# 21 AIM WORKSHOP AT NIES TSUKUBA, JAPAN.

14 Nov 2015 at NIES, Tsukuba, Japan

## Mainstreaming climate change and green technology policy into National Development plans in Malaysia

REGIONAL CENTRE OF EXPERTISE ON EDUCATION FOR SUSTAINABLE DEVELOPMENT

ACKNOWLEDGED BY

UNITED NATIONS UNIVERSITY

UTM-LOW CARBON ASIA RESEARCH CENTRE

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**Project for Development of Low Carbon Society Scenarios for Asian Regions**

SATREPS
Science and Technology Research Partnership for Sustainable Development Program

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# STRUCTURE

**1.0 Introduction**

Issues and Challenges towards Sustainable development

Climate change and sustainable development – green technology

Achievement in green technology (2013)

**2.0 Malaysian government Policies –**

11 MALAYSIA PLAN 2016-2020

-Game Changer - Green Growth for Sustainability and Resilience

-Investing in competitive cities- major shifts

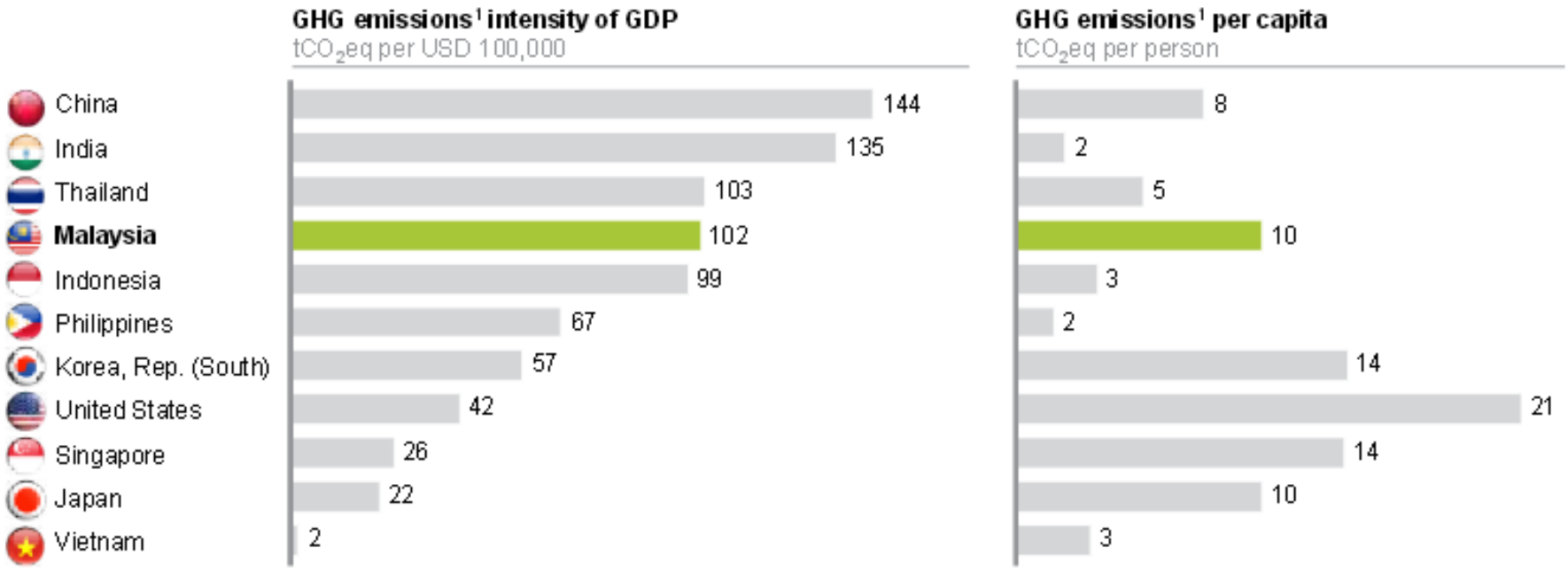
**3.0 Way forwards**

Green technology strategies 2020

# 02 Low Carbon Society Movement in Malaysia

## Issues and Challenges

- **Comparison of emissions intensity of GDP and per capita in 2011**




[1] Excluding land use change and forestry

Source: World Resources Institute – Climate Analysis Indicator Tools (WRI CAIT) and the World Bank

# 02 Low Carbon Society Movement in Malaysia

## Issues and Challenges

Rapid urbanization and industrialization

Relatively high carbon intensity dependence on fossil fuel


High private car ownership

Low density development and urban sprawl

Low efficiency appliances and low usage of renewable energy

# CLIMATE CHANGE AND SUSTAINABLE DEVELOPMENT – GREEN TECHNOLOGY


***As of 2013, we have managed to reduce carbon intensity by more than 33% vis-à-vis our pledged 40% carbon intensity reduction by 2020***

"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".

