

Sveriges lantbruksuniversitet Swedish University of Agricultural Sciences

Faculty of Natural Resources and Agricultural Sciences

Framing Renewable Energy

Dimitrios Mavromatis

Department of Urban and Rural Development Master's Thesis • 30 HEC Environmental Communication and Management - Master's Programme Uppsala 2017

Framing Renewable Energy

Dimitrios Mavromatis

Supervisor:	Hanna Bergeå, Swedish University of Agricultural Sciences, Department of Urban and Rural Development
Examiner:	Lars Hallgren, Swedish University of Agricultural Sciences, Department of Urban and Rural Development

Credits: 30 HEC Level: Second cycle (A2E) Course title: Independent Project in Environmental Science - Master's thesis Course code: EX0431 Programme/Education: Environmental Communication and Management – Master's Programme Place of publication: Uppsala Year of publication: 2017 Online publication: http://stud.epsilon.slu.se

Keywords: Framing Theory, Renewable Energy Resources

Sveriges lantbruksuniversitet Swedish University of Agricultural Sciences

Faculty of Natural Resources and Agricultural Sciences Department of Urban and Rural Development

Abstract

Media plays an important role in the education of the public opinion in relation to environmental issues. This empirical study examined how the online Greek media is framing renewable energy resources, the EU directive and the Greek action plan, during the period of 2015-2017. The study identified seven unique frames that journalists chose for the representation of the news, the economic development/ competitiveness, individual progress, sustainability, diplomacy, European relations, technological innovation and public accountability. These frames were generated after the inductive qualitative methodological approach and later have been compared to Nisbet's (2009) typology of frames. As a result, the findings suggested that the main focus has been given to economic frames, while there is a lack of frames that concern the environment. Additionally, the data showed that very little is discussed about sustainability, while the focus of the media is economic, diplomatic and innovative ideology. Thus, this paper extends our understanding on how the media frames online news articles concerning the environment. While these findings can attribute with further detail to the knowledge we have about how the Greek media frames renewable energy.

Keywords: Framing Theory, Renewable Energy Resources

Table of contents

1	ntroduction	7	
	1.1 Problem formulation	8	
	I.2 Aim and research questions		
2	Background to online news media and EU Directive		
	2.1 Online news media and Environment	9	
	2.2 Renewable Energy Directive and the case of Greece	9	
	2.3 Renewable Energy Resources and the Media Coverage	10	
3	Literature Review	12	
4	Theoretical Framework	15	
	1.1 Framing Theory	15	
	1.2 Media and Framing	16	
5 Research Design and Methods		18	
	5.1 Data sample	18	
	5.2 Data coding	19	
6 Results		21	
	6.1 Economic Development / Competitiveness in EU and Greek Level	21	
	6.1.1 Individual financial progress in relation to RES		
	6.1.2 Tecnological innovation in regard to Renewable Energy Research		
	5.2 Sustainability and Envrionmental Frames		
	6.3 EU and International Relations and the exploitation of RES		
	6.3.1 EU members and competitiveness		
	5.4 Greek Public Participation and Public Policy	28	
7	Discussion	30	
8	Conclusion	32	
R	ferences	33	
13	t of media articles	34	
ы	l ui iiieuia ai liuies		

List of tables

1 Introduction

"Achieving solutions to environmental problems that we face today requires long-term potential actions for sustainable development. In this regard, renewable energy resources appear to be the one of the most efficient and effective solutions." (Dincer 2000, p.157)

Under the same mindset, EU has created a Renewable Energy Directive that aims to establish an overall policy which targets the production and promotion of energy from renewable sources in an EU level. For Greece, this means an obligation to reach 20% of energy consumption from sustainable resources by the year 2020 (European Commission 2017). This goal has created an online media discussion referring to the Greek action plan that follows the Renewable Energy Directive of EU.

According to the Ministry of Environment Energy and Climate Change, Greece seems to be on the right track to achieve EU's obligation (YPERKA.gr, 2010). Based on the data presented by YPERKA (2010), Greece will reach both the minimum RES (Renewable Energy Sources) target by 2020, while it will even manage to reach a surplus of almost 21% in gross final consumption by 2020. On the other hand, the environmental public awareness is very low (oecd.org, 2010). In regard to the environmental performance of Greece and the Greek environmental public awareness, the Organization for Economic Cooperation and Development (OECD), argues that "although efforts have been made to raise public awareness of environmental issues, lack of familiarity with the concept of sustainable development still constitutes a handicap for policy implementation [...]" (oecd.org, 2017). One of the main parameters of YPERKA's action plan is to address the issue of social opposition to renewable energy (yperka.gr, 2010). The contradicting point is that although this parameter has been presented in the national action plan, the Greek citizens are not familiar and aware with issues around sustainable development, environmental awareness and renewable energy (oecd.org, 2017).

This identified paradox, between the goal of implementation of RES and the public education, has been assigned to be resolved by three different stakeholders, the Greek Government, NGOs and News Media. These stakeholders can educate and familiarize the Greek public opinion with environmental issues (yperka.gr, 2010; oecd.org, 2017). Journalists and mainstream news media are among the most important sources of information about the environment because their language use and representations of social events tap into existing frames and narratives of the general public (Cox 2013). Related to the above, this paper will focus on online news media and will treat them as one of the main sources that generates public awareness and education (Cox 2013; The Huffington Post 2016). This study aims to describe how media represents the information given about the environment, more precisely about the EU Directive and the national action plan of Greece. In terms of framing processes, how do environmental journalists choose specific narratives in order to structure and organize the news articles by making salient specific sides of the news? Based on the findings of the research the thesis will discuss the connections of the frames and the environmental issues from the perspective of online news media. That will determine whether we experience a lack of environmental frames and frames supporting environmental awareness, on a sample of online news articles that constitutes a problematic parameter on the rise of environmental awareness and education (Djerf-Pierre 2016, Lakoff 2010).

We are currently in the last phase of the national action plan and therefore Greece and all the EU countries have to present the status of their performance in order to assess whether or not they will accomplish to comply with the EU directive and their original action plan. Therefore, the various news articles presenting the national performance are one of the main sources of information (The Huffington Post, 2016; diaNeosis.gr, 2017).

1.1 Problem formulation

I have identified a paradox between the Greek implementation of Renewable Energy Sources (RES) and the public environmental awareness. Although Greece is likely to be among the first countries that will successfully fulfill the EU's Directive, the Greek public opinion appears to have a very low environmental awareness. This paradox can create an obstacle for future policy implementation (oecd.org, 2010) that Greece will be expected to achieve. Environmental journalism and news media agencies have a responsibility to produce news regarding the environment (Cox 2013). For scholars, such as Cox (2013), media is considered among the most important sources of information regarding the environment. Therefore, it is important to assess the frames that the news media use in order to understand their discourse regarding the Renewable Energy Directive and the national action plan. As a result, this assessment will allow us to comprehend how environmental and energy issues are framed in Greek online media and how these frames are employed to support or discourage environmental awareness and understanding in the Greek public.

1.2 Aim and research questions

The aim of this research is to identify and analyze the frames that the news media uses in order to refer to the issue of the Renewable Energy Directive and the Greek national action plan. Through this study I want to present what the media chooses to highlight while producing news and whether or not we experience a lack of environmental frames. In the end, this study will come to contribute to the understanding of how news media frames renewable energy. Therefore, the research question of my thesis is:

What frames does the Greek news media use when communicating about the Renewable Energy Directive and the National Action Plan?

To accomplish the assessment I collect news articles from online sources that are dealing with renewable energy. A qualitative analysis is applied to the sample through which I will identify themes, patterns, and repetitions, with the use of language (words, catch phrases, stock phrases, metaphors and images) that the media is using in order to reproduce the news about the above topic.

2 Background to online news media and EU Directive

In this chapter, I present background information related to the topic of renewable energy and media's representations of it.

