ISKANDAR
REGIONAL
DEVELOPMENT
AUTHORITY

MNRE National Symposium on Climate Change Adaptation

LOW CARBON CITIES AND CLIMATE CHANGE ADAPTATION: THE ISKANDAR EXPERIENCE

By Boyd Dionysius Joeman
SVP Planning and Compliance, IRDA
boyd@irda.com.my

18 November 2011

UTM
UNIVERSITI TEKNOLOGI MALAYSIA

ISKANDAR
REGIONAL
DEVELOPMENT
AUTHORITY

AIM
ASIA-PACIFIC INTEGRATED MODEL

KYOTO UNIVERSITY
KYOTO JAPAN
FOUNDED 1897

NIES JAPAN

Presentation Outline

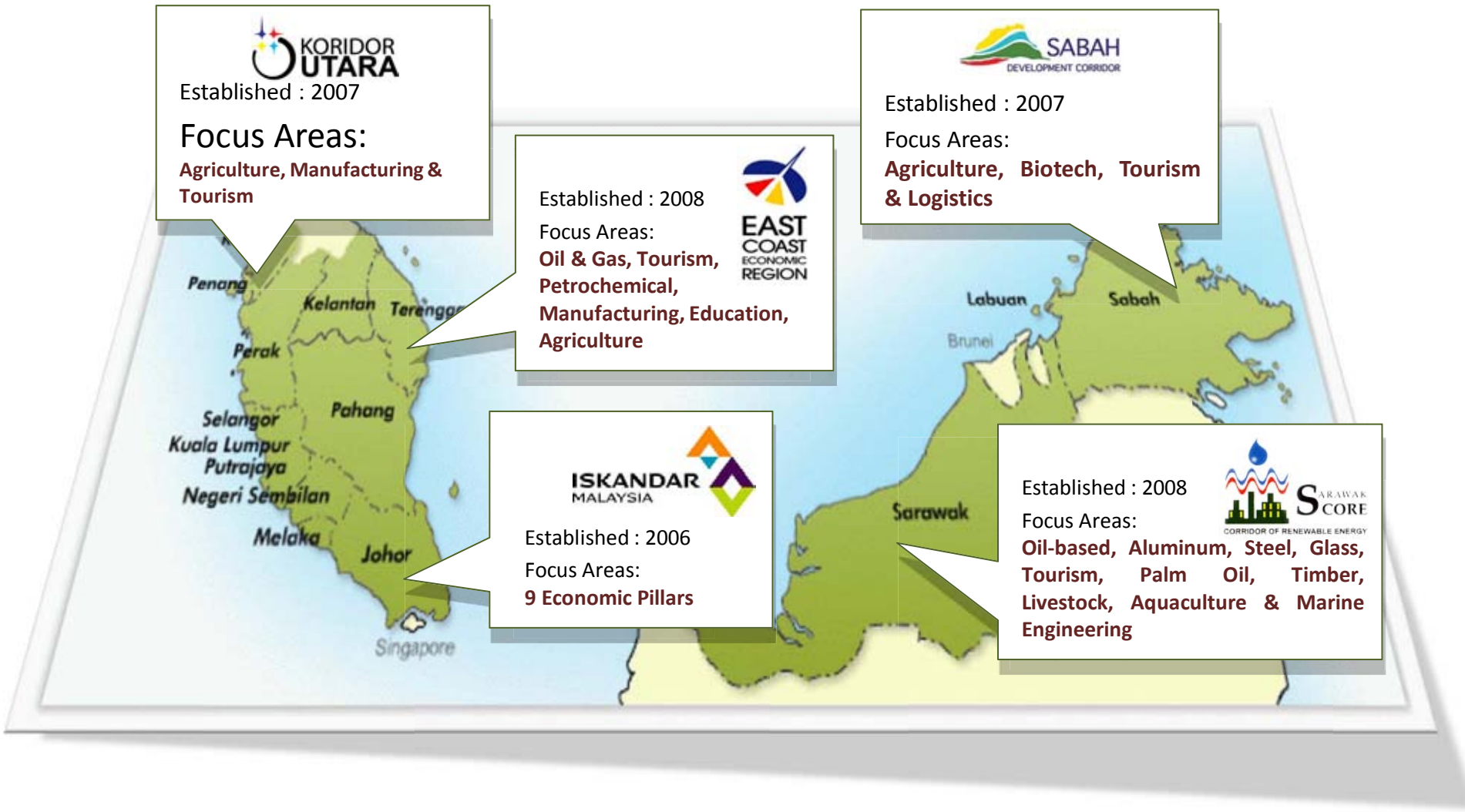
- Malaysia: Outlook
- Introduction to Iskandar Malaysia
- What is a Low Carbon Society?
- IRDA: Roles and Responsibilities
- Climate Change Adaptation + Measures
- Essential Mechanisms for Success

1. Malaysian Outlook

- In COP15 (2009), Malaysian Prime Minister YAB Dato' Seri Mohd Najib Tun Abdul Razak, has pledged a voluntary 40% reduction of CO_2 emission intensity by 2020 (base 2005).
- Under the Tenth Malaysia Plan (2011-2015): the Government has intensified effort to reduce emission by climate adaptation and mitigation measures.

- With this in Focus, We look towards lowering the CO_2 emission intensity in Iskandar Malaysia by 50% by 2025 (base year 2005).
- The Tools: (ExSS & Backcasting Model) play an important role in getting the numbers (Facts and Figures) to support in the decision making process when the Local Authorities and Iskandar Regional Development Authority (IRDA) design the Policies & Guidelines towards a Low Carbon Scenario.

2. The Economic Corridors



2. Background of Iskandar Malaysia (Cont.)

The economy in Iskandar Malaysia may be divided into 3 main sectors

- primary (agriculture, fishing, forestry/wetlands and mining);
- secondary sector (food processing, basic metal processing, non-metal processing, wood processing); and
- tertiary sector (retail & transport).

The key sectors in the manufacturing sector that drives the Iskandar Malaysia economy are:

- electrical and electronic (E&E);
- chemical and chemical products (petrochemical, plastics, oleo chemicals); and
- food processing sub-sectors.

They contribute 60% of the total value-added in manufacturing.

These key sectors lead to the emergence of supporting or induced sectors such as retail, wholesale, hotels, restaurants and finance.

In manufacturing, the induced sectors include fabricated metal products, non-metallic products and transportation equipment.

