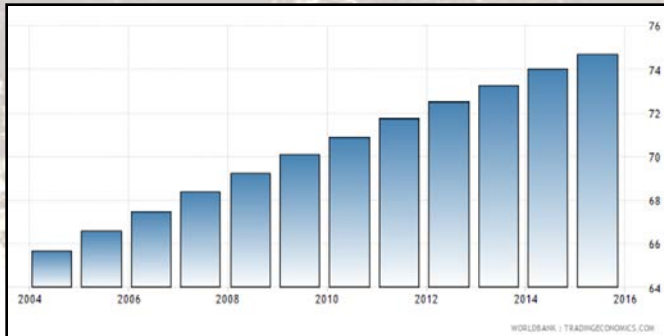




**Working Session 5 :
Local Experiences, Lessons
and Challenges In
Transforming
Seberang Perai Malaysia
To A Low Carbon Town**

**Presented By :
The Honourable Dato'
Maimunah Mohd Sharif
Mayor of City Council of Penang
Island
Penang, Malaysia**

MALAYSIA & URBANISATION



**More people living in Urban
Areas/Cities**

POPULATION

18 MILLION 1990 TO 27.6 MILLION (2010)

30.33 MILLION (2015) - Annual Growth Rate 1.42%

URBANISATION

URBAN POPULATION: 74.7% OF TOTAL POPULATION
(2015) – 22.6 million

RATE OF URBANISATION: 2.36% - Annual Rate of
Change (2010-2015)

ENERGY & ENVIRONMENT

2015 – CO2 EMISSION (83.48 million metric tons)

Residential/commercial (5.02)

Industrial/construction (32.73)

Transportation (43.00)

Others (2.73)

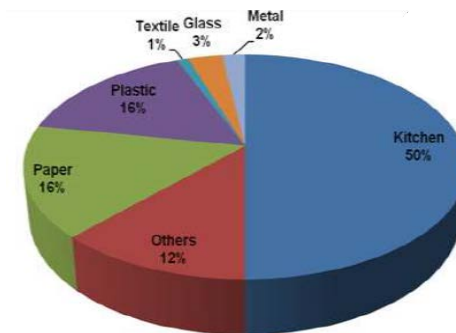
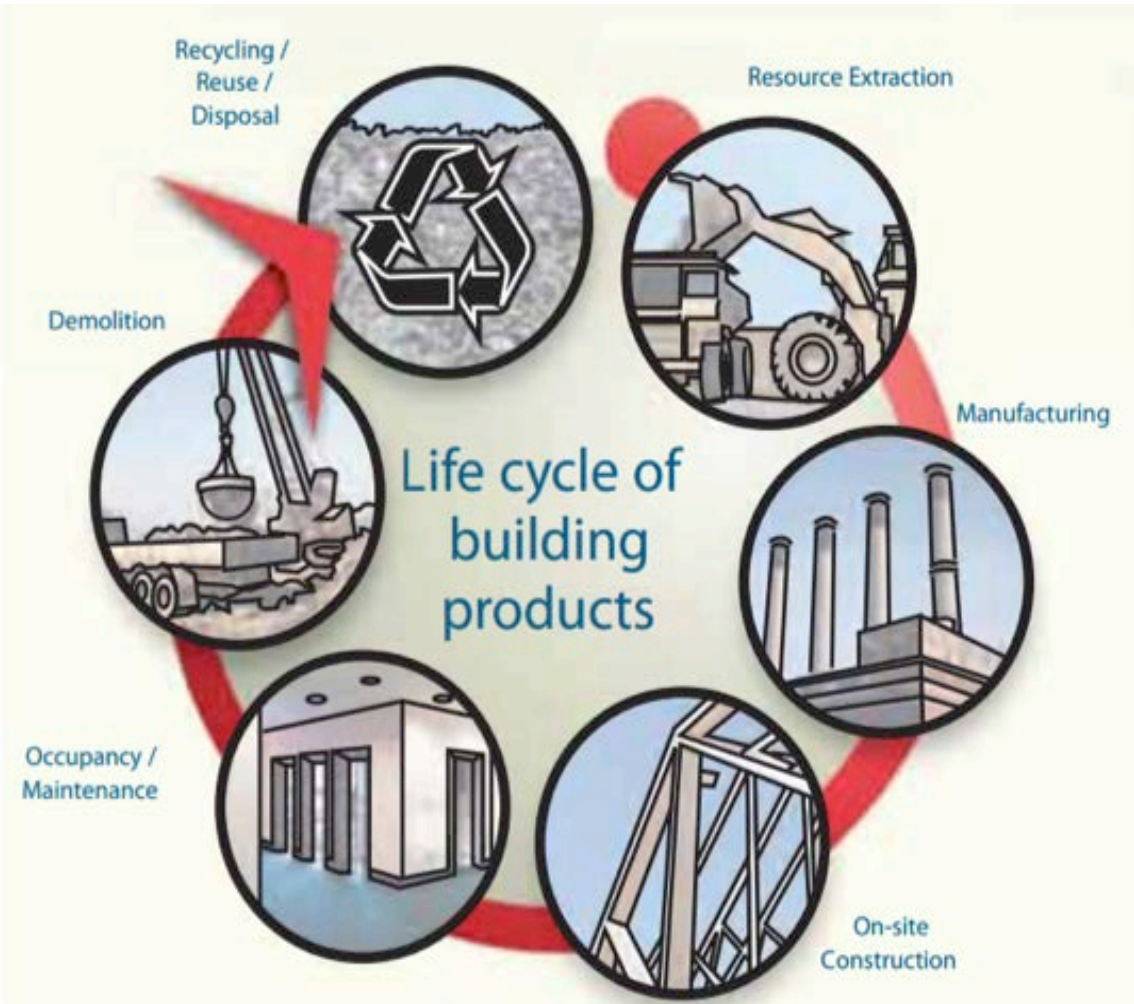
(Source: United Nations World Urbanisation Prospects 2015)

