

# Building Energy Saving Strategy in Hong Kong “Built-in” + “Plug-in”

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Organisers:



International Co-owners:



# 2015 United Nations Climate Change Conference, COP 21



Organisers:

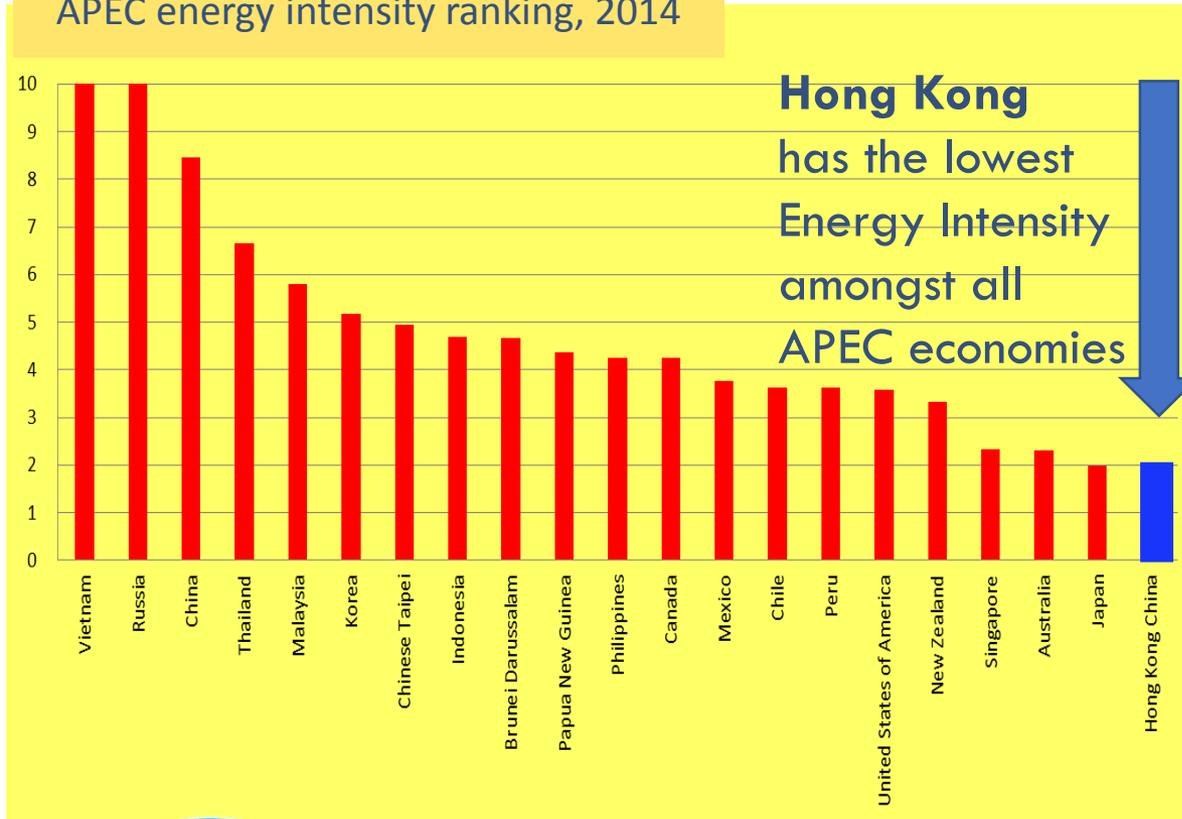


International Co-owners:



# HK Situation – the Past Decades

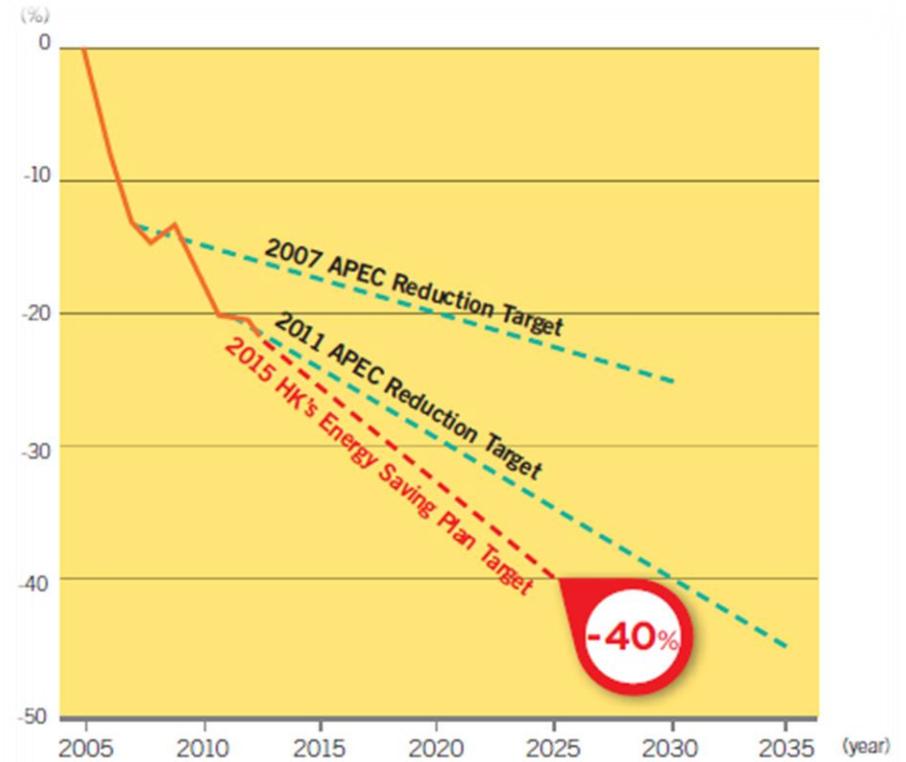
APEC energy intensity ranking, 2014



More than 20% energy intensity reduction



# HK Situation – the Past Decades



**Reduction of energy intensity by 40% by 2025**



# Challenge in Hong Kong



Gov. & Private Buildings  
**8000+** **42000+**



Organisers:



International Co-owners:

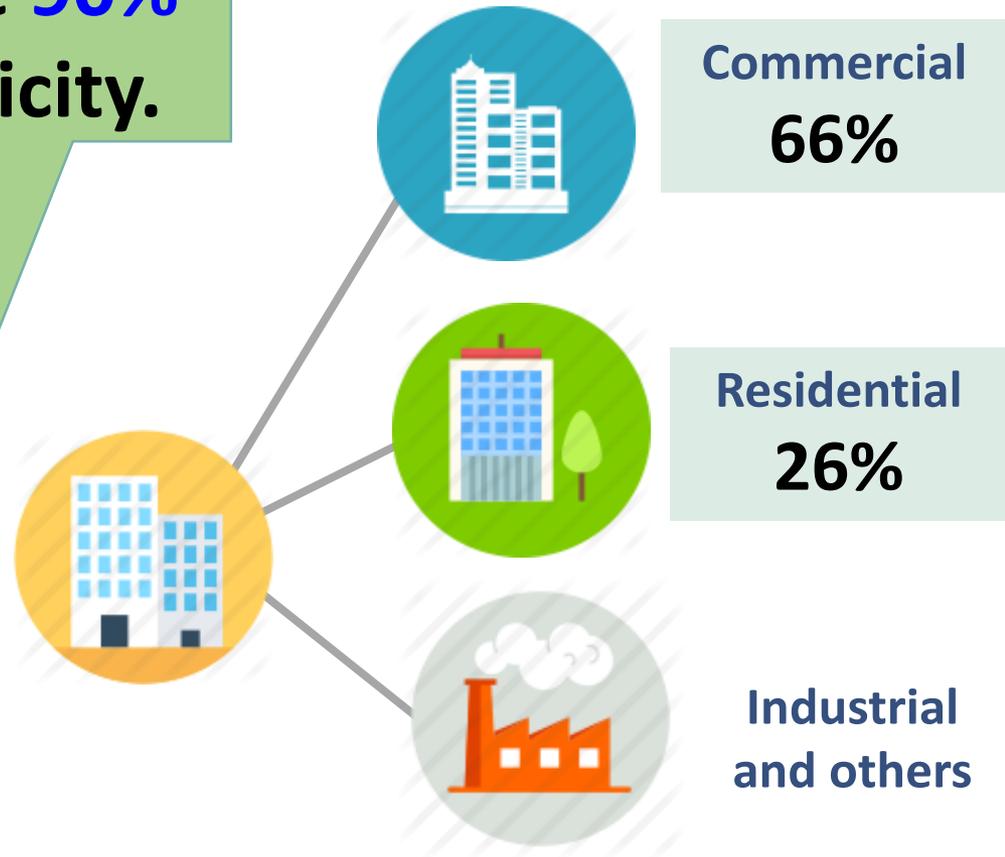
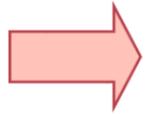
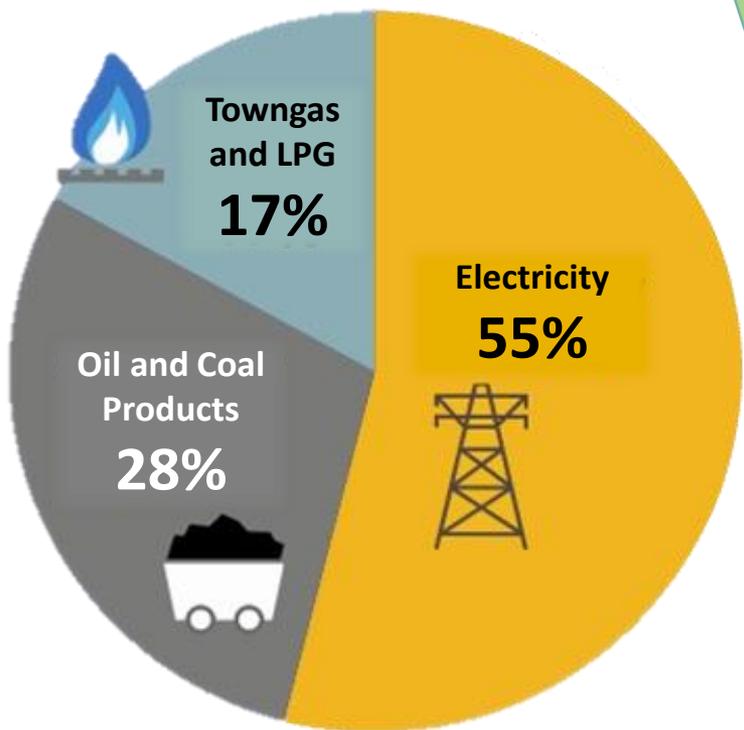


Sustainable Buildings and Climate Initiative  
Promoting Policies and Practices for Sustainability



# Energy Consumption in HK

Buildings Consume **90%** of the City's Electricity.



# Enactment of Ordinance

## Enactment EELPO

Established Energy Efficiency Office under EMSD



ENERGY LABEL 能源標籤	
more efficient 效益較高	Grade 1
1	
2	
3	
4	
5	
less efficient 效益較低	
Annual Energy Consumption (kWh/year) 每年耗電量 (kWh/年) 全年平均耗電量	250
Washing Capacity (kg) 洗衣量 (公斤)	5
Water Consumption (liters/cycle) 耗水量 (公升)	72
Washing Machine Brand	ABC 品牌
Model	HK1234 型號
Reference Number/Year Information Provider	W080123/2008 K12 資料提供者
機電工程署 EMSD	

