

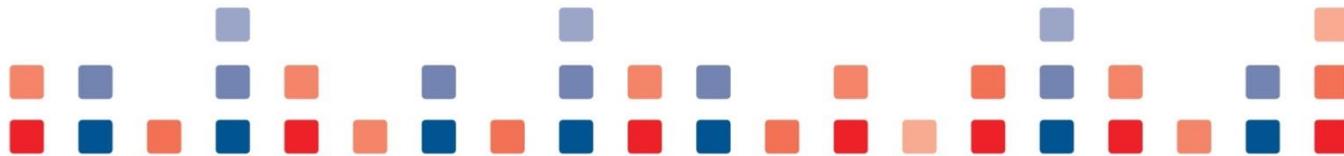


Presents:

The GPSC Resource Team

Peer Exchange Session

Finance and investable climate action planning



Melaka, MALAYSIA

Chandru Suparmaniam,
Chief Executive Officer,
Melaka Green Technology Corporation

MELAKA AT A GLANCE...



TOTAL AREA
1,654.14 sq.km.

165,414 hectares



GOVERNANCE



Majlis Bandaraya Melaka Bersejarah (MBMB)



Majlis Perbandaran Hang Tuah Jaya (MPHTJ)



Majlis Perbandaran Jasin (MPJ)



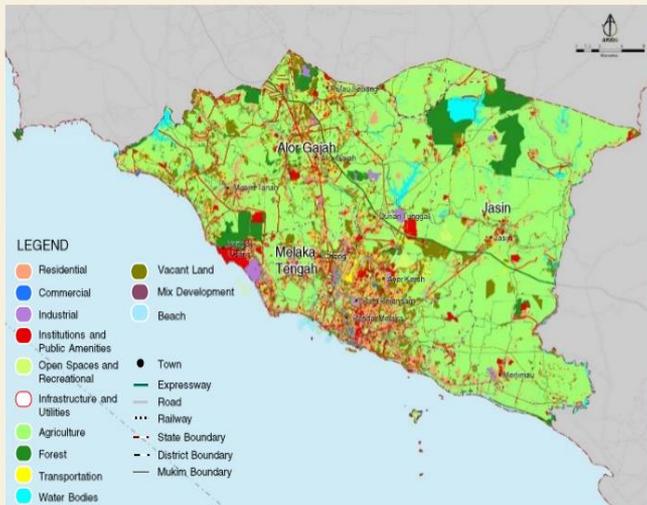
Majlis Perbandaran Alor Gajah (MPAG)

2x larger than
SINGAPORE
(719 sq.km)

14x larger than
MACAU
(115.3 sq.km)

0.6x smaller than
GREATER KL/KV
(2,843 sq.km)

