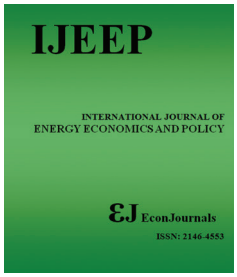

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Small and Medium-sized Enterprises as a Driver of Innovative Development of the Russian Fuel and Energy Complex

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ABSTRACT

The urgency of the studied problem is caused by the fact that international sanctions led to a number of bans in the oil and gas industry, and there is the necessity to create the role of small and medium-sized innovative enterprises. In this regard, this article is aimed at identifying the positive and negative aspects of these enterprises, as well as their significance in the development of the oil and gas service segment.

Keywords: Fuel and Energy Complex, Innovative Enterprises, International Sanctions, Import Substitution, Territorial Clusters
JEL Classifications: O13, P18, M21

1. INTRODUCTION

Fuel and Energy Complex (FEC) of Russia and its basic segment - oil and gas complex, due to significant impact to the GDP of the country, provision of the population with dozens of millions of jobs as well as introduction of the energy security issues to the priority issues of the national security of the country - is one of the main branches of our country economy.

Among the directions of comprehensive support of FEC, critical for our country's surmounting the protracted crisis is provision of innovative development of the complex.

Topicality of the Russian FEC innovative development is laid in the text of project of the Russian Energy Strategy for the period till 2035 (ES-2035) (The RF Government Decree No. 1352, 2014). In ES-2035 "the central idea is the transfer from resource-based to resource-innovative development of the FEC. Therewith the new role of FEC in the country economy will be concluded in the transfer from "growth driver" to "stimulating infrastructure" ensuring creation of the conditions for к development of the Russian economy including its diversification, growth of the technological level and minimization of the infrastructural limitations" (The RF Government Decree No. 1352, 2014).

In 2014 and 2015 the European Union (EU), the USA and come other states imposed a series of sanctions towards Russia and several Russian legal entities. Some of these sanctions are imposed directly against the enterprises of the Russian oil and gas sector, which to an even greater degree has defined and stimulated the necessity in realization of innovations to FEC.

Internationally "the drivers" of innovative development are small and middle-sized enterprises (SME). These processes can be observed in all the branches of national economy including such highly-monopolized as FEC. Exactly small and medium-sized business has all the necessary conditions for successful generation of innovative ideas, - this refers to high degree of freedom in implementation of business initiative, creativeness of small business, organizational flexibility and a series of other factors determining general success of small innovation enterprises (SIE). Though for a number of reasons SME are the most unprotected from adverse influence of external environment due to the forms of business organization, that's why the system support of the state and society is vital for them.

2. SME IN THE FEC OF THE RUSSIAN FEDERATION

Specifics of FEC, including significant concentration of capital and high degree of integration and globalization of oil and gas market, objectively preconditions domination of large business structures in this sector of economy.

In the modern Russia the same as in the majority of the foreign countries SME are included into the value chain on the market, though their ratio in the surplus value created by FEC is rather meager. In the 1st quarter of 2016 according to the data of the Russian Federal State Statistics Service (Russian Federal State Statistics Service, 2016), the turnover of the FEC small enterprises was about 1.5% to the turnover of small enterprises in general all over the country (Figure 1). In 2015 the number of small enterprises in FEC, including field production of fossil fuels was equal to 3724 units (1.4% of the general number of the small enterprises registered in the Russian Federation), these enterprises employ 129 thousand workers, and their turnover is counted by 147.7 million RUR. Comparing with 2011, significant dynamics by the number and turnover of FEC small enterprises was not observed: Their number increased by 94 units (+3%), while the turnover in the current prices increased by 29.7 million RUR (+25%), thus demonstrating the reduction in real prices.

The turnover of middle-sized FEC enterprises in 2015 was equal to 103.3 billion RUR or 2.2% from the general turnover of the middle-sized enterprises all over Russia. Comparing with 2011 this indicator increased by 1.8 billion RUR in the current prices or by 1.77% for the period of 4 years.

If to take into account that the annual turnover of FEC enterprises in 2014 (the latest data of the Russian Federal State Statistics Service, not including the turnover of small enterprises) was equal to circa 16.56 trillion RUR, then small and middle-sized FEC enterprises account for about 0.63% of the FEC gross industry product.

The analysis of SME in the Russian FEC conducted by Vdovin in his thesis research allowed coming to the conclusion "about low degree of participation of SME in the industry due to high degree of monopolization of large business as a result of privatization of the 1990s" (Vdovin, 2014).

