

## **"Green Economy- Social Cohesion and employment"**

**Pitoska Electra**

Associate Professor,  
Department of Accounting and Finance  
School of Management & Economics  
Technological Educational Institute of Western Macedonia, Greece  
[ilpitoska@yahoo.gr](mailto:ilpitoska@yahoo.gr) & [ipitoska@teikoze.gr](mailto:ipitoska@teikoze.gr)

**Karantinos Christos**

M.A. Public Relations & Marketing with New Technologies  
Special Managing Authority for the Operational Programme "Western Macedonia"  
Head of Unit  
[xkarantinos@yahoo.gr](mailto:xkarantinos@yahoo.gr)

### **Abstract**

*This paper is an empirical investigation on the matter of "green employment". Green economy is a new model of economic development that, according to its proponents, considers the environment and the quality of it as a vital pillar of financial activity and the sustainability of society. The green economy today is viewed in both the USA and the EU countries as the only way out of the current situation of major environmental issues and the global economic crisis. There is a large number of surveys and reports in the literature that relate to the creation of new jobs and the "green employment" the implementation of green growth can bring. Data relating to Greece are fragmented and incomplete.*

*In June 2014 was organized an empirical investigation to research in practice the relationship of "green growth" with employment and social matters in Greek reality. The field of research was the municipality of Kozani, an area that for decades has based its economic identity with the operation of lignite mines, five major power plants of the Public Power Cooperation S.A. Hellas, while facing increased environmental problems and high unemployment rates. The findings lead to conclusions which indicate that there is a degree of pessimism and distance from European practice.*

**Keywords:** Green economy, green employment, **Social Cohesion**

JEL Classification: R58

### **The green employment**

New employment prospects pass through environmental protection. Recycling, energy efficiency, biodiversity protection and the use of renewable energy sources are good for the environment and constitute both an economic boost and an opportunity to create new jobs in the Environmental Goods and Services Sector (EGSS) linked to energy production and efficiency, and to the sustainable management of resources such as water and waste.

Recent data on the development of "green" economy show its impact on the EU economic cycle. Good environmental practices have increased employment by 20%, an amount that could grow to 30% by 2030. Jobs linked to the field of environment and energy efficiency in the Union

have increased from 3 to 4.2 million between 2002 and 2011 and experienced a 20% rise between 2007 and 2011 in spite of recession (<http://italia2014.eu/en/news/post/ottobre/green-jpbs/>).

The integration of environmental and employment policies is a great opportunity for the Europe 2020 strategy. "Green Jobs" are quickly transforming traditional roles and creating new professions. According to the EU Commission, sustainable growth could translate into 20 million new jobs by 2020.

In July 2014, the European Commission presented the "Green Employment Initiative" based on:

- upholding a debate on the prospects of the green economy involving all stakeholders, employers and trade unions and sharing knowledge and practices on the green sectors at international level,
- identifying new competences that are needed and training for workers,
- shifting the tax burden from work to pollution,
- supporting small enterprises in the transition to comply with environmental regulations (European Commission "Employment: Commission outlines measures to maximize job opportunities in the green economy", 2 July 2014").

The Europe 2020 Strategy (EU COM (2010) 2020 final, Brussels, 3.3.2010) identifies the transition towards a green, low carbon and resource-efficient economy as one of the key ongoing structural transformations to achieve smart, inclusive and sustainable growth. The model for green growth is based on a structural economic change mainly driven by scarcity of resources (resource constraints and prices), and supported by public policies, technological change and innovation, new markets and changes in industrial and consumer demand patterns.

The Annual Growth Survey for 2015( EU 2014) stressed the job creation potential of the green economy and the need to develop strategic frameworks in which labour market and skills policies play an active role in supporting job creation. But integrated policy frameworks linking green growth and employment exist in only a few Member States.

The job creation potential linked to production of energy from renewable sources, energy efficiency, waste and water management, air quality, restoring and preserving biodiversity and developing green infrastructure is both significant and resilient to the business cycle changes. There has been considerable creation of "green jobs" even during the economic crisis, increasing from 3 to 4.2 million in the EU between 2002 and 2011, and by 20% during the recession years (2007-2011).