EXISTING LAND USE



BREAKDOWN OF KEY EXISTING LAND USAGE, 2015



19.8%
BUILT-UP AREA



63.5%
AGRICULTURE



5.33%
FOREST

POPULATION PROFILE 2016

908,200
PEOPLE

2.8%
OF MALAYSIA



68.9%
WORKING AGE
15-59 YEAR



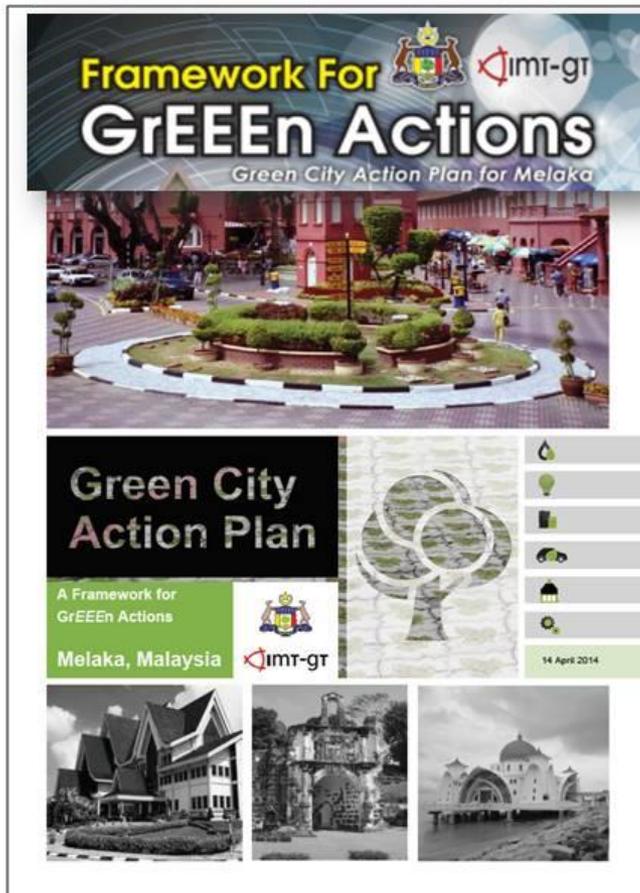
23.4%
CHILDREN
0-14 YEAR



7.5%
ELDERLY
65+ YEAR

35 THEMATIC ACTIONS

Green Policy



Custom Categories (Achieving E.E.E.)

The GCAP operationalizes the 3E approach through the following thematic areas that are discussed in more detail in the subsequent chapters.



8 ACTIONS

1 WATER MANAGEMENT

Goal: Protect and enhance the quality of surface and groundwater bodies in Melaka



6 ACTIONS

2 ENERGY EFFICIENCY & RENEWABLE ENERGY

Goal: Reduce GHG emissions through efficiency and increase in use of renewables in the generation and usage



6 ACTIONS

3 GREEN TRANSPORTATION

Goal: Increase opportunities for alternative modes of transportation and reduce GHG emissions resulting from vehicular use



6 ACTIONS

4 ZERO WASTE

Goal: Put Melaka on the path to become a "zero-waste" state and reduce waste-related GHG emissions



5 ACTIONS

5 CULTURAL HERITAGE & TOURISM

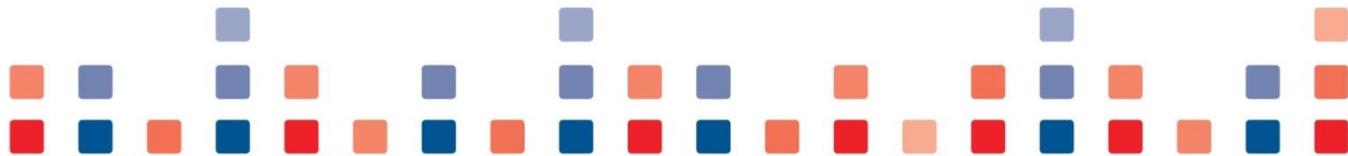
Goal: Promote sustainable tourism to balance needs of visitors with those of residents while ensuring preservation of cultural heritage