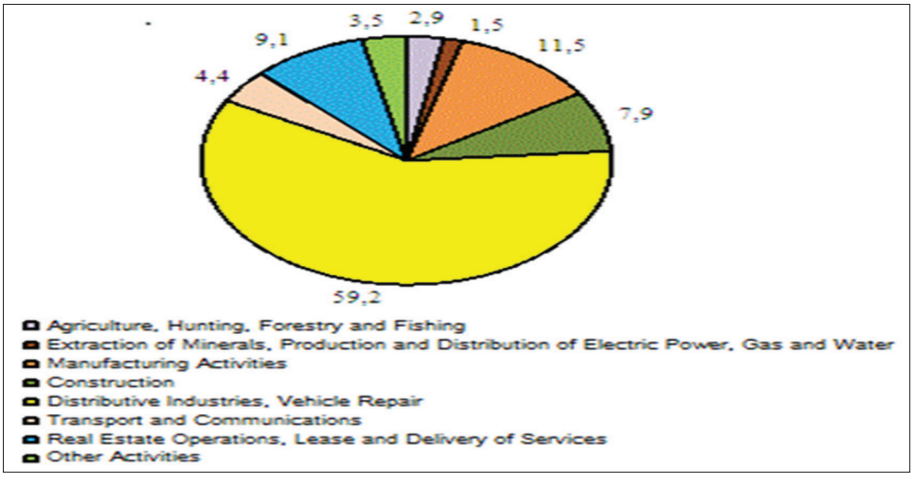
The above said as is seen should by no means downplay the importance of small enterprises in FEC.

The role of small and middle-sized business (SMSB) in the Russian FEC is defined first of all by the role of small business in the economy of the country which is concluded in stimulating competitiveness and innovations, ensuring consistency in regional development, and ratcheting down of tensions on the labor market (Partnership Program).

SME are undoubtedly the "counterbalance" of large businesses and they do not finally allow monopolizing the market, the state of which certainly the wellbeing of the Russian society in general depends on. Having no opportunity to implement large-scale projects in energy generation (in the sphere of production, extraction and transportation of energy products), small and middle-sized FEC enterprises are focused on the solution of specific tasks, including development of service technologies, rendering information, consulting and other services. Frequently the specifics of services in small and middle-sized FEC enterprises do not imply the need in their location in close proximity to the main production which ensures relative consistency in distribution of the enterprises along the regions and territories. Eventually, SME seamlessly complement large FEC business, as they have the quality characteristics not found in corporations, including low degree in bureaucratization of the management and high involvement of each employee in the results of their labor, high degree of mutual support and solidarity in the staff.

It is quite obvious that in the conditions of really free and rather developed market economy some proportions of optimal existence of small, middle-sized and large FEC business should present, objectively ensuring synergetic development of the complex. Until the corresponding synergy is not achieved, the state objectively has to interrupt into the processes of competitive struggle on the fuel and energy market, stimulating penetration and survival of SMSB (Shulus, 1996).

Figure 1: Turnover of small enterprises in the 1st Quarter 2016, % (according to the data of the Russian Federal State Statistics Service)



3. SMSB IN THE OIL AND GAS SERVICING IN RUSSIA AND ABROAD

Concentration and integration on the oil and gas market in general is an objective and natural process peculiar not only to the Russian economy.

According to the rating data of the Financial Times Global-500, 500 largest international companies in market capitalization include 31 oil and gas manufacturing company and 7 oil and gas servicing companies with common capitalization equal to 2 trillion 838 billion USD including the following (the rating position is denoted in brackets): Exxon Mobil (2), PetroChina (6), Chevron (23), Royal Dutch Shell (26). Therewith one should take into account that decrease in the capitalization of the international oil and gas market caused by the over two-fold reduction of the market prices for crude oil late 2014 - early 2015 which led to weakening of the positions of the oil and gas rating segment, at the peak of the oil prices the capitalization of large corporations – representatives of oil and gas market was significantly higher (FT 500 2015 Introduction and Methodology, 2016).

The above mentioned list also includes Russian Gazprom (170), Rosneft (213), Lukoil (271), and Surgutneftegaz (441). The rating of 500 largest companies includes only one company from Russia which is not a representative of the oil and gas sector - Norilsk Nickel (421). While generally in the oil and gas sector of the modern Russia vertically-integrated private and state companies prevail, accounting over 90% of the total hydrocarbon extraction, according to the data of the RF Ministry of Energy (Russian Ministry of Energy, 2016).

