

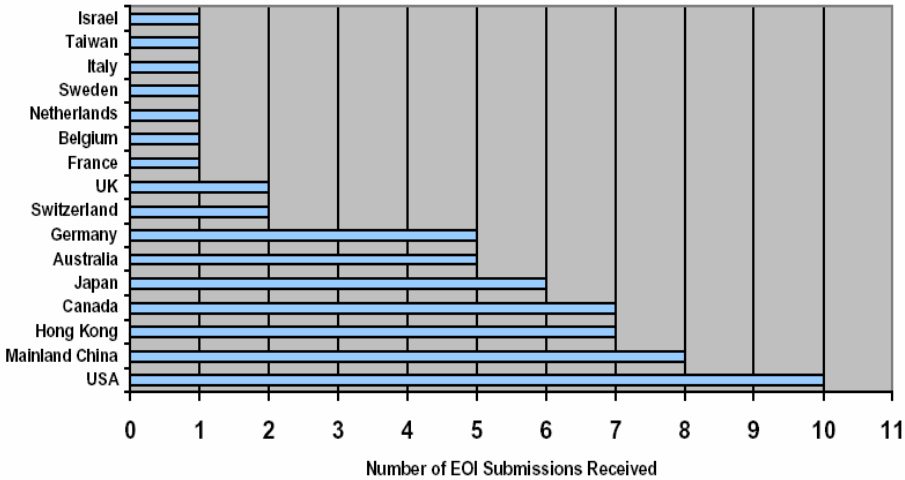
Review of Waste Management Technologies

Presentation to
LegCo Panel on Environmental Affairs
23rd May 2005



Expression of Interests from Around the World

◆ 59 proposals received from 16 different countries / regions



Strategy Options

Option 1 – Incineration with Energy Recovery

Option 2 – Gasification

Option 3 – Close-coupled Gasification-combustion

**Option 4 – Material Recovery & co-combustion of
Refuse Derived Fuel for Cement Production**

Option 5 – Mechanical Biological Treatment (MBT)

Option 6 – Composting and Incineration

Option 7 – Anaerobic Digestion and Incineration

Option 8 – MBT and Gasification

Each option has its strengths and weaknesses

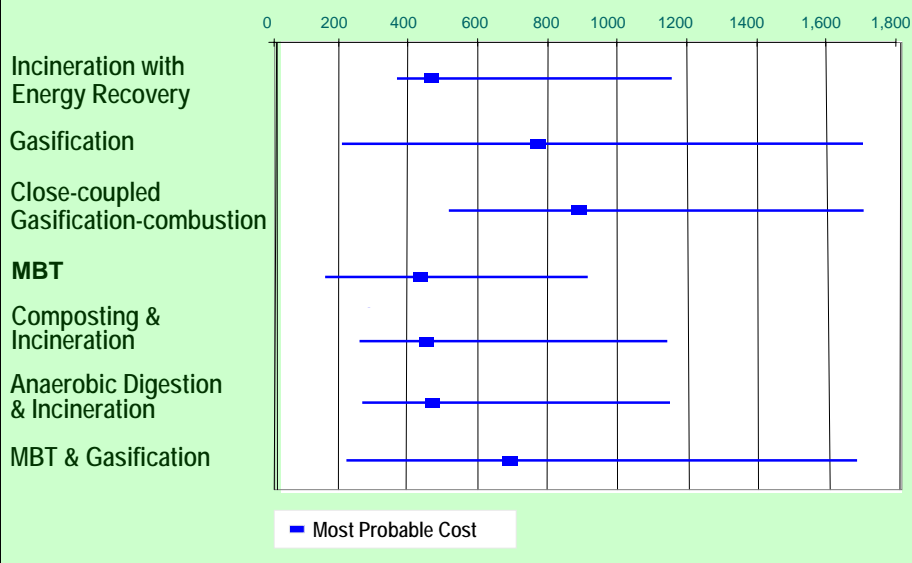
Overseas Experience

- ◆ Landfilling of organic wastes in Europe is gradually being phased out
- ◆ Gasification is becoming more commercialized in Japan but is more costly at the present and only applicable to handling smaller volumes of MSW
- ◆ MBT plants are operating in over 100 sites in Europe but the potential outlets for refuse derived fuel (major useful product of MBT) are severely limited in HK
- ◆ Technologically advanced economies are constructing more advanced and larger scale incineration facilities which could meet stringent emission standards

