APPRAOCH FOR INTRODUCTION OF AN ENERGY LABELLING SYSTEM FOR HOUSEHOLD ENERGY-CONSUMING APPLIANCES

Experience of the Republic of Armenia

Levon Vardanyan – Head of Department of Development of the Ministry of Energy and Natural Resources of the Republic of Armenia

CONTENTS OF THE PRESENTATION

- Importance and background for introduction of a labelling system of energy-consuming appliances in Armenia
- Labelling of household gas appliances:
  Main results of studies carried out by the project
- Institutional and legal framework for introduction of a labelling system of energy-consuming appliances:
  Approach that guarantees a smooth implementation of the system in Armenia
- Main provisions for introduction of a labeling system of energy-consuming appliances in Armenia
IMPORTANCE AND BACKGROUND FOR INTRODUCTION OF A LABELLING SYSTEM OF ENERGY-CONSUMING APPLIANCES IN ARMENIA

Why implementation of an energy labelling system is important for Armenia?

- Armenia has no domestic sources of energy
- Energy-saving is one of the key components of energy security policy in the Republic of Armenia
- Energy-saving activities focused on household energy consumption do not require big investments
- Social and economic effect – raising energy efficiency of household appliances will reduce energy costs, which is important considering growing prices on gas and electricity.

From 2011 a phased transition to market-based principles of setting prices on gas supplied to Armenia by OJSC Gazprom is expected to take place
Why implementation of an energy labelling system is important for Armenia?

Energy consumption in the municipal sector steadily grows. Energy consumption by households accounts for about 20% of greenhouse gas emissions.

*Evolution of GG emissions from different branches of economy*

A package of amendments to this Law approved by the House of Assembly of the Republic of Armenia will establish a legal framework for implementation of an energy labelling system.

• Plan of activities of Government for implementation of national programme provisions on energy saving and renewable energy approved by the Government Decision of the Republic of Armenia in 2010.

One of the priorities of the programme is establishment of an institutional framework for implementation of energy labelling.

• Favourable market structure of household energy-consuming appliances

There is a wide range of appliances with different energy characteristics at the market and a huge potential for a market transformation.
District heating stopped functioning in 2002 and has been gradually replaced by household autonomous gas-fired boilers or gas space heaters and in-line gas water heaters.

Gas network coverage is exceeded 90%.

Share of natural gas in energy consumption structure of municipal sector is more than 70%.

Considerable energy saving potential in case of a positive market transformation.

In accordance with forecasts in 2012 gas consumption by household consumers for heating will get over 500 mln. m³, for hot water supply it will be around 120 mln. m³, which is more than 30% of total gas consumption of the Republic.
The analysis of market trends for household gas appliances has revealed the following:

- A growth of sales of household gas appliances (up to 20,000 units each year)
- Reduction of sales of household gas space heaters and in-line gas water heaters (gas space heaters are replaced with boilers)
- Despite that, the volumes of sales of gas space heaters will remain to be high (up to 30,000 units each year)
- There is no direct relations between energy characteristics and market value of appliances, i.e. a more expensive appliance does not necessarily mean that it is more efficient.

*It is recommended to focus energy labelling on household gas-consuming heating devices with a big energy-saving potential, that cover a wide segment of a market.*
There are no “ready-made” solutions based on international experience. The existing “models” do not suit Armenia (different market structure, mentality of consumers, etc.), some “models” turned out inefficient and are now revised.

It is necessary to determine an energy-saving potential and possibilities of a market transformation, develop a national approach to establishment of energy classes and “design” of energy labels.

Provided that he is properly informed, the consumer will choose a model with the best energy characteristics from all options of the same price range.

➢ The economic effect from implementation of a labelling system (the overall savings caused by decrease of gas consumption) during the first year will be around 350 thousand dollars. At a later stage of the system implementation the annual economic effect will be 5 and more times higher.
PROPOSALS ON LABELLING

Ranking of household gas appliances by energy classes.

Main indicator of energy class – nominal heat output efficiency factor.

*Energy classes in accordance with “star rating”*

<table>
<thead>
<tr>
<th>Energy class</th>
<th>Nominal heat output efficiency, %</th>
<th>BBoilers</th>
<th>CConvectors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. *</td>
<td>&lt;&lt;86</td>
<td>&lt; &lt; 84</td>
<td></td>
</tr>
<tr>
<td>2. **</td>
<td>887-90</td>
<td>885-88</td>
<td></td>
</tr>
<tr>
<td>3. ***</td>
<td>991-94</td>
<td>889-91</td>
<td></td>
</tr>
<tr>
<td>4. ****</td>
<td>995 and more</td>
<td>991 and more</td>
<td></td>
</tr>
</tbody>
</table>
Two institutional models have been considered:

• Introduction of a labelling system within the framework of compliance verification:

☞ **Advantages:**

Approach with which the stakeholders are already familiar – tests of energy efficiency and issue of compliance certificates can be combined with tests on safety of appliances (requirements of relevant technical regulations).

☞ **Drawbacks:**

System of compliance verification does not contain a mandatory requirement for having an energy label, importers of inefficient appliances will “disguise” test results.

Changes in the legislation are required, in particular, it is necessary to change some provisions in the laws on “Standartisation” and “On Compliance Assessment”.
Institutional and legal framework for introduction of a labelling system of energy-consuming appliances: approach that guarantees a smooth implementation of the system in Armenia

- Implementation of labelling under the umbrella of the National Authorised Body on Energy Efficiency (Ministry of Energy and Natural Resources)

☞ Advantages:

Possibilities for implementation of a “robust” labelling with a mandatory requirement to have energy efficiency labels. A high flexibility of a system, capacity for a quick reaction on the changes in the market structure.

☞ Drawbacks/difficulties

An innovative approach was required to an institutional framework design for implementation of a system. There were no cases of assessing compliance of non-food goods different from the ones carried out within the framework of a compliance verification system.
Institutional framework

➢ Creation of a Council on Energy Efficiency Labelling at the Ministry of Energy and Natural Resources, that will operate based on an order of the Minister.

➢ Competitive selection of an implementing agency in charge of energy efficiency labelling, development of operating procedures for the agency (order of the Minister of Energy and Natural Resources).
List of energy-consuming equipment subject to labelling:

Electric appliances:
- Household refrigerators, freezers and combination of both
- Air-conditioners
- Household washing machines

Gas appliances:
- Household gas-fired boilers
- Gas space heaters (convectors)
Electric appliances:

- Design of labels, energy classes and other information in accordance with the requirements of EC Directives.
- Energy tests based on standards securing implementation of EC Directive requirements are carried out by local laboratories. It’s also possible to have the results of tests of laboratories accredited in EU.

Example:
Refrigerator energy label
Household gas appliances:

- A label was designed by the Project and agreed with the Ministry of Energy and Natural Resources

- Principle of indication of energy classes – a "star rating" (from one to four stars)

- Information on the label – name of manufacturer, model of appliance, energy class (number of stars), nominal heat output efficiency factors.

- Energy tests – in accordance with relevant CEN standards