



**Institute of Economic Research Working Papers**

**No. 114/2015**

**THE ROLE OF THE STATE IN CREATING A GREEN  
ECONOMY**

**Paulina Szyja**

The paper submitted to

**VIII<sup>th</sup> INTERNATIONAL CONFERENCE ON APPLIED  
ECONOMICS  
CONTEMPORARY ISSUES IN ECONOMY  
*under the title*  
MARKET OR GOVERNMENT?**

Institute of Economic Research and Polish Economic Society Branch  
in Toruń

18-19 June 18-19, 2015, Toruń, Poland

**Toruń, Poland 2015**

© Copyright: Creative Commons Attribution 3.0 License

Paulina Szyja

e-mail: paulinaszyja@wp.pl

Uniwersytet Pedagogiczny im. Komisji Edukacji Narodowej

Ul. Podchorążych 2, 30-084 Kraków

## THE ROLE OF THE STATE IN CREATING A GREEN ECONOMY

**JEL Classification:** E12, F62, F63, F64, O20, O38, O44, P48, Q01, Q28, Q30, Q32, Q43, Q50-58

**Keywords:** *sustainable development; environment; state; a green economy; energy*

**Abstract:** Starting from the crisis on the real economy in 2008 it has been developed an intense discussion, supported by a number of declarations on the global scale, about the need for changes in the economy. A huge impact on this state of affairs was the analysis of the causes and effects of the economic downturn and the challenges of the future. As a result, some states have taken action to remedy the situation. Many of them were aimed at structural changes in production, consumption and environmental friendly investment. At the same time gained in importance the concept of "low carbon economy" and "green economy". The aim of this paper is to present the role of the state in the economy in terms of creating conditions for a green economy. The thesis of publication is: implementation of structural changes connected with creating a green economy requires the involvement of the state.

### Introduction

As a result of the crisis 2008-2010, there were raised voices regarding the need for changes in both the basic paradigms of modern economics, as well as the structural framework of national economies. In the first case a

dispute flared up between opponents and supporters of liberalism. With regard to the second issue has gained in importance of the green economy concept. This is an economy based on the reduction of energy consumption, based on traditional energy resources, increasing energy and resource efficiency and increasing the share of energy from renewable sources.

Intensive efforts for green economy were taken especially in the United States. Green economy has also become one of the elements of the anti-crisis program adopted in the European Union. As justification for the introduction of structural transformation to a green economy can be identified: building new competitive advantages, the use of research potential, environmental considerations, the creation of new development framework. Creating a green economy, however, faces some obstacles: low demand for green products and services, higher cost of production of such goods, playing down the role of increased efficiency in the use of natural resources.

The purpose of this paper is identification states role in creating of a green economy.

### **Methodology of the research**

The research method is based on the analysis of strategic documents, anti-crisis plans, measures taken by the state, as well as examples of practical actions initiated by countries, in terms of the real possibilities of implementation. At the same time it presents guidelines for the implementation of the state policy in the field of creation of a green economy introduced by international organizations.

### **The role of the state in the economy**

After several decades dominated by the neoliberal doctrine, espousing reduce the role of the state in the economy, the crisis 2008-2010 revealed weaknesses of its assumptions. The sources of the crisis are justified both in the doctrinal concept, as well as the structure of the economy. No less important role played implications of market weakness. According to professor Grzegorz W. Kołodko: “Only the power of intelligent synergy with invisible hand of the market and the visible head of state creates opportunities for far-reaching economic success” (Kołodko, 2010, p. 95).

The state plays an important role in correcting scarcity of the free market in areas (Winiarski, 2006, pp.31-32):

- raising the efficiency of the economy in a societal scale,

- limit excessive inequalities in the distribution of the social product,
- stabilizing the economy.

There are also emphasized (Czaja, Becla, 2012, p. 134):

- the need for regulation in the economy,
- the existence of market failures in the competition,
- the existence of external effects.

Some of them revealed due to the economic crisis 2008-2010 especially in banking and financial sector. The effects of the crisis were the result of agreement for financial system to live its own live, because of limited regulations of innovation in that area (Flejterski, 2010, p. 138).

The state is obligated to ensure appropriate living conditions of citizens. That means not only working and livings opportunities, but also environmental quality. That have to be done through public concern about these elements, because of the enterprises activity and their pursuit of profit, which can be unrestricted, especially in use of the natural resources. This infinitive must be subjected to a rationalization. And that is, among others, the reason for which underlines the issue of sustainable development, defined as: "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (*Our common future*, (http)).

