

The Buildings Energy Efficiency Funding Schemes

A Preliminary Technical Review

**Electrical and Mechanical Services
Department (EMSD)**

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- 3. Applications and Results**
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Background

- **2008-09 Policy Address**

“Reserve HK\$450 million under the Environment and Conservation Fund (ECF) to launch the Buildings Energy Efficiency Funding Schemes (BEEFS) to subsidize building owners for conducting ECA and EEP”



Background Administration

Environment Bureau

ENB

Energy Conservation
Projects Vetting
Subcommittee

BEEFS
Office

ECPVSC

Electrical and
Mechanical
Services Trading
Fund



Background (cont.)

- **BEEFS**

Energy-cum-carbon Audit (ECA)

Energy Efficiency Project (EEP)

- **Application**

- ▶ **Open for Applications in April 2009**
- ▶ **Last for 3 years or until the allocated funds of HK\$450 million are fully utilized**
- ▶ **Close Applications in April 2012**



Background (cont.)

Eligible Applicants

Incorporated Owners
Cap. 344

Residents' Organizations

Owners' Organization



Background (cont.)

Eligible Buildings

Residential

Industrial

Commercial

Composite Buildings



Energy-cum carbon audits (ECA)

- **Scope**
 - Review energy usage
 - Quantify greenhouse gas (GHG) emission
 - Identify enhancements in energy efficiency and GHG reduction



Energy-cum carbon audits (ECA)

- **Requirements**

- ▶ **According to**

- **Guidelines to Account for and Report on Greenhouse Gas (GHG) Emissions and Removals for Buildings (Commercial, Residential and Institutional purposes) in Hong Kong**
- **Guidelines on Energy Audit**

- **Submissions**

- ▶ **Audit report within 12 months**
- ▶ **A progress report every year for 3 immediate subsequent years after the 1st audit**



Energy Efficiency Projects (EEP)

- **Scope**

Carry out alteration, addition or improvement work to upgrade the energy efficiency performance of building services installations in communal areas of eligible buildings



Energy Efficiency Projects (EEP)

Types of Installations

Lighting

Air-Conditioning

Lifts &
Escalators

Electrical



Energy Efficiency Projects (EEP)

- Requirements

The installations shall comply with or be more energy-efficient than the requirements of the “**Building Energy Codes**” issued by the Electrical and Mechanical Services Department upon completion of the project



Energy Efficiency Projects (EEP)

- **Project Duration**
 - Commence project within 12 months
 - Complete project within 24 months
- **Submission**
 - Submit completion report within 6 months upon project completion



Professional Services

- **Qualified Services Provider (QSP)**

A QSP must be employed for each ECA and EEP to :

- ▶ Carry out audit
- ▶ Certify and submit audit report and progress reports
- ▶ Oversee technical aspects of EEP and carry out measurements upon completion



