Sustainable Energy Use in Urban Areas

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Key Points

- Urban population will grow at 2.2% (UN report)
- Asia Pacific total population will grow at 0.9% (UN report)
- Suburbanization happens when urbanization starts peaking and people wish to seek cleaner living areas – prevalent in developed countries
- A clear nexus between urbanization and motorization and passenger transport demand – household/industry income is a key determinant in making this choice

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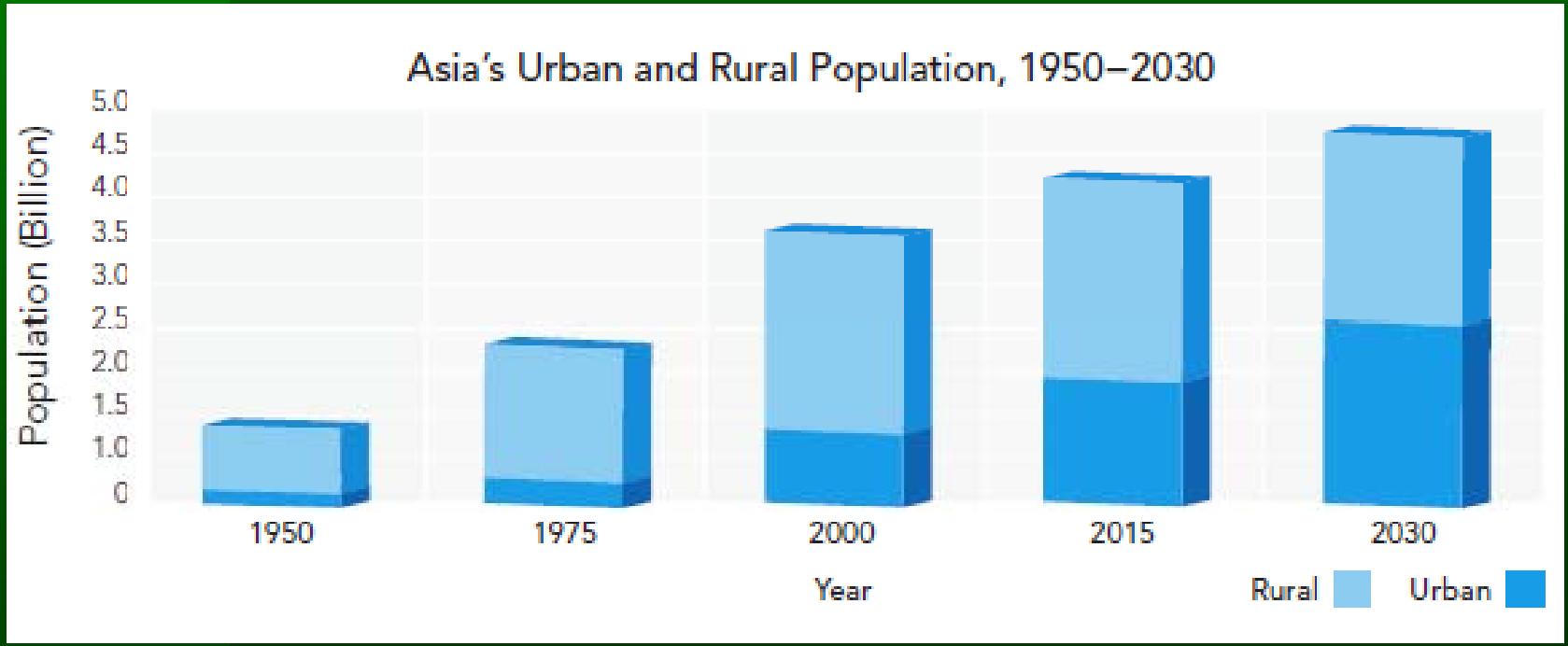
Asia's Urban and Rural Population



- Source: ADB, 2008

Policy framework for energy emission-related issues in cities

Section in which to intervene (excluding industry	Physical indicators	Ways to intervene	Tools with which to intervene	Future scenario	Consensus of stakeholders
Urban planning	Population density Urban functions Urban land use Building	1. Technology options 2. Management options *(Based on the nature of each determinant)*	1. Economic tools 2. Regulatory tools 3. Institutional arrangements 4. Voluntary mechanisms *(Based on an evaluation of the number of tools applicable to each sector, determinant or way)*	1. How might such determinants change in the future? 2. What kind of technologies and management principles might evolve in the future?	1. Who are the stakeholders? *(National government, local government, private sector, civil society)* 2. What kind of combinations of *determinants, ways* and *tools* would be most suitable given the roles of various stakeholders?
Urban transport	Travel activity Travel modes Energy intensity Fuel quality and choice				
Households	Number of households Floor space use Appliance utilisation Energy efficiencies Fuel choice Building				
Business	Office floor space Appliance utilisation Energy efficiencies Fuel choices Buildings				
Waste	Waste volume Incineration Landfill Energy recovery				