2.1 Online news media and Environment

Hansen (2010) refers to the importance of media on the distribution of news regarding the environment: "what particularly distinguishes the history of the recent half-century or so is the crucial role played by the mass media and communication is not only helping to define 'the environment' as a concept, but more particularly in bringing environmental issues and problems to public and political attention." (p. 6). Both Cox (2013) and Hansen (2010) consider news media as one of the main sources of public education and information regarding environmental issues and subjects. Hansen (2010) emphasizes the importance of media on making the public aware of important environmental issues and stories. From that point of view, news communication becomes the core source of how we receive information regarding environmental issues. Therefore, the popular media can set this issue on the public's agenda, educate, make people aware and potentially resolve environmental problems (Hansen 2010; Cox, 2013).

Online news sites and traditional news media are the two main sources that distribute official information regarding the environment (Hansen 2010; Cox, 2013). In order for an environmental story to be published it needs to compete with the other news stories, based on the value of information. This is the reason that there are cases about environment that never get published (Cox 2013). Therefore, journalists writing news about the environment can experience that they need to produce news in a specific way because "environmental stories must compete with news of war, unemployment, terrorism, and other breaking news" (Cox 2013, p.145). For that reason, the media tends to frame the environmental stories in combination with issues such as unemployment and development in order to set them as breaking news (Cox 2013).

Online media (newspapers websites, news media websites etc) generates information surrounding the implementation of the renewable energy strategy on the Greek and EU level. News coverage of environmental stories "began on sustained basis in the 1960's ... reporters found themselves covering issues like dioxin, smog and endangered species, as well as oils spills, air pollution, and nuclear fallout." (Cox 2013, p.145) As Cox (2013 p.145) mentions in 1990 the field of environmental journalism was established by the Society of Environmental Journalists (SEJ).

2.2 Renewable Energy Directive and the case of Greece

This last decade we notice a big wave of debates revolving around the climate change and the turn to green energy consumption on the EU level (Cox, 2013). The European Union has created the Renewable Energy Directive in order to oversee and coordinate the performance of the EU members towards this shift to renewable energy resources (European Commission 2017). The directive allows each country to follow a different national plan based on its unique natural and financial resources. The directive obligates the EU countries to create a National Action Plan presenting their possibilities, opportunities and chances to reach this common goal and the increase of renewable energy production

and use on both, national and EU level. The Greek national action plan is also called 202020 (reach 20% of renewable energy consumption by 2020) since the goal is to reach a level of 20% green energy by 2020 (European Commission 2017).

"The Renewable Energy Directive establishes an overall policy for the production and promotion of energy from renewable sources in the EU. It requires the EU to fulfil at least 20% of its total energy needs with renewables by 2020 – to be achieved through the attainment of individual national targets. All EU countries must also ensure that at least 10% of their transport fuels come from renewable sources by 2020." (European Commission 2017)

In order to present a country-specific national action plan that legally binds Greece to achieve the goals of EU directive, the Greek parliament adopted the law L3851/2010. On 4th June 2010 it came into effect and specifies "ambitious national targets for RES (namely 20% on final energy consumption, 2% above the mandatory level of 18% set by Directive 2009/28/EC)" (YPERKA, 2010 p. 7). The Greek national plan focus on substantial changes in the use of RES primarily in electricity, heat and transportation. The renewable energy sources as presented in the national action plan from 2010 are: "285 ktoe (tone of oil equivalent) are produced by hydroelectric plants, 193 ktoe from wind power plants, 174 ktoe from solar thermal systems, 63 ktoe from biofuels, 35 ktoe from biogas, mainly for electricity generation and 17 ktoe from geothermal energy." (YPERKA, 2010 p. 7).

Greece as a member of the European Union applied its own Action Plan in order to reach the 20% of renewable energy consumption by 2020. In this Action Plan the Ministry of Environment and Energy, presented a plan in which the country has to focus on electricity, heat and transportation. The plan also presented the challenges that Greece may come up against: "the productive and balanced exploitation of RES requires the successful tackling of already identified barriers, which include social opposition at local level, bureaucratic constraints and lengthy timeframes for the licensing procedure, investment climate and feasibility and deficiencies in the physical planning" (YPERKA, 2010 p. 8). The quote shows the explicit emphasis of the social dimension and therefore takes its importance into consideration.

2.3 Renewable Energy Resources and the Media Coverage

The results of the survey "what Greeks believe in 2017" conducted by diaNeosis Research and Policy Institute (2017 p. 136) showed that the online news media is one of the main sources of information for the Greek citizens. The data summarizes that Greeks are collecting their news primarily online (52.8%) and secondly from television (27.9%). Greeks that choose traditional newspapers for their news represents 6.3% of the total population. As this survey did differentiate between types of news (environment, war, unemployment and so on) I am concluding the numbers refer to the collection of general news and therefore imply news concerning environmental issues.

The EU Directive and Action Plan is one of the biggest organized attempts for Greece and Europe as whole towards sustainable development. The directive calls for a systematic control of the energy consumption (Council Directive 2009/28/EC). The program aims to increase the use of renewable energy, in order to reduce the CO2 emissions and comply with "Kyoto Protocol to the United Nations Framework Convention on Climate Change, and with further Community and international greenhouse gas emission reduction commitments beyond 2012." (Council Directive 2009/28/EC, p. 16).

The Renewable Energy Directive became more relevant in the last three years and which implies more pressure on Greece to fulfill the obligation to comply with the EU policy on

renewable energy consumptions and reach the targets within the upcoming years. The media has reported of the same agenda, as it appears from the several articles published regarding the 202020 agreement, the Greek national plan in relation to the Directive and the progress of Greece in comparison to the rest of EU members and the EU in total.

3 Literature Review

In this chapter, I present previous studies that focus on framing of the news media. The research of the topic showed that most of scholars are using combined methods, qualitative and quantitative when they are conducting framing research.

Many scholars have used as a reference Nisbet's (2009) article on Communicating Climate Change: Why Frames Matter for Public Engagement. In the center of his research Nisbet presented the opposing ideas of American citizens, mainly the Republicans and the Democrats, regarding the climate change. Nisbets investigated the power of communication and specifically the power of framing. He mainly discussed the paradox that even though Obama's administration is committed to addressing climate change, the necessary level of public engagement with the issue still appears to be missing. He further claimed that framing is inevitable when communicating and he gathered a set of frames that appear to reoccur across past framing research, that he called 'Typology of frames applicable to climate change'. The intention of his article was to identify and analyze how the public polarization is been assisted by politics, media and partisan ideology from the perspective of using a specific storyline and framing climate change. In order to achieve that Nisbet created the "Typology of frames applicable to climate change". Right below you can see the 7 different types of frames that Nisbet gathered as a represented sample of the media framing storylines.

- "Social progress: A means of improving quality of life or solving problems; alternative interpretation as a way to be in harmony with nature instead of mastering it.
- **Economic development and competitiveness**: An economic investment; market benefit or risk; or a point of local, national, or global competitiveness.
- **Morality and ethics:** A matter of right or wrong; or of respect or disrespect for limits, thresholds, or boundaries. Scientific and technical uncertainty; A matter of expert understanding or consensus; a debate over what is known versus unknown; or peer-reviewed, confirmed knowledge versus hype or alarmism.
- **Pandora's box/Frankenstein's**: monster/runaway science A need for precaution or action in face of possible catastrophe and out-of-control consequences; or alternatively as fatalism, where there is no way to avoid the consequences or chosen path.
- **Public accountability and governance:** Research or policy either in the public interest or serving special interests, emphasizing issues of control, transparency, participation, responsiveness, or ownership; or debate over proper use of science and expertise in decision-making ("politicization").
- Middle way/alternative path: A third way between conflicting or polarized views or options.
- **Conflict and strategy:** A game among elites, such as who is winning or losing the debate; or a battle of personalities or groups (usually a journalist-driven interpretation)." (Nisbet 2009, p. 18)

One of the first scholars that I came across on my research is Jonson (2011). She conducted an analysis of Swedish Newspaper Dagens Nyheter with a focus on environmental risks in the Baltic Sea. Her topic and her approach to the above issue attracted my interest and helped me out to see how we can apply the framing theory on news media sample. The study analyzes the extent and in what way the risks of the Baltic Sea have been discussed in Swedish news media in 1992-2009. The interest of the study is on how these environmental risks are represented in news media and which risks received the most attention and if there have been any changes over the time. This study focused as well on how the media frames the environmental risks, in terms of what are the problems, solutions and main actors presented. Jonson was interested in seeing how media constructs discourses on uncertain knowledge, such as the risk of eutrophication. The findings displayed that media gave mainly attention to the risk of eutrophication and the main actors were authorities, scientific experts, organizations, and politicians, while it showed that the public opinion is not visible. The media showed a lack of scientific knowledge and therefore a lack of scientific solutions. Further, the issue of eutrophication has been framed as problem and a risk for environment, while in some examples eutrophication was framed as a cause of other risks.

