HI-TECH
2024 TURKMENISTAN

Guidebook

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Name of the event:

International forum and exhibition on attracting high technologies and innovations to the economy of Turkmenistan

Date:

September 4-6, 2024

Location:

Ashgabat, Turkmenistan

Events planned within the framework of the International Forum and Exhibition to attract high technologies and innovations to the economy of Turkmenistan:

- International Hackathon – September 3-6, 2024 in the building of the Oguzkhan Engineering and Technology University of Turkmenistan;
- Start up – September 4-5, 2024 in the building of the Chamber of Commerce and Industry of Turkmenistan;
- International forum – September 4-6, 2024 in the building of the Chamber of Commerce and Industry of Turkmenistan;
- International exhibition - September 4-6, 2024 at the Expo Center of the Chamber of Commerce and Industry of Turkmenistan;
- Info session: September 5, 2024 in the building of the Chamber of Commerce and Industry of Turkmenistan;
- Signing ceremony of the memorandum - September 6, 2024 in the building of the Chamber of Commerce and Industry of Turkmenistan;
- Award ceremony for the winners of the Hackathon and Start up competitions - September 6, 2024 in the building of the Chamber of Commerce and Industry of Turkmenistan.

Purpose of participation:

Taking into account the high dynamics of development of innovative technologies in Turkmenistan and around the world, the intensification of digitalization in all areas of the state structure and life in general, in order to establish and develop business relations with leading global companies, manufacturers specializing in the development of high technologies and Innovation, it is planned to organize an International Forum and Exhibition to attract high technologies and innovations to the economy of Turkmenistan.

Sections of the International Exhibition:

- Smart city technologies
- Construction technologies
- Marketplaces
- Green energy and green factory
- Aerospace services
- Water saving technologies
- Cybersecurity
- Government technologies
- Financial technologies
- Education technologies

SMART CITY TECHNOLOGIES

In order to successfully implement the tasks set in the State programs of Turkmenistan, it is planned to build the Ashgabat City residential complex. 15 billion manats (4.8 US dollars) have been allocated for the implementation of this project, which emphasizes its importance. In December 2021, the Ministry of Construction and Architecture of Turkmenistan announced an international tender for complex engineering and geological surveys of the area, in which many international companies took part.

In addition, new Arkadag city is so far the only one in Central Asia where initially and completely all life support systems are controlled by electronic systems.

The megaproject will be implemented in two stages. More than 3.3 billion USD has been allocated for the first phase, and an additional 1.5 billion USD is planned for the second phase, which will last from 2023 to 2026.

As part of the second stage, service and production facilities will be built in Arkadag for the production of food, industrial, pharmaceutical and medical products. In the first stage of development, 336 objects have already been built, including a stadium, a drama theater, a hotel, an equestrian academy, a children's health and rehabilitation center and many others.

BUILDING TECHNOLOGIES

In 2024, it is planned to invest 38.5 billion manat ($11 billion) in the country's economy from various sources of financing.

Annual investment in the economy amounts to 18-19% of GDP, and the share of foreign investment is up to 12%.

High investment activity of the economy has led to rapid growth of the construction complex of Turkmenistan. Work on the construction of social facilities using modern technologies is carried out at a high pace. Every year a list of facilities planned for opening is compiled.

This year, this list includes 49 large buildings and structures for industrial and social purposes. The President of Turkmenistan instructed to keep the progress of construction and timely commissioning of these new buildings under strict control.

As part of the National Rural Program, the following will be built in the regions of Turkmenistan: 13 hospitals, 20 health houses, 163 preschool institutions, 201 secondary schools, 16 cultural centers, 11 water treatment facilities, 13 sewerage facilities. treatment facilities, as well as residential buildings with a total area of 1896.4 thousand square meters. In the electric power industry, 7 facilities are planned to be put into operation in the next seven years.

MARKETPLACES

In accordance with the State Program for the Development of the Digital Economy of Turkmenistan for 2021-2025, The country is in a progress of working to develop e-commerce.

Thus, today there are more than 300 marketplaces registered in the country, such as Ynamdar, Gerekli, Akat Market, etc., cooperation with which can bring real benefits to Turkmen entrepreneurs and increase company income.

At the same time, state electronic trading platforms, such as the "shop.post.tm" marketplace of the "Turkmenpochta" postal service company, is also successfully operating.