An extreme complexity of the technological circle representing a significant duration and high risks of investment to the oil and gas sector; high labor intensity and expensiveness of deposits exploration and primary depletion works; the above mentioned investors' risks and deficiency of the initial capital for launching of the oil and gas business defined the immanent advantages of large business in the oil and gas sector.

After the stage of the initial capital accumulation on the oil and gas market in the foreign countries, the key means for corporate growth became the chain of mergers and acquisitions which actually did not remain the place for SMSB at the majority of the stages of the technological process in the oil and gas sphere. Further large FEC business obtained additional impulse for development using the economy of scale. The sphere of oil and gas servicing became the most important exception, because rendering services is, on the one hand, do not require significant staff and financial resources which allows SME penetrate into the market, survive and develop. On the other hand, oil and gas servicing is one of the most science-driven spheres of oil and gas industry, what is more it is based on the unique cutting-edge developments. Large corporations despite great financial capacities are rather inert in the context of servicing innovations and foreign experience speak volumes for the benefit of transfer of the innovations in the oil and gas service to small business (Competition of Innovation, 2016).

The practice of the USA and Canada shows that corporations approach to the issue of business support on the market in different ways, though traditionally SME are allowed to compete in the sphere of oil and gas service (Andreeva et al., 2009). As for 2014 the turnover (gross revenues) of SME-segment of Oil Equipment and Services industry of the USA was equal to 38% of the total turnover of the segment (Andreeva et al., 2009), provided that in the oil and gas producers segment the corresponding indicator was equal to about 7%. The activities of the SIE in the oil and gas servicing of the North American states is supported both by society and by government. A significant indirect means of support of small business in the USA and Canada still remains anti-trust legislation significantly limiting the scale of the large business development.

Historical experience shows that corporations often themselves initiate the creation of "controllable competitors" in the oil and gas servicing small business segment, straining after stimulation of the competitiveness among the developers of the science-driven technologies which is by itself would allow large enterprises to gain significant benefits as a result of usage of the developed technologies. Thus, Enbridge, Inc. company (Canada), is currently one of the largest international oil and gas servicing enterprises (41.1 billion USD capitalization, 260 position in the Financial Times Global-500 in 2015), was created as a subsidiary of the imperial oil. Enbridge, Inc., as well as many others current large oil and gas servicing enterprises of the USA and Canada, emerged as middle-sized and (rarer) small enterprises.

Therewith the literature provides a quite valid conclusion that the life cycle of small and middle-sized innovation enterprise of oil and gas servicing sector of a North American country (USA, Canada) is inevitably directed to the growth and enlargement (Low and Pasadilla, 2016). The majority of the SME investigated by the authors either independently developed to large business on their way or became a part of such business as a result of acquisition or left the market (Low and Pasadilla, 2016). The gone SME were replaced by the new, although this process did not mean the mechanical replacement of the market participants: If to consider the same stage of scientific and technical progress then the number and capitalization of SME according to the researchers' hypothesis permanently decreased due to the fact that transferring to large business the market participants preserved the corresponding share and further increased it. New enterprises replaced only bankrupts. Bursts of activities of oil and gas market small segment accounted for the periods of abrupt changes in technologies, therewith small enterprises and their developments often became the exact drivers of such technological changes (e.g., in the sphere of development of shale plays) (Low and Pasadilla, 2016). In this case, SME filled the empty niche in the oil and gas servicing which led to the growth of activities of small businesses.

In the West European countries the situation is rather different: Due to the EU Single Energy Directive as well as in the framework of the single energy and antimonopoly policy first active governmental support to small oil and gas innovation enterprises is rendered and secondly excessive concentration of capital on the market of energy services is being prevented (Sadeleer, 2015).

Concentration of capital in oil and gas servicing in the EU countries remains relatively low as a result of combination of administrative limitations for large business and governmental support of SMSB, according to separate evaluations about 55-60% of the sector revenue in the EU countries accounts for SMSB (Start-Catalyst, 2016).

Generally international experience convinces that SMSB may be an active driver for development of oil and gas industry first of all through innovative servicing enterprises (Shulus, 1993).

In the Russian Federation SMSB also plays important role in the oil and gas servicing segment. Such situation is inherited from the Soviet times when design institutions and profile enterprises developing and implementing servicing solutions were not integrated into the industrial associations of oil and gas producing (transporting) enterprises.

