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„GREEN" INVESTMENTS IN UKRAINE AND THEIR SOCIO-ECONOMIC CONSEQUENCES

ABSTRACT

The article deals with current issues related to environmental protection investment in Ukraine. First of all, green investments are defined in order to avoid inconsistencies in the interpretation of the results. There are analysis of investments in environmental protection over the past five years and the main source of funding, social and economic implications of green investment are considered. During writing conclusions of the article were made primarily on the basis of Ukrainian official statistics.

Keywords: environment, „green" investment, capital investment, operating costs, funding sources, consequences

Introduction

Mankind has faced many environmental problems that require an urgent solution. Among those problems scientists identify the following: climate changes (global warming), loss of biodiversity and pollution of World Ocean, degradation of global land and so on. The environmental problems have caused considerably by

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human activity in the manufacturing sectors and increase of population in the world. Mankind makes a draft on patience of nature by the actions in relation to the environment. So, according to the report of the World Wildlife Fund in 2012 mankind has consumed 50% more resources than the planet can renew every year. If the rate of natural resources usage and population growth is the same two planets will be not enough to meet the needs of each person by 2030[1].

In order to motivate all enterprises to solve environmental problems, it's necessary to persuade them in ability of the development and increase of performance, improve quality of life thanks to the implementation of „green" investments. Investment activities in the field of environmental management is extremely relevant now because of the integration of Ukraine into the international community, necessity of overcome consequences and reduce human impact on the environment, prevention of irrational natural resources usage.

The aim of this article is analysis of the „green" investments' amount, sources of their financing in Ukraine, characterization of their socio-economic consequences using only official statistical information. To achieve this aim the following tasks were set: to define of the term „green" investments as the object of the study, to analyze the investment activity of Ukrainian enterprises and sources of „green" investment projects' financing, to define socio-economic consequences of investing in environmental management.

1. „Green" investments as the object of the study

The essence of the term „investment" was investigated by a great number of scientists. Numerous authors have published the results of their studies, demonstrated in their works the importance of investment for the business entity development and for increase in its competitiveness. Despite some minor inconsistencies in the interpretation of this term scientists traditionally say that investment is input for the long and/or short term in order to obtain economic or non-economic, and social effect.

As for the term of „green" investments, it is infrequent in modern domestic scientific literature. More often in the works of Ukrainian scientists you can find

[1] *Report of the World Wildlife Fund 2012*, awsassets.panda.org/downloads/1_lpr_2012_online_full_size_single_pages_final_120516.pdf (20.03.2013).

the terms „environmentally oriented investments" and „environmental (ecological) investments". They are often identified and are sometimes named „green". It should be noted that, according to some researchers[2], the term „environmentally oriented investments" is broader than the term „environmental investments" because they include not only the achievement of environmental (ecological) effects, but also provide social and economic results. Some authors have the opposite point of view.

In this article we should give a definition of „green investments" as the object of our study in order to avoid inconsistencies in the obtained results. „Green" investments are investments in objects of economic activity for short or long term in order to achieve environmental security, rational usage of natural resources and minimize human impact on the environment. As a result of the „green" investment it could be achieved: environmental (to reduce of anthropogenic pressure on the environment, to achieve more efficient usage of resources), socio-economic (to improve the quality of society life and increasing national wealth) and political effects (to reduce dependence on imports of natural resources, increasing opportunities of environmental quotas trade in according with international agreements, etc.).

The main advantages for enterprises in the case of „green" investments' implementation are:

a) increase competitive advantages thanks to the implementation of environmental innovations (development and adjustment of production capacities for the production of environmentally friendly products, renewable energy development and usage of low-waste and resource-saving technologies, etc.);
b) displacement of a large number of competitors and achievement a better level of competitiveness both on domestic and global markets.

The main directions of „green" investments' implementation are: environmentally friendly agricultural production and sustainable consumption, increasing energy efficiency of building construction, development of environmentally friendly transport, and the development of clean energy, management of chemicals and wastes, development of environmental infrastructure, improvement of wastewater treatment.

[2] С. Харічков, Н. Андрєєва (2010), *„Зелені інвестиції" як каталізатор переходу до нового курсу розвитку економіки: міжнародні орієнтири і перспективи впровадження*, Економіст, nr 12, s. 16–21.

2. Investments in environmental protection and achievement of rational nature usage in Ukraine in 2007–2011

We determined investment activity of Ukrainian enterprises in the sphere of natural management on the basis of official statistics over the last five years. In Statistical Yearbook of Ukraine[3] the costs of environmental protection are divided into capital investment and operating costs.