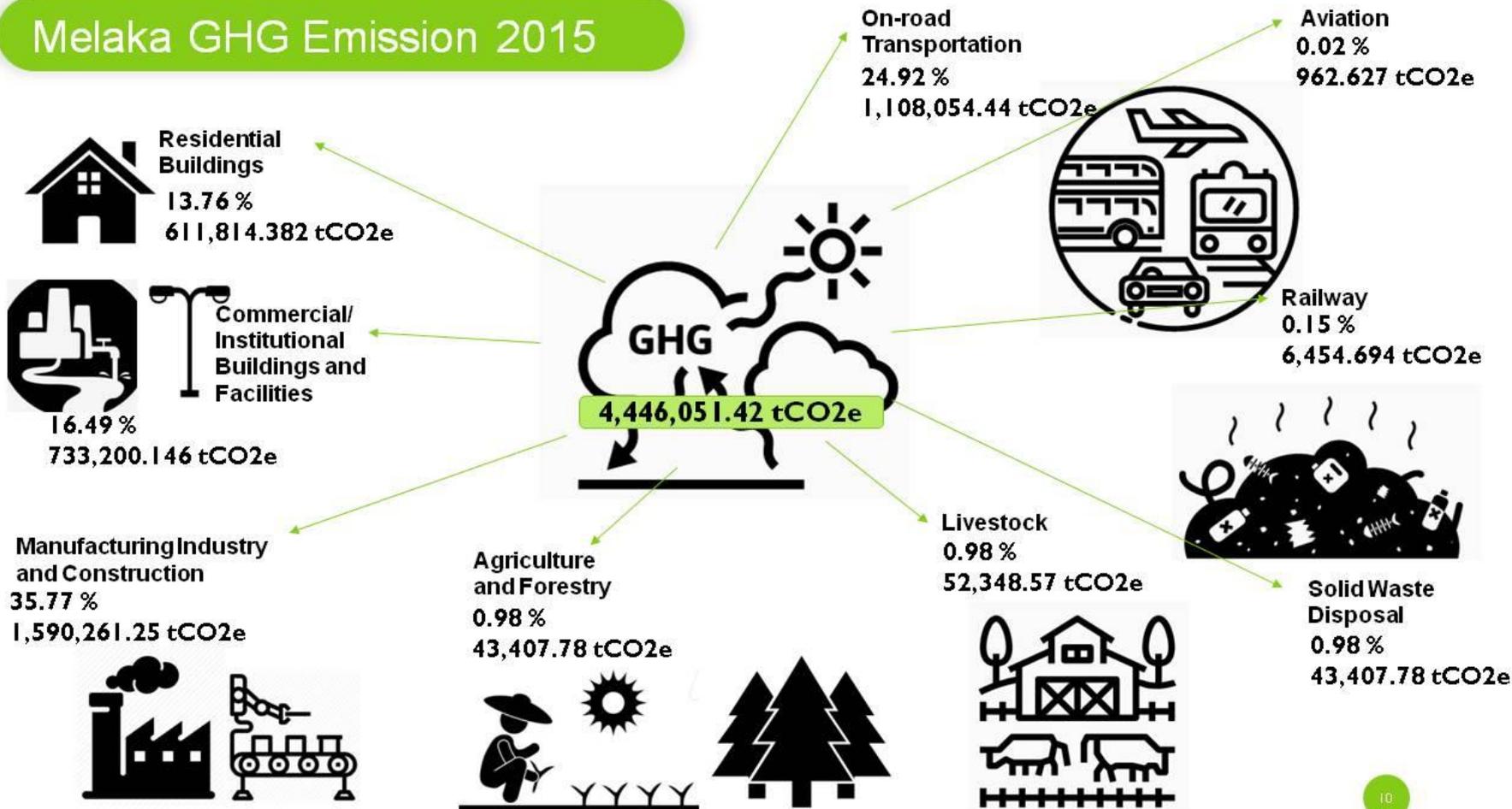
4 ACTIONS

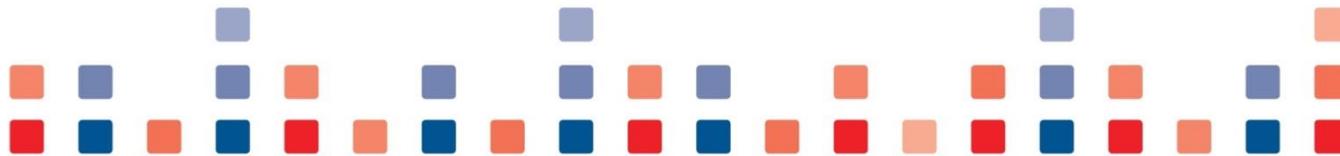
6 URBAN FORESTRY & ARGICULTURE

Goal: Protect forests and areas with rich biodiversity, and improve agricultural practices



