



MINISTRY OF ENERGY,
GREEN TECHNOLOGY AND WATER (KeTTHA)



ENABLING GREEN TRANSFORMATION

GREEN INITIATIVE SEMINAR
Hotel Casuarina@Meru, Ipoh
4 July, 2018

SYED AHMAD SYED MUSTAFA
Chief Operating Officer

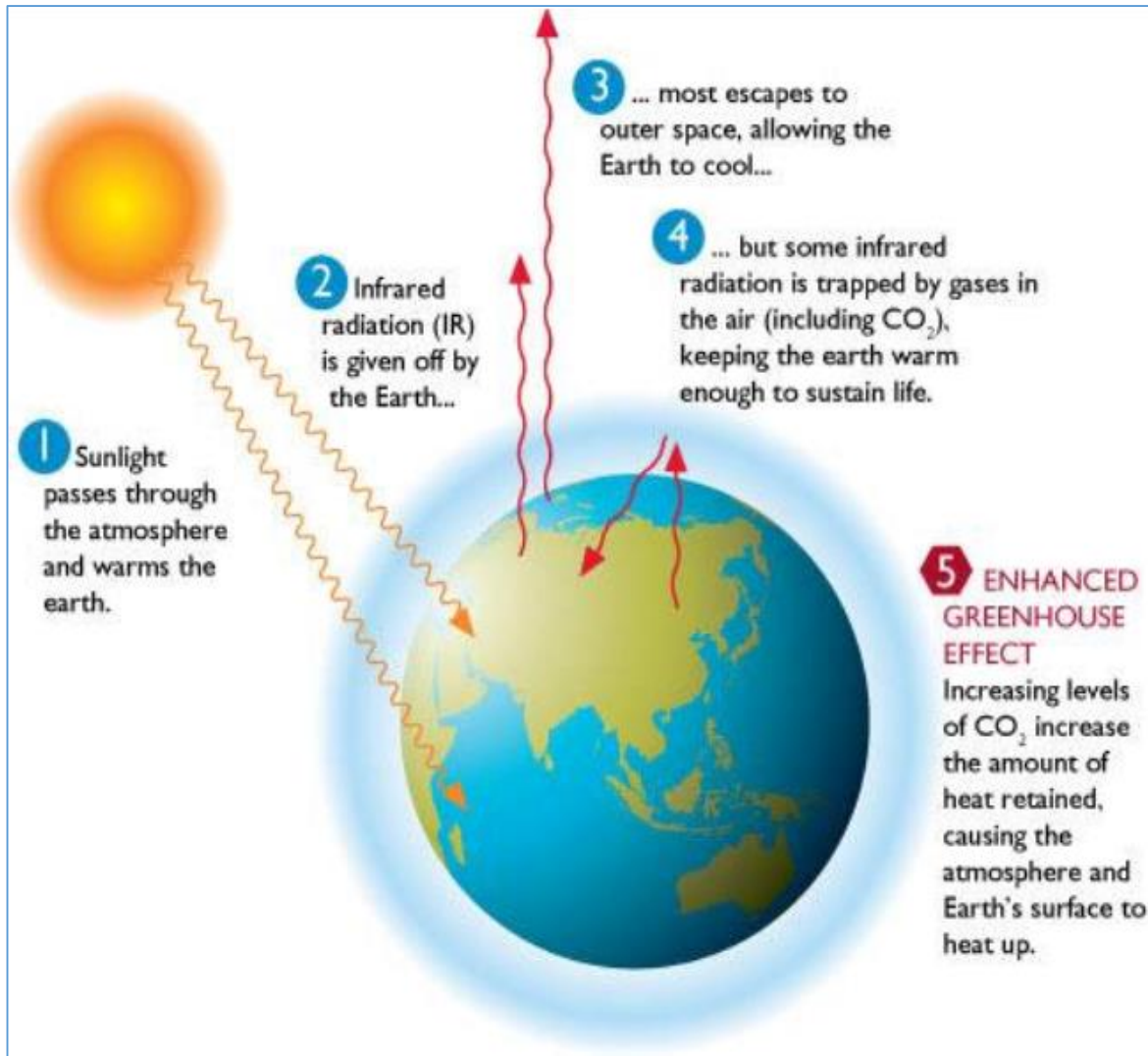
**CHAMPIONING
GREEN ECONOMY**



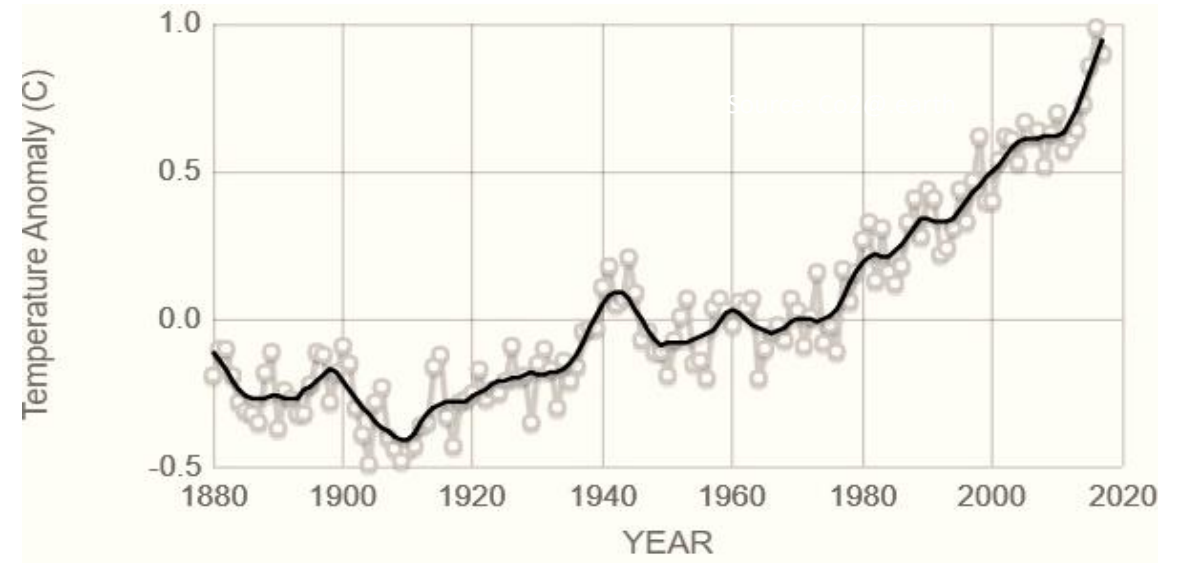
OUTLINE

- Climate Change - Revisit
- High Economic Growth vs Green Growth
- National Green Technology Policy
- About GreenTech Malaysia
- Public Support Policy Mechanism
- Other Enabling Initiatives
- Way Forward

CLIMATE CHANGE - Revisit



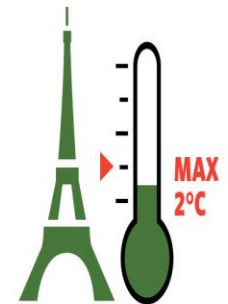
Change in Global Surface Temperature Relative to 1951-1980 Average Temperatures