Table 1. Dynamic of capital investments and operating costs in the sphere of environmental management in Ukraine, million UAH

Indicators	Years				
	2007	2008	2009	2010	2011
Capital investments and operating costs total, including	9691	12176	11073.5	13128	18490.7
Capital investments	3080.7	3731.4	3040.7	2761.5	6451.0
% to previous year	–	121.1	81.5	90.8	233.6
% to all costs	31.8	30.6	27.5	21.0	34.9
Operating costs	6610.3	8444.6	8032.8	10366.6	12039.7
% to previous year	–	127.7	95.1	129.1	116.1
% to all costs	68.2	69.4	72.5	79.0	65.1

Source: created by authors based on Statistical information of the main indicators of socio-economic and demographic development of Ukraine, www.ukrstat.gov.ua (4.04.2013).

For each year of the analyzing period (table 1) in Ukraine more than 60% of total expenditures in natural management were operating costs, i.e. costs of the current period, aimed by supporting objects of environmental protection in working condition. Consequently, only about 30% costs were capital investments, i.e. the cost of construction, reconstruction, technical re-equipment businesses, and purchase of environmental protection equipment so on. This proportion of the costs don't allow to significantly changing the structure of fixed assets of environmental protection. Usage of outdated technologies and equipment, reducing new fixed assets is accompanied by increasing the risk of disasters and accidents. It may aggravate environmental crisis. So, it is necessary to increase the share of capital investments that will have a positive impact on the environment.

[3] Statistical information of the main indicators of socio-economic and demographic development of Ukraine www.ukrstat.gov.ua (4.04.2013).

Table 2. Investment securing of „green" investments in Ukraine in 2007–2011

Indicators	Years				
	2007	2008	2009	2010	2011
GDP, million UAH	720731	948056	913345	1082569	1316600
% to previous year	–	131.5	96.3	118.5	121.6
Total capital investments in Ukraine, million UAH	222679	272074	192878	189061	259932
Capital investments in the sphere of environmental management, million UAH	3080.7	3731.4	3040.7	2761.5	6451.0
% to GDP	0.43	0.39	0.33	0.26	0.49
% to total capital investments	1.38	1.37	1.58	1.46	2.48
Per capita, UAH / person	66.11	80.42	65.96	60.03	140.85

Source: created by authors based on statistical information of the main indicators of socio-economic and demographic development of Ukraine www.ukrstat.gov.ua (4.04.2013).

Table 3. Structure of capital investments in the sphere of environmental management in Ukraine, million UAH

Indicators	Years				
	2007	2008	2009	2010	2011
Capital „green" investments total, including	3080.7	3731.4	3040.7	2761.5	6451.0
– protection of air and climate	1380.2	1477.6	1274.1	1140.5	2535.2
– water purification	810.2	925.4	881.8	731.8	722.5
– waste management	388.2	421.6	401.4	475.0	1187.0
– protection and rehabilitation of soil, groundwater and surface water	394.3	787.3	401.4	320.3	638.6
– reduction of noise and vibration impact	73.9	67.2	24.3	11.0	38.7
– saving of biodiversity	18.5	33.6	33.4	19.3	12.9
– radiation security	0.0	7.5	6.1	2.8	1277.3
– environmental orientation research and development	3.1	3.7	9.1	8.3	12.9
– other directions of environmental activity	12.3	7.5	9.1	52.5	25.8

Source: created by authors based on statistical information of the main indicators of socio-economic and demographic development of Ukraine www.ukrstat.gov.ua (4.04.2013).

There was a decrease of amount and rate of capital investments growth in Ukrainian environmental management in 2009–2010 (table 1). One of the main reasons of reduces of the total investments amount under the influence factors of the economic crisis (table 2). In general, green investment securing in Ukraine remains low over the last five years. Although the share of green investment in total capital investment of Ukraine increased, the actual level of „green" investment remained low. Capital investment amount is faster decline than GDP. According to experts this amount of „green" investments are not enough in order to meet EU environmental legislation and to achieve significant environmental results.

The largest amount investments were directed to the protection of air and climate in the structure of green capital investments in Ukraine. Paying attention to this sphere of environmental activities can primarily be attributed to the country's international obligations under the Kyoto Protocol. Huge part of the capital investment was invested in the water purification, waste management and soil protection. It helped to improve the environmental situation in these spheres in 2011 (table 3).

Thus, during the analyzing period Ukrainian enterprises showed low activity of the „green" investments' implementation. The main causes of low „green" investment activity were:

– low level of awareness of entrepreneurs,
– lack of financial resources,
– lack of motivation the entities to implement „green" investments.

