

BUILDING ENERGY CODES AND LABELING IN VIET NAM

7th September 2010

APEC Cooperative Energy Efficiency Design for
Sustainability (CEEDS) Workshop
Bangkok, Thai Land

Present:

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- Current Legal Frameworks
- Current statue of energy use in Building Code and Labeling
- Barriers and Potential of energy saving in Building
- Main activities were implemented and action plan for the next step

1. Electric production and consumption in Viet Nam



- Growth rate 14-16% in electric production (in period of year 2005-2009)
- Structure of electric consumption
 - Industry and construction: 49%
 - Commercial and Service: 4,8%
 - Public and residential: 40%
 - Agriculture, fishery: 1%
 - Other: 3,7%
- Consumption in construction field: 20-24%

2. Current Legal Frame Work

- Decree 102/2003/ND-CP dated 03/9/2003 of government on Energy efficiency
 - ▣ Define energy efficiency and conservation in building construction
- Decision 79/2006/QD-TTg dated 14/4/2006 of Prime Minister approved National Strategy Program for energy efficiency
 - ▣ Define 6 main content groups, and Ministry of Construction is responsible for 5th content group, for increasing Energy efficiency and conservation use in buildings

2. Current Legal Frame Work

- Decision 40/QD-BXD dated 17/11/2005 of Ministry of Construction approved the Vietnam Energy Efficiency Building Code
 - ▣ Describe technical requirements and solutions applied in the design and construction of buildings
- Law of Energy Efficiency and Conservation has just approved by Viet Nam National Assembly dated 17/6/2010 and shall be of full force and effect as of 01 January 2011
 - ▣ Have a particular chapter on Energy efficiency and conservation in Construction