Significant is also quite common opinion, that the state is the largest economic entity, which regulates the functioning of other actors and institutions (Kaczmarek, 2004, p. 87). This conclusion corresponds with other: "We need a smart combination of the principles of economic freedom with a pragmatic, resulting from the principles of rationalism role of the state and the appropriate scope of the public sector"(Żyżyński, 2010, p. 41).

It should be emphasized that as a result of globalization, there appear new threats, which, because of its scope, require the active role of the state (Dach (ed.), 2008, pp. 16-17):

- environmental hazards, f. ex. destruction and environmental pollution, climate change;
- economic risk;
- social risk - increase in unemployment, poverty and hunger.

In some areas the role of the state is marginalized because of internationalization of economic relations and trade liberalization. On the other hand, it causes many negative effects and their limitation is possible only in cooperation of the states. This particularly applies to environmental issues.

## A Green Economy – definition and main goals

The concept of a green economy has gained in importance as a result of the crisis of the real economy, which started in 2008. Its genesis dates back to 1989, when it was used for the first time in the report "Blueprint for a Green Economy", prepared for the Great Britain government (*Blueprint for Green Economy*, London, 1989). A green economy is linked to the reduction of energy consumption based on traditional energy resources, increase and resource efficiency and increase the share of energy from renewable sources. Presently is identified with the reduction of energy consumption, based on traditional energy resources, energy and resource efficiency, growth the share of energy from renewable sources.

The concept was mainly developed in 2008 and 2009 by international organizations such as the United Nations Programme for the Environment (UNEP) and the Organization for Economic Cooperation and Development (OECD) through various programs, reports and declarations. One of the most important paper in this issue is New Economics Foundation report "A Green New Deal", which indicated the need to overcome the "triple crunch" crisis: financial, associated with climate changes and the crisis resulting from high oil prices (*A Green New Deal*, 2008). Please note that never before such proposal, based on establishing a direction for economic development strongly associated with environmental considerations, not gained such importance, as in the case of the recent crisis. Although, a milestone in this issue was Brundtland Commission report – "Our Common Future" (1987) and establishing the principle of sustainable development (*Our Common Future*, 1987) .

Explaining the reasons for this situation will help answer the question of what is a green economy. According to working definition, prepared by United Nations Environment Programme (UNEP), a green economy "results in **improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities**. In its simplest expression, a green economy can be thought of as one which is **low carbon, resource efficient and socially inclusive**" (UNEP, ([http](http://www.unep.org))). It is emphasized, that it can be regarded as a more pragmatic approach to the implementation of sustainable development (Burchard-Dziubińska, 2013).

Creating a green economy is aimed at achieving the following objectives (Szyja, 2013):

- increase of energy and raw materials efficiency,
- reduction of greenhouse gases (especially carbon dioxide),
- reduction of the level of pollution resulting from production processes,

- increase energy security,
- mobilizing the potential of innovative,
- acquiring new competitive advantages.

Implementation of these purposes is linked to the performance of green industrial revolution, that will generate global demand and create jobs, inter alia, through the development of clean and efficient technologies, increase the use of renewable energy, promotion of environmentally friendly transport systems (Szyja, 2011, p. 72).

In this sense a green economy includes the following elements:

- green products and services,
- green investments,
- green sectors of the economy,
- green public procurement,
- green tax reform,
- green jobs.

The first one group are products, that throughout the life cycle have a limited impact on the environment. Green investments are related to the energy self sufficient constructions or energy, raw materials efficient machines and equipments. It have been proposed to investment in natural capital, sustainable agriculture, human capital, infrastructure, innovation (Allen, 2012, p. 7).

In turn, green sectors of the economy are not only agriculture, forestry, and animal husbandry, but especially renewable energy, the production of environmentally friendly technologies.

Green public procurement, according to the European Commission, is “a process whereby public authorities seek to procure goods, services and works with a reduced environmental impact throughout their life cycle when compared to goods, services and works with the same primary function that would otherwise be procured” (*Public procurement for a better environment*, 2008, p. 4).

Green tax reform can help to cut down environmental externalities through appropriate structures of tax rates, tax exemptions (Aidt, 2010, pp. 31-43).

