Regulatory aspects of import substitution in the oil and gas sector of Russia

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Abstract. The article discusses the legislative and regulatory aspects of import substitution by the example of the Russian oil and gas sector. Moreover, despite the use of standardization tools, including the making of long-term plans for the preparation of national standards, barriers to the successful solution of the import substitution problem arise, caused not only by poorly effective harmonization of standards, but also by significant differences in domestic and foreign regulatory practice of project management approaches. The article presents the results of an analysis of the harmonization of national standardization documents with international analogues carried out in accordance with the Federal Law “On Standardization in the Russian Federation”, the regional legislation of the Eurasian Economic Union, and the norms of the “Agreement on Technical Barriers to Trade” of the World Trade Organization. As an example, the work plans of the technical standardization committee 023 “Oil and Gas Industry” for the period from 2009 to 2020 are considered. The authors also defined the risks arising from the established differences, presented directions for improving the development of regulatory documents in the field of project management, contributing to the implementation of the tasks of import substitution in the oil and gas sector.

1. State strategy of import substitution in the oil and gas engineering industry

It is known that in 2014-2015 the Government of the Russian Federation and federal ministries adopted a series of measures aimed at ensuring import substitution in a variety of industries, including the manufacture of equipment for the oil and gas sector (OGS). At the present time, this legal framework is largely brought up to date; a new "Action plan on import substitution within the industry of oil and gas engineering in the Russian Federation" (order of the Ministry of Industry and Trade of Russia №1329 of 16.04.2019) can be mentioned as an example.

However, it should be noted that most of the prepared legal acts, including federal sectoral programs, are focused on import substitution of certain groups of homogeneous products or units [1]. At the same time, such an approach does not always allow the successful implementation of the established measures in practice, since in formal pursuit to reduce the share of imports over a five-year period, the demand for the supply of various types of engineering products for existing and future-oriented projects is not always reliably estimated, and an integrated approach is often not applied to account for the production capacities of Russian enterprises.

In many cases, on the way to successfully solving the problem of import substitution, obstacles arise due to significant differences in domestic and foreign regulatory practice of approaches to project management. An eloquent example is the situation when a foreign partner at the design stage in large
international projects uses its usual approaches to the formation of design solutions by the means of foreign materials and technological equipment (the situation was similar in the Sakhalin-1 and Sakhalin-2 projects).

Certainly it would not be entirely justified to criticize foreign partners for contemptuous disregard of Russian regulatory documents: foreign project engineers are very poorly aware of Russian standards and the capabilities of Russian enterprises. To be completely consistent, it should be noted that the harmonization of the domestic regulatory framework is still far from complete, and the quality of oil and gas equipment manufactured in our country fluctuates over a fairly wide range [2]. As a result, foreign standards for the equipment are laid down in the project requirements, and Russian products are essentially ignored. This circumstance necessitates the use of an integrated approach in which the problem of import substitution should be addressed at all stages, including starting with the harmonization of the regulatory framework for project management.

2. Standardization tools to solve the problem of import substitution of oil and gas equipment

Indeed the achievement of the goals in the field of import substitution of oil and gas equipment (OGE) is implemented through various tasks, including by the use of standardization tools, which are defined by the federal law “On Standardization in the Russian Federation”. Such tools include the development, approval, revision of documents within the national standardization system (GOST R, preliminary national standards PNST, etc.), the development and adoption of interstate GOST standards, the creation and use of corporate standards (standards of organizations STO, technical specifications TU), registration of international, regional and foreign standards with the Federal Information Fund and the implementation of their translations into Russian, as well as the use of references to standards in technical regulations, legal acts of federal authorities, in technical assignments for public procurement.

It should be understood that in the case of technical regulations for OGE, it is necessary to focus on the legislation of the Eurasian Economic Union (EAEU), since according to the current “Unified list of products for which mandatory requirements are established” (decision of the Customs Union Commission dated 28.01.2011 No. 526), machines and equipment in general, including oil and gas units, as well as equipment operating under excessive pressure, and equipment for working in explosive atmospheres are put under the scope of appropriate EAEU technical regulations. At the same time the case is about introduction of innovative products into the single market regardless of their country of origin, which is fully consistent with the non-discrimination principle by the “Agreement on Technical Barriers to Trade” of the World Trade Organization (WTO).

Moreover the fundamental documents of the WTO on the technical legislation system allow each state to establish more strict requirements compared to international standards, if this is due to climatic, technological and other reasons. On the one hand, this circumstance makes it possible to avoid reckless copying of extraneous experience, whether it is temperature operating conditions that are inappropriate to Russian conditions or the standardization of key elements of complex technical systems only.