**Green Technology** has been identified as a driver of the future economy for the nation that would contribute to overall Green Growth and Sustainable Development

# 02 Low Carbon Society Movement in Malaysia

## The Importance of being low carbon


COP15
COPENHAGEN
UN CLIMATE CHANGE CONFERENCE 2009

**Malaysia Commitment**
Speech by Datuk Seri Najib Tun Razak, Prime Minister

"… Malaysia is adopting an indicator of a voluntary reduction up to 40% in terms of emission intensity of GDP by the year 2020 compared to 2005 levels."
17th December 2009

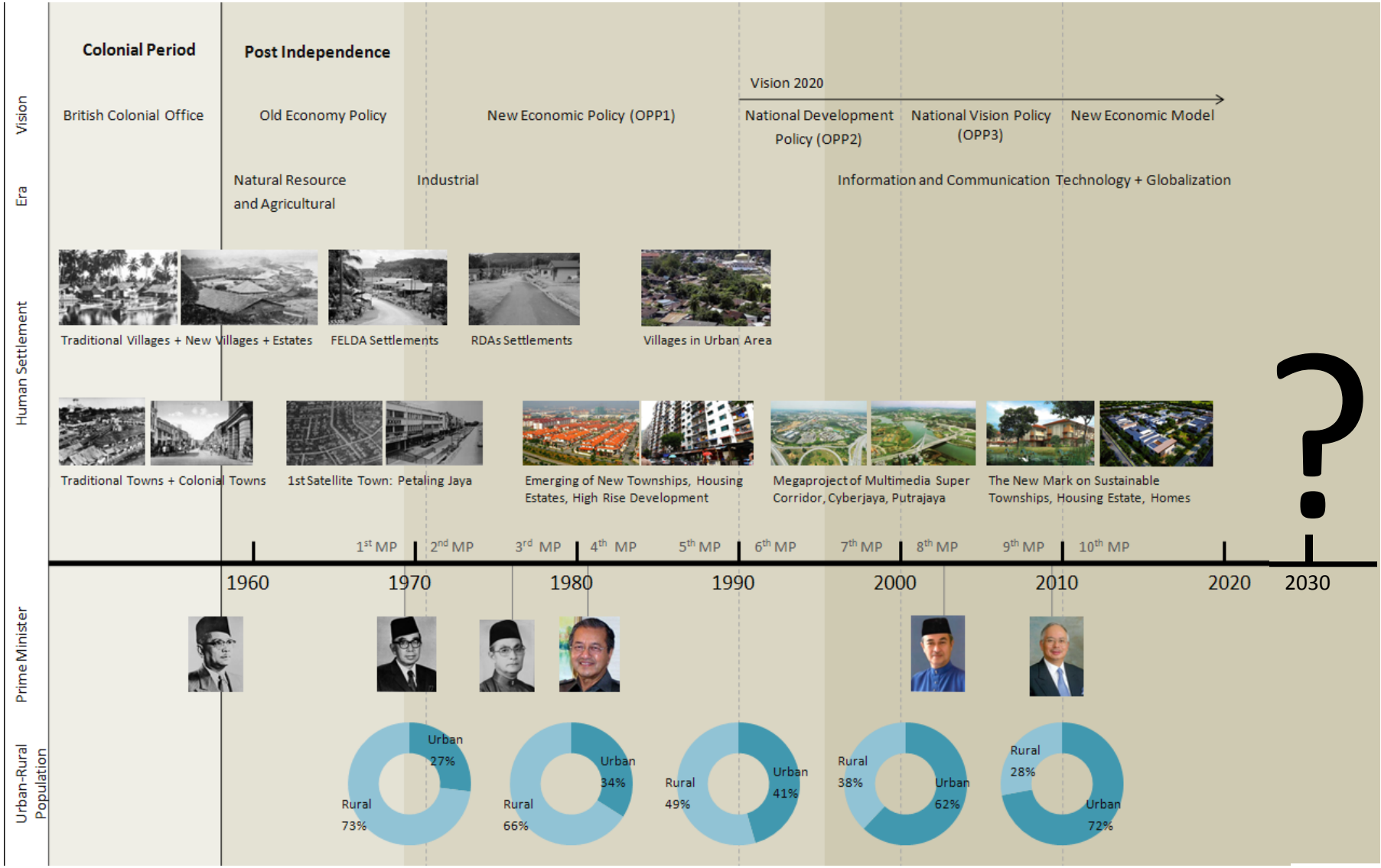
**Global Citizens + Responsibilities**
For the Earth, for our future generation


**Green as New Consumer Culture, New Market, New Growth**

**Money Saving**
Energy conservation and renewable energy

# 02 Low Carbon Society Movement in Malaysia

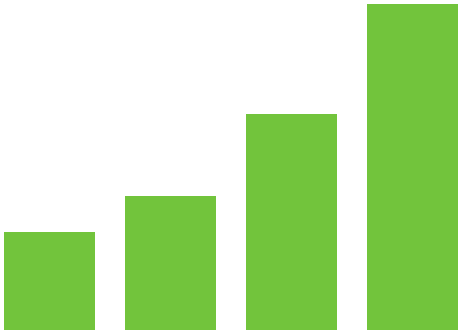
## The Pathway to Sustainable Urban Development




(Source: Ho Chin Siong, Teh Bor Tsong and Chau Loon Wai, 2011)

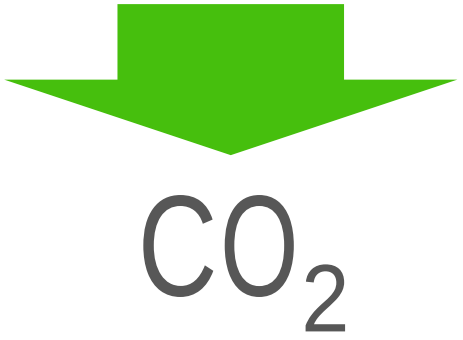
# ACHIEVEMENT IN GREEN TECHNOLOGY (2013)

ECONOMY



SOCIAL


ENVIRONMENT




CONTRIBUTION TO GDP:
RM7.9 billion (0.8%)