According to the International Labour Organization green jobs are those that (Szyja, 2013, s. 199):

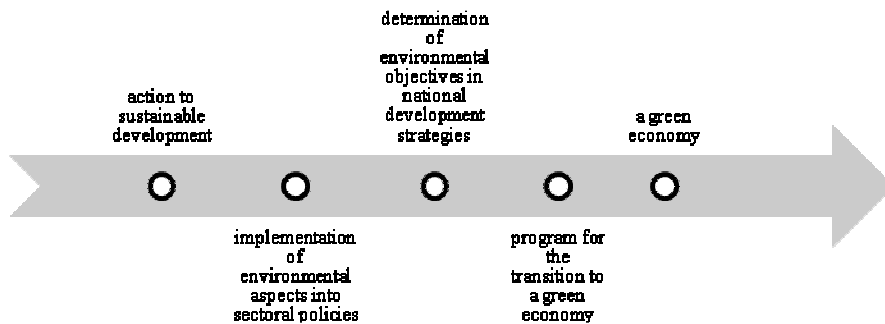
- contribute to reducing the consumption of energy and natural resources,
- reduce greenhouse gas emissions,
- reduce the amount of waste and pollution,
- foster the protection of ecosystems and restore their original state.

As Edward B. Barbier emphasized: “Transitioning to a green economy requires a mix of short- and long-term policies, a different mix of policies and instruments for rich as opposed to poor countries, and overcoming the political difficulty of implementation”(Barbier, 2012, s.

887). In turn Cameron Allen (UN Division for Sustainable Development) argues that, therefore, national governments should adopt their own definitions of a green economy in accordance with national priorities and circumstances (Allen, 2012, p. 3).

The success of the specific elements of a green economy depends on the involvement of three groups of actors, that means states, businesses and societies in their commitment to implement. A particularly important role is played by the first one, because of the tools and instruments that are available to and associated with the formation of economic policy. No less important is the process to achieve a state of the green economy, which requires a systemic approach (picture 1).

**Picture 1.** Phases on the way to a green economy in the context of planning



Source: Author's own

Most European countries have implemented some elements of sustainable development principle, both in terms of planning solutions, as well as through specific practical ones. However after crisis have been proposing green growth policy toolkit, which includes a step-by-step guide, for example four categories of policy tools, promoted by international institutions (AfDB, OECD, UN, World Bank, 2012, p. 17):

1. Incentivize - tools for pricing pollution and natural resource use, tools to complement pricing policies, tools to foster inclusiveness;
2. Design - tools to manage uncertainty;
3. Finance – financing and investment tools;
4. Monitor – monitoring tools.

## **Overcoming the crisis through the development of a green economy**

Because of the crisis on the U.S. mortgage market, states were obliged to counteract. This public commitment was something new in the face of neoliberal mainstream with the release of Milton Friedman. This occurred as a result of public disillusionment arbitrary enterprises and limited regulatory systems of financial markets. In these circumstances, some countries adopted anti-crisis programs. Furthermore politico-economic union like the European Union did made the same step to overcome the negative effects of the economic downturn. A new and simultaneously element of these plans were measures, aimed at structural transformation of economies to more environmentally friendly. This course of states involvement was justified by the following arguments:

- reduce the potential for similar events in the future;
- meet the challenges of the future such as: energy crises, climate changes;
- create new capabilities for the development of economies;
- development of innovation potential associated with clean technologies;
- reduce the addiction to natural resources, especially petroleum, gas;
- increase the efficiency of production processes;
- create new jobs;

Below will be given examples of activities taken in this particular aspect.

January 8, 2009 President Obama announced “The American Recovery and Reinvestment Act”. The value of the anti-crisis plan was 787 billion USD, of which nearly 80 allocated to projects connected with clean energy. Direct expenditures have been focused especially on: energy efficiency, reduce pollution of air and water, modernization of the power grid, reduce carbon dioxide emissions, transport, research and innovation, renewable energy sources. Mentioned funds have been transferred to government agencies, state authorities, scientific institutions and company, in the form of loans, guarantees, grants.