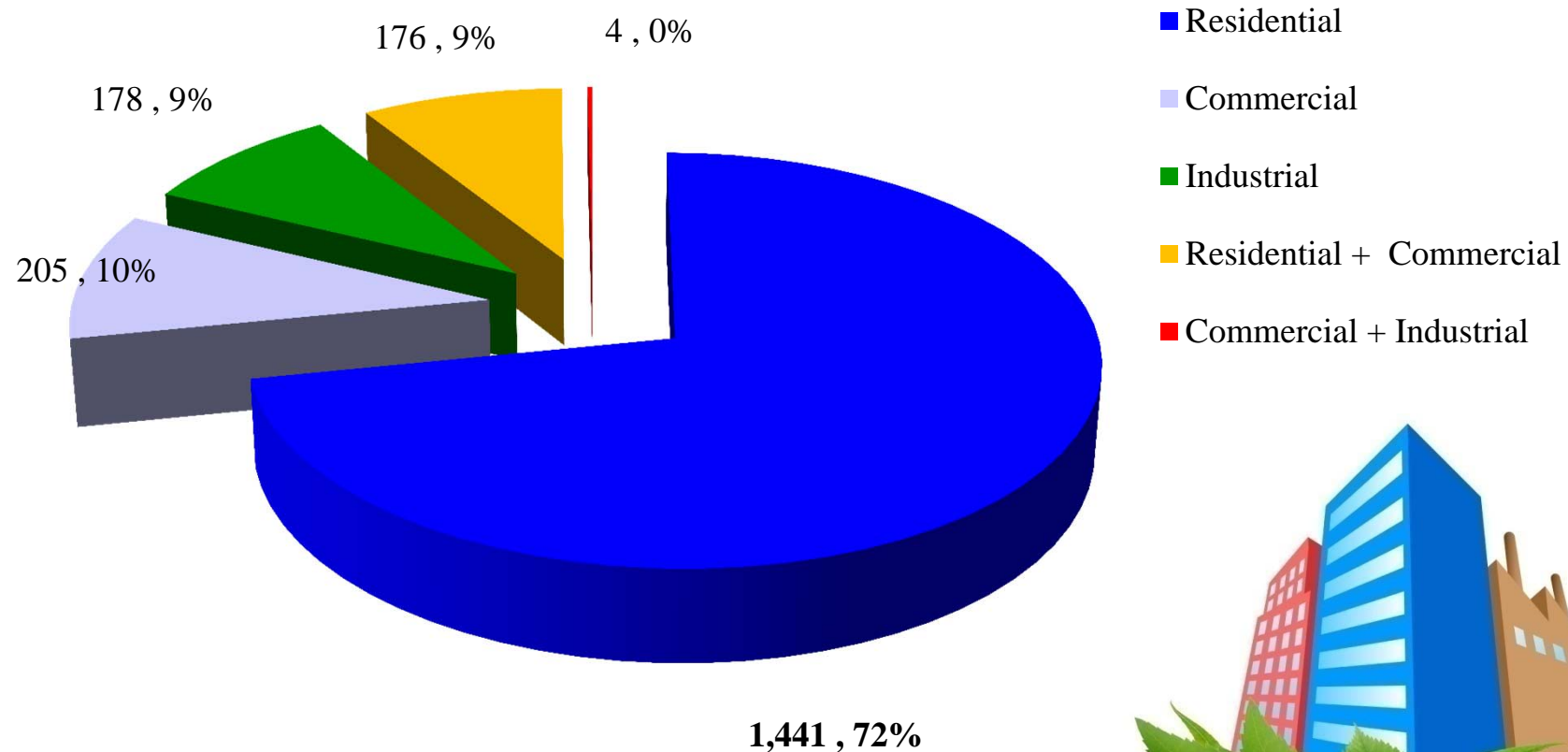
Subsidies

- Funds would be granted on matching basis
- 50% of actual expenditure on **approved energy saving items** would be reimbursed
- Maximum funding (per building per application)
 - ▶ ECA : HK\$150,000
 - ▶ EEP : HK\$500,000



