainable Waste Management Sustainable Water and Wastewater Management	
		Green Urban Governance		

## Kuala Lumpur Low Carbon Society Blueprint 2030 EMISSION REDUCTION CONTRIBUTION BY ACTION

Thrusts	Actions	Reduction (ktCO <sub>2</sub> eq)	Share (%)*
Economy (59%)	Action 1 Green Growth (GG)	2,502	5.2
	Action 2 Energy Efficient Spatial Structure (SS)	2,872	6.0
	Action 3 Green Mobility (GM)	6,868	14.2
	Action 4 Sustainable Energy System (SE)	16,327	33.9
Social (19%)	Action 5 Community Engagement and Green Lifestyle (CE)	9,015	18.7
Environment (22%)	Action 6 Low Carbon Green Building (GB)	9,673	20.1
	Action 7 Green and Blue Network (BG)	316	0.7
	Action 8 Sustainable Waste Management (WM)	527	1.1
	Action 9 Sustainable Water and Wastewater Management (WW)	105	0.2
Enabler	Action 10 Green Urban Governance (UG)	0	-
	Total	48,206	100

## Kuala Lumpur Low Carbon Society Blueprint 2030 ROAD TO ACHIEVING 70 BY 30



## OUTCOME FROM FGD2 – Wish list/ programs ROADMAP OF KL LCSBP 2030

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

To **identify implementation timeline for each programs** 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.



To **identify potential actor/ caretaker** for each program and supporting agencies (Office in charge/ Supporting agency/ implementer.

## **KUALA LUMPUR: LOW CARBON SOCIETY'S PROGRAMMES**



#### Transportation

- Rail system
- Bicycle lane
- Bus system
- Pedestrian Network



#### Buildings

- Green Building Index (GBI)
- Energy Management (KLCH Tower 1)



#### Solid Waste

• Reduce Reuse Recycle 3R program



#### Water

- River of Life (ROL)
- Rain water harvesting



#### Energy

- Energy –efficient buildings
- Euro5 NGV for Public Transport
- B10 Trial Project



#### Infrastructure & Digital Technology

- Integrated Transport Information System (ITIS)
- LED Street Lanterns



#### Environment

- Open spaces
- Tree Planting
- Vertical green
- Community garden
- Preserving Forest
- Laneway projects

4<sup>TH</sup> International Conference on Low Carbon Asia & Beyond (ICLCA 2018)

**Transportation** 

## **RAIL SYSTEM**



## Mass Rapid Transit (MRT)

- MRT1 Sg. Buloh-Kajang Line (51 km) Phase One becomes operational in 2016
- MRT2 Sg. Buloh-Serdang-Putrajaya Line (59.5 km)
- MRT3 Circle Line

#### **KTM Komuter**

- Port Klang Line (45 km)
- Seremban Line (105 km)
- Ridership 51,200 per day





## <u>KL Monorail Line</u> - 8.6 km - Ridership – 75,000 people per day



#### **Express Rail Link (ERL)**

- KLIA Express (57 km) non-stop airport rail link service
- KLIA Transit (57 km) commuter rail service
- Ridership 6,200 per day



## Light Rapid Transit (LRT)

- LRT1 Ampang Line (27 km) 18.1 km to Putra Heights is under construction
- LRT2 Kelana Jaya Line (29 km) 17.4 km to Putra Heights is under construction
- Ridership 190,000 people per day

## **KUALA LUMPUR: PEDESTRIAN AND BICYCLE MASTER PLAN**

## **KUALA LUMPUR PEDESTRIAN AND BICYCLE MASTER PLAN 2019-2028**

## **GOAL:**

Sustaining the livable city agenda where quality of life and environment is enhanced through improvements in smart mobility towards a healthy lifestyle.