3. The present status of energy use and energy management in building construction

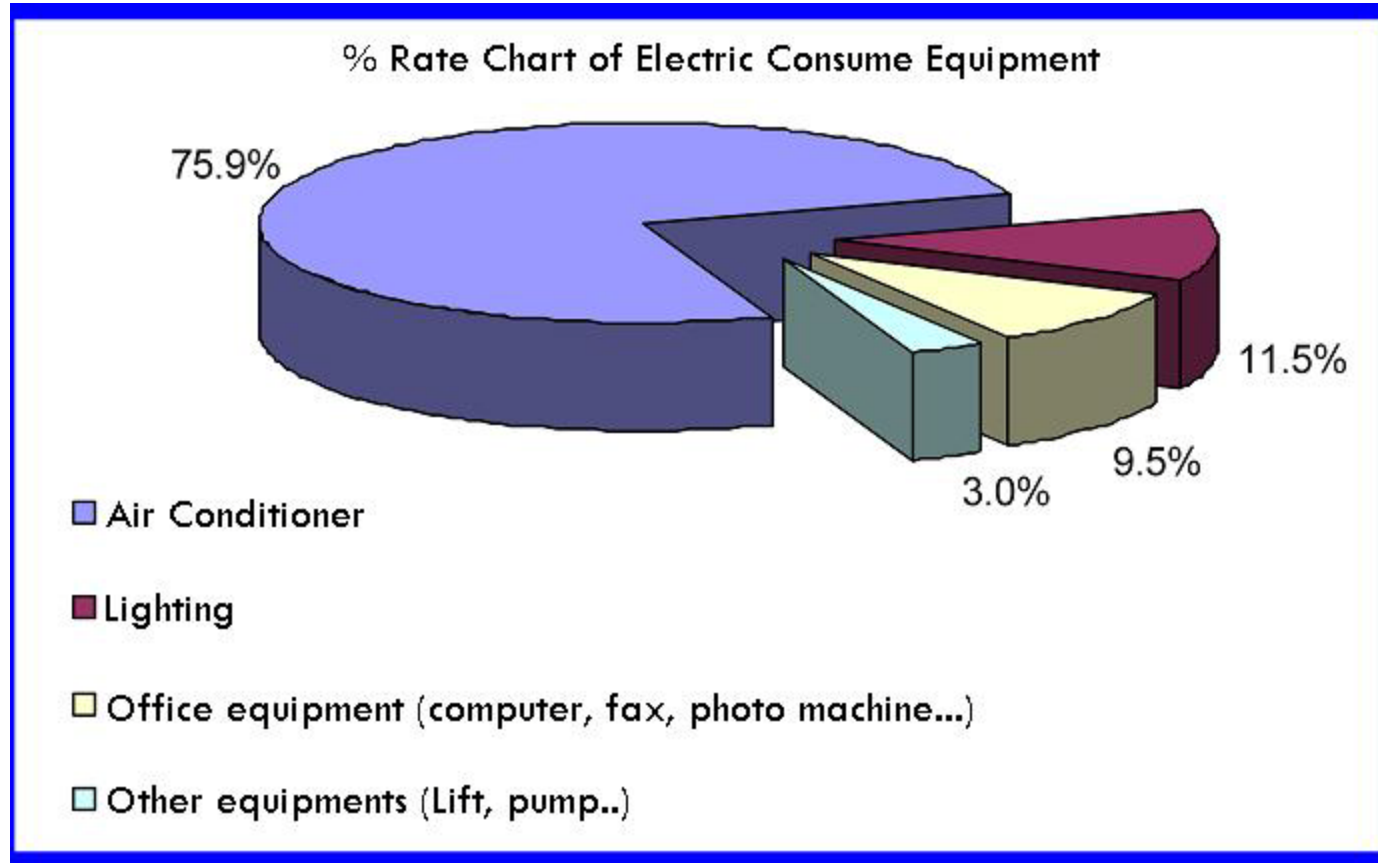


- In recent years, along with economic development in the country, the growth speed of enterprises in particular and the Construction in general also achieved high level, from 12-16% per year
- Along with the growth of production, the energy consumption in construction sector more and more increase and it's difficult to control. As the recent data research, now the total of energy consumption in construction sector estimates about 20 ~ 24% in comparison with the national energy consumption