3. What is a Low Carbon Society ?

1. Carbon minimisation in all sectors.

- A society that emits GHG only in an amount which can be absorbed by nature.

2. Towards a simpler life style that realise richer quality of life

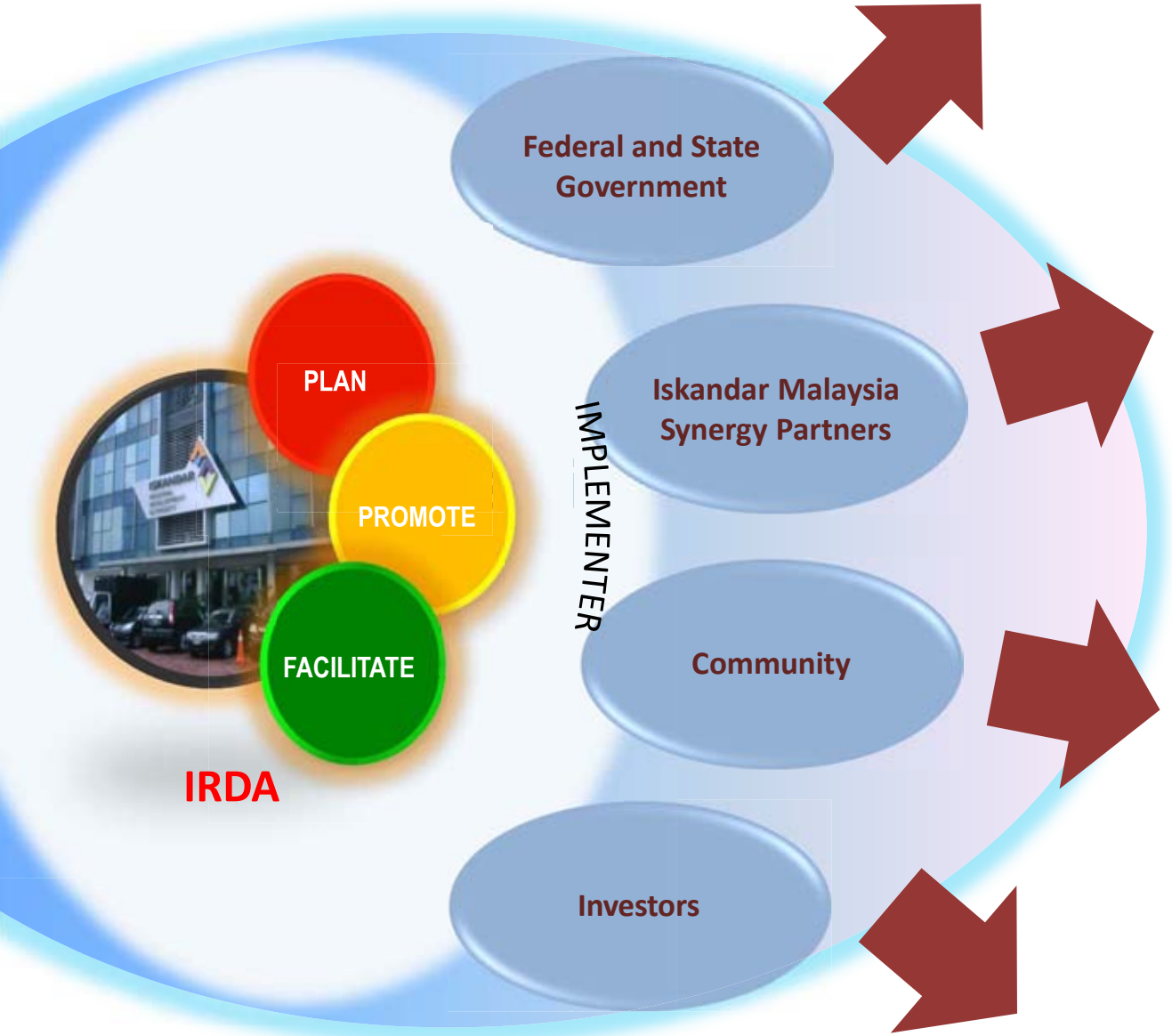
- To build a society where value is placed on family or community ties, health, interaction with mother nature and the spirit to improve the quality of life.

3. Coexistence with nature.

- Importance on harmony and co-existence with nature; and promoting “nature-friendly technologies,” such as utilisation of biomass.