Source: climate.nasa.gov

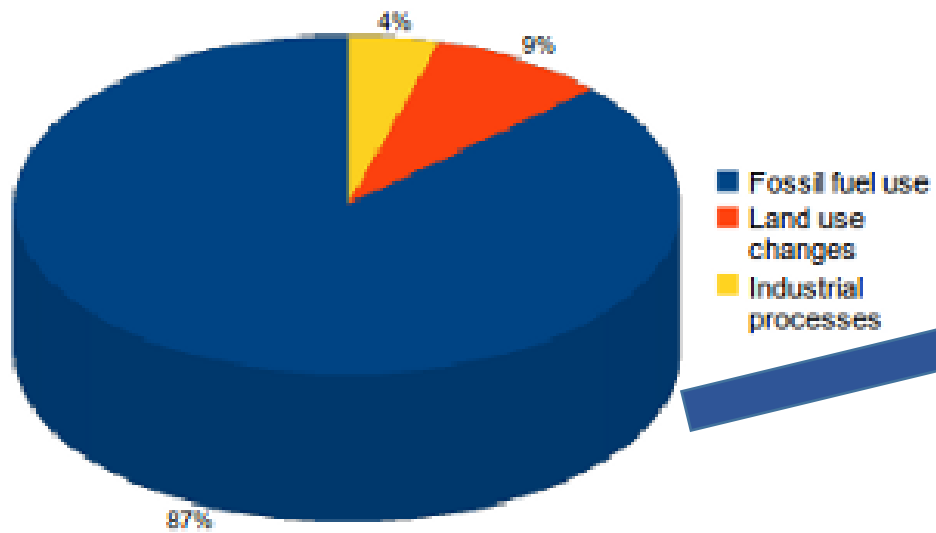


PARIS2015
UN CLIMATE CHANGE CONFERENCE
COP21·CMP11

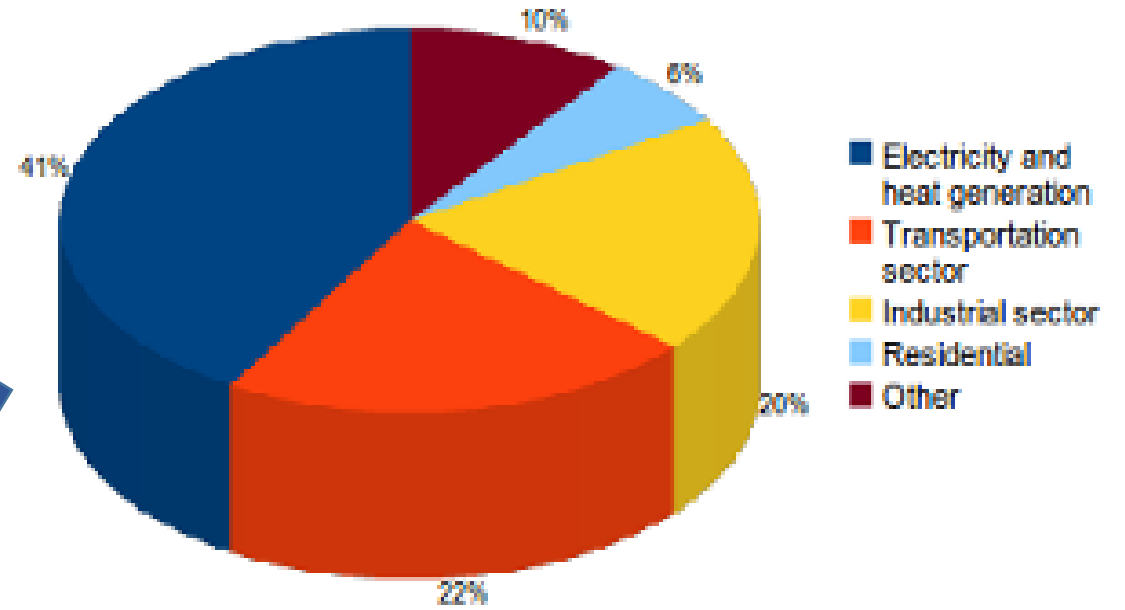


CO2 EMISSION

Human sources of carbon dioxide



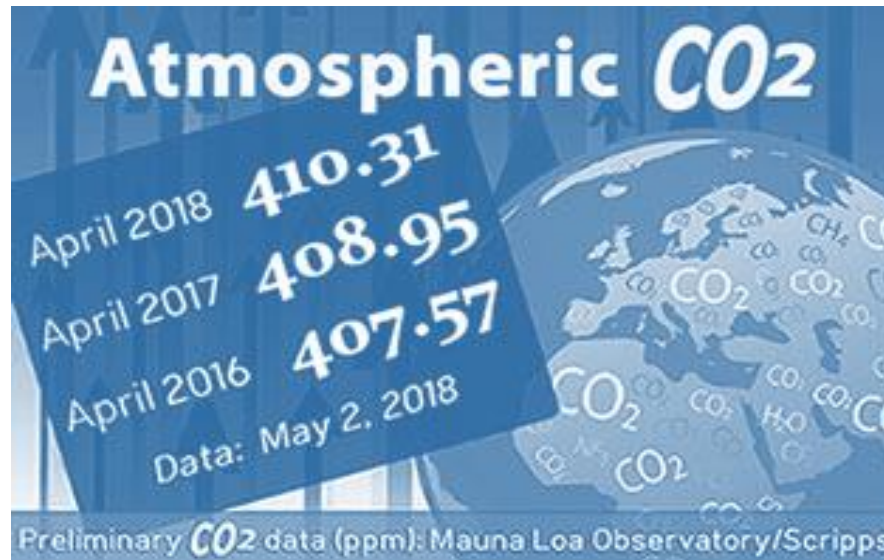
Carbon dioxide emissions from fossil fuel combustion



Source: Le Quéré, C. et al. (2013). The global carbon budget 1959-2011

The build up of human-generated greenhouse gases in the atmosphere is a threat to the ecology and biodiversity of the planet.

Humans are currently emitting around 30 billion tonnes of CO2 into the atmosphere every year.



IMPACTS

Rise in demand for energy, water, transport, urban development and agricultural infrastructure.

Global population growth – 9 billion by 2050



Environmental Impacts

Overall average annual temperatures increase.

Global warming leads to rising sea levels and increased coastal flooding.

Storms and heat waves increase in frequency and severity.

Affect biodiversity and ecosystem

Social Impacts

Severe extreme weather events lead to increased risks of death from dehydration and heat stroke, and injuries from intense local weather changes.

Food insecurity

Economic Impacts

Changing weather pattern affect agriculture, forestry, tourism and recreation.

Human health impacts lead to additional economic stress due to increase in government budgets on health and social support systems.

The impacts of climate change magnify the already existing challenges face by the developing countries such as widespread poverty, low levels of education, limited access to health services, and gender inequality.