2008

1994

1995

2012

- Extension of product coverage
- Tightening efficiency standards

Voluntary Scheme on Energy Labelling and Building Energy Efficiency



Enactment BEEO

# Buildings Energy Efficiency Ordinance (BEEO)



Air-conditioning installation



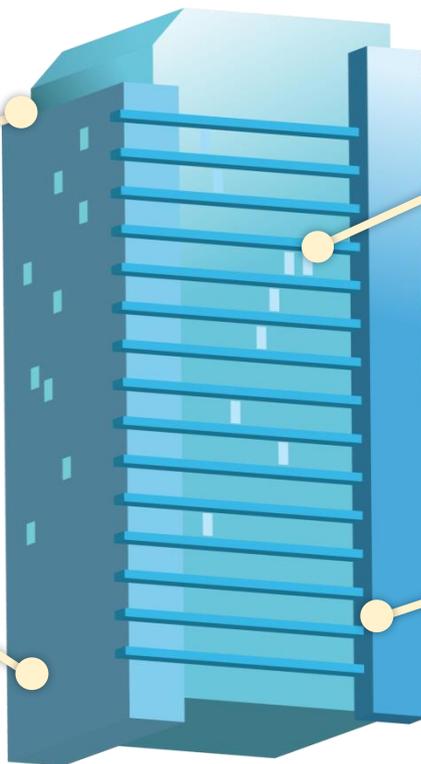
Lighting installation



Electrical installation



Lift & Escalator installation



Organisers:



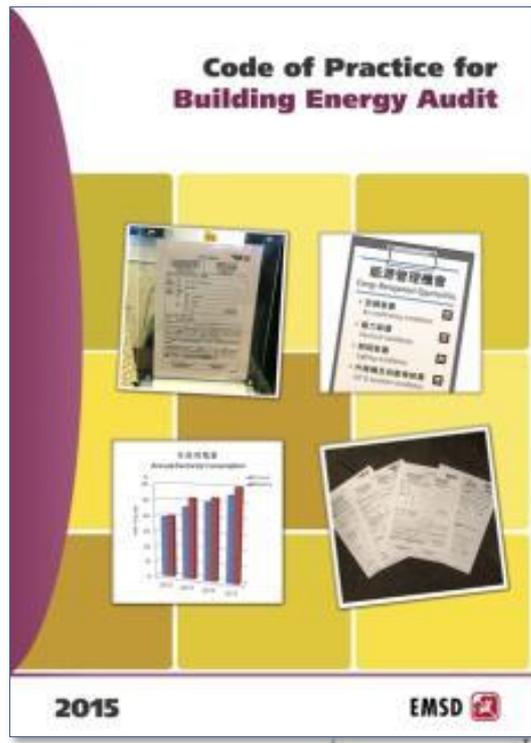
International Co-owners:



# Building Energy Code (BEC) and Energy Audit Code (EAC)



- (1) Newly constructed buildings
- (2) Retrofitting in existing buildings



(3) Energy Audit

Building Energy Code

Building Energy Code



International Co-owners:



# (1) Newly Constructed Buildings

## Stage One Declaration (Construction Commence)

Engage **Registered Energy Assessor (REA)** to submit declaration



## Stage Two Declaration (Building Completion)

Declaration on the compliance of Building Energy Code



10

Organisers:

International Co-owners:

# (2) Major retrofitting works in existing buildings

## Works Area

Total renovation area  
 $\geq 500 \text{ m}^2$



## Central BS installation (CBSI)

Addition/upgrade of main component:



electrical  
circuit  
 $\geq 400\text{A}$

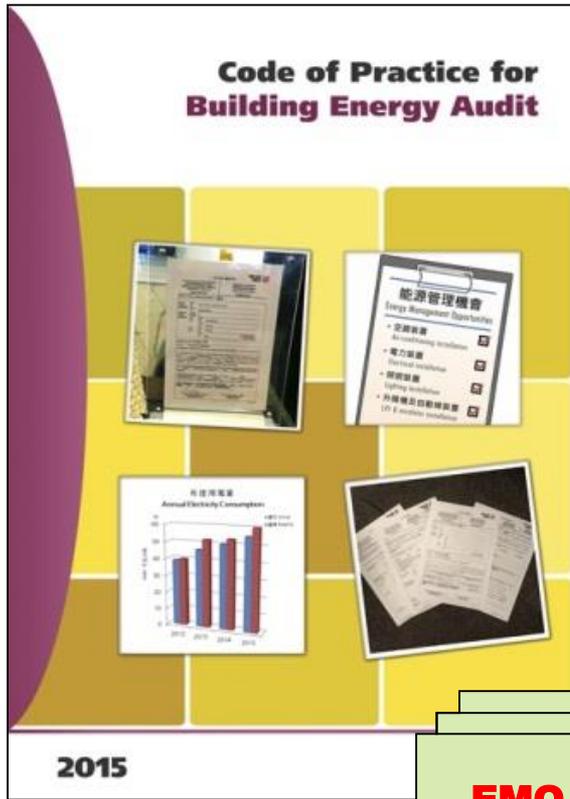


A/C  
installation  
 $\geq 350\text{kW}$



Replacement  
of motor  
drive

# (3) Energy Audit



- ✓ From Registered Energy Assessor (REA)
- ✓ Energy Audit Report with Energy Utilization Index (EUI)
- ✓ Identification of Energy Management Opportunities (EMO)