4. IRDA: Roles and Responsibilities

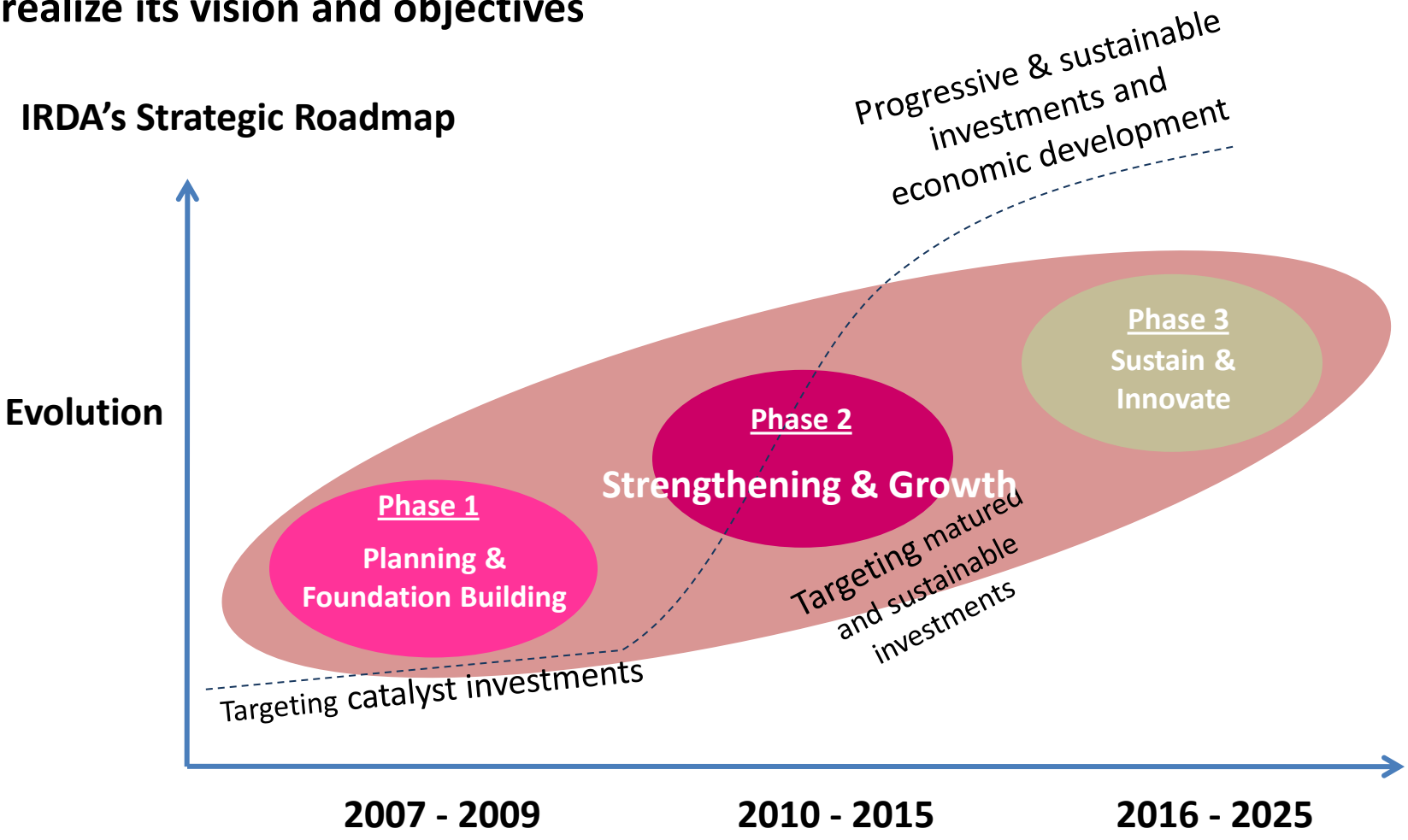
ISKANDAR REGIONAL DEVELOPMENT AUTHORITY



Roles:
PLAN
PROMOTE
FACILITATE

Iskandar Malaysia Development Phases

IRDA's strategic roadmap is divided into three (3) developmental phases to realize its vision and objectives



Comprehensive Development Plan 2006-2025

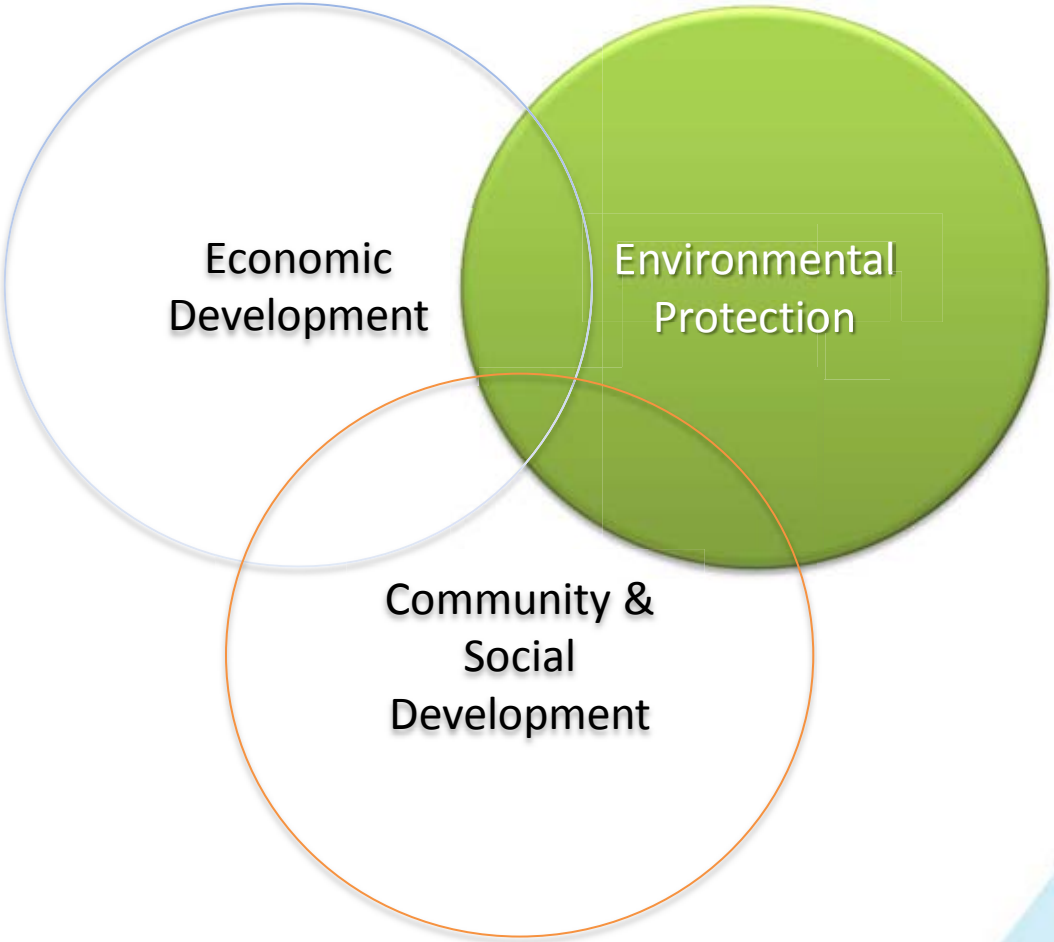
Main document to guide Iskandar Malaysia's economic, social, environmental planning and management toward the establishment a "sustainable metropolis of international standing".

