Innovation activity of Uzbekistan Academy of Sciences

1. Fundamentals of Innovation activity in the Republic of Uzbekistan.

Innovation activity in the country is largely controlled by the government (through legislation and flexible taxation, state and departmental funds, large state-funded programs, etc.). Responsibility for the implementation of innovative projects on priority government programs should be placed on the Committee for Coordination of Science and Technology under the Cabinet of Ministers. Promotion of high-tech innovation in the domestic production should be provided by Technology Transfer Agency established under the Ministry of Economy, Patent Protection of domestic innovation should be provided by the Intellectual Property Agency. Export innovative deliveries and attracting investments is to be done via assistance of the Ministry for Foreign Economic Relations, Investments, and Trade of the Republic of Uzbekistan.

According to the Decree of the President of the Republic of Uzbekistan dated 15 July 2008 “On additional measures to stimulate innovative projects and technologies in industry”, Republican Fairs of innovative ideas, technologies and projects have been held annually and the Law on the Fund of modernization and new technology of the bodies of economic management and enterprises since May 22, 2009 came into force, thereby providing the opportunity to host such funds to promote innovative development of manufacturing industries and enterprises. This allows domestic producers actively modernize technological processes, not only by their own forces and resources, but also to involve specialists from the Academy of Sciences, ministries and agencies.

It should be noted that a number of privileges and preferences adopted in the Republic contributes to innovative development. Thus, scientific organizations engaged in the development of innovative projects are granted tax exemptions, at that the funds allocated for these purposes are virtually exempted from all taxes, except for the single social payment. If previously research organizations received preferences in terms of accomplishing state scientific and technical programs, exclusive of contractual works by this provision, according to the new Regulations, the academic institutions carrying out economic contractual research for companies and enterprises are also exempted from paying taxes up to 2013.

Adoption of the Law of the Republic of Uzbekistan “On innovation and innovation activity”, which is being developed by an interdepartmental commission will certainly contribute to intensification of innovation activities in the country. The draft of the elaborated Law will make provisions for development of mechanisms of regulating relations between subjects of innovation, attracting investments, organization of innovation and venture capital funds, infrastructural innovative organizations, and further improvement of the system of taxation and credit, as well as the development of policies to develop interest and encourage innovators performing priority high-tech innovative projects and developed them commercially.

According to international experience, industrial sectors and manufacturing enterprises, corporations and firms should fund and put up money for applied research they need on a par with the state, providing more than 30% of funding for applied research, as well as at least 50% of funding for scientific and technological innovation projects, rather than the level of 10 % existing in the republic. We believe that even at the stage of development of the state scientific and technical programs, significant financial contribution shall be provided by industries interested in these and other projects by their orders. Some steps in this direction have already been taken.

Thus, in the period between 2008 and 2012, at the five Republican Fairs of Innovative Ideas, Technologies and Projects, research institutions and universities concluded with industrial organizations and enterprises hundreds of contracts and agreements of intent on the domestic implementation of various innovative products. This demonstrates the great interest of domestic producers in scientific research of scientists of the Republic. As an example of successful integration of science and industries production can serve consolidating ties of scientific institutions of the Academy of Sciences of Uzbekistan, universities and

institutions of higher education with NHC “Uzbekneftegaz”, GOC “Uzkimesanoat” GOC “Uzfarmsanoat”, GOC “Uzbekenergo”, JSC “Uzbekugol”, NGMC, AGMC, NAC “Uzbekistan Airways”, regional departments of Uzbekistan Ministry of Agriculture, and other large corporations and businesses.

2. Sixth Republican Fair of Innovative Ideas, Technologies and Projects (24 - 24 April 2013)

In 2013, at the 6th Republican Innovative Fair, there were submitted 527 original domestic innovation projects, including: 353 new ones, non-exhibited at previous fairs, 74 projects of university students and “Kelajak Ovozi” winners etc. The development projects presented were elaborated in recent years by more than 100 research groups of scientific and educational institutions and experimental design departments of the Academy of Sciences of Uzbekistan, Ministry of Higher Education, Ministry of Health, Ministry of Agriculture and other organizations as well as by individual inventors and entrepreneurs.

The widest range of new development projects presented referred to five thematic sections: industry - 136 exhibits, agriculture - 95, pharmaceuticals and health care - 78, IT (information technology) - 31, education and science – 13 exhibit items, respectively. The Fair was visited by some 10.800 representatives – as consumers of innovations – from over 660 organizations and enterprises (ministries, departments, enterprises, etc.), as well as by entrepreneurs and farmers from the regions of the republic.

During the fair, 413 contracts were concluded in a total of worth 17.19 billion Uzbek soums. For instance, 11 scientific organizations of the Academy of Sciences of Uzbekistan signed 136 commercial contracts totally worth of 7.1 billion soums.

Of special interest on the part of economic agents were the major interdepartmental research projects and innovative development projects of the Institute of General and Inorganic Chemistry, which in the future might be implemented in the Angren economic zone and would give a significant economic effect:

- Energy-saving and low-waste technology of complex processing unenriched kaolin from Angren deposit for producing metallurgical alumina and high-quality cement;

- Technology for producing high-performance organic-fertilizer from lignite to increase the content of humus in the soil.

