

**«Development Strategy of Non-commercial Joint-Stock Company
«International Green Technologies and Investment Projects Center»
(2020-2024).**

Structure:

- I. Analysis of the current situation
- II. Mission and vision
- III. Strategic targets, objectives and expected results
- IV. Key performance indicators
- V. Action Plan for the Development Strategy of Non-commercial Joint Stock Company “International Green Technologies and Investment Projects Center (2020-2024)”.

Non-commercial Joint Stock Company «International Green Technologies and Investment Projects Center» (*hereinafter – Company*) has been established under the decree of the Government of the Republic of Kazakhstan № 224 dated April 27, 2018, under the initiative of the First President of the Republic of Kazakhstan – Elbasy Nursultan Nazarbayev, which was announced at the 70th session of the UN General Assembly in September 2015 as a heritage of «Astana Expo-2017» international exhibition.

I. Analysis of the current situation

Since the beginning of 2000, Kazakhstan's economic development has been mainly driven by an increase in extractive industries, which has made the country highly vulnerable to external market shocks.

In the addresses of the First President of the Republic of Kazakhstan Nursultan Nazarbayev to people of Kazakhstan "New possibilities of development in the context of the fourth industrial revolution" dated January 10, 2018, the need of increasing requirements for energy efficiency and energy saving, as well as sustainability and efficiency of the energy producers, the need to encourage businesses to invest in «green» technologies was mentioned.

The President of Kazakhstan K.K. Tokayev in his speech at the UN climate Summit in September 2019 (*hereinafter - the Summit*) noted that environmental degradation has become one of the most destabilizing factors in the world. The impact of climate change in Central Asia, in particular, will lead to serious existential problems, such as desertification, melting of glaciers and the consequent depletion of drinking and irrigation water resources.

The UN report presented at the Summit focuses on the fact that achieving the Sustainable Development Goals will require a fundamental change in the situation where economic growth is achieved at the expense of environmental degradation. In

this regard, the report highlights the need to increase countries' access to new technologies and knowledge.

Thus, the transfer of «green» technologies and the introduction of the «green» economy aspects becomes not just a newfangled trend, but a system for ensuring the survival of mankind and achieving sustainable development.

In 2016, Kazakhstan joined the OECD Declaration on Green Growth, declaring that it will strengthen its efforts to pursue green growth strategies, promote green investment and sustainable management of natural resources, and reform domestic policies to eliminate environmentally harmful measures. Currently, many international development banks have decided to invest only in "green" projects.

Kazakhstan is one of the first countries in the world after the Rio+20 Summit at the state level has adopted a strategic document –the Concept of transition to a "green" economy (hereinafter – the Concept). Our country has made significant progress in regulatory reform in support of the Concept, including the development of Kazakhstan's greenhouse gas emissions trading system, energy efficiency and renewable energy policies.

The global institutional arena for green growth is rapidly expanding with participants from international development institutions as well as governments implementing their green growth strategies and programmes. This rapidly increasing activities and the experience of individual countries demonstrate the obvious benefits of investing in green growth. At the same time, international public financial support for new programs is becoming an object of growing competition.

However, there are a number of standard barriers for the green growth investments. They can occur at the country level, a segment of the economy or a specific project, and is common for both public and private sectors.

Standard barriers for the green growth investments

<i>Category</i>	<i>Barriers</i>
Commercial risks	• <i>Lack of access to finance</i>
	• <i>Technological risks</i>
	• <i>Investment climate in a country</i>
	• <i>Lack of access to insurance coverage</i>
The risk associated with the technology or the product	• <i>The difference in the cost of technologies</i>
	• <i>Weak intellectual property protection</i>
	• <i>Absence of demonstration projects</i>
Political environment	• <i>Weak political institutions</i>
	• <i>Inconsistent policy</i>
Capacity and skills	• <i>Weak local institutional capacity</i>
	• <i>Lack of technical capacity</i>
Cooperation and partnership	• <i>Weakly developed cooperation centers</i>
	• <i>Weak sector and supply chain partnership</i>

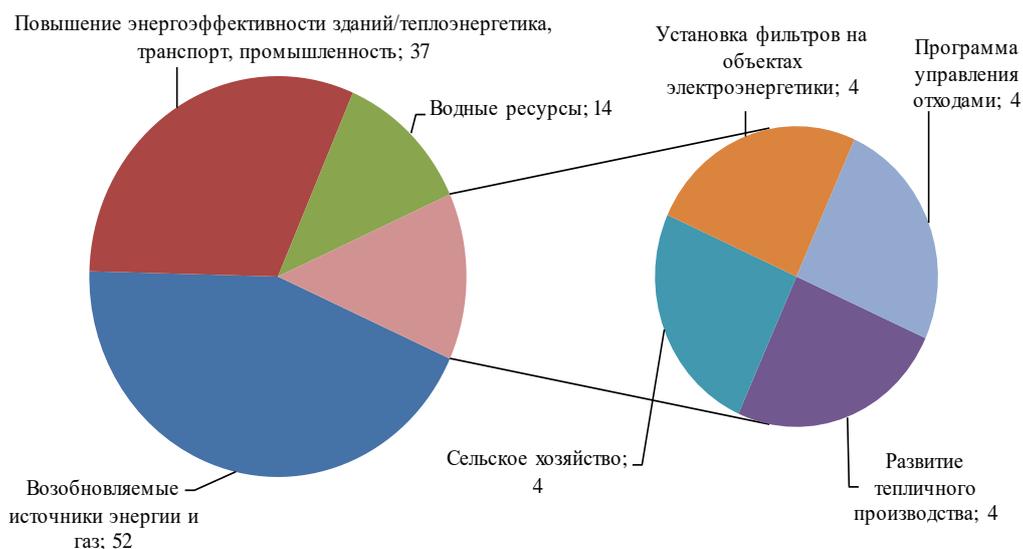
Information and knowledge

- *Data interpretation problems*
- *Few examples of sharing positive experience*

It is necessary to conduct research on these barriers (risks) on the ground level together with stakeholders, which should identify the key problems of the transition to a green economy and the implementation of Sustainable Development Goals, in particular the problems of attracting green investments and technologies, and ways to overcome them.

According to the estimates contained in the Concept for the transition to a green economy, the overall investment needs for its implementation cover energy supply and consumption, water resources, air pollution, waste management and efficient agricultural practices. The concept assumes that most of the investments will be made with the involvement of private investors without specifying the sources and measures to stimulate such private sector investments.

Total investment needs for the implementation of the Concept for the transition to a green economy by sector, 2016-2050, USD billion



Public financial institutions and the private sector are interested in investing in the transition to a green economy. However, policies to protect the environment and climate change, as well as to create an overall enabling environment to stimulate investment, are not sufficient to mobilize additional funding to achieve the objectives of the Concept.

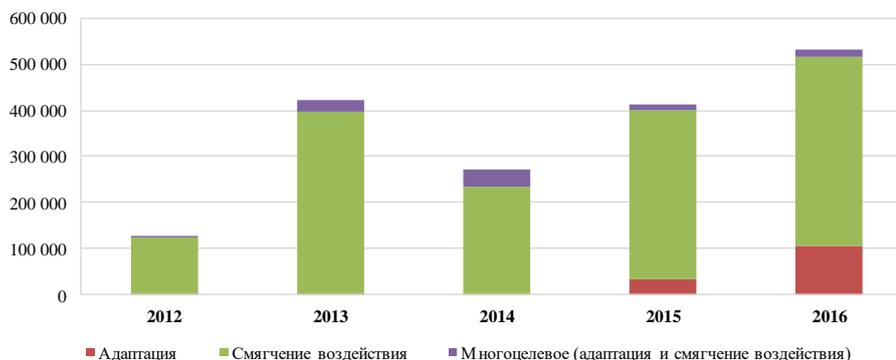
Currently there is no state Fund specifically designed to finance public investment in projects in the field of the environment. There are several state financial institutions that invest in projects designed to facilitate the transition of the country to a "green economy" (JSC "National managing holding "Baiterek" ("Damu" Entrepreneurship Development Fund" JSC, JSC "Development Bank of Kazakhstan"), Sovereign Wealth Fund "Samruk-Kazyna" JSC, etc.). However, the country does not

have a clear definition of green finance activities and related instruments that are agreed at the national level and can be provided by these public institutions. In addition, these institutions are not required to take climate or environmental risks into account in their corporate governance frameworks.

