Iskandar Malaysia
Strong Sustainable Metropolis of International Standing

Session 3 is "Optimization Local (District) Energy System"
Future of smarter energy infrastructure in the city

By Maimunah Jaffar
Head Planning and Compliance,
Iskandar Regional Development Authority,
Malaysia
Presentation Outline

1. Introduction to Iskandar Malaysia
2. The plan to realize smarter energy infrastructure in Iskandar Malaysia
Iskandar Malaysia is Malaysia’s economic growth corridor covering a total area of 2,217 sq km (12% of Johor State)

Statistics & Facts…

Iskandar Malaysia in the context of Regional Corridors

- **3 times smaller** than Iskandar Malaysia
- **1.3 times bigger** than Iskandar Malaysia
- **11 times bigger** than Iskandar Malaysia
- **30 times bigger** than Iskandar Malaysia

Iskandar Malaysia covers **FIVE** local planning authorities.
Iskandar Malaysia Holistic Eco-system

- **A resilient ecosystem**, anchored by wealth generators to create regional wealth to be shared equitably among communities.

- **Wealth generation and wealth sharing** by balancing the optimal use of ecological assets to enhance the Quality of Life in Iskandar Malaysia and turning it into a leading global region.

- **Spatial management and good governance** would enable the realization of its vision and goals by 2025.
Developed framework as tools to accelerate IM vision

SMART CITY

HOW we focus, think and implement

- Attract economy through smart investment
- Smart governance that focus on ‘rakyat’ needs
- Manage environment through smart collaboration
- Provide smart mobility and connectivity
- Produce smart people and mindset
- Provide smart living quality

LOW CARBON SOCIETY (LCS)

- Sets a target for 50% carbon intensity reduction in 2025 as compared to the 2005 level

Figure 1: GHG emissions by sectors

Projected Greenhouse Gas Emission Reduction in IM
Iskandar Malaysia as one of the world’s 10 cities/regions to take part in SE4ALL programs as announced in Climate Summit 2014 in New York, United States

Participating governments are expected to make commitment to double the rate of energy efficiency by 2030 in targeted sectors within their jurisdiction.

Status to date:

1- Formation on Steering Committee at State and Federal level

2- Consolidation of initiatives based on Iskandar Malaysia existing blueprints

3- Issuance of RFP on key strategic identified projects
**Case for Action and Targets**

**CURRENT SCENARIOS**

- **ELECTRICITY DEMAND IN IM**
  - 1,406 MW in 2010
  - 3,838 MW in 2025

**TARGET**

- 12% from 2025 requirement supplied by Renewable Energy (459 MW)

**Energy Sources:**
- Biomass: 5%
- Biogas: 2%
- Solid Waste: 11%
- Hydro: 3%
- Solar PV: 79%

**Through EE initiatives, 24% of projected requirement can be reduced (912 MW)**

- Domestic: 10%
- Commercial: 51%
- Industry: 39%

**3.4 million tonnes savings in CO2 emissions by 2025**
Energy vision for Iskandar Malaysia

**VISION**

To provide its residents and industries with energy choices that are affordable, reliable, diverse, safe and environmentally acceptable.

**5 THRUSTS**

- Strengthen the institutional framework
- Provide conducive environment for RE, EE and Green Technology Development
- Intensify Human Capital Development in RE, EE and Green Technology
- Intensify RE, EE and Green Technology Research and Innovations
- Promotion and public awareness

**3 MAIN ELEMENTS**

- Economy
- Environment
- Social
1: Strengthen the institutional framework

**Challenges**

- Strengthening of policy and regulatory
- Lack of specific energy policy and strategy
- No mandatory regulations on EE in the building sector
- Lack of stakeholder participation due to cheap energy

**Measures**

1. Establish:
   - steering committee
   - Energy Unit for IM
   - standards for mandatory and voluntary compliance
2. Review legal mechanisms

**The strategy**

1. Formation of Steering Committee
2. Formation of Green Action and Climate Change Council (MTHPI)
3. Plan for Inter-agencies and disciplines lab to chart integrated road map for EE

*FEDERAL LEVEL: IRDA’s Members of Authority (MoA) chaired by Malaysia Prime Minister*

*STATE LEVEL: IRDA’s Action and Implementation Committee (AIC) chaired by Johor Chief Minister*
2: Provide conducive environment for Energy Efficiency Programs and Green Technology Development

**Challenges**
- Restricted and limited incentives and financial support
- Uncompetitive product cost
- Skills and knowledge workers are few in the market.