Despite deep involvement in the value chain of the oil and gas market, significant part of the Research and Technological Development segment was in institutional subordination and as a result obtained nominal independency in the period of denationalization. Therewith, in the process of emerging of the oil and gas complex of modern Russia, by no means all the oil and gas servicing scientific research institutions existing from the Soviet times were absorbed by the corporations. A series of scientific institutions preserved formal or even real independency (it means implements the projects for several unrelated corporations).

Nowadays according to several evaluations share of small and middle-sized oil and gas enterprises of the RF accounts for to 15% of the joint turnover (Panina, 2016), which though is lower than the Foreign indicators, but significantly exceeds the impact of the small businesses into FEC in general.

While the main role of SME in the oil and gas servicing thus is concluded in their incorporatedness into the oil and gas market value chain. Oil and gas servicing actually allows focusing science-driven developments in the holdfast of small and middle-sized research teams, while the results of commercialization of their developments ensure innovative breakthrough in the oil and gas sector with the innovative inertness of large enterprises as a background.

4. PARTICIPATION OF SMSB IN VALUE CHAIN OF OIL AND GAS MARKET SERVICING SEGMENT

Creation and development of small and middle-sized innovation enterprises in the sphere of oil and gas servicing of the RF is being actively promoted by the government including by the following directions:

- Stimulation of interaction between vertically-oriented state corporations and SMSB in the aspect of public procurement and technology platforms;
- Support of creation of businesses aimed at commercialization of scientific developments on the basis of higher educational institutions in accordance with the Federal Law dated 02.08.2009 No.217-FZ (Federal Law of the RF No. 217-FZ, 2009).

An important direction of the innovative development programs is interaction with technology platforms. Technology platforms are a relatively new tool of innovation policy in Russia. In accordance with the definition offered by the Government Commission for Advanced Technology and Innovation (Protocol dated 3 August 2010 No. 4), technology platform is a "communicative instrument aimed at accelerating efforts for creation of advanced proprietary technologies, new products (services), mobilization of additional resources for conducting researches and developments on the basis of participation of all the concerned parties (business, science, education, government, civil society), improvement of regulatory and legal framework in the sphere of science and technology and innovative development" (Protocol No.4, 2010).

Among the first technology platforms in FEC one may name "Technologies of Hydrocarbon Extraction and Application" (Facilitator - Gubkin Russian State University of Oil and Gas) and "High-level processing of hydrocarbon resources" (Facilitator - "VNIPIneft" OJSC). For support of SIE in the system of oil and gas servicing the efforts of private corporations are also focused in our country. Finally, the support for development of such enterprises is rendered by numerous business incubators, innovative centers, and other subjects of governmental and private infrastructure of small and middle-sized innovative business development.

Over the last years a number of examples of successful participation of SMSB in value chain in the gas and oil servicing segment have been accumulated. Innovative activities are to a large extent being developed by scientific research results of commercial enterprises created at laboratories of budgetary research establishments.

"Scientific and research innovative and technological expert company of well drilling at the Tomsk Polytechnic University (TPU) is a new innovative company founded in 2010 on the basis of the Well Drilling Department of the Natural Recourse Institute at the TPU in the framework of implementation of Federal Law No. 217" (NIITEC, 2016).

As it is noted at the official web-site of NIITEC (Scientific and Research, Innovative Technological Expert Service Provider) "TPU-Drilling" operates since 2010, accumulating the experience and expanding production. By now the company has been developed into an entire complex in construction, production, service support of the wells uniting the following directions:

- Development of design specifications and estimates for construction of gas and oil wells;
- Development and incorporation of the programs on well washing;
- Production and supply of chemicals for preparation of drilling solutions;
- Preparation and service support of drilling washing liquids at well construction;
- Production and supply of calcium and sodium bentonitic

chemicals for horizontal directional drilling (technology of trenchless pipe laying);
- Development and incorporation of the programs on well cementing, check and correction of working plans, modeling of cementing with the use of special programs and modern technologies;
- Production and supply of extra-strong light-weight oil well cements for cementing of complicated oil and gas wells in the layers with low pressure of fracturing;
- Control over the construction of the well (supervising) - rendering services on the control of drilling process, testing, reclamation or workover on sites of diverse complexity;
- Conduction of laboratory research and testing of chemicals according to international standards;
- Conduction of scientific research works in the sphere of well drilling.