Also the report of Assistants Research Professors Robert Pollin & Jeannette Wicks-Lim (provide a snapshot of the kinds of jobs are needed to build a green economy in the United States (Pollin R. & Jeannette Wicks-Lim J., 2008). They focus on six key strategies for attacking global warming and highlight some of the major "green jobs" associated with each of these approaches.

The six green strategies are: building retrofitting, mass transit, energy-efficient automobiles, wind power, solar power, and cellulosic

biomass fuels. Pollin and Wicks-Lim show that the vast majority of jobs associated with these strategies are in the same areas of employment in which people already work in today, in every region and state of the country. For example, constructing wind farms creates jobs for sheet metal workers, machinists and truck drivers; increasing the energy efficiency of buildings through retrofitting relies on roofers, insulators and building inspectors. What makes these entirely familiar jobs "green" is that the people working in them are contributing their everyday labor toward building a green economy. (Robert Pollin & Jeannette Wicks-Lim, 2008, "Job opportunities for the green economy: A state by state picture of occupations that gain from green investments", Political Economy Research Institute, University of Massachusetts, Amherst.

The Green Employment Initiative Communication builds on the staff working document on "Exploiting the employment potential of green growth" that was part of the April 2012 Employment Package (IP/12/380, MEMO/12/252), which highlighted that up to 20 million jobs could be created between now and 2020 in the green economy. The Employment Package identified health care and information and communications technologies as the two other main areas of significant potential job creation.

Contrary to the above optimistic ideas there are those who are being critical and apprehensive. They state that green economy is an attempt to "rationalize and commercialize the rate of destruction of the environment, and an attempt to achieve development as a means of destroying the environment with the need for cost reduction that comes with the deterioration of the environment" (Naxakis, 1997.

### **The "green" jobs**

Recent reports from the International Labor Organization (ILO) in cooperation with CEDEFOP in relation to the skills required for green economy and employment, it is emphasized, among other things, in the acquisition of relevant skills, which is a necessary precondition for the transition to a greener economy.

Today, the lack of skilled personnel has already been recognized as a major problem in a number of areas, such as renewable energy, energy and resource efficiency, retrofitting of buildings, construction, and environmental services. The adoption and spread of clean technologies require skills relating to the application of technological solutions, customization, and maintenance. Skills are also of vital importance for economies and businesses, employees and businessmen, so as to respond and adapt swiftly in changes that come from environmental policies or climate change.

The International Labor Organization conducted applied research to investigate the current and future needs for skills required for the green economy, and has published, in conjunction with CEDEFOP, a series of related papers. In their report titles "Green Skills and Environmental Awareness in Vocational Education and Training" mapped the changes in nine professions in eight European countries (Greece, Germany, Italy, Hungary, Netherlands, Slovakia, Finland, and United Kingdom). The professions that were examined were: nanotechnology scientists, environmental engineers, energy inspectors, electricians, Photovoltaic installers, insulation workers, metal workers, vehicle

emissions inspectors, and collectors of recyclable materials (<http://edujob.gr/arthrografia/prasina-epaggelmata>).

What are the initial conclusions? According to the briefing note of the report, many businesses active in environmental industry, due to the current economic crisis and high unemployment, they have easy access to employees with professional qualifications. This fact encourages cutting employee-training costs to acquire "green" skills.

The CEDEFOP report showed that many green professions do not attract young people or women, because they are considered "heavy" labor. (Charitos P, 2014)

### **The green employment in Greece**

Data relating to green employment are fragmented and incomplete. The structure of green employment in Greece exhibits a bias: there is both a high-percentage of scientific personnel on one end, and on the other end a high-percentage of manual laborers with low-qualifications. The percentage of participation of personnel with intermediate educational level is small (Chrysogelos N., Theodoropoulos M., 2012) The demand of higher-education personnel with specialties relating to the environment is satisfactory. The latter is confirmed by the representatives of the corresponding respective professional bodies. According to a European study titled "The Situation of Renewable Energy in Europe" (EU 2013), it is estimated that, up until 2010, renewable energy sources were responsible for about 13,000 new jobs.

