

LINKING GHG INVENTORY TO MITIGATION ACTIONS

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CONTENT

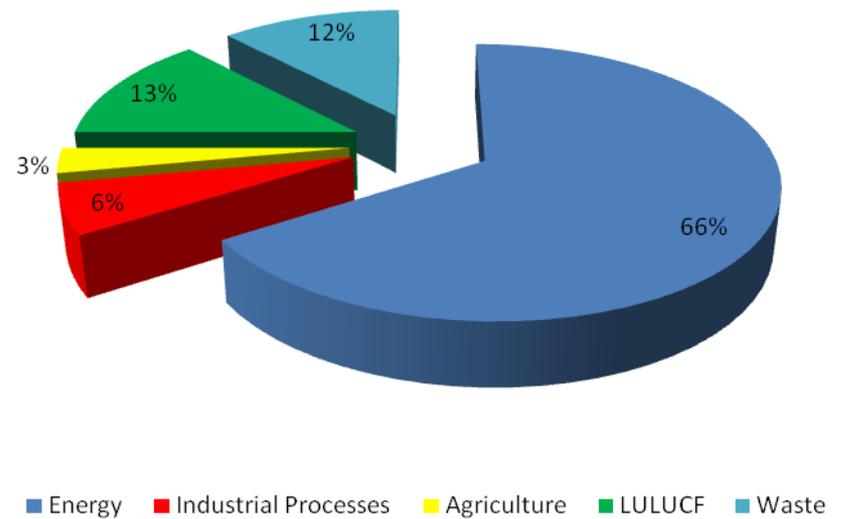
- Background
 - Potential mitigation for all sectors
 - Linking GHG inventory and mitigation strategies
 - Mitigation action in
 - Energy industries
 - Solid waste management
 - LULUCF
 - Others
 - Barriers to implementation of mitigation actions
 - Impact assessment
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BACKGROUND

- Emissions reduction activities started in the 1990s in line with sustainable development goals
- Quantification of emissions reduction began during NC2 in Malaysia
- Key source analysis derived from the GHG Inventory was used to develop mitigation options
- Assessment prepared with reference to BAU baseline projections from 2000 to 2020
- Projections considered the national economic, social and development trends

