

ЮБИЛЕЙ



90th anniversary of Gubkin University

On 17 April 2020, National University of Oil and Gas “Gubkin University” celebrates its 90th anniversary. Since 1930, when the Department of Petroleum was established in Moscow Mining Academy, the University has trained over 100,000 highly qualified specialists who work on the development of the natural wealth of the country – oil and gas reserves. For nine decades Gubkin University steadily holds a leading position in research and training specialists for oil and gas sector of Russia.

Today, over 12,000 students from all regions of Russia and 81 country of the world study at Gubkin University. The University applies intensively the interdisciplinary approach to training and innovative teaching methods and technologies of virtual reality based on interactive full-scale simulators, computer models and systems such as Virtual Field, Virtual Oil and Gas Transportation System, Virtual Oil Refinery, etc. The bachelor’s programs in petroleum engineering offered by the University obtained international accreditation in 2016 and received a European certification mark of quality. In cooperation with Rosneft and Gazprom, the University implements long-term projects to create a comprehensive multi-level educational technology and infrastructure for training specialists in the development of the Arctic and Eastern Siberian reserves and transportation of hydrocarbon products to the Asia-Pacific region.

Gubkin University is a part of the consortium established jointly by Moscow Institute of Physics and Technology, Moscow State University and Skolkovo Institute of Science and Technology with the participation of Gazprom Neft as a business partner. A similar format of integration also works with Lukoil and Zarubezhneft. Gubkin University cooperates actively with international universities and companies from Austria, France, Norway, China, USA, Great Britain, and Germany.

The merits of Gubkin University are highly evaluated by the state. Over the past 12 years, the University has received six prizes of the Government of the Russian Federation in education and eight prizes of the Government of the Russian Federation in science and technology.

Gubkin University is consistently ranked among the top technical universities in Russia and occupies respected positions in international rankings, including Times Higher Education and Quacquarelli Symonds.

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Following the Precepts of I.M. Gubkin

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Abstract. On April 17 2020 National University of Oil and Gas “Gubkin University” celebrates 90th anniversary. The article shows that all these years the University has been strictly following the principles formulated by the founder of the university, academician Ivan Gubkin. The most important of them are the following. The University is the leader of domestic higher oil and gas education, carrying out the advanced training of oil and gas engineering personnel on the basis of innovations in the content and teaching technology. The University is a polytechnic university that combines the entire technological chain of the hydrocarbon industry with its specialties and directions – from finding them to supplying to the market. The University is the driver of the scientific and technological progress of hydrocarbon energy.

Keywords: National University of Oil and Gas “Gubkin University”, Moscow Mining Academy, Moscow Petroleum Institute, national research university, fuel energy, oil and gas complex, innovative educational technology

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Abundant literature has explored the glorious history of Gubkin University and many of its periods, including doctoral dissertations, marvelously illustrated multipage gift books, and colorful brochures [1; 2]. Nevertheless, today we still see publications dedicated to each big date since the founding day of the University, appearing every five and ten years under various industry editions [3; 4]. As a rule, each author tries to shed new light on one or another page in its history and to put new accents on the past events. These notes are no exception. Our brief journey into the history of Gubkin University should be seen in that exact context.

Gubkinsky genome

The first aspect to be covered slightly differently here than it was before is the birth of the University and its first steps. When writing the story of a legal entity, one would not normally write when, where and in what family it was born. Violating this tradition, we ought to let the unaware reader know that at birth which took place on Maundy Thursday by Orthodox calendar on April 17, 1930 in Moscow, on Bolshaya Kaluzhskaya street, 14 (now Leninsky Prospect, 6) it was named Ivan Mikhailovich Gubkin Moscow Oil Institute. The corresponding entry was made on the same day in the order