According to Greenpeace (Press release Greenpeace 7/09/2009 and Greenpeace's report <http://www.greenpeace.org/greece/el/news/118508/118517/green-development-new-jobs/>), green development is expected to create 256,000 - 403,500 new jobs in Greece up to the year 2020. This choice not only guarantees a way out from the economic crisis, but is also the only possibility to fight against climate change and to overcome the planet's environmental crisis. From the aforementioned job figures, it is estimated that 98,500 - 155,000 of them are full-time "green" jobs in the sectors of energy, construction, recycling, and agriculture. As a result of the shift towards green growth, the remaining are indirect jobs in wider sectors of the economy, due to increased consumption.

Green growth nowadays seems to safeguard jobs under threat, or to create new ones to achieve the necessary momentum to overcome the current economic crisis. These jobs are related to sectors of the economy that are either not paralyzed completely by the crisis, or that are deemed necessary to fight climate change. Green employment is increasingly gaining a greater share of the labor market. It is estimated that just in the sector of green energy technologies there are about 2.5 million people employed globally (440,000 in wind farms, 190,000 in photovoltaic energy, 625,000 in solar-thermal, and more than one million in biofuel and biomass). The trend in the above sectors exhibits a strong increase.

According to the estimates in Greenpeace's report, these jobs are additional, in the sense that they are either new (in the case of the renewable energy sources) or they save the jobs that would have ceased to exist without green activities (e.g. energy upgrades in building). It must be noted that the creation of new jobs in the aforementioned sectors will have indirect and positive effect in the total economy.

For every new job created directly as a result of the green economy there is an additional 1.6 jobs created indirectly in wider sectors of the economy, due to the increase in consumption.

## **The empirical investigation**

### **The Research methodology**

In June 2014 was organized an empirical investigation to research in practice the relationship of "green growth" with employment and social matters in Greek reality. The field of research was the municipality of Kozani, an area that for decades has based its economic identity with the operation of lignite mines, five major power plants of ΔΕΗ (Public Power Company), while facing increased environmental problems and high unemployment rates.

The research was conducted with a structured questionnaire, having open- and closed-ended questions that were addressed to local institutional representatives, and was completed during a personal interview. There were a total of 12 interviews. The questionnaire was made of 11 questions that were related to:

- the degree the notion of green economy is known,
- the degree to which it can affect local economies and societies in Greece to improve on the socio-environmental problems,
- the reduction of the unemployment,
- the better management of energy,
- the degree to which "green economy" can become a vehicle for the exit of the economic and environmental crisis.

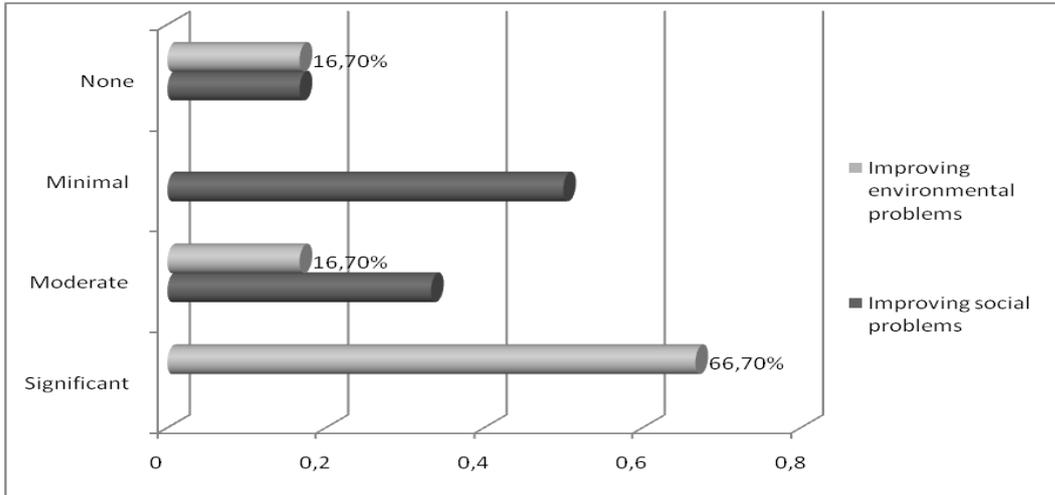
### **Research findings**

After the processing of responses it was found that:

The participants in the research were mostly men (83.3%), and to a much lesser extent women (16.7%). The majority of the respondents were in between the ages of 50 and 60 (66.6%), which is expected, since those who hold places of responsibility in Greece today are above 50 years old. Immediately the next age group, ages between 40 and 50, accounts for 16.6% of the participants. All of the participants are aware of the concept of "green economy".