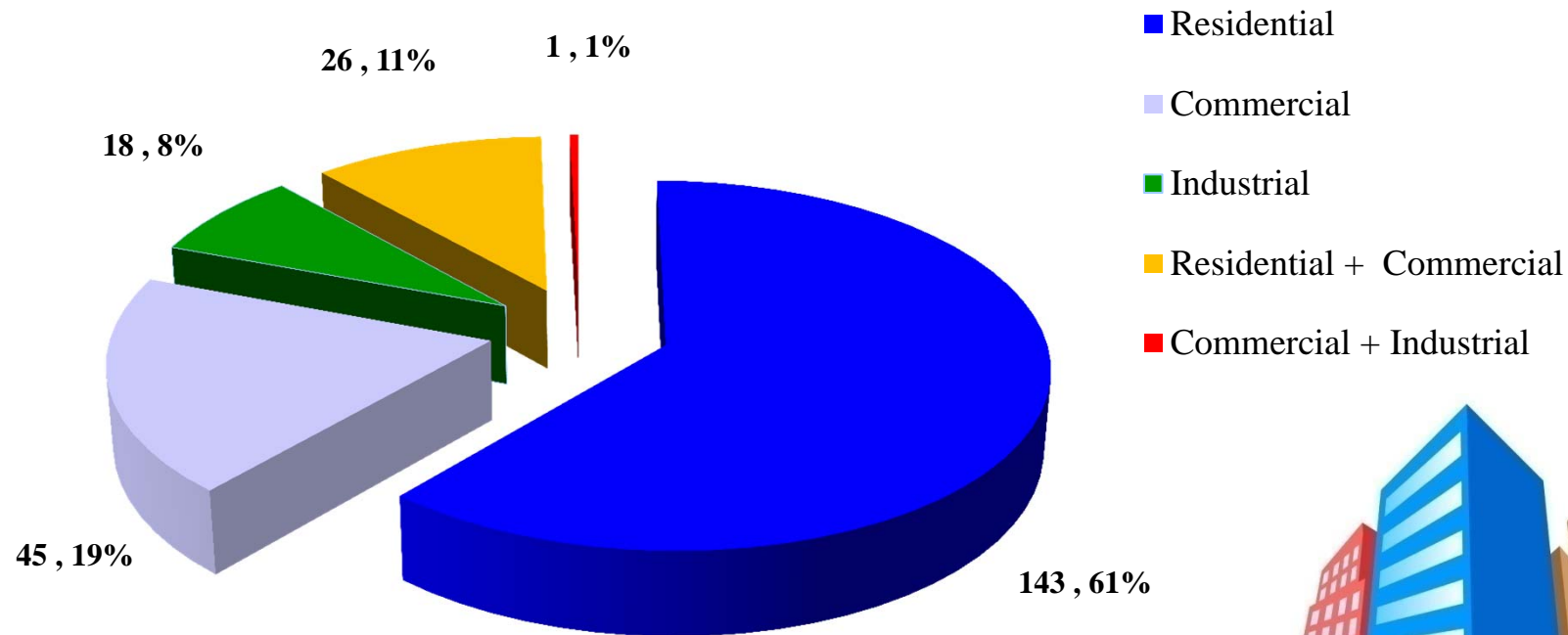
BEEFS Applications

- **Total Applications : 2,004**



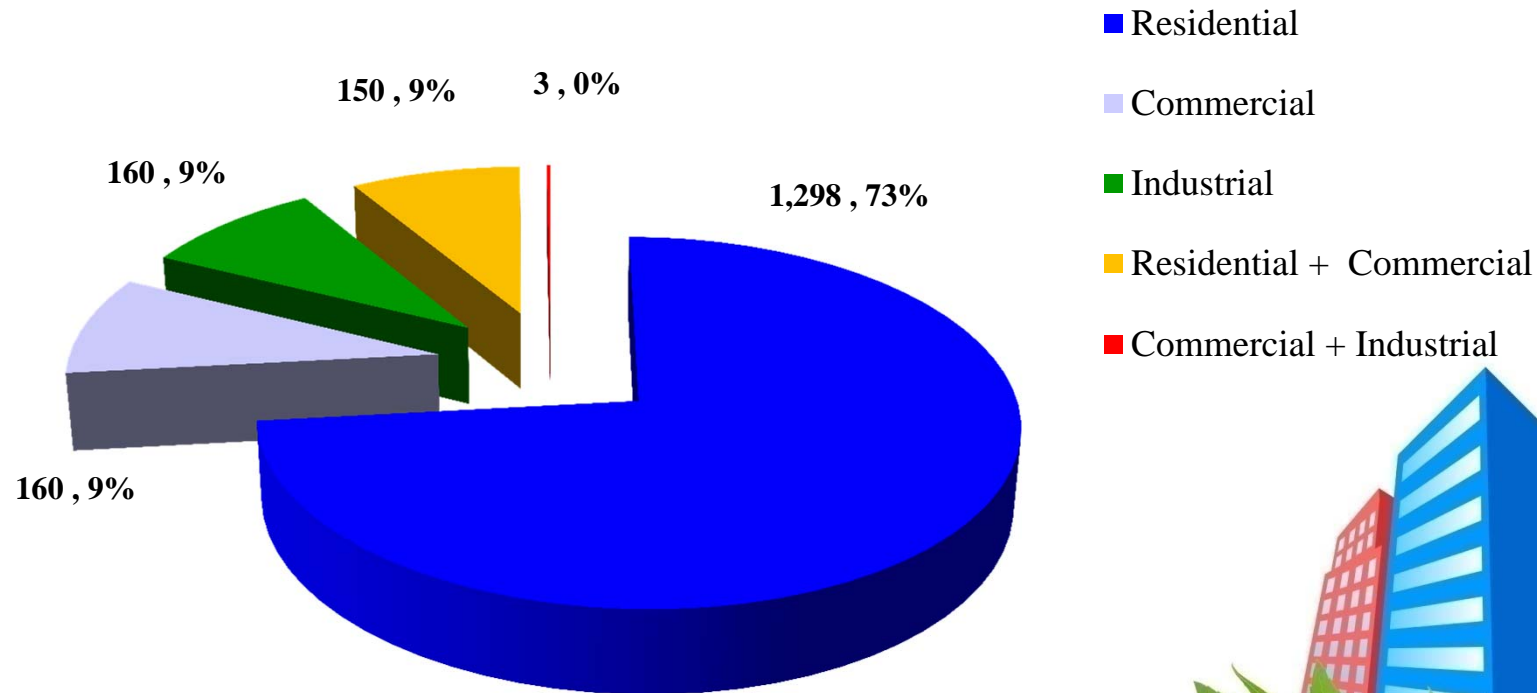
ECA Applications

- **Total Applications : 233**



EEP Applications

- **Total Applications : 1,771**



EEP Applications

Categories	2009 - 10		2010 - 11		2011 - 12		1 – 9 Apr 2012	
Lighting	569	65%	136	54%	168	45%	100	37%
Lift & Escalator	123	14%	82	32%	160	43%	91	34%
Air-conditioning	26	3%	11	4%	14	4%	18	7%
Electrical	18	2%	5	2%	12	3%	14	5%
Multi-installation	138	16%	20	8%	21	5%	45	17%
