Energy Efficiency Standards and Labeling in Vietnam

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Ministry of Industry and Trade of Vietnam
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- Electricity consumption and market of home appliances in Vietnam
- Government policies and strategies

Challenges in energy efficiency
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General situation of Vietnam

- Member of: ASEAN, APEC, WTO
- GDP per capita increases
Energy consumption and market of home appliances in Vietnam

- **Energy consumption**
  - Annual growth rate: ~15%
  - Industry: 45%
  - Residential: 44%
  - Commercial: 4.5%
  - Other: 6.5%

→ Demand > Supply
Energy consumption and market of home appliances in Vietnam

- Structure of electricity consumption in residential area

![Pie chart showing energy consumption breakdown]

- Air conditioner 7%
- Fan 7%
- Refrigerator 16%
- Lighting 34%
- Other 36%
## Market for selected appliances in Vietnam

<table>
<thead>
<tr>
<th>Appliance</th>
<th>Average Size</th>
<th>Saturation (unit/HH)</th>
<th>No. of Units (2004) Stock</th>
<th>Sold²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vietnam</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Refrigerators (3)</td>
<td>180 liters</td>
<td>0.27</td>
<td>4,300,000</td>
<td>573,330</td>
</tr>
<tr>
<td>Air conditioners (3)</td>
<td>12000 BTU/hr</td>
<td>0.07</td>
<td>1,100,000</td>
<td>146,670</td>
</tr>
<tr>
<td>Electric motors (1)</td>
<td>5.25 kW</td>
<td></td>
<td>1,000,000</td>
<td>116,670</td>
</tr>
<tr>
<td>FTL Ballasts (2)</td>
<td>12 W&lt;sub&gt;loss&lt;/sub&gt;</td>
<td></td>
<td>33,600,000</td>
<td>4,264,620</td>
</tr>
<tr>
<td>Electric fans (3)</td>
<td>70 W</td>
<td>1.77</td>
<td>28,300,000</td>
<td>5,457,860</td>
</tr>
<tr>
<td>CFLs (4)</td>
<td>15 W</td>
<td></td>
<td>20,000,000</td>
<td>7,666,670</td>
</tr>
<tr>
<td>Rice cookers (3)</td>
<td>650 W</td>
<td>0.66</td>
<td>9,200,000</td>
<td>1,380,000</td>
</tr>
</tbody>
</table>

*Source: BRESIL GEF project document 2007*
Government policies and strategies

- Related government strategies and policies:
  2. Circular No. 08/2006/TT-BCN (16 Nov 2006): process and procedures of EC&EE labeling
  3. Law on Energy Efficiency and Conservation (Effect from 01 Jan 2011)
  4. Decision 51/2011/QĐ-TTg List of Mandatory labeling equipment, MEPS and Roadmap
  5. Decision 68/2011/QĐ-TTg List of energy efficiency equipment that are purchases by state-owned enterprises.
Government policies and strategies

- **National target program (key points)**
  - Targets: Saving 3% - 5% (2006 – 2010), 5% - 8% (2010 – 2015)
  - 11 sub-program:
    1. Upgrade existing legislative documents (Law, Ordinance, Regulations)
    2. Public communication
    3. Education
    4. Development of sample model
    5. *Development of EE Standard and Labeling*
Government policies and strategies

- Establishment of facilities for EE labeling programs:
  - Set up EE standards
  - Set up and qualify EE testing facilities (QUATEST1, QUATEST3, STAMEQ branches, labs in research organizations)
  - Set up procedures for EE labeling (Cir 08/2006) and design EE labels
  - Set up marketing programs with focus on consumers
Government policies and strategies

- Development of EE Standards for priority energy using products
  Available energy standards for:
  - Electric Motors: issued 2005
  - Refrigerators: issued 2007
  - Air-conditioners: Issued 2007
  - Rice Cookers: Issued 2009
  - Electric Fans: Issued 2007
  - Others (Washing machine, Water storage heater etc), including some industrial equipment
## Government policies and strategies

