Building Certification. First Steps and Paths for Further Development in the Kyrgyz Republic

State Energy and Gas Inspectorate under Ministry of Energy of the Kyrgyz Republic
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Certificate of Conformity or Energy Passport

- *It’s a document confirming that certified products, processes (methods) of production, storage, transportation, sale, operation and utilisation, works and services are in conformity with requirements established in technical regulations, provisions of standards or contract conditions.*

As it is seen, the term has a broad meaning. In our case ‘auditor’s certificate’ should be a certificate issued based on audit results. It is the document named ‘energy passport’.

- Energy passport has been developed by the State Energy and Gas Inspectorate under Ministry of Energy of the Kyrgyz Republic with the objective of implementing Government Decision of the Kyrgyz Republic as of 23 June 2005 No. 255 ‘On Approval of Consumption Limits (allowed consumption) for Thermal Energy, Electricity, Natural Gas, Water and Wastewater Discharge for State-financed Organisations and Measures on Rational Use of Funds Allocated to State-financed Organisations for Paying for Municipal Services’.
Energy passport includes the following sections:

1. Heat supply
2. Cold water supply
3. Hot water supply
4. Gas supply
5. Electricity supply
6. Wastewater disposal
Each section contains the information:

- on maximum and average loads;
- energy consumption;
- consumption of heat, hot and cold water;
- specific consumption of boiler and furnace fuel (provided there is a heat source of its own);
- gas consumption;
- installed capacity of electric equipment;
- annual electricity consumption;
- technical characteristics of the facility;
- operational characteristics of the facility;
- availability of metering points;
- energy consumption caps;
- communications
Energy passport also contains section II. ‘Actual Energy Saving Activities Implemented by Organisation’ that includes:

- number and date of order of the organisation on introduction of a system of energy metering and consumption in the organisation;
- number and date of order on introduction of changes in employment position instructions due to introduction of a system of metering and control of energy consumption in the organisation;
- list of officials in charge of energy saving activities with a breakdown by their main directions;

as well as information on:

- energy saving activities, installation of metering devices and other energy saving equipment in organisation, persons in charge;
- change in the mode of operation of electric equipment in the organisation;
- change in the mode of operation of the system of heat and hot water supply;
- briefing of organisation staff on changes in the operation of electric equipment, systems of heat supply, rational use of energy resources.
The Government Decision of the Kyrgyz Republic as of 23 June 2005 No. 255 approved the procedure for calculating the limits (allowed consumption) of thermal energy and electricity consumption for state-financed organisations, distribution and re-distribution of limits among institutional organisations with the objective of controlling rational use of budget funds.

The procedure establishes mandatory requirements for calculating the need in thermal energy and electricity for state-financed organisations, approval of a limit of consumption (allowed consumption) of thermal energy and electricity and regulates relations between ministries/institutions and energy consumers.

The Ministry of Finance of the Kyrgyz Republic approves annual thermal energy and electricity consumption in physical terms, confirms financing within the scope of the need approved to be executed by ministries, state committees, administrative bodies, state commissions and local state administrations and informs them about that.
Responsibilities of Consumers

- On an annual basis before the 1\textsuperscript{st} of August thermal energy and electricity consumers are obliged to fill in a standard form of energy passport of the organisation in accordance with the current ‘Procedure for calculating the need in thermal energy and electricity of buildings’, prepare a well-grounded calculation of a required volume of thermal energy and electricity with a breakdown by quarters and submit it to the superior organisation not later than the 15\textsuperscript{th} of August for consolidation.

- The consumer shall carry out control over energy consumption, reducing it to values defined in the plan of energy consumption.

- The manager of the organisation/institution after a relevant attestation in the commission with participation of the representative of the State Inspectorate for Energy and Gas under the Ministry of Energy of the Kyrgyz Republic shall appoint in his order an official to be in charge for implementation of this procedure.

- On an annual basis not later than the 1\textsuperscript{st} of December ministries, state committees, administrative bodies, state commissions, local self-government bodies shall submit to the Ministry of Finance of the Kyrgyz Republic and the State Inspectorate for Energy and Gas under the Ministry of Energy of the Kyrgyz Republic a full list of subordinate structural subdivisions with an indication of their names and, based on energy passports and calculations of thermal energy and electricity demands of structural subdivisions, shall fill in a standard form of energy passport for the whole of the ministry, submitting information to the Ministry of Finance of Kyrgyz Republic.
The Ministry of Finance of the Kyrgyz Republic shall create a commission with participation of a representative of the State Inspectorate for Energy and Gas under the Ministry of Energy of the Kyrgyz Republic and study the submitted consolidated calculations of thermal energy and electricity demand for the upcoming year.

Energy suppliers shall supply energy to consumers in accordance with volumes specified in the plan and shall be forced to limit energy supply in case the planned volumes are exceeded until they are fully compensated, stop supplying energy to consumers that have no targets set for the current year.

Nowadays the issues of energy saving are of high importance. We have drafted an ‘Energy Saving Programme of the Kyrgyz Republic for 2010-2015’.

This is what we have by now.