3. The present status of energy use and energy management in building construction



Status
of
energy
use



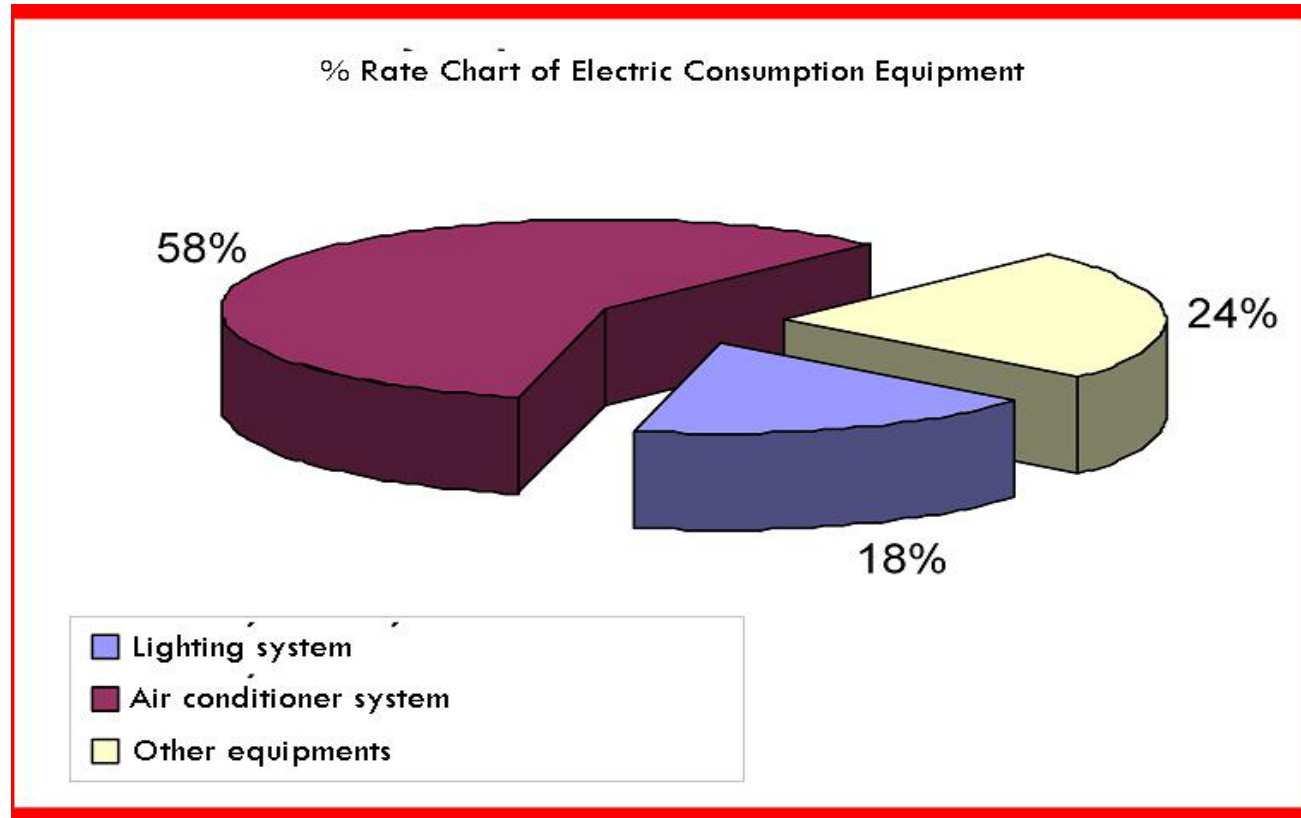
Office Buildings

3. The present status of energy use and energy management in building construction



VNEEP

Status
of
energy
use



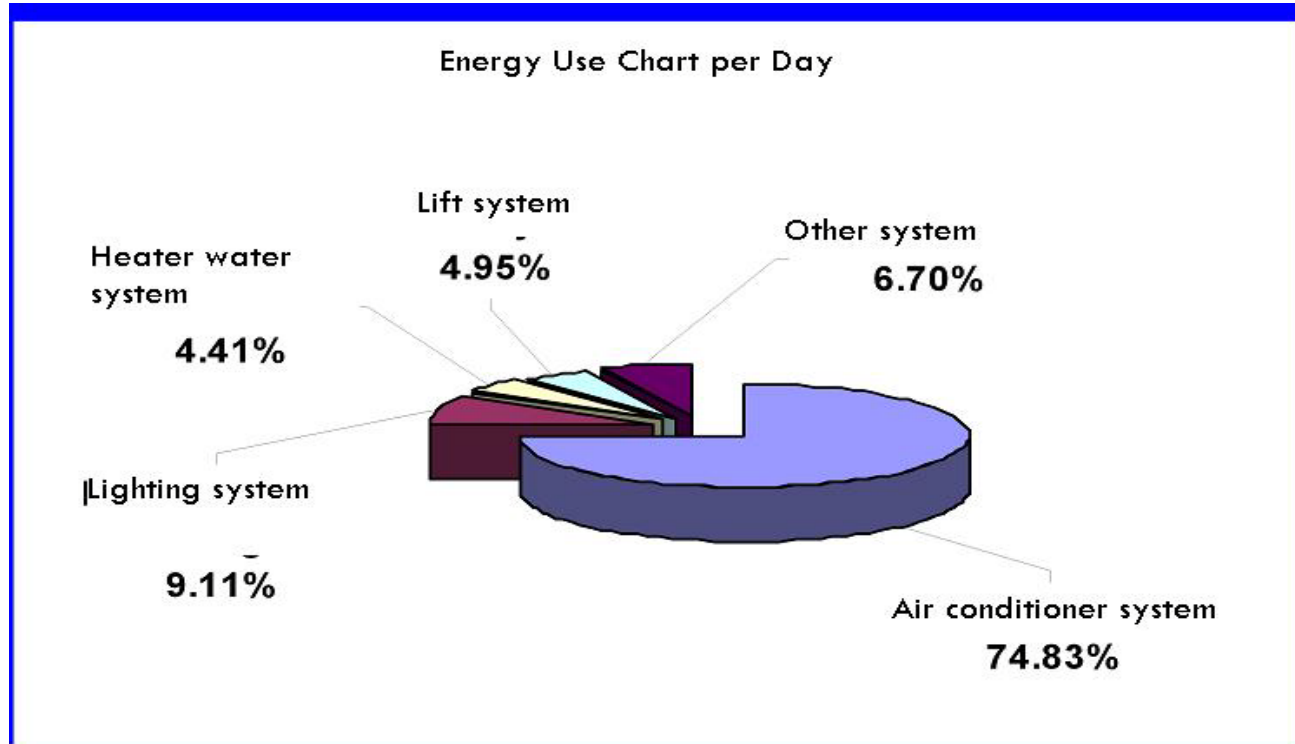
Hotel Buildings

3. The present status of energy use and energy management in building construction



VNEEP

Status
of
energy
use



Commercial buildings

3. The present status of energy use and energy management in building construction



- Actually in Viet Nam the use of energy in buildings still have inadequate, leading to loss and waste of energy. The cause can be find out as below:
 - ▣ The construction crust design and materials don't satisfy the requirements of energy efficiency, OTTV coefficient is not guaranteed...
 - ▣ Air conditioning system was installed mismatch, COP performance low, the setting of temperature too low, no periodic maintain
 - ▣ Have still use a lot of light bulbs and T10 lamps in lighting
 - ▣ Solar water heater equipments: not yet disseminate in generous, a little of buildings use
 - ▣ The EE&C awareness of staff and owner of building are still limited



3. Building Energy Standards and Labeling

- ▣ We are building the energy efficiency standards for labeling (its still in draft version)
- ▣ Currently we are building the roadmap for labeling the green buildings, from the voluntary program to mandatory program