ERRATIC AND EXTREME WEATHER CONDITIONS

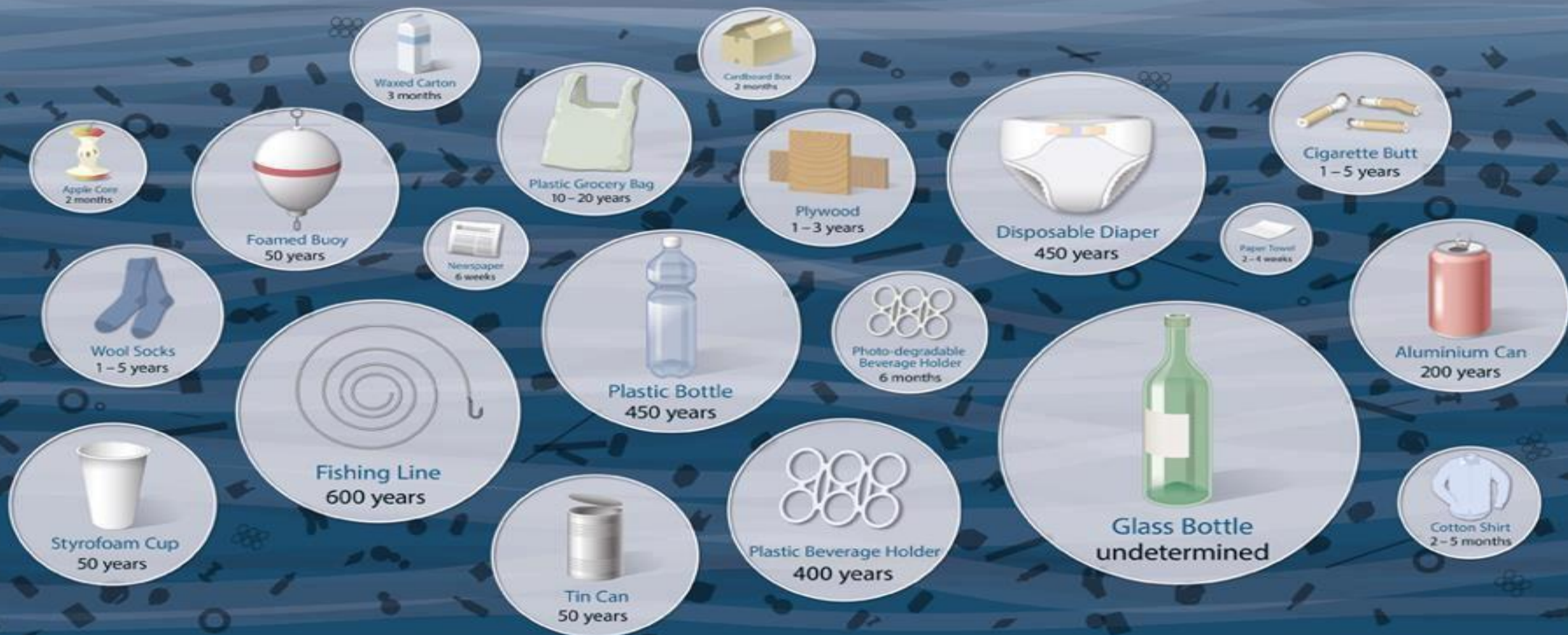


HUMAN IMPACTS TO ENVIRONMENT



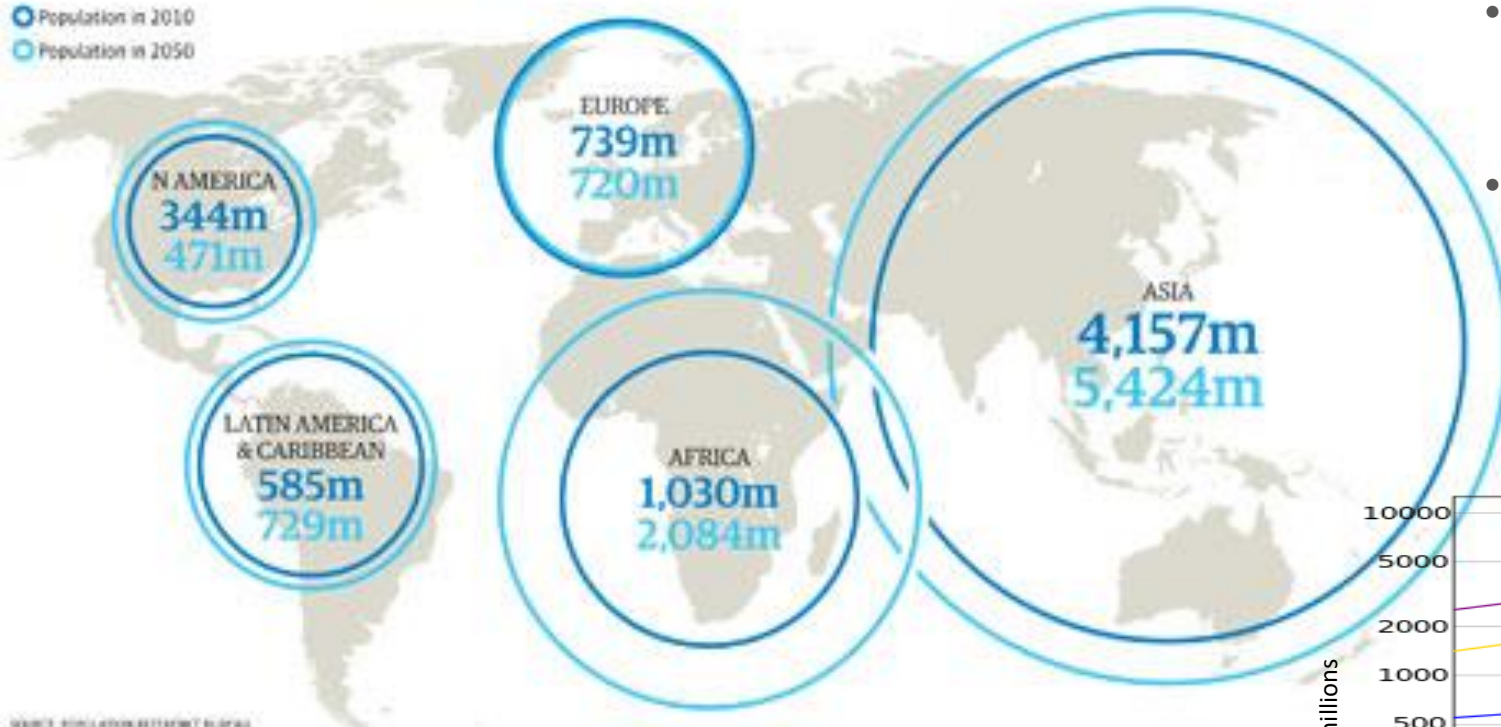
HOW LONG UNTIL IT'S GONE?

Estimated decomposition rates of common marine debris items



CONSUMPTION and CARBON EMISSION

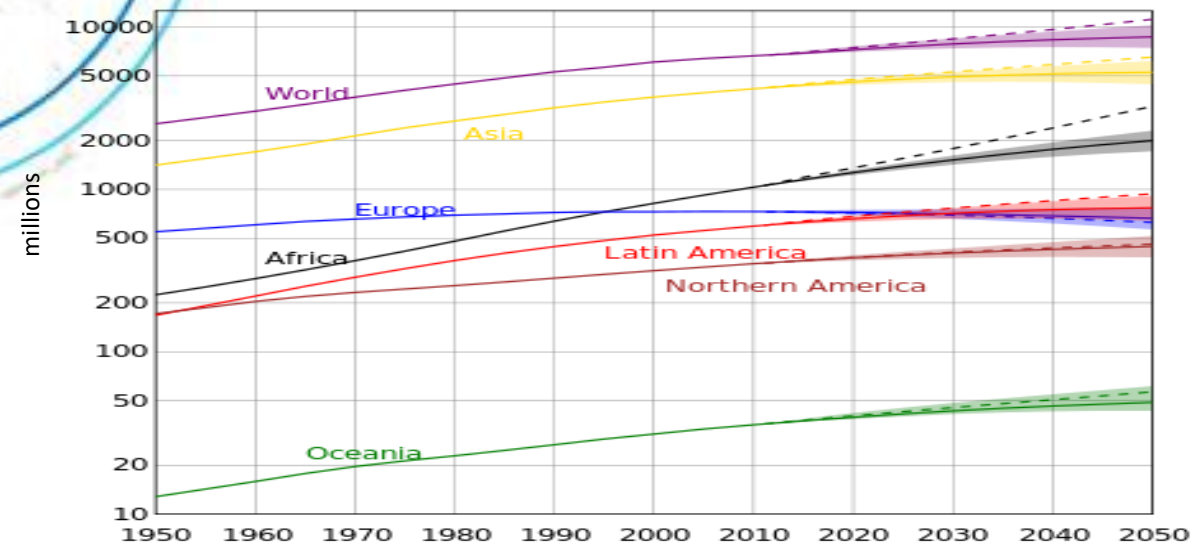
The world's wealthiest countries i.e 20% consume approximately 80% of the world's resources.



- Industrialized countries account for about 80% of the carbon dioxide build up in the atmosphere to date.
- Annually, more than 60 percent of global industrial carbon dioxide emissions originate in industrialized countries, where only about 20 percent of the world's population resides.

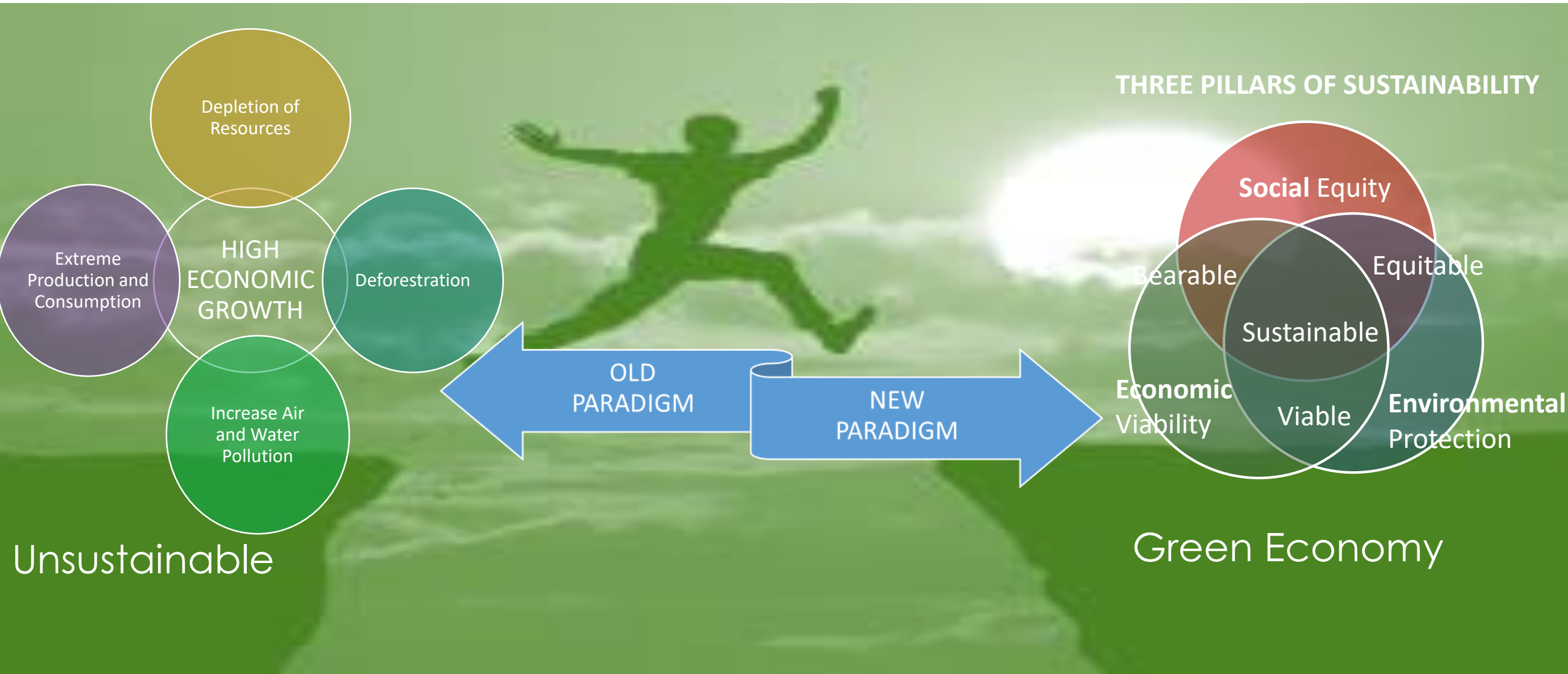
SOURCE: POPULATION REFERENCE BUREAU

- While the vast majority of GHG had been produced by developed nations for the past 100 years, most of the effects of climate change are being experienced in developing countries.
- Emissions are related to consumption, not just population numbers alone.