### List of TCVN standards for means and equipment of the Energy efficiency labeling program

<table>
<thead>
<tr>
<th>TT</th>
<th>Số hiệu TCVN</th>
<th>Tên tiêu chuẩn</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>TCVN 7541-1:2005</td>
<td>Thiết bị chiếu sáng hiệu suất cao – Phần 1: Mức hiệu suất năng lượng tối thiểu</td>
<td>High efficiency lighting products – Part 1: Minimum energy performance</td>
</tr>
<tr>
<td>5</td>
<td>TCVN 7826:2007</td>
<td>Quạt điện – Hiệu suất năng lượng</td>
<td>Electric fans – Energy efficiency ratio</td>
</tr>
<tr>
<td>6</td>
<td>TCVN 7827:2007</td>
<td>Quạt điện – Phương pháp xác định hiệu suất năng lượng</td>
<td>Electric fans – Methods for determination of energy efficiency</td>
</tr>
<tr>
<td>7</td>
<td>TCVN 7828:2007</td>
<td>Tủ lạnh, tủ kết đông lạnh – Hiệu suất năng lượng</td>
<td>Refrigerator, refrigerator-freezer – Energy efficiency ratio</td>
</tr>
<tr>
<td>8</td>
<td>TCVN 7829:2007</td>
<td>Tủ lạnh, tủ kết đông lạnh – Phương pháp xác định hiệu suất năng lượng</td>
<td>Refrigerator, refrigerator-freezer – Methods for determination of energy efficiency</td>
</tr>
<tr>
<td>9</td>
<td>TCVN 7830:2007</td>
<td>Điều hòa không khí – Hiệu suất năng lượng</td>
<td>Air conditioners – Energy efficiency ratio</td>
</tr>
<tr>
<td>10</td>
<td>TCVN 7831:2007</td>
<td>Điều hòa không khí – Phương pháp xác định hiệu suất năng lượng</td>
<td>Air conditioners – Methods for determination of energy efficiency</td>
</tr>
<tr>
<td>12</td>
<td>TCVN 7897:2008</td>
<td>Balat điện tử dùng cho bóng đèn huỳnh quang – Hiệu suất năng lượng</td>
<td>Electronic ballasts for fluorescent lamps – Energy efficiency</td>
</tr>
</tbody>
</table>
Government policies and strategies

List of TCVN standards for means and equipment of the Energy efficiency labeling program

<table>
<thead>
<tr>
<th>TCVN Code</th>
<th>Description</th>
<th>Energy Efficiency Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>7898:2009</td>
<td>Bình đun nước nóng cơ dự trữ – Hiệu suất năng lượng</td>
<td>Storage water heaters – Energy efficiency</td>
</tr>
<tr>
<td>8250:2009</td>
<td>Bóng đun sodium cao áp – Hiệu suất năng lượng</td>
<td>High pressure sodium lamps – Energy efficiency</td>
</tr>
<tr>
<td>8251:2009</td>
<td>Thiết bị đun nước nóng bằng năng lượng mặt trời</td>
<td>Solar water heater – Technical requirements and testing method</td>
</tr>
<tr>
<td>8525:2010</td>
<td>Máy biến áp phân phối – Mức HSNL tối thiểu và phương pháp xác định</td>
<td>Distribution transformers – Minimum energy performance and method for determination of energy efficiency</td>
</tr>
<tr>
<td>8526:2010</td>
<td>Máy giặt Mức IISNL tối thiểu và phương pháp xác định</td>
<td>Electric washing machine – Minimum energy performance and method for determination of energy efficiency</td>
</tr>
<tr>
<td>8630:2010</td>
<td>Nồi hơi – Hiệu suất năng lượng và phương pháp thử</td>
<td>Boilers - Energy efficiency and test method</td>
</tr>
</tbody>
</table>
Government policies and strategies

• Objects of the labeling program

1. Group appliances including straight fluorescent tubes, compact fluorescent lamps, electronic ballasts and electronic fluorescent lamp, air conditioning machines, refrigerators, washing machines, electric cooker, electric fans, televisions.
Government policies and strategies

• Objects of the labeling program
2. Group of office equipment and commercial including photocopying copy, computer monitors, printers, commercial refrigerators.
Government policies and strategies

- **Objects of the labeling program**

  3. Group industrial equipment including machine threephase distribution transformers, electric motors
Objects of the labeling program

4. Group means of transport including cars (of 7 seats or less).

5. The specialized equipment such as public lighting, machine air conditioners with a capacity greater than 28 kW water-cooled equipment and other required labeling route and apply the maximum energy efficiency minimum prescribed by the Ministry.
## Government policies and strategies

List of energy efficiency means and equipment that are purchases by state-owned enterprises