RANKING IN EMISSIONS BY SECTORS

- Energy
- LULUCF
- Waste
- Industrial Processes
- Agriculture



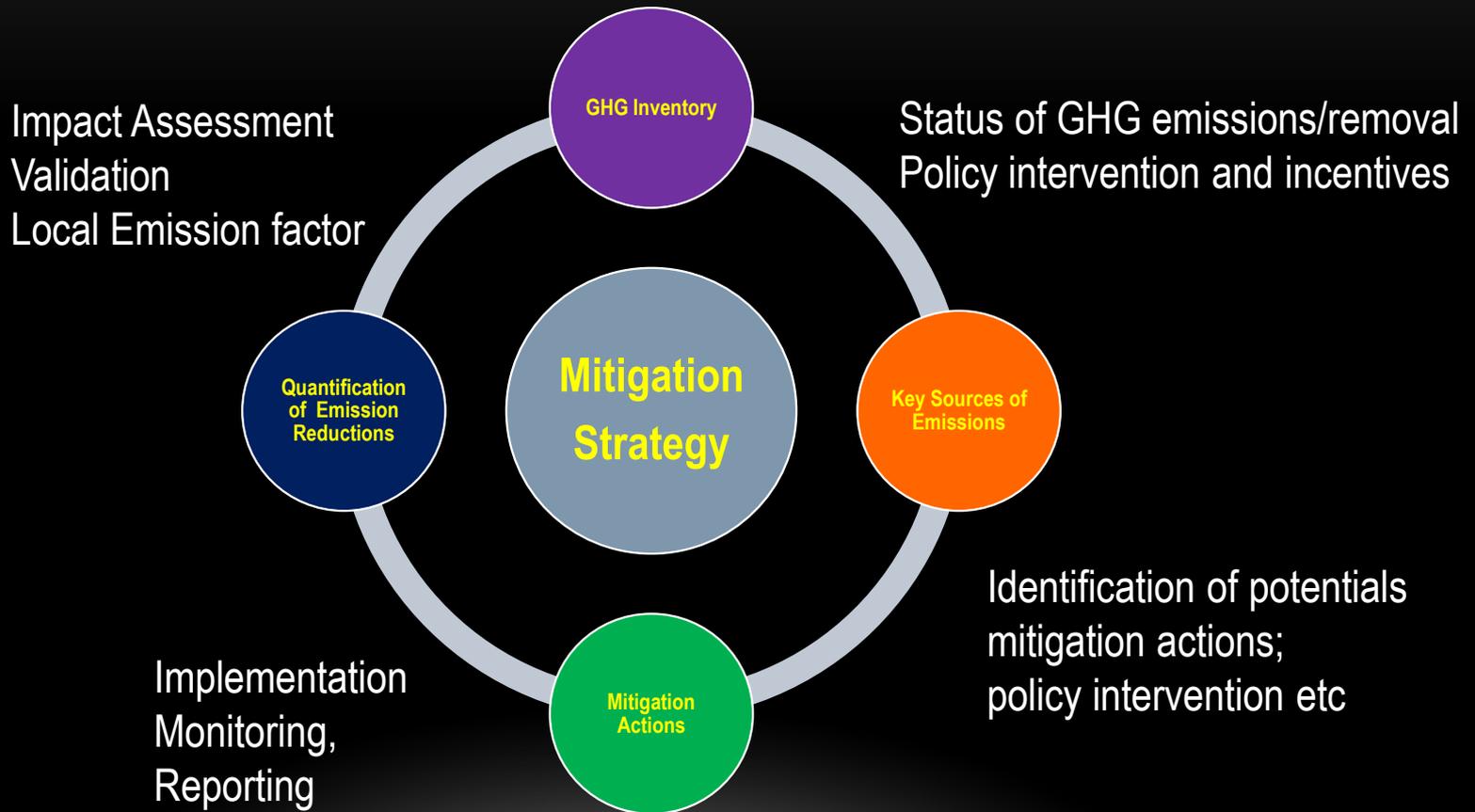
POTENTIAL MITIGATIONS OPTIONS

Sector	Potential Mitigation Options in Each Sectors			
Energy	Implementation of RE for power generation	Implementation of EE the industry, commercial and residential sector	Implementation of RE in the industrial , commercial and residential sector	Transportation Hybrid Electric vehicles Biofuels Integrated public transportation system
Industrial Processes	Processes to reduce clinker use in cement production			

POTENTIAL MITIGATIONS OPTIONS

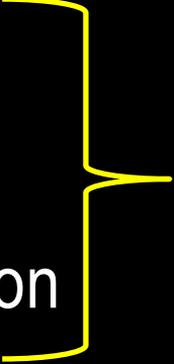
Sector	Potential Mitigation Options in Each Sectors			
Agriculture	Rice cultivation Improve water management: Intermittent flooding Aerobic rice	Waste management in livestock Aerobic manure composting Biogas capture	Partial replacement of synthetic nitrogenous fertilizers	
LULUCF	Maintain existing forest cover	Reduces forest degradation	Where appropriate, increase forest cover	
Waste	Methane capture at sanitary landfills	Biogas capture in palm oil mills for power generation	Reduce, reuse and recycle	

GHG INVENTORY AND MITIGATION STRATEGIES



KEY SOURCE OF GHG EMISSIONS

- Energy industries
- Land transportation
- Manufacturing industries and construction
- Landfills



65% of total emissions

MITIGATION OPTIONS

- Energy Industries
 - Oil products the greatest demand in terms of types of fuels
 - BAU Scenario – industries and transportation are the highest energy demand sectors
 - Solid waste management
 - Reduce reuse and recycle
 - Methane capture from landfills
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EMISSION REDUCTION OPTIONS FOR ENERGY INDUSTRIES

Year	Total Emissions (million tonnes CO ₂)		
	2010	2015	2020
BAU	181	213	260
EEC Scenario	181	213	251
RE Scenario	181	207	248
APS Scenario	181	207	234

EEC Scenario: Energy efficiency and conservation

RE Scenario : Renewable energy

APS Scenario : EEC+RE

EMISSION REDUCTION OPTIONS FOR SOLID WASTE

	CH ₄ emission reduction	CH ₄ recovery	Total emissions
BAU	-	-	42.8
Scenario 1	0.3	10.6	31.9
Scenario 2	18.7	6.0	18.1

Scenario 1: 22% recycling + 25% CH₄ recovery rate from landfills

Scenario 2: 22% recycling + material recovery facilities and thermal treatment plants
CH₄ recovery rate from landfills + 25% CH₄ recovery rate from landfills

