Energy Efficiency Reforms, Legislations, and Projects in Azerbaijan

International Ecoenergy Academy

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International Ecoenergy Academy (IEA) Background

- **The IEA was founded in 1994.**

- **Co-founders of the IEA:**
  - The National Academy of Sciences of the Republic of Azerbaijan,
  - Clean Energy Research Institute of USA,
  - Russian Academy of Architecture and Construction,
  - Russian Association ABOK.

Approved Policies

The main policies on Renewable Energy Sources (RES) and Energy Efficiency (EE):

- **The State Program on use of Renewable Energy Sources and Energy Efficiency in Azerbaijan Republic (2004)**

- **The Decree of President on establishment of the State Agency of Renewable Energy and Energy Efficiency Sources at the Ministry of Industry and Energy (2009)**

Proposed Draft Laws

- **Energy Efficiency Law of the Republic of Azerbaijan**
- **Law of the Republic of Azerbaijan on the use of Renewable Energy Sources**
- **Law of the Republic of Azerbaijan on Support to the use of Alternative and Renewable Energy Sources**

The analyzed legal and regulation acts

- **Laws**
- **Decrees**
- **Ordinances**
- **Regulations**
- **State Programs**

Proposed and Submitted Secondary Legislative Documents

1. Regulations for improving efficient use of energy and energy resources
2. Regulations for energy consumption in buildings
3. Regulations on method and procedure for increasing energy efficiency in transport
4. Regulations for production of electricity in solar energy plants

5. Method of calculation of overall energy use in buildings

6. Regulation for the use of geothermal source areas for production of electricity

7. Method of calculation of natural gas losses during exploitation of main gas pipeline

8. Certification standards for the gas devices imported or manufactured in the republic

9. Norms of fuel gas consumed for the unit of electricity and heat energy

10. Norms of air change in residential and public buildings

11. Method of calculation of heat consumption in existing (old) buildings

12. Method of calculation of parameters of the anti-smoke systems in residential and public buildings

13. Standards for automated management systems in buildings

14. Standards for automated single heating systems

15. Standards for complex Intellectual systems in few stored and cottage buildings

16. Regulations for the use of solar energy in urban planning

17. Norms for placing of wind energy plants

18. Rulebook on method and procedure for performing the state energy expertise

19. Rulebook for establishing the state information system in increasing energy efficiency and effective use

20. Rules and conditions of the development of state programs in efficient use of energy resources

21. Rulebook for establishing penalties and payment procedures for ineffective use of energy resources

22. Regulations for the state control for observation of energy resource use norms

23. Regulations for providing energy users with devices to register overall energy consumption, and also attestation and installation of these devices

Roadmap on the Development of District Heating in Azerbaijan until 2020

Inception Report – Roadmap (strategic whitepaper) on the Development of District Heating in Azerbaijan until 2020

- Sustainable Development
- Environmental Protection
- Economic Growth
- Stable Heating and Cooling to Residential and Commercial Buildings
- Energy Efficiency in Combined Heat and Energy Systems

What has been done

- Overview of Current Situation
- Institutional Framework was Analyzed
- Technical Situation
- Tariffs and Cost Recoveries
- Main Stakeholders

Completed Projects

Project: Building 27

Stage 1: Description of the initial situation

Stage 2: Identification and determination of the parameters of the territory where building is located

Stage 3: Market search for local insulation materials and window designs

Stage 4: Calculation of technical and economic parameters of the proposed activities

Before Audit

Audit defined the potential increase in energy efficiency of the building:

- Energy savings = 1 119 980 kWh/year
- The total net savings =69 676 AZN
- Needed Investments = 582 174 AZN
- Payback = 8.4 years

After Audit

After Audit

Project: Kindergarten in Khazar District

Stage 1: A study of initial state of the building including electricity and heat consumption, HVAC systems and etc;

Stage 2: Identification of outside climatic parameters and necessary actual values;

Stage 3: Study of availability of local heat insulation materials with low heat transfer coefficient;

Stages 4 and 5 were organization of energy audit of the kindergarten and a training course.