GREEN ENERGY AND GREEN FACTORY

Since the opening of Arkadag the city, it has received many certificates confirming its uniqueness, modernity and commitment to a "green" strategy. The entire city has an energy-saving infrastructure, and public transport is represented by environmentally friendly electric buses and electric cars that do not emit harmful substances and run on

electric energy.

Turkmenistan is home to one of the world's largest sand deserts, the Karakum Desert, which contains silicon, a common semiconductor material that can absorb sunlight and convert it into electrical energy. With significant silicon reserves (estimated at almost 83 million tons), Turkmenistan can contribute to the global adoption of solar energy.

Currently, a combined solar and wind power plant with a total capacity of 10 MW is being built in Turkmenistan. It is also planned to build solar power plants with a capacity of more than 6 MW in remote settlements throughout the country.

In addition, being the fourth largest holder of natural gas reserves, Turkmenistan is strategically positioned for the development of hydrogen energy. More than 68% of hydrogen production comes from natural gas, making it the most cost-effective method.

AEROSPACE SERVICES

On April 28, 2015, Turkmenistan's first communications satellite "TürkmenÄlem 52°E" successfully reached its orbital position – 52 degrees east longitude at an altitude of 36 thousand km above the Earth. The resources of the TurkmenAlem 52.0E communication satellite provide ample opportunities for organizing communication services and digital television and radio broadcasting, creating VSAT networks, broadband Internet access, organizing departmental and corporate communication networks in the satellite coverage area.

Work is underway on a second communications satellite project in Turkmenistan. It is planned to increase the technical capabilities of the communications satellite through the use of modern space technologies while maintaining the current frequency, expand the coverage area through the use of additional frequencies, and also improve the ground infrastructure.

It is expected that the new artificial satellite will be used to accelerate the development of all sectors of the national economy. The Earth remote sensing spacecraft is extremely promising from the point of view of application in the national economy. In addition, it provides the ability to obtain data on hard-to-reach, high-speed and other objects, and also allows for observations over large areas of terrain.

In Turkmenistan, as in other countries, space imaging capabilities are actively used to study the Karakum Desert and other hard-to-reach areas in the country. The accuracy of terrain recognition at this stage exceeds 90%.

The territory of Turkmenistan is covered by space photography of the most diverse scales and types. The resulting images are used in the compilation of maps intended not only for economic activities, but also for the implementation of measures aimed at protecting the natural environment.

WATER-SAVING TECHNOLOGIES

In Turkmenistan, the introduction of high-tech and effective methods of irrigation of agricultural crops continues and is planned, work is in a process on the use of collector-drainage and wastewater, through their accumulation, purification, desalination, etc., since the agro-industrial complex directly depends on the water sector and, in connection With this, the adaptation activities of these two sectors are closely interconnected.

Several years ago, a project for the construction of the Turkmen lake “Altyn Asyr” was developed, the first stage of which was put into operation in 2009. Construction is estimated to cost approximately US$4.5 billion. Filling the lake to full capacity could take up to 15 years, after which Lake Altyn Asyr will occupy an area of 2,000 square kilometers and its maximum depth will be 70 meters.

This project represents the creation of a unified system of collectors for the targeted collection of drainage water from irrigated lands in all regions of the country and diverting it to the giant natural depression Garashor, which is located in the north-west of Turkmenistan.

CYBER SECURITY

Strengthening the country's cyber security is the need of the time. Thus, advanced digital technologies are being actively introduced in Turkmenistan within the framework of the concept of development of the digital economy, and work is in a process to train high-level specialists in this field.

The “State Program for Ensuring Cybersecurity of Turkmenistan for 2022-2025” is currently being implemented.

It is worth noting that in October 2022, on the basis of the Institute of Telecommunications and Informatics of Turkmenistan, together with the OSCE Center in Ashgabat, a Center of Excellence in Cybersecurity was opened. The center was created as part of an important project to transition the country to a secure digital system in order to ensure information security.

GOVERMENT TECHNOLOGIES

In the context of the development of the digital economy, special attention is paid to the creation of the Electronic Government system and the introduction of an information exchange system in the X-Road architecture format. Totaling over 2.5 million USD, the project, fully funded by the Government of Turkmenistan, aims to develop and deploy a pilot electronic data interchange system in Turkmenistan. Currently, the selection of the supplier is carried out jointly with the United Nations Development Program.

