Country Report (Myanmar)
“Energy Conservation Workshop
under ASEAN-Japan Energy Efficiency Partnership
(ECAP 17)”

Energy Efficiency and Conservation Division (EECD)
Ministry of Industry (MOI)
Myanmar
Content

I. Current status of development and implementation of BEC/GBC

II. Proposals to refine the ASEAN Energy Award
Current status of development and implementation of BEC/GBC

To develop Energy Efficiency and Conservation Guideline

- Scope of Regulatory Framework
- EE Policy Targets (baseline demand in 2012)
- Scope of EE&C Law
- Judgment Criteria of EE&C Law in Building Sector
- EC Guideline and EC Handbook
- Road Map for Law Formulation

To develop Energy Efficiency and Conservation Building Code / Zero Energy Building

- Myanmar National Building Code (MNBC)
- Survey for standardizing by type of building to improve Zero Energy Building
Scope of Regulatory Framework

Energy Efficiency & Conservation Policy, Strategy and Road Map (2016)

Energy Efficiency & Conservation Law (Draft)

- Regulation on Energy Management System for Factories and Building
- Regulation on Energy Manager and Energy Auditor System
- Regulations for MEPS & Labeling
- Regulations for Transportations *
- Other Supplementary Regulations (EC Guidelines, Financial Mechanism, etc.)

EC Handbook (Preparing)
## EE Policy Targets (baseline demand in 2012)

<table>
<thead>
<tr>
<th>Sector</th>
<th>Weighted Average Saving Potential (%)</th>
<th>Achievable Target by 2020 (%)</th>
<th>EE Policy Target – 2020 (%)</th>
<th>Achievable Target by 2025 (%)</th>
<th>EE Policy Target – 2025 (%)</th>
<th>Achievable Target by 2030 (%)</th>
<th>EE Policy Target – 2030 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry</td>
<td>8.84%</td>
<td>40</td>
<td>3.54</td>
<td>60</td>
<td>5.31</td>
<td>75</td>
<td>6.63</td>
</tr>
<tr>
<td>Commercial / Public</td>
<td>4.97%</td>
<td>40</td>
<td>1.99</td>
<td>60</td>
<td>2.98</td>
<td>80</td>
<td>3.98</td>
</tr>
<tr>
<td>Residential</td>
<td>9.70%</td>
<td>55</td>
<td>5.36</td>
<td>70</td>
<td>6.82</td>
<td>80</td>
<td>7.80</td>
</tr>
<tr>
<td>Other</td>
<td>1.7%</td>
<td>40</td>
<td>0.68</td>
<td>60</td>
<td>1.02</td>
<td>80</td>
<td>1.36</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>25.26%</strong></td>
<td><strong>11.7</strong></td>
<td><strong>16.1</strong></td>
<td><strong>19.77</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**EE Policy Targets**

- 2012: 12
- 2016: 16
- 2020: 20
Scope of EE&C Law

- **Energy Intensive Industries**
- **Industrial Guidelines**
- **Energy Manager**
- **Energy Intensive Buildings (Commercial, Public)**
- **Building Guidelines**
- **Energy Manager**
- **Residential Sector**
- **MEPS for Electrical Home Appliances**
- **Fuel Economy for Transport Vehicles, Public transport system improvements**
## Judgment Criteria of EE&C Law in Building Sector

<table>
<thead>
<tr>
<th>Sector</th>
<th>Type</th>
<th>Objective Persons</th>
<th>Obligation</th>
<th>Restriction/Thresholds level under Ministerial Decree</th>
</tr>
</thead>
</table>
| Building       | Specified Building    | Designated Business Operators       | ▪ Appoint Energy Manager  
▪ Reporting System  
▪ Follow industrial Guidelines | Total Energy Consumption  
**Eg. 3,000,000 kWh** |
EC Guideline and EC Handbook