GREEN JOBS:
61,280

CARBON EMISSION REDUCTION:
11.6 million tonnes $CO_2$ eq/yr

Note: Contribution by Energy, Transportation, Building, Waste And Water Sectors

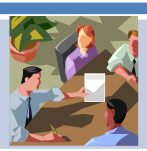
# CHALLENGES FACED BY GOVERNMENT TO ADOPT GREEN TECHNOLOGY

Market Readiness: GT products perceived as expensive. Scepticism and confidence in some GT products

Lack of understanding on GT leading to low green market demand

Infrastructure to support GT

Lack of innovative financing on GT projects- adverse risk taking

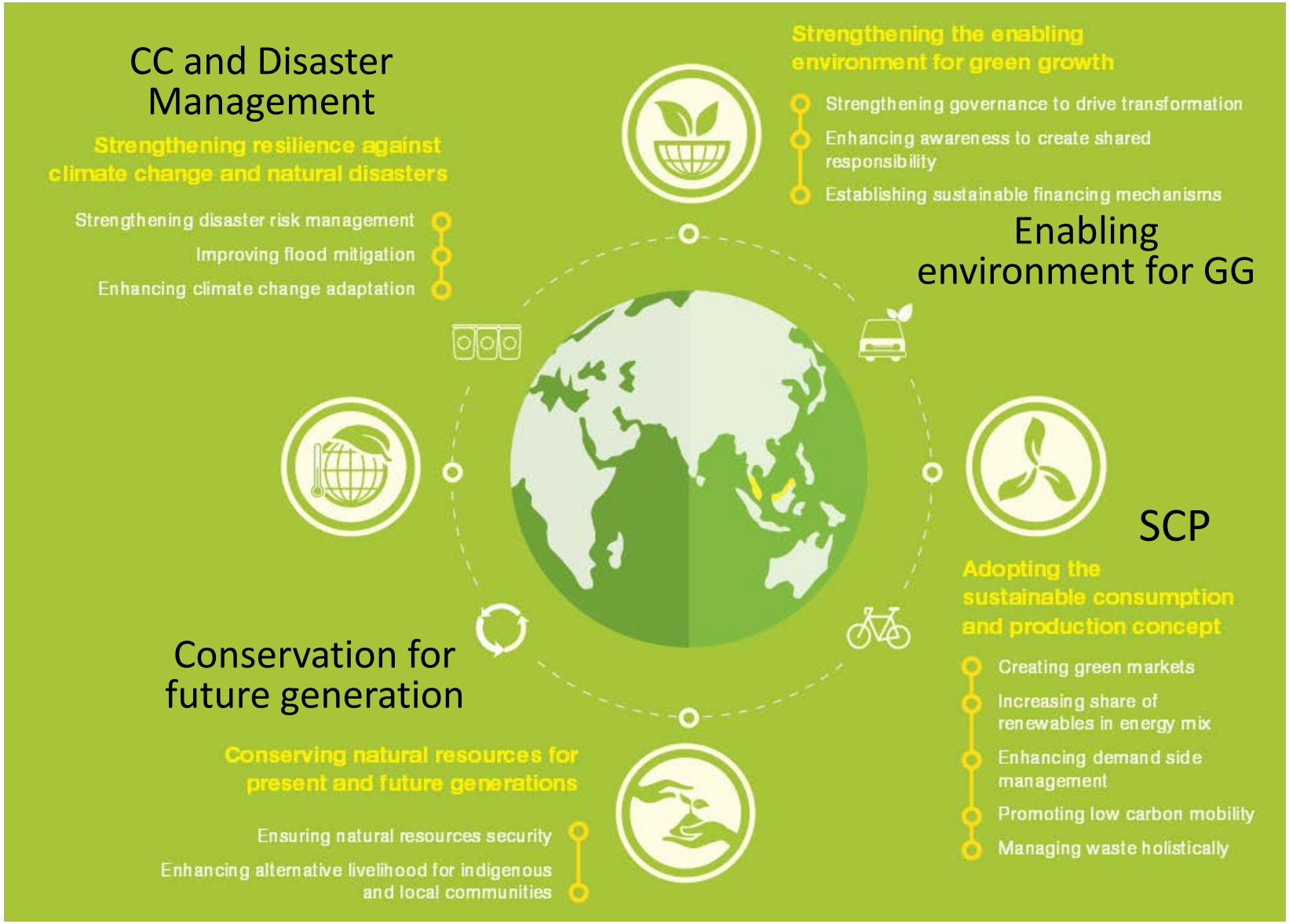


Lack of GT products in local market

Lack of local expertise throughout value chain

# 02 Low Carbon Society Movement in Malaysia

## Eleventh Malaysia Plan 2016-2020 (Green Growth Policy)



# 02 Low Carbon Society Movement in Malaysia

## Eleventh Malaysia Plan 2016-2020 (Green Growth Policy)

**Game Changer**

### Embarking on green growth

**Why is green growth important for Malaysia?**

Malaysia, like many countries across the world, is grappling with the challenge of balancing a growing population and demand, with a natural environment that is increasingly under stress. In the global context of increasing intensity and frequency of extreme weather events, adopting green growth has now become an imperative for Malaysia. It represents Malaysia's commitment to renew and, indeed, increase its commitment to the environment and long-term sustainability.

**What will success look like?**

A successful green growth trajectory will ensure:

- Detrimental impact of socio-economic activity on environmental systems is reduced;
- Natural capital, including forested areas, biodiversity, and water resources as well as its ecosystems, is valued and sustainably managed;
- Development gains are protected, thus ensuring wellbeing of people across generations; and
- Energy use is efficient and renewable energy is widely used.

