

# Regulatory framework of pricing and estimate standards in the petroleum sector

V Romanyuk<sup>1,2</sup>, U Baitova<sup>1,3</sup>, E Safronova<sup>1</sup>, G Pozdeeva<sup>1,4</sup>

<sup>1</sup> Institute of Natural Resources, National Research Tomsk Polytechnic University, 30 Lenin Ave., Tomsk, 634050, Russia

E-mail: <sup>2</sup> romanyukvb@rambler.ru, <sup>3</sup> baitova-juliya@rambler.ru,  
<sup>4</sup> galyunya-tom@yandex.ru

**Abstract.** The article is devoted to the improvement of the regulatory framework of pricing and estimate standards in the petroleum sector. Regulatory framework reform in the construction sector is necessary at the state, territorial and branch levels. Taking into account the provision and opportunity for potential relations between sellers and buyers, peculiarities of industrial sectors and investment projects, sources of financing, technology pre-investment studies, pre-project, project, tender and production documentation.

## 1. Introduction

Nowadays, in the formation of the construction products cost, a main element of the market value definition of market is the estimate and regulatory framework of pricing system existing in Russia. It is based on the system of construction base prices. Annually, a large number of year-to-year itemized average cost estimate handbooks for construction products for are published.

Estimate standards are a common name of complex rules, pricing and prices are published in separate estimate handbooks. Regulations and rules determining the construction estimate cost embrace essential requirements.

In accordance to the estimate norm, an established resource base for construction, assembly and other works is considered.

## 2. Materials and methods

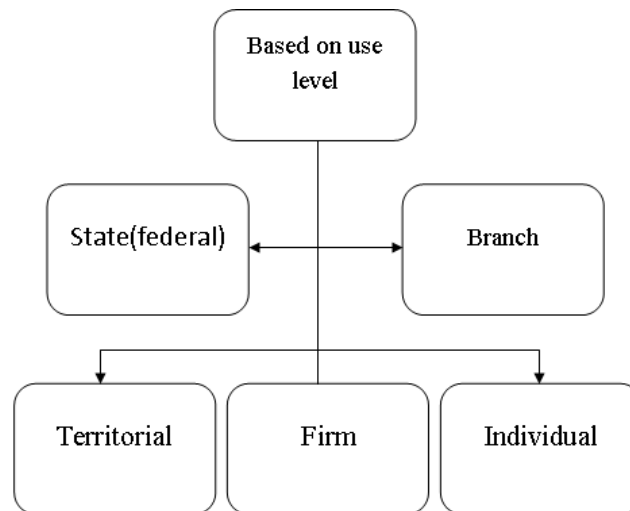
According to CG (Construction Guidelines) 81-35.2004 the following types of estimate standards are defined (figure 1).

Branch estimate standards (BES) for construction estimate documents within the relevant branch and, as a rule, in specific areas. State estimate standards should not contradict or duplicate above-mentioned ones.

Territorial estimate standards include documents introduced for the construction within the territory of the Russian Federation and approved by the Regional administration of the Russian Federation constituent unity.

Firm estimate standards and house-in regulatory framework include estimate documents in compliance to the actual conditions of a particular company (construction supervisor). As a rule, the structure is based on SES, BES, and TES in terms of aspects and human resources.





**Figure 1.** Types of estimate standards [1].

IES unit and specifications are developed in the cases when not one of the existing estimate and rates handbooks for this or that technology project standard is envisaged in the work and specific conditions of production including all complicating factors. They are approved by the investor (the customer) as part of the construction design. When applying individual standards and rates, the increasing coefficients of production condition performance is not included.

Branch, territorial and firm regulatory frameworks are based on the federal regulations and /or standards. Above-mentioned frameworks include a specific branch or territory, as well as the contractor's (firm) focused orientation.

State, branch territorial and individual standards are evaluated to the forms of estimate normative base of "pricing and assessment in the construction industry". This system does not include free (market) and regulated prices and tariffs for the manufacturing of technical products and services.

Based on the structure and intensive enlarged estimate standards are divided into eight groups (figure 2).

According to intensive enlarged estimate standards are divided into two groups:

- elemental estimate standards (ESN) and unit prices (UP);
- enlarged estimate standards (EES) and indicators (EEI).