ON GOING MITIGATION

- Biogas capture from palm oil mills for power generation
 - Nutrient recycling in oil palm plantations
 - Development of Green Building
 - Tax incentives are given to green building developers
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EMISSIONS REDUCTIONS FROM FORESTRY

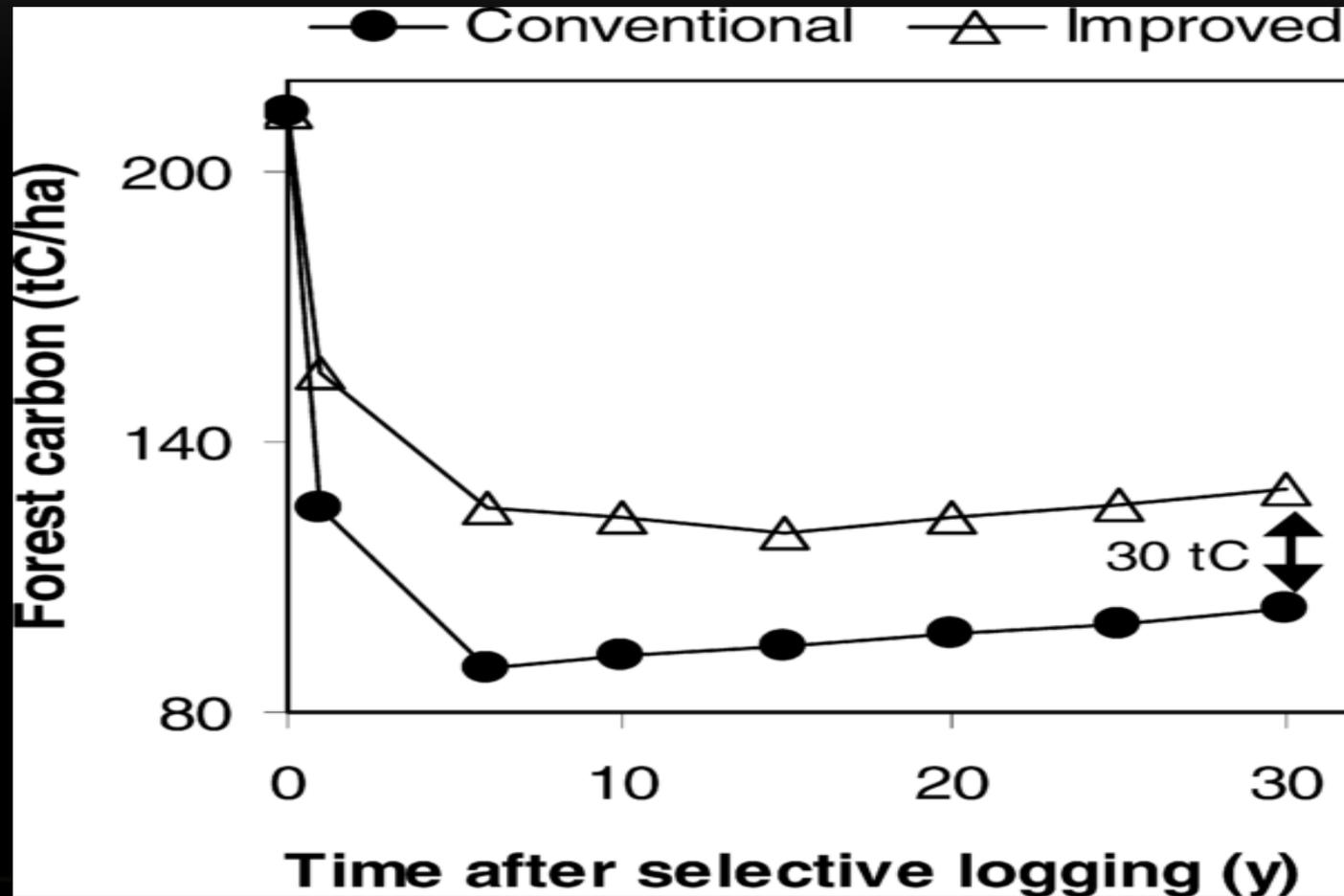
- Forest management in Malaysia started in the 1900s
 - MUS
 - SMS
- Sustainable forest management -1994
- Forest certification –
 - 5 million ha certified, first in 1997

CHANGES IN FOREST AREAS (MILLION HA)