**How will this be achieved?**

Achieving these aspirations requires a fundamental shift away from a 'grow first, clean up later' development model towards one that views resilient, low-carbon, resource-efficient, and socially inclusive development as an upfront investment that will yield future gains over multiple generations to come. This requires fundamental changes across every major dimension including how policy is determined, how institutions are regulated, how responsibilities are shared, and how people value their environment.

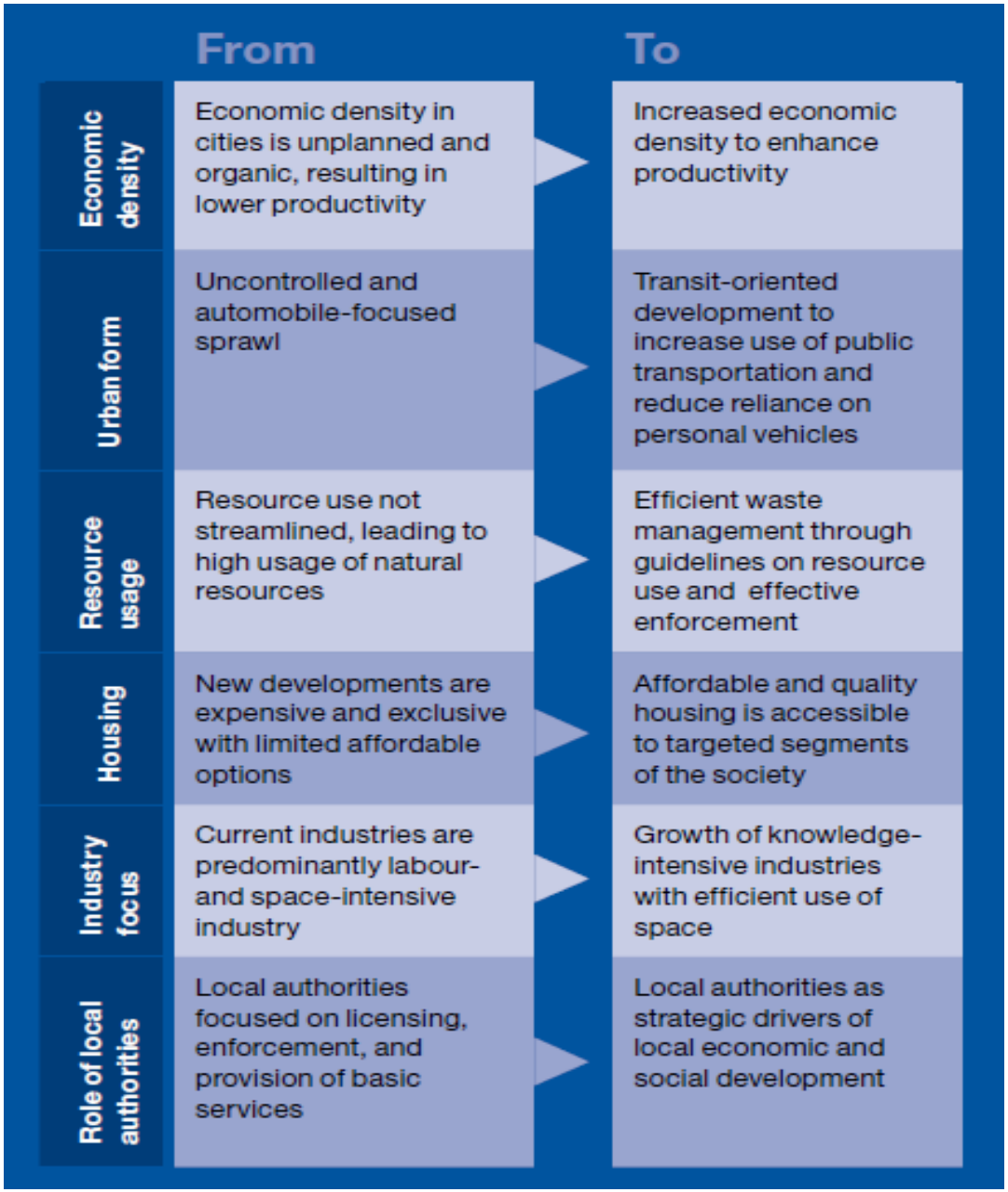
**Shift away from 'grow first and clean up later**'' development model towards one that is **resilient, low carbon, resource efficient and socially inclusive development**.

# 02 Low Carbon Society Movement in Malaysia

## Game Changer - Green Growth for Sustainability and Resilience

# INVESTING IN COMPETITIVE CITIES- Major Shifts

- **Economic Density**
  - Increase Density
- **Urban Form**
  - Transit Oriented Development (TOD)
- **Resource usage**
  - Efficient SWM
- **Housing**
  - Quality and Affordable
- **Industry Focus**
  - Knowledge Intensive Industries
- **Role of Local authorities**
  - Strategic drivers of local economy and social development



# INVESTING IN COMPETITIVE CITIES

- **POLICY**

  to reengineer and **spur economic growth**

  - development and renewal of cities to create **nodes for strong economic agglomeration**

- **KEYS PRINCIPLES**

  **- Liveability and stimulate economic growth**

- **HOW?**

  **-Creating density to increase efficiency.**

  **-**Expanding **TOD to enhance mobility**

  **-**strengthen **knowledge based clusters to facilitate agglomeration and innovation**

- **BROWN FIELD AND GREEN CITIES**

## Why is investing in cities important for Malaysia?

Cities have always played an important role in a nation's growth by providing investment and trade opportunities, as well as improving connectivity with rural or suburban areas. Today, global competition for investment and talent is increasingly between cities, making it imperative to invest in cities in order to attract and retain investment and talent. Kuala Lumpur, the largest city in the nation, is expected to contribute 14.8% of GDP in 2015. As Malaysia aims to re-engineer and spur economic growth, the development and renewal of cities will be crucial to create nodes for strong economic agglomeration.

