

**NON-PROFIT JOINT STOCK COMPANY
«Al-Farabi Kazakh National University»**

«I approve»

**The Acting Chairman of the Rector's
Board**

NJSC «KazNU of al-Farabi»

K.N. Abdullaev

"24" August 2023



A policy ensuring that renovation/new buildings comply with energy efficiency standards.

Almaty 2023

This policy determines the compliance of renovated/new buildings with energy efficiency standards.

To solve this issue, the University is guided by the legislative and regulatory documents of the Republic of Kazakhstan on energy conservation and energy efficiency improvement:

1. Law "On Energy Saving and Energy Efficiency Improvement" dated January 13, 2012 No. 541-IV

2. Requirements for energy efficiency of buildings, structures, structures and their elements that are part of the enclosing structures approved by Order of the Minister of Investment and Development of the Republic of Kazakhstan No. 406 dated March 31, 2015.

3. State standards in the field of architecture, urban planning and construction of the Republic of Kazakhstan 2.04-07-2022 "Thermal protection of buildings"

4. The concept of development of the sphere of energy saving and energy efficiency of the Republic of Kazakhstan for 2023-2029 approved by the Decree of the Government of the Republic of Kazakhstan dated March 28, 2023 No. 264.

Improving energy efficiency is a hidden reserve for dynamic economic growth due to the redistribution of released financial resources. An energy management system is necessary for effective management of energy consumption.

Energy policy is a driving force in the implementation and improvement of an organization's energy management system (EnMS), as well as the level of energy efficiency within its scope and boundaries.

The University's energy policy is aimed at building the scientific potential of young specialists, creating conditions for the implementation of scientific projects of practical importance in the field of energy conservation and energy efficiency.

Terms such as: "energy standards for buildings", "thermal building codes", "requirements for energy conservation in buildings", "requirements for energy efficiency of buildings" are applicable. The terms "building codes" or "energy standards" for new buildings most often echo the energy efficiency requirements for houses under construction, regardless of whether they are a set of building requirements, specific standards or other documents.

Considering that any university carries out scientific, educational, educational and methodological activities, the main objectives of its energy policy are:

1. Assistance in the implementation of the state policy in the field of energy conservation and energy efficiency through scientific and educational activities of the university. Formation of a culture of energy conservation among students, university staff and the public.

2. Efficient and rational consumption of energy resources at university real estate facilities, taking into account the requirement to improve the quality of educational services provided.

Energy efficiency building codes imply several levels of responsibility in terms of implementation and quality control:

1. The state level – the Government of the Republic of Kazakhstan, the Ministries of the Republic of Kazakhstan, subordinate authorized bodies of the Ministries of the Republic of Kazakhstan and quasi-public sectors of these Ministries.

2. Local level – Akimat of Almaty city (Department of Energy and Water Supply of Almaty city).

Energy efficiency building codes are a set of mandatory requirements designed to reduce energy consumption of buildings. These standards are used as mandatory tools to stimulate the achievement of the required energy efficiency characteristics of buildings. Different approaches to the formation of energy efficiency building standards are used in each country. The prescriptive approach establishes minimum requirements for the energy characteristics of each individual part of the building – windows, walls, as well as heating and refrigeration equipment. The executive approach requires an integrated project based on a holistic assessment of the energy characteristics of the building. Energy efficiency policy is focused on:

- The main regulatory documents;
- Strictness and scope of application of building energy consumption standards;

- Performance requirements in building codes of energy consumption;
- Regulations (requirements) in building codes of energy consumption;
- Energy certification;
- Performance and compliance requirements;
- Requirements for building materials and equipment.

The requirements for architectural, space-planning, technological, constructive, engineering and technical solutions affecting the energy efficiency of a building, structure, and structure and included in the design documentation and used in construction (reconstruction, major repairs) materials that allow to exclude irrational (unreasonable) consumption of energy resources are:

1) the indicator of the normalized (basic) specific value of thermal energy consumption in a building, structure, or structure should be no more than the indicator given in Appendix 1 to these requirements;

2) the indicator of the base value of the required (normalized) heat transfer resistance of the enclosing structure must be at least the indicator given in Appendix 2 to these requirements;

3) the indicator of the normalized value of the specific thermal protection characteristics of a building, structure, or structure should be no more than the indicator given in Appendix 3 to these requirements.

6. A cost-effective solution for the enclosing structures of a building, structure, or structure is selected taking into account the specific climatic conditions of the construction site.

7. Design (design estimates) documentation for the construction of new or expansion (major repairs, reconstruction) of existing buildings, structures, structures must correspond to the energy efficiency class of the building, structure, structure "A", "B" or "C".

