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# Energy service contracts in regional engineering center for small and medium businesses

**I R Gil'manshin, N F Kashapov**

*Kazan Federal University,*

420008, Kremlevskaja Street, 18, Kazan, Russia

**Abstract.** The analysis of the energy service contracts development in Russia is given in the article. The role of the Complex learning centres in the field of energy efficiency in the promotion of energy service contracts is described. The reasons of constraining the development of energy service contracts are described.

## 1. Introduction

Energy conservation and energy efficiency are the key ingredients to ensure competitiveness of the modern economy. In order to create the legal, economic and organizational basis to stimulate energy conservation and energy efficiency President of Russian Federation D. Medvedev signed a law FL-261 "On energy saving and energy efficiency improvements and on Amendments to Certain Legislative Acts of the Russian Federation."

In the FL-261 the main activities to ensure energy efficiency are determined: the information base formation, analysis and evaluation of energy efficiency, identification of ways to improve energy efficiency, the development of energy efficiency program, the introduction of advanced technologies and solutions in the field of energy conservation and outreach services to citizens.

## 2. Basic part.

Effective implementation of the requirements of the law requires:

- The presence of a sufficient number of qualified professionals with expertise in the field of energy efficiency and skills of practical integration of advanced technologies and solutions to existing engineering networks,
- Rooting in the mass consciousness of citizens the principles of energy efficient behavior,
- Construction and testing of a system of external funding for energy efficiency activities,
- Organizing information platform of interaction of consumers and suppliers of energy efficient products.

To solve these problems in Kazan (Volga) Federal University and 8 educational institutions in Russia, with the support of the Russian Ministry are created the comprehensive learning centers in the field of energy efficiency (hereinafter - the Center). [1]

A wide range of tasks are solved in the created centers.

1. Implementation of additional educational programs and educational services in the areas of energy efficiency, energy conservation, energy efficiency and environmental management.
2. Carrying out the energy audits.
3. Carrying out a research work in the field of energy saving, energy efficiency and environmental management.



4. . Implementation of organizational performance and management of the system for energy efficiency in the KFU.
5. Development and testing of methods of effective interaction of organizations in the field of energy audits, engineering companies, investors and customers in order to promote energy service contracts.
6. Popularization of energy saving and energy efficiency, the creation of the presentation site of advanced technologies and solutions in the field of energy conservation and energy efficiency.

An important aspect of the implementation of FL-261 is to provide energy efficiency standards of energy saving measures in the design, implementation and analysis of the results [2]. In the absence of a systematic approach to the implementation of measures to improve energy efficiency the achievement of targets, in some cases is unattainable. In many respects by the lack of qualified personnel at the customer [3,4] and effective, transparent implementation of the methodology for energy efficiency is explained the restrained development of energy service contracts in Russia [5,6]. Investors are forced to conduct a comprehensive examination of the project or organize a full cycle of analysis and design work [7], which significantly increases the implementation time and reduces the attractiveness of the project. Development of a flexible mechanism for the formation of verification and maintenance of energy service contracts will significantly shorten the period of preparation of documentation, reduce indirect costs, ensure the transparency of the project.

However, the great importance of the implementation of energy efficiency measures has the educational and outreach work [1]. Education and awareness-raising activities are held in the form of training seminars or training courses. During which the legal basis of energy saving, the basic theoretical issues, specific examples of energy-efficient technologies and solutions are disclosed. Maintaining the relevance of acquired knowledge is achieved by placing visual-campaign materials.

One of the main factors hindering the modernization of energy equipment and increasing its energy efficiency is the difficulty in attracting foreign investors. Investor, in turn, for accepting a positive decision needs the researched, transparent project with verification. Implementation of these requirements is possible with the implementation of measures to improve energy efficiency through energy service contracts of a full cycle (Fig. 1). Moreover, the development and implementation of energy service contracts in the framework of a regional engineering center significantly increases the attractiveness of the project to the investor.