#### **OBJECTIVE 1:**

To increase the quantity and enhance the quality of walking and cycling facilities in KL

#### **OBJECTIVE 2:**

To encourage, champion and incentivize walking and cycling as supporting components of seamless connectivity based on public transportation

#### **OBJECTIVE 3:**

To connect vibrant and attractive public spaces created by place making with safe and comfortable walking and cycling facilities 4<sup>TH</sup> International Conference on Low Carbon Asia & Beyond (ICLCA 2018)

**Transportation** 

## **BICYCLE LANE**



- 5.5 km dedicated bicycle lane from Dataran Merdeka to Mid Valley
- Proposed dedicated bicycle lanes in city centre: LRT Station Taman Melati to LRT Station Wangsa Maju (2.1 km)
   Kg. Batu Muda – Taman Metropolitan Batu (2.0 km)



**Transportation** 

## **EXTENSION OF BICYCLE LANE**



## **BUS SYSTEM: GO KL FREE RIDE**



#### Go KL City Bus

- The Go KL City Bus service was introduced in 2012 to improve public transport within city centre
- Go KL is a free bus service which was designed to function as a feeder bus service providing last-mile connectivity integrating other modes of public transport.
- Thre are four lines (within downtown KL): Green Line : KLCC – Bukit Bintang (14 stops / 45 mins)
  - Purple Line : Pasar Seni Bukit Bintang (15 stops / 60 mins)
  - Blue Line : Medan Mara Bukit Bintang (17 stops / 45 mins)
  - Red Line : KL Sentral Jalan Tuanku Abdul Rahman (19 stops / 60 mins)



**Transportation** 

## **PEDESTRIAN'S COVERED WALKWAYS**

#### **Pedestrian Network**

- Comprehensive pedestrian network with anti climb fences, plus the fences are barrier free and handicappedfriendly, together with landscaping.
- Completed pedestrian network by year:
  - 2011 (12.6 km) Jalan Raja Laut, Jalan P. Ramlee, Jalan Tuanku Abdul Rahman, Jalan Sultan Ismail
  - **2012 (13.4 km)** Jalan Raja Laut Jalan Ipoh, Jalan Ampang Jalan Sultan Ismail, Jalan Bukit Bintang, Jalan Raja Chulan, Jalan Tung Shin, Jalan Pudu
  - **2013 (12.8 km)** Part of Jalan Ipoh, Jalan Pahang, Jalan Tun Razak, Jalan Raja Muda Abdul Aziz, Jalan Dr. Latiff, Jalan Binjai, Persiaran KLCC, Jalan Kia Peng, Jalan Tun Razak, Persiaran Stonor, Jalan Dang Wangi, Jalan Conlay, Jalan Khoo Teik Ee, Jalan Melati, Jalan Horley, Jalan Pahang Barat
  - **2014 (12.7 km)** Jalan Sultan Ismail, Changkat Raja Chulan, Changkat Bukit Bintang, Jalan Hang Jebat, Jalan Imbi, Jalan San Peng





Building

## **GREEN BUILDING**



## **Green Building**

• As of October 2018, the numbers of GBI Certified Projects in Kuala Lumpur is 174 which include residential and non-residential buildings.



## **ENERGY MANAGEMENT**

AEMAS

## Certificate of Registration

Awarded to

#### Dewan Bandaraya Kuala Lumpur (Menara 1) MALAYSIA

AEMAS certifies that the Dewan Bandaraya Kuala Lumpur, Malaysia, has been audited and found in accordance with the requirements of:

## **Energy Management Gold Standard**



Audit conducted: 14-15 February 2017 Validity of this certificate: 1 March 2017 - 28 February 2019 Accreditation No.: AU-MY-001-1210 Auditor: Hasbullah Harun Certificate No.: EMGS 0032 Gold Standard level: 1-star

The Energy Management Gold Standard, delivered under the ASEAN Energy Management Scheme, requires companies to establish their energy management system according to ISO 50001 and to demonstrate that their Energy Efficiency Index improves against an established energy baseline.