## What will success look like?

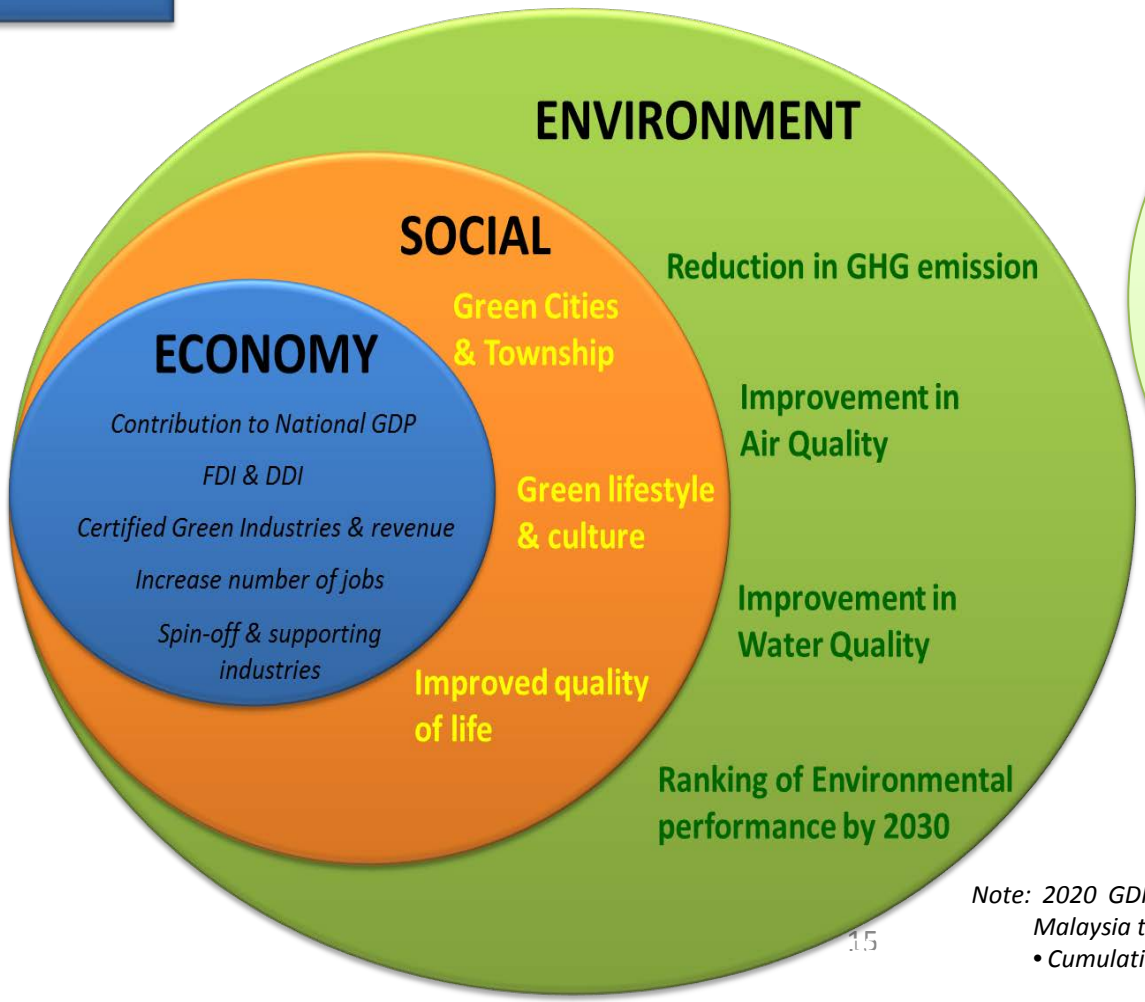
By 2020, four major cities in Malaysia will have undergone a step-change in their economic growth, importance as talent hubs, and liveability. City residents will be able to afford urban housing, have adequate public transportation systems, enjoy green and open spaces, and have access to economic opportunities that will enable them to provide their children with a better future. While these four cities – selected based on their strong fundamentals – will serve as pioneers, the transformation will be expanded to other cities over time. These cities will serve as role models for other cities in the country and region.

## How will this be achieved?

City Competitiveness Master Plans will be developed for four major cities as a start, based on key principles that increase liveability and stimulate economic growth. These include creating density to increase efficiency; expanding transit-oriented development to enhance mobility; and strengthening knowledge-based clusters to facilitate agglomeration and innovation. These master plans will take into account each city's competitive advantages, and will be formulated by the respective local authorities in consultation with the private sector and civil society. The major shifts that this game-changer will produce are summarised in the following chart.