Although, these sovereign wealth funds and the Development Bank of Kazakhstan (hereinafter – DBK) have some experience, they do not currently have a clear mandate to support Kazakhstan’s transition to a green economy. Giving them such powers will require certain changes and additions to the statutory documents of national funds and banks (for example, the development Strategy of the DBK for 2014-2023). As a result, sovereign wealth funds and banks could direct large amounts of government funding to green projects, especially energy efficiency and environmental protection, which require more risk capital (e.g. equity investments) and risk mitigation instruments (e.g. guarantees).

In the period from 2012 to 2016, multilateral and bilateral development funding agencies allocated about \$ 1.76 billion to climate projects in Kazakhstan, which averages about \$ 352.2 million per year (figure 3.6). Most of the funding went to climate mitigation projects (87 %), 8% to climate change adaptation and 5% to multi – purpose mitigation and adaptation projects.

Annual climate Finance in the context of development allocated by multilateral and bilateral aid agencies, 2012-2016, US dollars



Source: <http://www.oecd.org/dac/stats/climate-change.htm>

Although these projects are referred to as "climate finance in the context of development", many of them also address other environmental challenges, including biodiversity conservation, air pollution control, environmentally friendly means of transportation, water supply and sanitation, and waste management.

The Astana international financial center (AIFC) was established in 2015 and started its operations at a full scale in 2018. One of the six priorities of the AIFC is to promote the development of "green" financing by providing the necessary conditions and infrastructure. As of 1 January 2018, the AIFC is an independent jurisdiction based on the principles of English common law, with a preferential tax regime and an independent financial court. The AIFC has established partnerships with stock exchanges such as the London stock exchange, NASDAQ and Shanghai stock exchange in order to become a platform for investments in environmentally sustainable

projects, "green" financing and lending for the issuance of "green" bonds. At the same time, the Company's objective is to cooperate with the AIFC in terms of further attraction of AIFC financing instruments for green projects, search for potential investors and issuers, joint taxonomy of green projects, research, etc. A Roadmap of cooperation between the AIFC and the Company was signed.

Kazakhstan faces a large-scale task to achieve sustainable, balanced "green" growth. This will require further reforms aimed at improving the system of public administration, transfer of innovations and technologies, increasing the openness and competitiveness of the economy, promoting environmentally and socially oriented development, ensuring equal access to education, employment and other economic opportunities.

Kazakhstan ranks 8th in the world energy intensity rank in connection with the use of outdated technologies. Therefore, to maintain the competitiveness of enterprises, basic industries need subsidies and grants (for example, according to the American Energy Development Agency, Kazakhstan spends more than \$ 4 billion annually for the indirect subsidies for energy and coal production).

One of the main activities of the Company is the development and support of the national policy in the field of "green" technologies and promotion of "green" business. It is necessary to identify market participants, their functions, responsibilities and powers, develop legislative frameworks, develop a methodology for green technologies and technology transfer, create a register of domestic and foreign technologies based on international experience, organize work to attract funding from international financial organizations, etc.

As a result of improvement of the market of "green" technologies there will be an opportunity of successful integration of Kazakhstan with the global market of "green" technologies, green projects will become more attractive for foreign investors from the economic point of view. The business community will be able to independently implement investment projects that favorably affect the fulfillment of Kazakhstan's obligations under the Paris agreement.

In the future, the Company on the principle of "single window", intends to provide legal and technical support for business projects in the field of "green" economy, ensuring the creation of comfortable conditions for investors.

The current situation in the field of environmental protection, the systematic increase in the level of negative impact on the environment from enterprises operating on environmentally inefficient equipment, as well as the global greening of international relations, require increased attention to the system of environmental protection management in Kazakhstan.

One of the main goals of the Company is assistance in developing the legal basis for the systematic transition of natural resources users of Kazakhstan to the principles of best available techniques (BAT) with the necessary state incentives in accordance with the best practices of OECD, EU, Russia and other countries.

In 2018 by order of the Ministry of energy of Kazakhstan the Company

developed a draft Concept of Kazakhstan's transition to the principles of best available techniques (hereinafter - BAT Concept). The BAT Concept aims to form the institutional framework for the transition of Kazakhstan to the principles of BAT by describing the mechanisms of interaction between government agencies, business structures, civil society and science. The main provisions of these documents are taken into account in the draft Environmental code, developed by the Ministries of ecology, geology and natural resources. The company is also guided by the main conclusions set out in the BAT Concept in the establishment and operation of the BAT Bureau.

Separately, an analytical review on the possibility of transition of Kazakhstan's energy enterprises to the principles of BAT has been prepared. These enterprises are the most problematic in Kazakhstan, both in terms of environmental pollution and greenhouse gas emissions.

Transition to the principles of BAT will allow the state to implement the tasks of ensuring a favorable environment for life and health of the population, environmental protection and biodiversity conservation, as well as optimization of the activities of industrial enterprises and other organizations based on compliance with the requirements and indicators established by national regulatory bodies and meeting the relevant international quality standards.

Transition to BAT principles will allow to solve three key tasks:

- to ensure the competitiveness of Kazakhstan's products;
- create a barrier to the import of dirty technologies;
- to improve the environmental safety of the country.

Overview of the international experience in the development of green technologies

In recent years, in the context of the implementation of the strategy of environmentally oriented growth, "green technologies" in the civilized world are developing at an accelerated pace. The most important incentives for growth are various government policies, as well as new opportunities for business in the environmental market, which is growing rapidly under the influence of demand from consumers.

The change of technological paradigm and diversification of production towards low-cost, low-waste, low-toxic "green technologies" occurred at the end of the XX century and affected almost all, both existing and newly developed technologies. In this regard, in developed countries, citizens together with governments set the task and adopt national and international programs to protect the environment and man from himself, realizing that the time has come to save the planet from ourselves, unreasonably, excessively exploiting and loading nature. The answer to these challenges was a new direction of science and practice called "green technologies".

According to the classification of the Organization for Economic Co-operation and Development (OECD), «green technologies» cover the following areas:

- environmental management (waste management, water and air pollution control, land restoration);

- production of energy from renewable energy sources (solar energy, biofuels, etc.), mitigation of climate change, reduction of harmful emissions into the atmosphere, improvement of fuel efficiency, as well as energy efficiency of buildings and household appliances.

Currently, "green technologies" are being implemented in the entire value chain of companies, including, in addition to production, consumption, management and methods of organization of production, in order to solve the global challenges for the sustainable development of modern and future society, namely:

- modification and replacement of hazardous industries;
- development of new alternative energy and new fuels;
- search for new approaches to safe and affordable food and water;
- protection against pollution of the atmosphere, soil, fresh water and oceans;
- reasonable regulation of demographics.

In a number of developed countries, large-scale state plans and programmes are in place to stimulate the development of environmental technologies and innovations, special research centers and funds are being established. Standards, taxes, subsidies and other public policies provide a significant incentive for the development of green technologies. Many programmes aimed at promotion of the development of environmental technologies operate in the US, and in the EU, under the seventh framework programme of scientific and technological activities, 10 billion euros were spent on the development of environmentally friendly technologies in 2007-2013.

The trend of recent years is the increased attention to environmental technologies on the part of rapidly developing countries. For example, significant sums are allocated for their development in China and India. China has more than 1,600 state-owned incubators and science parks, most of which are involved in clean technology projects. As a result, China holds one of the world's leading patents in six major areas, including wind power, biofuel production and clean coal.

The bulk of green technologies are concentrated in a relatively small number of countries, with different countries specializing in different types of technologies. Air treatment, water treatment and waste management technologies are actively developing in the OECD countries: in Australia –water treatment, in Denmark – renewable (primarily wind) energy sources, in Germany – air treatment, in Spain – solar energy. Significant progress in the development of "green technologies" is also noted in the BRIC countries: Brazil, Russia, India, Indonesia, China, and South Africa are developing technologies in the sphere of waste management, water pollution control and renewable energy sources.