3. Innovative activity of the Academy of Sciences of Uzbekistan.

Recently, the Academy of Sciences attached special attention to innovations, including the establishment and enforcement of innovative programs and projects, the number of which in 2012 increased by over one third compared with 2009-2010.

Academy of Sciences in recent years has made a number of priority outcomes of global significance in the field of fundamental and applied research. Applied projects are intensively developed and oriented mainly to the needs of key industries of the Republic. In recent years, it has become more and more examples of close links between the academic science and industry. Academy of Sciences of Uzbekistan introduced into production many of its major development projects.

The most important results of applied research and innovation development projects of the Academy of Sciences of the Republic of Uzbekistan in 2011:

- Scientific breakthrough in the cotton industry of the country was the development at the Institute of Genetics and Experimental Biology of Plants using the gene knockout technology of four new varieties (series Porlok-1 – Porlok-4) transgenic-early-ripe and high-yield varieties of cotton with high quality fiber (1-2 type) and extensive root system; a joint patent is being documented to this technology with the University of Texas, USA (Uzbekistan’s share is 70%).

- Scientists have created and implemented a number of new high-efficiency cotton varieties (zone-recognized varieties – “Mehnat”, “Beshkahramon”, “AN-16”, as well as promising varieties “Kupaysin”, “Gulbahor-2”, “UzFA-703”, “Ishonch” “Nasar”, “Hamkor”, “Kelajak ", “Navbahor-2”, “Genetics-1”, and others) that are appropriate for different climatic zones.

- high-efficiency technology of seed potatoes cultivation, developed on the basis of cell biotechnology, which was tested in commercial farms in Tashkent and Kashkadarya provinces with yielded over 300 tons of seed potatoes;

- Institute of General and Inorganic Chemistry developed the original technologies for new types of fertilizers and defoliants that are implemented in production, and are import-substituting, a significant amount of which is exported to Afghanistan, Turkmenistan and Kazakhstan:

- JSC “Samarkandkimio” produced 63.7 tons of nitro calcium phosphatic fertilizers worth 19.2 billion Uzbek soums;

- JSC “Navoiazot” produced 70.0 thousand tons of fertilizers azotnofosfornogo worth 25 billion Uzbek soums;

- JSC “Ferganaazot” manufactured 36 thousand tons of nitrogen-phosphate fertilizers worth 10.8 billion Uzbek soums and 450 tons of defoliant “UzDEF” for 4.6 billion Uzbek soums.

- JSC “Ferganaazot” introduced new production technology developed by scientists of the new defoliant “SUPER-HMD-zh”, which is used for treatment of over 60% of cotton fields to be defoliated, and" soft "activities such as magnesium chlorate defoliant “UzDEF” which is used for treatment of 7% of cotton fields, as well as a defoliant “Polidef” for farming enterprises in the Republic.

- Institute of Energy and Automation engineered import substituting ceramic filtering apparatus, pontoons, membranes for fine cleaning of oil and gas, which were successfully implemented in enterprises “Uzbekneftegaz” and “Uztransgaz” in the context of National Localization Program;

- Institute of Ion-Plasma and Laser Technologies developed the original technology and produced a pilot batch of polysilicon (500 thousand U.S. dollars investment of the OSI Company (Korea).

- Institute of Plant Chemistry and Bioorganic Chemistry developed technologies and launched industrial production of 15 new original import-substituting domestic pharmaceuticals (Ecdysten, Ayustan, Rutan, Gossitan, Getasan, Punitan and others.)

- Development of national diagnosticum preparations, and based on them organization of production of ELISA test systems for the determination of a number of infectious diseases (hepatitis A, B, C, AIDS, etc.).

- Institute of Nuclear Physics developed the original industrial radiation technology of tincturing colorless topazes, which makes them undistinguishable from the natural ones. As shown by marketing, similar production by radiation processing of crystal jewelry and crystal products exists in none of the world countries. The unique technology of coloring natural stones has already been introduced in Tashkent Company “Onyx” Ltd. Pilot contract with the German company “Zimmermann BCS Stones Gmbh” was accomplished, yet, the research was conducted for Tashkent Company “Samotsvety” (“Gem”)Ltd.

Extra-budgetary revenues of AS RUz totaled over 15.5 billion Uzbek soums and increased by 20 percent compared with 2010, including attracted investment of 3.92 million U.S. dollars for international collaborative research projects.

In the first quarter of 2012, the Republic held a competition of new innovative projects. As a result, the winning projects that came out on top were considered best, and the scientists of the Academy of Science of Uzbekistan are accomplishing 71 innovative projects, instead of 43 in 2011 (65 percent added). During the same quarter scientific establishments of the Academy of Science RUz attracted extra-budgetary funds

of over 4.23 billion Uzbek soums, which accounts for 112% compared to the same period in 2011. The bulk of revenues are funds received from the sale and export of products, payments for services rendered and work performed on a contract basis.