# GREEN TECHNOLOGY STRATEGIES

**Economy** (enable players) → **Social** (GT adoption facilitated & experience immediate impact) → **Environment** (experience medium-long term impact)




## 2020 Goals

**By 2020:**

**GDP: RM22.4 billion**

**1.2% of national GDP (estimate)**

**Investments: RM28.0 billion***

**Green jobs: 144,590***

**0.7% of workforce**

**Malaysia can potentially achieve 3-4% of GDP by tapping the growth of regional markets by being export oriented**

*Note: 2020 GDP estimation is based on nominal GDP growth rate for Malaysia to become high income nation*

*• Cumulative figure*



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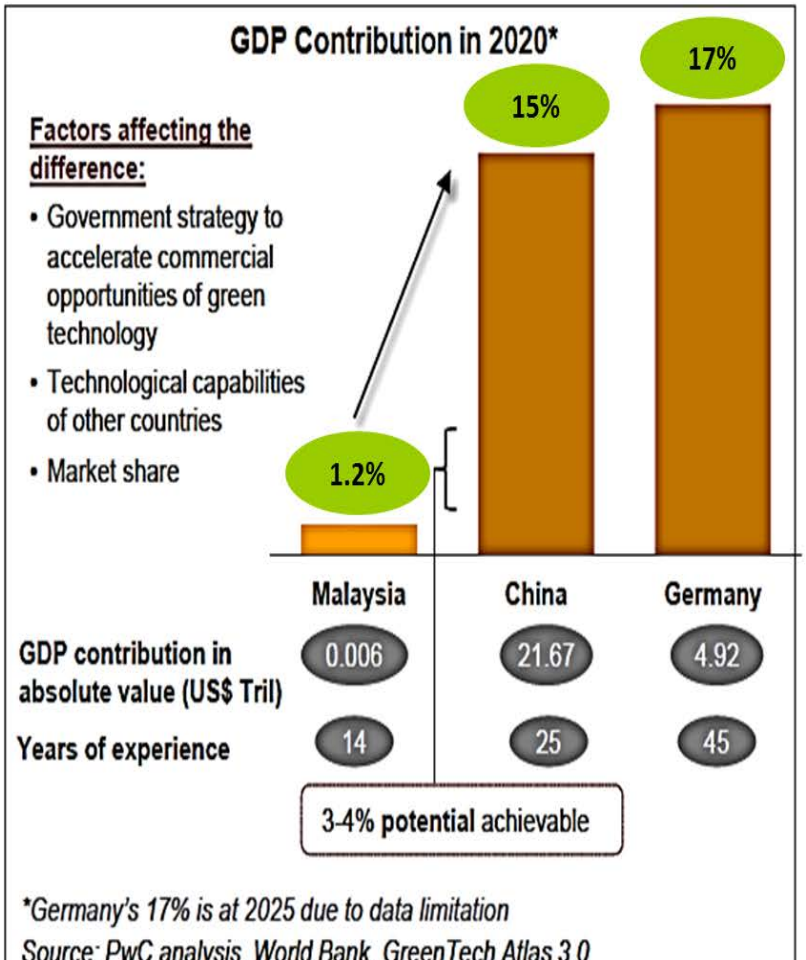
# IMPACT OF GREEN TECHNOLOGY TO THE MALAYSIAN ECONOMY

**It may be possible to achieve a higher GDP contribution from the green businesses if Malaysia commits to achieving the same capabilities or characteristics that some of the leading green technology nations have exhibited.**




**Malaysia can potentially bridge the gap and achieve 3-4% by:**

- Working towards the capabilities and characteristics which these countries exhibit
- Tapping on the growth of regional markets by being an export-hub
- Bringing in and specialising in new green technology industries, i.e. replicating our success stories

| Solar | Electrical and electronic |
|---|---|
| Since the operations of First Solar in 2007, its workforce has grown from 109 to 3,500 employees, and has contributed RM3.5 billion to GDP. | Electrical and electronic products have been the most traded items in Malaysia since the industry's inception in the 1960s. The industry contributes 24.5% to the manufacturing component in the GDP. |

*Source: SEDA, MATRADE*

KeTTHA
KEMENTERIAN TENAGA, TEKNOLOGI HIJAU DAN AIR

# IMPACT OF GREEN TECHNOLOGY: SOCIAL

**Improved Quality of Life:** Cleaner cities, reduced cost of living, creating green jobs, comfortable homes, better air quality, healthier society, greener future, sustainable water supply……

