Problems and Mechanisms of Formation "Green Economy" in Kazakhstan

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Abstract: The paper discusses the status and problems of the transition to sustainable development. The analysis and the necessity of immediate formation in Kazakhstan of the "green economy". Based on the theory and taking into account the similar experience of advanced countries, to provide direction, ways and mechanisms of selected acceleration.

Key words: Green • Economy • Consumers • Purchasing • Products

INTRODUCTION

The concept of sustainable development, accepted at the UN conference in Rio de Janeiro, in 1992 [1]. Its continuation in the new environment is the concept of sustainable development of the "Green economy" - the leading theme of the Third World Conference on Sustainable Development, Rio de Janeiro, 2012 (Rio + 20). The main features of this concept are contained in the report of the UNEP "Green Economy in the ways of transition to sustainable development and poverty eradication" (2011) prepared for the Rio +20. Innovative approaches and principles inherited in the concept of a green economy focused on solving the problems of multilateral crises of our time [2].

Although, some countries made significant progress in the transition to sustainable development - the development trend, the opposite of the concept of sustainable development became dominant and crisis escalates. The UNEP report states that: "A number of simultaneously occurring crises caused or accelerated during the last decade: the crises of climate change, biodiversity, fuel, food, water and more recently - the financial system and the economy as a whole." The financial and economic crisis of 2008-2009 followed by the current recession, the output of which in the near future are not even visible. World is coming to an environmental disaster, as the needs of humanity in natural resources exceed half an indicator that can provide our Planet.

Methods and Performance Analysis. Evaluation of Transition Paths: To correct the situation, the world needs to build a green economy. This warning is contained in the latest edition of the WWF Living Planet Report 2010 (the Report of the World Wildlife Fund Living Planet) - the world's leading scientific analysis of the health of our planet and a single influence on it of human activity. The report also showed that the situation of the world's ecosystems and of the Earth biodiversity continue to deteriorate, especially in the poorest countries of the world, which is largely a consequence of the growth of consumption in rich countries.

The report also considers the water trace indicator, which shows that at present 71 countries of the world is feeling moderate or severe water stress. The report is based on two key indicators - The Living Planet Index (assesses the state of the world's biodiversity) and the (human demand for natural resources). The Living Planet Index shows a drop of 30% compared to 1970. Ecological trace of humanity is 18 billion global hectares (the average hectare of land or water area of our Planet which regenerate its resources), or 2.7 hectares per person.
At the same time, the biological productivity of the Earth - only 11.9 billion global hectares, or 1.8 hectares per person. That is to say, the requirements exceed the capabilities of a person on Planet by 50 percent. In general, the ecological trace of humanity has doubled since 1966. If our demands on the planet continue to increase at the same rate, by 2030 we will need the equivalent of two planets to maintain our way of life and in 2050 - 2.8 planets. It is worth recalling, that humanity has in its disposal only one planet.

To the countries with the biggest Ecological trace per person refer: the United Arab Emirates (10.7 hectares), Qatar (10.5 hectares), Denmark (8.3 hectares), Belgium (8.0 hectares), the U.S. (8.0 hectares), Estonia (7.9 hectares), Canada (7.0 hectares), Australia (6.8 hectares), Kuwait (6.3 hectares), Ireland (6.3 hectares). If every man in the world will live as an average citizen of the United Arab Emirates, we will need more than 4.5 planets to meet their needs and to absorb carbon emissions. On the contrary, if everyone would consume as the average citizen of India, humanity will use less than half the biological productivity of the planet.

Analysis of biological productivity at the national level shows that more than half of the biological productivity of the world is in the range of 10 countries. Most biological productivity in the world belongs to Brazil, followed in descending order by China, the U.S., Russia, India, Canada, Australia, Indonesia, Argentina and France. First report traces the trend in the state of biodiversity in countries with different levels of income and shows an alarming rate of loss of biodiversity in poor countries (down 58%). Basically, this is due to the growth of consumption (Ecological trace) in the rich countries, which exported goods and materials from poor countries. Analyzing the data of the past, the Report presents three scenarios based on different assumptions about the sources of energy and diet of humanity in the future.

According to UNEP, the traditional economic indicators such as GDP, give the wrong idea about the efficiency of the economy. They do not reflect the negative impact of production and consumption of natural capital. Depleting natural resources or reducing the ability of ecosystems to perform useful functions, such as food supply, regulation and satisfaction of the cultural needs, economic activity is often accompanied by a depreciation of natural capital.

Ideally, the change in the value of natural capital should be assessed in terms of money and be reflected in the national accounts. This is one of the goals of improving the system of environmental and economic accounting (SEEA) carried out today by the Statistics Division of the UN Secretariat and accounted by the World Bank in assessment of adjusted net national savings.