Another study that focuses on framing of renewable energy is that of Djerf-Pierre et al. (2015). The scholars conducted a comparative study of newspapers in Australia and Sweden. The above paper, once again used a similar approach as Jonson (2011), and showed me the perspective of a comparison study based once again on the framing theory. The study focuses on print media with a deductive, quantitative methodology, in order to investigate "how renewable energy is represented in the quality press and whether the structural and institutional differences create different journalisms, with regard to how renewable energy is framed in news" (Djerf-Pierre, 2015 p. 635). This study applies Nisbet's (2010) typology and guidance to label the frames that used in the deductive approach, by identifying various framing devices such as the choice of words and arguments. The study identified: economic frames, environmental frames, science and technology frames, political frames, civil society frames and the analysis moved further in identifying the actors that were presented in the news. As result the study finds a combination of structural and institutional factors to influence the amount of the media attention given to renewable energy.

Rogala (2011) conducted a content analysis in three American newspapers aiming to identify the framing of fossil fuels and climate change published between 2008 and 2011. Another scholar has studied how media frames the climate change, and used as sample specific media. This study showed me, how media frames news and presented the different forms of frames that news stories adopt when they are producing news about environmental issues. I was also important for me to see the research design of Rogala. She employed content analysis with a set method of coding, by combining mixed methods approach. The findings showed that the rate of environmental stories has declined, while the content analysis showed that the stories in New York Times was publishing articles in depth and unbiased in comparison to USA Today and Washington Post. The scholar identified through the content analysis, Nisbet's suggested frames such as, "be worried," "environmental stewardship," "public health," "solutions," "conflict," and "social progress" frames. The findings showed that the most common way that media framed this topic was "conflict" and "be worried" frames. The content analysis commented on matters like the tone of the article based on the frames used, and showed that only one Newspaper displayed the "solution" frame, which was discussed as an optimistic attitude in regard to the problem.

Similarly, Nirmala and Aram (2017) performed a quantitative and qualitative content analysis of four Indian online newspapers for the calendar year of 2014 in order to find the newspaper framing of environmental issues. That was one of the first papers that I read and had a clear connection with the idea, I had exactly in my mind when designing this research. The scholars' focus had a similar core with my thesis, even though I was not planning to apply quantitative research. Their qualitative approach and content analysis showed me how to discuss the different topics that the content analysis showed. The prominent frames, that they identified, were political, economic, responsibility, scientific, extreme weather events and biodiversity. Additionally, the research showed that newspaper in English language were covering rather issues of climate change and international news and were allocating more space on environmental news than local newspapers. The study also presented that local newspapers were not framing the information with scientific and technology frames. While from an overall perspective the environmental issues found to be low in comparison to other issues and the results suggested that the communication of environmental stories can increase the awareness and education on climate change and environment.

Based on the above discussed study cases, this study is using an inductive qualitative approach on 29 online news articles to investigate the way that Greek media frames RES, during the period of 2015-2017. The analysis targets to identify and interpret frames that are used in the news articles. In contrast to the approach of the above scholars this paper will not use quantitative methods. In this case, the coding and analysis are performed inductively, that is why I focused on the observation of words and phrases that the reporter/media applied to construct news about the Renewable Energy Directive and the National Action Plan. This fact allowed the findings to be open to my interpretation, and the evolving of frames based on my coding process and inductive approach. This is what differentiates my study from the ones presented above. The above scholars choose to conduct a deductive research apporoach where they try to test Nisbet's hypothesis, on the other hand in this thesis I used an inductive approach where I observed some patterns and I developed some general conlusions.

My inductive approach has generetaed findings that are interesting to be compared with Nisbet hypothesis, not in an attempt of a deductive approach, rather as an intention to give a depth to my findings (see chapter 6). This comparison performed only in the final stage of my research and was not part of my data collection and coding process.

It was interesting to observe that all the above scholars, performed mixed methods and used Nisbets typology of frames as part of their data collection. Further the above articles are using similar if not identical approach on framing analysis, while, the majority is using printed news media articles as sample of their research. The previously mentioned articles have been selected based on their interest in framing theory and on the factor that they performed content analysis on news media articles. Therefore those studies, showed me how other scholars conducted qualitative content analysis based on the identification of different frames in news media.

4 Theoretical Framework

In this section I present the theoretical framework centrally applied in the research of this thesis. The main theory used to address my research problem is framing theory.

4.1 Framing Theory

Framing theory, can be described as the guidance the sender of an information offers to the receiver when constructing the communicating text, in order to guide/frame it in a way to call the attention to a specific aspect of the discussed issue (Hansen, 2010; Cox, 2013 Ardèvol-Abreu 2015; Djerf-Pier, 2015). In that way the construction of the communicating text gives power to the source to generate interpretive schemas to highlight and indicate a path of receiving and interpreting the produced information (Ardèvol-Abreu, 2015).

Framing theory offers scholars a research tool that allows them to see how media focus es the attention on specific issues by placing them in a concrete meaning. Hansen (2010) states that "frames, in other words, draw attention, like a frame around a painting or a photograph, to particular dimensions or perspectives, and they set the boundaries for how we should interpret or perceive what is presented." (p.31). Framing theory was first mentioned by Goffman (1974) who establishes a clear distinction between the two primary frameworks that humans use in their daily life: the natural and the social. "Natural frameworks identify occurrences seen as undirected, unoriented, unanimated, unguided, purely physical" (Goffman, 1974 p. 22). Goffman, when talking about natural frameworks are the way that our minds placing the information under mental frames subconsciously. Those frameworks are the ones that people call upon without intention, guidance or interferes. People do not intend to value information but they perceive it as part of a "fundamental" reality, that is why natural frameworks are activating subconsciously and unintentionally (Goffman, 1974), thus the individuals use this technic to organize and make sense of the new provided information.

Opposing to natural frameworks, Goffman (1974) identified a second primary framework, called social. These frameworks can be defined as the background understanding of events, which relates to the agency of people. The social frames are the ones that are socially guided, from family, society, school, education, work etc. People use social frameworks with an intent and motive. This research will mainly focus on the social perspective of frames, and how someone can frame an information by constructing a specific storyline when he/she communicate this information. This construction is based on societal norms and ideas, and it is connected to a specific society, where the communicator takes under consideration the unique familiar references of the people that will receive the information.

Every doing or saying can either include one or both primary frameworks. Additionally, the way people use language in order to express or receive thoughts, understandings or problems can include either of the two primary frameworks. The receiver uses the primary frameworks in a process to understand what is presumed by the speaker. With this primary analysis, Goffman managed to connect the psychological with the sociological perspective, the mental schema and the social framework in order to organize people's experience and interpretation of reality in a broader social context.

More contemporarily, the scientist Entman (1993) elaborates on the "analysis of frames" to "illuminate[s] the precise way in which influence over a human consciousness is exerted by the transfer (or communication) of information from one location-such as a speech, utterance, news report, or novel-to that consciousness" (p. 51). Framing is a source of power, which defines the position from which the author can guide the reader towards a specific path of thoughts (Entman 1993).

Besides frames can be described as method that helps the receiver organize socially shared principles. This is a process that connects already existing knowledge with new information obtained by the receiver (Reese 2010). That process helps the source to communicate effectively with the receiver by producing a message framed in a way to connect easier with shared knowledge and principles. In order to identify the use of the different frames that are developed in a communication process, someone can analyze how the source constructed the information, in order to make it understandable and interesting for the receiver by activating frames of shared knowledge (Reese 2010; Ardèvol-Abreu, 2015). This is the reason one can identify the use of frames, by spotting the reasoning devices, in different context of communication like policy, journalism and public speeches (Reese 2010).