It is worth mentioned a few examples of projects. There have been developed project under the Department of Energy called SunShot, which aims to reduce the price of solar power to 1 USD / watt (up to 75%) in 2020 through advance in systems that convert light energy (photovoltaic technologies), increase productivity and optimize the use of solar and streamline procedures for obtaining permits for solar energy systems. Another instance is Clean Cities Program, covering nearly 100 cities. It has been designed to reduce the consumption of traditional liquid fuels and



increase the use of renewable fuels and develop new technologies in the field of transport. In turn, DOE's Advanced Technology Vehicle Manufacturing (ATVM) encourages companies in the expansion of production facilities for electric vehicles.

In addition to the funds it have been started to develop standards for example for fuel consumption and emission:

- introduce new requirements for car models from the years 2012 to 2016. In 2016, the cars have to pass no less than 35.5 miles per one gallon of gasoline, it is almost 15 km per 1 liter (6.7 liters per 100 km),
- set measure for medium and heavy truck models 2014-2018,
- introduce The National Emissions Standards for Hazardous Air Pollutants for Utility Boilers.

Furthermore there have been established economic goals, connected with environment for the implementation through 35 federal government agencies (Szyja, 2013, p.154):

- reduce fuel consumption by 2020 by 30%,
- reduce of water consumption in the economy for 2020 by 26%,
- increasing to 50% the proportion of waste recycled as early as 2015,
- growth share of public contracts which meet the requirements of a balanced and sustainable development to 95%.

“The European Economic Recovery Plan”, announced at the end of 2008, has highlighted the need of a coordinated action at national and the EU levels respond to the economic crisis. The EERP was based on two pillars, one related to fiscal policy, the second to the direct structural transformation. Thus, the first was connected with the Pact for Stability and Growth, and the second with the Lisbon Strategy. One pillar have been focused on boosting the economy in the short term by an immediate budgetary impulse amounting to 200 billion EUR. The second has been concerned the orientation of "short-term action to reinforce Europe's competitiveness in the long term". In this regard, it has been undertaken development of "smart investment", which means investing in growth of energy efficiency to create jobs and save energy; investments in clean technologies in order to promote, among others, the construction sector and the automotive industry. The Plan has also identified an important number of green initiatives with a focus on energy-saving and climate-change related measures. In this last means each efforts should have been focused on greening the economy through involvement in two areas, development of green energy infrastructure and energy efficiency. For energy projects in the period 2009-2010 was booked 3,980 billion EUR, respectively for gas and electricity infrastructure (2,365 billion EUR), offshore wind farms (565 million EUR) and the capture and storage of carbon dioxide (1.050 billion

EUR) (*Driving European Recovery*, ([http](#))). At the same time it has been modified regulations, which allow for an increase of up to 8 billion EUR for investments in energy efficiency and renewable energy in residential buildings (*European Parliament legislative resolution of 6 May 2009*, ([http](#))).

Some member states adopted their own anti-crisis programs, including “green” elements of recovery instruments. It was possible, because of launching legislative and financial instruments on the EU level for example (Szyja, 2012, p.184):

- consensus, among governments of the member states and the European Bank Investment, on loan guarantees and loans of innovative eco-products,
- use of the European Cohesion Fund to finance thermo-modernization and renewable energy source of buildings in all member.

According to the European Commission, the total sizes of the "green" parts of states packages differed between countries. The share "green" efforts ranged from 1.3% in Italy to 13% in Germany, and 21% in France. In most cases the 'green' elements was identified with energy efficiency, renewable energy, development of public transport and infrastructure and car scrapping schemes. In form of the type of instrument, member states used public investment, loans and loan guarantees, and subsidies (*Non paper „Green elements from member states recovery plans”,*([http](#))). For example significant amount of anti-crisis package in Belgium, Czech Republic, Estonia, France, Slovenia, Germany, Spain was allocated to increase of energy efficiency in buildings. In turn Denmark put on green transport, Finland on green technologies, Portugal on energy from renewable sources (*Green Growth: Overcoming the Crisis and Beyond*, 2009, p.15-18). In Poland, the government did not indicate in the package directions of actions and instruments to assist the implementation of structural transformations strictly to the "green economy". Indirectly pointed to the need to accelerate investments co-financed from EU funds, which concern, inter alia, solutions to municipal and supporting renewable energies.

States involvement in the area of creating a green economy due to several reasons. The first one refers to strategic dimension of projects mainly in the energy sector. This is connected with energy security and attempts to be independent of gas or oil supplies from abroad (table 1.).