Analysis of reasons of global situation’s aggravation leads to the conclusion that the main factor of the crisis processes is the misallocation of capital (Capital Misallocation). "Although reasons of these crises are different, they have a fundamental similarity: a huge irrational allocation of capital. During the last two decades a lot of money invested in real estate, mining of fossil fuels and structured financial assets which produce income, but relatively little - in the development of renewable energy, energy efficiency, public transport, sustainable agriculture, ecosystems and biodiversity protection, land and water [2].

In transition countries, more than two decades following the path of liberal reform, pronounced irrational allocation of investment. In these countries (Russia, Kazakhstan and others) heavily invested in real estate (including foreign), expanding the financial sector (received the most government support in times of crisis) and trade. The decline of manufacturing industries combined with an increase in production of carbon-based fuels, the dependence of economic growth on mineral resources sector [3,4].

At present, the world is widespread disappointment inability of the prevailing economic paradigm to predict events and processes occurring simultaneously with many crises, as well as shortcomings of the market, which is particularly evident in the first decade of the new millennium. Therefore, the starting point is the need for Rio +20 "a fundamental rethinking of existing approaches to development."

As a new model of development put forward the concept of "Green Economy" - the transition from carbon, "brown" energy and unsustainable nature to the "green economy", sustainable development and environmental rational management. Model of a “green economy” offers the international community as a way out of a multilateral global crisis. Consistent with the principles and provisions of the basic concept of sustainable development, the concept of “‘green economy: characterized by a concrete definitions - focusing attention on the problems of the structural transformation of the economy as a major factor in the transition to sustainable development, the eradication of poverty, increase social justice.
"Green economy" - an economy that improves the well-being of people, ensures social justice, while significantly reducing environmental risks. "Green Economy" aims, in particular, to promote the reform carried out in all sectors of the economy and policies that encourage environmental investments. The income and employment provided by public and private investments that reduce carbon emissions and pollution, improve energy efficiency and resources, as well as prevent the loss of biodiversity and ecosystem services.

In the transition to the "Green Economy" WWF invites governments, businesses and citizens to pay attention to the following questions, which will help to solve the planet's most acute environmental problems: the development of sustainable development paths, investment in natural capital (increase in the proportion of protected areas, strengthening the protection of forests, stopping excessive use of water and fragmentation of freshwater ecosystems, ending overfishing, investing in biological productivity, appropriate assessment of biodiversity and natural services), the problem of energy and food, paying attention to issues of land distribution and land-use planning, allocation of scarce resources and the elimination of disparities, investments in improving governance, decision-making and institutions.

The main directions of the transition to the "Green Economy":

- Reduction of resource intensity;
- "Greening" of key sectors of the economy - the rationalization of nature;
- Improvement of energy efficiency and increase of using of renewable energy sources;
- Distribution of low-waste and non-waste technology;
- Recycling [2].

The green economy is seen as the basis of social and environmental progress, which increases the welfare of the people and ensure social equity, while significantly reducing environmental risks and ecological impoverishment.

Foreign experience shows that at the household level, the transition to a "green economy" comes down to all sorts of efforts to preserve the environment and this is associated with the emergence and widespread use of concepts such as "green consumers", "green purchasing", "green products", "green marketing and communications", "green building", "green houses", "green roofs and walls", "eco-landscapes", "eco-innovation", "clean technology", "green investments", "green agriculture", "green lifestyle".

The example of green economy promotion provides South Korea, which has become the only state to adopt the "green growth" as a national strategy. According to the OECD, South Korean invested about 9.3 billion euros in this area. They went on to develop "green" models of transport, alternative sources of fresh water, waste treatment technologies. Another 19.3 billion euros spent on the provision of loans and tax cuts for businesses engaged in the development of parks, landscaping, improvement of rivers in the country.

Common economic engines of the "green economy" in the world are sustainable public procurement of "green goods and services", which can help to strengthen the market with sustainable products and services. On government procurement accounts for a significant share of total government spending in both developed and developing countries. For example, in South Africa and Brazil, the share is 35 % and 47 % of GDP, respectively. Using the techniques of sustainable public procurement, the state can generate high and long-term demand for "green" products and services. This practice encourages companies to make longer-term investments in innovation and manufacturers - for economies of scale, reducing costs. In turn, this may contribute to wider commercialization of "green" products and services, creating the conditions for sustainable consumption. For example, a program of sustainable public procurement in Austria, Denmark, Finland, Germany, the Netherlands, Sweden and the UK helped to reduce emissions of CO2, associated with the purchase, by an average of 25%.

Public procurement also contributed to the formation of markets in Europe "organic" foods and drinks, cars with low fuel consumption and "sustainable" timber.