The combined effects of climate change and rapid population growth are increasing food insecurity, environmental degradation, and poverty level.

PARADIGM SHIFT: HIGH ECONOMIC GROWTH VS GREEN GROWTH



UN INITIATIVE: THE SDG'S



On 25 September 2015, the 193 countries of the UN General Assembly adopted the 2030 Development Agenda titled "**Transforming our world: the 2030 Agenda for Sustainable Development**".



The SDGs cover **social and economic** development issues including poverty, hunger, health education, **climate change**, gender equality, water, sanitation, energy, urbanisation, **environment**, and social justice.

MALAYSIA'S COMMITMENT

Green technology is a key contributor to realise Malaysia's commitment in reducing its GHG emission intensity

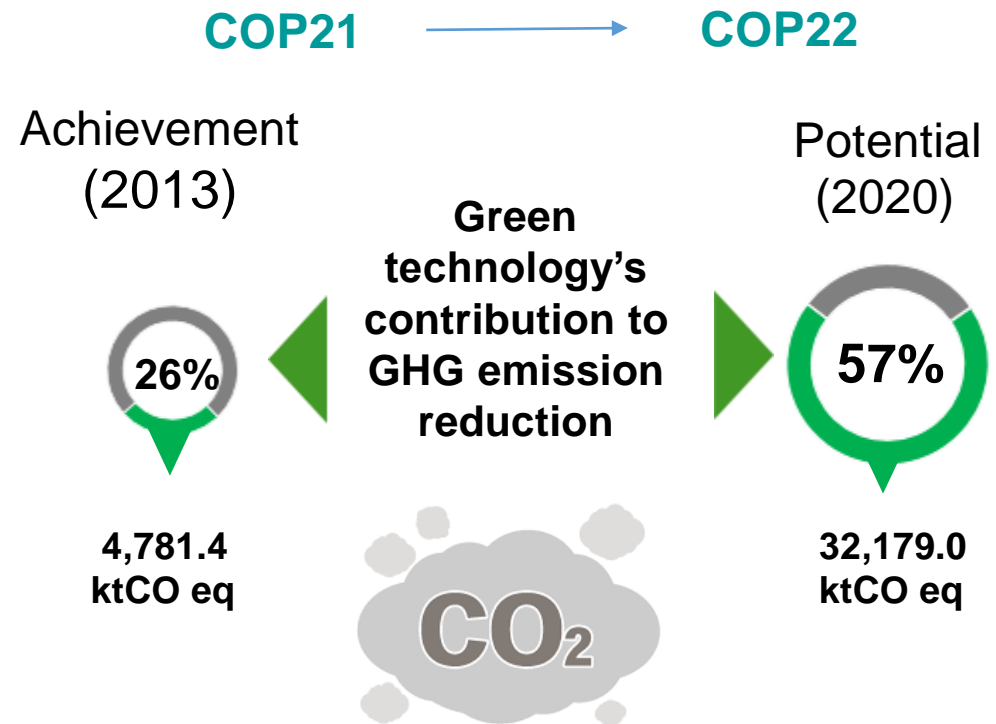
Malaysia's immediate goals

- Malaysia as a developed and high income nation by 2020 (GNI per capita of USD15,000)
- Up to 45%* reduction in GHG emission intensity of GDP by 2030 relative to 2005 levels

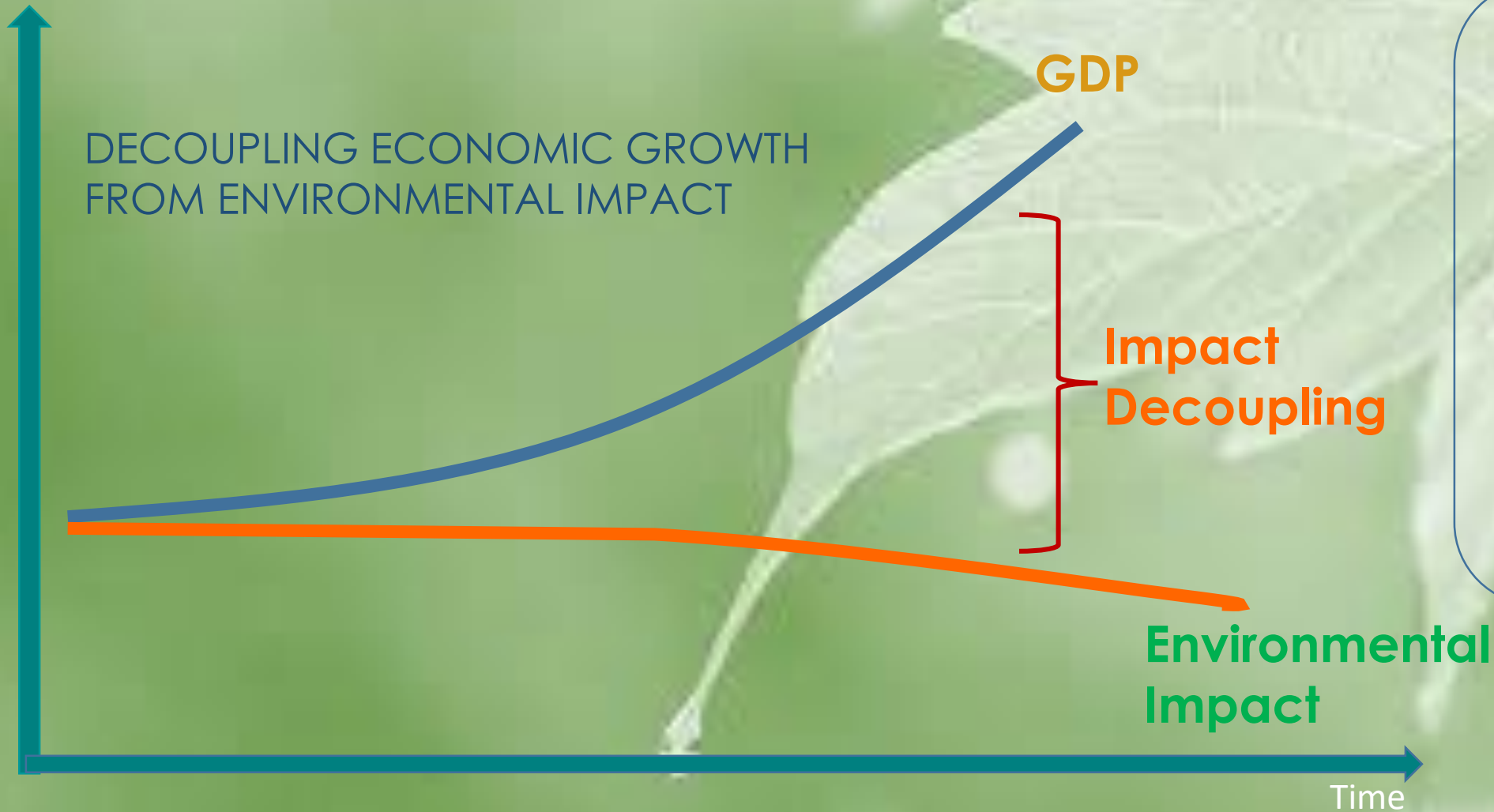
National nominal GDP in 2013:
RM1 trillion (based on Dept Statistics, Malaysia)

Green Technology contribution to GDP in 2012/2013:
RM7.9 bilion

*This consist 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.