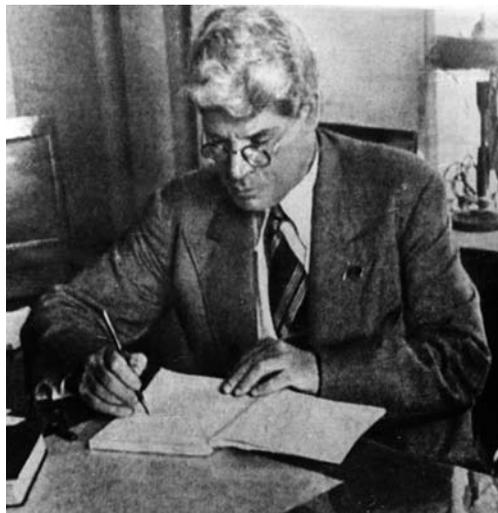
No. 1238 of the Supreme Board of the People's Economy (VSNH) of the USSR. Remarkably, the Easter week of 1930 almost fully coincides with that in 2020. This year, April 17 is Good Friday.

Giving the newborn institution the name of Academic Gubkin, the founder of the domestic scientific and pedagogical school of petroleum geologists who became famous by organizing the exploration of the Kursk magnetic anomaly, who predicted the discoveries of hydrocarbon reserves in West and East Siberia, in Mangyshlak and Central Asia, who is credited by the VSNH order for his "immense contribution to the higher education of engineering and technical human resources for the socialist industry, in particular the creation of the powerful Moscow Mining Academy" – giving it his name stressed his role as the founding father of the Oil Institute [5].

One more detail has to do with the mother, for which the Latin is *alma mater*. It was young and breathtakingly beautiful. It can be seen on the photograph. Its name was Moscow Mining Academy (or MGA as the term of endearment).

It is of prime importance that on that fourth day of the Easter week of 1930 it gave life to five more sons. Among three of them were Moscow Mining Institute (MGI) that continues to live in its *alma mater's* home to this day; Moscow Institute of Black Metallurgy, now Moscow University of Steel and Alloys, a top university in Russia that built a strong family with MGI in 2012; as well as their brother Moscow Geological Prospecting Institute (MGRI), a white-stone beauty that also became a university.

Upon giving birth to such heroes and in such quantity, the *alma mater* did not survive and left



this world. But it never disappeared from the memory of the grateful descendants: on September 4, 2018 the leading geologic-metallurgical and oil and gas communities of the country celebrated the 100th anniversary of the dear and unforgettable Moscow Mining Academy with a bash.

It must be noted that Moscow Oil Institute stayed in the *alma mater's* home until 1962. It was allocated the left wing of the building on Bolshaya Kaluzhskaya 14, and they even permitted to install a laboratory drilling unit on the small plot of land behind the building next to the fence separating it from Pervaya Gradskaya hospital. The drilling unit was for many years visible to Moscovites from afar.

Academic Gubkin was all around perfect as the rector of Moscow Oil Institute, its favorite child. But what is especially noteworthy, he was great thanks to his enormous influence in



scientific circles and administrative structures. He possessed such a powerful administrative resource, as they would call it today, that he was able to gather the cream of the crop of the oil and gas scientific communities of the time at the crib of the newborn institute. With that, being innately wise, he realized that the grey-haired academics and professors (his existing MGA colleagues A.D. Arkhangelsky, D.V. Golubyatnikov, N.S. Shatskiy, V.P. Obruchev, L.S. Leibenzon, S.S. Nametkin, as well as his colleagues K.R. Chepikov, G.A. Sarkisyants, L.S. Davitashvili invited to Moscow Oil Institute) would manage to realize their full powerful potential only when surrounded by young, energetic, ambitious and gifted people. Those young people included, first of all, his and his colleagues' apprentices – undergraduate and graduate students, MGA instructors – who had demonstrated these qualities (nowadays labeled competencies) and who could and did become the source of support for Ivan Mikhailovich Gubkin in organizing the education and research activities of the new institution.

The 29-year-old mining engineer Nikolay Vyacheslavovich Samostrellov was made Deputy Director of the Institute, the 35-year-old docent Sergey Filippovich Fedorov became the Head of the Faculty of Geology and Oil Exploration, the 26-year-old mining engineer Nikolay Ivanovich Titkov became the Head of the Faculty of Production Mechanics, the 29-year-old techno-

logy engineer Josef L'vovich Gurevich became the Head of the Faculty of Refining. All of them were MGA alumni. Among Gubkin's closest collaborators were 30-year-old Ivan Mikhailovich Muraviev, 35-year-old Mikhail Mikhailovich Charygin, 32-year-old Alexey Alexandrovich Blokhin, 28-year-old Ivan Sergeyevich Polyakov who became the first Head of Construction and Design Bureau at the Institute.