Moreover, we can refer to framing as a tool that not only promotes a specific side of an issue, it also interprets, evaluates and recommends a solution. For that reason, media can accomplish all the above by framing environmental matters from a distinctive point of view (Reese, 2010). Thus, the power of frames, has been discussed by all of the above theorists, as a process, that the source of a message use the text in such a way to attract public attention/interest by calling upon shared social meanings.

At this point it will be good to point out that through the search of relevant papers around the framing theory there appears a lack of conceptualization and the absence of an unified theory on framing, especially from angle of the communication discipline (Entman, 1993; Ardèvol-Abreu, 2015). Entman (1993, p. 51) calls the attention to this dilemma:

"Despite its omnipresence across the social sciences and humanities, nowhere is there a general statement of framing theory that shows exactly how frames become embedded within and make themselves manifest in a text, or how framing influences thinking" (Entman, 1993, p.51)

This lack of a solid theory and methodological approach in media communication collides with the constant interest from the scientific community to identify framing theory as part of the communication discipline. Similar to this case my research problem and my interest on media's effects pushed me to investigate the theory further and compare different scientific perspectives which, overall tend to agree and support each other. Framing theory is used in this paper as a way to understand the *how* of communication processes. As Ardèvol-Abreu (2015) sums it up, "this heterogeneous conceptualization has brought with it a very different methodological approach, both with regards to the identification of frames (media and audience frames and the socio-cultural environment) and the measuring of their effects on individuals and audiences" (p. 425). The application of this theory helps to link the information given about a topic and the way that the media portray this information with a use of an interpretative package, words, catch phrases, stock phrases, metaphors and images (Hansen, 2010; Cox, 2013 Ardèvol-Abreu 2015; Djerf-Pier, 2015). So in order to investigate how media frames, someone has to detect and identify these interpretative packages, that link the information to a specific storyline.

4.2 Media and Framing

When I refer to media's framing I discuss the way news media presents a specific issue, how they talk about it and how they organize the text in a way to create an understanding of a story. Every communicative process uses frames in order to organize the text to communicate a story (Cox, 2013; Lakoff, 2014). The media framing analysis is a tool that can help us understand in what way the media uses the framing in order to make specific sides of an issue more salient (Entman, 1993; Cox, 2013; Lakoff, 2014; Ardèvol-Abreu, 2015). To accomplish that media produces the information based on an interpretive

framework that allows the public to comprehend the message easier. (Ardèvol-Abreu, 2015)

To analyze that notion further, the framing theory underlines the power of the media to present information, define problems, evaluate actions and suggest solutions. This power comes from their ability to bring an issue to the surface. Further, media can make people be aware of an event, understand and remember it and also evaluate and take stance. (Entman, 1993; Lakoff, 2014). News media articles are textual messages that are constructed around a concrete idea. Professionals then, such as journalists under this process are providing an "interpretive framework" for the reader who is exposed to this textual product. (Entman, 1993; Ardèvol-Abreu, 2015)

Given the above when journalists narrate a news story they frame reality and give their own perspective on the story. News have the ability to focus on specific parts of reality in a way that they can make some parts of a news story more salient to the general public. In order to accomplish that media chooses a narrating frame. In that sense, media chooses to promote a specific frame, by selecting to present their own definition of the problem, interpret and evaluate and as well give a suggestion to the problem (Entman 1993; Ardèvol-Abreu, 2015).

With the use of the frames the news media can attract people's attention on some aspects of the issue and 'obscure' others. (Smith, 2016). As this research focus on the framing that the news articles activate when they represent environmental issues in news articles, framing theory can help the research by enabling the researcher to map the different understandings that the Greek online media offers to the reader regarding the Renewable Energy Directive. To reach that understanding, the paper will identify the analysis of the frames as Silverman (2015) describes as "a constructive in the sense that these assemblages of words, repertoires and so on put together and stabilize versions of the world" (p. 319).

Consequently, the news media can shape public perception by using frames especially in matters that the public might not be aware of, or had a narrow view about. This is the case in the topic around the use of renewable energy sources (Entman, 1993; Ardèvol-Abreu, 2015; Smith, 2016). Framing is a process that can indeed also call attention to signals of social change, such as rising public awareness on environmental issues. Therefore frames are powerful enough to steer public's perception on UN's framework for climate change and green energies in general. Their power and potential effect on citizens are a key factor initiating this research, and therefore framing theory is useful for my research.

In conclusion, the use of the framing theory is assisting the research of social and media phenomena represented as frames by the news articles. The frames that this study is working upon, are themes, ideas, and repertoires that are traced in the empirical data. The news articles that are gathered provided data that are analyzed in order to understand in what way (how they frame) media steers people's attention, towards a specific perspective when they are talking about the renewable energy and produce public discussion regarding the EU directive and the national action plan.

17

5 Research Design and Methods

I used a qualitative text analysis approach, which helped me to generate meanings from the content of news media (Zhang & Wildemuth, 2009; Johanessen, 2015). To do that I collected articles from online Greek news media and performed a qualitative content analysis. Every article was the unit of my analysis, at this step I coded the text by looking for keywords, catchphrases, stock phrases and judgements and identified themes and topics (Zhang & Wildemuth, 2009; Reese, 2010; Johanessen, 2015; Ardèvol-Abreu, 2015). As mentioned in chapter 3, I decided to conduct an inductive approach, through which I gathered my data and analyzed my results not based in any theory hypothesis. In order to give a more depth in my analysis, in the final stage I performed a comparison between my identified frames and the ones that Nisbet has presented as the most predominant frames,.

5.1 Data sample

My decision to collect news articles, mainly, from online sources such as online news sites and online newspapers, was guided by the cognition that Greeks choose to get their information, primarily, from online sources and new media (The Huffington Post, 2016; diaNeosis.gr, 2017).

The decision to collect online data, was equally important based on both theoretical and practical matters. The theoretical reason, was supported by the perspective that, traditional news media (newspapers, news magazines, television, radio) tends to neglect news regarding environmental issues (Cox, 2013). This limited news hole does not permit journalists to write and publish news environmental stories if there is not a newsworthy environmental issue to call the public's attention (Cox, 2013). As a result, I considered that it will be hard to collect enough data from print newspapers.

On the other hand, the online news sites have an unlimited publishing space, journalists are having a greater freedom on choosing the stories, that they want to write about. Not to mention that even in most mainstream online news sites, readers can find an organic environmental news section (Cox, 2013). Additionally, to those circumstances, the online availability and accessibility rendered the collection of my data to be effective and efficient.

Taking into consideration the specific time frame that the researcher problem is targeting upon, I have collected news articles published within the years of 2015 - 2017, written in Greek. After applying an advanced google search I gather 29 news articles, of around 500 to 1500 words length, from 18 news websites. All articles were written in Greek and refer primarily to the Greek action plan in relation to the Renewable Energy Directive. Since Greek is my mother language I was able to understand and analyze the Greek content and then translate it to English. The time limits are set to create a manageable period of publications of news articles and provided more contemporary data to the research.

Different keywords relevant to the topic and the period of interest have been used in the collection of my data sample. The keywords presented in Table 1 are the ones that I used to select my data sample. In order to collect the data, I search for the words on their own and also in combination, through the google search, and I applied an advanced google research in which a user can find pages by specifying, the exact word and phrases (see keywords), language (Greek) and region (Greece).

Table 1. Keywords used in search for online news articles (in Greek and English).

Keyword in Greek	English translation
'Εθνικοι στοχοι ΑΠΕ'	National Action Plan
	RES

'Ελλάδα- Ευρώπη ΑΠΕ'	Greek- Europe RES
'Ανανεωσιμες πηγές ενέργειας Ελλάδα'	Renewable Energy Sources Greece
'Πρασινη ενέργεια'	Green Energy
 Έναλλακτικές μορφές ενέργειας' 	Sustainable Energy Sources

The data sample of news articles have then been selected based on the period of publication and the relevance to the topic of interest. For that reason, articles were excluded, for example, when they were not relevant to my topic, nor published within the time frame I have set, or they discussed renewable energy but without relating to the Nation Action Plan or the EU Directive. Additionally, the time frame played an important role. The articles used for this research were published between January 2015 to April 2017. The multiple use of keywords facilitated the data collection and it helped me collect a sufficient number of news articles.