7-1. Information about the energy efficiency class is placed on a voluntary basis, in a place accessible to the public (on an information board in the entrance of the building and/or in the lobby of the building at a level not lower than 1.5 meters and not higher than 2 meters and/or on the facade of the building next to the main entrance, at a level not lower than 1.5 meters and not higher than 2 meters meters) according to the form of marking buildings, structures, structures for energy efficiency, approved by the Order of the Acting Minister for Investment and Development of the Republic of Kazakhstan dated November 26, 2015 No. 1106 (registered in the Register of State Registration of Regulatory Legal Acts No. 12541) on the initiative of the customer (developer), the owner of buildings, structures, structures, the association of owners of the property of an apartment building and (or) a simple partnership of an apartment building.

The use of various levels of energy consumption taken into account when determining the energy characteristics of a building, 90% of which is accounted for by heating, hot water (76%) and lighting (67%). Requirements for technical specifications in the building codes of energy consumption. It is necessary to introduce requirements for thermal insulation, including (U coefficients) (94%), along with boiler and air conditioning systems (88%), as well as ventilation or air quality (82%). Lighting density, natural lighting and solar radiation (G coefficients) are represented by equal shares (65%) together with renewable energy sources and thermal bridges, which make up 53%. Energy certification is an important tool for improving the energy performance of academic buildings and student dormitories. The main purpose of energy certification is to inform building owners, tenants and tenants, as well as to visualize energy efficiency as an additional marketing ploy. Thus, it can be a powerful marketing tool to create demand for energy efficient construction. Technical requirements in Energy Efficiency Building Codes.

An energy efficiency improvement plan to reduce overall energy consumption.

1. Carrying out current, major repairs, reconstruction of existing buildings on campus using advanced building materials and technological equipment to eliminate irrational consumption of energy resources, regulating the characteristics of the building in terms of energy consumption and optimizing the overall building performance in terms of energy efficiency and energy conservation.

2. When designing and constructing new buildings on the territory of the University, be guided by the legislation and regulations in the field of architecture, urban planning and construction of the Republic of Kazakhstan.

3. Conducting energy management.

Energy management should be considered as an energy conservation management system. It should combine both managerial and technical aspects (Fig. 1). An energy management system is a set of interrelated and interacting structural elements of an organization based on an energy policy formulated by the organization, goals and objectives of energy efficiency, as well as a mechanism (special processes and procedures) that allows achieving a given level of energy efficiency.

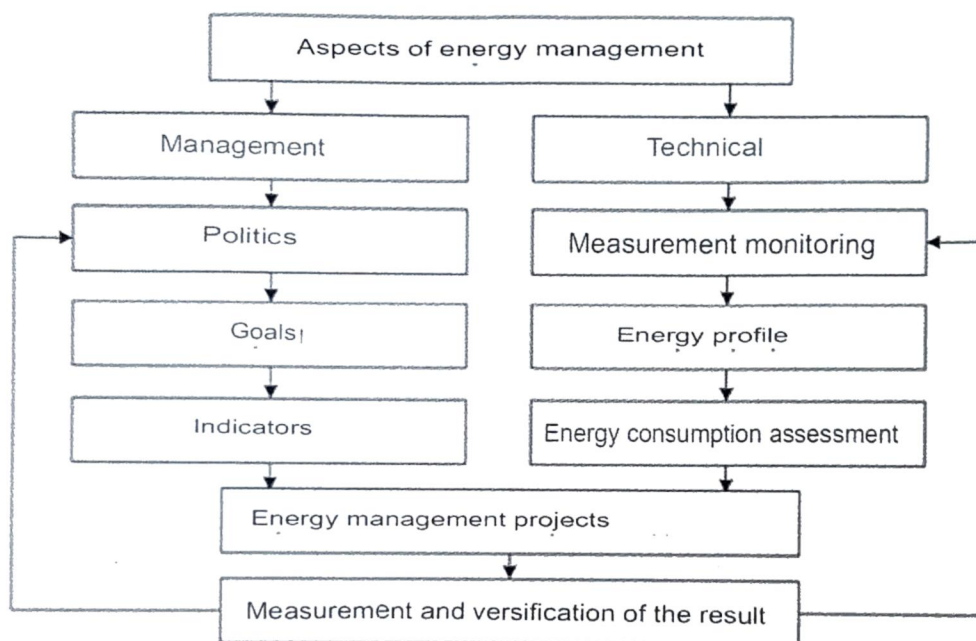


Fig. 1. Combination of managerial and technical aspects of energy management