In general, the year 1930 marked the first five-year plan, the country going at full speed like a powerful locomotive, the young people swept by winds of change, "to take and overtake", "time – forward!", "communism is the youth of the world and it is to be built by the young!"

Young people constituted 75% of those working in oil production, and 80% of those in oil refining. The famous march composed by Issac Dunayevsky, "March of Enthusiasts" was written about them, too – the young oil men. Gubkin himself and his entire young team were taken in by this unstoppable current of constructive energy:

"Let them stand still forever!

By rightful daring we shall tell our story.

Ours is a grand endeavor,

An act of courage and a deed of glory."

As for the mastery of I.M. Gubkin in selecting his collaborators, their accomplishments speak for themselves. Most of them became doctors of science, professors, heads of departments, deans of faculties, directors of research institutions and industrial organizations. M.M. Charygin became Gubkin's successor as the Director of Moscow Oil Institute after Gubkin passed away in 1939. N.I. Titkov was asked to head the Oil Institute of Grozny for a period of time and also acted as Interim Director of his own institute whenever Gubkin himself needed to concentrate on other work. S.F. Fedorov was named corresponding member of the Academy of Sciences of the USSR in 1939. A.A. Blokhin who eventually became famous for his discovery of Bashkirian oil, was made Deputy Director for Research of the Institute of Geology at the Russian Academy of Sciences of the USSR and the Editor-in-Chief of *Geology of the USSR*,



a 25-volume publication. This list can go on and on. The more names of Gubkin's students and followers (who are too many to count) we bring up to illustrate his exceptional ability to inspire and unite talented committed people aspiring to contribute personally to the growth of the energy potential of the country, the easier it gets for us, today's generation of Gubkin followers, to see the simple truth: it was largely thanks to their work that over an extraordinarily short period of time, the foundation was laid for today's leadership of the country as the energy superpower of the world, the leadership that enabled it to find, produce, transport, and refine hydrocarbons based on own technologies, own equipment made by own manufacturers, and – what is the most important – own research and engineering talent.

The legendary Victor Stepanovich Chernomyrdin once called the energy industry the backbone of the Russian economy. It was then, in the 1930s, during the first decade of Gubkin University's life, that this backbone was formed. During the 12 years of MGA's existence, only about forty petroleum engineers graduated from it. In comparison, over the 11 years starting from 1930 to 1941, over fifteen hundred graduated from Moscow Oil Institute. Over that same period, oil production grew over 1.5 times and reached 33 million tons [6].

The year 1941 was the start of the Great Patriotic War, and the country could fully appreciate the courageous act that the oil industry had accomplished in the pre-war years: without gasoline, kerosene, diesel, mazut, lubricants that they gave the country, it would have been just as impossible to defeat the enemy as it would have been without tanks and airplanes. "The modern war is the war of motors. But motors by themselves are lifeless steel. In order for them to work, be useful, strike the enemy, they need gasoline. Gasoline is the blood flow of airplanes, tanks, automobiles, industry. Our oil men breathe life into the cold steel of motors and put them into action. They give the military as much fuel as needed to fully defeat the enemy," – "Pravda" newspaper wrote on February 8, 1942.

No doubt, enormous contributions into the Great Victory were made also by the Azerbaijan (Bakinsky) Oil Institute, the Grozny Oil Institute, and the eleven oil and gas vocational schools that joined Moscow Oil Institute in preparing engineering and technical talent for the oil industry. And of course, the same is to be said about our brothers by Moscow Mining Academy: Moscow Institute for Geological Prospecting (MGRI), Moscow Mining Institute (MGI), and Steel Institute (MISIS). The best song that was ever written about Victory Day has this line: "Day and night, at the open hearth furnaces, our motherland never closed her eyes." While that metaphor generalizes the selfless work of all people who worked hard in the rear during the war years, it is precise in how it depicts the obvious fact: the energy and fuel so needed at the front line would not have been possible without mining and metallurgical workers, drilling units, drill pipes and casing, drill bits, oil and gas manufacturing equipment, and, most importantly, steel and pig iron necessary to produce all those.