Downloadable at
www.iskandarmalaysia.com.my

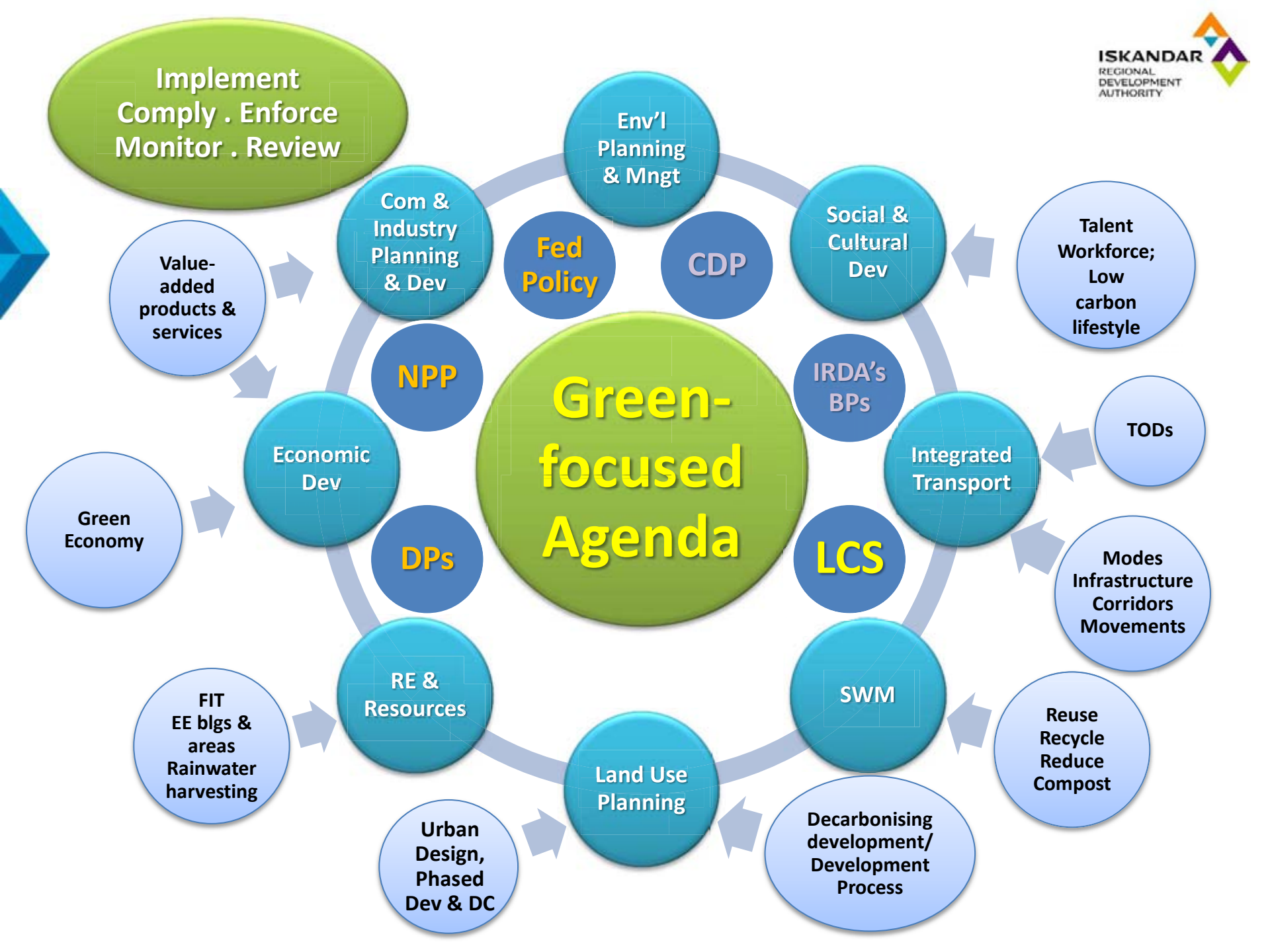
DEVELOPMENT STRATEGIES:

- **Balanced Development**
- **Protect and Conserve Nature, Historic and Open Spaces**
- **TODs**
- **Promote Infill & Redevelopment**
- **Enhance Accessibility**
- **Promote Key Economic Areas as Focal Point For Growth**
- **Plan & Manage Regional Growth**
- **Plan for Innovative & Sustainable Infrastructure & Utilities**
- **Liveable, Walkable Green Cities - Quality and Sustainable Neighbourhoods**

Sustainable Development within Iskandar Malaysia: Integrating 3 main elements



Livability and Sustainability are the core essences of the framework and thrust of the Comprehensive Development Plan (CDP)


ISKANDAR
REGIONAL
DEVELOPMENT
AUTHORITY
Implement
Comply . Enforce
Monitor . Review
Green-focused Agenda
Env'l Planning & Mngt
Com & Industry Planning & Dev
Social & Cultural Dev
Economic Dev
Integrated Transport
RE & Resources
SWM
Land Use Planning
Fed Policy
CDP
NPP
IRDA's BPs
DPs
LCS
Value-added products & services
Talent Workforce; Low carbon lifestyle
Green Economy
TODs
Modes Infrastructure Corridors Movements
FIT
EE blgs & areas
Rainwater harvesting
Reuse
Recycle
Reduce
Compost
Urban Design, Phased Dev & DC
Decarbonising development/ Development Process

ISKANDAR
REGIONAL
DEVELOPMENT
AUTHORITY

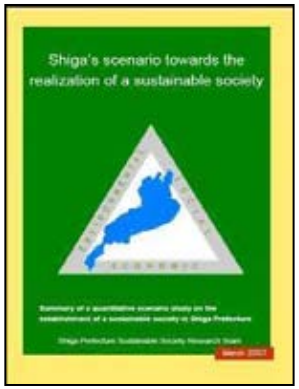
Low Carbon Cities in Asia:

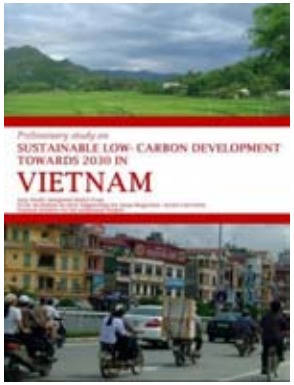
Updates from Iskandar Malaysia

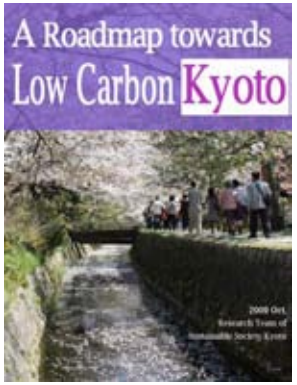
Capacity-Building & Dialogues between Policy-Makers and Researchers: Towards Implementation

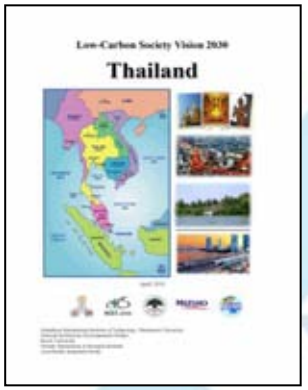
ISKANDAR
REGIONAL
DEVELOPMENT
AUTHORITY

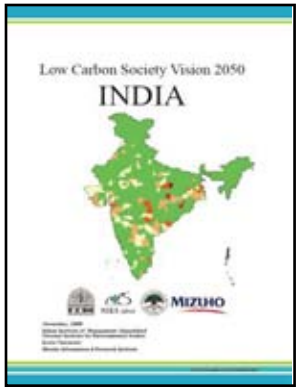
On-going region-specific studies: Communication and feedback of LCS study to the real world