Total (1,771):	874	100%	254	100%	375	100%	268	100%



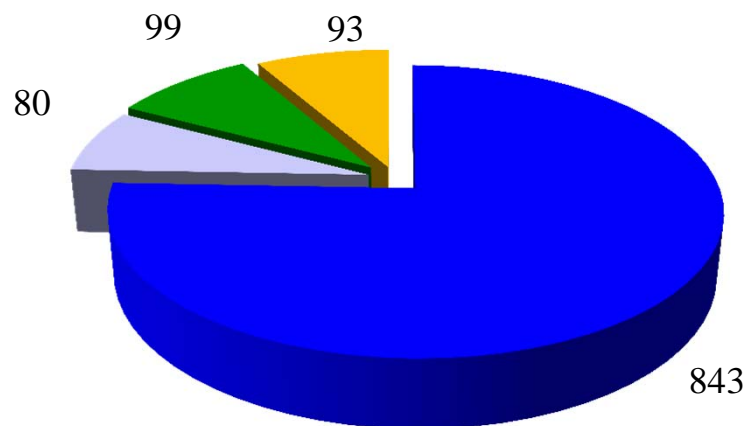
Unsuccessful Applications

- **Withdrawn by applicants : 222**
- **Rejected : 383**
 - ▶ Not eligible applicant
 - ▶ Inadequate information
 - ▶ Project commenced before funding approval
- **Funding fully committed : 284**



Total Approved Applications

Approved Applications	ECA		EEP		Total	
Residential	68	66%	775	77%	843	76%
Commercial	24	23%	56	6%	80	7%
Industrial	3	3%	96	9%	99	9%
Residential + Commercial	8	8%	85	8%	93	8%
Total :	103	100%	1,012	100%	1,115	100%