In our notes we would like to stress the special mission of Gubkin University that was assigned or, better yet, bestowed by its founder Ivan Mikhailovich Gubkin 90 years ago, to which the University has been true for all these years. Today, this mission opens the University's website and calls for Gubkin University "*to be the locomotive of producing new knowledge and ensuring competitiveness of national oil and gas technologies, the foundry of innovative talent that consolidates the resources of higher education and academic and industry research to ensure technical progress of the oil and gas industry as a crucial factor for the country's stable growth*"¹. In May 1945 the University was awarded its first order – The Order of the Red Banner of Labor. That signified the leadership mission that the University had honorably performed during pre-war and war years in the preparation of engineering resources for the country's oil and gas industry.

¹ See website of the University: https://www.gubkin.ru/general/mission_and_ustav/

Another Gubkin's testament to which the University is true today is told by these words: "The future of our oil industry fully depends on the growth of exploration activities, brave and decisive, without fear of risk." These words were said by Ivan Mikhailovich in 1931 at the special Session of the Academy of Sciences in Moscow [7]. To see as our first priority the comprehensive contribution to the growth of the resource base of the fuel and energy complex, to grow the University in all directions *bravely and decisively, without fear of risk* – that is how Gubkin's followers understand the legacy of the university's founder.

"You are on the right path, comrades"

And so, *bravely and decisively, without fear of risk*, the University has been setting the direction for its innovative development and for the development of the national higher education in oil and gas throughout its entire history.

The same can be said about the creation in the 1940s of the network of subsidiaries in the oil and gas regions of the country, which have over time transformed into independent oil and gas universities; about the initiation of specialist training for the new petrochemical and natural gas sectors in the 1950s, and for the automation of the oil and gas industry as a whole in the 1960s; about the transformation of the University into the major exporter of education services to Eastern Europe, Africa and

Asia in the 1960-70s; about the daring project in the 1980s of integrating academic research and higher education by adding an academic research institute to the University's structure (Institute of Oil and Gas Problems), the only one overseen by both the Academy of Sciences of the USSR and the Ministry of Higher Education of the USSR; and about the leadership of Gubkin University in the 1990s among all Russian technical universities in organizing multi-level education of engineers [8].

The invariable faithfulness of the University to the directions first outlined by I.M. Gubkin in his famous speech at the Academy of Sciences of the USSR in 1931 is also evidenced by the program of becoming a national research university over 2010–2019, first proposed to the Government of the Russian Federation in the spring of 2010 and subsequently approved, shortly called NRU Program. This program became the essence of the University's activities over the past decade, and it is these activities that we will address next in this article, dedicated to the 90th anniversary of the University. The Program states that "the growth of the resource base of the fuel and energy complex – exploration and production of offshore, hard-to-recover, and unconventional hydrocarbon reserves" – is among the three main priorities of the University as a NRU.

The work of the University under that specific priority areas of development (PAD) has been focused on the following:





- Developing the methodology and methods of geological exploration at greater depths based on basin modeling and geodynamical approach;
- Developing methods of integrating 3D seismic, geochemical analysis, petrophysics, and well logging data to model structurally complex reservoirs and to monitor oil and gas production;
- Optimizing exploration in new regions.

The list of activities under this PAD assumed the creation of a new training center called “Offshore hydrocarbon production technologies and equipment”. The photograph on page 56 shows the Center for Offshore Drilling of Oil and Gas Wells created by Rosneft Oil Company at the University’s Department of Drilling, the only such center in a higher education institution in Russia. The samples and models of the cutting-edge technological equipment used in offshore drilling and oil and gas production were given to the Department of Drilling to be displayed in this center by Gazprom and by several international companies. The Center is already engaged in the University’s Master’s programs as well as in continuing education and professional retraining of Rosneft’s specialists that work on offshore units of the company, including those who participate in designing, building, and operating deep sea offshore oil and gas fields [9].