- Source: IGES, 2004

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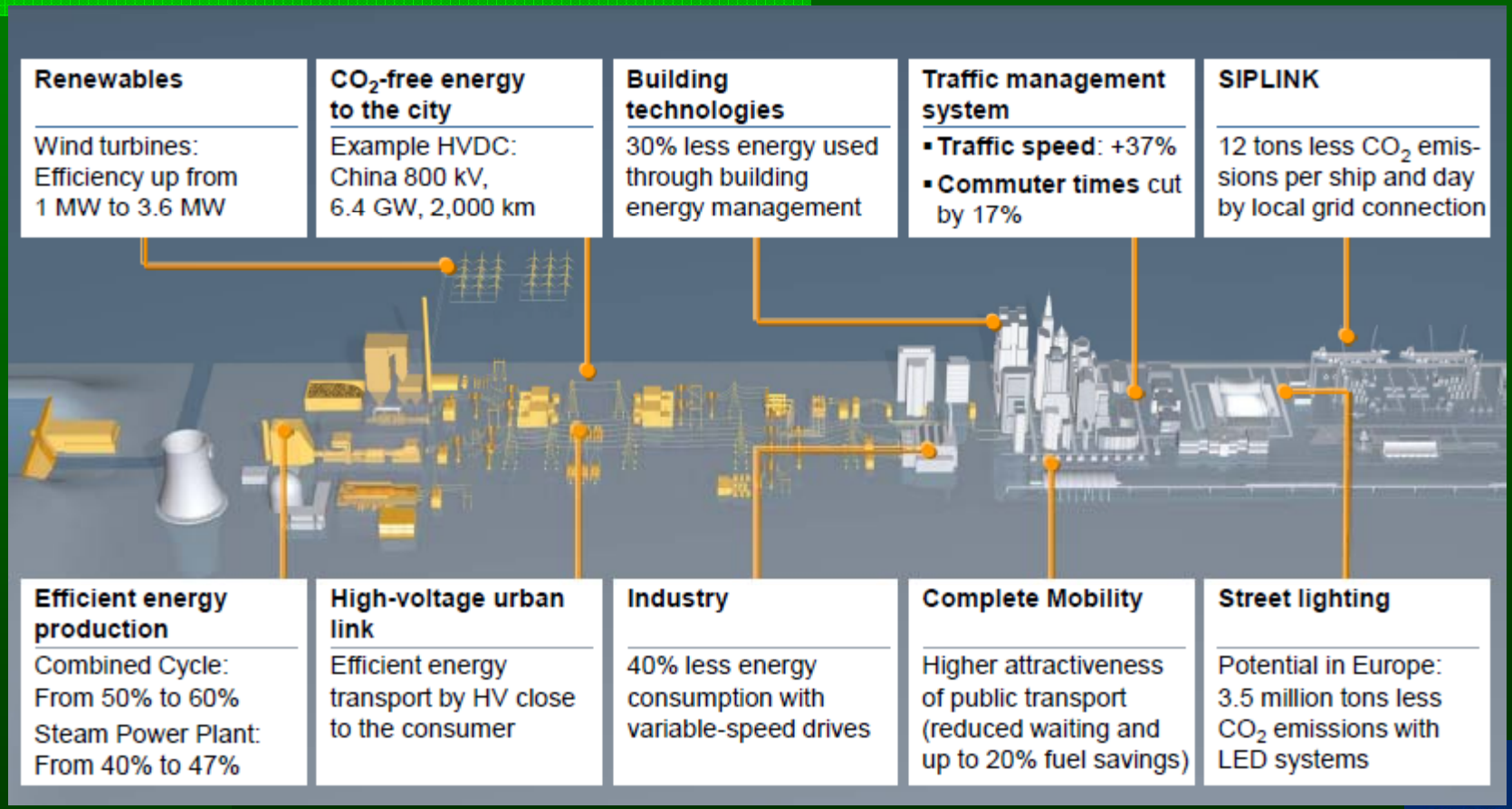
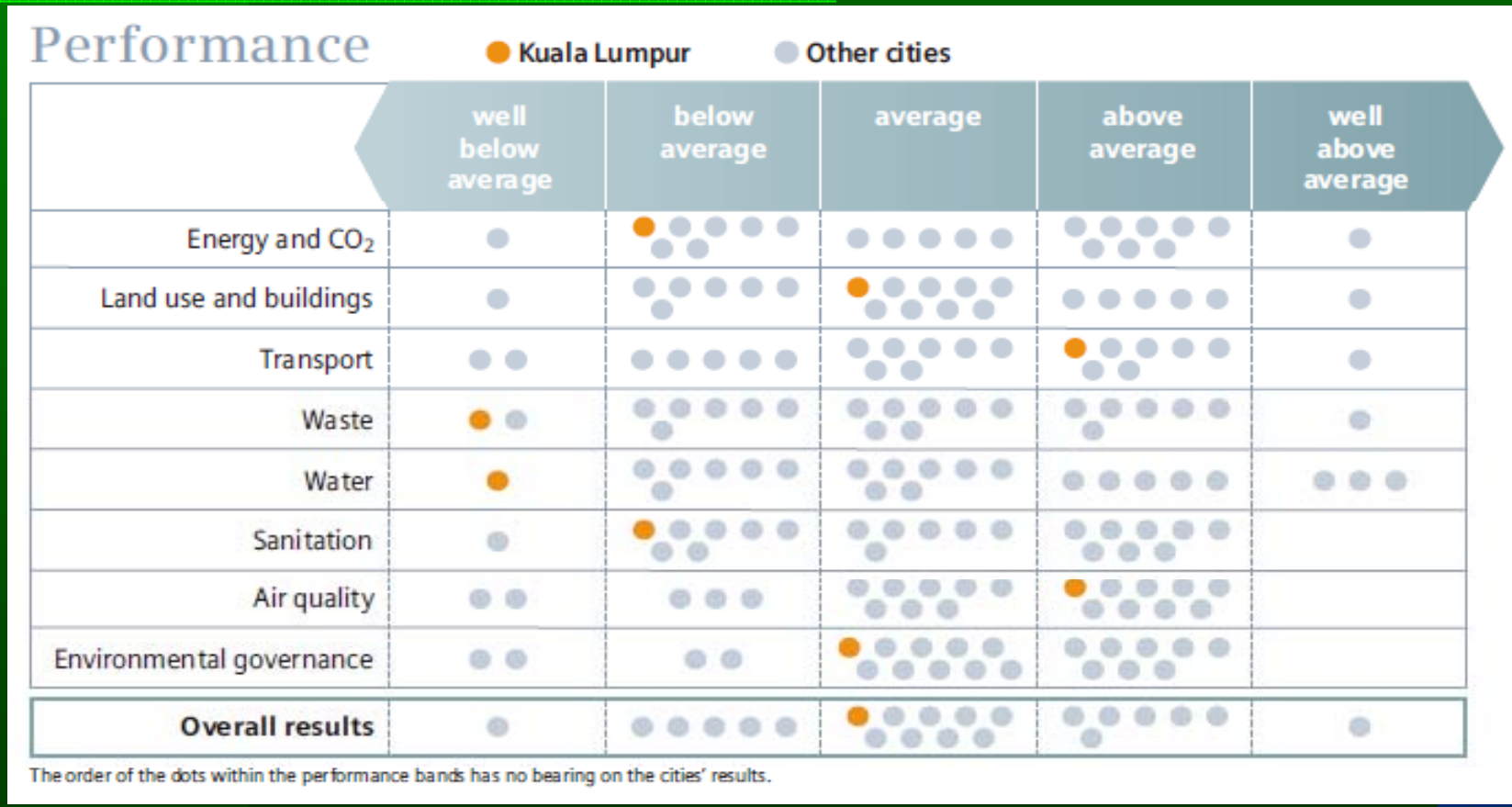
Examples of EE Measures in Urban Areas