Estimates of institutional representatives as to how green growth can be the way out of the economic crisis is relatively moderate and cautious. 50% responded "Maybe", 33.3% responded "No" and just 16.7% maintains that green economy can become a way out of the economic crisis.

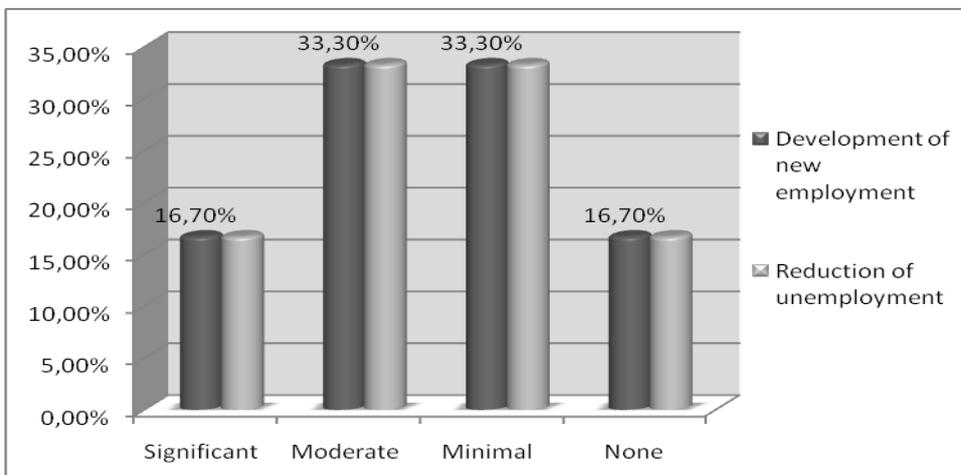
66.7% of the respondents believe that the "Green Economy" can significantly improve the environmental problems, 16.7% believe in a moderate improvement, and the remaining 16.7% think that there can be no improvement. As far as the ability for the green economy to contribute to the improvement of social problems, estimates show relative pessimism, since 50% believe in a minimal improvement, 33.3% believe in a moderate improvement and the remaining 16.7% to no improvement at all.



**1<sup>st</sup> Graph: Estimation of the effects on the improvement of environmental and social problems.**

According to the respondents, "Green Economy" can be anywhere from minimal to moderate help in the reduction of unemployment (33.3% each), followed by the same percentage (33.3%) as far as the creation of new jobs is concerned.

Only 16.7% of the respondents believe that it helps significantly in the creation of new jobs as well as the reduction of unemployment, while 16.7% believes that "Green Economy" has no effect on matters of unemployment and the creation of new jobs.