SOURCE OF CARBON EMISSIONS



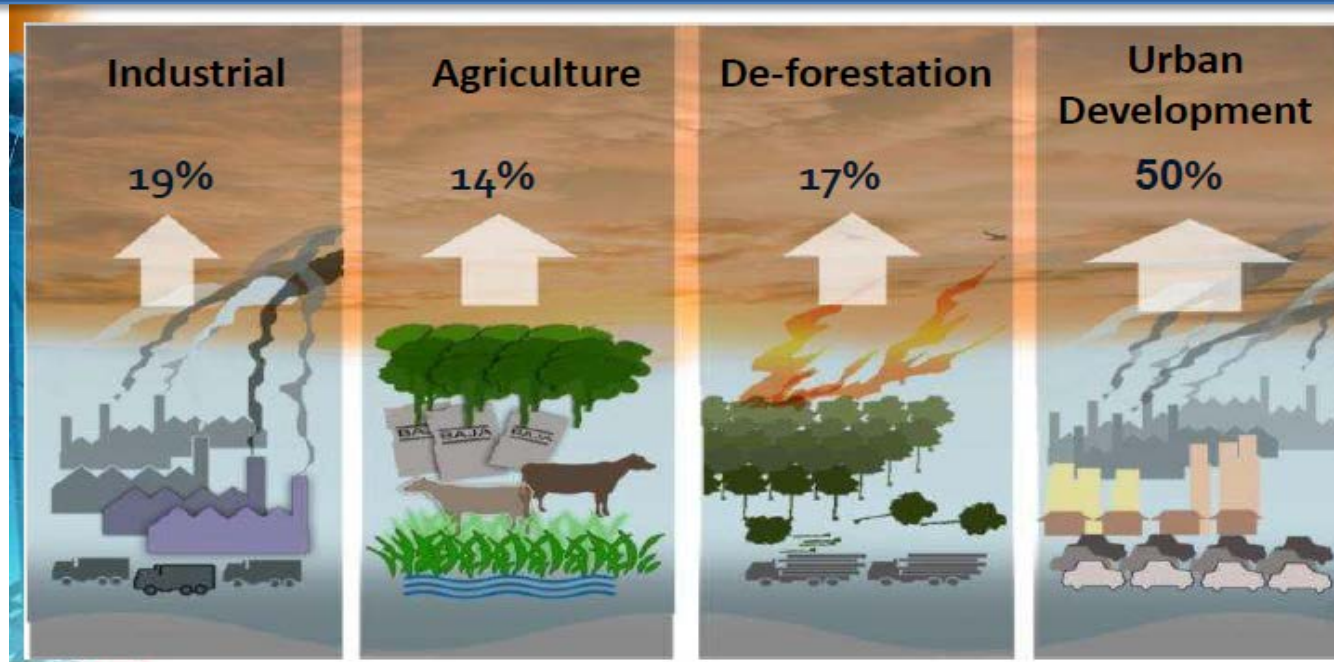
Energy Generation, Transportation, Industries, Infrastructure