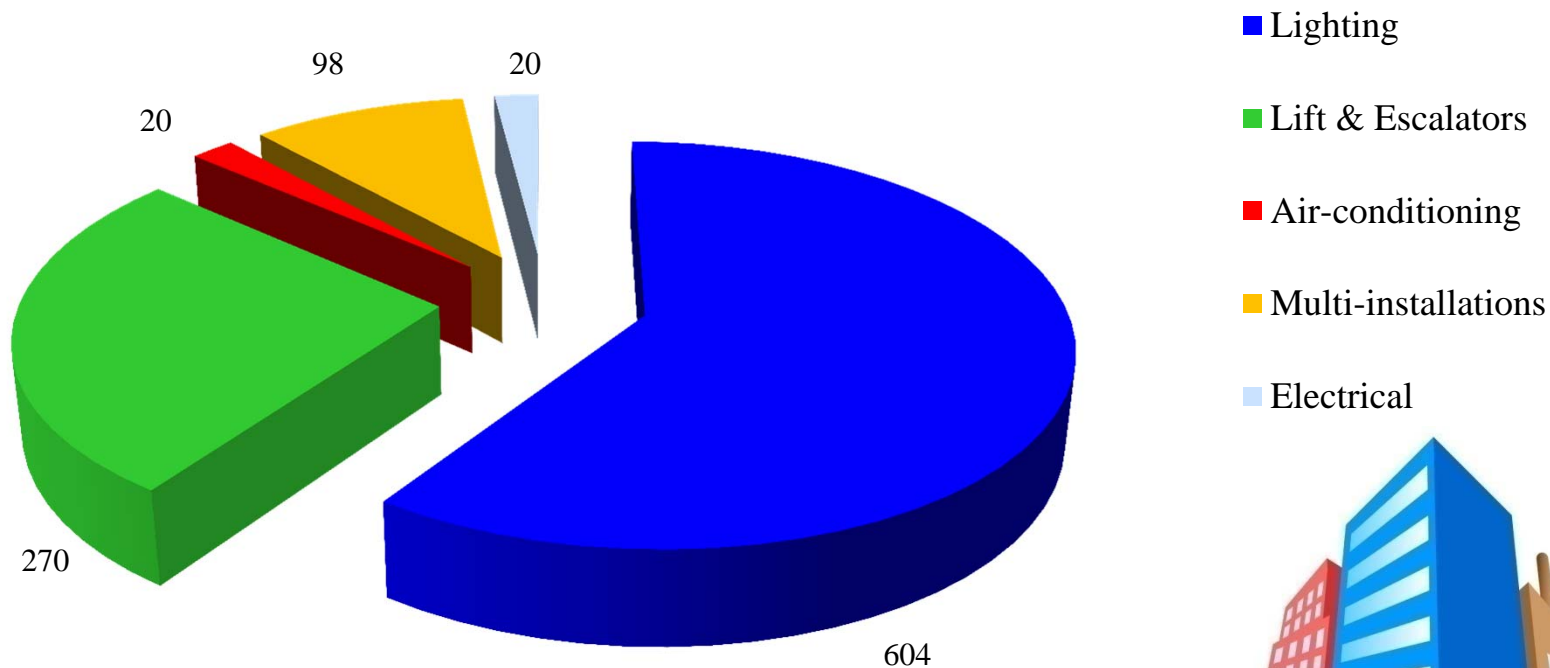


- Residential
- Commercial
- Industrial
- Residential + Commercial



Approved EEP Applications

- **Total Approved Applications : 1,012**



EEP Energy Saving

Categories	No. of projects	Energy Saving Original Est. (kWh/Yr)	Funded Amount (million HK\$)	Measured Saving Upon Completion (kWh/Yr)	Saving (%)	Est. Payback (Yr)
Lighting	139	37,219,513	42.2	33,508,491	19.2%	3.2
Air-conditioning	4	488,561	0.9	584,492	12.8%	4.4
Lift & Escalator	20	1,810,869	14.3	1,737,201	28.9%	33.7
Electrical	6	1,574,048	3.7	932,366	24.4%	3.1
Multi-installation	18	4,666,442	5.3	9,749,239	23.2%	4.0
Total:	187	45,759,433	66.4	46,511,789	20.8%	5.9