One of the most popular websites is the Public Services Portal "e.gov.tm", which provides citizens of the country with the opportunity to use more than 40 online services, in particular, making utility payments, paying for communication services and the education system, processing various documents and receiving legal assistance from relevant authorities without leaving home.

In addition, work is in a process to create a single information center "Data Center", and to establish digital document flow, the creation of an "e-government", which will allow interaction between various branches of government (G2G - government-to-government), between the government and citizens (G2C – government-to-citizen), between government and business (G2B – government-to-business).

FINANCIAL TECHNOLOGIES

In order to promote information about the economic reforms carried out in Turkmenistan, projects of regional and international importance, and attract investments from foreign and international banks, financial institutions, industrial groups, the website "Invest in Turkmenistan" (invest.gov.tm) was created.

In addition, the "Made in Turkmenistan" business portal has been created and has become a new online platform that brings together leading domestic manufacturers of a variety of high-quality consumer goods. The website "madeinturkmenistan.com.tm"

presents a convenient digital catalog containing basic and updated information about goods and services produced and sold in Turkmenistan, including data on their compliance with international standards and norms.

The process of digitalization of banks is actively working, aimed at modernizing the banking structure, expanding the range of products and channels of interaction with clients using modern technologies.

EDUCATION TECHNOLOGIES

In the course of digitalization, significant changes are taking place in the structure of learning and the organization of the educational process. A pilot version of the digital platform “e-Mekdep” has already been introduced in Ashgabat, which is actively used by teachers, schoolchildren and their parents.

This platform is a secure system that simplifies the work of teachers by automating document flow and provides access to the “Electronic Journal” and “Electronic Student Diary” online for parents. In the future, it is planned to develop an improved "e-Mekdep" application for mobile devices.

In addition, the Academy of Civil Service under the President of Turkmenistan has successfully implemented the Moodle e-learning program, which provides a mobile space for collaboration between teachers, students and students.

LITHIUM

Turkmenistan has all the resources to become the world's largest lithium producer and supplier of this strategic product to world markets. Garabogazkol, located on the eastern coast of the Caspian Sea, is considered the world's largest deposit of sulfate salts, with reserves estimated in billions of tons.

Garabogazkol is a vast salt basin with an area of more than 18 thousand square kilometers, representing a colossal resource potential for the country's chemical industry.

In the summer months, under the influence of solar heat, up to 16 km3 of water evaporates from the pool. As a result, the water level in the bay is lower than in the sea, and the bay is

continuously replenished with sea water and salts accumulate in it. The main ions are Na+, Mg2+, SO4 and Cl.

The waste brines contain compounds of valuable elements demanded by industry and agriculture, such as lithium, potassium, boron, bromine, etc. It is interesting that all of these elements are of industrial quality, which means they have export potential.

Another product contained in the natural waters of Garabogazgol is lithium bromide LiBr. Recently, absorption refrigeration units based on lithium bromide have found widespread use. In Turkmenistan, an industrial absorption refrigeration machine has been used at the "Ajanta" joint pharmaceutical enterprise for 25 years, which shows its environmental safety in hot climates.

OIL AND GAS TECHNOLOGIES

Technologies in the oil and gas sector play a crucial role in industry advancement. They enhance administrative efficiency, management effectiveness, and cost reduction in field development, material delivery, and processing.

Turkmenistan is renowned for its abundant hydrocarbon resources, including oil and natural gas fields such as Galkynysh (formerly South Yoloten), Osman, Minara, Tagtabazar-I, Caspian Sea offshore blocks, and the Dostluq field, along with the Central Karakum group of fields. The country focuses on exploring and developing these resources, constructing gas treatment and processing units, and utilizing modern geological exploration technologies, seismic imaging software, and drilling equipment. Turkmenistan aims to reduce methane emissions from the oil and gas sector, creating opportunities for international companies offering relevant products and services.

All components must be well-developed and interconnected to ensure efficient operation. It is important to acknowledge that the primary purpose of information technologies in the oil and gas sector may evolve based on external factors or internal requirements. Hence, an effective model should be adaptable to resolve emerging challenges.