KAZAKHSTAN'S TRANSITION TO GREEN ECONOMY

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***Abstract**: The adopted Strategy "Kazakhstan-2050": a new political course of the established state" provides clear guidelines for building a sustainable and effective economic model based on the country's transition to "green" development. Green Economy Concepts lays the foundations for profound systemic transformations in order to transition to a new economy by improving the high living standards. The article describes the stages of developing a "green economy" model and characterizes the main aspects of Green Economy Concept.*

***Keywords**: green economy, Concept of "green economy", competitiveness, sustainable development, greenhouse gas emissions*

I. INTRODUCTION

Kazakhstan approved the "Concept for transition of the Republic of Kazakhstan to "green economy" on May 30, 2013. The Concept is aimed at increasing the innovation and competitiveness of the state. The Concept is presents a prioritized task list primarily aimed at reforming specific economy sectors. The "green economy" is defined as an economy with high living standards and makes effective use of natural resources for the welfare of present and future generations

and the Kazakhstan's entry into the world's top 30 most developed countries while minimizing environmental burdens and natural resources degradation and in accordance with international environmental standards, including the Rio Declaration on Environment and Development, the Agenda 21, the Johannesburg Declaration on Sustainable Development and the United Nations Millennium (Concept, 2013).

Kazakhstan has established national development programs and policies to create the foundations for sustainable development in accordance with the global desire for comprehensive and sustainable development, with the adoption such documents such as the Law on Support for the Use of Renewable Energy sources (2009), the Green Economy Concept (2013), and the Environmental Code (2021).

In the Address by the President of the Republic of Kazakhstan, Leader of Nation, N.Nazarbayev "Strategy Kazakhstan-2050": new political course of the established state" emphasizes global energy security and depletion of natural resources as global problems of the XXI century.

The President of the Republic of Kazakhstan Kassym-JomartTokayev also reflected about importance of green economy. In his speeches, the President notes the idea of "greening" the economy and environmental protection, and that in the medium term economic growth should become more and more "green".

II. GREEN ECONOMY CONCEPT

The "green economy" is essential for the sustainable development of the country. The Government of Kazakhstan has implemented a variety of development strategies and programs aimed at achieving long-term prosperity, but it is obvious that key issues remain unaddressed, and attempts at regional cooperation are ineffective. Kazakhstan faces structural imbalances, socio-economic and environmental problems, such as extreme dependence on commodity exports,

unequal distribution of wealth, low living standards and limited access to essential services.

The Concept of transition to a “green economy” will be implemented in three stages.

Table 1.

The main stages of Green Economy Concept

The first stage – 2013-2020	Optimize resource use to improve the effectiveness of environmental protection activities and the development of green infrastructure
The second stage – 2020-2030	Rational use of natural resources, implementation of renewable energy sources related with high innovation
The third stages – 2030-2050	Transition of the national economy to the use of natural resources in case of their renewability and sustainability

Note: compiled by the authors from the source [1].

The transition to “green economy” is a vital goal for Kazakhstan, as Kazakhstan’seconomy is currently based mainly on extractive industries and raw material exports. Most economic sectors have relatively high energy intensity, environmental pollution and low energy efficiency. The transition to a “green economy” is conducted in the following aspects: energy conservation, electricity development, development of sustainable agriculture, waste management, sustainable water management, air pollution reduction and effective ecosystems management.

Table 2.

Investments aimed at a “green” economy in 2020 thousandtenge

	2020			
	Total	Including		
		investmentinrenewableenergy	investments in energy-saving technologies and energy efficiency	investments to reduce greenhouse gas emissions
RepublicofKazakhstan	120243 188	114218 620	5 959 183	65 385
Akmola	60 656 897	60 656 897	-	-
Aktobe	9 947 746	9 947 746	-	-
Almaty	559 780	x	-	x
Atyrau	24 262	-	x	x
Zhambyl	6 286 083	6 286 083	-	-
Karagandy	-	-	-	-
Kostanai	10 646 722	x	x	-
Kyzylorda	13 252 400	x	x	-
Mangystau	1 511 705	1 498 394	1 779	11 532
Pavlodar	-	-	-	-
Turkistan	1 375 655	1 375 655	-	-
ShygysKazakhstan	10 280 629	10 063 995	x	x
Nur-Sultancity	x	-	x	-
Almatycity	-	-	-	-
Shymkentsity	-	-	-	-

Note: compiled by the author according to Bureau of National Statistics.

The Concept includes seven important aspects of “green economy” development:

The first direction is the use of renewable energy sources.Oil and gas are classified worldwide as one of the largest energy resources. But even they are depleted over time, which means thatit is essential to look for new resources for life and the issue of further conservation of minerals is gaining huge proportions.

The second direction – Energy efficiency in housing and communal services.In the field of housing and communal services, energy efficiency can be understood as the following measures:

- saving the use of electricity per m^2 of housing;
- reduction of fuel use at generating plants;
- reduction of electricity load per capita;
- reduction of losses in electrical and thermal networks.