On the other hand, it is impossible to demand from domestic enterprises to promptly and unconditionally fulfill the strictest requirements established in national standards - in this case, the opposite effect is very likely: not being able to follow the provisions of standardization documents for technological reasons, the manufacturer will become even more uncompetitive on market [3].

3. Improving the standardization system for import substitution of equipment

In this regard, the development of standardization in the country should take place on the basis of its complexity and systematic nature, as well as the principle of building the so-called “development ladder” of requirements - the latter approach is also often called the “pulling standardization” method, when the standards that industry must achieve are stepwise increased. A similar method is applied to mandatory documents - so, as an example, a gradual increase in motor fuel classes can be cited in accordance with the technical regulation TR TS 013/2011.

With regard to ensuring the complexity of standardization, since the 70s of the XX century domestic standardization has extensive practice in creating standards for various industries, where requirements
for interconnected objects and elements of these objects are presented. However, in the transition from state standardization inherent in the planned economy of the USSR to a national system, which is based on the initiative of business structures to create the necessary industry documents, the approaches to ensure the complexity of standardization work consistently had to be changed: at present, experts refer to the principles of the so-called "batch standardization" [4].

Unlike the Soviet idea of integrated standardization, the results of which became multilevel document complexes, the modern concept of developing standards is implemented in relation to interrelated objects and aspects that are standardized at the same level, by coordinating the requirements for these objects (aspects) and matching the timeframes of the development and effective dates of standards (Clause 4 GOST R 1.0-2012). Thus, from a multi-level hierarchy in establishing the provisions of documents, which forms a rigid vertical of requirements, it is proposed to proceed to a single-level standardization system, horizontal connections of which will ensure a decrease in the rigidity (inflexibility) of updating procedures for the standards included in such a “batch”. Proponents of this approach also note increased efficiency and closer interaction between manufacturers of products, the requirements for which are set in the standards of the same “batch”.

Undoubtedly, relevant proposals for improving such a basic principle of standardization as the complexity of the document development procedures can be extended to a separate technical area of standardization, such as project management.

Meanwhile, it should be preliminarily considered another positive tendency towards changes in standardization work in Russia that is the intention to create unique standards that have no exact equivalents abroad.

4. Harmonization of standards as a strategy for achieving equivalence of requirements

The well-known characteristic of domestic standardization, beginning in the late 90s of the 20th century, was the institutionalized principle of nationwide harmonization of the developed standards GOST R and GOST with international standards (at the same time such documents were understood as not only published deliverables of official international standards organizations ISO, IEC and ITU, but also any standards of foreign countries - API, ASTM, NORSOK, etc.). On the one hand, this point was quite explainable by the need to move to a two-level system of technical legislation “technical regulations - standards”, as established in the WTO agreement mentioned above. On the other hand, an incorrect interpretation of the WTO recommendations about focusing on international documents when creating national voluntary standards in the face of a lack of funding and unjustified positioning of technical regulations as documents subordinating all standardization work in the country to themselves led to the direct application of foreign documents in Russian standards. As noted above, such identical or unified standards, which in themselves are far from the best form of import substitution, did not meet domestic realities and did not allow gaining any competitive advantages compared to the normative requirements of other countries [5, 6].

By reference to the analytical results concerning open data on the planning of standardization work in Russia for the period from 2009 to 2020 (national standardization development programs - PRNS, national standardization programs - PNS) [7], it is a fair assumption to say about the gradual rejection of the identical harmonization of domestic documents GOST R and GOST with international standards. When comparing the data, the basis was taken on the planned standards projects of PRNS and PNS for technical committee #023 “Oil and Gas Industry” (until 2015 it was called “Technics and Technologies for Oil and Gas Production and Processing”), as one of the most highly efficient standardization committees in Russia.

The results of the analysis are presented in table 1 and figure 1. It should be noted that identical standards mean the direct application of international standards without making any changes. Harmonized standards in the context of this article are both identical, and modified ones (with additions to the text of international documents), and nonequivalent (taking into account some sections of international standards).
Table 1. Data on the work of TC #023 for 2009-2020.

| Years | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| Years |
| Standardization work items|
| GOST and GOST R standards for development, pcs. |
| 96  | 86  | 56  | 94  | 117 | 98  | 110 | 99  | 116 | 122 | 162 |
| GOST and GOST R standards for revision, pcs. |
| 0   | 2   | 24  | 21  | 2   | 6   | 5   | 7   | 7   | 18  | 17  | 26  |
| Development of international standards, pcs. a |
| 0   | 0   | 0   | 0   | 0   | 0   | 0   | 2   | 2   | 0   | 0   | 0   |
| Number of harmonized standards, pcs. |
| 28  | 19  | 20  | 34  | 40  | 30  | 17  | 9   | 6   | 6   | 17  | 13  |
| Number of identical standards, pcs. |
| 11  | 10  | 18  | 18  | 21  | 17  | 8   | 2   | 0   | 1   | 10  | 9   |

a - the number of international standards projects where TC 023 specialists get involved in