The goal of NIITEC "TPU-Drilling" company is the following: Applying practically their own innovative developments for constant improvement of the performed work quality. Applying at works all the potential of their own material-and-technical and scientific complex for taking leading positions on the Russian market of servicing in well construction and thus strengthening their positions on the international market.

For a short period NIITEC "TPU-Drilling" have approved themselves among both the Russian and international companies. Successfully implemented works on the projects, complex approach in development of the company helped NIITEC "TPU-Drilling" company to gain the status of resident of the Tomsk economic area of technology and innovation type.

The base of the company is built up by the following staff: High-qualified science officers of the Well Drilling Department at the TPU; experienced leaders and specialists of practical aspect of well construction in various conditions capable of solving irregular tasks.

The main advantage of the NIITEC "TPU-Drilling" company is deemed the presence of their own scientific and technical center, specialized laboratory, information based formed for decades, and the knowledge continuity in the training of new specialists. All this allows calculating, researching, training and implementation of the project thus rendering the customers the whole range of services in well construction (NIITEC, 2016).

As it was underlined above in 2013 in accordance with the expert council on technology and innovation Special Economic Area (SEA) of the RF Ministry of Economic Development, the small enterprise of the TPU NIITEC "TPU-Drilling" OJSC was assigned the status of a resident of the "Tomsk" SEA (Official Web-Site of TPU, 2013). At the Northern Site of the SEA the company is currently constructing its own production complex, where the innovative developments in the sphere of oil and gas well drilling will be implemented.

The example of NIITEC "TPU-Drilling" may be justly called a spectacular example of a SIE in the segment of oil and gas servicing created at a higher educational institution - under the auspices of the TPU laboratory the student and specialists develop and test innovative ideas, the best of which are being selected and become the subject of commercialization in future. Among the specific examples - bentonitic chemical for horizontally-directed drilling developed and launched to serial production in 2013, the cost of which (in the prices of the specified period) was by one third lower than of the foreign analogs at equitable quality. In the conditions of weakening of the Russian ruble and aggressive international sanctions including towards the oil and gas sector, such innovative activities is undoubtedly the most important direction of implementation of the import substitution policy in the industry.

With the purposes of increasing its competitiveness and execution of the governmental orders a series of the largest government companies developed the programs of innovative development and started their implementation.

Particularly, Gazprom PJSC has developed and is currently implementing the program of partnership with the subjects of SMSB.

"The program is developed with the purposes of ensuring implementation of state policy on development of SMSB through procurement activities implemented by Gazprom PJSC and provides a complex of measures aimed at:
- Formation of the net of qualified and responsible suppliers (contractors, executors) from the number of subjects of SMSB, supplying goods (performing works, rendering services) to Gazprom PJSC using its own resources by direct contracts and subcontracts of the 1st level;
- Active involvement to the activities of the Gazprom PJSC of innovative subjects of SMSB, widening of cooperation between Gazprom PJSC with the innovative subjects of SMSB;
- Ensuring assistance in development and support of the Program Participants" ("Gazprom" official web-site, 2016).

Particularly, as it appears from the corporate information of Gazprom PJSC which is publically available, an important component of the Gazprom procurement activities is widening of the access of the subjects of SMSB to the procurement of the company. With this purpose the procedures of the procurements announced for SMSB are simplified to the maximum, including: The procurements are modified to electronic format, maximum necessary list of documents is requested without the claim of financial assurance for the application to take part in the procurement.

In accordance with the decree of the RF Government dated 11 December 2014 No. 1352 in 2015 "Gazprom" approved and placed in the Unified Information System the List of Goods, Works, Services Bought by the Company from SMSB. The procurements were implemented with SMSB as the only participants, as well as implying the requirement on involvement of SMSB as subcontractors. Contractors of "Gazprom" are over 700 subjects of SMSB.

For simplification of small procurement procedures (up to 500 thousand RUR) last year upon an initiative of Gazprom at ETP GPB (electronic trading platform of Gazprombank, OJSC) Trading Portal of Small Procurements (Web-shop) was created. This site allows the suppliers to offer their goods, works and services to the potential customers and at receiving the preliminary order to decide upon confirmation or rejection of the order. In 2015 the service was used by over 2100 suppliers (over 88% of them were SMSB), having placed their price lists to 47 thousand stock items of goods, works, and services.

Implementation of the pilot program of partnership between Gazprom and SMSB is started. It implies measures on formation of the network of qualified and responsible suppliers and widening interaction with SME, releasing innovative and highly technological production.