In modern conditions, the introduction and implementation of "green" technologies are the main factor of technological changes and a condition for ensuring competitiveness, radically increasing productivity, improving the quality of life of the population.

A brief overview of the international experience of similar centers

In order to study international best practices in attracting green technologies and investments from the leading countries of the world and to be included in the priorities of its activities, the Center has concluded agreements with similar centers in China, Japan, Korea, the USA, Denmark, the United Arab Emirates, Finland and Belgium. When forming the Strategy

GreentechnologyCenterKorea (GTC-K) the Center, officially launched in 2013, is playing its main role in drafting laws in the field of climate technology, as well as in supporting technology transfer to developing countries as part of a global partnership.

Objectives:

- supporting national green technology policies and global collaboration;
- development of a global collaboration system for green technology and increasing technology transfer;
- green technology applicability forecast;
- supporting the state in creating laws for the study and development of green technologies.

Mission

Supporting national green technology policies and global collaboration:

- development of a global collaboration system for green technology and increasing technology transfer;
- green technology applicability forecast and supporting the state in creating laws for the study and development of green technologies;
- analysis of trends and development of green technologies and monitoring of relevant statistics; implementation of other tasks that are related to the goal of the center.

Vision - global leader in the sphere of green climate technology

GGGI - Global Green Growth Institute (Korea)

The GGGI supports the governments of its member countries in fulfilling the commitments set out in the Paris Climate Agreement and their sustainable development goals.

It provides technical assistance to governments through built-in country teams and helps in attracting finance for climate-resilient projects.

Goal - A global transition toward a model of green growth.

Vision - A resilient world of strong, inclusive, and sustainable growth.

Working on the thematic priorities of sustainable energy, green cities, sustainable landscapes and water supply, and sanitation, the GGGI seeks to deliver impact through six strategic outcomes:

- Greenhouse gas emission reduction;
- Creating green jobs;
- Increasing access to sustainable services such as clean, affordable energy, sustainable public transport, improved sanitation and sustainable waste management;
- Improving air quality;
- Adequate supply of ecosystem services;

- Improved climate change adaptation.

Shanghai Science and Technology Exchange Center in China

Since its establishment in 1983, the Shanghai Science and Technology Exchange Center has focused on the work of the Service Committee on innovative technologies in the sphere of science and technology and the Scientific and Technical Committee. The Center has achieved certain successes in strengthening support for the development of green technologies, the consolidation of innovative resources, military and civil integration, the innovation environment and others.

In the field of international cooperation, the center is actively conducting large-scale work in Africa, Europe, ASEAN, Central and South Asia. It conducts close scientific and technical cooperation in key sectors such as new energy sources, intelligent production, biomedicine, information technology, new materials, etc. Studying new models of investment and financial services for technological projects, creating a new international network of cooperation in the field of technology transfer, deepening the content and significance of international cooperation. Assistance in further raising the level of its own innovative potential and industrial technologies. Participation in the process of internationalization and the implementation of bilateral mutually beneficial development.

The creation of a green technology bank, assistance in the transfer and transformation of green technologies is a key task for the implementation of the “2030 Sustainable Development Program”. Through seminars between the Ministry of Science and Technology of the PRC and the city of Shanghai, it was decided to launch the creation of a green technology bank in Shanghai.

GreenTechCenter (Denmark)

The main task is to support Danish “green” companies and projects, organize an innovation platform with a triple helix, where targeted “green” companies, authorities, research and educational institutions unite, introduce innovations and collaborate in the development and marketing of new products and concepts.

Development, demonstration and commercialization of new technologies, system solutions and new renewable energy business models. *The mission* of the Green Tech Center is a triple helix innovation playground where dedicated green companies, authorities, research and educational institutions are networking, innovating and cooperating on development and marketing of new products and concepts.

We have a strong network and environment which makes it easy for our tenants and partners to meet and match with partners, customers, universities, authorities, investors and other stakeholders.

We have a number of demonstration facilities, live labs, workshop and services to further the development and growth of green companies.

We organise triple helix innovation projects to support our partners in their development and to contribute with new knowledge and knowhow within the green transition.

Vision - Green Tech Center wants to further innovation, demonstration and commercialization of sustainable energy solutions within energy production, consumption and storage as well as energy control of electricity, heating, cooling, data and print.

Conclusions

The company has studied international best practices in attracting green technologies and investments of leading countries of the world and the main activities of which have become priorities in the development of the Strategic targets. Agreements were concluded with similar centers of Korea, China, Denmark, Finland, Belgium, etc., the targets and objectives of which served as a guide for the Company in determining its own priorities in the implementation of its mission.

In General, the functions of all the above agencies coincide with the activities of the Company, namely, support for national policies in the field of green technologies, consolidation of innovative resources and global cooperation in the field of sustainable development and green growth. The governments, from the state budget, finance these centers.

EU countries experience

The EU environmental legislation system is generally recognized as the most developed in relation to BAT. This legal system serves to a large extent as a direct legislation and does not need to be further interpreted by acts of any authorities. In addition, the system covers almost all major issues of environmental protection and environmental management. In addition, the EU norms are the result of a compromise equal dialogue between society, the state and business.

The experience of applying an integrated approach to pollution prevention and control in the EU is more than twenty years. This approach was first reflected in the Council Directive 96/61/EU of 24 September 1996 "on integrated pollution control and prevention" (hereinafter – Directive 96/61/EU) [4], which was subsequently replaced by Directive 2008/1/EU of 15 January 2008 "on integrated pollution prevention and control".

Currently, the supranational regulatory framework in the EU on this issue is Directive 2010/7 /EU of the European Parliament and of the Council "on industrial emissions (on integrated pollution prevention and control)" of 24 November 2010 (hereinafter – the Directive).

The main principle of the EU environmental legislation is to create a balance between the requirements to minimize pollution and real technical capabilities. The Directive provides for the use of a mechanism for calculating BAT-based impact indicators.

Thus, according to article 3 of the Directive, "best available techniques" refers to the most effective and advanced stage in the development of activities and methods of their implementation, which indicates the practical suitability of certain technologies to meet emission thresholds and other permit conditions aimed at preventing or, if this is not feasible, reducing emissions and the impact on the environment in general.

Although different approaches to BAT implementation may be applied in different countries, there are common elements (especially in the European Union), among which are:

- ✓ regulatory framework, including the existence of national and / or supranational legislation;
- ✓ types of industrial activities covered by the issuance of a comprehensive (environmental, nature protection) permit and which are subject to assessment in order to determine BAT;
- ✓ authorized body issuing complex (environmental, nature protection) permit;
- ✓ validity period of the integrated (environmental, nature protection) permit; (reference: this comparison parameter is important: if no changes have been made to the technologies used during the validity period of the integrated (environmental, nature protection) permit, an additional BAT assessment may not be required during this period of time);
- ✓ authorized body responsible for BAT/development of documents used for technology assessment;
- ✓ documents used for technology assessment (e.g. BAT BREFs, standards or other documents);
- ✓ technical working / expert groups whose main functions should be related to the development/application of documents for the purpose of technology assessment;
- ✓ information resources, e.g. BAT registry;
- ✓ the system of preparation of experts in the field of BAT;
- ✓ number of technologies/industries using BAT.

The main element in order to identify the best available techniques, the Directive specifies that BAT BREFs (hereinafter - BAT BREFs) should be developed. These handbooks should be reviewed and updated as necessary based on the exchange of information with stakeholders.

The European Integrated Pollution Prevention and Control (IPPC) Bureau, located in Seville, is responsible for the development of the guidelines within the framework of the Directive. The Bureau shall monitor the updating of BAT BREFs no later than eight years after the publication of the previous edition.

Currently, the European Union has developed and adopted 32 reference documents on BAT, which relate to various industries.

The reference documents developed are not prescriptions and do not set or give emission/discharge limits by industry and at the national, regional, or local level.