Land Use	1990	2009	% Change
Permanent Reserved Forest	12.6	13.2	+5
Totally Protected Areas	1.12	1.85	+65
State land	6.8	3.67	-46
Total forest	20.54	18.72	-8.8

Source: Environmental Compendium 2010

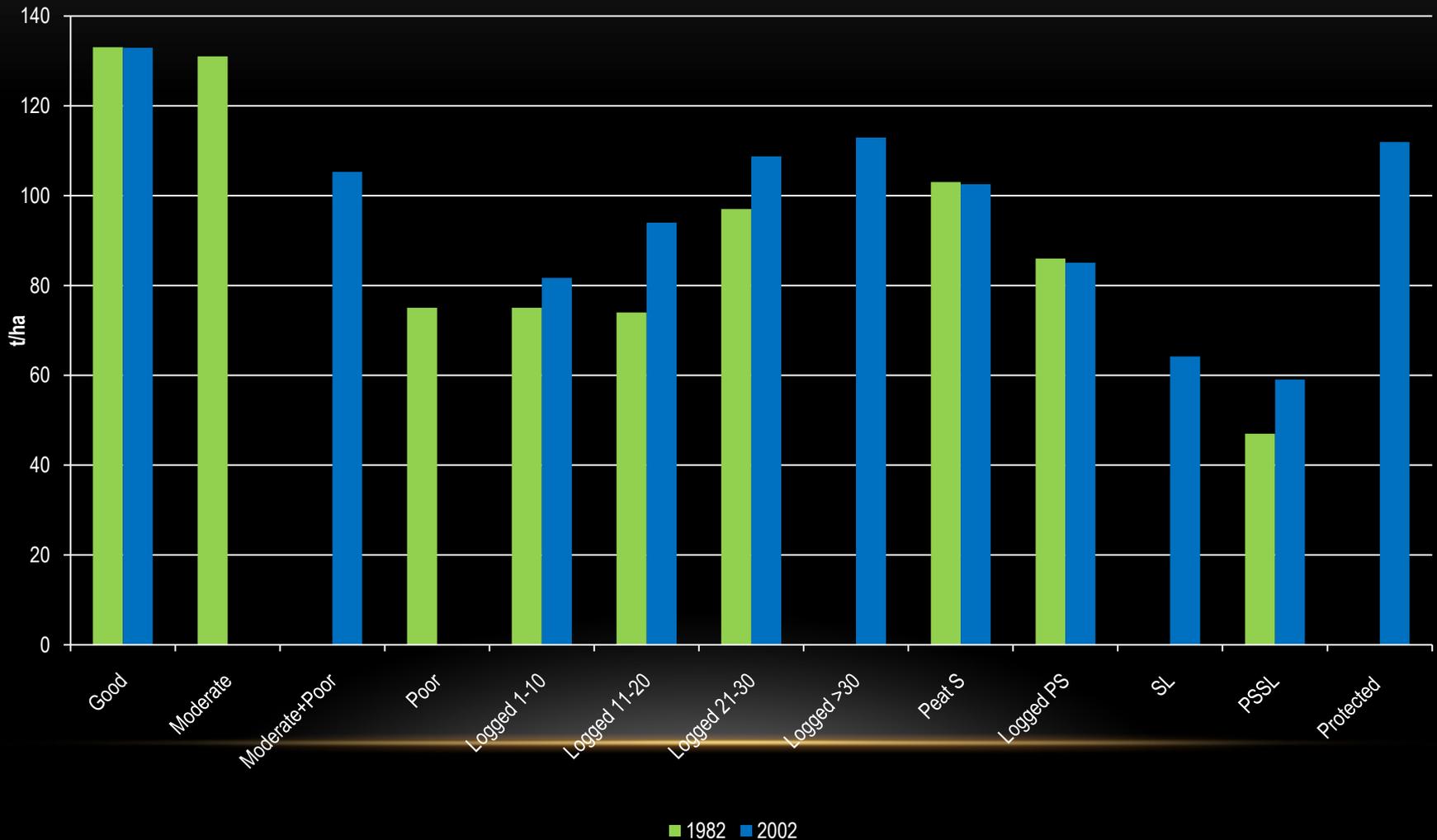
ENHANCEMENT OF CARBON STOCKS THROUGH RIL



EMISSIONS REDUCTIONS FROM DEFORESTATION

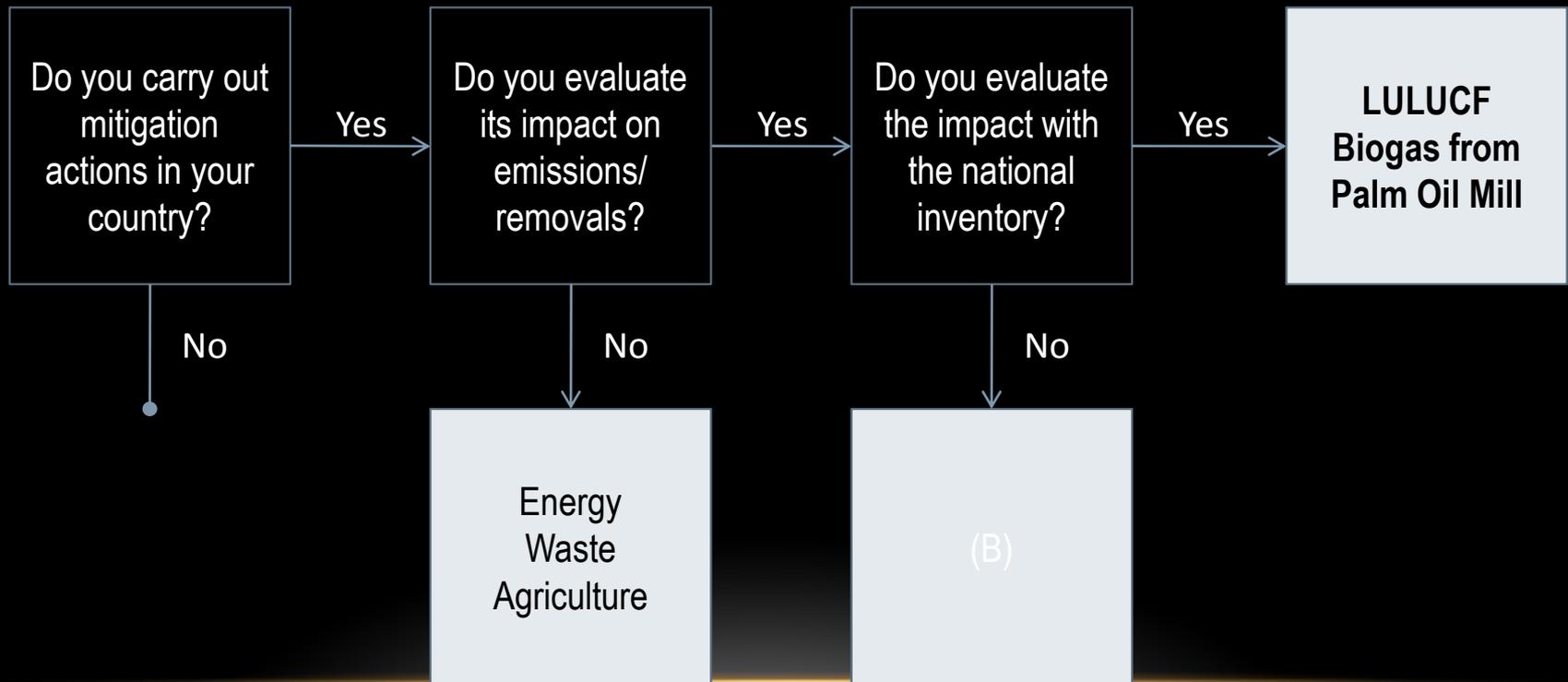
Year	Emission reduction (CO ₂ t/ha)
Avoided deforestation	220- 350
Improved forest management	40

ENHANCEMENT OF CO₂ REMOVAL



HOW ARE THE STATUS OF MEMBER COUNTRIES?

To find out the status of each country, this figure was circulated to member countries.



BARRIERS FOR MITIGATIONS

- Economic and pricing
 - The cost of RE, PV technologies high
 - Funding and financing
 - Stringent loan requirement
 - Market
 - Limited market
 - Need to enhance policy instruments
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IMPACTS OF EMISSION REDUCTIONS

- Impact assessment will be conducted post 2015 when policies are implemented:
 - Climate Change policy
 - Green Technology Policy
 - Renewable Energy Policy and Action Plan
 - National Energy Efficiency Masterplan
 - Public Land Transport Commission – holistic public transport system
 - Waste Minimisation Master Plan and Action Plan
 - Green building Index
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Thank you