The main goal of the NRU Program is basically a concretization or, better yet, projection of Gubkin University’s mission onto the second decade of the 21st century, and it is *to form within the University the research and education environment that consolidates the intellectual, material and informational resources of the University, academic and industry research and business practice, to build world class research, design, and application for the priority directions of the oil and gas industry, to use the leading learning technologies, and on this foundation to ensure the stable supply of the fuel and energy complex of Russia with high quality specialists who are able and ready to take on leadership in its innovative development.*

The fulfillment of the NRU Program, with the main stakeholder being the state, has enabled the University to notably raise its competitive-

ness and to strengthen its leadership among oil and gas universities of the world, to create educational products in science and technology that are in demand today, and thus to justify the investments, to ensure further development of the University and the higher oil and gas education in the country as a whole, and to reinvest the profits in research, education, and infrastructure.

The Program’s goals and planned outcomes have been achieved thanks to the success in solving the following problems faced by the University’s research and teaching community:

- To build up the research and teaching potential of the University based on integrating the intellectual, material and informational resources of the University, academic institutions and oil and gas companies, as well as reorganizing the University governance, including the transition to the category of autonomous educational institutions;

- To raise volumes to at least one billion rubles and to improve the outcomes of research and experimental design, to increase the scope of the University’s intellectual property and to utilize the system of small enterprises in order to grow the scope of commercialization and revenue by significantly expanding the investment activities of the University;

- To raise quality of education to the level of the best technical institutions that lead the world in preparing specialists in geology and hydrocarbon technology, by increasing the proportion of young, research active faculty in both research and teaching, and by considerably raising the level of involvement of teaching faculty and Master’s students in research, and research faculty and doctoral students in teaching;

- To install modern, including unique, equipment in laboratories and research and learning centers, field bases, training facilities, and to grow informational resources of the University;

- To develop, together with oil and gas companies, the professional standards and to use them as a basis for creating the model of competencies for industry specialists that are essential for productive innovative work and the corresponding academic programs, including

those for continuing professional education, to optimize the student body by focusing primarily on Master's and doctoral students;

– To develop in every way the created learning technologies based on virtual simulators, to strengthen the collaboration of the University with international schools, to broaden the practice of continuing education including internships for faculty and staff in the leading international research and learning centers, to create conditions for attracting international researchers to collaborate with the University colleagues;

– To turn the University into a true center for accumulation and dissemination of new knowledge, to strengthen the interaction of the University with other oil and gas schools and faculties in Russia, to propagate the University's innovative accomplishments throughout the higher education system of the country.

The accomplishments of the research and teaching faculty of Gubkin University in the directions identified as priorities for the fuel and energy complex and the oil and gas education are evident from the three Russian Federation Government awards in research and four Russian Federation Government awards in education. Those awards were shared by 20 professors and instructors.

To show the success in tackling these challenges, let us consider the most significant results².

Reorganization of the University's structure and governance. Per order No. 288 of the Ministry of Education and Science of the Russian Federation of April 18, 2018, Gubkin University, which used to be a federal state budget higher educational institution, has changed its status to a federal state autonomous higher educational institution. Let us not dwell on the advantages of the new status. It is sufficient to say that all leading universities included in the "top 5-100" group are autonomous educational institutions.

² Martynov, V.G. Rector's Annual Report on the Work of the University. Available at: https://www.gubkin.ru/general/rukovodstvo/Uchen_sovet_RGU/otchetniye_materialyi/index.php?sphrase_id=7868897 (In Russ.)

A direct result of obtaining the new status was the positive decision of the Ministry of Science and Education of the Russian Federation on extending the term of V.G. Martynov as the rector of the University through the 2022–23 academic year as requested by the new governance structure of the University, the Monitoring Council. This decision was absolutely necessary as a condition for successful realization of the Program and for continuing on the dynamic path for University's development in the years after its completion.