EES and EEI determine price of construction products in the initial investment process stage.

EES and EEI and used to compile investor estimates, develop a project construction feasibility study, draft business plans, determine tender initial cost and cost estimate in selecting the most effective project and etc. [2].

EES and EEI determine a simple and affordable way of project cost and activities, based on the structural and other parameters of buildings and facilities, as well as integrated units or work volume.

### 3. Results and Discussions

Existing system of the construction pricing is regulated by state, territorial and branch regulatory framework and methodological guidelines. Based on the regulatory framework documents, estimate standards and norms handbooks, the cost construction rules and procedures are defined at state, territorial and branch levels. There are strong differences and contradictions between branches, state and territorial documents. These differences are mainly associated with different pricing methodologies in the construction industry.

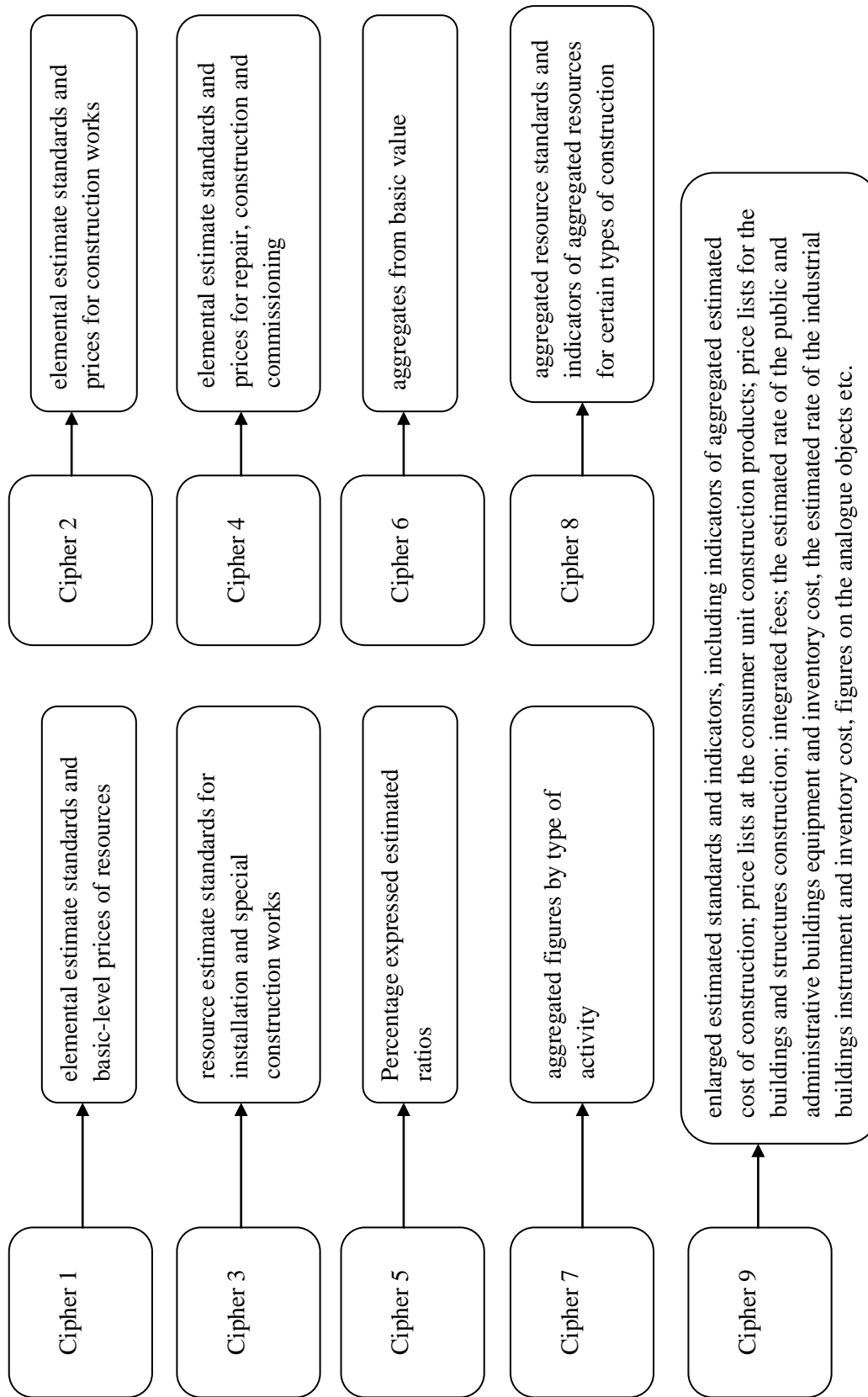
The 1984 regulatory framework being used in domestic practice of construction cost computation does not meet the modern requirements in the scope of work and quantitative physical indicators of labor costs, machinery and material consumption of elemental and enlarged estimated standards.

