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Information Exchange - ECCJ

Associate Professor Chandra Sekhar
Department of Building,
School of Design and Environment

Energy Efficiency – Recent Developments in Singapore

1998 - an Inter-agency Committee on Energy Efficiency (IACEE) formed to address concerns over the increasing energy consumption of Singapore and to recommend policy measures to improve energy efficiency in Singapore

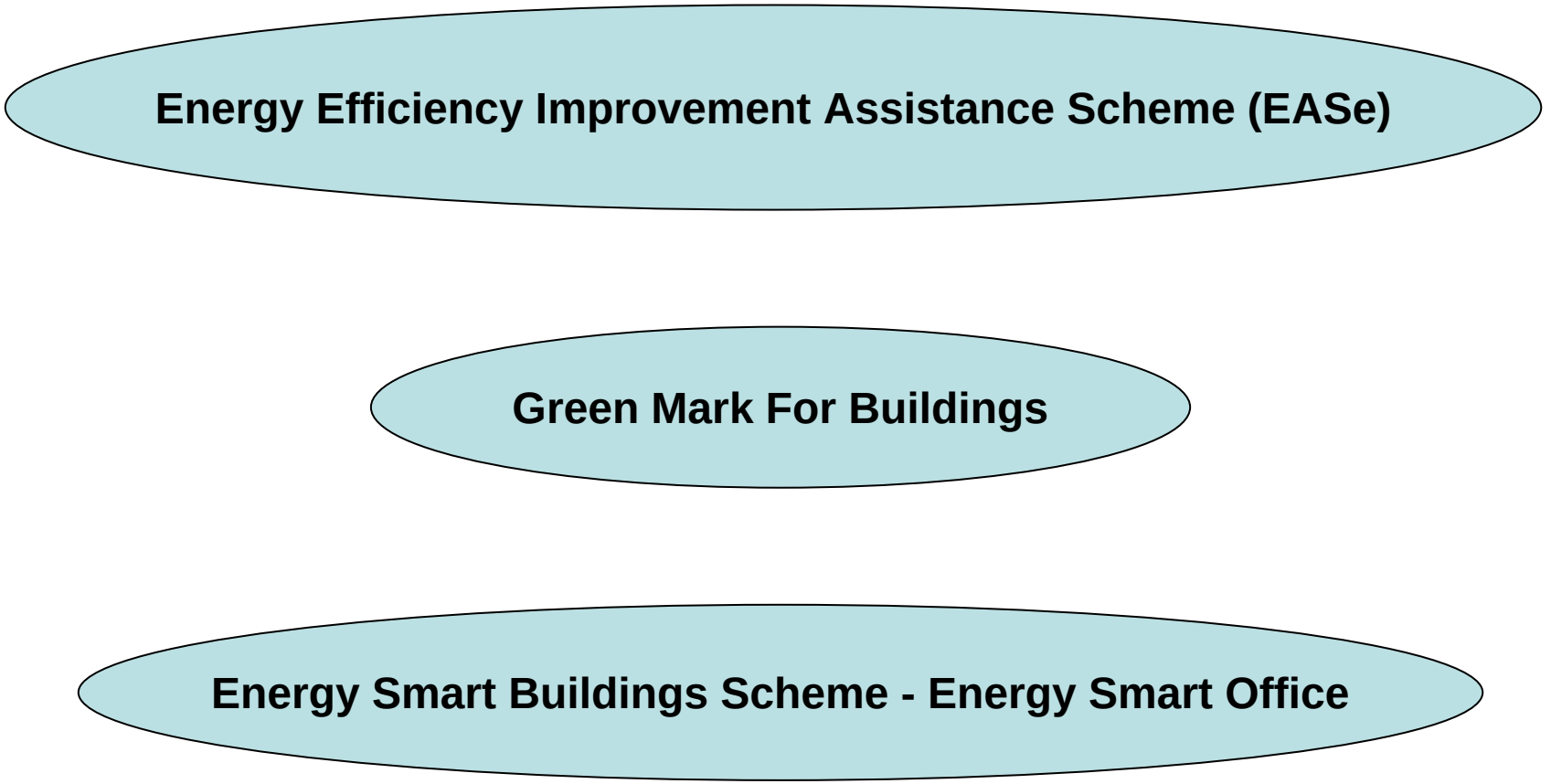
- **Recommendations presented in a report on Energy Efficiency in Singapore**
- **Approved by Cabinet – Government Agencies tasked to follow up on the recommendations**

1 Apr 01 - the Ministry of the Environment and Water Resources (MEWR) re-structured the IACEE,
expanded its scope and renamed it the
National Energy Efficiency Committee (NEEC)

2006 - **Singapore's plan to accede to the Kyoto Protocol**
- **NEEC expanded in scope to cover climate change issues and renamed the National Climate Change Committee (NCCC)**

Energy Efficiency – A Key Thrust

Energy Efficiency in Building Sector



Promoting Energy Efficiency in Buildings

- Regulations and standards
  - Building and Construction Authority's Building Control Regulation for air-con bldgs (revised in Jan 2004)
    - Maximum permissible Envelope Thermal Transfer Value (ETTV) and Roof TTV (RTTV) levels
    - Minimum efficiency requirements for air-con systems exceeding 30 kW
    - Maximum lighting power budget

NEA Programme

Promoting Energy Efficiency in Buildings

Energy Efficiency Improvement Assistance Scheme (EASe)

- **Introduced in Apr 2005**
- **$10 million incentive scheme**
- **Fund up to 50% of cost of engaging ESCOs**
- **Manufacturing companies and building owners/operators**
- **Requires companies to contract with ESCOs accredited by ESU[1] to provide audit services**
- **60 companies have signed up - of which 40 are buildings (230 GWH annual energy savings expected)**