**EC Guideline**
Section A - General Requirement
Section B -
1. Introduction
2. Measures for New Installation
   2-1. Selection of Equipment
   2-2. System Design
3. Energy Management
   3-1. Management and Control
   3-2. Measurement and Recording
   3-3. Inspection and Maintenance
4. Further Improvement

**EC Handbook**
Section A - General Information
Section B -
1. Introduction
2. Measures for New Installation
   2-1. Selection of Equipment
   2-2. System Design
3. Energy Management
   3-1. Management and Control
   3-2. Measurement and Recording
   3-3. Inspection and Maintenance
4. Further Improvement
5. Key Note
   5-1. Technical Description
   5-2. Energy Loss/ Efficiency
   5-3. Management and Control
6. Case Study
7. Appendix

(1) Boiler
(2) Furnace
(3) Transformer
(4) Lighting
(5) Air Conditioner/ Chiller
(6) Air Compressor
(7) Fan, Pump, Motor
# Road Map for Law Formulation

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Description</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Preparing EE&amp;C Law Final Draft</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Submission Final Draft to Authorized Person</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Assessing the Law by the Commission</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Discussion on the Law within Parliament</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Public Consultation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Decree on Energy Management System</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Regulations on Energy Manager &amp; Auditor System</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>EC Guidelines</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>EC Handbook</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Standardization and Labelling</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Public Consultation</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Myanmar National Building Code (MNBC)

Prepared to develop MNBC in 2011
Myanmar National Building Code – Provisional 2012
Myanmar National Building Code – 2016 (Voluntary)

• Technical Working Group
  • Ministry of Construction (Leader)
  • Myanmar Engineering Society (MES),
  • Association of Myanmar Architects (AMA),
  • International experts and concerned ministries and organizations
  • is established with 7 Sectors:
    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


<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>More Focuses on Architectures and Building Design</td>
<td>Building Design for Energy Saving and Natural Condition Usage (EEBC)</td>
</tr>
<tr>
<td>2</td>
<td>No regulation for Energy Consumption, energy management (Operational Control)</td>
<td>Regulation for Energy Consumption, energy management and Operational Control (EC Guideline)</td>
</tr>
<tr>
<td>3</td>
<td>Apply only Safety standards</td>
<td>Apply Energy Performance standard plus safety (EEBG)</td>
</tr>
<tr>
<td>4</td>
<td>No technical details for energy performance level and calculation for the appliances</td>
<td>Technical guideline and calculation detail for the appliances (EC Guideline)</td>
</tr>
<tr>
<td>5</td>
<td>Renewable Energy Usage is Optional.</td>
<td>Renewable or alternative energy or new energy instead of fossil fuel usage must be necessary for green building code (EEBC)</td>
</tr>
</tbody>
</table>
Survey for standardizing by type of building to improve Zero Energy Building

- Building Model: A standard building in Myanmar
- Building Type: Office
- Building Size: 8-stories, 2400sqm
- Location: Yangon

The energy consumption of a standard specification building in Myanmar is 954 MJ/sqm · a (98 kWh / sqm · a)

We have many Challenges to develop Zero Energy Building
- Investment Cost
- Material
- Capacity
Proposals to refine the ASEAN Energy Award

- To discuss detailed criteria and scores and scoring system (ranking system)
- Focal Points should make pre-screen the entries before submission to ACE.

Example

<table>
<thead>
<tr>
<th>No.</th>
<th>Overall On-Site Natural Environment Considerations</th>
<th>Criteria</th>
<th>%Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Use of vegetation, landscape and hardscape</td>
<td>1. Effective application of ground covering plant and large plant</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. The modification of landscape and topography</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. The use of hardscape materials</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>The use of hardscape materials</td>
<td>4. Effective application of water body: location, quantity,</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5. Effective application of wind: natural ventilation, stack ventilation, etc.</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>The use of wind</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Other use of on-site natural environment</td>
<td>6. The use of night sky radiation</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>7. Others (specify)</td>
<td>1</td>
</tr>
</tbody>
</table>

Example
Your kind suggestions, comments and cooperation are welcome.

Thank you!