SOURCE OF CARBON EMISSIONS



Waste generation, De-forestation, Land Clearing, Non Environmentally Products

TOWNSHIPS/URBAN DEVELOPMENT & GHG



More than 50% of world's population
Consumes for 75% of world's energy consumption
Responsible for 80% of GHG emission

GLOBAL CO2 EMISSION INCREASED 30%
TEMPREATURE HAS RISEN BY 0.3 – 0.6 C

“CO2 is the most important anthropogenic of GHG and the main sources of atmospheric CO2 is from burning of fossil fuels – 75% of increase in atmospheric CO2 since industrial times

(Source: Cities and Climate Change – Global Report on Human Settlements 2011, UN-Habitat).

DEFINITION DEVELOPMENT OF LOW CARBON

Objective of
Low Carbon
Cities
Framework
(LCCF) &
Assessment
system

- To encourage & promote the concept of low carbon cities and townships in Malaysia.
- To increase the compatibility of cities/townships with their local natural system.
- To guide cities in making choice/decisions towards greener solutions.

Users

- All Cities & Townships in Malaysia

Targets

- To reduce carbon emission intensity by 45% per GDP per capita by the year of 2030

*"It is my dream that one day we can live in a clean, healthy and high quality environment, where **cities, townships and communities** are built on the fundamentals of Green Technology"*

YAB Dato' Sri Mohd Najib Tun Razak



DEFINITION

Low Carbon Cities can be defined as
a city that comprises of societies

that consume sustainable green technology, green practices and emit relatively low carbon or GHG as compared with present day practice to avoid the adverse impacts on climate change.