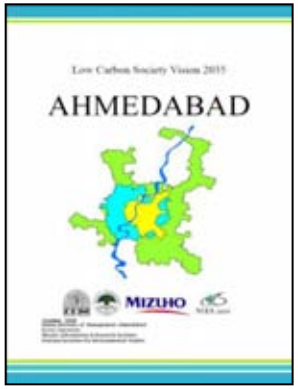


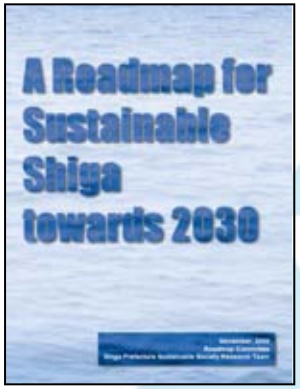












ISKANDAR MALAYSIA VISION

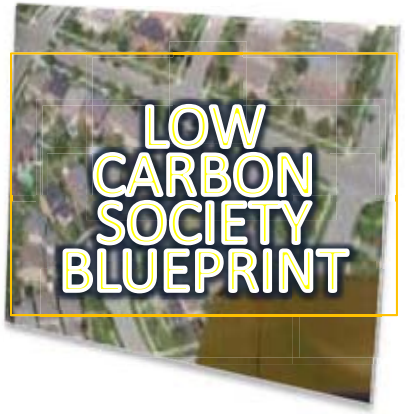
"Strong Sustainable Metropolis of international standing"