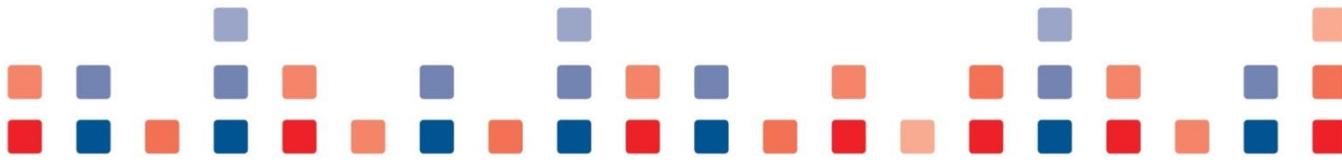
Melaka GHG Emission 2015





Melaka State GHG Emission Inventory 2013 - 2015

No	Sector	2013		2014		2015	
		GHG Emission (t CO ₂ e)	Share (%)	GHG Emission (t CO ₂ e)	Share (%)	GHG Emission (t CO ₂ e)	Share (%)
1.	Stationary Units	2,661,583.33	63.79	2,724,182.29	63.05	2,978,683.56	67.00
a.	Residential Buildings	499,654.88	11.98	579,039.48	13.40	611,814.38	13.76
b.	Commercial/Institutional Buildings and Facilities	574,844.16	13.78	559,524.35	12.95	733,200.15	16.49
c.	Manufacturing Industry and Construction	1,548,411.50	37.11	1,544,352.17	35.74	1,590,261.25	35.77
d.	Agriculture, Forestry	38,672.79	0.93	41,266.29	0.96	43,407.78	0.98
2.	Mobile Units	1,165,108.94	27.92	1,187,307.97	27.48	1,115,471.76	25.09
a.	On-Road Transportation	1,160,333.48	27.81	1,180,652.73	27.32	1,108,054.44	24.92
b.	Railway	4,411.96	0.11	6,454.69	0.15	6,454.69	0.15
c.	Aviation (Landing and Take Off)	363.49	0.01	200.55	0.00	962.63	0.02
3.	Waste	268,829.37	6.44	363,657.40	8.42	299,547.53	6.74
a.	Solid Waste Disposal	268,828.81	6.44	363,651.32	8.42	299,547.53	6.74
b.	Biological Treatment of Waste	0.56	0.00	6.08	0.00	-	0.00
4.	Agriculture, Forestry and Land Use	76,811.46	1.84	45,767.61	1.06	52,348.57	1.18
a.	Livestock	76,811.46	1.84	45,767.61	1.06	52,348.57	1.18
	Total	4,172,333.10	100	4,320,915.27	100	4,446,051.42	100



Solutions

PTHM solutions towards green technology application

With extensive experience in project management, PTHM can deliver various green technology solutions and innovations.



Awareness & Event Management



Energy Savings & Energy Efficiency



Green Buildings



Renewable Energy & Net Metering



Carbon Calculation



Biodiesel & Biomass

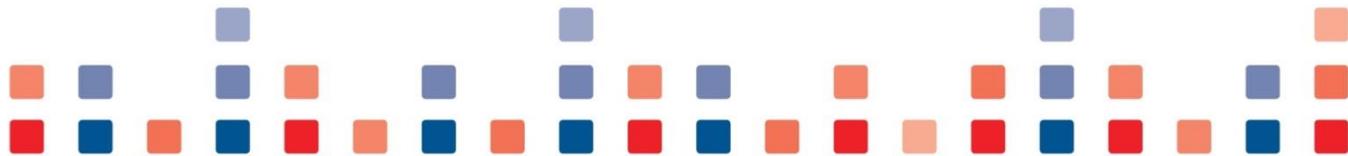


Green Governance



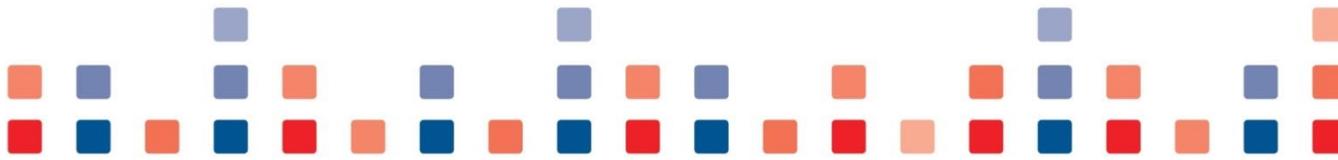
International Green Fund





1. What are the financial instruments your city has been most successful using?

- Partnership model with private investment is the best solution.
- CAPEX will be borne by investor.
- Consumer will pay back through energy savings (Solar Energy Purchase) and energy export to grid (Net Energy Metering).