[1] ESU : Energy Sustainability Unit, National University of Singapore

Promoting Energy Efficiency in Buildings

- Energy Efficiency
- Water Efficiency
- Site/Project Development & Management
  (Building Management & Operation for existing buildings)
- Good Indoor Environmental Quality & Environmental Protection
- Innovation

Green Mark Incentive

Green Mark Rating [1]	Green Mark Incentive		Minimum Energy Savings[4]
	Rate	Cap	
Gold	$3.0/m² for new GFA[2] & $1.2/m² for existing GFA[3]	$300,000 or 0.2% of construction/ retrofitting cost, whichever is lower	-
Gold^{PLUS}	$5.0/m² for new GFA[2] & $2.0/m² for existing GFA[3]	$2,500,000 or 0.33% of construction/ retrofitting cost, whichever is lower	25%
Platinum	$6.0/m² for new GFA[2] & $2.4/m² for existing GFA[3]	$3,000,000 or 0.4% of construction/ retrofitting cost, whichever is lower	30%

Note:

1. The prevailing version of the **BCA Green Mark Criteria for New Buildings** will apply. Please see BCA website for details.
2. These rates apply to new buildings and the new GFA added to existing buildings.
3. These rates apply to upgrading works for existing GFA.
4. The minimum energy savings requirements is only applicable for air-conditioned buildings (exclude residential buildings). The energy saving must be demonstrated by energy modeling and validated on completion.

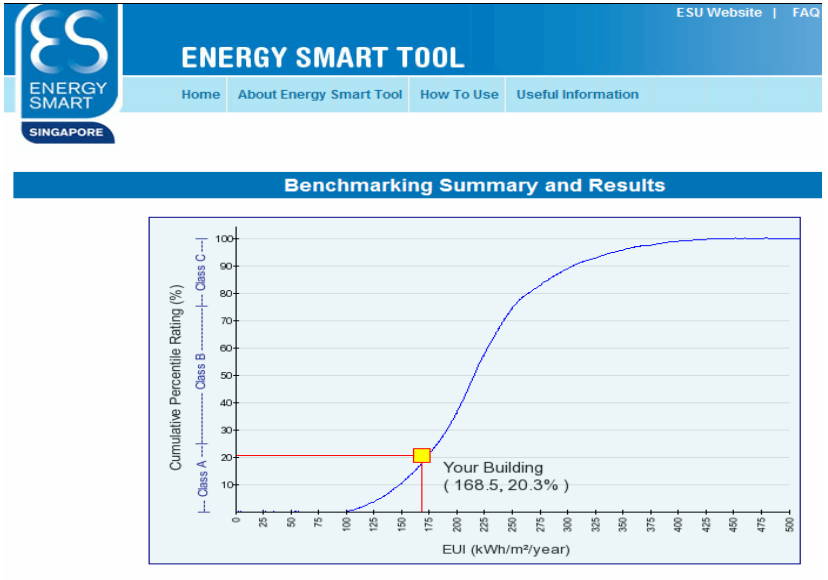
The cash incentive would be disbursed in two stages:

- **50% upon successful certification to the required Green Mark standards during design or construction stage**
- **and the remaining 50% after validation, to be undertaken one year after TOP**

NEA Programme

Promoting Energy Efficiency in Buildings

- Energy Smart Building Labelling Scheme
  - Accord recognition to buildings with good energy performance, while maintaining a healthy and productive indoor environment



Singapore Government takes the Lead

- All government buildings > 15,000 m^2 need to have energy audits done by 2010
- All new government buildings must be Green Mark accredited
- Environmental Score Card of all agencies

Energy Sustainability Unit

The Unit's Mission:

“To advance energy sustainable development in Singapore and the tropics by establishing a knowledge base for fostering healthy, productive and sustainable environmental practices and research”

The Energy Sustainability Unit (ESU) was established in August 2004 at the School of Design and Environment, NUS through the support of the Economic and Development Board (EDB), the National Environment Agency (NEA) and the Energy Market Authority (EMA).

EDB Programme

EDB-LEAP Programme

Economic Development Board –
Locally-based Enterprise Advancement Program (LEAP) Programme

Development of a performance measurement and verification protocol for Singapore

- Establishing a Training Curriculum and a National Certification System for energy engineers and managers
- Establishing a measurement and verification protocol on energy utilization for use by ESCOs in Singapore
- Developing and implementing a National Accreditation System of Energy Services Companies (ESCOs)
- Organizing events to educate professionals, industries and financial institutions

EDB Programme

Singapore Certified Energy Manager (SCEM) Program

OBJECTIVES

- **To build competent technical capacity in support of the energy services sector**
- **To establish a formal training and certification system for Energy Managers**
- **To motivate the provision of training services in relevant areas of energy management.**

EDB Programme

Energy Services Companies (ESCOs) Accreditation Scheme

Enhance professionalism and quality of services offered by ESCOs

The accreditation scheme can lead to the following benefits:

- **Development of professional and qualified ESCOs and energy engineers;**
- **Enhance the standing of ESCOs, and in particular energy auditing services;**
- **Support services procurement and selection procedures;**
- **Support public sector incentive schemes in the promotion of energy efficiency; and**
- **Reduce wastage and false claims amongst industry players.**

The accreditation is open to any company established in Singapore who wishes to be accredited in the provision of energy auditing services for Building and Industrial facilities.

Useful Links

http://www.nccc.gov.sg

http://www.bca.gov.sg

http://www.bca.gov.sg/GreenMark/green_mark_buildings.html

http://app.nea.gov.sg/

http://www.esu.com.sg/