However, government expenses should be limited in time. Introduced subsidies can be difficult to cancel, because the recipients of material interested to lobby for their preservation. As a rule, the state is trying to minimize their costs by developing subsidies programs, provides a variety of control methods. For example, the conditions of the program are reviewed regularly and implemented the agreed adjustments and sometimes set limits on the total cost and clearly defined when the implementation of the program ends.

Subsidies reduce the profitability of "green" investments. When in a certain kind of subsidy "unsustainable " activities is cheap or low-risk, reduces
Tax incentives can encourage investment in "green" economy and the mobilization of private capital. Such incentives can be targeted at both: the consumption and the production of goods or provision of services. Taxes are often well stimulating emission reductions, more efficient use of natural resources and innovation. Environmental taxes can be divided into two big categories: taxes on the principle of "the polluter pays", which are charged to the producer or the consumer at the place of pollution and taxes on the principle of "user pays" - taxes on production and use of natural resources.

For example, Singapore, which in 1980 introduced the world's first payment road, today is a leader in the application of pricing tools to address the problems of waste disposal and water shortages. It turned out that the introduction of pollution charges also encourages innovation and use of new technologies, as companies begin to look for more "clean" alternative. For example, in Sweden, a tax on emissions of nitrogen oxides has led to a significant expansion of the use of existing technology to reduce emissions - before the introduction of the tax it used 7% of the companies and the next year after the introduction - is 62%.

A number of municipalities in India have introduced discounts on property tax for users of solar water heaters. In some cases, the discount is up to 6-10% of the property tax. Another type of tax incentives often used to stimulate the production of energy from renewable sources - accelerated depreciation. It allows the investor to quickly amortize the cost covered by the exemption of capital and thereby reduce their taxable income. In Mexico, the accelerated depreciation allowed investors to invest in infrastructure without having a negative impact on the environment since 2005 [5].

Implementation of technologies for energy production from renewable sources successfully promote measures to support prices and methods of net-calculation of electricity. Measures to support prices, usually by providing subsidies or price controls, guarantee the market price of a particular good or service and provide long-term certainty needed to private investors.

The most common and well-known of these measures is the use of stimulation tariffs for implementing and improving the technology of electricity from renewable sources. Many also use the method of accounting for net stimulus of low energy based on renewable sources. Using this method, user receives a deduction from future electricity bill and if the amount of electricity supplied to the national electricity generator system of consumer operating on renewable raw material exceeds, the amount of energy abstracted from the system user. Net accounting is widely distributed in the United States, as well as implemented in Mexico and Thailand.

Kazakhstan is also actively involved in the process of implementing a "green economy". Thus, in the President of Kazakhstan Nursultan Nazarbayev's "Strategy "Kazakhstan - 2050": a new policy of the established state" as one of the top ten global challenges of the 21st century has been called the global energy security. The immediate way to overcome the shortage of energy is energy saving and energy efficiency. [6,7] The Ministry of Environmental Protection of Kazakhstan, based on experience of South Korea and Germany prepared a national strategy for the country's transition to a "green economy".

For example, the world has become a proven reputation in Germany as one of the leaders in the global market of green technology. 23% of all patentable in the world of technology in the field of ecology and more than 30% of solar and wind energy accounted for the German company. German companies working in the green sector - areas in one way or another connected with the protection of the environment and climate change (energy, transport, processing and disposal of waste, etc.) employs about 2 million people, or 4.5 % of the economically active population. This indicator tends to continued growth.

The economic impact of development and active use of green technology is evident not only in solving the problem of unemployment. Currently, for example, Germany ranked first in the world in terms of trade in environmentally safe products/Umweltgüter (exports worth over 60 billion euros per year). The share of Germany in the total volume of world trade in the relevant products is 16%. At the same time, Germany accounts for two thirds of the world market of automated waste sorting systems, 90% - the market of biogas plants. The main and most successful green energy industry in Germany is - development and implementation of renewable energy sources. Due to the development of green technology Germany managed to significantly reduce the level of greenhouse gases in 2010 the corresponding figure is 25% below the 1990 level.
Despite the obvious need to move to an economic model that will ensure their well-being, while maintaining the resources and not exposing future generations to significant environmental risks, the transition to a "green economy" is associated with many problems.

Preoccupation about the transition to a "green economy" is actively expressed in developing countries. They fear that this concept can be used to create new trade barriers and reduce the competitiveness of their products, which, in turn, will hinder the achievement of development goals. According to the developing countries, the theme of "green economy" should be considered only in the context of sustainable development and poverty reduction.

Thus, the international debate of recent times have shown that we need a clear study of the concept of "green economy", an in-depth analysis of measures for its implementation from the point of view of the interests of all countries.