The innovation spirit of the NRU Program can be seen in the creation of two new faculties: The Faculty of International Energy Business (FIEB, 2011) and the Faculty of Systemic Safety of the Fuel and Energy Complex (FSS FEC, 2018). The first of those is expected to supply the fuel and energy complex of Russia with the highly demanded specialists in the areas of modeling and predictive analytics of global fuel energy, analysis and forecast of global energy markets, formulation of business strategies of oil and gas companies and the energy policy of the fuel and energy complex of the country as a whole, as well as practitioners in the areas of international trade in raw hydrocarbons and their products. The mission of the second faculty (FSS FEC) appears to be self-explanatory from its name. Nevertheless, it is important to understand that, when talking about the digital transformation of the economy, labeled as "industry 4.0", they often fail to mention the threats to society, state, and individual citizens that arise from the inconsistencies and gaps caused by the fact that the various institutions responsible for the well-being of the country (economic, social, legal) lag behind the technology. In order to see those threats and gaps *holistically*, to formulate and accomplish policies that minimize them jointly, the state demands the kind of specialist who is both a technocrat and a humanitarian, someone with systemic multidisciplinary thinking. This is precisely the type of specialist that the new faculty intends to graduate, and the structure of the faculty is also multidisciplinary as a result. This is the principal difference

between this faculty and the others within the University.

Integration of resources of the University, oil and gas companies, and academic institutions in both research and education [10]. The University has doubled the number of academic units at the commercial organizations within Fuel and Energy Complex and within the Russian Academy of Science. At present, the University comprises 21 academic units, including the first unit created in a foreign company “Uniper Global Commodities SE” (Germany), the Department of Marketing of Energy Products. The department is included in the Faculty of International Economic Business and graduates Masters of Management.

It is important to point out that the creation of new departments under the NRU Program, unlike that in the past, takes place mainly by the initiative of oil and gas companies. In particular, Rosneft Oil Company initiated the creation in 2018 of the Department of Supply Chain Management in the Oil and Gas Complex, the only academic unit of this profile in the country. The department is created in order to graduate Master’s level specialists for Rosneft Oil Company, as well as to provide additional professional training and retraining of specialists in the area of supply chain management for the national and international oil and gas companies.

Under the initiative of Lukoil Oil Company, in 2017 the University built the Department of Renewable Energy, another unique academic unit within Fuel and Energy Complex, which also offers a Master’s degree under a corresponding program. The national vertically integrated companies are actively positioning themselves as energy companies, and Gubkin University, which has always stayed abreast of the industry’s leading practices, is again ready to provide them with the necessary human resources for the renewable energy projects.

International collaboration and building of stronger competitiveness in the market for education. The geography of the University’s international presence has now been expanded to include 70 countries. The University has interna-

tional agreements with organizations in over 50 countries of the world. Among the international partners of the University are over 100 universities from Austria, Argentina, Bahrain, Bulgaria, United Kingdom, Venezuela, Vietnam, Germany, India, Iraq, Kazakhstan, China, Columbia, Kuwait, Malaysia, The Netherlands, Norway, Romania, Serbia, Sudan, USA, Uzbekistan, Finland, France, Sweden and over 50 oil and gas companies and research centers. The share of international undergraduate and graduate students in the total number of students is approaching 20 percent. The number of students in six Master’s programs that allow for joint degrees of two universities – Gubkin University and a foreign university – is now 40, with five international universities participating in the joint degree program. Those are:

- French Institute of Petroleum (programs “Modeling of Reservoirs and Production Design” and “International Oil and Gas Business”);
- University of Stavanger, Norway (program “Offshore Oil and Gas Production Technologies”);
- Molde University College, Norway (program “Oil and Gas Logistics”);
- University of Leoben, Austria (program “Leading Technologies of Construction and Exploitation of Oil and Gas Wells”);
- KTH Royal Institute of Technology, Sweden (program “Energy Efficiency and Alternative Energy”).



The work of the University's subsidiary in Uzbekistan (the city of Tashkent) over the last ten years has made it one of the most prestigious centers for engineering education in the republic and received high accolades at the state level: in 2018, per the decree of the President of Republic of Uzbekistan Shavkat Mirziyoyev, Gubkin Russian State University of Oil and Gas (NRU) was awarded The Order of Friendship for its contribution to preparing highly qualified specialists for the oil and gas industry of Uzbekistan. Throughout the entire history of independent Uzbekistan, the Tashkent subsidiary of Gubkin University has been the only international school that received the highest state award.