SEBERANG PERAI



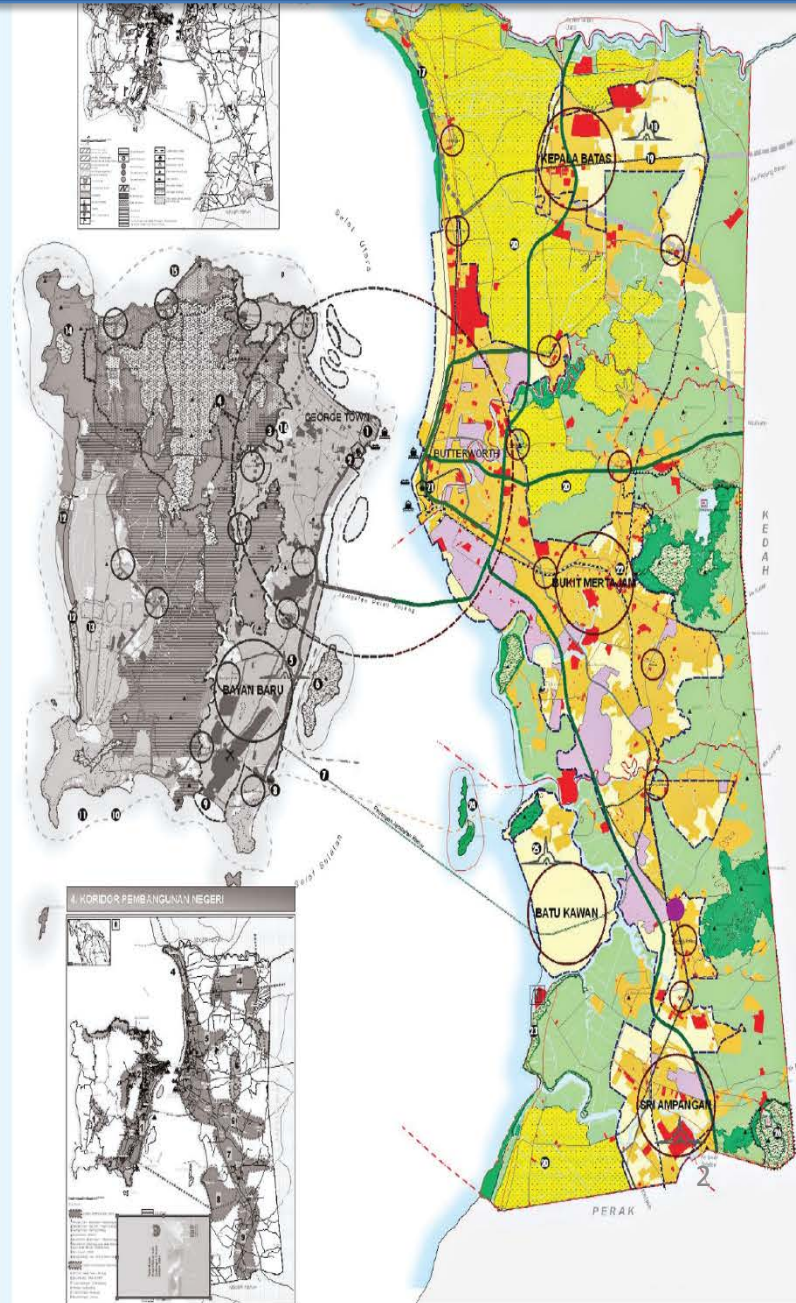
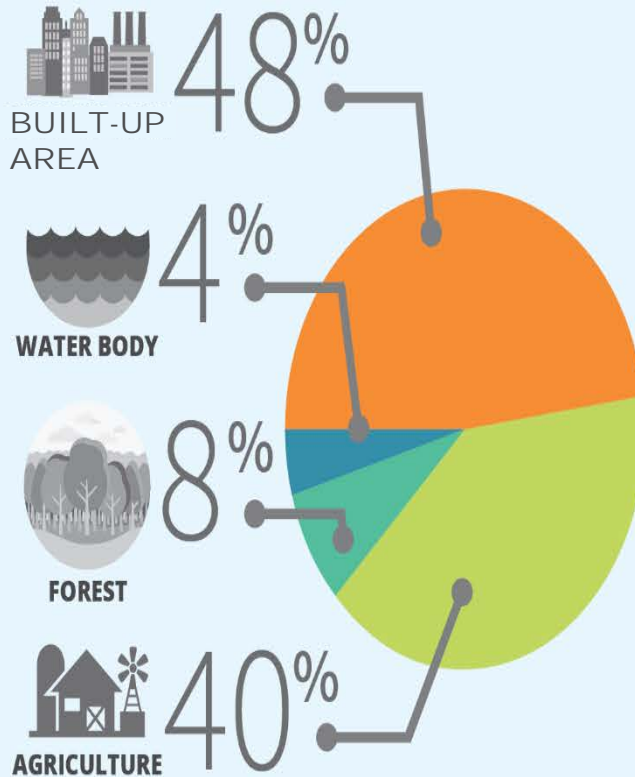
POPULATION
897,600
RESIDENT
*based on Malaysian
Population Statistic 2014*