Kindergarten Building

Project: Turkan High School

Potential improvements of the school building:

- Energy savings = 486 319 kWh/year
- The total net savings = 23 152 AZN per year
- Needed Investments = 285 960 AZN
- Grant cost subsidies = 146 760 AZN
- Payback = 6.3 years

Before

After

Project: High School # 109

Audit defined the potential increase in energy efficiency of the building:

Energy savings = 892 094 kWh/year

The total net savings = 26 856 AZN per year

Needed Investments = 237 800 AZN

Payback = 8, 9 years

Before

After

Project: Architecture and Construction University

Fotos of the Building

Audit defined the potential increase in energy efficiency of the building:

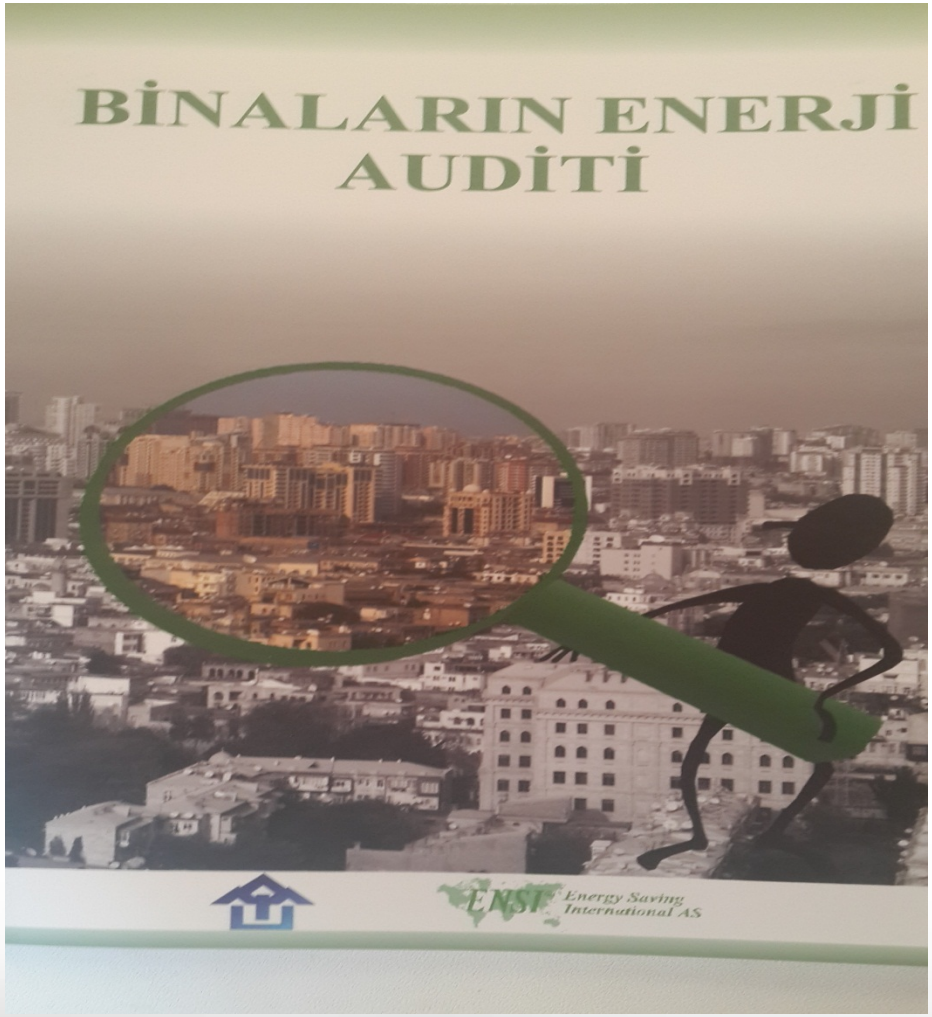
Energy savings = 831 030 kWh/year

The total net savings = 22 695 AZN per year

Total investments = 264 800 AZN

Payback = 11,7 years

Academy's First Energy Audit Textbook



4. Recommendations

- **Establishment of a governmental entity to coordinate the activities related to energy efficiency in all spheres including industrial sectors, public and residential building;**
- **Development of long-term National Energy Efficiency program with participation of the related governmental bodies and scientific-research institutes;**
- **Development and implementation of projects on increased energy efficiency in both new and existing buildings;**
- **Development and use of new energy efficient building models according to advanced world practice.**

- **Application of automated building energy management and control systems;**
- **Organizing of the manufacture of modern and high-quality building materials and structures;**
- **Development and adoption of new standards, norms and regulatory acts on building energy performance, and establishment of institutional and financial mechanisms of their management;**
- **Establishment of incentives and economic motives to stimulate energy efficiency of buildings;**

- **Development of legal and policy framework for energy efficiency of buildings in compliance with international standards to regulate**

Thank you for your attention!