After the above described process, I collected 45 online news media articles, and I selected and analayzed 29 of them. This is because, I deemed the collection of data to be saturated since I could see a repetition of the same categories and frames in most analyzed texts. At that point, I realized that the more news articles I was collecting, the fewer new insights and properties I could gather which relates to what Creswell (2013) is describing. That is why my data where collected from the 29 out of 45 gathered news media articles.

5.2 Data coding

In the actual coding, I mostly focused on the main argument put forward in the article and how it was sustained by the reporter's or the interviewees' choice of words and use of metaphors (Djierf- Pierre et al. 2015).

I applied a qualitative analysis of content, which means "a research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns" (Hsieh & Shannon, 2005 as quoted in Zhang & Wildemuth 2009, p 308). Once the online published data were collected, I processed to the coding taking as a central tool the framing process. At this stage, I focused on finding categories and themes in the texts. These categories constitute the first level coding, and helped the identification of frames which I used to organize and categorize my data. Finding clues in the text is the process of frame identification and a researcher uses clues as the "reasoning devices" which "are terms, metaphors, examples, descriptions, arguments, images and arguments, and they can may be explicit or implicit" (Van Gorp 2007, as cited at Ardèvol-Abreu, 2015 p. 433).

In the second level of coding I kept in mind Lakoff's (2014) idea that frames are mental structures that shape the way we see the world. The identification of frames helped me categorize and divide the data and code the sample in a way to relate the content to a specific frame. In other words, I tried to see how the media sees the world by identifying the mental structures that shaped the news media articles and they are represented with the reasoning devices. During that stage I identified the frames as mental structures that we do not access consciously. They are rather accessed when somebody uses specific words, phrases, and meanings that call these set of frames to come to the surface of our mind (Lakoff, 2014). Once again, Lakoff (2010) describes that "words are defined relative to frames, and hearing a word can activate its frame and the frames in its system in the brain of a hearer. Words themselves are not frames" (p.73). Following that idea, in my coding analysis, I selected the more salient words and phrases (reasoning devices), that from my

point of view constitute a frame that help structure the news media articles and also represent the world through reproduction of social reality.

6 Results

In this section, I present my key findings based on the performed qualitative content analysis on online news articles. After performing the coding analysis, were I focus on spotting schemes, frames and storylines, I have identified four central frames that were predominantly used by news media agencies as a concept to connect the information of RES. Even though my initial intention was to avoid following Nibet's (2009) typology of frames, after reasseing my data it appeared that identified more similarities and less differences than expected. That is why I decided in the last stage, to perform a comparison between my findings and Nisbet's frames as an attempt to see our similariaties and differences.

6.1 Economic Development / Competitiveness in EU and Greek Level

As presented in literature review (see chapter 3) scholars have identified an economic frame in their findings. Nisbet (2009) describes the economic frame as "an economic investment; market benefit or risk; or a point of local, national, or global competitiveness". In my case, similarly the media represented the RES as an investment which will alleviate the depth and give an extra push to the market. The storylines were portraying RES as the medium that will set Greece once again to the EU and global stage.

More in depth, the findings showed that the journalists primarily emphasize the economic opportunities that the RES can create on a Greek and EU level. Especially in Greece's case, media highlights the cue of sustainability as an opportunity to offer a financial growth to the country, which can aid the Greek economic development. The framing of the media sources was following the coherent pattern of representation of RES as a "green" source of income, which can lift country's GDP (Gross Domestic Product). Similar to that idea, Lakoff (2010) expose the equal predominant notion that "greed is good and that the natural world is a resource for short-term private enrichment" (p.77).

On the one hand, the public is becoming more aware about the Directive and the Action Plan, on the other hand, the interpretation is monopolizing the economic growth and the financial welfare. In that way, the media selects to highlight the economic benefits, instead of the actual environmental impact. As a consequence, the media frames primarily one side of the story. By constantly repeating the same notion, we can assume that this is the information that has been prioritized and presented as the main goal of the country and EU.

Here I present the words, ideas and notions, within the frame of economic development and competitiveness in EU and Greek level, which I have identified as a dominant frame. I have categorized parts of the text that refer to investments on a national level, market benefits and Greek competitiveness, from an economic point. In the majority of cases, the online news media articles are using words and phrases in an attempt to connect the mental dots of the reader to the general frame of economy, "exploitation of renewable resources, create new business opportunities, recovery of the Greek economy". Even though the topic of the articles is revolving around renewable energy the editors chose to guide the mental structures to the framing of the economic competitiveness. The repetition of words such as economy and business relate to meanings such as viable, recovery and exploitation. This connection of meaning and ideas, associates the mental dots of the reader to an economic development. As a result, the green energy in that context has been portrayed as a financial resource that can bring development and competitiveness on a national and EU level.

Similarly, the the articles framed the Renewable Energy Directive and the progress of the National Action Plan by using the economic development and national financial

competitiveness frame. The recovery of the Greek economy based on the exploitation of the RES is one of the central notions. Generally, words and phrases like "Greek financial growth", "investments in RES of X billion", "the focus on RES has created a positive GDP for the first time since 2008", "RES can give financial motives" and "RES are cheaper than fossil fuels". These are findings that called my attention to the economic frame. Once again, the mentioned phrases connect sustainable energy and environmental issues with financial growth, investments on the Greek market and cheaper energy in comparison to fossil fuels.

In a similar manner, we can see that fossil fuels are presented as an expensive source of energy and not as a polluting source of energy. In contrast renewable sources are profitable, cheaper, attract investment and they reduce the costs. The media highlights these positive characteristics of the RES but once more they do not refer to them as environmentally friendly, green energy and sustainable energy. They rather chose to characterize RES with adjectives like profitable, cheaper and cost efficient.

The articles referred to the annual amount of investments, and the exact billions that stakeholders have spent on national level, setting the Greek financial power back in the game of the EU competitiveness. The word investment, is connected to a system ftrust, success, prosperity and further development. Journalists and online media are calling upon the GDP and the positive impact that the use of RES has on Greece's financial state. RES for the media are a source of national prosperity and financial growth which helps the country to create a positive image on EU level. Words as "investments" and "new jobs" make a social connection with the central frame of economic development and competitiveness. Given these points, media correlates RES with the competitive advantage of Greece and the opportunity to improve its financial status. Further, the data showed that RES have been preferably presented as a positive development for the economy. The findings showed that there was not a sample in which the RES were presented in a negative context.

6.1.1 Individual financial progress in relation to RES

Under the general frame of Economic Development and the exploitation of RES, I identified a sub frame that represent the notion of individual progress. The individual progress sub frame is described as an opportunity for individuals to dream of a better personal future, with a focus on an individual financial welfare. The data shows, the mental connection with the frame of individual progress, by underlining phrases like 'produce their own electricity' and 'meet their own needs'. The journalists and media present RES as powerful enough to change and improve the lives of individuals, mainly from a financial point of view, especially when they refer to matters such as 'reduce of current bill's cost' and 'produce an extra income'. The media, using the notion, of the challenged financially Greek citizens and choose to connect the RES and the frame of individual financial progress.

From a similar approach, news media, represent the sustainable energy in a way to connect it with the individual growth of Greek citizens. The media is giving prominence to all the economically aspects of RES that will boost positively the life of every citizen. That is suggested, firstly with access to cheap energy, and secondly with the possibility to create extra income by over producing renewable energy on a private level.

As a result, the articles frame RES as a cheap source of energy that can be produced individually by every citizen with subsidization from the government. Once more the media calls attention to the general frame of the economy and further to the exploitation of the green resources by individuals. The news media connected the concept of the individual exploitation of renewable resources. Another concept of the individual progress frame is the work opportunities and the chances of a new green collar job market. The individual financial progress and the work opportunities, are the dominant frames within individual progress, which have been pointed out by the media as another benefit of RES.