Challenges

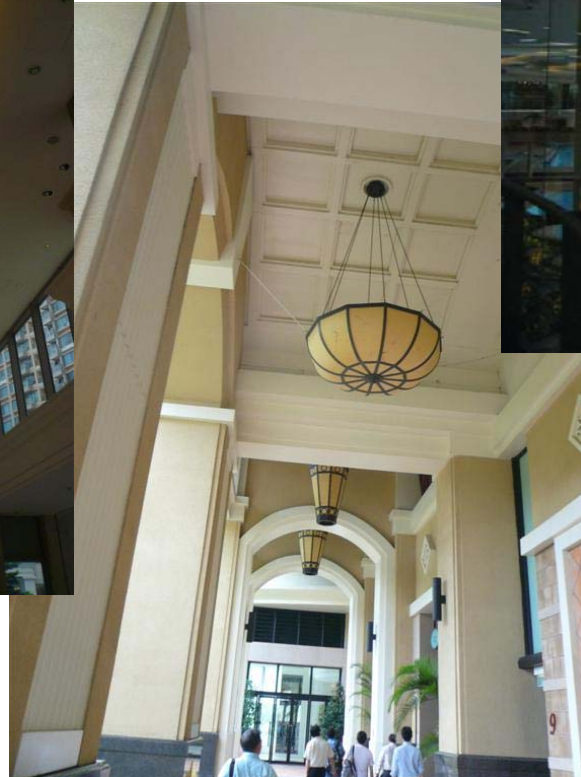
- **Disadvantage to Single Buildings**
 - **Single Vs Multiple Buildings**

	ECA		EEP		Total	
Single Buildings	112	48%	831	47%	943	47%
Multiple Buildings	121	52%	940	53%	1,061	53%
Total :	233	100%	1,771	100%	2,004	100%



Challenges

- **Verification of Lighting Quantities and Types**



Challenges



Challenges



Challenges

- **Estimated Budgets**



Challenges

- Arguments Among Building Owners



BEEFS Success



Quick Saving in EEP



Lift Installation – old



Lift Installation – Replaced



BEEFS Success

Business Opportunity for Suppliers



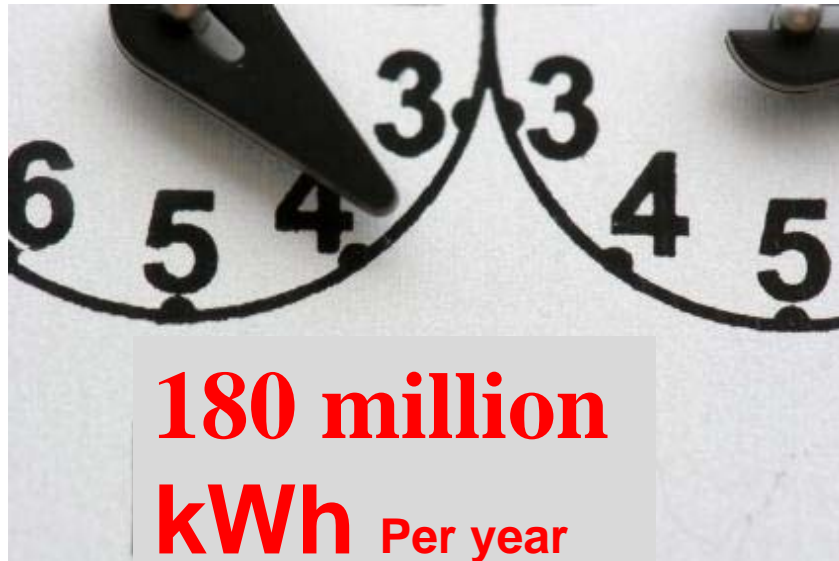
BEEFS Success

Job Creation

70,000 man-months



Conclusions



Carbon Dioxide

126,000 tonnes



Objectives of the Schemes

- **Promote the benefit of building energy efficiency to building owners**
- **Encourage building owners to replace with more energy efficient installations**

Objectives Successfully Achieved



Thank
You