1991 estimate regulatory base (ERB-91) was developed in terms of eliminating many shortcomings of the 1984 estimate regulatory base, which was incomplete in content. The principle of formation of elemental cost estimate standards, overhead costs and other expenses for time scheduled technology of construction and assembly work was not implemented. This reduces the calculation accuracy and results in significant contradictions between the customers and the contractors involved in capital construction for determining the negotiated prices.

The shortcomings of published handbooks - 2001 SICAS (state itemized cost estimate standards) 1991 ERB - are connected with the inadequate listed modern domestic and foreign construction technology, new means of mechanization and transport, materials and equipment, as well as the application of required standard production costs, including direct and overhead costs, profit estimates and other costs. Similar shortcomings are inherent for territorial estimate standards and regulations. Based on 2001 SICAS Federal Unit Rates (FUR) and price tags were developed for Russian Federation territorial areas. In some Russian regions with extensive experience in pricing development, Territorial Unit Rates (TUR) and price tags based on the territorial element estimated standards were developed. However, in terms of inflation, an index for determining the construction projects value of current prices is introduced into these rates. As domestic and foreign experience demonstrates, precision and calculation accuracy of value determination based on the index approach is insufficient.

In addition, this approach leads to a certain contradictions between the customers and the contractors in capital construction concerning negotiated costs and settlement payments pricing for work performed. New approaches should be introduced based on resource and resource-ranked calculation methods including market prices monitoring for basic resources

Detailed or enlarged data involved in the basic design, investment justification for construction, business plans, project and (or) working design is the determination basis for the project cost. In addition to regulatory framework for assessment of basic work types, it is necessary to develop price-lists of norms and standards, requirements for all resources and their current cost in rubles (foreign currency) for the project. Although creating a data file is time-consuming, it is objectively necessary as it includes specific index of labour requirements, material output ratio, as well as the cost of a project per a unit power of construction products. One of the main principles evaluating construction project cost is the improvement of the regulatory framework itself to provide investor estimates formation, as well as to improve tender documentation, business plans, settlement payments documentation for work performed. Capital construction contractors need a new regulatory framework in contracting, settlement payments for work performed, preparing bids, planning and operational management of the construction project progress and estimated prime cost of contract works.



**Figure 2.** Structure types of estimate standards.

To determine capital investment volume (for each investment project), being the main tool, methodologies and regulatory framework bases for monitoring evaluation different project types exist. For instance, petroleum construction includes such projects as field facilities, surface infrastructure, linear gas pipelines, and subsurface pipeline facilities.

#### **4. Conclusion**

Improvement of standardized construction in the petroleum sector is to increase efficient investment, reliability and durability of buildings and structures, saving material, energy, labor and financial resources, sustainable management of land and other natural resources, environmental protection, and to establish necessary requirements for healthy and safe working and living conditions on the project enterprises, buildings and structures.

#### **References**

- [1] Official site of the State standards and regulations library [Electronic resource]. - Access: <http://ohranatruda.ru/>, free
- [2] Official site of the Federal Center of Pricing [Electronic resource]. - Access: <http://www.faufccs.ru/>, free
- [3] Official site of the Ministry of Energy of the Russian Federation. [Electronic resource]. - Access: <http://minenergo.gov.ru/>, free.
- [4] Badagiev B T 2013 *Organizatsiya stroitel'nogo proizvodstva. Proizvodstvennaya i tekhnicheskaya dokumentatsiya* (Moscow: Al'fa-Press) p 456
- [5] Chaya V T, Pankratova VV 2009 Normativno-pravovaya baza formirovaniya otchetnosti neftegazovykh predpriyatij Rossii. *Audit i finansovyj analiz* **6** 99–109