Besides, in 2015 simple procedure of submission and consideration of applications on using the innovative developments of the SMSB in industrial activities of Gazprom was worked out - and called single-window system. It is a simple and clear mechanism for submission and consideration of innovative offer of a SMSB subject through the "single-window" - Gazprom VNIIGAZ, LLC (Gazprom PJSC, 2016).

Active role in development of SMSB in the oil and gas servicing is played by creation of innovation clusters at regional level.

So, in the Khanty-Mansiysk Autonomous District of the RF as of August 2016 there are 170 innovation companies focusing on IT developments (The Yugra Information Service, 2016).

"An example of successful implementation of innovative projects of small and middle-sized innovation companies of the autonomous district is a project of SITEK - Western Siberia' company on increase in the effectiveness of the oil well workover by incorporation of innovative technologies and materials of their own production at conduction of repairing and insulating as well as plugging operations. The project is implemented through development and incorporation of various innovation products. The volume of the company revenue in 2015 was equal to 50 million RUR."

A positive example is also the work of Center of Geological Modeling LLC. The employees of the company developed the "oil river" technology consisting of the complex of specialized methods for processing, interpretation of field seismic information and geological modeling, which allow obtaining unique geological models with a brand new information layer – breaking and block structure of oil fields. According to a resident of the Yugra Technology Park, Center of Geological Modeling LLC Vladimir Krupitsky, innovative technology "oil river" allows placing exploitation wells into the underground flow rivers. Thus, oil developments become more profitable. The experience is proved practically: The Center of Geological Modeling worked out over 30 fields, drilled and activated over 40 wells. The efficiency is about 90%. The company intends to enter the oil market of North America (The Yugra Information Service, 2016).

Finally, as it was already mentioned above, the support of development of such enterprises is rendered by numerous business incubators, innovation centers and other subjects of governmental and private infrastructure of small and middle-sized innovative business development, often specialized exclusively in oil and gas servicing segment.

So, on the 26th April 2016 under the auspices of Gazprom VNIIGAZ, LLC a workshop was held devoted to development of interaction between Gazprom PJSC and the subjects of SMSB, suppliers of innovation and highly technological production. Representatives of SME took part in the event - suppliers of highly technological production and representatives of subdivisions of Gazprom PJSC, responsible for interaction with SMSB. In the framework of the workshop Deputy Director General of the Union of Engineering and Technical Centers of Russia Aleksandr Mitrofanov addressed the meeting and told about currently existing programs of the Small Enterprise Assistance Fund in the science and technical sphere. The attention of the participants was turned to the "Cooperation" program as a really effective mechanism contributing to establishing close cooperation ties of SIE with the subjects of middle-sized and large business - the suppliers of innovative production. A special interest from the profile structures of Gazprom PJSC at the workshop was paid to the represented project in the sphere of production of unique catalyzers of "Start-Catalizator" company (hereinafter - Project) supported in 2007 by the Small Enterprise Assistance Fund in the science and technical sphere (Press Center of Innovation Promotion Fund, 2016).

It is noteworthy that "Start-Catalizator" company founded as early as in 2005 is a resident of the Energotechnological Cluster of the Skolkovo Innovative Center. The company is led by Lyudmila Tyurina - Doctor of Chemistry, leading research worker of the Chemistry Department at the Lomonosov Moscow State University. The company promoters were the RF citizens - the scientists of the Lomonosov Moscow State University, Institute of Petrochemical Synthesis, Russian Academy of Sciences having the degrees of doctors and candidates of sciences. According to the declared information, the goal of the project is commercialization of technologies for all the segments of international market of desulfuring ensuring significant decreases in the costs at improving of quality and environmental specifications in the processes of preparation and processing of sulfuric hydrocarbon crude (Skolkovo Foundation, 2005): Gas; oil; process gases ("residues" of Claus process); liquified petroleum gas, commercial propane/butane mix, liquefied hydrocarbon gas, diesel fuel, gasoline, petroleum residue; GTL crude, gas and chemical industry.