**Table 1.** Energy dependency rate, EU 28, 2008-2012 (% of net imports in gross inland consumption and bunkers, based on tones of equivalent)

Specification	2008	2009	2010	2012
Crude oil	84,9	84,1	85,1	88,2
Natural Gas	61,7	63,4	62,1	65,8

Source: EUROSTAT

[http://ec.europa.eu/eurostat/statisticsexplained/index.php/Energy\\_production\\_and\\_imports](http://ec.europa.eu/eurostat/statisticsexplained/index.php/Energy_production_and_imports)

It should be emphasized, that between 2008 and 2009 import of crude oil declined, however it was short-lived as well as a decrease of gas supply in 2009 and 2010. In 2013 import of oil from different regions of world was in EU on the level: former Soviet Union - 39,8%, Europe - 18,76 %, America - 4,61%, Africa - 24,05%, Middle East - 12,89% (*Market Observatory for Energy*, 2014).

The second one is the high capital investment. It is due to the high costs and long payback period. Following is connected with little companies interest due to the high investment costs and uncertain benefits, especially in sectors related to environmental technologies and renewable energy (*The Global Environmental Goods and Services Industry*). According to World Economic Forum public action can help to **introduce additional capital** through other financing mechanisms by absorbing potential losses to other financiers, as well direct equity investment from the public sector can be valuable for projects with heightened technology risks (*The Green Investments Report*, 2013, p. 77).

Next the states have more possibilities to invest in research than individual companies, because of due to the financial possibilities and relationships with scientific centers (Vaitilingam,( http)).

Another one points to empower the public to the attitudes and behavior more environmentally friendly. This requires education from first class in primary school. "Individuals must be ready to learn, to change their habits" (Kink, Reinumägi, 2011, p. 183).

No less important is to reinforce consumers with various kinds of subsidies, which would encourage them to buy green products and services. As well states should arrange solutions for entrepreneurs to invest in more sustainable production.

And the last one is the need to introduce some structural changes in economy – greening up economy. That means not only development of green sectors, like renewable energy or green technologies, but also introducing ecological transformation of traditional sectors like automotive.

For example, in the United States the government addicted state assistance for General Motors and Chrysler, inter alia, from the introduction of efficiency technologies in production processes and environmentally friendly vehicles, which would be offer buyers. However, this example shows a conditional form of state influence on the company. It is also important to carry out the transformation of the economy and the individual sectors because on the one hand to external factors f.ex. climate change and on the other the pursuit of commercial entities to make profits through new types of products and services. It is essential noticing, both the need for and benefits of changes aimed at environmentally friendly solutions.

International organizations, in many publications, indicate specific solutions for the implementation of a green economy. OECD stresses the need for action in two areas: reinforcing economic growth and the conservation of natural capital, encompassing policies targeted at incentivising efficient use of natural resources and making pollution more expensive. Both require such activities as fiscal and regulatory settings (f. ex. tax and competition policy) and a mix of price-based solutions (OECD, 2011, pp. 11-12). UNEP highlights prioritising government investment and spending in support of a green economy, limiting government spending in areas that deplete natural capital, using taxes and market-based instruments to promote green investment and innovation, and investing in capacity-building, training and education. And UNESCAP emphasize the need of reforming the economic incentives framework, promoting sustainable infrastructure investment, and facilitating investment in natural capital (Allen, 2012, p. 6). World Bank divide green growth policies into three broad categories: the “getting the price right” policies; the “complement or replace prices” policies where markets signals can’t be relied upon to effect the desired changes; and “activist” policies such as innovation or industrial policy (World Bank, 2011, p. 23).

Also remarkable is to reach, on an international level, an agreement for green growth. The green growth is identified by "green investments", based on the development of technologies for the use of energy efficiency and reduce carbon emissions (*Declaration on Green Growth*, 2009). It is essential to create more effective climate change policy. However at the same time it should be pointed to “green race” in the production and sale of environmental technologies, primarily related to renewable energy. In this race are involved mainly The United States, China and German. Especially the second one is characterized by high growth of wind energy capacity (IEA, 2013, p. 10). It is possible due to the involvement of the state through measures like production subsidies and export support, which was a subject of petition of the United States in WTO. In many cases it is a serious threat for companies from other countries, particularly in USA. They need

support from the state to compete. At the same time the involvement of the state may result of the public policy and (Henzelman, Schaible, Stoever, Meditz, 2011, pp. 33-34):

- accelerate the development of selected environmentally friendly technologies through R & D activities,
- accelerate the market introduction of modern but expensive products in order to benefit,
- create companies in the green sector,
- form of response to international agreements.