Reference documents serve as useful information source for all economic entities, as they have data on the most effective solutions that should be directed to the rational use of resources and reduce the negative impact on the environment.

Review of the experience of the countries of the Eurasian Economic Union EAEU (Russia, Belarus)

Russian Federation

In Russia, the first stage for facilitation of the transition to environmental regulation of large enterprises of key sectors of the economy on the basis of BAT is the entry into force on January 1, 2015 of the law "On amendments to the Federal law" on environmental protection" and certain legislative acts of the Russian Federation " dated July 21, 2014 No. 219-FZ.

The main provisions of the system of state regulation in the field of BAT are aimed at the classification of facilities that affect the environment. The legislation defines state control measures applicable to four different categories of facilities that have a negative impact on the environment.

The first category is characterized by the highest intensity of impact on the environment, the fourth - the least. The Integrated Environmental Permit (IEP) is a single official document confirming the ability to carry out activities related to the environmental impact and containing mandatory requirements for environmental protection. Obtaining IEP is mandatory for facilities with significant environmental impact (category I). Technological standards and indicators ensure that the specifics of the technology used are taken into account and allow certain preferences to be given to enterprises implementing BAT.

The legislation provides an extensive list of incentive measures for the transition to BAT of manufacturing enterprises. The main principle of these measures is to reduce the amount of fees for negative impact up to its cancellation for enterprises that effectively implement BAT, as well as tax incentives in the form of a 3-year exemption from property tax, as well as the use of an accelerated depreciation rate for fixed assets, possessing high energy efficiency.

The state order of transition to the principles of BAT is defined. The Rules for defining technology as best available, as well as the development, updating and publication of informational and technical reference books on BAT were approved.

The Rules provide criteria on which basis the technological processes, equipment, technical methods and other methods can be defined as BAT: a) the lowest level of negative environmental impact per unit of time or the volume of manufactured products (goods), work performed, services provided or compliance with other environmental impact indicators provided for by international treaties of the Russian Federation; b) the economic efficiency of implementation and operation; c) the use of resource and energy-saving methods; d) implementation period; e) industrial implementation of technological processes, equipment, technical methods, other methods at two or more facilities in the Russian Federation that have a negative impact on the environment.

The BAT reference book (BREF) includes a description of the main technological processes specific to the industry (in our case, natural gas production), focuses on the environmental aspects and the environmental impact of the industry, justifies a number of basic criteria that make it possible to determine the best available techniques for the appropriate industry (in particular, such as technological indicators

of emissions, discharges of pollutants, waste generation, etc.) and offers a list of technologies classified under these criteria according to the BAT.

Besides, the BREF, describing promising technologies in the corresponding section, defines the vector (direction) of industry development. Since the active introduction of promising technologies transfers them to the category of BAT, thereby increasing the technological level of the industry development.

The list of facilities required to introduce BAT includes the largest metallurgical, chemical, mining, petrochemical, oil producing, pulp and paper enterprises, as well as water utilities. In addition to the “pilot” companies included in the list of the Ministry of Natural Resources of Russia, category I enterprises that will be commissioned on January 1, 2020 will be required to comply with BAT principles. All other companies not included in the list of “pilot” companies of the Ministry of Natural Resources of Russia will have to obtain comprehensive environmental permits for facilities of category I until January 1, 2025.

Republic of Belarus

The best available technical methods (BATM) have been introduced in the Republic of Belarus. The National Strategy for the Implementation of Integrated Environmental Permits for 2009–2020 (approved by Decree of the Council of Ministers of the Republic of Belarus dated July 25, 2009 No. 980) defines the tasks and prospective areas for the implementation of integrated environmental permits (IEP) in the Republic of Belarus, as well as the best available technical methods (hereinafter - BATM) as a mechanism for the comprehensive prevention and control of environmental pollution.

Within the framework of the regulatory basis of the Republic of Belarus, a phased introduction of BAT and permits was provided. Integrated environmental permit - a document issued by specially authorized state bodies to environmental users engaged in environmentally hazardous activities, certifying the right to pollutants in the air, special water use, storage and burial of industrial wastes and other harmful effects, subject to environmental protection requirements, established by law.

In order to provide methodological assistance in the implementation of the best available technical methods by nature users, a center for BATM has been established, which collects and disseminates information in the industry. The BATM center covers industrial combustion facilities with an estimated thermal capacity of more than 50 MW, it also includes energy production and those industries that use "traditional" (commercially available and standard) fuels.

The objectives of the BATM Center are:

- search and translation of information;
- the formation of working groups for the assessment of reference books on BATM;
- collection, accumulation and dissemination of information;
- creation of a software product for the introduction of the BATM database;

- the formation and placement of the database and national recovery of BATM on the official website of the center;
- updating, revising the database and national guidelines for BATM;
- provision of technical assistance.

The introduction of integrated environmental permits in the national permitting system in the field of environmental protection is aimed at approximating the legislative framework of the European Union, which includes an integrated permitting system in accordance with Directive 2008/1 / EC.

The fundamental legislative acts in the field of environmental protection establish the need for the introduction of BATM by nature users - identified objects that have a comprehensive impact on the environment, for which the introduction of BATM is a priority; a list of benefits for BATM is developed.

The development of these documents is based on the relevant EU reference books, which were translated into Russian as part of the international technical assistance project "Strengthening the institutional and legislative framework for the implementation of integrated environmental permits in the Republic of Belarus", funded by the World Bank.

Conclusions

In 2018, the Company conducted a review of international experience on the transition to BAT principles by the request of the Ministry of energy of the Republic of Kazakhstan. The review contains the results of a comprehensive analysis of approaches to determining the best available technologies and similar solutions aimed at preventing and controlling industrial emissions in a number of States.

While preparing the review, the specific differences in BAT application procedures are taken into account, so the collected material provides an opportunity for interstate comparison of existing approaches to their definition. The review does not prescribe any preferred procedure for establishing BAT; rather, it aims to demonstrate the typical features and limitations of different methodologies, to present the positive results of those countries where BAT identification and application procedures have already been developed, and to assist public authorities that are interested in implementing such approaches.

In this regard, the Company has identified one of the strategic targets to facilitate the transition of Kazakhstan to the principles of BAT. The Company plans its activities based on the policy determined by the Ministry of ecology, geology and natural resources.

In countries that have switched to BAT principles, there are special institutions to conduct a harmonized policy of transition to BAT and developed basic documents used to assess BAT, in the EU-BAT Bureau (Seville), in the Russian Federation-BAT Bureau (Moscow), in Belarus - the National center for BATM (Minsk), in South Korea - the National Institute for environmental studies, etc. These separate institutions are not a part of a state body structure.

In this regard, it is necessary to consider appropriate amendments to the legislation in order to transfer functions in the field of BAT to the Company by creating, within the Company, the BAT Bureau and the BAT Technical Committee

that is a managing body of BREFs development process. Herein, the most thoughtful approach should be provided, including analysis of the current situation within the sectors and the most vulnerable industries in Kazakhstan (through inventorization and assessment of "the Technological Park" by industry), including the possibility of adoption of the national reference documents on BAT in some areas, taking into account the specifics of Kazakhstan's industry, methods of using reference documents.

In order to accomplish this objective, the Company will carry out works on development of draft regulatory legal framework for the institutionalization and transition to BAT; the information exchange and data collection with the use of digital technologies necessary for the development of BAT; the organization of Technical Committee and technical working groups; development of BREF for the energy sector on the basis of analysis and methodology as a result of research enterprises. Informational support was provided to target groups in order to explain the transition to BAT principles, to develop BREFs, recommendations for the development of the regulatory framework.