From the data collected, I understood that the everyday person does not care about the CO₂ emissions or the purpose of the EU Directive or the National Action Plan, but the opportunity to save more by changing to solar energy was presented by Econews.gr (2015 para 6) as one of the main reasons why Greece reached the amount of 80% of RES consumption in house heating already by 2015. In addition, the articles present another financial motive, which assists the individual progress, a favorable subsidy systemby the policy makers that supports a further investment from the individual's side towards RES.

Similarly, dealing with renewable energy, I came across the idea cognition of the employment in the sector of renewable energy the discussion over the increase of job opportunities due to RES. This notion, has been also chosen as narrative from the media to attract public's attention. Bankningnews.gr (2017) and enikonomia.gr (2017) both are writing about RES that employ over a million people in Greek and European level. The media takes this point of interest and portrays the Greek citizens, as anxious for their individual progress and financial status. From that aspect, the media not only presents a problem, but it also gives a solution, which in that case is RES.

In conclusion, the media produces the idea that the financially unstable Greece and its citizens can find a new source of progress which is translated as national and individual progress as well. From all the above, I get the impression that Greeks are presented as people who choose to switch from fossil fuel consumption to renewable energy sources for the reason to reach lower electricity and heating prices and not because of an environmental awareness. As a result, the articles, when discussing the National Action Plan and the Directive, portray the citizens as individuals who worry more about money, or not at all, about the environment.

6.1.2 Tecnological innovation in regard to Renewable Energy Research

Moving forward, another framing pattern that the findings showed was the innovation and technology notion. Nisbet has also included a similar frame but he approached it differently. He focused primarily on the knowledge and the difference between knowing and unknowing and the problem of the different understandings between the scientific community and the public opinion. Base on my findings, I saw that media represents RES as an important tool that assists the extended technological innovation, there was no connection between scientific and public knowledge as Nisbet identified.

The media was referring to the transition from the old model to a new model. This transition is focusing on the research and the development of a sustainable innovation, which will be attributed by efficient technologies and innovative practices. This frame is also connected to the previous two frames of economic development and individual progress. That can be justified, from the point that the innovation and technology is the main reason for the investments and the green collar jobs to take place. It could be claimed, that these three frames are interwoven in a way to support and attribute each other, in a sense that all these different frames in my analysis could exist as well under the same umbrella.

This sub frame is connected as well with the general frame of competitiveness and development, from the perspective that RES can be exploited from a technological and research point of view. As result this exploitation will assist the two previous mentioned frames.

Once more, catch phrases and words call the attention to this specific frame, by underlying the possibilities that the focus on RES can bring along.

"The EU has the <u>opportunity to use its research</u>, <u>development and innovation</u> policies to make this transition tangible to industry...The package includes measures aimed at <u>accelerating innovation on clean energy</u> and renovating Europe's buildings." (Eleftherostypos.gr, 2016). The above text highlights the opportunities from an EU perspective. The extended use of RES as well as the Directive are presented as a need for the EU and Greece to be a pioneer and up to date with the global technological growth and innovation. Phrases such as "the opportunity to use its research, development and innovation" and "innovation of clean energy", are there to present a conceptual framework connecting the use of RES as another way to be innovative and make use of the new technologies. The data showed that EU is aiming to be innovative and pioneer in RES, and motivates this action to reach this innovative and competitive profile. That is one of the main points that Eleftherostypos.gr presented as conceptual frame in connection to the Renewable Energy Directive. In this example, we see how media framed the environmental issue with the theme of innovation and technology.

Moreover, the application of sustainable energy in the National level is presented through words such as modernization and innovation. Also CNN (2015) is framing the issue as a transition to a new innovative model. "The <u>transition to a new electricity model</u>, focusing on <u>the research and development</u> of alternative energy forms, as well as the <u>development</u>, <u>expansion and modernization</u> of transmission and distribution networks." (cnn.gr, 2015 Pliakos,) The words that these articles use in order to frame renewable energy under the idea of innovation and technology is 'new', 'research', 'development', 'expansion' and 'modernization'. These cues are putting the issue of sustainability in the frame of innovation and technology, in a way to present it as an innovative and research oriented aim of Greece's and EU's strategy. Likewise, the renewable energy has been framed over the notion of innovation which attracts development and modernization. The article focuses on the goal to reach a cutting-edge technology which can re-create and reestablish the country in EU's prestigious map.

In the same way, the media also presents the idea that the Renewable Energy Directive can play an important role of the reevaluation and modernization of old environmental practices. That notion can be observed on the following passage. "<u>The modernization of the institutional framework for recycling and tools such as the Ecolabel, the European Union's Environmental Management and Audit Scheme (EMAS), and Green Public Contracts"</u> (cnn.gr, 2015 Pliakos,).

The frame of technological innovation can be represented by the wide spectrum from the daily life of the citizens (recycle and energy consumption) to research and technology (innovative ideas and new technologies). This informative pattern has been chosen as another way to frame environment, that creates another theme of interest on which the media presented the Directive and the Action Plan as a beneficial step aiming for an innovative future.

6.2 Sustainability and Envrionmental Frames

Many scholars from my literature review preferred not to emphasize, or comment on the sustainability frame. That is the gab that Lakoff (2010) and Djerf-Pierre (2016) referred to when they were refereeing to the "Tragedy of the Absence of Frames". For that reason, I decided to dedicate a frame to this storyline and see how media frames sustainability and environment when they are talking about the environment.

Journalists are referring to environment and environmental practices as another objective and not as the main target. The reduction of the CO_2 emissions has been presented similar to a collateral benefit. With this in mind, media gives prominence to financial worries, like the investments, the reduction of the price of petrol, the establishment of a financial welfare and the achievement of a green power sufficiency. Once all the above are accomplished, only then the media refers to the environmental aspects of the Renewable Energy Directive. Further the articles indeed use the narrative of the RES as an action of improvement towards the environment. The identification of this frame was spotted by words like pollution, sustainable, environmental objectives and CO₂ emissions as in the passage below of an article from econews.gr (2016). With the frame of Sustainability, I include the framing process that the Action Plan and Directive was presented as a direct positive action towards environment. The idea that RES can be used as a solution to reduce the actual CO₂ emission and the notion that this action can have a positive impact for the environment, were in all cases mentioned in small, or short, sentences. Moreover, these findings were presented as an additional, and not the primary, benefit of the consumption of sustainable energy. Examples of the framing cues used to create that connection can be traced in the two following passages.

"The higher penetration of renewable energy sources into the Greek energy potential, in addition to its direct contribution to the achievement of the <u>environmental objectives</u> of the Europe 2020 strategy, <u>also</u> contributes to <u>more sustainable development</u> as well as increased security of energy supply" (econews.gr, 2015).

In the passage (above) of the article from econews.gr (2015) the frame of sustainability in the text was mentioned briefly and very superficially. Moreover, we can recognize that by the use of the word "also", which gives the impression that the contribution to environment is a secondary interest. The National Action Plan and the Directive, have been represented to reach sustainable development, which, in all cases was connected to the recovery of the Greek economy. At the same time, the cues such as 'environmental objectives' and 'sustainable development' are framing the topic of renewable resources, with a focus on sustainability and environmental awareness. These were some of the linguistic references that called my attention to this frame when analyzing the articles.

"The problem is that the largest <u>polluters</u> in Europe, Germany, France and the UK, which account for 45 percent of EU <u>pollutant emissions</u>, are out of the RES penetration target over the total energy consumption" (econews.gr, 2016).

In the quote above from econews.gr (2016), we can spot three of the words that reflect the interest of the article in relation to the environmental issue of "pollution", these are the polluters, pollutant and emissions. In the rest of the articles I did not locate similar findings, or other references to the reasons why EU and Greece are aiming to turn to RES. Implicitly, though, the reader can make the connection among the environmental friendly - energy sources (RES) and pollutant - energy sources (fossil fuels). Another catch phrase that was used in the articles was "environmental friendly" as in the following text of CNN.gr (2016): "Greece will focus on Biomass and Geothermal sources of energy that they are <u>environmental friendly</u>".

