



**Country Report on
Development of Energy Building Code/
Guideline in Myanmar**
14th Energy Conservation Workshop (ECAP 14)

Submitted by

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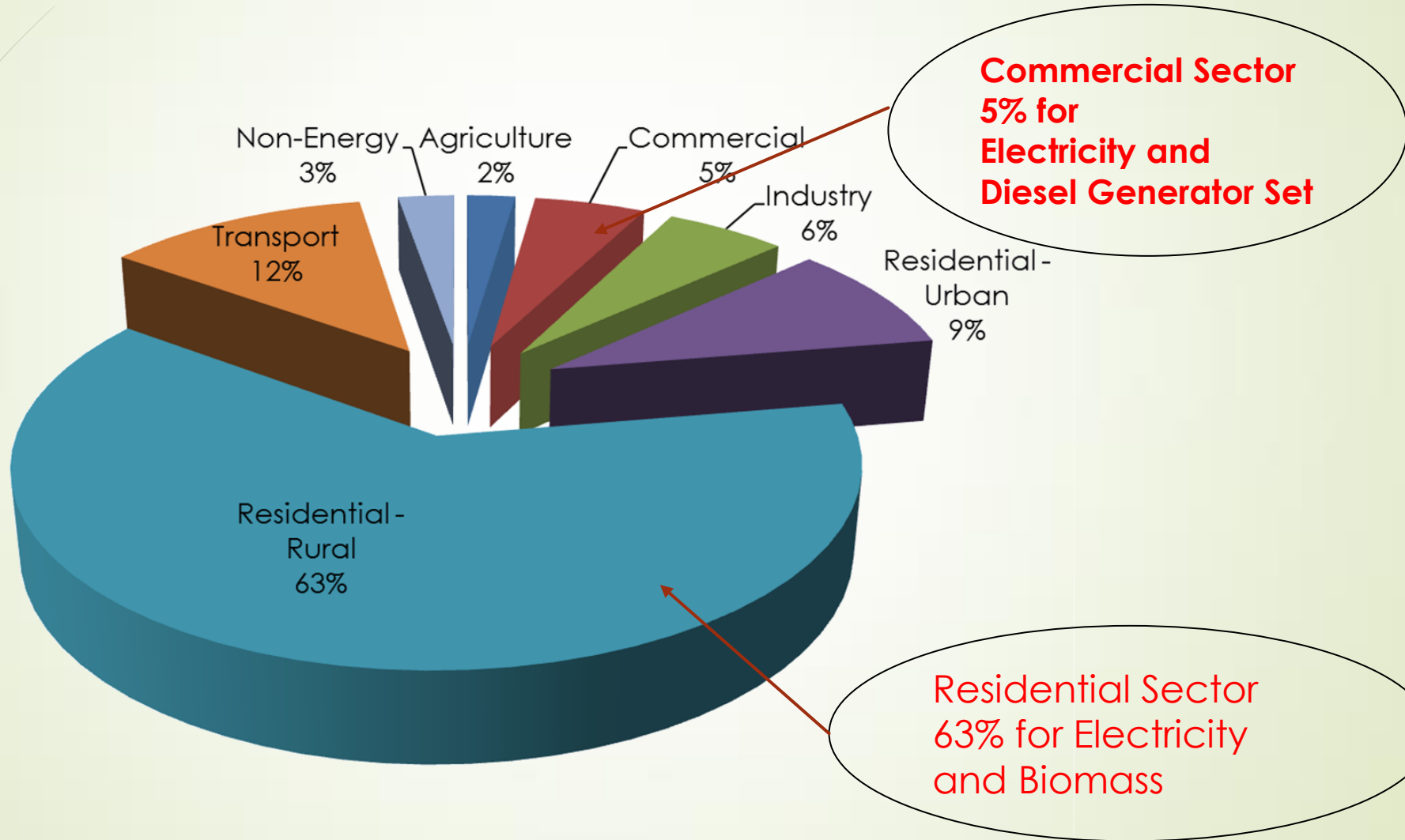


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Energy Consumption by Building Sector in Myanmar





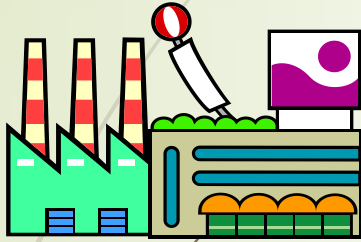
Energy Saving Potential in Building Sector

Sector	Sub-Sector	Saving Potential (%)	EE Technologies Proposed
		Average	
Commercial	Office Buildings	25	HE Lighting, ACs, Office Equipment through MEPS
	Restaurants	25	HE Lighting, ACs, LPG cooking, Solar water heating
	Hotels	30	HE Lighting, ACs, LPG cooking, solar water heating
	Commercial Sector: Average Saving Potential (%)	25%	
Residential	Urban Households	30	HE Lighting, refrigeration, MEPS for appliances, SHW, LPG cooking
	Rural Households	30	HE Lighting, refrigeration, MEPS for appliances
	Residential Sector: Average Saving Potential (%)	30%	
Public Sector	Public Buildings	25	HE Lighting, ACs, Office Equipment through MEPS
	Hospitals	30	HE Lighting, ACs, LPG cooking, SWH, cogeneration
	Schools	25	HE Lighting, ACs, Office Equipment through MEPS, Boilers, SWH
	Public Lighting	50	LED, HPS street lighting
	Public Sector: Average Saving Potential (%)	25%	



Scope of Energy Efficiency Policy (Strategy)