The third direction is the organic farming in agriculture. It takes into account the rejection of synthetic fertilizers and pesticides, which are the main weapons for plant growth. And the “greening” of agriculture will make it possible to provide the population with food without harming natural resources.

Almost a third of agricultural land of Kazakhstan is under serious threat or degraded. The economic losses incurred as a result of lower land productivity amount to USD 1.5-4 billion per year, which employs 30-45% of the population in regions such as Almaty, Turkestan and North Kazakhstan. In order to develop organic farming in Kazakhstan’s agriculture, investments, new knowledge, and steady demand are needed.

The fourth direction is the improvement of the waste management system. The problem of waste management is also an urgent environmental problem.

Table 3.

Solid waste generation and recycling rate thousandtons

	2016	2017	2018	2019	2020
Generationofsolidwaste	5 400.9	4 864.3	4 319.2	4 736.6	4 551.7
Processing and recycling of solid waste	140.3	440.0	497.1	705.2	868.9
Share recycling of solid waste, %	2.6	9.0	11.5	14.9	18.6
Solid waste generation per capita, kg/ per capita	303.5	269.7	236.3	255.8	242.7

Note: Data from the Ministry of ecology and geology and natural resources of the Republic of Kazakhstan based on information provided by local Executive bodies.

As of 2019, the average population coverage with solid waste removal services is approximately 80 %, the share of recycling as of -13.2%, solid waste disposal facilities meet the standards by only 17%. According to the World Bank scale, this level of waste management system indicators is equivalent to lower middle income countries. However, according to the level of real incomes of population Kazakhstan is at the level of middle income (The Country Context, World Bank Kazakhstan – 2019.).

The fifth direction is the improvement of the water resources management. Water remains one of the main natural components of ensuring the existence of mankind and the integrity of ecosystems.In the regard, the rational use of water resources remains a huge problem. According to the World Bank, the accessibility of water is 3.222 m^3. It is 40% lower than the world average; the world level is 6000 m^3. It is estimated that this indicator will decrease by another 30% by 2030 as a result of population growth, a decrease in average annual water resources by 30% (77 km^3) per year, now it is 108.5 km^3 per year. It is essential to improve effectiveness and efficiency of water resources and environmental management,

monitoring of the water balance, as well as to address issues of irrational use of water resources and their consequences.

The sixth direction is the development of “clean” transport. Most of the transport vehicles in Kazakhstan are carried out on diesel/petrol.

Table 4.

Greenhouse gas emissions from all types of transport million tons of CO2 per year equivalent

	2015	2016	2017	2018	2019
Fromroadtransport	18.59	19.58	20.73	21.86	22.35
Fromoff-roadtransport	0.08	0.16	0.17	0.18	0.19
Fromrailwaytransport	1.34	1.39	1.68	1.61	1.60
Fromwatertransport	0.02	0.02	0.01	0.01	0.01
Frompipelinetransport	0.84	0.82	0.72	1.38	1.25
Fromairtransport	0.87	0.94	0.99	1.08	1.19

Note: According to Bureau of National Statistics.

Nowadays, petrol (diesel) is the dominant transportation fuel. First of all, this contributes to high greenhouse gas emissions.

The seventh direction is the conservation and effective management of ecosystems. Involves taking effective measures to preserve the unique natural diversity of Kazakhstan and prevent the degradation of ecosystems. Despite the implemented policy in the field of environmental protection. Kazakhstan's economy is still highly dependent on energy. Because of its high-carbon energy system, the country confronts challenges in meeting the targets of its national commitment to reduce greenhouse gas emissions. Based on the projections, Kazakhstan will be unable to meet the target of 45 million tons of CO2 equivalent by 2030. According to the estimate it can be concluded that Kazakhstan will not be able to reach the target of 45 million tons of CO2 equivalent by 2030(Concept, 2013). The country

also has a high level of atmospheric air pollution with other toxic substances.Unsustainable approaches to biological resource management are worsened by the unfavorable consequences of climate change on natural pastures and forests, agriculture, and the water sector. Kazakhstan may face water shortages as early as 2040.

III. CONCLUSION

The Kazakhstan Green Economy Transition Concept is Kazakhstan's effort in global operations to minimize environmental impact, to combat the climate change and degradation of nature. Despite governmental support and achievements in all areas of development, including the economy, social and environmental spheres, Kazakhstan is still confronted with challenges and obstacles to implement the political vision and facilitate the transition in practice. Sustainable waste management has been identified as one of the seven priorities of the new Environmental Code of Kazakhstan. In the meantime, as the analysis revealed, there is no unified vision of the development of the waste processing industry, there are no systematic actions to achieve national indicators in the waste industry. The management of different types of waste is often the responsibility of different organizations that focus on recycling, rather than preventive measures and/or an integrated approach, for example, the concept of circular economy. Currently, there are many regulatory legal acts on waste management adopted by various departments. At the same time, measures to reduce waste generation are implemented only to a small extent and require additional attention.

REFERENCES

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