**EMO**  
- Cat 1  
- Cat 2  
- Cat 3

# Buildings Energy Efficiency Ordinance Commercial Building

## Code of Practice for Energy Efficiency of Building Services Installation



2015

EMSD

## Built-in Equipment



Lighting



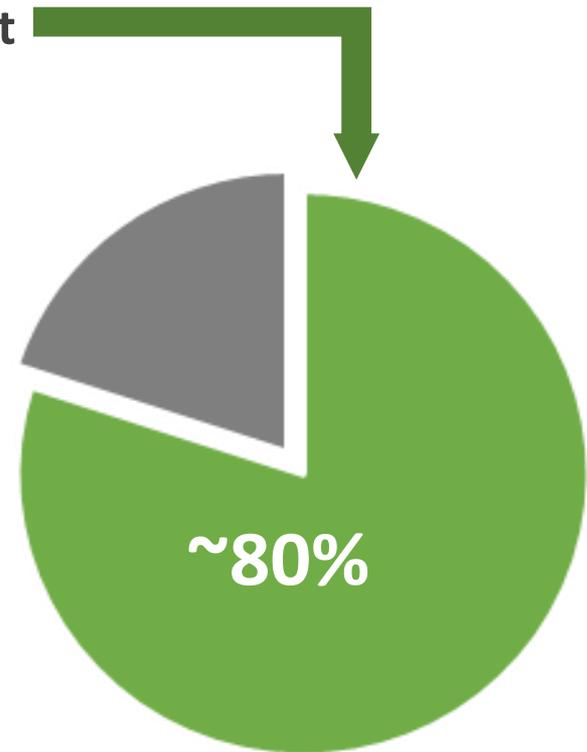
Electrical



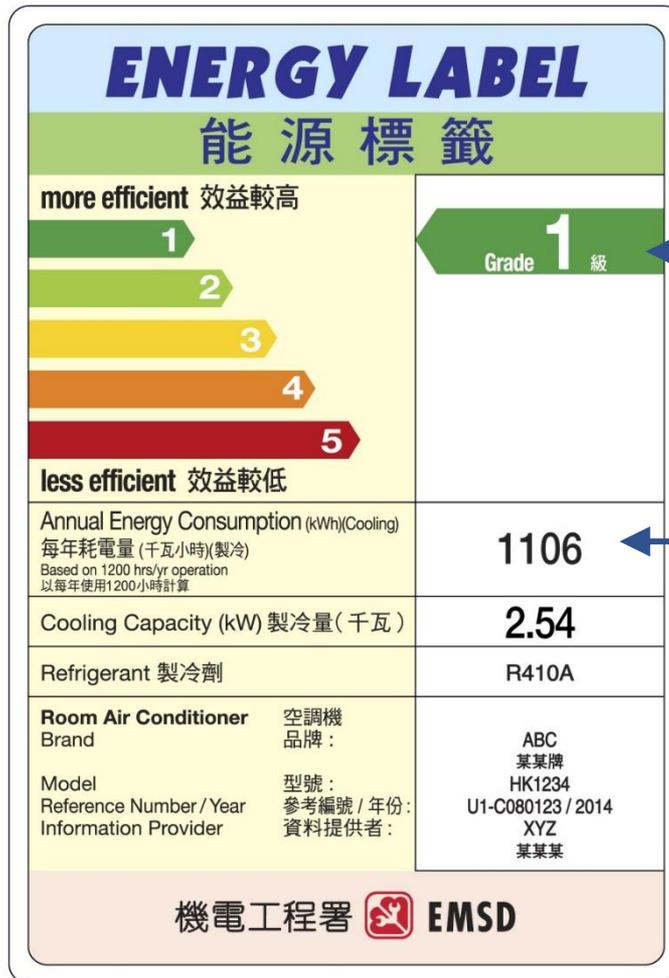
Air-conditioning



Lift & Escalator



# Energy Efficiency (Labelling of Products) Ordinance (EELPO)



(1) Grading

(2) Annual Energy Consumption

**Mandatory Energy Efficiency Labelling Scheme (MEELS)**

# Expansion of Product Coverage

## 1<sup>st</sup> Phase

2009



Room air conditioners



Refrigerating Appliances



Compact Fluorescent Lamps

## 2<sup>nd</sup> Phase

2011



Washing Machines



Dehumidifiers

## Proposed 3<sup>rd</sup> Phase



電視機  
Televisions

Televisions



儲水式  
電熱水爐  
Storage type  
electric water heaters

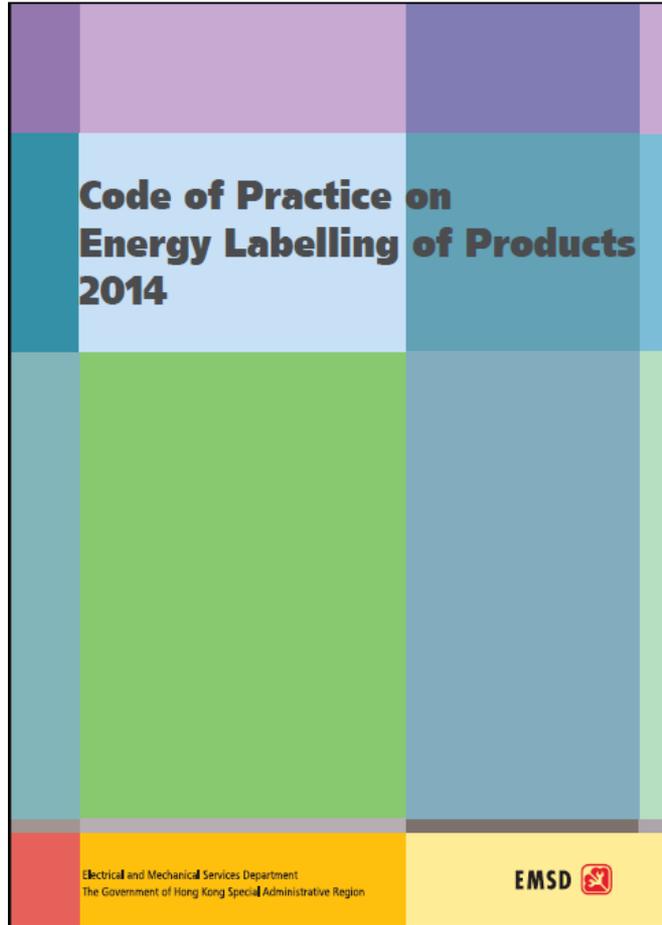
Storage Type Electric  
Water Heaters



電磁爐  
Induction cookers

Induction Cookers

# Tightening of Energy Efficiency Grading Standards



Gazette

*31 October 2014*

Full Implementation

*November 2015*