THE CHALLENGE

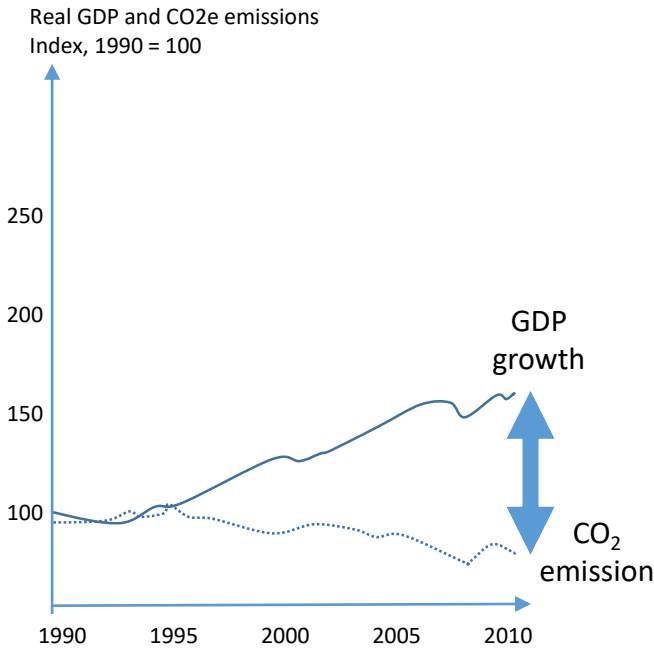


GREEN GROWTH

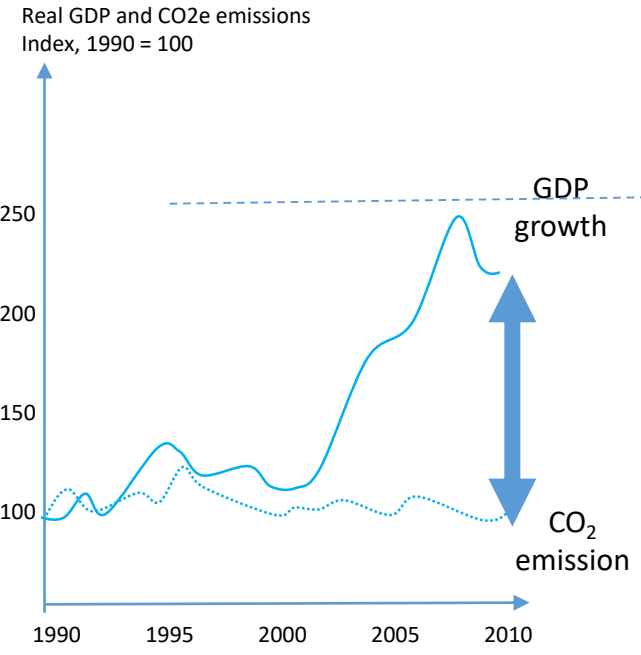
- ❖ Maintains or restores environmental quality and ecological integrity
- ❖ Decouples negative environmental impact from economic growth pressures

DECOUPLING ENVIRONMENTAL IMPACT FROM ECONOMIC GROWTH

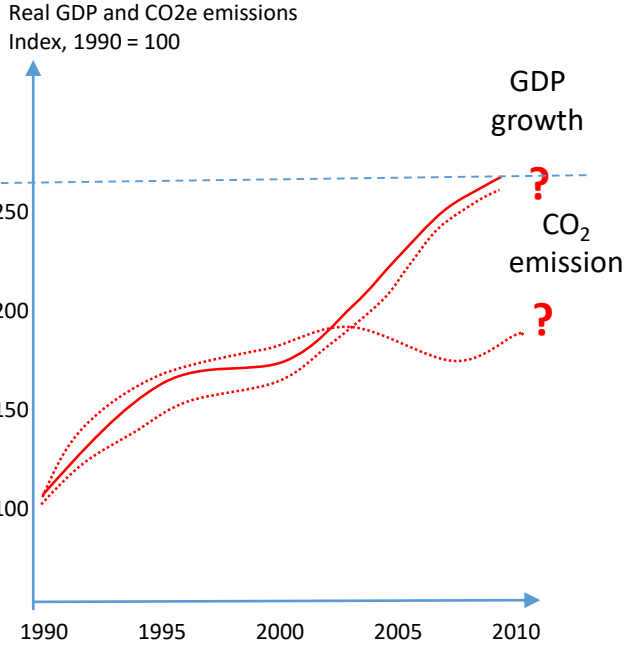
Advanced economies had demonstrated the decoupling of environmental impact from economic growth



Sweden (2013):
4.6 metric tons per capita



Denmark (2013)
6.8 metric tons per capita



Malaysia (2013)
8.0 metric tons per capita

Malaysia's carbon footprint per capita is already higher than its peer among the upper middle income countries

Decoupling natural resource use and environmental impacts from economy growth creates opportunities

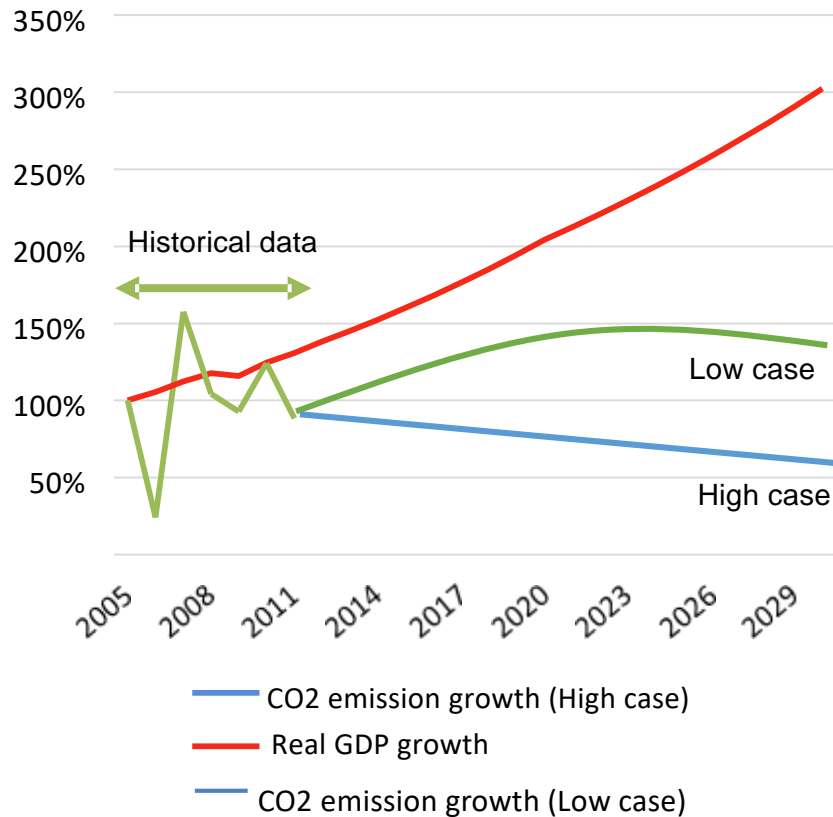
Source: The World Bank, Nordic Energy Research



DECOUPLING ENVIRONMENTAL IMPACT FROM ECONOMIC GROWTH

Decoupling natural resource usage and environmental impact from economic Growth – Malaysia Scenario

Real GDP and CO₂eq emissions Index, 2005 = 100



Decoupling should be a National aspiration in line with global best practice that will accelerate GHG 2030 achievement.

Low case

- Malaysia continue its economic growth to becoming a high income nation by 2020, emitting similar amount of GHG as the existing high income nations.
- Decoupling starts post-2020
- Malaysia will not be able to achieve its GHG emission reduction by 2030

High case

- Malaysia to reduce 35% of GHG emission intensity of GDP relative to 2005 scenario by 2030
- Decoupling has to start in 2011

Note: The projection is illustrative only. The actual scenario simulation has to be generated from a Malaysian carbon calculator

Source: The World Bank, Malaysia's Biennial Update Report (BUR) to the UNFCCC, 2016, PwC analysis

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NATIONAL GREEN TECHNOLOGY POLICY

LAUNCHED ON 24 JULY 2009

POLICY STATEMENT

GREEN TECHNOLOGY SHALL BE A DRIVER TO ACCELERATE THE NATIONAL ECONOMY AND PROMOTE SUSTAINABLE DEVELOPMENT.



MINISTRY OF ENERGY, GREEN TECHNOLOGY & WATER MALAYSIA (KeTTHA)

Responsible for the planning and formulation of policies for energy, green technology and water sectors, as well as to facilitate and regulate the growth of these sectors.