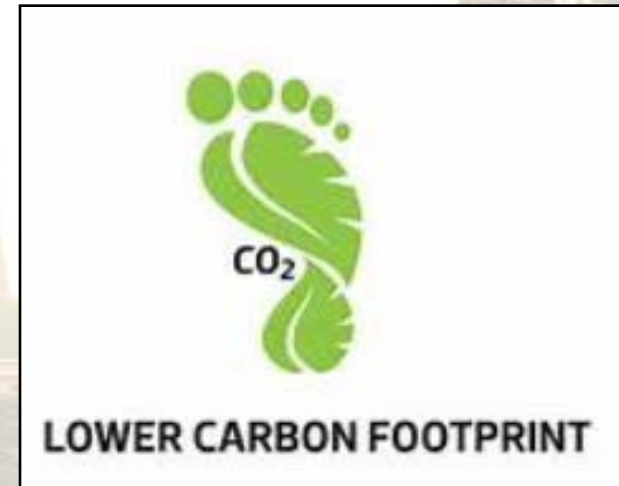
SIZE
738
KILOMETER²



**POPULATION
GROWTH**
1.7%
PER YEAR



SEBERANG PERAI



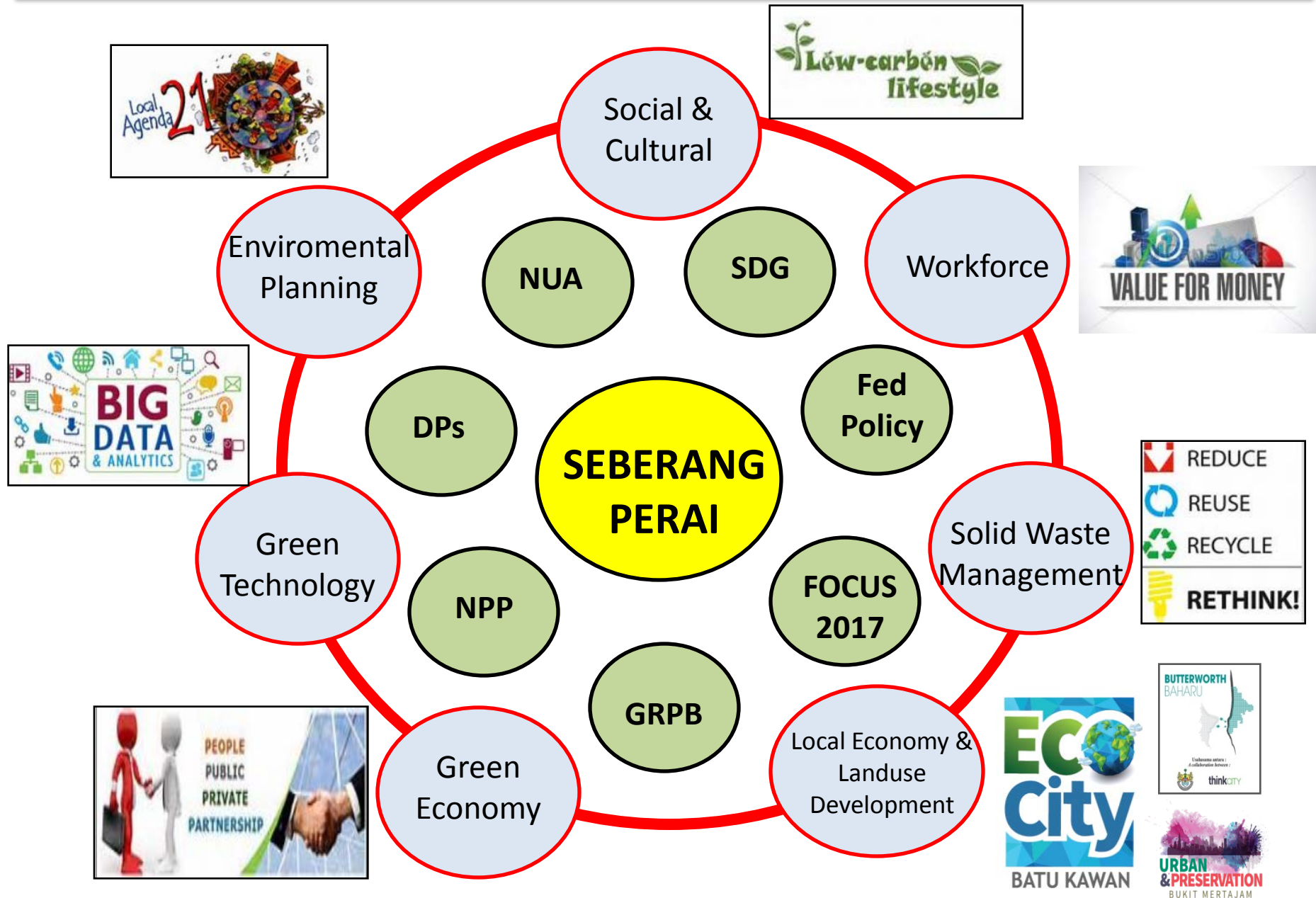
PROBLEM GREEN HOUSE GASES (GHG)

e.g: Carbon dioxide (CO₂), Methane (CH₄), Nitrous oxide (N₂O), Chlorofluorocarbons (CFC), etc