The key stage of technology of the "Start-Katalizator" company's project is selective oxidation of hydrogen disulfide (H2S) and mercaptan (RSH) in the presence of licensed catalysts, therewith the catalyst itself does not contain rare expensive components. Basic technical solution of "Start-Katalizator" company is the implementation used for many decades at one of the stages of Claus process or LOCAT with the supply by the main manufacturer having the experience of designing beginning from the first examples in the USSR. Among the key advantages of the implemented project may be pointed technological - reduction of

number of the technological stages to 1-2 instead at least 7 stages necessary at the use of alternative solutions - amine treatment (2 stages) + Claus -(3 stages) + MEROX-processes (min 2 stages) (not considering tail gas cleanup of Claus-process and treatment of water alkaline wastes of MEROX-process) and, thus it leads to significant reduction of material consumption of the equipment; environmental - the unprecedented quality of crude product treatment, up to 0.001 ppm and air emissions; economic - significant reduction of capital and operational expenditures for desulfuring (Skolkovo Foundation, 2005).

It is noteworthy that before it was widely recognized by the commercial sector, the project of "Start-Katalizator" company had been greatly supported by the government as a finalist of Startup Village 2014 competition. "According to the results of the event "Start-Katalizator," LLC was awarded the money prize and the Moscow Innovation Passport (MI Passport) - a universal pass to the unified system of the measures of State support provided by the Moscow government and development institutions to the highly technological companies and perspective start-ups" (Start-Catalyst, 2016).

It is highly important to underline that the described cases of successful integration of SMSB into the value chain in the oil and gas servicing segment are by no means singular (Kapitonov, 2012), which shows the importance and perspective nature of the above mentioned processes.

5. PROBLEMS OF GOVERNMENTAL SUPPORT OF SMALL AND MIDDLE-SIZED INNOVATION ENTERPRISES IN OIL AND GAS SERVICING AND THE WAYS OF THEIR SOLUTION

It is quite obvious that SMSB in the Russian oil and gas servicing requires support and has many problems. The conducted research shows that some movement in the economic activities of SMSB of the oil and gas servicing was significantly provoked by externalities. Active governmental assistance and support to SIE have coincided with the necessity of solving the tasks of import substitution, extremely acute for oil and gas complex. As it is thought it is exactly the last circumstance that led to the fact that large oil and gas business gained true motivation to more actively integrate SME into the value chain on the oil and gas market, particularly, in the servicing segment.

Subjective external processes, by the way, do not allow providing conceptual solution of the problem of creating favorable competitive environment for development of SMSB in the oil and gas servicing.

The same as before survival of SME whether the management was able to enlist the support of state or private commercial institutions. As it is known, despite the presence of separate positive examples of state support of SIE in the sphere of gas and oil, the processes and procedures of such support provoke numerous disputes.

The sphere of decision-making in the state support remains nontransparent and thus potentially prone to corruption. Besides, the system of the evaluation of state investments into the development of small and middle-sized innovation enterprises has not been totally regulated. In the conditions of doubtful nature of support of many innovation initiatives from the position of budget efficiency, at the same time, a series of perspective start-ups dies in the beginning without financing. While investments in their turn at the "zero" stage come exactly from the government, rarer - from the institutional mediators, and rarely - from large business. The latter are objectively interested in the acquisition of ready solutions and who direct venture capital.

Director of Research and Technological Development of oil and gas group of companies "Sibur" Stepkin notes that the corporation "is interested in the projects in the sphere of gas-processing, gas-fractionation, transportation of liquid gases, new technological solutions in the petrochemical processes, innovation solutions in the sphere of environmental issues connected with production and disposal of oil petrochemical products. Annually "Sibur" implements over 20 optimization projects based on application of innovation technical solutions" (Oil and Gas Center "Skolkovo" Foundation, 2016). Therewith the corporation is interested not in the "idea on paper," but in the implementation, at least test examples; and the argumentation of the corporation is generally clear. In a private conversation the above mentioned leader notes that at the events organized by government and venture funds thousands of ideas are passed through the hands of the potential investors at the stage of a concept, the efficiency of which it is impossible to check. The representatives of the corporations select only a few of the represented ideas, fewer start-ups enlist the support of large corporations after detailed consideration of the innovation projects. Meanwhile at the outlet of the mentioned selection of innovation start-ups, according to Stepkin, real economic effect for corporation is brought by every 10^{th}-20^{th} project, while the discounted result of participation of the corporations in the start-ups is usually represented with net loss.

The burden of financing small innovation start-ups, including oil and gas sector, is transferred to the budget, the expenditures of which in the conditions of unfavorable macroeconomic environment will be further reduced.

Analysts note that "nowadays the government is able to help the industry effectively not much through the development of direct subsidiaries, but through stabilization of macroeconomic circumstances and increase in the accessibility of credits to the middle-sized and small enterprises" (Rodionov, 2016).