3 Financing of „green" investments

The main sources of investment financing in Ukraine is own funds – 58.6% of total investments in 2011. We can't anticipate a significant increase of green investment through this source because of low level of profitability (3.5%) and the huge share of unprofitable enterprises (41%). In addition, many Ukrainian businessmen put economic interest in the first place rather than concern of the environment. Often it is more profitable to pay a fine than to invest in the sphere of nature, because the amount of fines for environmental offenses is much lower than the cost of clean-up activities (table 4).

Table 4. Environmental payments and violations in the sphere of environmental management in 2007–2011years

Indicators	Years				
	2007	2008	2009	2010	2011
Number of individuals and legal entities who have committed offenses in the sphere of environmental protection, usage of natural resources, cultural heritage protection, thousand	187.0	209.5	213.6	201.3	197.4
% to previous year	–	112.0	102.0	94.2	98.1
Requirements of environmental tax, million UAH, because of	955.7	1065.3	1198.7	1361.2	1990.0
% to previous year	–	111.5	112.5	113.6	146.2
– Air emissions of pollutants from stationary sources	501.5	563.1	634.6	716.8	1256.4
– Share, %	52.5	52.9	52.9	52.7	63.1
– Discharges of pollutants directly into water objects	75.0	69.7	88.0	93.7	60.3
– Share, %	7.8	6.5	7.3	6.9	3.0
– Disposal of wastes in designated areas except the disposal of certain wastes as secondary raw materials	322.0	368.5	408.5	471.6	491.6
– Share, %	33.7	34.6	34.1	34.6	24.7
Requirements of penalties for violations of the legislation on environmental protection, million UAH	24.6	6.1	10.9	147.5	132.8
% to previous year	–	24.8	178.7	1353.2	90.0

Source: created by authors based on statistical information of the main indicators of socio-economic and demographic development of Ukraine www.ukrstat.gov.ua (4.04.2013).

Thus, according to table 4 to 2009 the number of individuals and legal entities who have committed offenses in the sphere of environmental protection, usage of natural resources, cultural heritage protection increased. There has been a slight decrease them in 2010–2011. Every year environmental taxes and penalties increased. Accordingly, we can conclude that the Ukrainian enterprises are insufficiently motivated in the implementation of environmental legislation.

The share of investments financed from the state budget is small, and since 2010 it has tended to decrease (table 5). It indicates a low expression of state interest and its participation in environmental activities' investment. Also funds directed to

the state budget for environmental protection have been misused – the amount of environmental tax and penalties for violation of environmental legislation exceeds government spending on environmental needs (table 4).

Table 5. State financing of „green" investments in Ukraine in 2007–2011years

Indicators	Years				
	2007	2008	2009	2010	2011
Capital investments, financed from the state budget, million UAH	298.8	709.0	623.3	240.3	283.8
Share of capital investments, financed from the state budget, %	9.7	19.0	20.5	8.7	4.4
Operating costs from the state budget, million UAH	145.4	202.7	329.3	279.9	313.0
In %	2.2	2.4	4.1	2.7	2.6

Source: created by authors based on statistical information of the main indicators of socio-economic and demographic development of Ukraine www.ukrstat.gov.ua (4.04.2013).

In 2011 the SAEI (the State Agency of Environmental Investments in Ukraine) received and approved 332 projects of green investments. Total to 01.01.2012 the SAEI approved 987 projects of „green" investments in 23 regions of Ukraine. Sum of 987 approved projects is 3.7 million UAH.

The level of bank „green" investments is low in Ukraine, because of complexity of determining the financial impact and the availability of more profitable projects than environmentally oriented ones. Commercial banks prefer highly profitable investment projects with relatively low risk. Thanks to international cooperation between Ukraine and the World Bank, in 2011 the World Bank provided a loan of 200 million USD for 30 years under the state guarantees to the State Export-Import Bank of Ukraine (Ukreksimbank). The main purpose of the loan is financing of energy efficiency projects (modernization and installation of equipment with high energy efficiency, the use of gas and heat waste , reducing energy loss in buildings and utilities sector, improvement of production systems) by providing loans through commercial banks.[4]

[4] В. Дідух (2011), *Екологізація інноваційної діяльності відповідно до вимог сталого розвитку суспільства*, Ефективність державного управління, nr 27, s. 359–369.

4 The social and environmental consequences

The socio-environmental and economic consequences of the implementation of „green" investments can be determined by analyzing each investment project separately. Determination at the national level of „green" investments' impact on social environment's characteristics in comparison is difficult because of a limitation of official statistical information and an inability to isolate the impact of „green" investments on the data. By the way, a single list of indicators that can describe social effects of „green" investments at the macro level is absent.