The word emissions appeared, when the online news media of Greenagenda.gr, wanted to present the so far improvements regarding the emissions of the EU as a total, "EU has decreased its <u>emissions</u> as much as the total volume of Italy's emissions" (2017,). It is important to comment here that when journalists speak on behalf of the environment regarding the EU's directive, they have a positive perspective on the results. The above finding, creates a very optimistic standpoint, and highlights Greece's and EU's successful attempts to decrease emissions, which is described as process to reach their goals, while they can push some of the EU countries to do better in the integration of RES.

In contrast, I did not come across cues that presented a pessimistic perspective, or storyline to call people's attention on general environmental problems or discussions to make people aware of the current environmental crisis. That use of a frame that can offer a more holistic spherical perspective. Nevertheless, the media gave accurate details on the performance numbers of each renewable energy source, but they chose not to mention additional information on the present emissions of EU and Greece, that could portray the scale of the problem and educate the public further.

6.3 EU and International Relations and the exploitation of RES

Moving on, the findings were a mix of political frames from the perspective of the diplomacy, and helped me identify the frame of 'EU and International Relationa and the exploitation of RES'. Similarly, Nisbet has referred to the frame of 'Conflict and strategy', as a game of power between elite groups and other parties. From my interpretation, the media presented the power relations from the aspect of the EU competitiveness in regard to the global energy resources in oil and gas. Due to that reason, the renewable resources presented as a medium of energy reliance, towards the dependence on the Russian oil and gas, to cover the energy needs of EU. While this framing was selected, the media refered to EU as a union, while Greece was portrayed, as an equal important member in this attempt for independence. The online news media, presented a bigger image and reasoning of why the countries should turn to sustainable energy, this time with a motive of energy independence.

The frame of EU and International relations, refers to the ideology that the EU as a group can achieve self-sufficiency in energy and power supply, so that there will be no need to import energy from others. The consolidation as Eleftherostypos.gr (2016) states regarding the EU's leading role in the field of renewable energy production is one of the main goals of the EU Commission. Additionally, the main idea is that the EU can enjoy a political autonomy since it will not need to rely on external sources of petrol and fossil fuels. Articles framed the environmental issue as a chance to accomplish the EU's independence from the Russian energy monopoly.

"One of Commission's goals is to reduce Europe's energy dependence from Rusian fossil fuel imports." (Enikonomia.gr is 2017)

The passage above, brought the conceptual framework of a Union free from the Russian energy power, which was creating a dependence in the relation between the two stakeholders. The media are presenting a narrative that the main reason behind the EU's interest on RES comes from the goal to reach an independence of energy production. Equally, the media agencies were holding the perspective that the EU as a union can be more competitive towards the global energy 'game' and achieve a reliance of energy resources.

This frame explains how EU can become a strong player in the arena of energy by aiming on a strong RES production from all country members. The main reasoning given by the articles, has been framed over the idea of diplomacy. That frame was focusing on the dependence of the EU on Russian fossil fuel and the desire of the EU Commission to achieve big scale energy production through RES. The ideas mentioned above can be presented with a part taken from the article of Greenagenda.gr, which presented the EU as relying on the import of Russian energy. "The report was discussed yesterday evening at the meeting of directors of the Commissioners' offices and evidence shows that the <u>EU is increasingly relying on Russian oil and gas</u> and has reduced its emissions as much as Italy's total volume of emissions" (2017).

In the end, I need to mention that these articles use the diplomacy frame from an EU perspective and they did not focus on Greece. Although, they included Greece as an equal EU partner that can contribute to the common goal of energy independence.

6.3.1 EU members and competitiveness

While the media did mention the chances to achieve a diplomatic strategy, they also preferred to frame renewable energy under the scope of inner EU relations. The data added an extra framing idea on the map of my findings. The comparison of the performances of every EU member in regard to the renewable energy Directive, attracted people's interest by underlining the important role and the successful performance of Greece in comparison to other EU members. The data showed as well that there is a tendency to create a sense of a competition. This concept portrayed, Greece and other EU members, as rivals in the race of the fulfillment of EU's obligation. The media seems to use a language of "games" in order to present this image of Greece. Moreover, the findings suggested that Greece, even though is in a disadvantageous position, due to its financial state, manages to perform better on RES than other EU countries., such as "the bankrupt Greece does better than...".

The frame of EU members and competitiveness has been identified as a sub frame of the EU and international relations. The media in that case frames the EU Directive in connection to an EU level of performance, where the media compared and analyzed the performance of EU members from a competitive point of view. More in detail, the news stories presented the application and development of RES as a statistical performance based on the accomplishments of Greece and other EU countries.

"According to the 2014 data released recently by the EU, <u>nine Member States had already</u> <u>achieved their national target</u>: Croatia, Estonia, Italy, Sweden, Bulgaria, Lithuania, Finland, Romania and the Czech Republic. On the other hand, Britain, France, Ireland and the Netherlands <u>are lagging behind</u>, endangering to receive fines as the target is soon binding" (econews.gr, 2016).

Here we can identify that the media creates an atmosphere of competitiveness by comparing the performance of several EU members. Phrases like 'achieve their national goals' and 'lagging behind', structure the frame of EU members and competitiveness. The analysis of the national goals and the general presentation of every country, shows an attempt of comparison of the countries, which eventually creates a sense of competition, from an angle of who did better and who did worse. From these lenses of interpretations, the media is portraying the members as rivals in a competition of who will first reach the goal of the Renewable Energy Directive. By the same token, the following passage can provide more catchphrases that point out to the same framing of the topic.

"Britain is 8% <u>behind its target</u>, which is a penetration of 15% of RES. Sweden, thanks to hydroelectric power, <u>produces more than half of the energy consumed by RES</u>. Other countries <u>close to achieve the 2020 target</u> is Denmark, which <u>has kept the record of wind</u> <u>power production</u>, as well as the bankrupt Greece" (econews.gr, 2016).

The above part of the article portrays the comparison of Britain, Sweden, Denmark and Greece. Words like 'target' and 'record' can highlight this conceptual frame of competitiveness and challenge between the country members. From this aspect, all EU countries seem to be playing a game, the game of RES, who will make it first and who will come second. Moving further on the frame of performance and EU relations, Greece was presented to do a great job on RES and the country was portrayed as a key player in the renewable energy game, with "some EU countries to <u>do better</u> and some other <u>worse than</u> <u>Greece</u>." (cnn.gr, 2017)

The competitive perspective of the EU members in the framing Renewable Energy Directive highlights that Greece will successfully fulfill EU's obligations while "other countries <u>will not be able to accomplish</u> their national goals like Luxembourg, Netherlands, Ireland and Great Britain" (greenagenda.gr, 2017). This gives the impression that the media notes Greece's performance and speaks in a positive way about the improvements that Greece accomplished during this period. Under that notion, Greece's successful attempts to accomplish the EU goals have been related with the narrative of the weak and bankrupt Greece. This structure creates an active competition between "the bankrupt Greece" and the big financial powers of the EU. Under that conceptual frame, media is showing the impressive work of Greece, to praise its performance. From the aspect of media, this creates another news worthy aspect of the topic, which in the articles played a central role. We could sum up this aspect of conceptual frame, as the weak and bankrupt Greece that can defeat its powerful opponents in the RES race.

6.4 Greek Public Participation and Public Policy

Another frame that was traced from the findings is the one of 'Greek Public Participation and Public Policy'. Nisbet has identified a similar frame called 'Public accountability and governance', which he analyzed as a process to empower the public by emphasizing on issues of transparency and participation. In my frame, the data point out the case, that the Greek online media referred to matters such as public's empowerment and participation on matters of renewable energy.

The main interest of this empowerment is concerning economic goals. From the stance, the citizens presented to be able to pressure the policy makers in order to achieve lower prices in the electricity. Media was referring to the public opinion by using different titles to describe it. It has been mentioned previously in 5.7 section that media uses words such as public, people, citizen, stakeholder and customer to refer to the public.

This variety of identities have been appeared in my data and gave focus on specific characteristics of every identity distinctive identity. The media refered to the public as people and citizen when they were referring to matters such as public participation, or when they were inviting the people to demand for something as union. On the contrary, the media addressed the public as a stakeholder or consumer when they addressed issues of individualism.