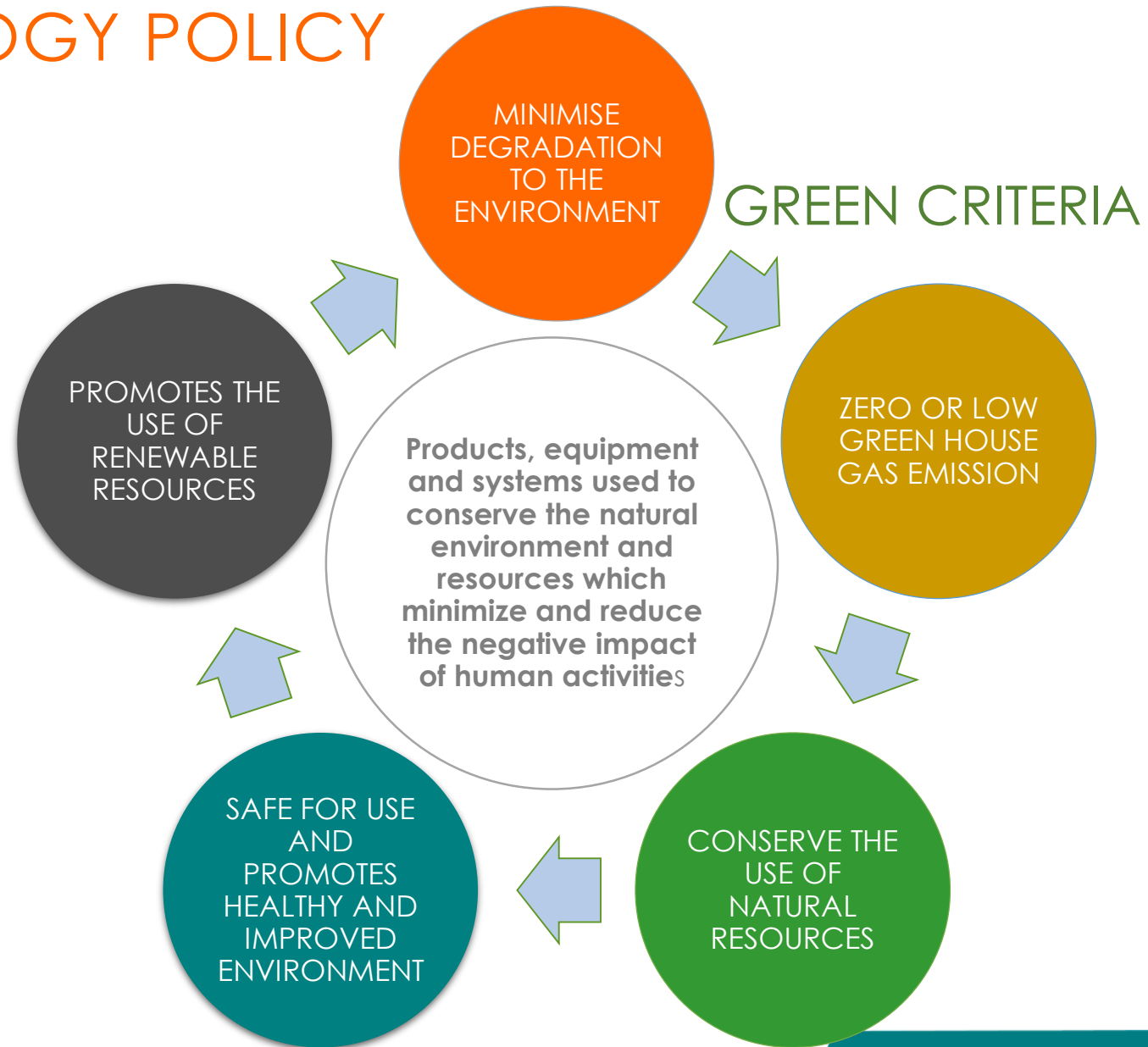
MALAYSIAN GREEN TECHNOLOGY CORPORATION (GREENTECH MALAYSIA)

A corporation under the purview of the Ministry of Energy, Green Technology & Water Malaysia act as the nation's lead agency in catalyzing green technology as a strategic engine for socio-economic growth.

NATIONAL GREEN TECHNOLOGY POLICY

What is Green Technology?

Green Technology is the development and application of products, equipment, and systems used to conserve the natural environment and resources, which minimizes and reduces the negative impact of human activities.



NATIONAL GREEN TECHNOLOGY POLICY

FOUR PILLARS OF GREEN TECHNOLOGY POLICY

ENERGY

Seek to attain
energy
independence &
promote efficient
utilization



ENVIRONMENT

Conserve and
minimize impact on
the environment



ECONOMY

Enhance the national
economic
development
through the use of
technology



SOCIAL

Improve the quality
of life for all



ABOUT GREENTECH MALAYSIA

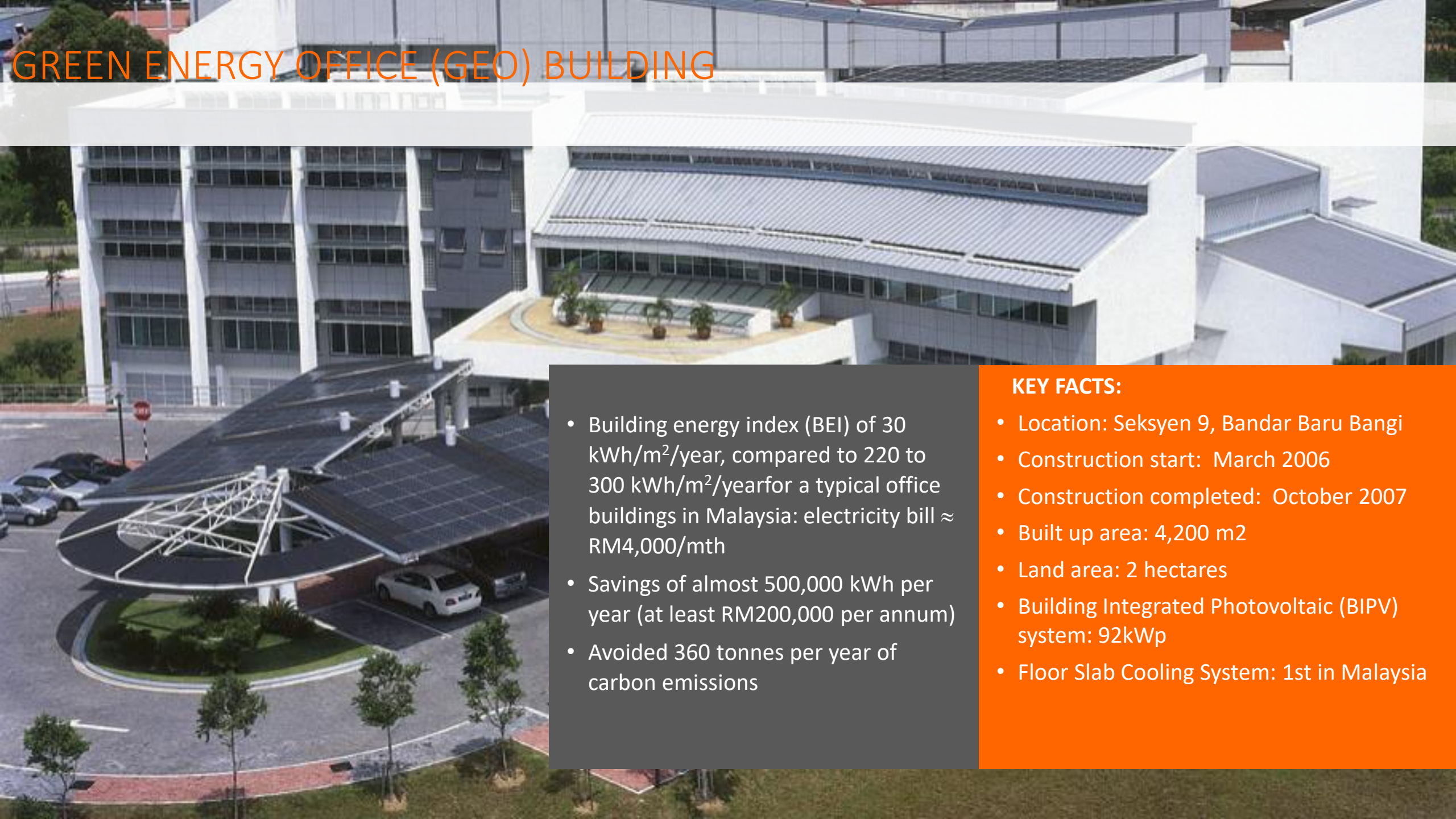
Established in 1998 as Pusat Tenaga Malaysia (PTM) or Energy Centre of Malaysia and restructured in 2010 as Malaysian Green Technology Corporation (**GREENTECH MALAYSIA**)



An agency under the purview of the Ministry of Energy, Green Technology & Water (KeTTHA), Malaysia

The leading organisation in spearheading green technology for green growth and sustainability.