ISKANDAR REGIONAL DEVELOPMENT AUTHORITY

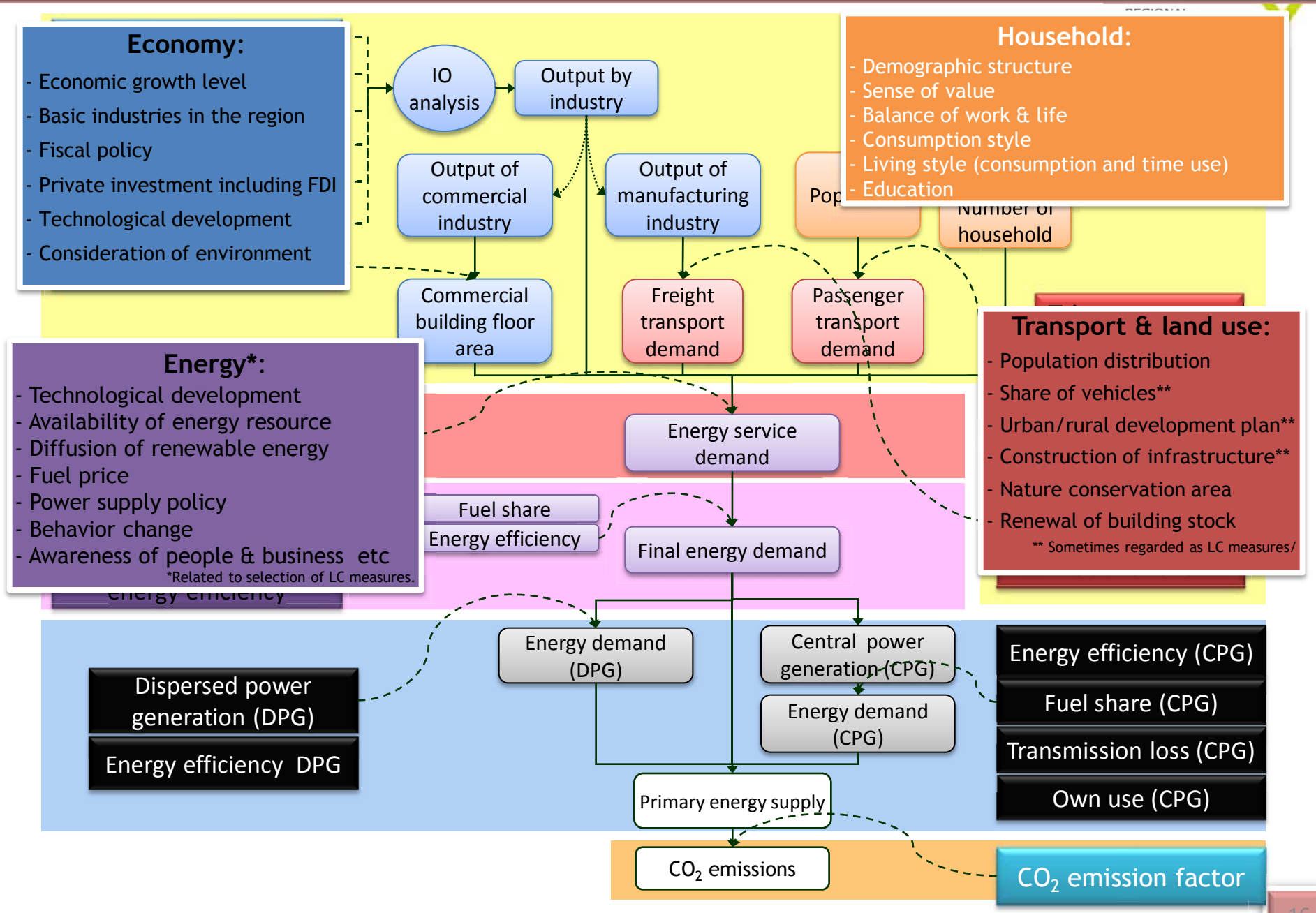
IRDA Blueprints that promote LCS

Adaptation and Mitigation Measures

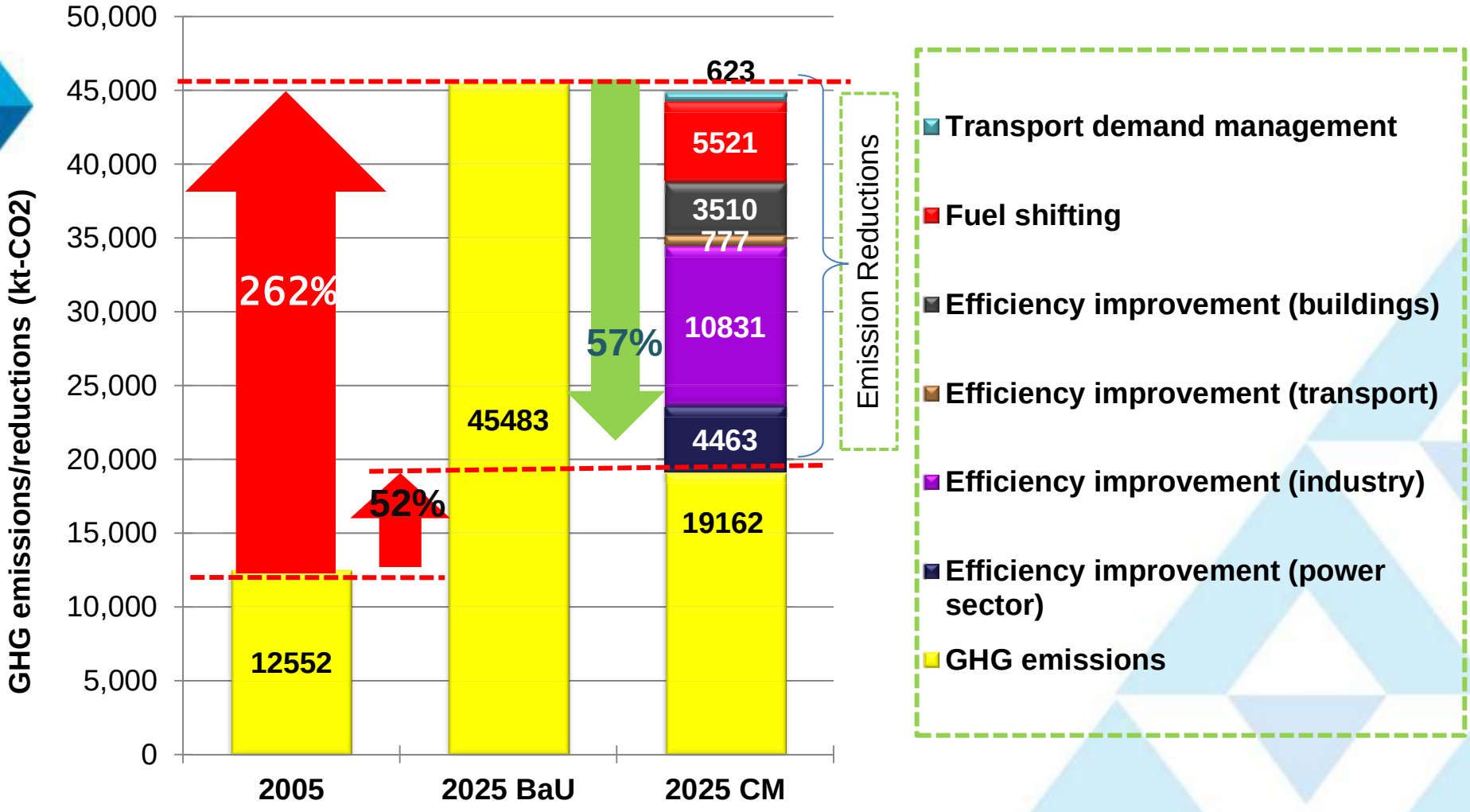
ISKANDAR REGIONAL DEVELOPMENT AUTHORITY



ExSS Model Structure



Potential Mitigation in IM



5. Adaptation and Mitigation Measures

ISKANDAR REGIONAL DEVELOPMENT AUTHORITY

RESIDENTIAL & COMMERCIAL SECTOR

- Energy Efficiency (EE) Improvement (Buildings & equipments)
- Lowering CO_2 Intensity (Renewable Energy – Photovoltaic power generation system)

TRANSPORTATION (FREIGHT & PASSENGER)

- Transport Demand Management (Improvement of Public Transportation Sector)
- EE Improvement (Hybrid Vehicles)
- Lowering CO_2 Intensity (Renewable Energy- Bio fuel)

INDUSTRY & POWER SECTOR

- EE Improvement – (Improvement in Operations & Equipment, Promotion of Technology Transfer)
- Lowering CO_2 Intensity (Increase share of Natural Gas Usage)

Low Carbon Cities Policy Package

ISKANDAR REGIONAL DEVELOPMENT AUTHORITY

Buildings

- Environmental performance standard and evaluation of buildings
- Adjustment of tax rate of fixed asset tax
- Low interest loans to investment to energy efficient buildings

- Environmental performance standard of equipments
- Environmental labeling
- Education and information service
- Green purchasing policy

- Subsidy to introduce photovoltaic power generation system

Transport & Land use

- Urban planning
- Transport planning
- Tax rate adjustment to fixed asset
- Investment to public transport

- Environmental performance standard of vehicles
- Tax rate adjustment to energy efficient vehicles
- Promotion of bio fuel

Industry

- Subsidy to investment to energy efficient equipments
- Promotion of technology transfer

- Incentive to introduce energy efficient equipments & buildings
- Incentive to introduce renewable energy

- Controlling urban growth & choice of transport mode

Energy efficiency improvement

Lowering CO_2 intensity

Transport demand control

Mitigation of GHG emissions from Iskandar Malaysia

ISKANDAR
REGIONAL
DEVELOPMENT
AUTHORITY

To achieve Low Carbon Society status by 2025, what do we need to do together?

IRDA's Proposed Actions:

- Action 1: Walkable/Liveable/Compact City
- Action 2: Green & Blue Network/ Infrastructure
- Action 3: Low Carbon Lifestyle
- Action 4: A Green Economy
- Action 5: Integrated Transportation
- Action 6: Energy-efficient buildings
- Action 7: Land Use Planning
- Action 8: Efficient Energy Systems & Renewable Energy

Action 1: Transformation of Johor Bahru City

14th Oct 2010

SG. SEGGET REHABILITATION PROJECT

Conceptual Design Proposal
JB City Center after the Segget River Rehabilitations Projects

Action 2: Green & Blue Environment:
Environmental Planning Blueprint:
7 Thematic Areas; 66 Initiatives