In the declaration of Rio +20 have been noted, that the green economy have to be implemented by public policies, each country can choose an appropriate approach in accordance with national sustainable development plans, strategies and priorities which should include, inter alia (*Report of the United Nations Conference of Sustainable Development, 2012, p.11*):

- respect each country's national sovereignty over their natural resources taking into account its national circumstances, objectives, responsibilities, priorities and policy space with regard to the three dimensions of sustainable development;
- be supported by an enabling environment and well-functioning institutions at all levels with a leading role for governments and with the participation of all relevant stakeholders, including civil society;
- promote sustainable consumption and production patterns;
- continue efforts to strive for inclusive, equitable development approaches to overcome poverty and inequality;

In Author opinion the main obstacles in introducing green economy is to overcoming the gap between expenses incurred in the short term for environment friendly investment and the economic and social benefits achieved in the long term. In this regard, the state should take action to convince companies and the public to make the effort now incurring expenditure, which will bring the desired results in a long time.

## Conclusions

A green economy can be identified with new direction of development. It should be emphasized that many in this field has already been done, mainly because of anti-crisis programs, which were introduced to overcome the effects of the economic downturn.

The role of the state in the development of a green economy is essential, because of its instruments and measures, which are necessary for shaping supply and demand in the field of environmental solutions. Both

consumers and producers require support, because of high cost of green technologies, energy from renewable sources and green products. At the same time, there is need to finance research and innovation to lower price of such goods. The future of green economy depends also on global commitment on climate changes and ways of dealing with them, which depend on the cooperation of the states.

The further research will concern the involvement of enterprises in the process of transition to a green economy.

## References:

1. *A Green New Deal. Joined-up policies to solve the triple crunch of the credit crisis, climate change and high oil prices*, 2008, Retrieved form [http://b.3cdn.net/nefoundation/8f737ea195fe56db2f\\_xbm6ihwb1.pdf](http://b.3cdn.net/nefoundation/8f737ea195fe56db2f_xbm6ihwb1.pdf) (access 02.07.2014).
2. *A Toolkit of Policy Options to Support Inclusive Green Growth*. Submission to the G20 Development Working Group by the AfDB, the OECD, the UN and the World Bank, 2012, Retrieved form <http://www.oecd.org/greengrowth/toolkit.pdf> (access 18.12.2014)
3. Aidt T.S.(2010). Green taxes: Refunding rules and lobbying. *Journal of Environmental Economics and Management*, No. 60.
4. Allen C.(2012) *A Guidebook to the Green Economy*. UN Division for Sustainable Development.
5. Barbier Edward B.(2012) The Green Economy Post Rio+20. *Science*, Vol. 338.
6. Burchard-Dziubińska M. (2013) *Green economy as a new area of interest in economics*. Paper at the Ninth Congress of Polish Economists, Economics for the future. Explore the nature and causes of economic phenomena, Warsaw.
7. Czaja S., Becla A. (2012). *Disputes over the role of the state in the economy in modern economic theory*. In The challenges of modern economics. selected problems., Warsaw: Difin.
8. *Declaration on Green Growth*. OECD, Meeting of the Council at Ministerial Level, 24-25 June 2009.
9. *Driving European Recovery*. Volume 1, Communication for the Spring European Council., COM(2009) 114 final, Brussels 4.3.2009, Retrieved form [http://ec.europa.eu/commission\\_barroso/president/pdf/press\\_20090304\\_en.pdf](http://ec.europa.eu/commission_barroso/president/pdf/press_20090304_en.pdf) (access 15.07.2014).
10. *European Parliament legislative resolution of 6 May 2009 on the proposal for a regulation of the European Parliament and of the Council establishing a programme to aid economic recovery by granting Community financial assistance to projects in the field of energy* (COM(2009)0035-C6-0049/2009-2009/0010(COD)), Retrieved form

<http://www.europarl.europa.eu/sides/getDoc.do?type=TA&reference=P6-TA-2009-0366&language=EN>(access 17.07.2014).