4. Barriers in implementing

- ❑ Lack of policy and management tools in construction, the policy document system in EE&C field have not yet synchronous
- ❑ Lack of the effect energy management system
- ❑ Lack of standards for implementing the labeling program
- ❑ Lack of technical capacity in EE management in buildings (experts, energy management staffs, equipment...)
- ❑ The EE&C awareness of citizen is still limited
- ❑ Lack of information and mechanisms for sharing between the stakeholders
- ❑ Lack a good database about energy efficiency in building construction fields

5. The potentiality of energy saving in building construction



VNEEP

- According to experts, the potential of energy saving in construction work in Viet Nam is quite big, not only in new building but also in existing building or improvement buildings
- For new buildings: estimate saving about 30~40% energy consumption when apply synchronous EE solutions and have the good energy manager (staff, owner of building)
- For existing building and improvement building: estimate saving about 15~20% when do audit and apply EE solutions

6. Main activities were implemented and action plan for the next step



- Coordinated with other stakeholder for making standards, technical guideline for applying EE technology and equipment in the building (for ex: lighting, air conditioner, heat water...)
- Investigated, evaluated and summarized the experiences from other countries about the EE&C policy and proposed EE&C policies suitable for building field in Viet Nam
- Organize some training workshops to disseminate and introduce the Viet Nam Energy Building Code for stakeholders and other relevant
- Study and apply the architecture design solutions with EE&C direction; build the technical guideline for new high energy efficiency equipments, such as solar heater water,...

6. Main activities were implemented and action plan for the next step



- Capacity building for 2 EE&C Advisory Center in Ha Noi University of Architecture and Ho Chi Minh University of Architecture
- Building some EE models in construction works
- Proposed to build a model of green architecture and green buildings and defined solutions for implementing
- Coordinate with the Ministry of Industry and others relevant organization to organize the EE building contest
- Coordinate with Ministry of Industry and others relevant ministries to build the Law Implementation Decree, with some clauses related with construction works

7. Action plan for the next step



- Improve the legal documents and technical regulations on EE in construction works
 - To build the guideline decree for implementing Law of EE&C in construction works
 - Organize for building the standards, technical guideline on energy audit and certificate for EE green buildings
- Implementing the pilot program and making the EE&C model in some designated buildings
 - Investigate, survey, energy audit in designated buildings
 - Set up the green architecture model, green construction works

7. Action plan for the next step



- Support for building EE&C database in designated construction works
 - Establish the periodic report system
- Strengthen human capabilities for building energy code program
 - Support for establishing of examination qualification system of the certified Energy Manager in buildings
 - Organize for making training material, step by step for taking EE contents in building into University of Architecture and University of Construction
 - Set up a networking between related agency (MOC, MOIT, VSQC, local EE center...)
- Set up roadmap for applying Building energy code in mandatory

8. Viet Nam Energy Efficiency Building Code (continue...)



- Vietnam Energy Efficiency Building Code was issued by Ministry of Construction according to Decision No. 40/2005/QĐ-BXD dated November 17th 2005.
- **Objective:** This code stipulates minimal technical requirements that are required to comply with in order to use energy efficiently when designing and constructing or improving commercial buildings, research agencies, state administrative headquarters, residential blocks and hotel buildings, etc... which use air conditioners and equipments consuming much energy.

8. Viet Nam Energy Efficiency Building Code (continue...)



Scope & Minimum requirements:

- This code introduces minimal requirements that need compliance in design and construction to improve energy efficiency of:
 - ▣ (a) New buildings and equipment systems of the buildings;
 - ▣ (b) New components of buildings and accompanying equipment systems;
 - ▣ (c) Systems and equipments in existing buildings;
 - ▣ (d) Improvement and upgrade of main equipment systems of buildings.
- Regulations in this Code are applied to the building envelope, systems of lighting, air conditioning and ventilation together with other power-consuming equipments.

8. Viet Nam Energy Efficiency Building Code



Scope & Subject of Application:

- Application according to building scales
 - *Small scale buildings*: gross floor area from 300 m² to 2,499 m²
 - *Medium scale buildings*: gross floor area from 2,500 m² to 9,999 m²;
 - *Large scale buildings*: minimum gross floor area of 10,000 m².
- Application according to building systems
 - The building envelope, excluding space for storage or warehouse without air conditioners;
 - Equipments and systems of buildings include:
 - *Indoor and outdoor lighting*
 - *Ventilation*
 - *Air conditioner*
 - *Water boiler*
 - *Energy managing equipment.*



THANK YOU!

[HTTP://WWW.VNEEC.GOV.VN/EN](http://www.vneec.gov.vn/en)