ISKANDAR REGIONAL DEVELOPMENT AUTHORITY

Environmental Thematic Areas

EPB Thematic Area 1 :
Biodiversity and Habitat Management

EPB Thematic Area 2:
Climate Change Management

EPB Thematic Area 3:
Air Quality Management

EPB Thematic Area 4:
River Water Quality Management

EPB Thematic Area 5:
Geo-Terrain, Soil & Groundwater Management

EPB Thematic Area 6:
Green Economy

EPB Thematic Area 7:
Environmental Governance

EPB Initiatives

ISKANDAR REGIONAL DEVELOPMENT AUTHORITY

Strategy 1: Enhance and Improves Biodiversity & Habitat Management

- **Establishment - Biodiversity Council & Biodiversity Centre**
- **Formulate Integrated Management Plans for Ramsar sites – *completion end 2011***
- **Enact a Biodiversity Regulation To Strengthen Biodiversity & Habitat Areas In Iskandar Malaysia.**
- **Establish a Continuous Habitat Corridor linking Tg Piai-Sg Pulai-Mount Pulai.**
- **Promote "Wise Use Concept" in areas near the 3 Ramsar sites.**
- **Conduct A River Basin EIA For Sg Pulai**

EPB Initiatives

ISKANDAR REGIONAL DEVELOPMENT AUTHORITY

Strategy 2: Actions on Climate Change

- Prepare Integrated Climate Change Action Plan (now under LCSIM)
- Phase Out The Use Of Diesel Public Buses By Replacing Or Retrofitting To CNG Buses
- Implement A Carbon Offsetting Programme For The Incoming And Outgoing Flights At The Senai Airport
- Establish a GHG Inventory Database in IM (LCSIM)
- Mainstream Climate Change Management in Development Planning (LCSIM)

EPB Initiatives

ISKANDAR REGIONAL DEVELOPMENT AUTHORITY

Strategy 3: Green Economy

- Formulate A Green Investment Policy For IM
- Promote a Green Product Hub for green industries.
- Designate a Green Technology Park for Research & Development
- Promote Tax Incentives For Green Building And Green Homes
- Allocation for Free Public Parking For Hybrid Cars
- Formulate A Green Purchasing Policy For All The Purchases Made By IRDA And Local Authorities

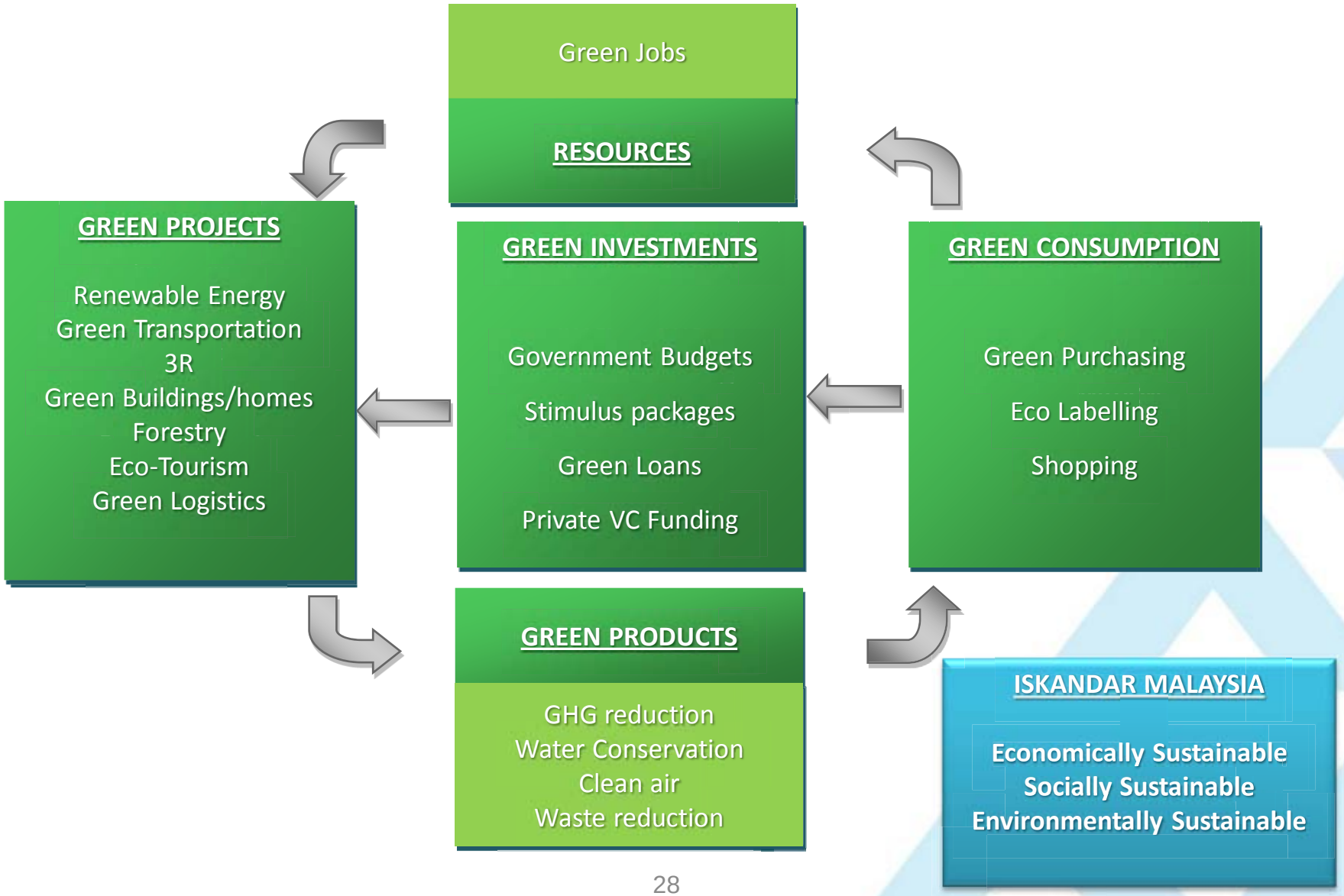
EPB Initiatives

ISKANDAR REGIONAL DEVELOPMENT AUTHORITY

Strategy 4: Environmental Governance

- **Publish an Annual State of the Environment Report**
- **Encourage The Preparation Of Green Plans By All Major Developments**
- **Encourage Corporate Environmental Reporting By All Major Developments**
- **Implement A Green Accord Initiative Award (GAIA) For The Private Sector To Encourage Corporate Commitments To The Environment.**
- **Strengthen existing governance to Support And Facilitate Environmental Management & Initiatives In Iskandar Malaysia**