h. Dr. Sanjayan K.V. Welauthar

ASEAN Centre for Energ







Ahmad Hadri Hari

AEMAS Country Coordinator Malaysia

#### JAWATANKUASA PENGURUSAN TENAGA LESTARI PENJIMATAN TENAGA ELEKTRIK

MEI 2016 HINGGA APRIL 2017 (SETAHUN PENJIMATAN )

14 JUN 2017 TARIKH

ATAU PEMBAWA

BAYAR/PAY MENARA DBKL 1

RINGGIT

u-1

MALAYSIA TIGA RATUS TIGA PULUH RIBU, TIGA RATUS

RM 330,384.27

LAPAN PULUH EMPAT RINGGIT DAN SEN DUA PULUH TUJUH

## DBKL, SEDA meterai kaji jimat tenaga elektrik

Kuala Lumpur: Dewan Bandaraya tan tenaga secara berjimat kerana Kuala Lumpur (DBKL) semalam banyak penggunaan elektrik pada menandatangani memorandum penghawa dingin. persefahaman (MoU) dengan Pi-

DA) bagi mengkaji serta mengeelektrik di Menara DBKL 1.

Datuk Mhd Amin Nordin Abd tahun 2020. Aziz, berkata sehingga kini DBKL menanggung kos sebanyak RM13 adanya kerjasama daripada SEDA juta setahun bagi penggunaan te-dapat membantu mengurangkan naga elektrik di tiga menaranya.

"Kita sudah mengarahkan semua jabatan di tiga menara DBKI, tanya pada majlis menandatangasupaya menguruskan hal berkai- ni MoU itu di sini, semalam

nak Berkuasa Tenaga Lestari (SE-Kurangkan pelepasan karbon DA) bagi mengkaji serta menge- "Selaku Pihak Berkuasa Tempanal pasti kaedah yang mampu tan (PBT) bandar raya, kita memenjimatkan penggunaan tenaga nyahut saranan kerajaan untuk mengurangkan pelepasan karbon Datuk Bandar Kuala Lumpur, sebanyak 40 peratus menjelang

"Justeru, kita harap dengan

penggunaan tenaga elektrik wa-laupun serendah 30 peratus," ka-

Yang turut hadir, Pengerusi SE-DA, Datuk Vee Moh Chai; Tumbalan Pengarah Kanan Pelaksanaan Projek DBKL, Juminan Saman; Pe-

ngarah Eksekutif Pengurusan Projek DBKL, Datuk Tan Keng Chock dan Ketua Pegawai Eksekutif SE DA, Catherine Ridu.

Mhd Amin Nordin berkata, pi haknya akan melaksanakan langkah yang sama di Menara DBKL 2 dan 3 jika usaha mengurangkan penggunaan tenaga di Menara DBKL itu berjaya.

"SEDA membantu kita dalam projek perintis ini untuk menjadikan menara DBKI, sebagai contoh bangunan cekap tenaga DBKL pertama," katanya.



Waste

## **REUSE, REDUCE, RECYCLE (3R) PROGRAMME**



- Greater KL/KV will face major solid waste management (SWM) problems given current practices as solid waste generation per day in Greater KL/KV is expected to grow from 10kton to 17kton by 2020. Current limited sanitised landfills capacity, low recycling rates of 11%, lack of proper system for disposal of construction and demolition waste (C&D) need to be addressed.
- Greater KL/KV EPP recommends the enhancement of the Reduce, Reuse, Recycle (3R) implementation by creating a recycling ecosystem to stimulate waste disposal reduction and to target a recycling rate of 40% by 2020 from current target of 22%.
- In 2014, out of 629.98 kilotons solid waste that been collected by Alam Flora, only 0.1 kiloton were recycled.



Water

## **RIVER OF LIFE PROJECT**





Water

## **RAIN WATER HARVESTING**



Rain water is harvested to help conserve water in the buildings, and to reduce the use of treated water from the utility. That way, this water can be applied to the cooling system condenser as well as being used to water the landscape and for general cleaning purposes.