As the presented table and figure show, the number of developed national (GOST R) and interstate (GOST) standards included in TC 023 documents programme is steadily decreasing over time, that is, at the moment implicit copying of international standards is no longer a key characteristic in the development of domestic standards. The rise in the proportion of harmonized standards in 2019-2020 should be explained the lack of Russian documents and the results of scientific research in an area such
as the offshore development - for example, all national standards that are identical to international ones relate to the design and operation of subsea production systems.

5. Improving Project Management standards

At the same time, the implementation of projects in particular for the oil and gas industry is largely based on foreign standards. Of course, the development of normative framework for project management in the oil and gas complex does not seem to be a priority, but it is impossible not to consider the impact of standardization tools on the scope of project management.

At the end of 2017, Russian standards body Rosstandart issued an order on the creation of the relevant technical committee #205 “Project Management”, the field of activity of which largely overlaps with the tasks assigned to the international technical committee ISO/TC 258 “Project, Program and Portfolio Management” (founded in 2011). Concerning the proposals of the Russian TC #205 presented in the national standardization programs for 2019 and 2020, then, firstly, it appears the absolute identity of plans for these time intervals, and, secondly, four out of five creating GOST R standards led by this technical committee will be exact copies of international standards. In this case, the intention of TC #205 to implement the ISO standards directly is also due to the lack of domestic regulatory materials in this area and the need to unify the fundamental aspects of project management standardization: terminology, the procedure for managing and performing work, the methods used, etc.

Nevertheless, there are high risks of "getting stuck" in a situation where TC #205 will purposefully continue to focus exclusively on the standards published by ISO/TC 258 (it should be emphasized that the international publications are carried out with contribution of Russian specialists), without delving into the specifics of activities in project management in the context of Russian legislation and modern industry needs. In this case, there remains the possibility of a negative impact on the creation of appropriate industrial equipment under the conditions of import substitution when Russian project management developments will not actually be applied.

At the same time the identified advantages of developing the standards for project management (PM) and their subsequent implementation in OGC can not only contribute to quality and risk management, but generally improve the controllability of the life cycle of oil and gas equipment.

Moreover the above-mentioned approach to identical harmonization also negatively influenced the Russian basic standards developed both in the multilevel complex and the “batch” described above: for example, in many research studies it is noted that the intersectoral system of standards “Reliability in Engineering”, which is applicable OGC as well, brought discredit on itself due to inefficient harmonization with IEC publications. In the PM area there is a similar situation: existing normative documents GOST R IEC 61160–2015 (project analysis), GOST R ISO 21500–2014 (project management manual) are absolutely identical to international ones [8]. At the same time, it is necessary to develop standards for the PM sector in the oil and gas industry which would be basic in nature and would focus on the principles of reliability, environmental friendliness and safety reflecting Russian realities.

In general, the advantages of project management should be listed (as the area that has recently turned to the tools of international and national standardization):

- management taking into account resource limitations that is relevant in any conditions and can reduce the cost of the project;
- centralization on the uniqueness of the project or product goal: it increases the innovative potential of the industry and the effectiveness of knowledge management;
- coverage of most functional areas and a deep study of life cycle processes compared with operational management without separation into projects. It allows implementing additional measures to analyze the risks of failure of oil and gas equipment.

Since often the causes of accidents in the oil and gas complex are faults in the system management carried out without taking into account the analysis and risk management at all stages of project management, the catastrophic nature of the environmental and material consequences inevitably dictates the industry organizations to decide on system changes conducted at the initial stage through project
management. At the same time, the PM standards for OGC area should take into account integrated management systems for compliance with GOST R ISO 9001–2015, GOST R ISO 14001–2016, GOST R ISO 31000–2019, GOST R 54934-2012 / OHSAS 18001: 2007 and, if possible, promote their adaptation to the specifics of the Russian Federation.

6. Conclusion

Today, there is only one standard GOST R 55414–2013 that regulates the creation of a technical project for the development of oil and gas fields, which is aimed at the rational use of mineral resources and reducing the risks. With all the advantages of the standard, it does not establish the functional areas and requirements for them in the project for the oil and gas equipment development. Moreover, without ensuring a systematic and interconnected relationship between normative documents, the problem of import substitution and implementation of project management is difficult. All the best documented practices in the PM, such as PMBOK (Project Management Body of Knowledge), require careful study for the oil and gas industry.

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