SOLUTION LOW CARBON INITIATIVES

FUTURE
CLEANER
GREENER
SAFER
HEALTHIER
HAPPIER

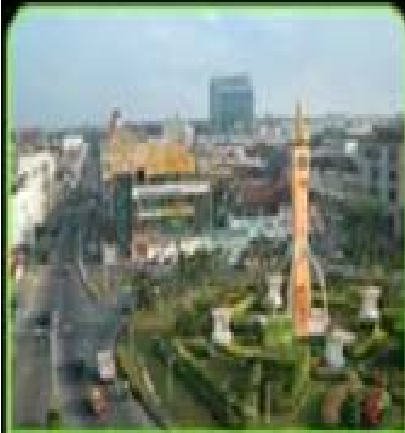
POSITIONING OF LOW CARBON DEVELOPMENT



NETWORKING LOCAL AGENCIES/ INTERNATIONAL PARTNERS



POTENTIAL TO REDUCE CARBON EMISSIONS & AREAS OF LOW CARBON INITIATIVE APPLIED



Urban Environment



- Site Selection
- Urban Form
- Urban Greenery & Air Quality



Urban Transportation



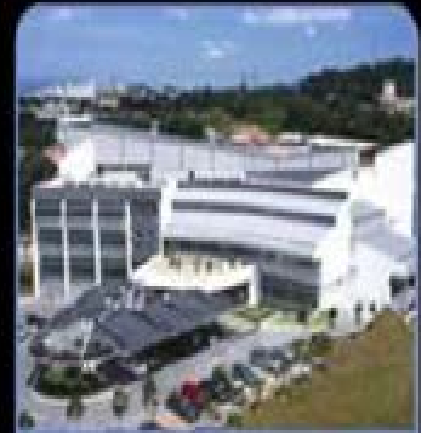
- Shift of Transport Mode
- Green Transport Infrastructure
- Green Vehicles
- Traffic Management



Urban Infrastructure



- Infrastructure Provision
- Waste
- Energy
- Water



Buildings



- Low Carbon Building
- Community Service

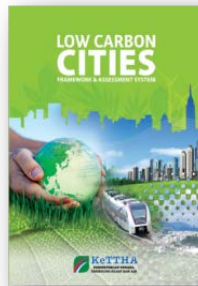
LOW CARBON INITIATIVES PROJECTS THAT HAVE BEEN IMPLEMENTED

BLUEPRINT/ASSESSMENT



LOCAL & INTERNATIONAL LAUNCHES

- Responsible Tourism Development
 - Biodiversity Conservation
 - Sustainable Management



Low Carbon MPSP HQ Building (LCCF Pilot Project)

- Reduction 3% electricity –EnMS ISO5001:2011 (Go Green & Green Initiative Concept)
- Blueprint target to reduce 1,491.93 Carbon (tCO₂/yr)
 - On going energy & water saving awareness

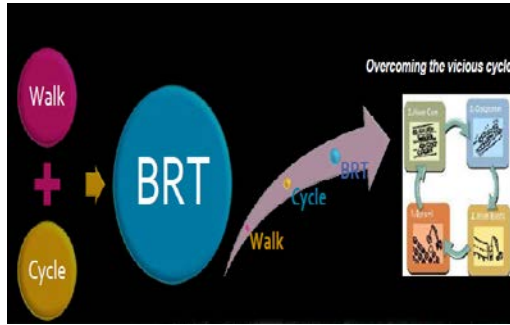
COMPACT OF MAYORS

- Climate Change Adaptation and Mitigation Action Plan
 - 20% Reduction of per capita Emission by 2030
- Targeted reduction from 8.37 tCO₂e / person in 2016 to 6.70 tCO₂e / person in 2030



