

Sustainable Urban Energy Planning in Southeast Asian Cities

Lessons from a recent World Bank study of 3 Pilot Cities



IPEEC/WEACT ASEAN Region Energy Efficiency Workshop
Session V

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Introduction to the Sustainable Urban Energy Programme (SUEP)

Background



Australian Government
AusAID



The World Bank

The study was part of the AusAid-supported **Sustainable Urban Energy Program (SUEP)**: a follow-up to the Energy Flagship Report on East Asia's Sustainable Energy Future.

The objective was to help the 3 pilot cities begin **formulating long term sustainable urban energy development strategies** in the context of city's overall development plans.

WINDS OF CHANGE
EAST ASIA'S SUSTAINABLE ENERGY FUTURE

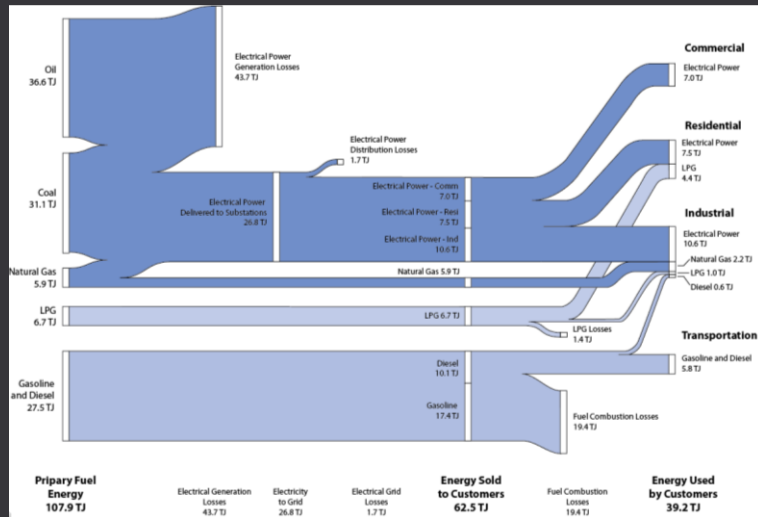


THE WORLD BANK

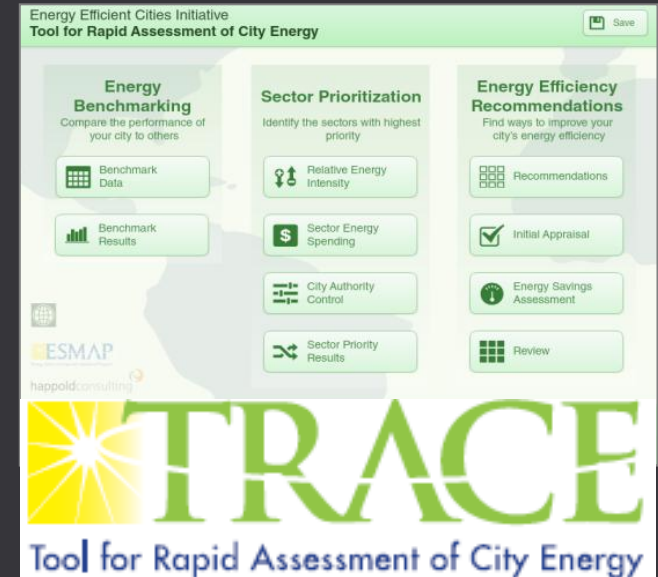


Australian Government
AusAID

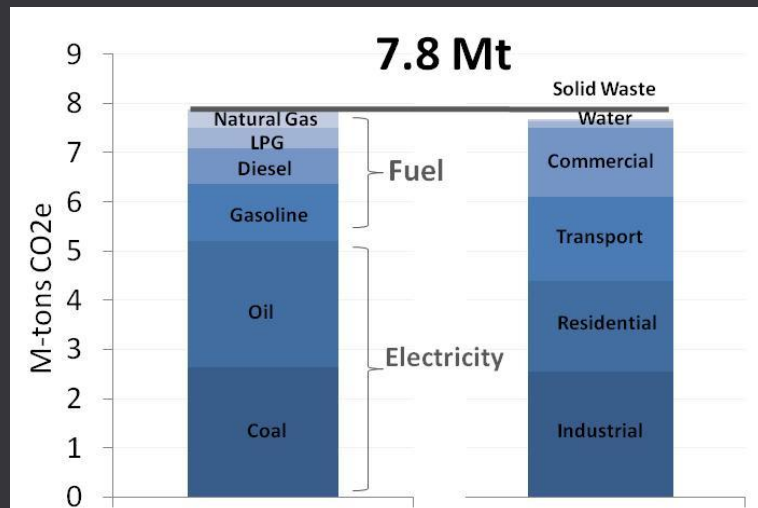
City Energy Balance



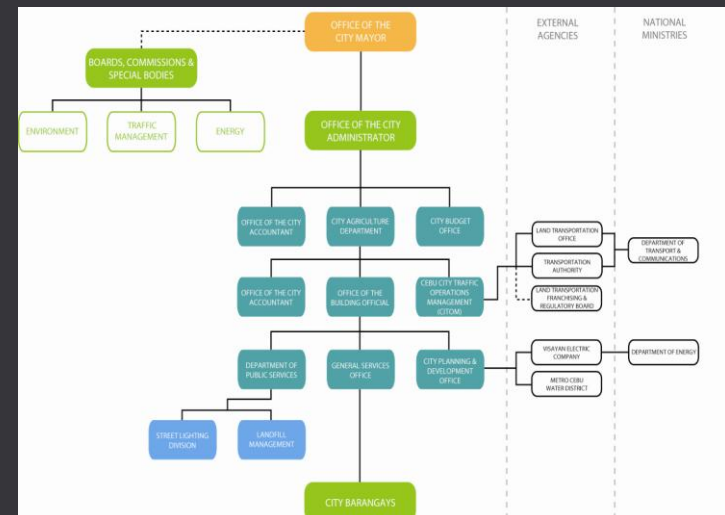
Identifying Municipal EE Opportunities



City GHG Emissions

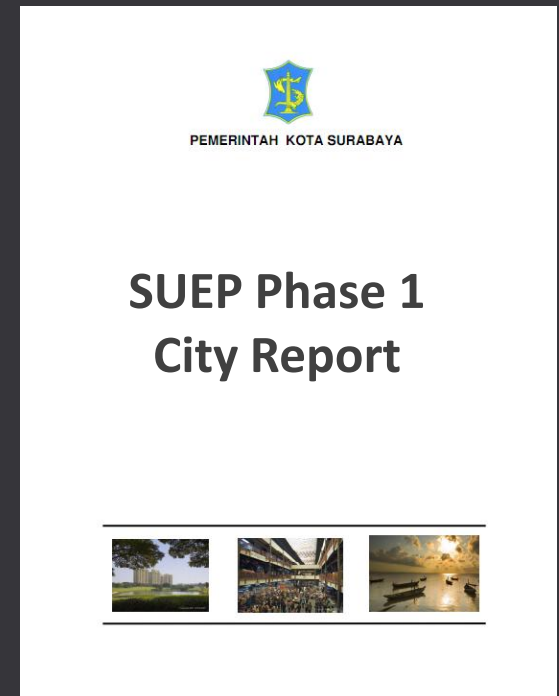


Institutional & Regulatory Mapping



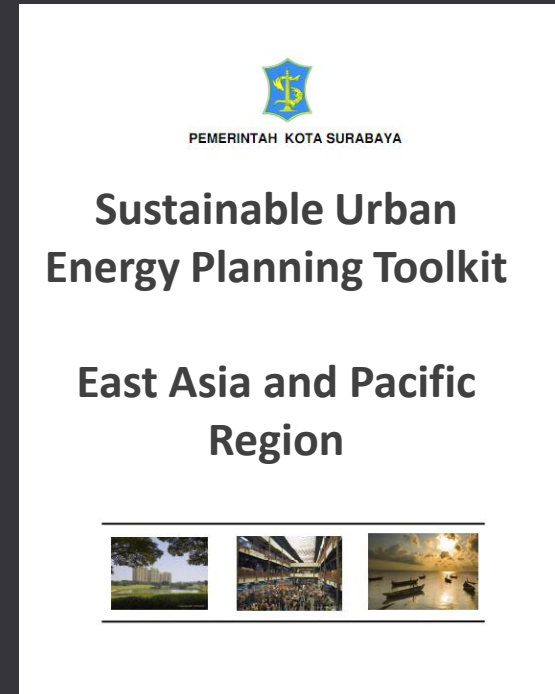
Output

- Review of Existing Energy Initiatives
- City Energy and Emissions Profile
- City Government Energy Spending
- Sector Recommendations
- Institutional and City-wide Recommendations
- Energy Efficiency Action Plan