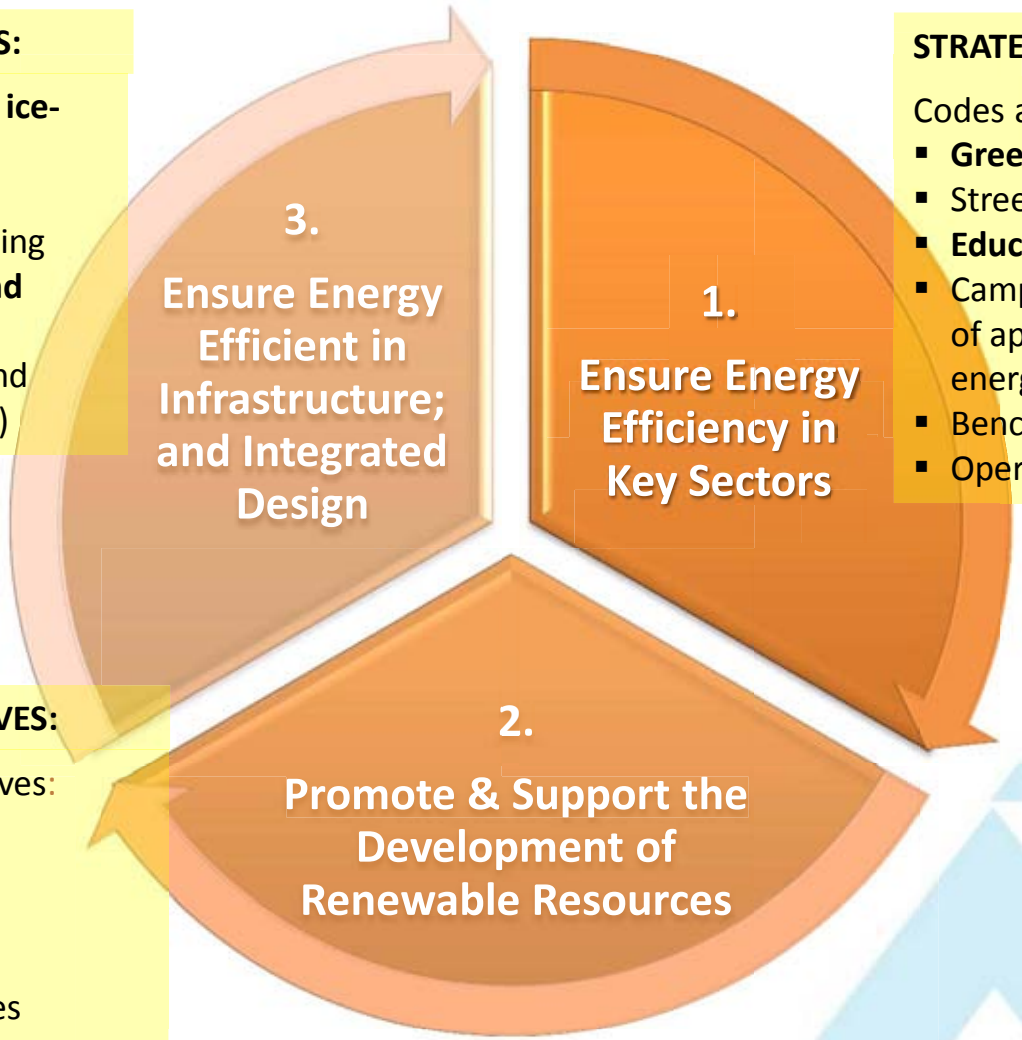
Action 4: Green Economy Framework



Action 6: Renewable Energy & Energy Efficiency: 3 Strategies & 17 Initiatives

STRATEGIC INITIATIVES:

- **District cooling and ice-storage**
- Co-generation
- GIS for spatial planning
- **Transport design and policy**
- Integrated design and renovation (clusters)



STRATEGIC INITIATIVES:

Codes and standards:

- **Green building index**
- Street lighting
- **Education programmes**
- Campaigns (labeling, types of appliances that save energy, good habits)
- Benchmarking
- Operation & maintenance

STRATEGIC INITIATIVES:

IM's own FIT incentives:

- **Solar farms**
- Rooftop solar PV
- **Mini-hydro**
- MSW
- Agricultural wastes
- Liquid wastes

CC Adaptation: Environmental Governance

Inaugurate The Iskandar Declaration On The Environment And Obtain Signatures From Key Stakeholders In Iskandar Malaysia To Formally Declare Their Commitment To Environmental Sustainability.

Priority: **High**

Lead Agency: **IRDA**

Supporting Agencies: **All Stakeholders in IM**

EPB: Environmental Governance

ISKANDAR REGIONAL DEVELOPMENT AUTHORITY

Low Carbon Green Growth Institute

Korea's GGGI; UNESCAP (Busan); KeTTHA's LCGGA

ARNLCD

'Greening Iskandar Malaysia' Campaign

26 million trees; green & blue spaces; green corridors/species movement

LCSIM Consensus-Building

IRDA's Sustainability Development

Awareness-Raising & Public Involvement; Charrettes/FGDs/Village Appraisals

Adaptation Measures

ISKANDAR REGIONAL DEVELOPMENT AUTHORITY

- Decarbonising Planning: Implementation through Village Appraisals – local industries, aquaculture
- Community involvement and consensus-building: grassroots understanding of CC and GW and LCS
- Energy self-sufficient villages
- Mangrove protection & replanting
- Land preparation through EMB
- Designing of compact cities
- Green and blue landscapes
- Rainwater harvesting
- Championing renewable resources

CC Adaptation: Some recommendations

ISKANDAR REGIONAL DEVELOPMENT AUTHORITY

1. Establish a GHG Inventory Database in IM
2. Expand The Network Of Air Quality Stations in IM
3. Establish an Air Emission Inventory System in IM
4. Prepare a Climate Change Blueprint to collate all the information from the various blueprints.
5. Phase out the use of diesel public buses by either replacing or retrofitting to CNG buses.

CC Adaptation: Some more, *cont'd*

ISKANDAR REGIONAL DEVELOPMENT AUTHORITY

1. Publish an Annual State of the Environment Report in IM.
2. The Preparation Of Green Plans By All Major Developments In IM To Promote Private Sector Environmental Stewardship.
3. Encourage Corporate Environmental Reporting By All Major Developments In IM To Promote Private Sector Environmental Stewardship.
4. Implement A Green Accord Initiative Award (GAIA) For The Private Sector To Encourage Corporate Commitments To The Environment.

6. Conclusion:
Essential Mechanisms for Success to CC Adaptation

ISKANDAR
REGIONAL
DEVELOPMENT
AUTHORITY

Thank You

boyd@irda.com.my