Energy Intensive Industries

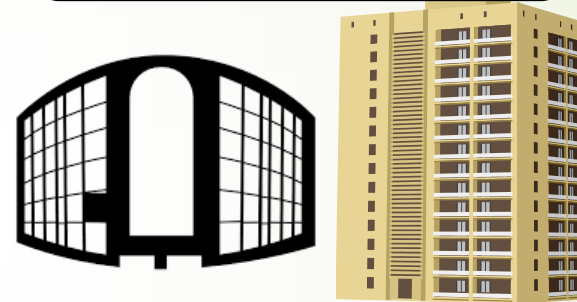


Industrial Guidelines



Energy Manager

Energy Intensive Buildings (Commercial, Public)



Building Guidelines

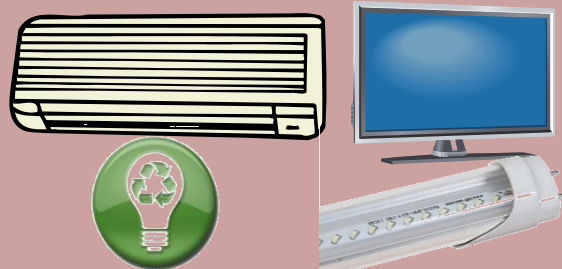


Energy Manager

Residential Sector



MEPS for Electrical Home Appliances



EE Projects and Trainings

- ❖ Demonstration Projects
- ❖ Energy Management Training
- ❖ Energy Efficient Technology Training
- ❖ Awareness Training





Myanmar National Building Code (Draft, 2016)

Scope

- ▶ The provisions of this code shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures.
- ▶ Seven Sections under the code are as follow:
 1. Planning, Environment, Administration and Legislation
 2. Architecture and Urban Design
 3. Structural Design
 4. Soil and Foundation
 5. Building Services
 6. Building Materials
 7. Construction Practices and Safety



Part 2: Architecture and Urban Design

2.12 Architecture for Energy Efficiency and Green

2.12.2. Criteria for green buildings in Myanmar

1. Energy		2. Water	
	<ul style="list-style-type: none">▪ Energy efficiency (design and practice)▪ Low embodied energy (Life cycle of materials)▪ Provision of Natural lighting and ventilation▪ Conservation of materials and resources▪ Utilizing renewable energy (optional)		<ul style="list-style-type: none">▪ Safeguarding water and water efficiency (design and practice)▪ Rain water harvesting▪ Managing waste water▪ Water recycling
3 Human Comfort and Health		4 Environmental Impact	
	<ul style="list-style-type: none">▪ Thermal comfort▪ Indoor air quality▪ Adequate Lighting		<ul style="list-style-type: none">▪ Low carbon emission▪ Maximize greenery▪ Reduce pollution▪ Reduce landfill waste



Scope of the regulation

The provisions of this code shall apply to

- All new Commercial building works (except Religious, low cost public apartment projects, non-profitable social release and assisted public based building projects provided by Government or NGOs) which involve a gross floor area of 100,000 sqft or more,
- Additions or extensions to existing commercial buildings, which involve increasing the gross floor area of the existing buildings by 100,000 sqft or more,
- Commercial building works which involve major retrofitting to existing buildings with gross floor area of 100,000.sqft or more;
- Building works located in an area which is identified as an environmentally sensitive area
- All building works which required EIA and SIA assessments
- Building works which the government officially states for compliance with this code



2.12.4.1 Energy Efficiency and Renewable Energy

Building Envelope

- Resistance to air, water, heat, light, and noise transfer
- To be designed in a way to enhance overall thermal performance of building envelope to minimize heat gain (for Hot regions) thus reducing the overall cooling load requirement

Roof

- Minimum heat penetration makes significant effect in reducing the temperature of the building (without skylight U value, with skylight RTTV (Roof Thermal Transfer Value))

Natural Ventilation in Common Area (Optional)

- Natural ventilation, also called passive ventilation
- Common area such as stairs, toilets, lifts, lobby, walkways, passage ways are advised

Lighting

- Day Light usage, Design Requirement, Type, Lux, etc.
- Energy Management and Control System (EMCS) (Optional)
- Computer-aided control, HVAC system

Renewable Energy (Optional)



Judgement Criteria of EE Regulation in Building Sector under Energy Conservation Law Draft, 2017

Sr.	Two Categories under Ministerial Decree	Objective Persons	Obligation	Restriction/ Thresholds level under Ministerial Decree
1	Design and Construction	Building Owner	<ul style="list-style-type: none">▪ Building Design▪ Natural Condition Usage▪ Heat Insulation (Wall, Roofing)▪ Lighting & Air Conditioning System▪ Construction Materials	Total Floor Area Eg. 10000 ft ² and above
2	Energy Consumption	Specified Business Operators	Appoint Energy Manager Reporting System	Total Energy Consumption Eg. 3,000,000 kWh and above or GJ or Toe



Comparison/ difference between National Building Code and Energy Efficiency Building Guideline, Energy Efficient Building Code

	National Building Code		Energy Efficient Building Code
1	Focuses only on Architectures, Building Design for Energy	-	Building Design for Energy Saving and Natural Condition Usage
2	No regulation for Energy Consumption, energy management (Operational Control)	-	Regulation for Energy Consumption, energy management and Operational Control
3	Apply only Safety standards	-	Apply Energy Performance standard plus safety
4	No technical details for energy performance level and calculation for the appliances	-	Technical guideline and calculation detail for the appliances
5	Renewable Energy Usage is Optional.	-	Renewable or alternative energy or new energy instead of fossil fuel usage must be necessary for green building code



Issues/ Challenges to implement Energy Building Code/ Green Building Code in Myanmar

- Regulation or enforcement for energy management in buildings
- Lack of practices or awareness for energy efficiency and conservation
- Practical Trainings have to be provided
- Financial constraints to afford for green building construction to comply with the international standards



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Your kind suggestions, comments and cooperation
are welcome.

Thank you!