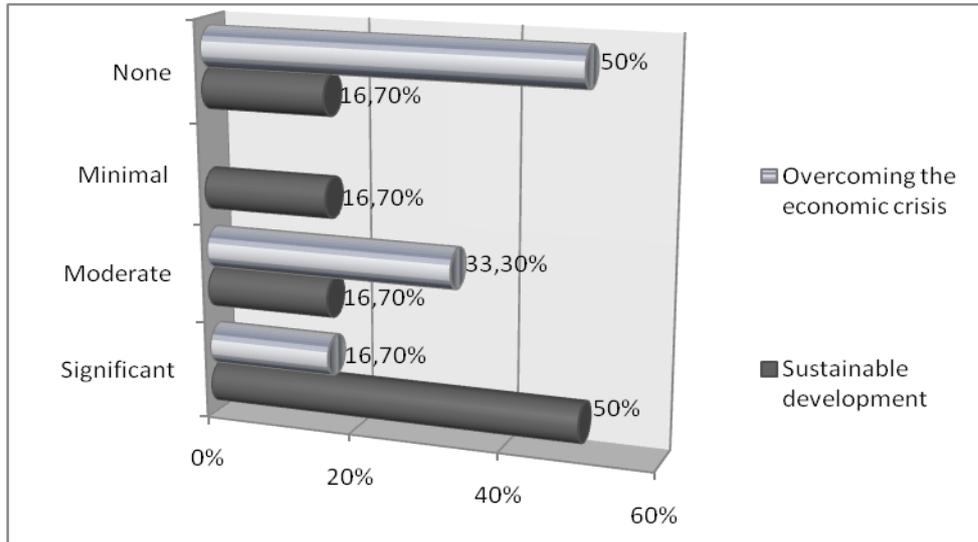


**2<sup>nd</sup> Graph: Estimation of the effects on the reduction of unemployment and the creation of new jobs.**

The participants' responses on the possibility of "Green Economy" to contribute to the sustainable development and in the overcoming the economic crisis show remarkable range.

A high percentage of the respondents (50%) believe that "Green Economy" is important for sustainable development, whereas the remaining responses come second, with none, minimal, and moderate being 16.7% each.

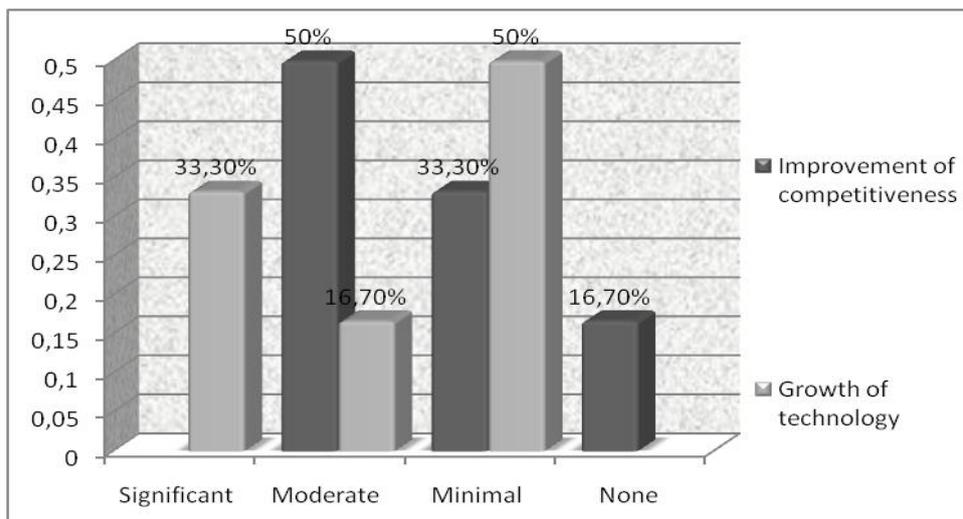
On the other hand, as far as the overcoming of the economic crisis is concerned, 50% of respondents believe that "Green Economy" cannot have any effect, 33.3% believe in a moderate effect, and the remaining 16.7% believe in a significant effect.



**3<sup>rd</sup> Graph: Estimation of the effects on sustainable development and the overcoming of the economic crisis.**

Concerning the improvement of competitiveness, 50% of respondents believe that "Green Economy" has moderate effect, 33.3% minimal effect, and 16.7% no effect.

Concerning the growth of technology, 50% of respondents believe that "Green Economy" has minimum effect, 33.3% believe it has significant effect, and the remaining 16.7% believe it has moderate effect.