**Reduce air & noise pollution**

**Sustainable water supply**

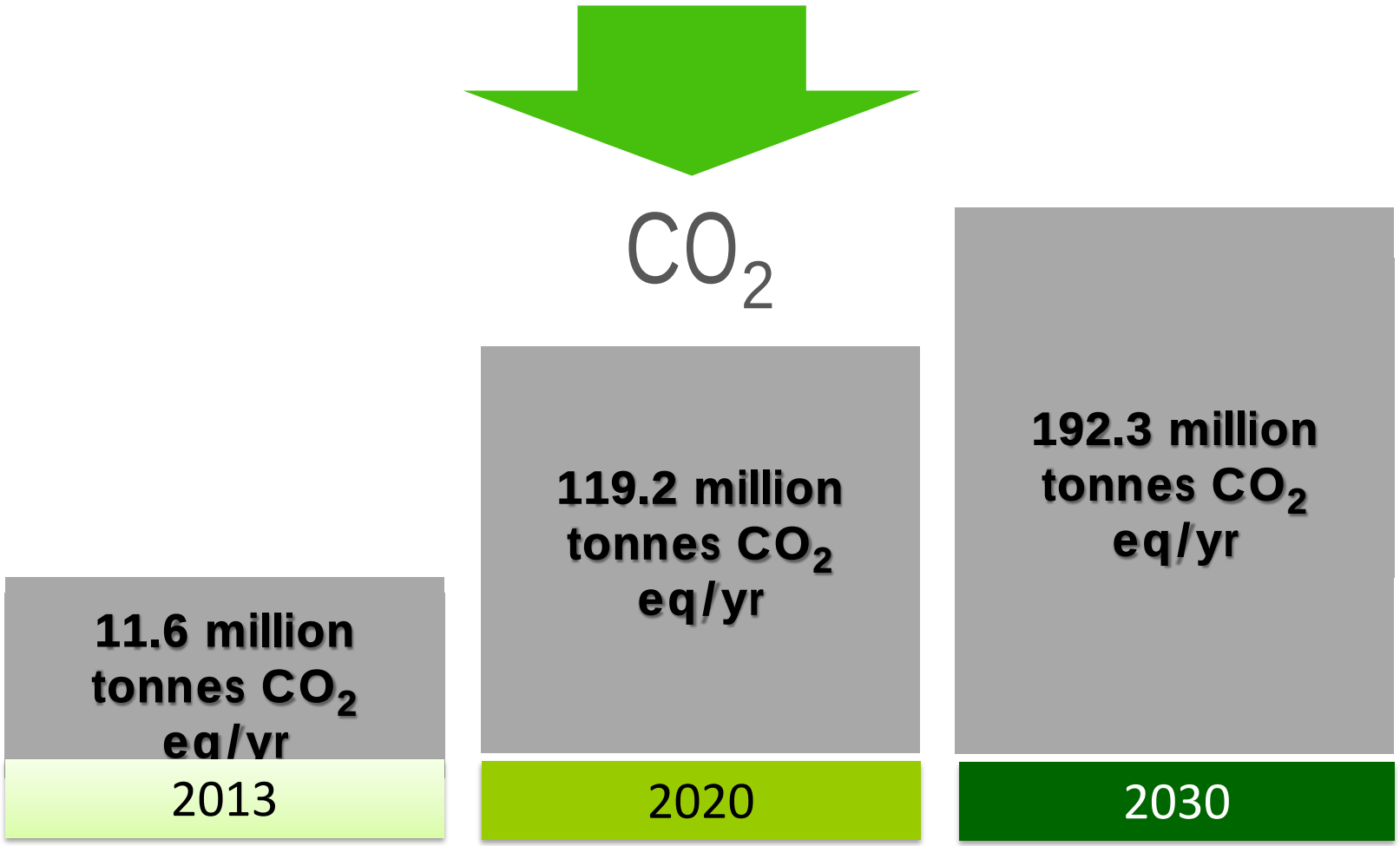
**Ability to generate own power**

**From sun to 'tank' – simplified & multi-functional infrastructure, reduced land usage**


**Active and healthy lifestyle & new mindset**


**Future green generation & innovators**

# IMPLICATION OF GREEN TECHNOLOGY : ENVIRONMENT




*Note: $CO_2$ reduction in year 2020 and 2030 subject to mitigation in place for the energy, transportation, building, waste and water sectors*

# 03 The Way Forward

**Green Technology policy is used** as the national strategic plan and implementation framework to catalyse Green Growth towards sustainable development and high income nation by 2020 and to position Malaysia as a Green Technology hub by 2030;

-

Eleventh Malaysia Plan (2016-2020) focuses on pursuing green growth for sustainability and resilience as one of the 6 development thrusts. And It also emphasises on game changers for green growth and investing on cities ( liveability and sustainability)

- Triple Baseline development (TBL) balance in terms of Improving Quality of life/ High Income Nation and Incisiveness is important priority for climate change and national development agenda.