Besides, it is necessary to ensure transparency of the decision-making process in the governmental support of start-ups through active involvement of broad society and large business to the evaluation of the tender projects.

It is obvious that important steps in this direction are currently being made. The idea of public private partnership (PPP) itself in the sphere of oil and gas SMB should develop to the utmost through active promotion of venture mediators and technological sites. In

the frameworks of PPP the potential loss from the investments into the oil and gas start-ups is proportionally distributed between the government and large business, ensuring in combination with the benefits from the successful projects and commercialization of "breaking-through" Research and Technological Development, the overall social and investment efficiency in support of the innovation oil and SMB at all levels.

Speaking about the directions of governmental support of small and middle-sized innovative oil and gas servicing business, we would once again turn to the issue of the necessity of the measures implementation, actual for PPP development in any sphere including presence of certain and gapless legislation, transparency of the procedures and the mechanism of decision-making, simplification of access of small business to the PPP instruments, and development of the system of state guarantees for private venture capital.

Applicably to the oil and gas industry, an important source of investment into the SMB development is also seen in ensuring real, but not nominal access of small business to state procurements: The largest Russian oil and gas enterprises, - Gazprom and Rosneft, - are state-owned, with the quota of the Russian Federation equal to 50.2% and 69.5% of shares respectfully.

In accordance with the applicable legislation, the government establishes quotas for the procurements from SMSB. In 2016 the quota was equal to 18% (The RF Government Decree No. 1352, 2014), while the finances resulting from it could significantly enlarge the circulate capital of small and middle-sized FEC innovation enterprises. Though a series of authors quite reasonably suppose that the corresponding processes can have nominal, fake nature, be implemented for purposes of formal observance of the quota for procurements from small business. Possible malversations were mentioned in summer 2016 in "Vedomosti" magazine with the reference to the report of The Ministry of Economic Development and Trade to the Prime Minister of the RF. So, "over 96% of the procurements are realized without competition" (Mereminskaya, 2016), besides "The Ministry of Economic Development and Trade also detected multi-billion contracts of state companies with small business. It means the cost of the contracts multiply exceeds the revenue, at which the companies are considered SMSB (800 million RUR and 2 billion respectfully)" (Mereminskaya, 2016). One of the brightest examples of possible violations took place exactly in the oil and gas sector of economy (the case of Stroygazmontazh LLC, shortly SGM LLC). According to "Vedomosti" "in the system of procurements there are the data of the June contract between SGM (the TIN coincides with Rotenberg's company) and Gazprom valued at sum of 6.2 billion RUR on construction-and-assembling operations at offshoot pipeline Okhansk-Kirov. At the same time it is said that "the supplier belongs to the subjects of SMSB" (Mereminskaya, 2016).

With the reference to the Ministry of Economic Development and Trade, "Vedomosti" further provide the information that Gazprom concluded the contract with the single supplier R and D Institute of Oil and Gas "Peton" valued at sum exceeding 50.3 billion RUR both with SME, the Ministry of Economic Development and Trade makes an example. R and D Institute of Oil and Gas "Peton," a part of the Peton group of companies belonging Igor Mnushkin - 40%, Oleg Polyakov - 40% and Vladimir Zaytsev - 20% (according to the data of Professional Market and Company Analysis System) develops technologies and designs the objects of petrochemical industry and oil and gas processing. In 2014 the revenue of the institute was equal to 1.9 billion RUR according to the data of Professional Market and Company Analysis System. There is no information on the revenue for 2015, but the valued sum of the concluded contracts was 29 billion RUR. Its staff accounts for 500 people and 350 people work here contractually according to the information on the web-site. But after the contract valued at sum of 50.3 billion RUR, introduction of the company to the quota for small business is doubtful (Mereminskaya, 2016).

Thus, establishing legal order in the sphere of public procurement is also seen as an important direction for creation of favorable competitive environment for development of SMSB in the oil and gas servicing.

6. CONCLUSION

The main role of SME in the oil and gas servicing consists in their tight integration into the oil and gas market value chain. Oil and gas servicing allows focusing science-driven developments in the hands of small and middle-sized research teams, while the results of commercialization of the latter's developments ensure innovation breakthrough in the oil and gas sector with the innovation inactivity of large enterprises as a background. For activation of support and development of innovation SMB and for purposes of creating favorable competitive environment for development of SMSB in the oil and gas servicing it is considered to be necessary to ensure transparency of the government support of the start-ups, to stimulate development of PPP and guarantee legal procedure of the state procurements.

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