SWOT analysis of IGTIC NJC

Strengths of the Company	Opportunities (external environment)
<ul style="list-style-type: none"> • Support of shareholders • Strong partners (AEOK, Development Foundation of Publically Important initiatives, etc.) • Established links with the Local Executive Bodies. • Established links with the international community (UNDP, IRENA, EU, OSCE, banks, etc.) • Dualism of the Company's goal: regional and international activities • Experienced management and qualified specialists in various fields of activities (energy, environmentalists, business-oriented specialists) • Budget program (BP 044) • Positive image 	<ul style="list-style-type: none"> • Национальная политика развития зеленой экономики (Концепция) с установленными индикаторами прогресса (Поддержка правительства). • National policy for the development of the green economy (Concept) with established indicators of progress (governmental support). • Developed international market of green technologies • Interest of foreign investment in green technologies • High patent activity • Active growth of technology commercialization • Demand for the Register of green technologies • Implementation of green technology standards in Kazakhstan • Development and implementation of economic incentive measures in the Republic of Kazakhstan • The company does not have a strong competition in its field • The interest of the international community in cooperation with Kazakhstan (the Company can become a center of attraction in the Central Asia)
Weaknesses of the Company	Threats (internal environment)
<ul style="list-style-type: none"> • Absence of additional sources of financing (except for RB) • Company restructuring • Schemes of interaction with partners are under development • Internal regulations are under development 	<ul style="list-style-type: none"> • Kazakhstan is rich with natural resources (oil, gas, coal, uranium) • Insufficiently prepared legislative framework • Weak awareness and demand for green technologies from business • The financial sector is not adapted for green technologies • Difficulties arise in the implementation of green projects (financial, social barriers) • Financial incentives for projects are not fully utilized • Lack of separation of participants' powers in the GT market and lack of communication between them • Lack of qualified green technology professionals • Undeveloped market of environmental services and goods

II. Mission and vision

Analyzing the international experience and taking into account the requirements of the national policy on green growth, the Company defined its Mission in promoting green technology and best practices, the implementation of which will contribute to achieving the strategic target of Kazakhstan joining the 30 most competitive economies in the world, to improve the quality of life of the population and reducing the negative impact on the environment.

Mission

Promotion of green technologies and best practices to increase the competitiveness of the economy, the quality of life of the population and to reduce the negative impact on the environment.

Vision

National coordinator of green technologies market and a recognized international partner in the field of green growth.

III. Strategic targets, objectives and expected results.

Main strategic targets 2020-2024

1. To create conditions for the development of green technologies market in the Republic of Kazakhstan.
2. To promote the transition of the Republic of Kazakhstan to the principles of best available techniques (BAT).
3. To become a recognized international partner in attracting green finance, sharing experience and transferring knowledge.

Targets of supportive directions

- Informational promotion of green economy principles.
- Building scientific capacity in the green economy.
- Improving the efficiency of the Company.

Strategic target 1. To create conditions for the development of green technologies market in the Republic of Kazakhstan.

Objectives:

- 1.1. Adaptation of the Kazakhstan's green technologies and projects market to modern conditions.
- 1.2. Promoting development of green business.

Objective 1.1 Adaptation of the Kazakhstan's green technologies and projects market to modern conditions.

Analysis of the internal and external markets of green technologies.

In order to develop the national policy in the field of green technologies and

projects, the Company plans to analyze the domestic market of green technologies of the Republic of Kazakhstan in the context of regions, as well as the analysis of international experience: tendencies and instruments for the development of green technologies (benchmarking). As a result of the analysis of the international market, it is planned to identify examples of effective functioning of the market of green technologies and projects in order to improve the domestic market of green technologies. Based on the results of the analysis, proposals will be formed to update the Concept of transition to a green economy and the action Plan for its implementation.

Assistance in improving the legislation of Kazakhstan in the field of green technologies and projects.

The Company will carry out work on the analysis of existing sectoral laws and regulations in the field of environmental protection, energy, water resources, organic agriculture, urban infrastructure, etc.

Based on the results of the analysis, existing legislation, assessment of problem areas and understanding the needs of the green technologies market, proposals for amendments to the Environmental code and other legislative acts and regulations will be made. The amendments will include the introduction of terminology on green technologies, as well as proposals for economic incentives for the development of green technologies.

The Company will develop proposals for the development of standards defining technologies as green technologies, which will reflect the classification (taxonomy) of green technologies, criteria, requirements for green technologies and projects, development and monitoring the Register of green technologies, the mechanism for issuing a certificate of conformity in accordance with the legislation

As a result of the work on the legislation, it is planned to actively interact with interested participants of the green technologies market, deputies and representatives of state bodies.

Objective 1.2 Promoting development of green business.

Formation of green technologies market (participants, “Single window”, etc.).

The work on the formation of the green technologies market will be carried out in order to develop the green technologies market. As the result the market participants will be determined, a database of market participants will be developed, the mechanisms of market participants interaction will be developed according to the principle of "Single window".

In order to determine the demand for green technologies and projects, the Company will conduct research, surveys, questionnaires to identify the demand of market interested parties for green technologies, projects and attraction of finance. Based on the analysis of the research results, the Company will form proposals for business regarding the green technologies, a portfolio of projects for financing. When processing requests from business, the Company will ensure close cooperation with

government and other organizations, including various associations, banks, AIFC, etc.

The Company will organize meetings of investors and technology owners with government agencies, subjects of industrial and innovative activities, as well as associations of private entrepreneurs in order to ensure full support of business according to the principle of “Single window”.

Investors will be provided with investment proposals and the necessary support in the process of finding a partner or implementing investment projects.

In addition, the Company plans to launch a Database (a digital platform) that should assist in providing a wide range of services to businesses, investors and technology owners. The platform will host business-profiles available for business, investors, technology Register of green technologies, special maps, a list of potential projects for implementation, a mechanism for the inclusion of technology in the Register of green technologies, the procedure for issuing Certificate etc. These measures will allow the Company to provide comprehensive business support, investors, technology owners, which will create favorable conditions for the introduction of green technologies and projects, creation of new green productions and modernization of existing ones.

Besides, in the process of considering potential projects, the Company will provide consulting services for businesses on green technologies, finances, technical support, conduct research on environmental, economic and climate issues on a fee basis.

Developing standards on green technologies.

Starting from 2020, the Company will conduct a study of the principles of standardization for the further formation of needs (applications) in the development of standards for green technologies. In Kazakhstan, the development of standards is carried out by state and interstate technical committees for standardization, other interested legal entities of the republic in accordance with the objectives of state standardization plans (programs) or on an initiative basis.

The Company will prepare and formulate an application for the development of standards to the authorized body, after identifying priority areas (standards for green renewable energy technologies, construction, etc.) for developing standards for green technologies.

The application will indicate the purpose and rationale for the development of the standard. An already developed draft standard, technical task for its development or an existing international standard may be attached to the application. In the technical task, will be indicated: the stage of development of the standard and the timing of their implementation; sections of the standard; main characteristics and indicators of the object, planned for standardization; lists of coordinating organizations and documents submitted with the standard; international standards, with the norms of which it is proposed to harmonize the requirements of the developed standard, other requirements of the customer. When developing the standard, feedback on the standard of subjects from the field of its application will be taken into account. In general, the

standardization procedure will be carried out in accordance with the requirements of the standard ST RK 1.2-2013 "Procedure for the development of national and preliminary national standards", as well as in accordance with the Rules for the development, coordination, accounting, approval, examination, amendment, cancellation and implementation of national standards, preliminary national standards, classifiers of technical and economic information, with the exception of military standards for goods (products), military and dual-use work and services. Source: <https://kadry.mcfr.kz/news/780-qqn-16-m12-13-12-2016-poryadok-razrabotki-natsionalnyh-standartov-respubliki-kazahstan>.

Creation of an effective system of commercialization of green technologies, business support and investments

The Company plans to become a Center of competence for the commercialization of green technologies. It will play a key role in coordinating the process of promotion and implementation of green technologies, focused on the technological demand of the national and global market.

Identification of the best ideas/projects to develop the local potential of green technologies. In order to identify the best green technologies ready for commercialization, the database of green technologies will be constantly updated through interaction with various sources of new ideas and technologies, including: research institutes and higher education institutions; existing businesses, small and medium enterprises, industrial companies; technical and professional sources, such as technology transfer networks, patent databases, product catalogs and specialized consultants.

Commercialization of green technologies in three main areas: the launch of a new business project for commercial use of the technology, selling licenses to use the technology to existing business, exploitation of technology through the provision of services, including technical consulting, analytical and expert services, and research contracts.