Gubkin University is the base organization of the Commonwealth of Independent States participating countries in the training, retraining, and continuing education of oil and gas human resources.

Succession of research and education schools of the University, support of young faculty and staff [11]. The result of the specific efforts in this direction under the NRU Program has been the doubling of the number of young (35 and younger) faculty and research staff at the University. Most of them (over 150 people) received grants from the Gubkin Alumni Fund, the national (Gazprom, Rosneft, Lukoil, Transneft and others) and the international (Schlumberger, Total) oil and gas companies. A total of 250 grants were awarded on a competitive basis annually.

The share of young faculty has significantly grown in the Research Council of the University, in the leadership of faculties, laboratories, and in the governance structures of education and research departments.

Gubkin University has led the academic community of Russia in the part of the famous May 2012 Decree of the President of the Russian Federation V.V. Putin regarding the development of Professional standards as the main normative qualification documents. This leadership is in the fact that by 2012, Gubkin University, under the NRU Program and with the participation of oil and gas companies, had already developed professional standards for every segment of the oil and

gas industry. Thus in 2014, even before the creation of the Professional Qualifications Council of the Oil and Gas Complex, which was also initiated by the University, the Ministry of Labor of the Russian Federation had approved, and the Ministry of Justice of the Russian Federation had registered the first 15 professional standards developed at the University. By the mid-2017, there was a total of 26 professional standards approved, which was over 30% of all professional standards that were overseen by the Professional Qualifications Council of the Oil and Gas Complex at that time.

In 2018, Public Joint Stock Company Gazprom approved and adopted as a governing document of the company the "Recommendations on preparing the personnel necessary for conducting offshore hydrocarbon development" worked out by Gubkin University.

Gubkin University is recognized in the academic community of the country as one of the leaders in digitization of the learning process. The Russian Federation Government Prize in education, received by the University in 2015 for its work "Developing professional competencies in the new area of education: the virtual environment of professional activity" was the first award of this level for creating within the University virtual structures and interdisciplinary training that simulate the real-life teamwork of engineers of different profiles.

In 2017, per the Sakhalin-1 project operator "Exxon Neftegas Limited" and under the initiative of equipping the Sakhalin State University STEM Center, Gubkin University successfully completed a project to further promulgate this interdisciplinary education technology.

At the end of November 2018, Gubkin University was one of the first among Russian higher educational institutions to organize a session "The Digitization Challenges to the Engineering Education in Russia" at the traditional conference of the base schools of Gazprom, "Synergy-2018"³. The conference featured presentations

³ See: "Synergy-2018". *Vysshee obrazovanie v Rossii = Higher Education in Russia*. Vol. 28, no. 1, pp. 65-103; "Synergy-2019". *Vysshee obrazovanie v*

from universities, research organizations, Russian Academy of Education and the leading companies of the country in this direction. One of the key events at the conference was the on-line demonstration of the multidisciplinary student training unit to control the wellbore direction of a horizontal well in a virtual field.

The directive of the Government of the Russian Federation No. 1727-r of August 18, 2018 “On approval of the plan of action to prepare personnel for the key sectors of the economy of the Far East federal district and to support young workforce in the labor market through 2025”, Gubkin University is charged with building joint Research and Education centers together with Sakhalin State University (“oil and gas business”), Pacific National University in Khabarovsk (“chemical technology”, “oil and gas business”), and Amur State University in Blagoveshchensk (“chemical technology”). This charge is another convincing tribute to the leadership role that Gubkin University keeps in the advancement of intellectual potential of the fuel and energy complex of Russia.

We at Gubkin University are no doubt worried by the need to constantly wander searching for the waterway to continue to accelerate engineering education to keep up with the unprecedented pace of scientific and technological progress. But even in these conditions, Gubkin University, led by the followers of I.M. Gubkin, and this, first of all, V.N. Vinogradov – the first president of the Union of Rectors of the USSR and Russia, who led the University for 31 years, as well as his successors at the rector’s post A.I. Vladimirov and V.G. Martynov, realizing its historical responsibility for the staffing of fuel energy and petrochemicals, will continue to act in solving its tasks in a Gubkin style, that is, *boldly, decisively, without fear of risks.*

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