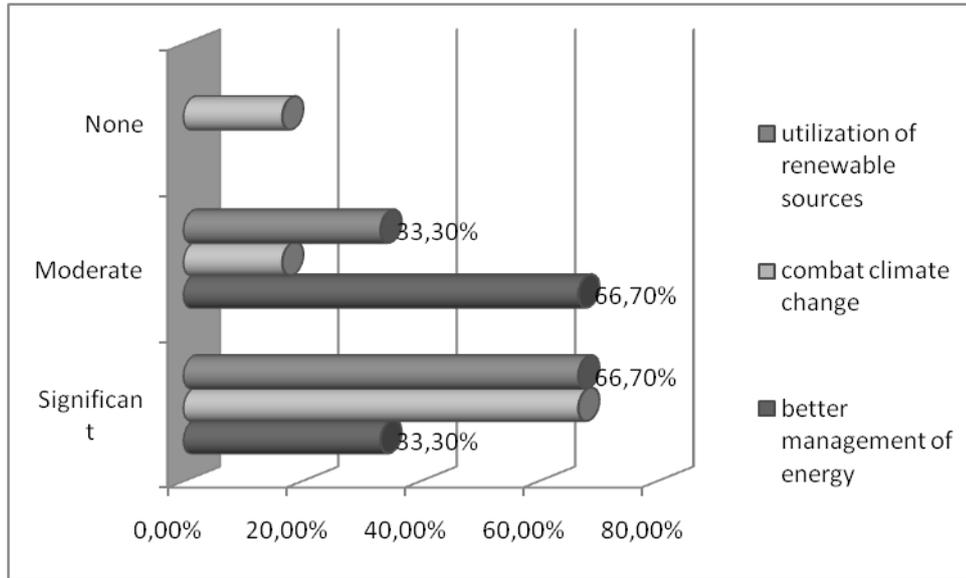


**4<sup>th</sup> Graph: Estimation of the effects on competitiveness and technology.**

66.7% of the participants believe that the effects of "Green Economy" are significant for the exploitation of renewable energy sources and moderate in better energy management. Moreover, 33.3% believe that

the effects of "Green Economy" are significant for the better management of energy, and moderate for the exploitation of renewable energy sources.

A high percentage of respondents (66.7%) believe that the effects of "Green Economy" in the fight against climate change are significant. Next follow the options moderate and none, each with 16.7%.



**Figure 5: Estimation of the effects on climate change and renewable energy sources**

Moreover, institutional bodies seem pessimistic about whether there may be a green economy in Greece today. 50% responded "Maybe," 33.3% responded "Yes" and only 16.7% responded "No". The above results express serious doubt on the matter of green growth.

Additionally, 50% of respondents believe that the natural environment can survive human exploitation, 33.3% believe it will not, and the remaining 16.7% believe it may.

As far as the assessment of green growth in the prefecture of Kozani is concerned, 50% believe its existence is "minimal", 33.3% percent believe it is "moderate" and the remaining 16.7% declined to respond. In the matter whether ΔEH (PPC), as the main source of energy in the prefecture of Kozani, manages correctly the electric energy and targets green growth, responses vary greatly. The answers given were "None" (33.3%), "Minimum" (33.3%), "Moderately" 16.7%, and 16.7% declined to respond.

Concerning the question on how they assess the fight against climate change throw "green growth", especially in the prefecture of Kozani, the responses vary greatly once again. 16.7% believe it is non-existent or declined to respond. Additionally, 33.3% of the respondents believe it is minimal or moderate.

Lastly, all participants believe that "green growth" has created few jobs in the prefecture of Kozani.

## **Conclusions - Summary**

After the literature review and the empirical investigation we conclude that:

The dominant forces present the green economy appears today as the solution to the economic crisis and in acute ecological problem that capitalism itself has caused.

The new investments in green business are presented as economic recovery, preaching new green jobs. Emphasis is given to particularly new green technologies and innovation that will bring new profits to the forces of capital.

The core of the green economy mainly concerns the shift in energy policy away from fossil fuel, combined with even greater industrialization of agricultural production.

Green growth is expected to bring in Greece at total of 98,500-155,000 total of full-time jobs by 2020. Taking into account the indirect jobs triggered by the shift to a green economy (due to increased consumption), total employment (direct and indirect) as of 2020 is estimated at 256,000-403,500 jobs.

Based on the empirical investigation, it is concluded that all institutional bodies know the concept of "green economy", doubt whether it can become a means out of the economic crisis, and whether the Greek state and adopt its principles and guidelines.

The application of green economy is considered important to the improvement of environmental problems, the sustainable growth and the exploitation of renewable energy sources, the fight against climate change, and the improvement of the competitiveness of the Greek economy.

It is estimated that the effects of "green growth" to the reduction of unemployment and the creation of new jobs will be moderate. On the social problems front it is thought it will be minimal.

The evaluation of the contribution of "green economy" at the local level in the area of Kozani, where ΔΕΗ (PPC) is active in the production of electricity from lignite in an overburdened environment, shows that institutional bodies do not expect major changes.