SUEP Phase 2 (current)

Creation of a **Sustainable Urban Energy Planning Toolkit** designed specifically for the **East Asia Pacific Region**



City Introduction and Key Data

Pilot City Locations



Da Nang

Cebu

Surabaya

Key Data

Parameter	Cebu	Surabaya	Da Nang
Population (m)	0.8	2.8	0.9
Energy Use (TJ)	23.1	113.8	14.8
GHG Emissions (MtCO ₂ e)	1.8	8.6	1.5
Renewables in Grid (%)	35	0	43
Annual Energy Demand Growth (%)	4.25	7.2	13
Energy Imports (to city) (%)	89	96	100
City Budget spend on Energy (%)	4.5	3.6	3

Lessons from the Study

Institutional

1) Dislocation between EE/RE efforts at National and local level:

- Little evidence of application or support at city level
- Policies, plans and programs from 2006 and earlier, but local 'step' missing?

2) Integrated City Planning:

- Absence of integration of issues (transport, utilities, land use) in planning process
- Good data (registrations), absence of monitoring or survey data to aid planning strategies



Sectors

Parameter	Energy Use %			Greenhouse Gas Emissions%		
	Cebu	Surabaya	Da Nang	Cebu	Surabaya	Da Nang
Industry	36	34	25	38	34	23
Transportation	51	22	53	40	20	46
Buildings	12	44	20	16	44	18

Sectors

1) Industry

- Limited focus during SUEP project, but high energy user, high GHG emissions and growing.....
- Government and City programs must include industry

2) Transport

- Da Nang and Surabaya low public transport mode share (both <5%), Cebu highest encountered at 80%
- All cities plan BRT, + other infrastructure and policies.....but need **sound monitoring data** to ensure success



Sectors

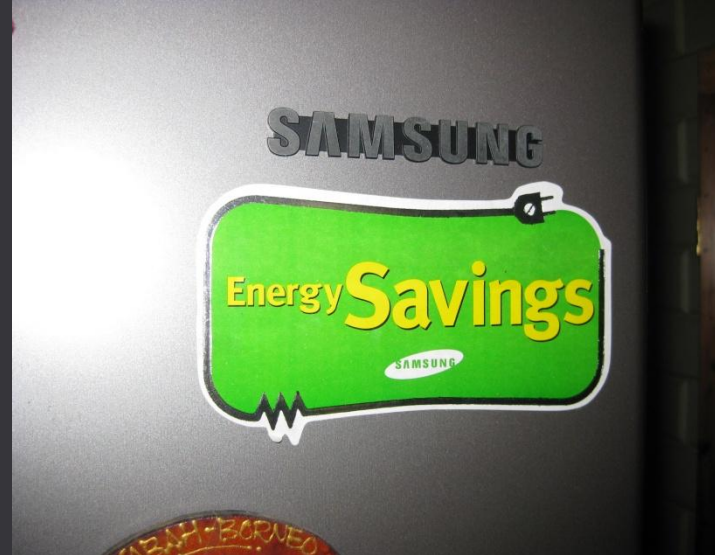
3) Buildings

- Generally, good ROI on simple retrofits for municipal buildings (lighting, AC)
- Medium-term application of Green Building Codes....but care needed



Some Common Barriers

- 1) National Procurement Codes based on 'first cost'
- 2) Limited investment planning at municipal and utility level
- 3) Limited knowledge and expertise with respect to financial products and procurement of EE (e.g. ESCo contracting)
- 4) Limited private sector involvement



Summary



Pilot Cities require coordinated efforts to plan for, and achieve, a sustainable energy future.

Time is limited to achieve this.

Key Issues

- Energy Security
- Growth In Energy Demand

Exacerbated by

- Rising per capita GDP
- Rising urban population