## **B10 BIODIESEL (Pilot Project)**







Infrastructure & Technology

## **Integrated Transport Information System - ITIS**



- A comprehensive traffic information system developed to monitor traffic flow and analyse the data on traffic conditions in the Klang Valley, and provides realtime traffic information to road users.
- A total of 1,200 CCTV's being used to better manage traffic as well as for crime prevention purposes.
- ITIS covers 45 main road corridors within the Klang Valley that includes the Inner Ring Road (Jalan Raja Chulan), the Middle Ring Road 1 (Jalan Tun Razak), the Middle Ring Road 2, and major radials such as Federal Highway Route 2, Jalan Ampang, Jalan Sentul, KL-Seremban expressway etc. In total, there will be over 200 km of roads which will be monitored.





Replacement Of Existing HPSV Street Lanterns To LED Street Lanterns In Kuala Lumpur

DBKL decided to replace the existing street lanterns to LED street lightings in line with the government policy of promoting energy efficiency.

Started on July 2014

About 45,000 nos of LED street lights were installed in the City.

Environment

## **TREE PLANTING AND COMMUNITY GARDEN**



- KLCH aims to plant 30,000 trees around Kuala Lumpur per year, or 100,000 trees by 2020, to achieve the goal of Greener KL, and to provide 14m2 per person for Kuala Lumpur citizens.
- In 2014, KLCH has planted 39,636 trees. Between 2011 and 2014, 135,734 trees have been planted which is well exceeded the target for 2020.
- LA21 Herbs Garden
- Urban Farming and Community Garden



Why?

4 phases

from August 2017 to March 2018



Environment

## **GAZETTING FOREST RESERVE**



- Hutan Simpan Bukit Nanas (10.5 hectares) Gazetted as Wildlife and Bird Sanctuary in 1934
- Hutan Simpan Bukit Sungai Puteh Gazetted as Wildlife Reserve in 1932
- Hutan Simpan Bukit Sungai Besi (42.29 hectares)
- Hutan Simpan Bukit Lagong Tambahan (2.10 hectares)



4<sup>TH</sup> Internation Conference on Low Carbon Asia & Beyond (Conference on Low Asia & Beyond (Conference on Low Carbon Asia & Bey

Environment

## LANEWAYS REJUVENATION PROJECT

7 LANEWAYS 1 POCKET PARK IN ALOR ENCALVE

## The Theme

- 1. Alor
- 2. Komuniti di Alor
- 3. Laman Belakang
- 4. Taman Rembia
- 5. Alam Alor
- 6. Budaya Alor
- 7. Pesta makanan
- 8. Kehidupan Alor























# KL CAR FREE MORNING

Every 1<sup>st</sup> And 3<sup>rd</sup> Sunday Of The Month





Environment

## **CHANGING BEHAVIOURS**



Environment

## **PRIVATE INITIATIVE: THE GREEN HIGHWAY**

Implementation of **Solar Photovoltaic** by Ekovest Energy at Duta – Ulu Kelang Expressway (DUKE)

The Solar PV has been completed and commenced operation in December 2015

## FINDINGS

□ Low Authorities are concern about implementation (ACT NOW and ACT TOGETHER) of quick win LCS project to have buy in from stakeholders. These initiatives need the commitment of everyone; that is the government, the private developers, NGO's, local communities as well private individuals in reducing the carbon emissions in the City.

Statement from Kuala Lumpur City Hall Vice Mayor

"To KLCH, it is a real big challenge, how to make everyone understands the concept of Low Carbon Society. Indeed, it is everyone obligation to commit to carbon reduction in anything that he/ she undertakes to do. KLCH has to implement a comprehensive awareness and outreach programme for all stakeholders in Kuala Lumpur. "

□ Integration of LCS initiatives and localisation of SDG Goals

Many of bigger cities are looking into localisation of 17 goals of SDG goals with low carbon programs.





UTM-LOW CARBON ASIA RESEARCH CENTRE





Thank you for your attention!

Thank You Terima Kasih 谢谢 धन्यवाद ありがとう