Further review upon implementation of phase 3



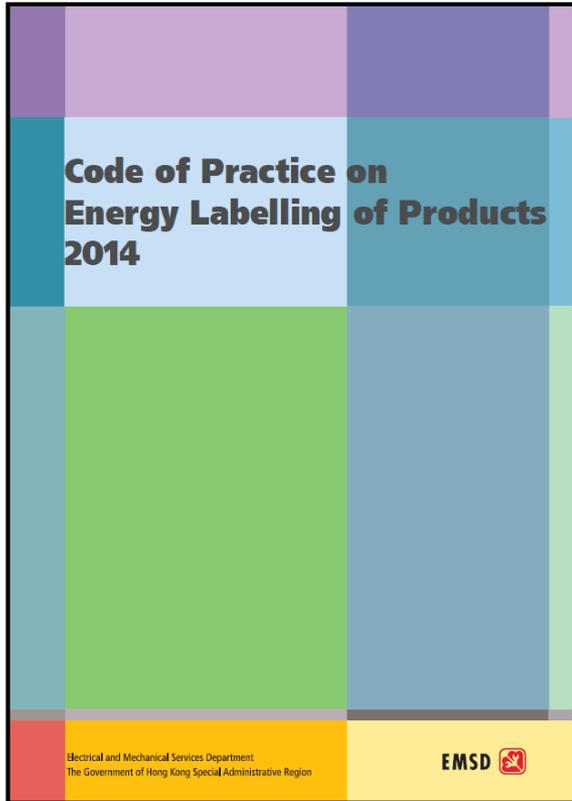
Organisers:



International Co-owners:



# Energy Efficiency (Labelling of Products) Ordinance Residential Building



## Plug-in Appliances (Domestic appliances)



Room Air Conditioners



Washing Machines



Refrigerating Appliances



Dehumidifiers



Compact Fluorescent Lamps



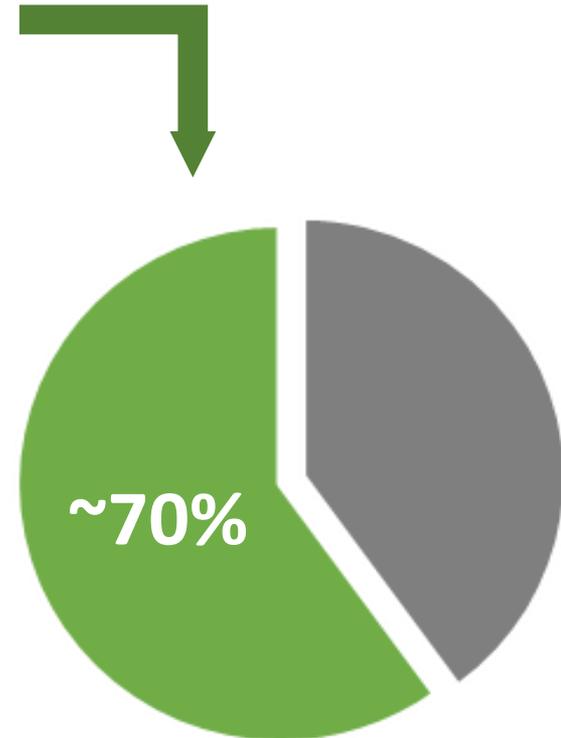
Induction Cookers



Storage Type Electric Water Heaters



Televisions



International Co-owners:



# Overall Energy Consumption in Buildings

## Built-in Equipment (Central Building Services Installation)



Lighting



Electrical



Air-conditioning



Lift & Escalator

## Plug-in Appliances (Domestic appliances)



Room Air Conditioners



Washing Machines



Refrigerating Appliances



Dehumidifiers



Compact Fluorescent Lamps



Induction Cookers



Storage Type Electric  
Water Heaters



Televisions



# Commercial Building

66% Total Consumption

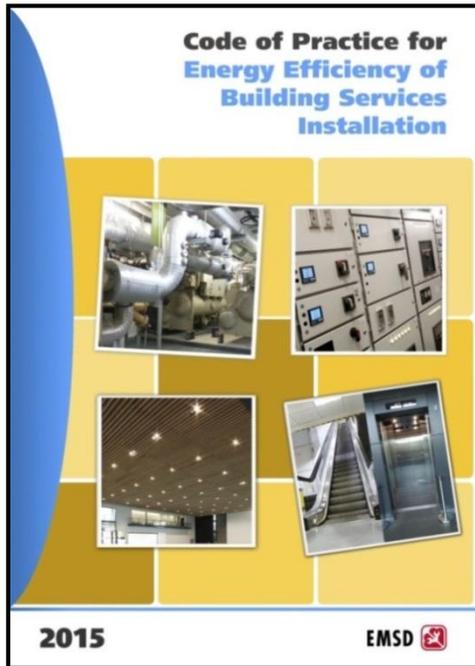


# Residential Building

26% Total Consumption

## Built-in Equipment

(Central Building Services Installation)