The energy passport contains section II ‘Actual Energy Saving Activities Implemented in the Organisation’. Unfortunately, they are almost absent.
Energy saving technologies include activities focused on improvement of heating systems, hot water and heat supply in residential and public buildings aimed at reduction of heat consumption. In connection with that it is necessary to:

1. make the staff operating energy systems, to the heating networks of which residential and public buildings are connected, accept, retrofit (if necessary), adjust and maintain internal heating and hot water supply systems of these buildings, irrespective of the institutional status of the latter;
2. introduce bonuses for employees of energy systems depending on a factual saving of heat (fuel), provided that a normal heat mode in buildings is kept;
3. equip heating systems with valves of double regulation and three-throw radiator valves, ensure quality and reliability of their operation, as well as with automatic devices for central, local and individual regulation of heat supply;
4. use of mixing and circulating pumps as well as modern heating devices;
5. improve quality of construction of heat networks using a highly-efficient heat insulation as well as reconstruct current heat networks.

Tasks to be Fulfilled for Paving the Way to Further Development
6. strengthen the role and rights of author’s supervision over installation of heating and ventilation systems;
7. enlarge scientific, research and experimental works in order to improve heating and ventilation devices, simulate processes of air-exchange in exclusive buildings;
8. use water heaters of different capacity for hot water supply;
9. install individual (apartment) hot water meters in buildings with a centralised hot water supply as well as general building heat meters;
10. make state-financed organisations obliged to use energy efficient lighting devices.

Envelopes of existing residential buildings do not meet modern requirements to heat insulation, that’s why before insulating building envelope it is necessary to carry out energy examination (energy audit), the main objective of which is to prepare a feasibility study for a comprehensive energy efficiency programme for buildings.
Energy audit includes seven main stages:

1. Collection and analysis of the necessary information for the building, preparation of the audit programme. Based on the results of this stage the scope, costs and terms for implementation of works are defined.

2. Building examination, including initial energy audit, i.e. collection of general documents as regards annual consumption for the basic and current periods, availability of the systems of internal and commercial metering of energy consumption, etc., instrumental energy audit – implementation of the necessary instrumental examination and examination of the modes of equipment operation. Development of detailed balances for all resources, identification of areas of energy saving.

3. Project development.

4. Report and presentation of activity results;

5. Implementation of energy-saving activities;

6. Monitoring of defined energy consumption after implementation of recommendations;

7. Organisation of energy management.
Further Improvements

- For implementation of the abovementioned activities it is necessary to create energy service companies that would work based on licenses in cooperation with energy companies and local self-government bodies (requiring to reduce energy consumption of buildings by 20% and more), which in its turn will contribute to energy management within the series of tasks set.

- For a successful introduction of the programme of retrofitting of residential buildings, the envelopes of which do not meet modern requirements it is necessary to create demonstration facilities, making contracts with a financing determined based on factual saving. The main objective is to secure guaranteed future energy savings. This will help a client use future energy savings for current modernisation of the company and reduction of current expenses.

- In connection with that it is necessary to ensure such a financing of institutions operating at the expense of Republican or local budgets and taking part in energy saving programmes that should not be reduced for the next year based on factual energy consumption. Their financing should be kept unchanged until the activities contributing to a more efficient use of energy are paid back.
Obstacles

The complexity of the task is explained both by a general state of reforms in a fuel and energy sector and the specifics of energy supply in the Republic.

However, with liberalisation of economic relations and reduction of state regulation the responsibilities of energy companies toward consumers as regards reliable and continuous energy supply as well as their interest in solving national priority tasks started to decrease.

The legal paradox is that in accordance with the current legislation it is the local self-government bodies that are in charge of securing energy in the region and of qualitative development of the energy sector, while energy is supplied by energy companies which are joint-stock companies protecting first of all the interests of the business. Energy saving demands big investments and the payback of activities is on the average 5 to 9 years. That’s why energy companies are hardly interested in their implementation.
Insufficient motivation for energy saving is also explained by budget limitations, withdrawal of saving received by the company, possibility to transfer the increasing costs on consumer, cross-subsidies, lack of tools regulating consumer.

Economic mechanisms have been developed in such a way that the recipient of energy saving is not defined and institutionally documented. Today it is difficult to get a clear answer to the question: who is personally interested in energy saving? The main problem is that saving brings to the cuts of budget and tariffs. Within such conditions the growth of prices on energy does not contribute to raising energy efficiency, it helps support further growth of tariffs and justifies additional requests for budget financing.
For example, inhabitants of multi-apartment buildings put plastic windows (double glazed windows), i.e. invested their own money in energy saving activities. What will energy supplier do in such a case? The supplier proposes to use in calculations a factual internal temperature of air, increasing it from 18 to 20-22°C as heat losses through windows decreased, instead of introducing a regulated supply allowing (that should allow to decrease) to decrease a consumption in the building. The same will happen to building envelopes that meet modern heat insulation requirements.

Another example of implementation of energy saving technologies – installation of building (in multi-apartment residential buildings) meters. Low-income citizens do not have money for meters, and the energy supplier (if there are meters) prefers to put the difference between the indications of the general building meter, consumers with meters and consumers without meters – on consumers without meter. And again the existing difference between the indications of a building meter and a total value of apartment meters (in case all apartments in the multi-apartment building are equipped with meters) is all the same proposed to be put on the consumer instead of taking efforts to eliminate losses, i.e. to implement on time the types of works related to technical maintenance, for which consumer pays by a different article.

Thus, for successful implementation of energy saving activities it is necessary to formulate and implement of composite tasks with an equal participation of all stakeholders.
Thank you for attention!