- Source: Siemens, 2011

Asia Green City Index



- Source: Economist Intelligence Unit, Asia Green City Index. 2011.

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Asia Green City Index

Quantitative indicators: Kuala Lumpur

		Average	Kuala Lumpur *	Year**
Energy and CO_2	CO_2 emissions per person (tonnes/person)	4.6	7.2 [1e]	2007
	Energy consumption per US$ GDP (MJ/US$)	6.0	5.0 [1e]	2007
Land use and buildings	Population density (persons/km^2)	8,228.8	6,811.1	2009
	Green spaces per person (m^2/person)	38.6	43.9	2004
Transport	Superior public transport network , covering trams, light rail, subway and BRT (km/km^2)	0.17	0.27	2010
Waste	Share of waste collected and adequately disposed (%)	82.8	57.5 [2e]	2005
	Waste generated per person (kg/person/year)	375.2	815.7	2005
Water	Water consumption per person (litres per person per day)	277.6	497.2 [3e]	2008
	Water system leakages (%)	22.2	37.0 [4e]	2004
Sanitation	Population with access to sanitation (%)	70.1	70.0 [5e]	2003
	Share of wastewater treated (%)	59.9	0.0	
Air quality	Daily nitrogen dioxide levels (ug/m^3)	46.7	40.1	2008
	Daily sulphur dioxide levels (ug/m^3)	22.5	6.2	2008
	Daily suspended particulate matter levels (ug/m^3)	107.8	44.0	2008

- Source: Economist Intelligence Unit, Asia Green City Index. 2011.

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Thank you

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