**Measures**
1. Explore monetary and fiscal measures
2. Strengthen understanding of local players, and industries
3. Promote foreign direct investments
4. Improve human resource capacity related

**The strategy**
1. Provide incentive ie: FIT in Tariff by KETHHA
2. Green technology team in IRDA to facilitate
3. Green Economy Guideline provide guidance on how to in IM

---

*Energy-efficient Design*

*Low Carbon Society Blueprint*

*ISKANDAR MALAYSIA Here and Now*
3: Intensify Human Capital Development in Renewable and Energy Efficiency related Projects

<table>
<thead>
<tr>
<th>Challenges</th>
<th>Measures</th>
<th>The strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Few research and educational institutions</td>
<td>1 Provide financial grants or assistance</td>
<td>1 Collaborate with others SEDA, BCEEP, conducting various capacity programs</td>
</tr>
<tr>
<td>• Limited technical capacity of professionals; resulting from the small market and opportunities</td>
<td>2 Enhance:</td>
<td>- Energy Audit</td>
</tr>
<tr>
<td></td>
<td>- network centres of excellence or research institutes</td>
<td>- EE guidelines</td>
</tr>
<tr>
<td></td>
<td>- smart partnerships gov, industries, research institution</td>
<td>- Green Bldg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 Collaborate with local authority ie MPJBT on Green Bldg. and MPPG on Green Industry</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 Energy Manager Training Center – certified managers</td>
</tr>
</tbody>
</table>
4: Intensify RE and EE Technology Research and Innovations

Challenges

• Limited funding to encourage R&D – Local grant
• Lack platform for networking of related R&D

Measures

1 Smart partnerships between gov, industries and research institute
2 Encourage strong link between local research institutions and regional and international centres of excellence

Current Initiatives

1 Centre of Excellence (COE) for RE& EE in IM
2 Collaborate with local and International universities
3 Match Public Private sector:
   - Ronser and UTM
   - NEDO and local industry on Gas District Cooling
   - Cybertopia: a Living Lab for demonstration purposes
• Development Strategy and principles

Mixed Development Town Zone to cater for new lifestyle of targeted population, mix commercial and residential, can be high density

Enterprise – Not the normal industries but hq and R&D - Big Box Detached/ Campus Planning

Low Density, foot hills development – Resort Zone

Medium Density Residential – low rise housing

Gunung Pulai Recreational Zone + conservation of green to cater for water catchment areas

Product: Enterprise – Detached/ Campus Planning

Green Infrastructure

Green Energy
5: Promotion and public awareness

### Challenges
- Lack of awareness on the importance and opportunities of EE:
  - Accessible info
  - Effective promotion and involvement of media, NGO and individual

### Measures
1. Comprehensive roll-out programmes to increase public awareness
2. Inculcate EE appreciation culture among students through development of effective syllabus & co-curriculum

### Current Initiatives
1. IM participation in national exhibition (IGEM) together with LCS
2. Government by Example; DCS in Kota Iskandar
3. My Hijau program by Federal
District Cooling System in Kota Iskandar, Nusajaya

Facts
- Owner: Johor State Government
- Developer: Cahaya Jauhar Sdn Bhd
- DCS Operator: Jana DCS Sdn Bhd
- Cover 21,480 square feet (1,996 m²) of office space in a five storey structure.

Challenges
- High Capital Expenditure for start up
- The current DCS in Nusajaya is not fully utilized due to development phases in the area.
- New technology – the local developers are used to the old system
In summary, Iskandar Malaysia requires the following to accelerate Energy Efficiency programs:

1. Advise on RE and EE best practices
2. Interested private sector to showcase RE and EE products in Iskandar Malaysia
3. Resources to implement capacity building, awareness programs as well as research and development
THANK YOU

ISKANDAR REGIONAL DEVELOPMENT AUTHORITY (IRDA)

Main office:
#G-01, Block 8, Danga Bay, Jalan Skudai 80200
Johor Bahru, Johor, Malaysia
T. + 607 233 3000
F. + 607 233 3001

Satellite Office:
Level 12-1, Mercu UEM, Jalan Sentral 5,
Kuala Lumpur Sentral, 50470 Kuala Lumpur
T. + 603 2260 6777
F. + 603 2260 7999

Toll free: 1800 88 3010
www.facebook.com/IskandarMalaysiaOfficial