11. Flejterski S.(2010) The global banking and financial crisis. Genesis, the actors, the consequences. In Kołodko G. W.(Ed.) *Globalization, Crisis and What Next ?*, Warsaw: Poltext.
12. Henzelmann T., Schaible S., Stoever M., Meditz H.(2011) The genesis of the Green Revolution and the expected economic benefits. In *Green growth, green profit. How green revolution stimulates the economy.* Warsaw : Roland Berger Strategy Consultants, Oficyna a Wolters Kluwer business.
13. Kaczmarek T. T.(2004) *Policy rules in the market economy. Role of the state.* Warsaw: Difin.
14. Kink M., Reinumägi S.(2011) Skills in the green economy. *Vocational Education: Research and Reality*, Issue 20.
15. Kołodko G. W.(2010) *Neoliberalism and the systemic crisis of the global economy.* In Kołodko G. W. (ed.) *Globalization, Crisis and What Next ?*, Warsaw: Poltext.
16. *Market Observatory for Energy. Registration of Crude Oil Imports and Deliveries in the European Union (EU27) (1) (INTRA + EXTRA EU), period 1-12/2013.* European Commission, Directorate General for Energy.
17. *Non paper „Green elements from member states recovery plans”*, Retrieved form [http://ec.europa.eu/environment/integration/pdf/recovery\\_plans.pdf](http://ec.europa.eu/environment/integration/pdf/recovery_plans.pdf)(access 15.07.2014).
18. OECD (2009) *Green Growth: Overcoming the crisis and beyond*, Paris.
19. *Our common future*, Retrieved form <http://www.un-documents.net/our-common-future.pdf>(access 17.07.2014).
20. Pearce D., Markandya A., Barbier E. B.(1989) *Blueprint for Green Economy.* London: Earthscan.
21. *Public procurement for a better environment.* Communication from Commission to The European Parliament, The Council, The European Economic and Social Committee and The Committee of the Regions, Brussels, 16.7.2008, COM (2008)400 final.
22. *Report of the United Nations Conference of Sustainable Development*, Rio de Janeiro 20-22 June 2012, A/CONF.216/16, New York 2012.
23. Szyja P. (2011) The role of "green" investments in anti-crisis packages in the United States and the European Union. *Economics and Environment*, 1 (39).
24. Szyja P.: *The role of Green New Deal Programs for creating socio-economic development* [in:] K. Górka, P. Szyja (ed.) "Green New Deal and selected problems of energy market and water management", Library "Economics and environment ", No 35, Cracow 2013.
25. Szyja P.: *The role of sustainability indicators and sustainable development in the study of the green economy.* Paper presented at the international conference Economics and Politics of sustainable

- development. Theory and statistical approach ", Urząd Statystyczny w Białymstoku, Uniwersytet w Białymstoku, 4-6 XII 2013 Białowieża;
26. Szyja P. ( 2013) Creating green jobs in situation of real economy crises. In Partycki S. (Ed.) Theories of crisis. Lublin: KUL.
  27. *Technology Roadmap. Wind Energy*, IEA, 2013, Paris, Retrieved form [http://www.iea.org/publications/freepublications/publication/Wind\\_2013\\_Roadmap.pdf](http://www.iea.org/publications/freepublications/publication/Wind_2013_Roadmap.pdf) (access 08.01.2015)
  28. *The Global Environmental Goods and Services Industry*, OECD, Paris, <http://www.oecd.org/industry/ind/2090577.pdf>(access08.01.2015).
  29. *The Green Investments Report*, WEF, Geneva, 2013, Retrieved form <http://reports.weforum.org/green-investing-2013/>(access 08.01.2015)
  30. *Towards Green Growth* 2011, OECD, Paris.
  31. Vaitilingam R.: Research for our future: UK business success through public investment in research. Retrieved form <http://www.rcuk.ac.uk/RCUK-prod/assets/documents/publications/researchforourfuture.pdf>(access 08.01.2015).
  32. *What is "the Green Economy"?*, UNEP, Retrieved form <http://www.unep.org/greeneconomy/AboutGEI/WhatIsGEI/tabid/29784/Default.aspx>(access 02.07.2014r.]
  33. Winiarski B. (2006) Economic policy. Warsaw: PWN.
  34. World Bank (2011) From Growth to Green Growth. *Policy Working Research Paper* , 5872.
  35. Żyżyński J.(2010) Neoliberalism - dead end of globalization. In Kołodko G. W.(Ed.) *Globalization, Crisis and What Next ?*, Warsaw: Poltext.