GREEN ENERGY OFFICE (GEO) BUILDING



- Building energy index (BEI) of 30 kWh/m²/year, compared to 220 to 300 kWh/m²/year for a typical office buildings in Malaysia: electricity bill ≈ RM4,000/mth
- Savings of almost 500,000 kWh per year (at least RM200,000 per annum)
- Avoided 360 tonnes per year of carbon emissions

KEY FACTS:

- Location: Seksyen 9, Bandar Baru Bangi
- Construction start: March 2006
- Construction completed: October 2007
- Built up area: 4,200 m²
- Land area: 2 hectares
- Building Integrated Photovoltaic (BIPV) system: 92kWp
- Floor Slab Cooling System: 1st in Malaysia

GEO BUILDING PERFORMANCE

April 2018

	Actual	Conventional Building Monthly Baseline
Energy Cost (MYR)*	4,063	40,126.00
Energy Consumption (kWh)	8,013	78,833
Water Cost (MYR)*	479	4,560.00
Water Consumption (m3)	170	2,000
Solar Energy Generated (kWh)	10,750	NIL
Total CO2e Emission (Tonne)*	5,632	55.55

Note *: Based on TNB rate RM0.509 per kWh for electric, Syabas RM 2.28 per m3
 **: total CO2 is Energy & Water combined

Comparison (yearly)

	GEO as of Current Month	Conventional Building Baseline
Yearly Net Energy (kWh)	121,047	946,000
Net BEI (kWh/m2/year)	22	220

Note: * Net Floor Area (NFA) = 4,300 sq.m
 **Average conventional building's BEI is at 220kWh/m2/year, without any Solar Photovoltaic system installed

Waste (recycle) (kg) cumulative since Jan 2018

396.67

*this is waste recycled by staff, not the building (iCycle Programme)



Equivalent Trees

19,100

Note: Based on 1 generic tree absorb 0.03 tCO2/year

Percentage reduction

87%

Tonne CO2e reduction

573

Note: Based on Emission Factor 0.694 kgCO2

Welcome to the GEO Building
 ~ Green Energy Office Building ~
 Operational since Nov 2007

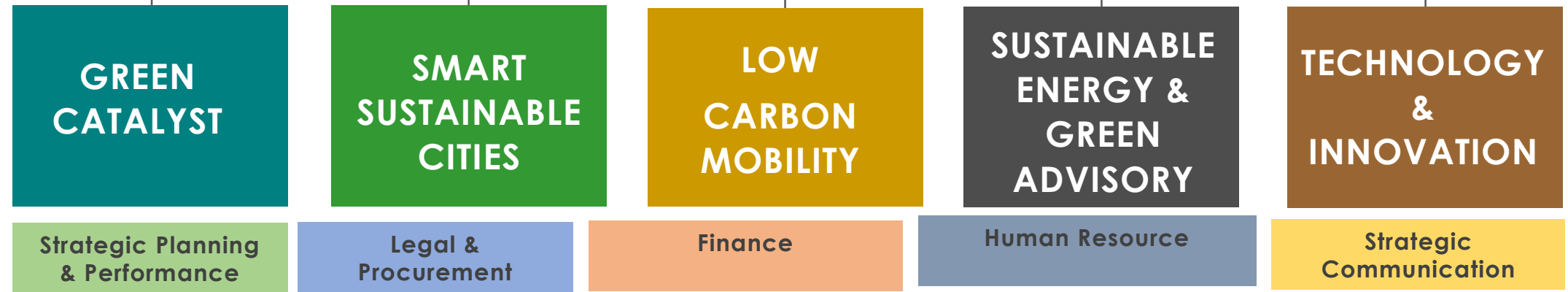


TrackOM Display
 VOD



ORGANISATION STRUCTURE

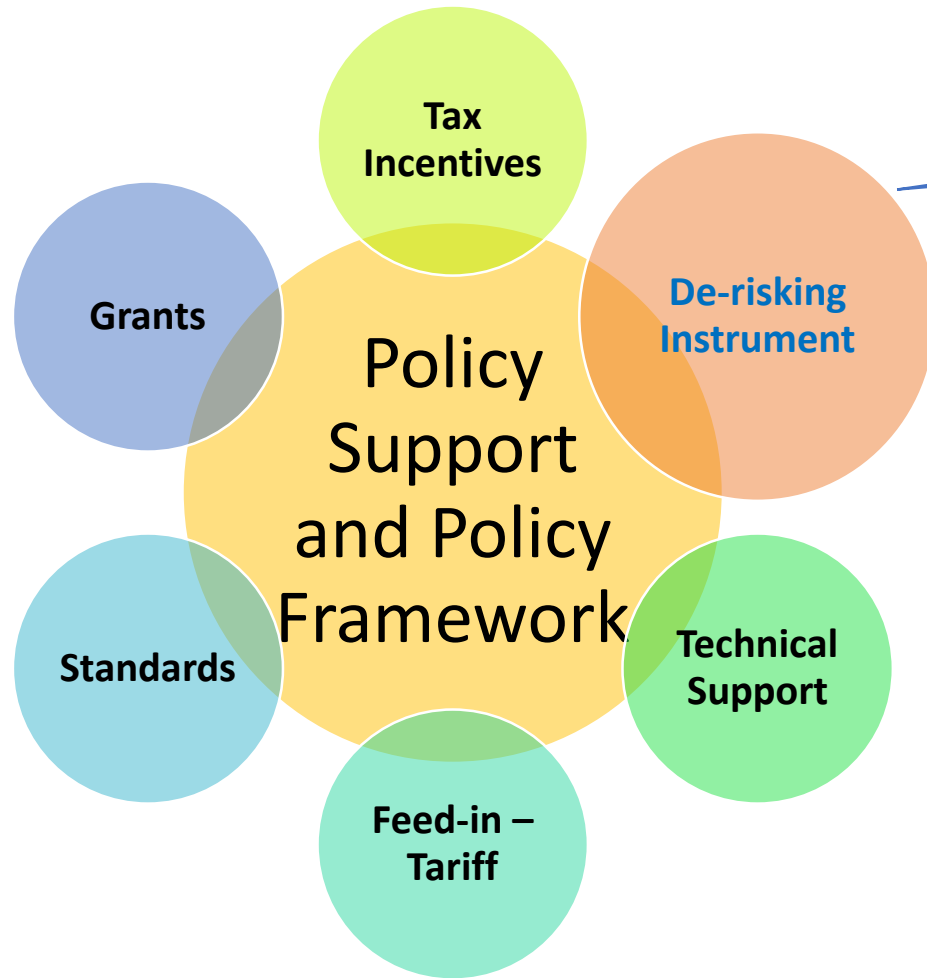
Vision: The leading organisation in spearheading green technology for green growth and sustainability
Mission: Championing Green Economy through Green Technology and Green Culture



IMPACT OF GREEN TECHNOLOGY ADOPTIONS AND DEPLOYMENT

ENVIRONMENT: reduction of carbon emissions;
ECONOMY: increase in GNI/GDP and investments;
SOCIAL: increase in high-income jobs and knowledge workers;
ENERGY: reduction in fossil-fuelled power and increase in renewables.

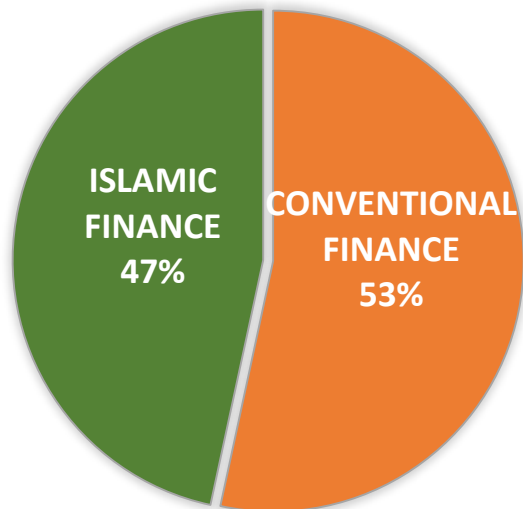
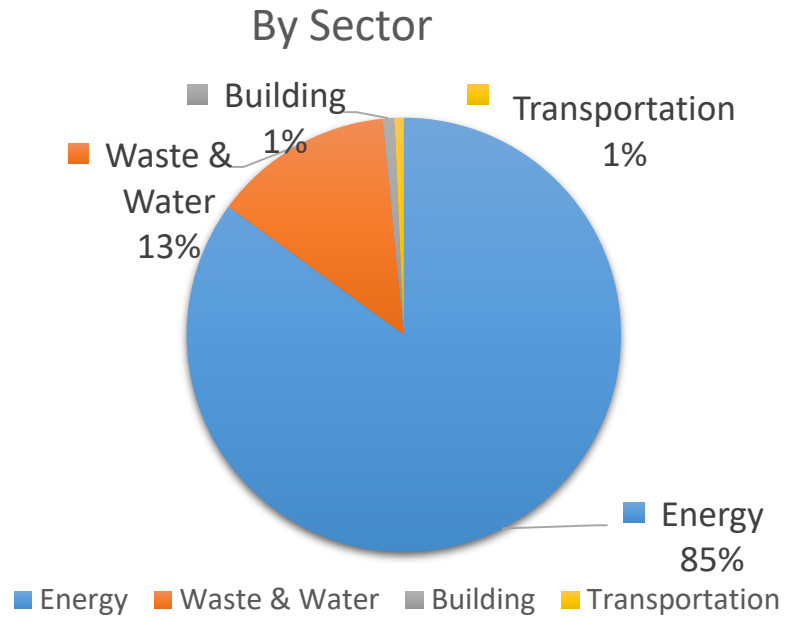
POLICY SUPPORT MECHANISM FOR GREEN INVESTMENTS IN MALAYSIA