<table>
<thead>
<tr>
<th>STT</th>
<th>Name of means and equipment</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Compact fluorescent lamps</td>
<td>Endorsement label</td>
</tr>
<tr>
<td>2</td>
<td>Tubular fluorescent lamps</td>
<td>Endorsement label</td>
</tr>
<tr>
<td>3</td>
<td>Ballast for fluorescent lamps</td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>Electromagnetic ballasts for fluorescent lamps</td>
<td>Endorsement label</td>
</tr>
<tr>
<td>b</td>
<td>Electronic ballast for fluorescent lamps</td>
<td>Endorsement label</td>
</tr>
<tr>
<td>4</td>
<td>Electric fans</td>
<td>Comparative label</td>
</tr>
<tr>
<td>5</td>
<td>Air conditioners</td>
<td>Comparative label</td>
</tr>
<tr>
<td>6</td>
<td>Refrigerator</td>
<td>Comparative label</td>
</tr>
<tr>
<td>7</td>
<td>Distribution transformers</td>
<td>Endorsement label</td>
</tr>
<tr>
<td>8</td>
<td>Public lighting products</td>
<td>Endorsement label</td>
</tr>
<tr>
<td>9</td>
<td>Solar water heaters</td>
<td>Endorsement label</td>
</tr>
<tr>
<td>10</td>
<td>Television</td>
<td>Comparative label</td>
</tr>
<tr>
<td>11</td>
<td>Monitor</td>
<td>Endorsement label</td>
</tr>
<tr>
<td>12</td>
<td>Printer</td>
<td>Endorsement label</td>
</tr>
<tr>
<td>13</td>
<td>Photocopy machine</td>
<td>Endorsement label</td>
</tr>
</tbody>
</table>
Government policies and strategies

- Development of Energy label
  - Endorsement label - “Viet Energy Star”
  - Used for lighting products - high efficiency
  - Comparative label
  - Used for household appliances
Government policies and strategies

- Procedures of EE labeling:
  - Preparation (getting model; testing; building up technical file)
  - Registration with MOIT
  - Evaluation (within 20 days)
  - Firms get permission for EE labeling (for 3 years)
  - The firms print and label energy (endorsement/comparative) sticker
Government policies and strategies

- **Progress of Voluntary EE Labeling program 2006 – 2011**
  - **Now: EE labeling**
    - Tub fluorescent lamps: T8, T5 (3 Suppliers)
    - Magnetic ballasts (5 Suppliers)
    - Electric motor (1 Supplier)
    - CFLs: 27 types (3 Suppliers)
    - Electric fans: 99 types (3 Suppliers)
  - **Soon:**
    - AC
    - Refrigerator
    - Rice cooker
  - **Near future:** PM to issue a roadmap to compulsory labeling
### Government policies and strategies

#### Roadmap of EE labeling program:

<table>
<thead>
<tr>
<th>List</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Home appliances</strong></td>
<td></td>
<td></td>
<td>Bóng đèn sợi đốt &gt;60w</td>
<td>MEPS</td>
<td>MEPS</td>
</tr>
<tr>
<td><strong>Office and commercial appliances</strong></td>
<td></td>
<td></td>
<td></td>
<td>MEPS</td>
<td>MEPS</td>
</tr>
<tr>
<td><strong>Industry equipment</strong></td>
<td></td>
<td></td>
<td></td>
<td>MEPS</td>
<td>MEPS</td>
</tr>
<tr>
<td><strong>Means of transport</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Others</strong></td>
<td>KK</td>
<td>KK</td>
<td>KK</td>
<td>KK</td>
<td>KK</td>
</tr>
</tbody>
</table>
Challenges in energy efficiency S&L policy development in Vietnam

- Policy and regulation framework barriers
- Institutional barriers
- Information and awareness
- Market barriers
Challenges in energy efficiency S&L policy development in Vietnam

- **Policy and regulation framework barriers**
  - No mandatory regulations for minimum energy performance standards (MEPS).
  - Lack of policy framework on ES&L and a comprehensive roadmap for ES&L.
  - Difficulties in negotiations between manufacturers and stakeholders: Policymakers do not have experience with negotiating with equipment manufacturers to increase their efficiency levels.
Challenges in energy efficiency S&L policy development in Vietnam

- **Institutional barriers**
  - Lack of integrated institutional approach to ES&L implementation: To date, implementation of ES&L in Vietnam just began and is *ad hoc*.
  - Lack of regular testing programs for energy performance of end-use equipment – Due to the lack of clear regulatory framework and mandate.
  - Lack of training programs on ES&L framework and implementation: There are not sufficient training courses or modules covering the step-by-step process of building up an ES&L regime.
  - Lack of accredited testing laboratories- The accredited labs can test EE for only some (not all) products.
Challenges in energy efficiency S&L policy development in Vietnam

- Information and awareness
  Insufficient public awareness about energy-saving equipment
Challenges in energy efficiency S&L policy development in Vietnam

- **Market barriers**
  - Market not driven to EE equipment because without labeling, energy efficiency is an invisible attribute.
  - Limited or no market monitoring and sampling suffer due to lack of manpower and funds.
  - Lack of knowledge about the benefits of ES&L among sellers and buyers.
Lessons learned

- ES&L should receive strong support from policy makers. Policy, regulations and EE standards should be developed in advance.
- Government should support testing labs, particularly in establishing expensive testing facilities.
- Government/implementing agencies should have comprehensive public awareness programs focusing on consumers to recognize EE labels.
- Energy Efficiency Standard setting should balance the benefit
Thank you for your attention