LOW CARBON INITIATIVES PROJECTS THAT HAVE BEEN IMPLEMENTED

TRANSPORTATION



TRANSPORTATION FOR COMMUTE

- Promote Public Transportation Use

INTERGRATED TRANSPORTATION

- Basic access needs to work & leisure safely

TRANSPORATION MONITORING

- Traffic light system (green wave)
- Bicycle route along 100' road

GREEN TECHNOLOGY IN TRANSPORT

- Minimize degradation of environment

LOW CARBON INITIATIVES PROJECTS THAT HAVE BEEN IMPLEMENTED

WASTE



On-site Composter



KNOWLEDGE TRANSFER PROGRAM

- Recycle (45% by 2018)
- Green School Certification
 - Green Habits/Thinking

WASTE TO FERTILIZER

- Composting of market waste

WASTE TO ENERGY

- Waste to electricity from animal waste
- Waste cooking oil to biodiesel

SANITARY LANDFILL

- Leachate treatment
- Sorters (recycle paper, plastics, tires, bottles etc)

LOW CARBON INITIATIVES PROJECTS THAT HAVE BEEN IMPLEMENTED

ECO COMMUNITY



- **4R - RECYCLE PRODUCT**
e.g : Banner & Bunting



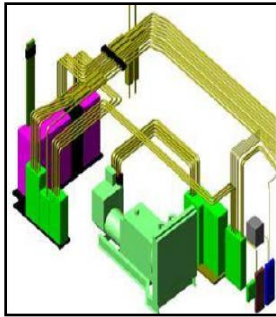
- **COMMUNITY FARMING**
- **SEGRIGATION AT SOURCE**
- **COMPOSTING**



- **GREEN SCHOOL PROGRAMES**
Create awarensa of low carbon society among students, teachers & families

LOW CARBON INITIATIVES PROJECTS THAT HAVE BEEN IMPLEMENTED

ENERGY/WATER



**ENERGY EFFICIENCY-
ELECTRICAL SYSTEM**

- Improvement to reduce energy cost
 - Replacement of inefficient lights by efficient LED

RENEWABLE ENERGY

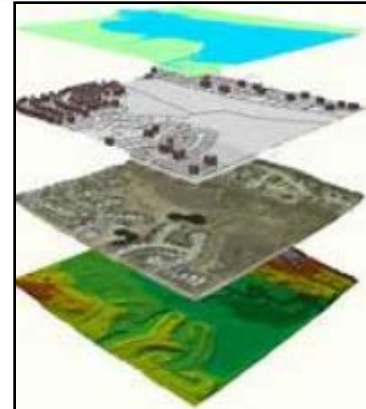
- Energy Generation System - Solar panels

**MANAGEMENT &
UTILIZATION OF WATER
RESOURCES - RAIN
WATER HAVERSTING**

- Water minimisation
- Reduce domestic water usage 20% by 2020

LOW CARBON INITIATIVES PROJECTS THAT HAVE BEEN IMPLEMENTED

BUILDING/ LOW CARBON ICT



LOW CARBON BUILDING

- Low carbon footprint material
 - Site construction
 - Energy management
 - Indoor environment

GREEN BUILDING RATING SCHEME

Certified	Minimum Requirement
Silver	20% Increase on density / plot ratio
Gold	30% Increase on density / plot ratio
Platinum	40% Increase on density / plot ratio

MAXIMIZING SOLID WASTE MANAGEMENT

- Big Data Analytics

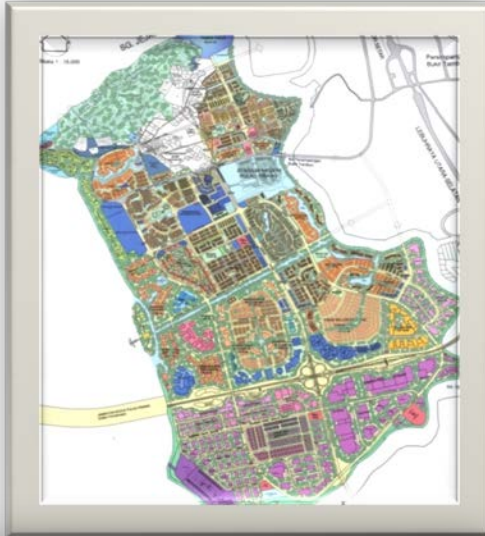
PHYSICAL CITY PLANNING & MANAGEMENT

- Geographical Information System (GIS)
(Utilising ICT In Operation/Management To Improve Environment)