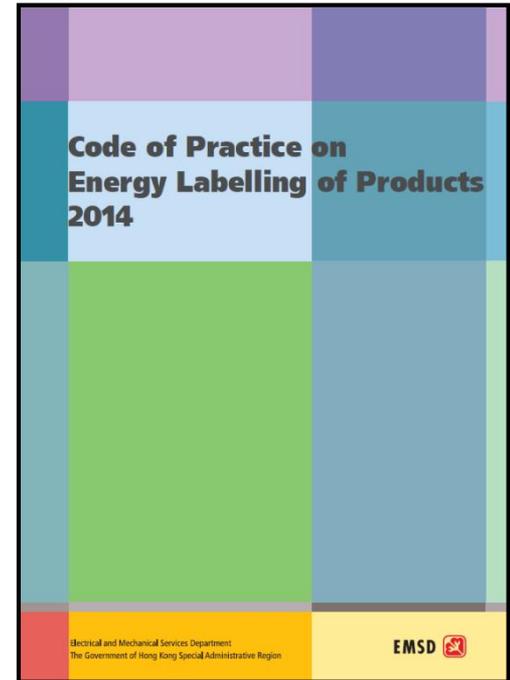


## Plug-in Appliances

(Domestic appliances)



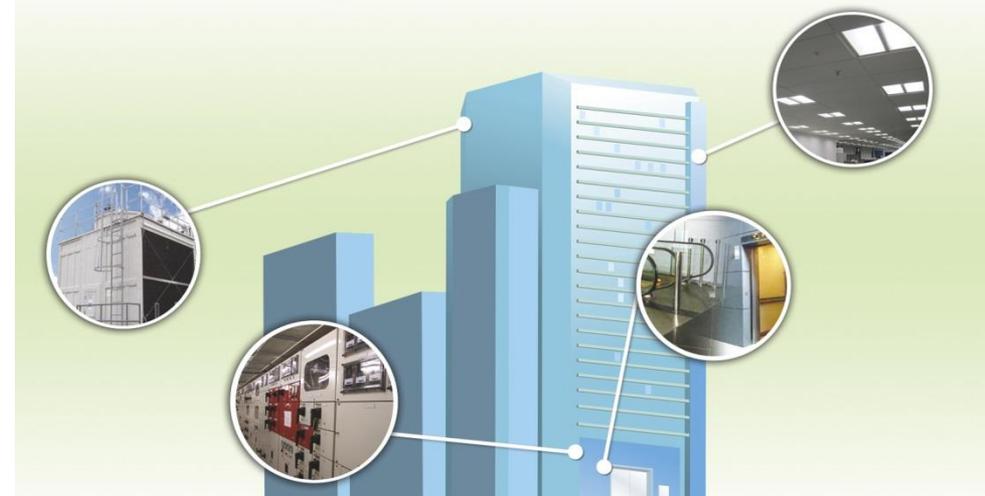
Over 70% Building electricity





# Buildings Energy Efficiency Ordinance (BEEO)

# Energy Efficiency (Labelling of Products) Ordinance (EELPO)



Organisers:



International Co-owners:



An aerial photograph of Hong Kong, showing a dense urban landscape with numerous high-rise buildings and skyscrapers. The city is situated on a peninsula and is surrounded by water. In the background, there are mountains under a blue sky with scattered clouds. A semi-transparent white box is overlaid on the right side of the image, containing the text "Thank You" in a large, green, sans-serif font.

# Thank You