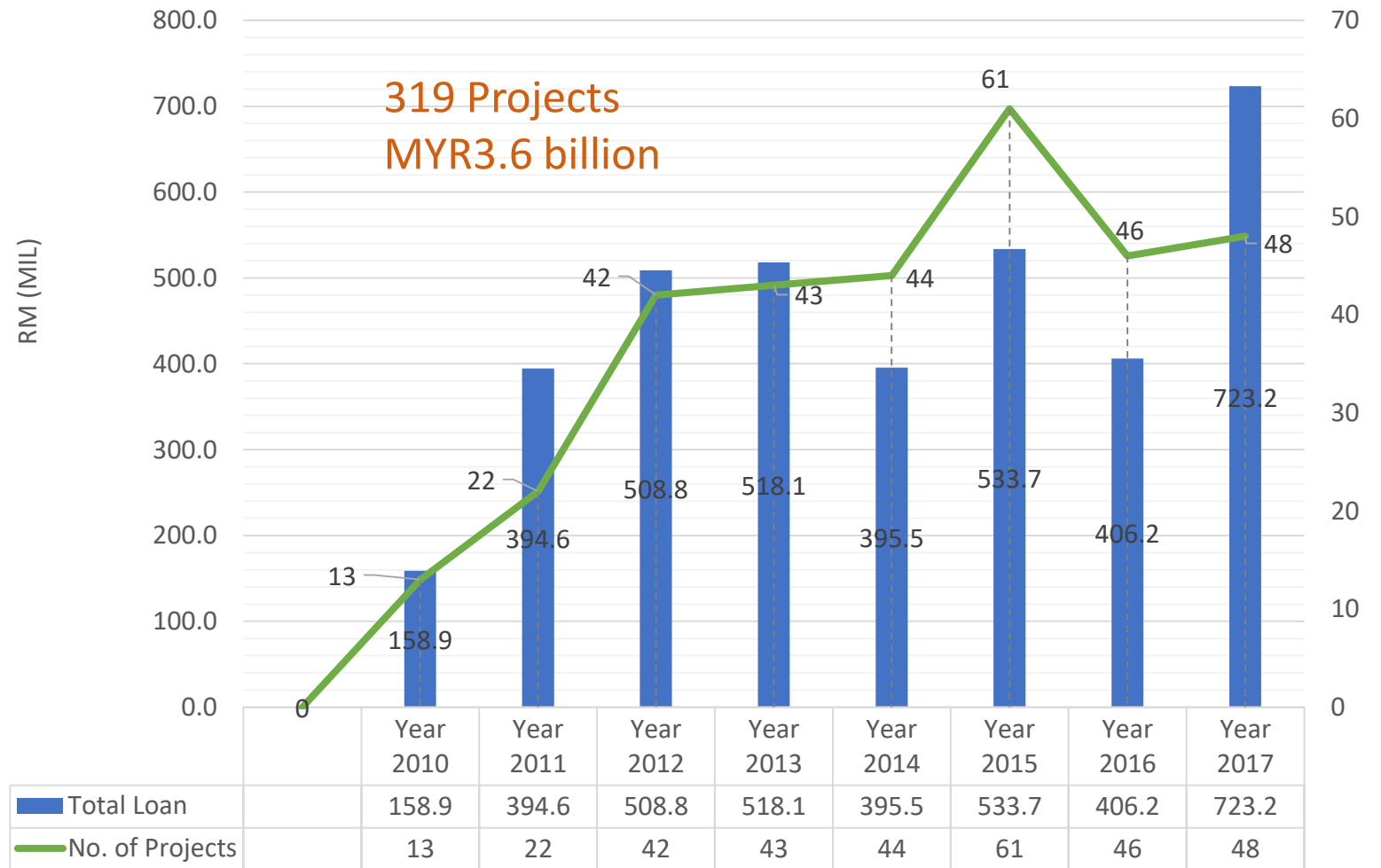
GREEN TECHNOLOGY FINANCING SCHEME

- Loan guarantee scheme introduced in 2010 till 2017 with a total target financing approval of RM3.5 billion.
- Objective is to promote green investments by providing easier access to financing and at a lower financing costs.
- Incentives:
 - 60% Government Guarantee on financing provided by financial institutions.
 - 2% rebate on interest/profit rate charged by financial institutions.

GTFS PERFORMANCE 2010 – 2017



Financing Approvals (MYR million)



Mobilise green investment and mitigate financial risks

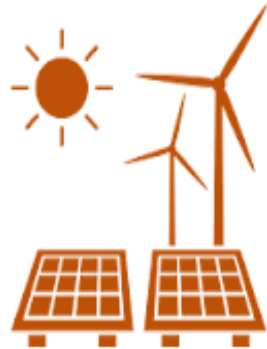


GTFS EXPECTED IMPACT

92% SME'S



PARTICIPATING
FINANCIAL
INSTITUTIONS:
28



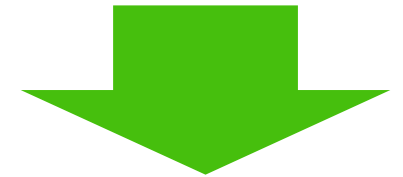
GREEN PROJECTS:
319



GREEN
INVESTMENTS:
MYR7.05 billion



EMPLOYMENT
CREATION:
5,265



CO₂

GHG EMISSIONS
REDUCTION:
3.784mtCO₂eq/yr

OTHER ENABLING INITIATIVES

01 RE and EE incentives will be extended beyond 31 Dec. 2015

02 Green Technology Incentive includes more qualifying activities

03 Incentives for establishment of Waste Eco Park

TAX INCENTIVES FOR GREEN INDUSTRY

GREEN INVESTMENT TAX ALLOWANCE/ INCOME TAX EXEMPTION

IGEM 2018
INTERNATIONAL GREENTECH & ECO PRODUCTS EXHIBITION & CONFERENCE MALAYSIA

SAVE THE DATE
17-20
OCTOBER 2018

MyHIJAU MARK & DIRECTORY

Available on the **App Store** and **Google play**

GREEN CERTIFICATIONS

CERTIFIED ENERGY MANAGER TRAINING PROGRAMME

CERTIFIED PROFESSIONAL M&V

CHARGING STATIONS

ELEVENTH MALAYSIA PLAN 2016-2020

ANCHORING GROWTH ON PEOPLE

GOVERNMENT GREEN PROCUREMENT

LOW CARBON CITIES FRAMEWORK & ASSESSMENT SYSTEM

KeTIBA

LOW CARBON CITIES FRAMEWORK



KEY ACHIEVEMENTS

ADVISORY

10 Policy / Blueprints



211 Registered Companies
1,330 products & services

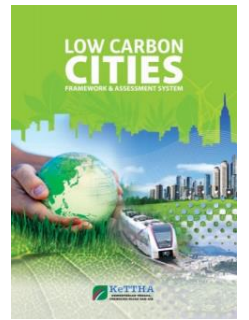
PROCUREMENT

30 Product Groups
12 Ministries / Agencies



MOBILITY

234 ChargeEV Stations



52 LCCF Partners
Diamond Recognition
Majlis Perbandaran Hang Tuah Jaya
Majlis Perbandaran Subang Jaya
University Malaya
University Teknologi Malaysia

SUSTAINABLE CITIES

20 organisations certified with EMGS



IGEM

>RM10 billion business leads
> 300,000 visitors



GREEN SKILLS

6,961 Skill worker trained
2,705 Certified Energy Manager
265 Certified Professional M&V



GREEN FINANCING

GREEN TECHNOLOGY FINANCING SCHEME
Empowering Green Businesses



319 Projects
RM3.5b in financing
RM7b green investments



Design 2R1: Vertical Logo

WAY FORWARD

Lead organisation in spearheading Green Technology for green Growth & Sustainability



LEAD AGENCY IN PROMOTING GREEN TECHNOLOGY
DEPLOYMENT

CENTRE FOR REFERENCE FOR GREEN TECHNOLOGY

Thank You

Syed Ahmad Syed Mustafa
COO

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