## **References- Sources**

- Apollo Alliance et al 2008, Green-collar jobs in America's cities: Building pathways out of poverty and Careers in the clean energy economy <http://www.apolloalliance.org/downloads/greencollarjobs.pdf>
- BMU 2009, Gross Employment from Renewable Energy in Germany In the Year 2008- A first estimate. March 06, 2009. [http://www.bmu.de/files/english/pdf/application/pdf/ee\\_bruttobeschaeftigung\\_08\\_en\\_bf.pdf](http://www.bmu.de/files/english/pdf/application/pdf/ee_bruttobeschaeftigung_08_en_bf.pdf)
- Chrysogelos N. and Theodoropoulos M., 2012, "Environmental Protection and Employment," The Greens in the European Parliament.
- De Morsella T., 2009, Which country has the Greenest Stimulus Package? March 20, 2009 <http://greeneconomypost.com/country-greenest-stimulus-package-674.htm>

- Duppresoir S. et al 2007, *Climate Change and Employment: Impact on Employment in the European Union-25 of Climate Change and CO2 Emission Reduction Measures by 2030*. (Brussels: European Trade Union Confederation, Instituto Sindical de Trabajo, Ambiente y Salud, Social Development Agency, Syndex, and Wuppertal Institute, 2007), pp.151-52
- EU, 2010, "The Europe 2020 Strategy," EU COM 2020 final, Brussels, 3.3.2010
- European Commission, 2012, The Green Employment Initiative Communication builds on the staff working document on "Exploiting the employment potential of green growth" that was part of the April 2012 Employment Package (IP/12/380, MEMO/12/252),
- European Commission 2012, Press release "Commission presents new measures" and identifies key opportunities for EU job-rich recovery" Strasbourg, 18 April 2012
- EUROPEAN COMMISSION, COM 2010 2020 final COMMUNICATION FROM THE COMMISSION EUROPE 2020 "A strategy for smart, sustainable and inclusive growth" Brussels, 3.3.2010
- European Commission, 2013, *Situation of Renewable Energy in Europe*, [http://ec.europa.eu/europe2020/pdf/energy2\\_el.pdf](http://ec.europa.eu/europe2020/pdf/energy2_el.pdf)
- EU, 2014, *Annual Growth Survey for 2015* Brussels
- European Commission, 2014, "Employment: Commission outlines measures to maximise job opportunities in the green economy" 2 July 2014"
- Friedman T.L., 2008, *Hot, Flat and Crowded, why the world needs a green revolution and how we can renew our global future*. Great Britain by Allen Lane
- Greenpeace, 2009, Press release 7/09/2009 "Green Growth and new jobs"
- Greenpeace, (2009), Greenpeace's report <http://www.greenpeace.org/greece/el/news/118508/118517/green-development-new-jobs/>
- Haritos P., 2014, "the green professions in greatest demand in the EU", Newspaper Kathimerini and ANA / MPA
- JEDI (2008, The Job and Economic Development Impact models. a. <http://www.nrel.gov/analysis/jedi>
- Morison J. et al 2005, "Survey and Analysis of Labour on Organic Farms in the U.K. and the Republic of Ireland," *International Journal of Agricultural Sustainability*, 3(1), 2005.
- Naxakis Ch., 1997, "The greening of development: The impact on the environment since the Treaty of Maastricht," *Utopia Magazine*, 26, page 23, Athens
- Pollin, R., and Wicks-Lim J., 2008, "Job opportunities for the green economy: A state by state picture of occupations that gain from green investments," *Political Economy Research Institute*, University of Massachusetts, Amherst.
- Ragwitz M. et al 2009, The impact of renewable energy policy on economic growth and employment in the European Union. Summary of the results of the Employ-RES research project conducted on behalf of the European Commission DG Energy and Transport. April 2009. Participating partners: Fraunhofer ISI, Ecofys, EEG, Rutter+partner, Seureco, LEI.
- Renner M. et al 2008, *Green Jobs: Working for People and the Environment*. Worldwatch Institute Report 177
- United nations 2009, *Green Economy, A transformation to address multiple crises*. An interagency Statement of the United Nations System.
- White S. and Walsh J., 2008, *Greener Pathways: Jobs and Workforce Alliance-The Apollo Alliance*. <http://apolloalliance.org/wp-content/uploads/2009/01/greenpathways1.pdf>