Providing ongoing support to technology developers and entrepreneurs in the form of a range of services, such as acceleration, business incubation, methodological support of the process of commercialization of technologies, attracting investment.

Providing the following support tools for the implementation of the Global Cleantech Innovation Programme with UNIDO: intensive development programme through mentoring, training, networking, assistance in marketing and market research, access to investors, as well as holding practical events - technology brokerage.

Expected results

Solving the tasks of the Center's first strategic target will contribute in building infrastructure for the development of the green technology market in Kazakhstan, developing green business through the promotion and adaptation of green technologies, and will also help to create conditions for attracting green financing and redirecting funds from international financial organizations to green projects. Promotion of green technologies and best practices, assistance in the implementation of green projects will

be an important element in increasing the competitiveness of the economy, the quality of life of the population and reducing the negative impact on the environment.

Results:

- development of the definition of “green technologies”;
- development of the draft and submission for approval of the rules for recognizing technologies as GT (2020);
- development of proposals for improving legislation and initiatives on GT to be included in the "Action Plan for the transition to a green economy" (2020);
- implementation of the “Single Window” principle (2020-2024);
- Formation of investment projects portfolio (2020 – 1 project, 2021-2024 - at least 3 projects);
- Development of standards for green technologies (RES, construction, etc) (2020-2024).
- to become a competence Center for the commercialization of "green" technologies and the development of technological entrepreneurship. Raising funding for the support of the competence Center (2020-2024).

Strategic target 2. To promote the transition of the Republic of Kazakhstan to the principles of best available techniques (BAT)

Objectives:

- 2.1. Establishment of BAT Technical Committee
- 2.2 Creation of an independent expert pool on activities defined by the authorized body in the field of environmental protection
- 2.3 Institutionalization of the transition to the principles of BAT: preparation of the regulatory, technical and legal framework.
- 2.4. Creation, organization and support of activities of technical working groups, while: defining technology as a BAT; developing and updating of BAT reference documents (hereinafter – BREF documents), BAT conclusions; conducting a technological audit.
- 2.5. Consulting interested parties on the transition to the principles of BAT, conducting training.

Objective 2.1. Establishment of a Technical Committee on BAT.

In accordance with the legislation of the Republic of Kazakhstan in the field of standardization, Technical committees for standardization are created. According to the draft Environmental Code of the Republic of Kazakhstan, the reference book on the best available techniques refers to the national standard, which is a document of the national standardization system, containing systematized data in a specific area of application of the best available techniques and including a description of technological processes, technical, managerial and organizational methods, approaches and practices and other data related to the scope of the best available techniques. In this regard, in accordance with the requirements of the Rules for the creation, work and liquidation

of technical standardization committees, approved by Order of the Minister of Investment and Development of the Republic of Kazakhstan dated December 26, 2018 No. 919, a package of documents has been prepared for the establishment of the Technical committee for the best available techniques (BAT),

BAT TC performs the following functions:

- takes part in development of documents on standardization and develop them;
- organizes technical discussion of the content of draft national standards in accordance with the assigned area of activity with the members of the Technical Committee for standardization;
- makes proposals for the formation of a national standardization plan;
- sends requests to state bodies, legal entities or individuals on issues within their competence, on behalf of the basic organization;
- participates in scientific research in the field of standardization;
- participates in the work of Technical Ccommittees for standardization of international and regional organizations for standardization;
- carries out monitoring in the field of standardization on the fixed objects of standardization.

Objective 2.2. Creation of an independent pool of experts on activities defined by the authorized body in the field of environmental protection;

As part of the pilot period, a pool of independent experts in economic sectors will be formed. These experts will participate in the determination of a technology as best available, in the process of technological audit and subsequently in the development of BREF.

Objective 2.3. Institutionalization of the transition to the principles of BAT: preparation of the regulatory, technical and legal framework.

In 2020, Kazakhstan's transition to BAT principles requires the establishment of an institutional and legislative framework for the transition to BAT principles. To do this, it is necessary to create a national Bureau of BAT as part of the Center. The BAT Bureau coordinates, organizes and directs the activities of technical working groups (TWGs) to determine the best available techniques, to develop, update and publish BREFs, to organize a technological audit, the results of which are the basis for the development of primary industry BREFs, expert support to industrial enterprises. To ensure the transition to the principles of BAT, the Center develops draft normative, technical, regulatory and legal acts: Regulation on the activities of the BAT Bureau, the procedure for determining the technology as best available, the procedure for the formation of the TWG, its activities and termination, the Regulation on the activities of the technical committee on BAT, the procedure for forming an independent pool of experts (by industrial sector), the procedure for conducting a technological audit. Drafts will be prepared and sent to the authorized bodies for approval and their adoption.

Objective 2.4. Development of BREFs. Creation, organization and support of activities of technical working groups, while: defining technology as a BAT; developing BAT reference documents (hereinafter – BREFs), BAT conclusions; conducting a technological audit.

Technical working groups on BAT (TWG) by economy sector will be created and approved by order of the CEO of IGTIPC NJC. In some cases by type of activity, based on a List of 50 enterprises identified by the Ministry of ecology, geology and natural resources of the Republic of Kazakhstan. Since these enterprises were the first to receive comprehensive environmental permits in 2025: electric power, mining and metallurgical complex, oil and gas processing, oil and gas pipelines transportation, crude oil and gas production, production of chemical products). All interested parties will be invited to the structure of the TWG: independent experts, technologists of industrial enterprises, representatives of industrial scientific organizations, specialists of industrial government bodies of the relevant industry.

Before starting the development of BREFs, it is necessary to conduct a comprehensive technological audit of not only 50 enterprises, but those who carry out similar activities in the relevant sectors of the economy. BREFs is developed for the industry in order to establish a balance to reduce environmental impact.

Objective 2.5. Consulting interested parties on the transition to the principles of BAT, conducting training.

The BAT Bureau will carry out consulting works with interested parties. Together with international organizations, trainings, seminars, round tables on BAT issues will be held for all interested bodies.

Expected results

Implementation of the objectives of the second direction will allow the Center to act as a platform for a harmonized policy of transition to the principles of best available techniques (BAT), the development of fundamental documents used to assess the best available techniques, taking into account the creation of a balance between the requirements to minimize environmental pollution and the real technical capabilities of enterprises.

Results:

- creation of BAT system: creation of legal and regulatory framework for the activities of BAT Bureau. Before 2024, development of 6 BREF documents in the following areas: production of electric and thermal energy; transportation of oil and gas; extraction of crude oil and gas; production of mineral oils; petrochemistry, mining and metallurgy industry (according to the List presented by the Environmental Regulation Committee of Ministry of ecology, geology and natural resources of the RK);

- creation of a professional community in the field of BAT;

- raising awareness of interested parties on the issues of transition to the

principles of BAT.

Strategic target 3: To become a recognized international partner in attracting green finance, sharing experience and transferring knowledge

Objectives:

- 3.1 Accreditation of the Company to the Green Climate Fund (GCF)
- 3.2 Attraction of financing within the framework of the international programs (UNIDO, UNDP, EU, etc.). participation in tenders (EBRD, WB, ADB, etc.).
- 3.3 Implementation of regional projects.
- 3.4 Assistance in development of national climate policies and measures for adaptation to climate change.
- 3.5 Cooperation with international organizations in the field of sustainable development: exchange of experience and increase of expertise of the Company.

Objective 3.1. Accreditation of the Company to the Green Climate Fund (GCF)

Preparation for accreditation.