Usually, in the scientific papers demographic characteristics of the population, changes of environmental conditions, changes of the jobs' number in the region, changes of the health level and other indicators are determined in order to estimate the social consequences of investment .So, according to Ukrainian statistical information we propose to consider the social consequences of „green" investments by:

a) identification of environmental situation's indicators that are closely concerned with the social indicators, and describe the living conditions of the population in Ukraine;
b) determination of the population and their health level.

Table 6. Indicators of ecological situation in Ukraine

Indicators	Years				
	2007	2008	2009	2010	2011
Emissions of polluting substances to air, thousand tones	7380.0	7210.3	6442.9	6678.0	6877.3
% to previous year	97.7	89.4	103.6	103.0	97.7
Discharge of sewage into surface water objects, million cubic meters	3854	2728	1766	1744	1612
% to previous year	–	70.8	64.7	98.8	92.4
Waste I–III hazard class, thousand tones	2585.2	2301.2	1230.3	1659.8	1434.5
% to previous year	–	89.0	53.5	134.9	86.4

Source: created by authors based on statistical information of the main indicators of socio-economic and demographic development of Ukraine www.ukrstat.gov.ua (4.04.2013).

Small amount of investment is not allowed to substantially improve the state of the environment (table 6). Ecological situation is unfavorable, although there was

decrease of environmental impact. As we think, there was reducing of ecological deconstructive impact partly due to the economic crisis. Thus, it was no qualitative changes in the living conditions of the population in Ukraine.

According to statistics information, the population of Ukraine during the analyzing period decreased from 46.6 million people in 2007 to 45.8 million people in 2011. The level of their health has not significantly improved from 2008 to 2010. The increase of number of sick per 100 thousand persons was observed annual, except 2011.

5 The economic consequences

The economic consequences show accordance of „green" investments with purposes of the national economy. Economic results are economy of labor and materials or prevention of natural resources' losses in production and non-production sectors of the economy, as well as in consumer sector. Thanks to official statistical information we can draw the conclusions:

1. The number of implemented low-waste, resource saving and waste-free technology processes in the industry was increased up to 2009 and in 2010–2011 it was decreased. Enterprises directed their financial resources in 2010–2011 to achieve business results of pre-crisis period and, consequently, they paid not enough attention to the environmental issues.
2. Costs per unit of industrial output were increased after exposure to the financial and economic crisis on enterprises. It indicates that enterprises have low ability to resist environment changes, lack of resource saving technologies (share of material costs in 2010 reached share of material costs in 2007).
3. There is inefficient electricity consumption because the growth (decline) higher than the index of industrial production.
4. During the 2007–2011 share of losses in electricity network remained almost unchanged, although it remained within the losses standard (12.9% in 2011). There were no qualitative changes in electrical networks of Ukraine.

Conclusion

The costs of existing environmental funds' repair were increased from 2007 to 2011. Many Ukrainian enterprises put more amounts of the investments in the re-

pair than in introduction of new environmental capacity. According to the analysis Ukrainian enterprises does not have sufficient funds to finance green investments. They are not motivated in the prevention of environmental impacts of their activities, more profitable to pay fines for them. Negligible levels of „green" investments' implementation could not significantly improve socio-economic conditions in the country in 2007–2010, although there were some minor changes in 2011.

To achieve sustainable development it should be involved significant investments. They are the basis of economic entities development. There are important not only amount of investments now, but also the efficiency of investments' usage. The investments should be directed to structure economy of each entity in order to increase the share of competitive environmentally friendly products and environmental technologies. The strategy of economic development in Ukraine at this stage should include the movement from the separated environmental protection measures to the development and implementation of a comprehensive concept of ecologization of production and other fields of activities.

References

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„ZIELONE" INWESTYCJE NA UKRAINIE I ICH SKUTKI SPOŁECZNO-EKONOMICZNE

Streszczenie

Artykuł dotyczy aktualnych zagadnień związanych z inwestycjami w dziedzinie ochrony środowiska na Ukrainie. Przede wszystkim, zdefiniowano zielone inwestycje w celu

uniknięcia niezgodności w interpretacji wyników. Przedstawiono również analizę inwestycji dokonanych w ciągu ostatnich pięciu lat w zakresie ochrony środowiska z uwzględnieniem głównych źródeł finansowania i konsekwencji społeczno-ekonomicznych zielonych inwestycji, co pozwoliło ocenić istniejąca sytuację. W artykule wykorzystano dane statystyczne z Ukrainy.

Słowa kluczowe: środowisko, „zielone" inwestycje, koszty inwestycyjne, koszty operacyjne, źródła finansowania, konsekwencje

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