Renewable Energy & Net Metering

Solar Roof-Top & Net Metering



PTHM in collaboration with TNBX and GSPARX to implement Solar Roof Top & Net Metering project in Melaka. Currently in progress to implement in stages;

- 10 government building
- High electric consumers
- Factories & Industries

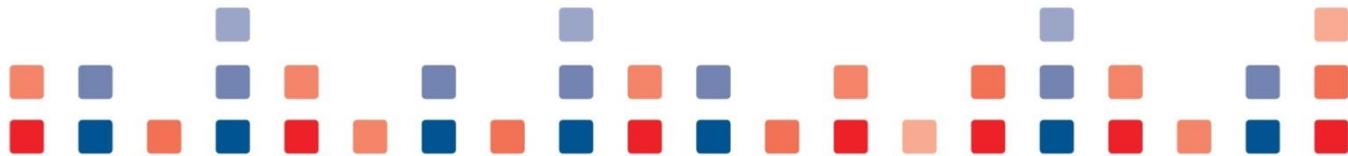


DO YOU HAVE THE GREEN SPARK?

GSPARX
Evolve • Sustain • Value

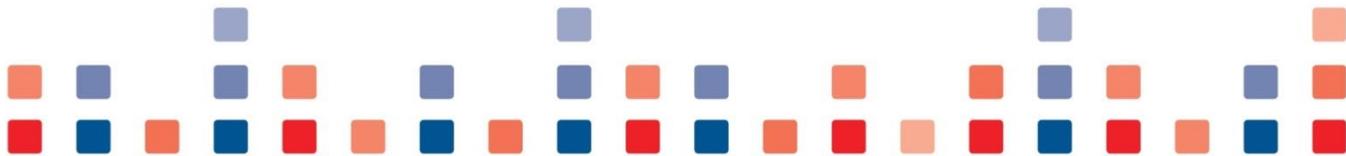
THE EASIER WAY TO SAVE ON YOUR BILL AND BE GREEN

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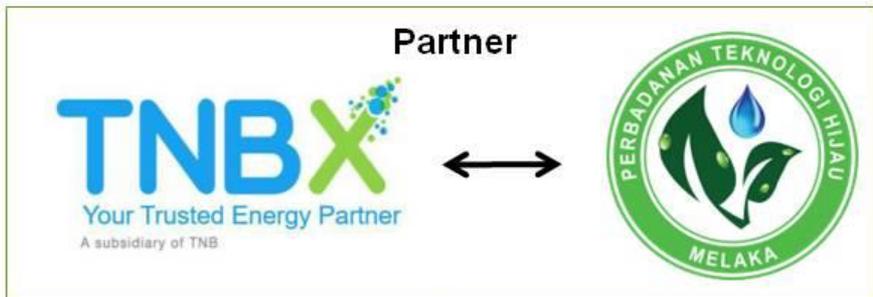


2. What is the most innovative financing model your city is using / trying to use?

- To increase Renewable Energy generation up to 20% by 2025.
- Solar roof-top is the best and quick solutions.
- Must involve private investment for accelerate the implementation.
- Solar PV Investor will invest and install solar roof-top to consumer.



Partnership Model



Consumer



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20

What is available in the market?