The Company will take the following measures:

- Preparation and submission of an application to participate in Readiness Programme;
- Preparation a project portfolio and necessary documents in accordance with the requirements of the GCF;
- Completion of self-assessment tool in compliance with the requirements by GCF to get accredited;
- Preparation on receiving letter of nomination on accreditation from country's NDA (National Designated Authority)/ obtaining no objection letter by NDA of the RK;
- Opening of OAS (Online Accreditation System) account via the GCF Secretariat;
- Preparation and submission of online application for accreditation through OSA (Online Accreditation System);
- Payment of the relevant accreditation fees;
- The GCF Secretariat will undertake an institutional assessment and completeness check of the documented material provided by the entity regarding the Company's policies, standards and guidelines relevant to the GCF's accreditation requirements;
- The review will be received from GCF Secretariat (if necessary documents shall be finalized)

Accreditation review and GCF Board decision. The GCF's accreditation Panel will review submitted accreditation application and supporting documents. Once the GCF Board approves accreditation, the Company will move onto Stage 3 – post accreditation review and legal arrangements

Post accreditation review and legal arrangements. Following accreditation approval by the Board, the Company will complete legal arrangements with the Fund:
-payment fee will be validated and registered;
-legal arrangements will be finalized and signing of the Accreditation Master Agreements (AMA) with the GCF.

For reference: on a regular basis, work is carried out to improve the status of accreditation by sending repeated applications and continuous improvement of projects and regulations of the Company.

Objective 3.2. Attraction of financing within the framework of the international programs (UNIDO, UNDP, EU, etc.). participation in tender bidding (EBRD, WB, ADB, etc.).

In order to attract financing, the Company is working on the implementation of the Global innovation program of clean technologies UNIDO "CleanTech" as the main operator. Development, acceleration and commercialization of green startups in Kazakhstan (3 years), attracting funding under the program READINESS 2.

To participate in tenders of international financial institutions, the Company monitors the tenders of the EBRD, WB, ADB, etc., and prepares and directs "green" investment projects.

Objective 3.3. Implementation of regional projects

The Company will establish long-term cooperation with international organizations and relevant government bodies, companies of the leading countries of the world in order to attract their experience in the field of "green" technologies, as well as to promote the "Green Bridge" Partnership Program.

- Development of project portfolios. Attracting foreign investments and green technologies to implement projects in Kazakhstan.
- Establishment of a Central Asian platform to promote the principles of best available techniques (BAT) on the basis of the Company with OECD support.
- Signing a Cooperation Agreement with GGGI (Global Green Growth Institute). Attraction of project funding in Kazakhstan.

- Monitoring and implementation of achieved fundamental understanding, and establishing further cooperation with international organizations (UN, OECD, FAO, OSCE, IRENA, etc.).

Objective 3.4. Cooperation with international organizations in the field of sustainable development: exchange of experience and increase of expertise of the Company.

- Studying the experience of leading countries and international organizations in order to exchange information from expert, transfer and attract advanced “green” technologies, the possibility of training of the Company’s employees in their training centers, studying the experience of BAT in other countries, as well as participation of foreign companies in the most promising projects in Kazakhstan.
- Involvement of experts to evaluate and improve the Company's program portfolio.
- Organization of international events in Kazakhstan and abroad on specialized topics.
- Training, policy consultations, seminars and study tours at the request of international partners to learn about EU environmental policies and best practices. Implementation of the EU-Central Asia water and environment cooperation platform (WECOOP) as national coordinator (3 years).
- Preparation of reference and analytical information, reviews, as well as ensuring visits and negotiations of the Company's management with foreign partners.

Expected results:

- Getting accredited by the Green Climate Fund for the attraction of financing and getting support for the projects (2020-2024).
- Formation of a portfolio of projects through the international programs financing (2020-2024).
- Initiation and participation in the implementation of regional projects in the field of green technologies (2020-2024).
- Recommendations on the use of green technologies in the framework of low-carbon development of Kazakhstan and adaptation to climate change.
- Joint research, programs and projects with international organizations.

Target 4: Informational promotion of “green economy” principles

Objectives:

4.1. Development and implementation of PR strategy for the period 2020-2024, approval of information policy and annual media plan.

4.2. Further development of the Internet resource as a key source of information in the field of green technologies and best practices.

4.3. Introduction of alternative media promotion tools, creation of a pool of journalists, bloggers, informational events, formation of an expert pool of speakers and partners.

4.4. Development of a digital platform for providing information and analytical services.

Objective 4.1. Development and implementation of PR strategy for the period 2020-2024, approval of information policy and annual media plan.

Planning of key events on media plan, carrying out image activities using all media tools on a regular basis in accordance with the guidelines of available data, transparency and objectivity, that will provide maximum and comprehensive coverage to involved audience and stakeholders, in regards activities of the Company.

Objective 4.2. Further development of the Internet resource as a key source of information in the field of green technologies and best practices.

In order to increase the demand and visit on the website as a useful content it suggested to expand the level of information services on green scopes by uploading:

- Digest news on weekly basis (functioning as RSS feeds);
- open data (legal, methodical and other information)
- reports on ongoing events in the Company
- web services and options for users (coal footprint calculator, eco monitoring map, etc.).

Objective 4.3. Introduction of alternative media promotion tools, creation of a pool of journalists, bloggers, informational events, formation of an expert pool of speakers and partners.

The formation journalists pool and bloggers by establishing friendly and trust-worthy relationship that will increase the degree of information literacy and loyalty of opinion leaders to the activities of the Company. Knowledge of the specifics when submitting information materials in General will improve the perception of innovations related to the implementation of the principles of the green economy.

Objective 4.4. Development of a digital platform for providing information and analytical services.

To achieve these goals, it is necessary to develop a modern tool for monitoring business entities, introducing “green” technologies, that will become a gateway for

processing, evaluation and supporting specific projects to improve the environment and climate change mitigation in the country. The use of digital technology will increase awareness towards national authorities, as well as all stakeholders in the field of environment and climate.

Creation of geo-data portal to monitor green technologies implementation (digital platform), designed to store, process, analyze and to make available information in regards implemented green technology projects, as well as BREFs and finding on BAT, in order to improve the environmental condition of the regions and increase the investment attractiveness of the country in the field of green economy, as well as improving the collaboration of manufacturers of the best available and green technologies, investors and business representatives.

The solution of this problem is associated with the positivity of the indices of availability of information systems and information resources that are accompanied by the Company:

- support of the Company's infrastructure
- e-mail server (MS Exchange Server)
- corporate portal (Website, Documentolog, etc.)

Expected results:

- Improving the image of the Company as a driver of green growth, increasing the citation index and number of publications of the IGTIC brand.
- Increasing the coverage of the population and the level of knowledge of the target groups of Kazakhstan regarding the implementation of best practices, technologies and projects.
- Digital platform for interaction of stakeholders of the green economy (experts, entrepreneurs, investors, public sector, international organizations, etc.)

Target 5: Creation of the center of expertise and formation of the scientific research platform in the field of green technologies.

Objectives:

5.1 Formation and support of the expert base consisting of the leading domestic and foreign scientists, representatives of the business community and experts to ensure the activities of the Scientific and Technical Council (STC) and BAT Bureau.

5.2. Obtaining the status of the scientific and technical activity subject (certificate).

5.3. Conducting scientific events, training seminars, round tables and advanced training courses in the field of green economy and in promoting BAT policies.

5.4. A study of a research trends and level of development of green technologies, carrying out analytical researches within the budgetary programs of state bodies.

Objective 5.1 Formation and support of the expert base consisting of the leading domestic and foreign scientists, representatives of the business community and experts to ensure the activities of the Scientific and Technical Council (STC).

The Company will establish a Scientific and Technical Council (hereinafter-STC) - Advisory body, which will review scientific & technical and innovation projects in the field of green economy and implementation of BAT technologies, aiming at developing expertise conclusion and recommendations for further implementation, development and funding. The STC will operate on the basis of the STS's Regulations, that will establish the status, set-up procedures, functions and main principles of operation.

In order to ensure activities of the STC, the Company will establish an expert base among leading domestic and foreign scientists, representatives of the business community and experts, which will be constantly updated. Hence, the Company will be able to attract leading scientific research organizations to carry out joint research projects and programs in priority areas of activity.

Objective 5.2 Obtaining the status of the scientific and technical activity subject (certificate).

Aiming at implementing scientific and technical activity performance of research works the Company will work on obtaining accreditation and obtaining the status of a scientific and technical body.