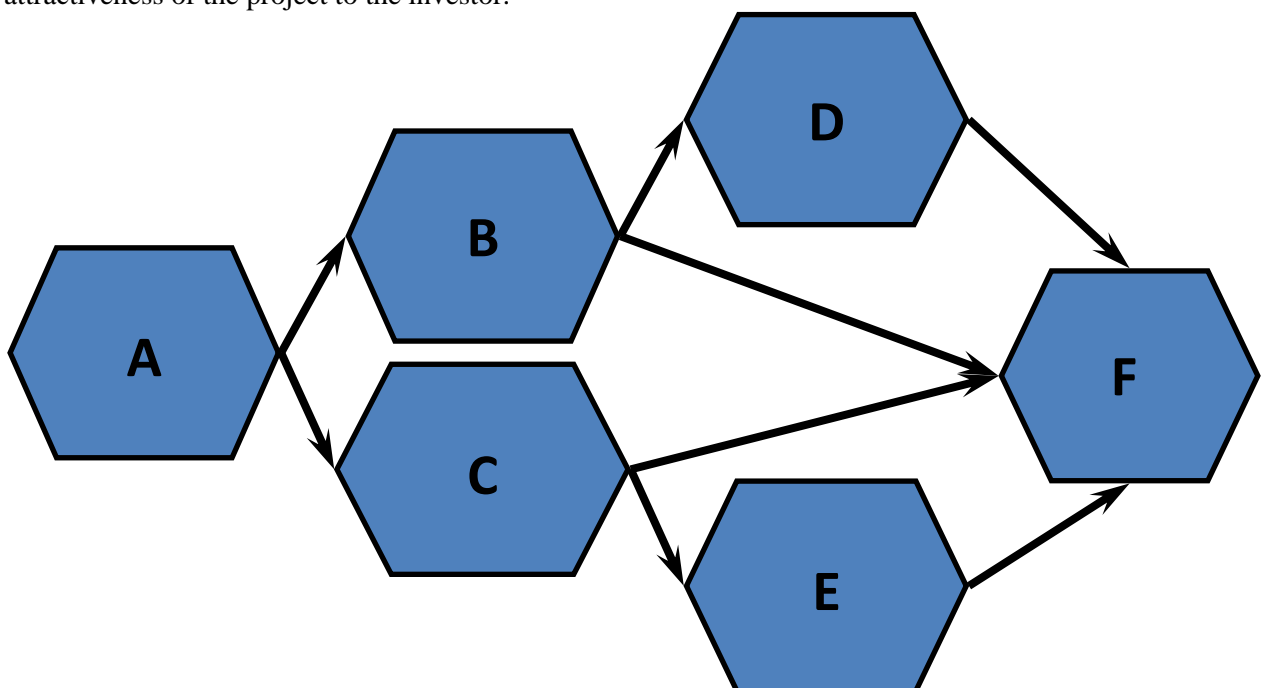


Figure 1. Stages of support energy service contracts of a full cycle.

A - formulation of the problem, B - consulting. C - project development. D - project funding. E - maintenance / technical supervision. F: Supply of equipment / installation.

Moreover the created in a regional engineering center target area of interaction of highly qualified specialists, companies implementers, developers and manufacturers of energy efficient products will effectively solve complex, multifaceted problem. Complex training centers in the field of energy efficiency in this case, will assume the role of information consolidators of information to ensure coordination of effort and resources to solve a problem within the energy service contracts. The scheme of interaction of the customer and the Centre is reflected in Fig. 2.

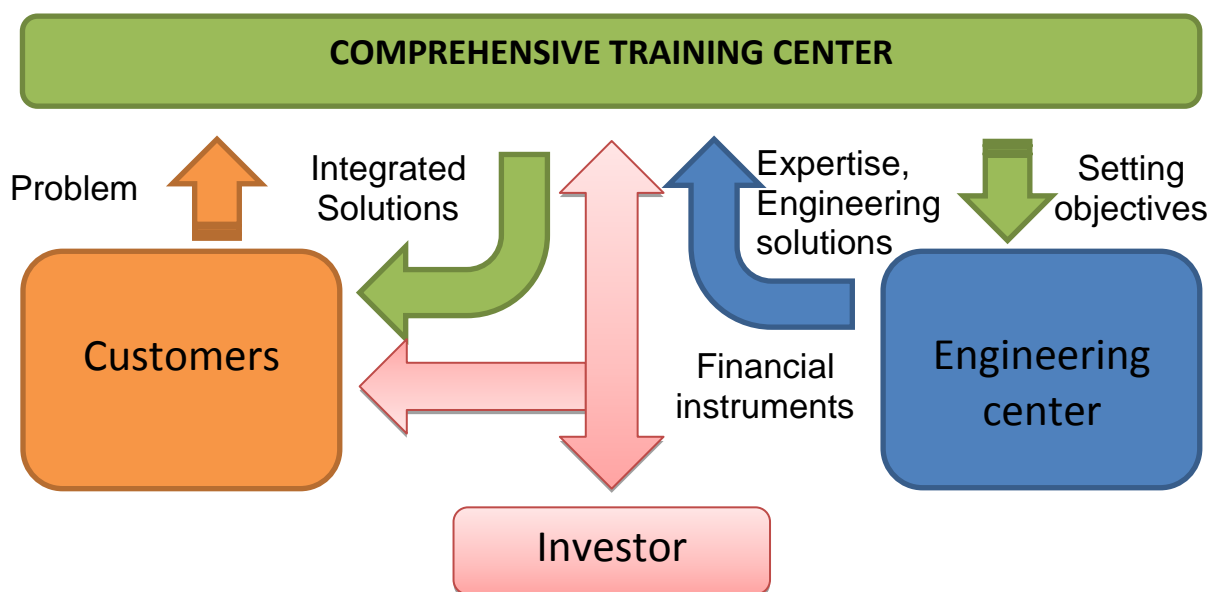


Fig. 2. Scheme of the interaction of the customer and the Centre.

In accordance with the proposed scheme a customer formulates a unified interaction task to achieve a certain result. Further, the Center made its decomposition on common tasks and select appropriate solutions. Simultaneously, the collection and accumulation of the necessary general and statistical information is carried out. After passing the preliminary examination a search for an investor is conducted. By this time, the Center has already collected the necessary amount of data objectively reflecting the efficiency of the project. There is the possibility to obtain current data in remote access regime. The collection of this information will allow a potential investor in a short time to make a decision on the financing of the project. Further, the project moves into the implementation phase, the choice of equipment, preparation of project documentation, direct mounting. At the final stage, the technical supervision and analysis of the degree of achievement of planned targets are carried out, and if it is necessary the remedial works are implemented.

The proposed methodology to support energy service contracts and the customer and Centre interaction scheme are providing the required efficiency and transparency of the process of implementation of energy efficiency measures, which will certainly contribute to the popularization of energy service contracts.

### 3. References

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