

Review on the LCT Planning of Shah Alam City, Selangor

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Findings on the LCT Planning of Shah Alam City

Basic Information

Selangor

- Population of 7,004,762
- The largest population in Malaysia**, with a high standard of living and the state's poverty rate is the lowest in the country.

Shah Alam City

- Completely Low Carbon City action plan by 2030
- Since 2000 has implementation on planning of land use, environment, environment and social management and related activities.

• standard building coverage ratio	9.3%
• standard floor area ratio	40.2%
• whole area	159.9Ha
• building area	335,703m ²



Future Building Distribution



Current Building Distribution



City Current Composition



Findings on the LCT Planning of Shah Alam City

➤ Shah Alam Low Carbon 2030 Action Plan

1. Provides Transportation Services & Efficient Mobility.
2. Integrate Nature in the Built Environment
3. Environmentally Friendly System for Solid Waste Management.
4. Effective Use and management of Energy and Water resource.
5. City Administration and Management Based on Green Technology

Short Term(2015~2020)	Long Term(2015~2030)
<ol style="list-style-type: none">1. CO₂ reduction - 7 more satellite cities will be included for the calculation. Targeted GHG CO₂ reduction is 303,188.13 Ton CO₂ in 2016 while 139,466.54 Ton in 20302. Green Procurement – 5 % per year3. Transportation – 69% Fuel Cost Savings4. Low carbon building – 30-50% energy saving, 70% of using LED Lighting.	<ol style="list-style-type: none">1. To reduce CO₂ emissions 60% in 2030. The yearly 4% reduction as implied of Malaysia target 45% in 2030.

Findings on the LCT Planning of Shah Alam City

➤ Estimated energy consumption before and after the completion of the project:

- Section 14, Shah Alam – 1,082.69 GJ/ year (2016) to 498.04 GJ/year (2030)

Activity/Sector	Potential Source	Estimated cost savings
Transportation	BRT Electric Vehicle Electric Bus	RM6,000/person/year
Infrastructure	LED Street Lighting	RM35/lantern/year
Waste	Waster Sorting Polices Recycling programs	RM360/house unit/year
Building	Cooling system <ul style="list-style-type: none"> • District cooling • Thermal storage air conditioning system 	RM 420,000/Bldg./year
	Rain Harvesting	RM 7,200/Bldg./year
	Low Emission Building <ul style="list-style-type: none"> • High Performance Façade • Double Skin Façade • Roof Greening 	RM 63,000/Bldg./year
	LED/inverter lighting	RM 10,497/Bldg./year

Evaluation on the Application of the LCT- I System

Question	Excellent	Good	Average	Below Average	Poor
Information of the LCT-I Volunteer Town		✓			
Understanding of each LCT-I System indicators		✓			
Explanation (evidence) provided for the self-evaluation			✓		
Collection of data necessary for the evaluation			✓		
Calculation of CO2 emissions		✓			

Overall Assessment

Overall Rank

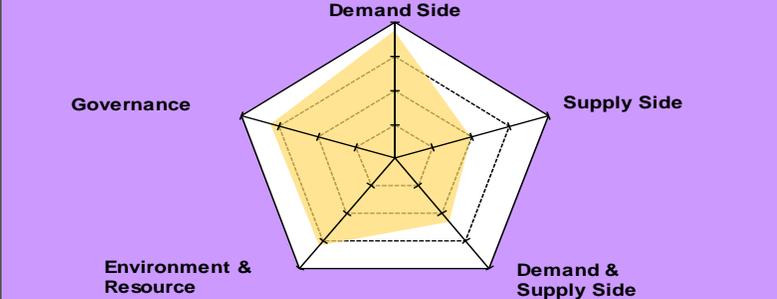


Total Point
average of (1) to (14) **3.9**

CO2 Reduction **31,914.5**
t-CO₂/year

Please fill Co2 reduction in the above cell
and attach the source or evidence

Radar Chart



Feedback on the Self-Evaluation

Tier 1	Tier 2	Tier 3	Comments
Demand	Buildings	Energy Saving Construction	<ul style="list-style-type: none"> The target area is a compact central business district (CBD) with high-rise buildings to be added. The comprehensive and integrated management of energy consumption of these buildings will be a model of such CBDs in the APEC economies.
Demand	Transportation	All items	<ul style="list-style-type: none"> This city is in the phase 1 of the LCMT Project, good green transportation plan can attract people to use and reduce carbon emission The arrangement of transportation including pedestrian pavement and bicycle roads should also be focused for the vitalization of the area, which seems to be split into several neighborhood by major streets, the wind flow between high-rise buildings to cool the air, and trees to shade the streets would make the target area more comfortable, beyond mere low-carbon.
Supply	All items	All items	This city is in the phase 1 of the LCMT Project, most of items are being planned, need to estimate total energy demand and how many energy can be generated by supply side.
Demand & Supply	Energy Management	Smart Micro-Grid	<ul style="list-style-type: none"> District Cooling System only be implemented in this portion so far. The system is actively use in non peak hours duration for freezing cold water. The cold water will be defrost during peak hour for chilling purposes. Micro smart grid can expand to whole city and connect supply side to demand side for energy management and control.

Feedback on the Self-Evaluation

Tier 1	Tier 2	Tier 3	Comments
Environment & Resources	<ul style="list-style-type: none">• Greenery• Water & Waste Management• Pollutions	All items	<ul style="list-style-type: none">• No data at evaluation sheet, need to describe more information to evidence effort in the part.• Enforce the Water & Waste Management plan• Enforce water reuse plan, Recycling storm water and gray water for plant irrigation• Enforce Air pollution plan
Governance	<ul style="list-style-type: none">• Policy Framework• Education & Management	All items	<ul style="list-style-type: none">• No data at evaluation sheet, need to describe more information to evidence effort in the part.• Setup energy saving and carbon reduction target.• Declare food's carbon footprint• Prepare more environment protection film to school for education

Conclusions

- Shah Alam city has completely Low Carbon City action plan by 2030 and this city is in the phase 1 of the LCMT Project, shall put more effort do achieve this plan.
- The target area is a compact central business district (CBD) with high-rise buildings to be added, ventilation and heat island issue will be the impacting factor for low carbon city.
- Green transportation plan can attract people to use and reduce carbon emission
- Performance measure standard making and execute the performance verification regularly are good methods to maintain the low carbon city



Thank You

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