The Company within 3 years should form a portfolio of scientific assets, which gives the right to apply for accreditation in the Ministry of education and science of the Republic of Kazakhstan. For this purpose, the Company during 2020-2023 will cooperate with scientific research organizations, in order to submit a joint application for participation in competitions, grant funding for scientific target programs and scientific & technical projects.

Objective 5.3. Ensuring the participation of the Company in competitions for grant, target and sectoral financing in the implementation of scientific and target programs in the field of green economy.

The Company will prepare bid documentation to prepare an application towards authorized state body, sectoral state bodies for the participation of the Company in competitions on scientific, scientific & technical projects and programs in the field of green technologies.

Objective 5.4. Conducting scientific events, training seminars, round tables and advanced training courses in the field of green economy and an annual Green technologies and BAT International Conference.

The Company will assist BAT Bureau and businesses, owners of green technologies to develop technical and institutional capacity, training and vocational training skills and competencies for “green” jobs by organizing trainings, round tables, scientific events and workshops for government officials, technical workers, enterprises, educational bodies and others.

A programme of work will be developed for all market participants covering relevant regional issues in transitioning to the BAT, and taking into account existing potential in such areas as renewable energy sources, sustainable energy resources, waste management, urban infrastructure, sustainable agriculture.

The Company will establish complex of training modules and retraining of specialists in the field of green economy and implementation of BAT technologies.

The Company will involve key individuals, that will identify economic policy makers, experts, representatives of the private sector and the scientific community, BAT Bureau TWG representatives.

Objective 5.5. A study of a research trends and level of development of green technologies, carrying out analytical researches within the budgetary programs of state bodies.

The concept of transition of the Republic of Kazakhstan to the “green economy” outlines the way to ensure long-term growth on the basis of climate-friendly technologies, measures to improve energy efficiency and rational use of natural resources.

In this regard, the novelty approach of development, not only in Kazakhstan, but also around the world, there is a possibility of entirely new approaches and technologies which can significantly simplify and accelerate the achievement of sustainable development.

The Company will conduct research on trends and level of development of green technologies, assessment of itself, as well as forecasting the development of green technologies in the Republic of Kazakhstan.

The Company will participate in analytical research in the areas of renewable energy, sustainable energy, waste management, urban infrastructure, sustainable agriculture. In this case, the Company will monitor the needs of public authorities in such studies and ensures participation in competitions.

Expected results:

- Demand for STC in the market of green technologies (2021-2024 - at least 100 examinations).
- Attraction of grant funding for the implementation of at least three scientific projects in the field of green technologies (2023).
- Conducting training courses in the field of green economy, considering the transition to the BAT on a regular basis (2020-2024).
- Development of recommendations for BAT Bureau, state bodies and local executive bodies (2021-2024).
- Preparation and submission to the state bodies of the budget application for analytical studies.

Target 6. Improving the effectiveness of the Company

Objectives:

- 6.1. Increasing the level of human resources.
- 6.2. Ensuring financial sustainability.
- 6.3. Systematization of key business processes.
- 6.4. Monitoring the implementation of the strategy and work plans.

Objective 6.1. Increasing the level of human resources.

The success of the implementation of the Strategy will largely depend on the quality of the staff of the Company, the recognition at all levels of the Company's management of the high economic importance of human resources as an important component of its strategic potential.

In order to formulate and implement a policy in the field of human resources management, as well as determine criteria for the effectiveness of this activity, a Personnel Policy will be developed that will combine existing approaches, proven methods and tools of personnel management, taking into account best practices in the field of human resources, allowing, thus, form a unified approach and develop a value system of the Company in the field of personnel management.

The systematic development of human capital will be built on the principles of meritocracy, aimed at attracting, training and retaining highly qualified personnel with in-depth industry knowledge and competencies.

The key elements of personnel policy will be areas related to the development of corporate culture, ensuring social stability and high staff involvement, effective staff selection and the development of a system of qualifications and competencies.

For these purposes the Company will increase staff competencies in key areas of activity. Performance management will also be introduced through quantitative (goals management and key performance indicator) and quality tools (professional, corporate and managerial competencies system). Assessment of employee performance will depend on the implementation of specific tasks and be confirmed by key indicators developed by cascading strategic tasks into specific indicators on business processes /

lines of business.

The implementation of an assessment of the activities of employees using the SMART system will allow coordinating strategic objectives with the individual goals of each unit and employee. The assessment process will focus on providing feedback to employees on performance and identifying ways for development and improvement.

In order to implement effective personnel selection in the field of selection, selection and hiring of personnel, which will ensure the needs of highly qualified specialists, it is planned to create a single database of external and internal candidates a priority search form aimed at retaining highly qualified and promising employees.

To exchange experience and develop competencies, specialists with international experience will also be involved, but with a mandatory component of knowledge transfer / transfer for the development of local staff and the preparation of successors.

To attract, retain talents and highly qualified specialists, the Company needs to increase its attractiveness as the best employer, creating a single holistic offer for existing and attracted employees, such as competitive remuneration tied to achieving goals, personal development plans and increasing staff involvement.

Thus, the Company will pay special attention to the development of personnel, as one of the key components for achieving strategic goals.

Objective 6.2. Ensuring financial sustainability.

Increase free cash flow.

The Company seeks to increase free cash flow by improving EBITDA and efficient use of resources for capital investments and further development.

A policy for temporarily free cash management should minimize currency risks by accumulating currency in advance in accordance with expected outflows. In order to avoid a cash gap, the Company is introducing a centralized cash flow management system “cash pooling”.

Prevention of unreasonably high receivables and payables.

The Company plans to establish a management reporting system:

- on cash flow;
- on receivables and payables;
- on purchases;
- on tax payments;
- on the implementation of investment projects by context and forecast balance for the timely adoption of strategic and tactical decisions.

Providing systematic work to obtain a credit rating.

To obtain a credit rating on an ongoing basis, the Company needs to take a number of measures to improve the criteria of rating agencies. When assigning and improving the credit rating of the Company, the possibilities for carrying out statutory activities at the expense of borrowed and investment funds are expanded.

This task will allow the Company:

- effectively manage assets and capital structure;
- strengthen financial sustainability;
- ensure transparency of the financial situation, stimulating the adoption of managerial decisions to achieve the level of similar leading world companies and further sustainable growth.

Objective 6.3. Systematization of key business processes.

For the effective implementation of strategic directions, it is necessary to build interaction between the structural divisions of the Company and the procedure for performing various operations to obtain a quick and high-quality result. Each employee must understand his functions and tasks facing the structural unit, as well as be aware of how his work affects the final result of the processes in which he participates. The strategic goals of the Company are achieved through the construction, control and continuous development of key business processes

In order to achieve maximum efficiency and effectiveness of business processes in the Company, it is necessary to build a business process management system that will allow “linking” business processes with the Company’s Development Strategy, ensuring its implementation. When forming proposals for optimizing business processes, the following criteria will be taken into account:

- reduction of time spent on a business process;
- increasing the controllability of the business process;
- compliance of the proposed solutions with current legislation and internal documents;
- improving the quality of service;
- elimination of duplication of operations;
- redistribution of functionality;
- the ability to automate operations;
- reduction of paper workflow.

Objective 6.4. Monitoring the implementation of the strategy and work plans.

The Company will strive to improve the performance management system by ensuring the construction of a balanced system of key performance indicators and their further cascading from strategic to functional and operational levels.

Also, it is planned to improve the management reporting system. The Company will establish a system for collecting and presenting information on the basis of which management will make strategic and tactical decisions. The management reporting system will facilitate the adoption of informed, timely and forward-thinking decisions by management.

Expected results:

- self-financing in 2025: at least 40% of the Company’s budget in 2020.
- recognition as a national coordinator of the green technology market and an international partner in the field of green growth.

IV. Key performance indicators

The Company will conduct regular monitoring of the achievement of the set targets using strategic (corporate) key performance indicators (hereinafter-corporate KPI), given in Annex 1 to the Strategy.

V. Plan of implementation of the Company's development Strategy

Implementation of the Strategy will be carried out in accordance with the Action Plan according to Annex 2, which specifies the main activities of the Company with the indication of deadlines and responsible executors.