# Projected Greenhouse Gas Emission Reduction in Iskandar Malaysia

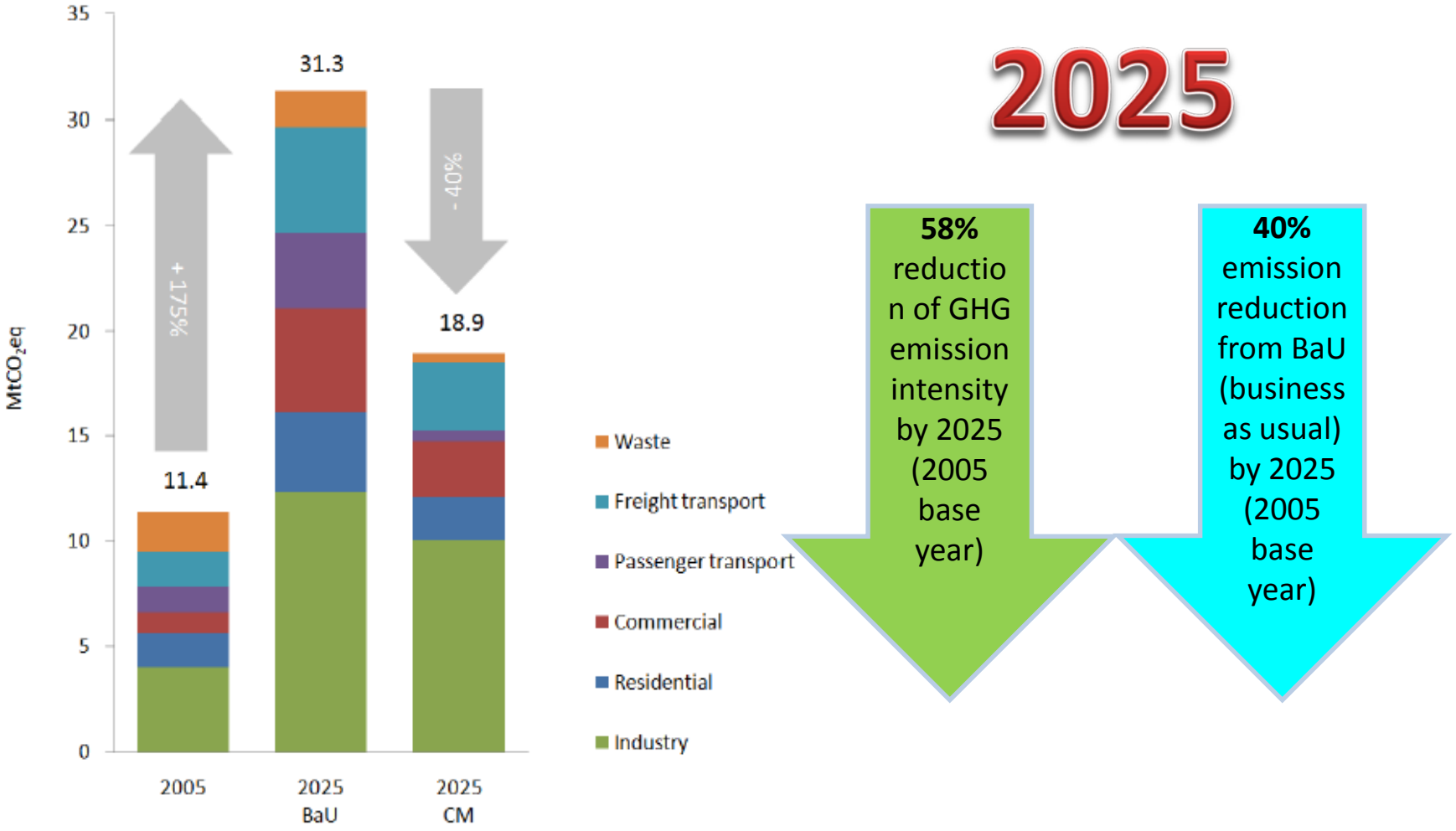
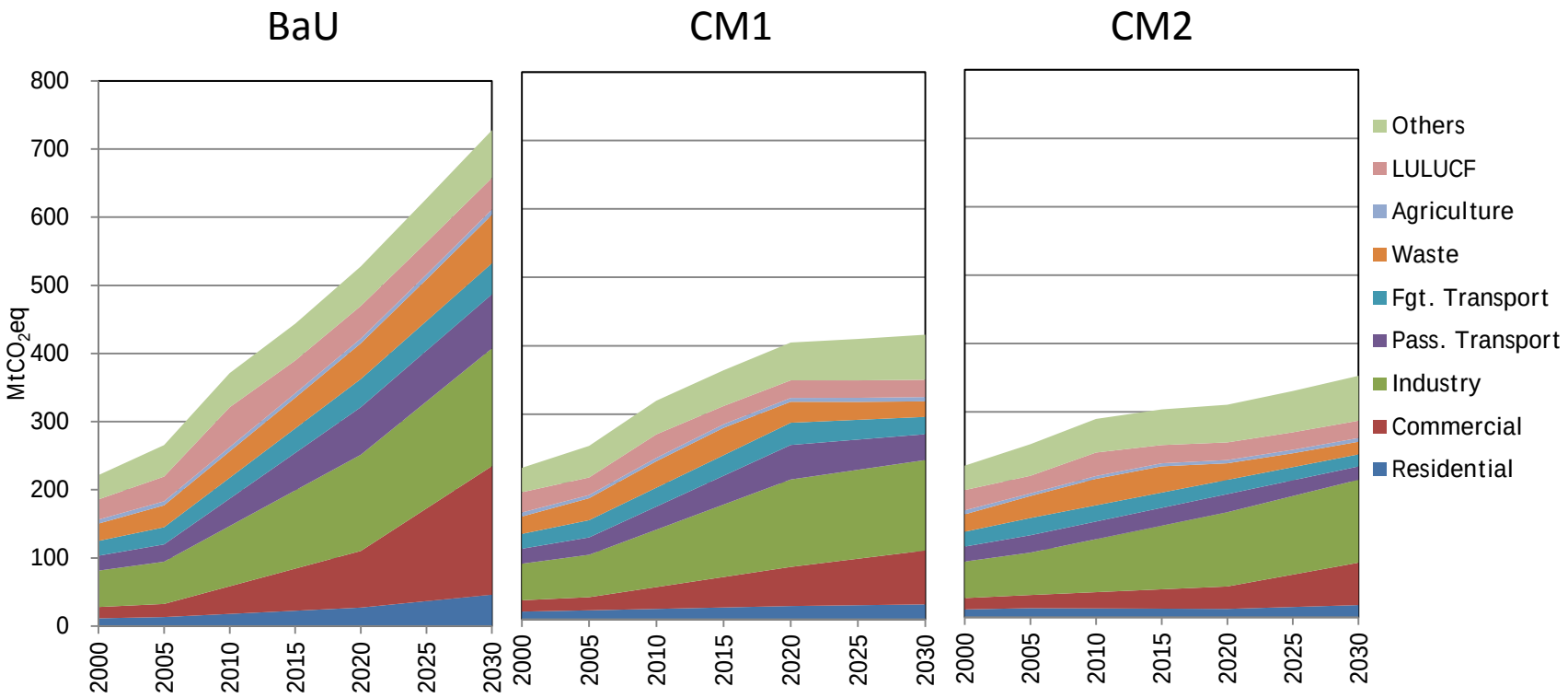



Figure 1: GHG emissions by sectors

# Malaysia - GHG emissions

- Energy has the largest contribution in both scenarios in all years.
- In BaU scenario, GHG emission increased by 99% (2020) and 174% (2030) from 2005
- In CM1 scenario, it was reduced by 22% (2020) and 42% (2030) from BaU, in CM2, 41% (2020) and 52% (2030).




Periods between projected years were interpolated linearly.

Thank You Terima Kasih 谢谢 धन्यवाद ありがとう

*Thank you for your attention!*

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