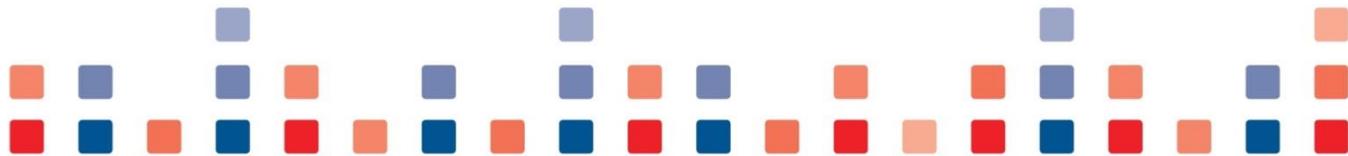
Solar Purchase	Solar Loan	Solar PPA	Solar Lease
Buy solar panels outright and see immediate monthly savings on your power bill	Pay for your panels over time with an affordable monthly payment	Go solar for no upfront cost and lock-in low energy rates	Lease solar panels for no money down and get guaranteed solar production
System Owner Customer	System Owner Customer/Financier	System Owner Investor/Owner	System Owner Investor/Owner
Cash	Cash via Loan	Solar Tariff	Solar Lease Payment
<ul style="list-style-type: none"> ✓ No monthly payment to TNBES Solar ✓ System monitoring Included ✓ Product & power output warranty** ✓ Upfront cost, keep tax credits & incentives 	<ul style="list-style-type: none"> ✓ Low monthly payment to financing partner ✓ System monitoring included ✓ Product & power output warranty** ✓ Little to no upfront cost, keep tax credits & incentives 	<ul style="list-style-type: none"> ✓ Low monthly payment to TNB Solar ✓ System monitoring Included ✓ Product & power output warranty** ✓ No upfront cost, save 10-30%* on your utility rate 	<ul style="list-style-type: none"> ✓ Low monthly payment to TNB Solar ✓ System monitoring Included ✓ Product & power output warranty** ✓ No upfront cost, save 10-30%* on your utility rate

Outright purchase (eg TNBES, ERS, GK)

Outright purchase with financing

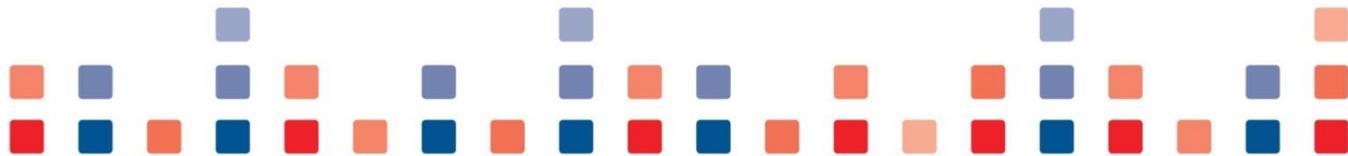
TNB's Solar Energy Purchase product

TNB's Solar Lease product



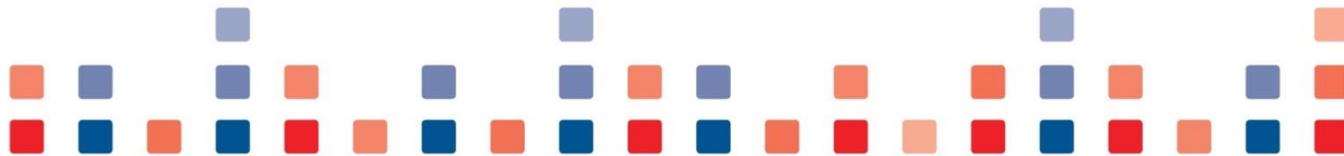
3. What have been the greatest challenge to adapting this specific instrument?

- It is relatively new in the market.
- Technical especially on roof design and structure will effect cost.
- Consumer still lack of awareness and understanding of this product.
- Risk of long term agreement up to 10 years for leasing and 25 years for Solar Energy Purchase.



4. What solutions are you using to overcome these challenges?

- Need successful pilot project, government as role model.
- Technical experts and design to optimize cost
- Promotion and testimonial to educate consumer.
- Agreement must cover tenant and building owner due to very long tenure.



THANK YOU

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