According to the instructions in the Strategy of Kazakhstan's transition to a green economy, reflected global priorities such as the transition to the new indicators non-crisis, sustainable economic development, the greening of taxation, etc. This provides a unified approach to new environmental standards, environmental standards and incentives, creating a system motivate businesses to entrepreneurs in the sector came to a green economy.

Since the beginning of 2013 in Kazakhstan introduced an internal system of carbon trading. By 2020, the country will build 13 wind turbines, half a dozen small hydro and four solar stations. In the future of renewable energy sources in Kazakhstan will receive more than a thousand megawatts. Thus on the "green" energy have to work all the objects "EXPO - 2017". In this regard, prepared three documents: the concept of electric power development by 2030, the concept of the fuel and energy sector development strategy and the "green economy".

The plan for alternative energy development, accepted by the Government, a number of regions of Kazakhstan has actively pursued a "green" projects. Wind turbines and solar panels have in Astana and Akmola region, five small hydropower plants in operation on the mountain rivers near Almaty. In addition, this year the company "Samruk -Energo" will begin construction of the first phase of a Ereymentauskiy wind farm in Akmola region. That will make it as energy source for the objects of the international exhibition "EXPO" in 2017. In the future, these projects will also appear in Aktobe, Pavlodar, Mangystau and Kostanai regions [5, 8].

The transition to a "green economy" - this is not a cheap pleasure, it requires large investments. According to international experts, the investment required in the "green economy" - is up to two per cent of GDP per year. And, when it comes to investments in "green economy", we mean not only and not so much public investment as private investments. It is therefore necessary to create the conditions, the rules, the market, in order for these private investment flow went into these sectors. It is also possible that one of the conditions and the attraction for investors may be tax breaks for companies that implement the principles of "green economy".

The Results of the Measures Taken in Kazakhstan and Their Evaluation: Kazakhstan has already started the implementation of the four blocks of "green economy" - is the use of renewable energy sources, energy efficiency and energy conservation, construction of waste treatment plants and low-carbon development, that is, CO2 emissions trading market. Economic mechanisms to stimulate the development of "green economy" in the Astana city and Akmola region include public financing of projects and receiving of public procurement.

Some results on the way to a "green economy" plant LLP «Astana Solar»(subsidiary of JSC "Kazatomprom") is the final element of the project process, in which Kazakhstan created a fully integrated production line for the production of renewable energy.

The new plant in Astana will produce solar cells based on Kazakhstan’s silicon. The plant is equipped with the latest generation of automated equipment meeting the highest safety standards and environmental regulations. The design capacity of the scheduled photovoltaic plates will be 50 MW extension to the term of up to 100 MW. Commissioning of the enterprise will employ 175 Kazakhstan specialists in various fields, some of them received specialized training abroad. Design capacity - 217 thousand or 50 megawatts of panels. In the future, this figure is projected to double. The first factory for the production of metalurgical silicon launched in March in Ushbove, there comes metallurgical silicon. Currently, plant in the Ust-Kamenogorsck city is being built for the production of photovoltaic cells, which is the next stage, a metallurgical silicon. The plant in Astana is the third stage in this scheme, which produces photovoltaic modules. Kazakhstan is interested in products abroad. On today signed several contracts with French businessmen to supply solar panels.
In Astana in December 2012 opened recycling plant. This plant was built by the Spanish technology and plans to start construction of nine similar plants in the next two years, the Agency for Construction and Housing has developed a program to build 41 such plant in the next 10-15 years. The plant in Astana will process 400,000 tons of garbage a year, covering all the needs of the capital in this service.

Also in Astana plans to build a station, it will be held in conjunction with the international exhibition "EXPO -2017" at the exhibition center. In addition, the city plans to build a large number of other projects related to the themes of the upcoming exhibition «EXPO 2017" - the "green economy". So, it is planned in Astana to build new eco-microdistricts. There will be used unconventional methods to allocate and conserve energy.

The relative cheapness and mobility - these are features of a wind power plant developed by Kazakh scientists, together with their colleagues from Russia. One of the executed at Kokshetau State University inventions is patented and have a prototype. The difference is that there is a diffuser, which increases the speed of wind turbine blades. And therefore, the size and weight reduced in order to be convenient to move it. The other well-known in the world of "windmills" - fixed. In the world there are only 1-2 portable "windmill".

CONCLUSION

Thus, we can say that Kazakhstan is taking active measures to accelerate the transfer of the country to the principles of green development. In this case, the experience gained by reputable international organizations and developed countries is taken into account to move towards a "green economy." However, some of the achieved results show that the transition to a "green economy" is expensive, it requires large private investments. It is therefore necessary to create proper conditions, the rules, market and financial mechanisms to ensure that these investments flow went into these sectors.

REFERENCES