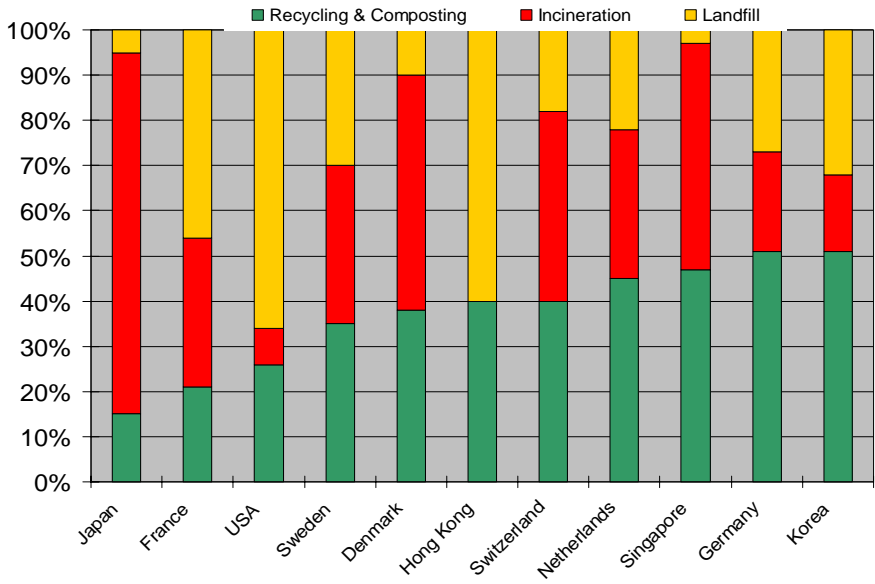
Option Evaluation (Annex B)

Criterion	Strategy Option							
	1	2	3	4	5	6	7	8
	Incineration with energy recovery	Gasification	Close-coupled Gasification Combustion	Material recovery & co-combustion	MBT	Composting and incineration	Anaerobic Digestion and Incineration	MBT and Gasification
Reliability	Excellent	Satisfactory	Satisfactory	to be demonstrated	Good	Good	Excellent	Satisfactory
Energy Recovery	19%	18%	8%	12%	0%	19%	19%	20%
Treatment Cost	See next slide							
Flexibility	Satisfactory	Satisfactory	Satisfactory	Good	Good	Satisfactory	Satisfactory	Good
Product Outlets	Satisfactory	Poor	Poor	Good	Good	Poor/Satisfactory	Poor/Satisfactory	Poor
Monopoly Concerns	Satisfactory	Poor	Poor	Poor	Satisfactory	Satisfactory	Satisfactory	Poor
Climate Change	2.17%	2.34%	1.93%	3.77%	3.70%	2.25%	2.19%	0.76%
Landfill diversion (by volume)	87%	89%-96%	95%-97%	to be demonstrated	48%	87%	87%	77%-79%
Hazardous Solid Residues	Yes	No	No	No	No	Yes	Yes	No
Land Requirements	See EA Panel Paper							
Air Emissions	See EA Panel Paper							
Liquid Emissions	See EA Panel Paper							
Visual Impacts	Poor	Satisfactory	Poor	Good	Satisfactory	Poor	Poor	Satisfactory
Setup Timeframe	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Good	Satisfactory	Satisfactory	Satisfactory
Employment	None of the options would provide significant new jobs (skilled and unskilled) relative to HK's overall employment situation.							
Public Health	All IWM strategy options would pose a very low or insignificant risk to public health.							

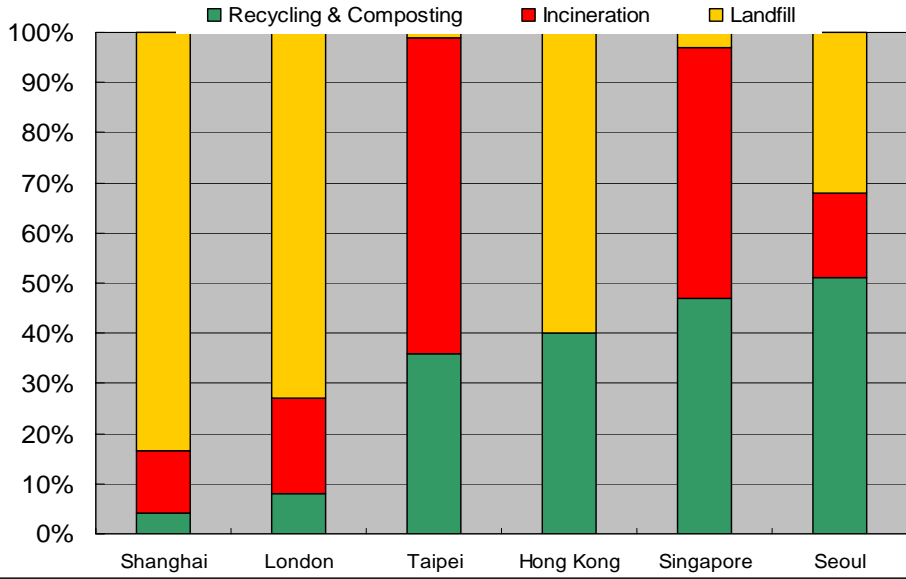
Treatment Cost Comparison (\$ per tonne)



What are other countries doing ?



What are other cities doing ?



For Shanghai, 52% of MSW goes to primitive dumps