Reduce environmental impacts of development and improved affordability

ON GOING DEVELOPMENT HAVE BEEN DUPLICATED IN OTHER SEBERANG PERAI AREAS

MASTER PLAN & GUIDE LINE



Green
Building

Green Building Index

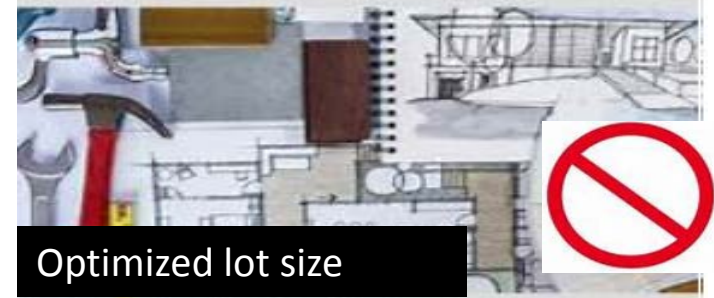
The Council regulate that commercial and residential required to comply with at least certified rates on GBI Standard. Industrial and other type of development are encouraged to follow with the GBI Standard. Incentive will be given as according table

GBI Rating	Incentive
Certified	Minimum Requirement
Silver	20% Increase on density / plot ratio
Gold	30% Increase on density / plot ratio



Responsive design towards
environment

Zero
Renovation



Optimized lot size

Ecology



Marine & coastal initiatives



ON GOING DEVELOPMENT HAVE BEEN DUPLICATED IN OTHER SEBERANG PERAI AREAS

MASTER PLAN & GUIDE LINE

Soid Waste



Innovative Technology - Vaccum system

Safe City



Developing cycling lane

Green Neighbourhood



Liner & Pocket Parks





ON GOING DEVELOPMENT HAVE BEEN DUPLICATED IN OTHER SEBERANG PERAI AREAS

MASTER PLAN & GUIDE LINE



Affordable
Homes



Energy efficiency through passive design

Accessibility



Safe for use & promotes healthy
environment



Neighbourhood
Concept



Sustainable living (social,
environment & economic)

FUTURE

Consists of 35% on an unconditional basis and a further 10% is conditional upon receipt of climate finance, technology transfer and capacity building from developed countries

GHG

➤ 45% GHG Intensity Reduction

- Strategic Policy
- Early implementation is essential
- Continuous Implementation
- Green Rating Tools
- Concerned with green technology & Synergies
- Collective Action to achieve Sustainable LCCF



FUTURE
society

Seberang Perai with 154 municipalities in Malaysia to achieve low carbon city

CHALLENGES

CHALLENGES OF LOW CARBON DEVELOPMENT

(Resource
Optimisation &
Low Carbon)

- 42.6% compare
20% Federal
recycle rate
- 50% in 2020

Maintaining a sense of
Collective
Action

Low Carbon
Policy/Strategy

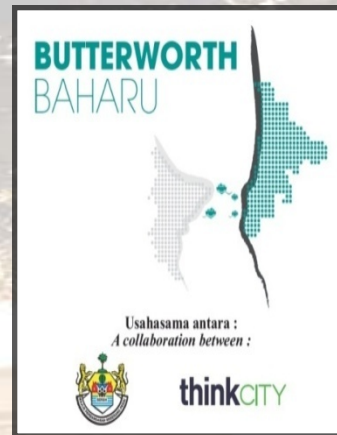
City with a simple
but high quality
life, emphasizing
on family &
community ties,
harmony with
nature with
minimum
emissions of GHG

Implementation
across
agency/department

DEVELOPMENT IN SEBERANG PERAI



New Emphasis 2016



NEW
BUTTERWORTH
(Empowering Community
Through Regeneration
Plan)



BUKIT MERTAJAM
REJUVENATION
(BM My Home Town)



BATU KAWAN
ECO - CITY

THANK YOU



MUNICIPAL COUNCIL OF SEBERANG PERAI

Jalan Perda Utama
Bandar Perda
14000, Bukit Mertajam
Penang, Malaysia

- t** 604 - 5497 700
- t** 1 - 800 - 88 - 6777 (Toll Free)
- f** 604 - 5395 588
- w** <http://www.mpsp.gov.my>