Additionaly, this frame calls the attention on the responsibility of the public to do good and take advantage of **RES** in order to achieve their goals. The citizens are portrayed as the ones who can apply social pressure to the policy makers, and demand an energy change, towards a sustainable and economical model.

The media is using the perspective of public opinion with catchphrases such as "people's choice" and "motivate the Government" (tovima.gr, Tratsa 2015). These examples that give a specific focus on the power of citizens and their ability to force a change by choosing RES instead of oil and gas. I notice that this frame was presented implicitly, as an empowerment of the public in the decision making regarding the implementation of National Action Plan. By applying this frame, the media empowers the citizen, as the energy consumer, that can push the government to implement practices revolving around green energy.

While on CNN the environmental issue of sustainable energy has been framed over the perspective of "the establishment of <u>a National Energy Council</u>, which will<u>involve all</u> <u>stakeholders</u> in the sector and <u>consumers</u>" (cnn.gr, Pliakos 2015). This article refers to the establishment of a National Energy Council which will promote the participation of both the public and other stakeholders. The citizens are presented as vital members of the community and as energy consumers, that will have the chance to be involved in the decision-making process.

In addition, the data suggested that the media tends to characterize the public opinion with different titles. In the analyzed articles, I spotted titles including words such as citizen, public, people, consumer and stakeholder in order to refer to the notion of public opinion. These are several distinctive identities, which have been used distinctly, depending on the context, to portray the public. By applying this identification, the media gives different characteristics to this group of interest. We see that media refers to public/citizen in order to promote this group and underline the power of the masses to create change. While, the media talks about the public as a consumer or stakeholder, by underlying a more individualistic aspect. In these examples people (consumer and stakeholders) have been characterized as individuals with individual interests and aims.

7 Discussion

As it is presented in the introduction, one of the main problems that guide me to conduct this study was the fact that the Greek public opinion seems to have a very low education/awareness on environmental matters, even though Greece is presented to have a successful performance on the RES integration. If we take into consideration the findings of this research, one parameter of this problem can be explained through this paper. The online media is one of the main source of information regarding the implementation of renewable energies. Taking that as a standpoint, this paper investigated towards what matters does the media frames the issue of renewable resources.

The analysis brought to the surface insights on how online news media is framing the Renewable Energy Directive and the national action plan of Greece. The data showed media has been focusing on the economic, diplomatic and innovative dogma. As mentioned in the results the framing of renewable energy in online news media of Greece, were the 'economic development/ competitiveness in EU and Greek level', 'individual financial progress in relation to RES', 'technological innocation in regard to renewable energy research', 'sustainability and environmental frames', 'EU and International Relations and the exploitation of RES', 'EU members and competitiveness', 'Greek public participation and public policy'.

The absence of environmental frames in addition, to the superficial mentioning of environment, creates a problem in the education and the environmental awareness of the citizens. Due to that, the public opinion is lacking spherical information, which will educate and call its attention into issues such as the global ecological crisis and the role that Greece and RES, in total, are playing in this global environmental issue.

Even though there is this high interest of promoting RES as something beneficial for all parties, the financial benefits are the ones that get highlighted primarily. The discourse, that the media are creating around the Renewable Energy Directive and national action plan, is revolving around finance and tecnological innovation. The benefits of the environment from the implementation of RES has been discussed superficially. From the data collected, we can see that the media is not interested in educating the public and creating environmental awareness, rather it prefers to relate RES with economic growth, the reduction of the electricity and the petrol and emphasize on the green jobs.

Another frame that has appeared in my data, is the 'EU and International Relations and the explotation of RES'. As presented in results media presents the benefits of RES in regards to the EU diplomatic advantage. RES can give the opportunity to EU to be self-suficient and produce enough green energy and not depend on Russia's energy resources.

'Greek Public Participation and Public Policy' is the last frame that has been identified. Media portray's the Greek community as capable to create social pressure and demand a change in the current energy practices. The motivation though behind this public participation is the access to cheaper energy resources that will alleviate the Greek citizens from the current monopoly of expensive energy.

That is what Lakoff (2010) means as "Tragedy of the Absence of Frames" for environmental issues. This absence of environmental frames constitutes a problematic parameter to force green awareness and education to the side. At this point the media is tending to avoid talking about the environmental issues as such but they reinforce frames like the economic and the diplomatic frames to predominate (Djerf-Pierre 2016, Lakoff 2010).

Further, the data suggested that the overall framing of the Greek news media regarding the sustainable energy is taking a positive standpoint over this collective strategy towards RES. The Greek online press manages to present all the beneficial aspects of the Directive and the Action Plan and inform the public in that way to convince that RES can do only good in someone's life. Other studies in the field of environment and renewable energy framing showed the contrary, that journalists are producing the information with a negative 30

angle and a skepticism towards the implementation of renewable energy such as wind power (Djerf-Pierre 2016; Nisbet 2009).

The media, in this study, appeared to hold unanimously a supportive and encouraging stance, when talking about the transition to renewable energy resources. That could be explained from the reason that most of the online media reproduces information from the same news media agencies. Through the analysis I could identify many content similarities in couple of articles that discussed the same topic. It could also be acknowledged from the fact that the articles refer to sources of media news agencies such as The Athens News Agency - Macedonian Press Agency (ANA-MPA). At this point it is important to mention that the online news websites, rarely present the name of the journalist who produced the article, most of the articles were not signed.

All the above things considered, the media avoids explaining further the ecological crisis, or call public's attention to important matters like global warming and the CO₂ reduction (Cox, 2013). The Greek capitalistic society and the perspective that only money can help Greece from escaping the crisis, has silent voices that they care about the environment and the contemporary environmental crisis. Further the lack of green stakeholders and green lobby, has burden the spiral of unawareness. If the Greek society had stronger environmentalists that will have forced the Greek media to give more space to environmental issues and environmental frames, that would probably create some pressure to set the priority on environment and environmental awareness and not on ly on the economy.

8 Conclusion

This paper highlights the importance that the online news media can play in raising people's awareness on environmental issues. After analyzing news articles from 2015-2017, the findings provided insights on how this specific media frames news regarding the EU Directive of renewable energy and the Greek Action Plan 202020, and how they choose to talk about the environment. At the latest point the paper compared the findings with Nisbets typology of frames, and showed that more frames can come up to the surface if the researcher has an open approach. As a conclusion, the news media is focusing on the financial aspect and the exploitation of renewable energy in order to grant access to cheap energy, but they fail to address issues of the sustainability. This paper can contribute to a better understanding of how the media uses framing environmental issues to produce and distribute the information. In addition, this paper can be a standpoint for further research in the field of framing theory. Scholars could investigate the 'why' the journalists choose to narrate the way they do and 'how' these frames influence the public opinion on issues regarding renewable energy.

References

Ardèvol-Abreu, A. (2015). Framing theory in communication research in Spain. Origins, development and current situation. Revista Latina de Comunicación Social, 70, pp. 423 to 450 Cox R. (2013). Environmental and the public sphere. 3rd Edition. USA: Sage Publications

Craig, RT & Muller, HL (2007). Theorizing Communication: Readings Across Traditions. Sage Publications

Creswell, J. (2013). Research design : qualitative, quantitative, and mixed methods approaches. SAGE Publications

Dincer, I. (2010). Renewable energy and sustainable development: a crucial review.

Renewable and Sustainable Energy Reviews 4:2 157-175

Djerf-Pierre, M., Cokley, J. & Kuchel, L. (2016) Framing Renewable Energy: A Comparative Study of Newspapers in Australia and Sweden, Environmental Communication, 10:5, 634-655

Entman, Robert M. (1993). "Framing: Toward Clarification of a Fractured Paradigm." Journal of Communication 43 (4): 51-58

Goffman, Erving. (1974). Frame Analysis: An Essay on the Organization of Experience. New York, NY et al.: Harper & Row

Hansen, A. (2010). Environment, Media and Communication. Routledge

Lakoff, G (2010). Why it Matters How We Frame the Environment, Environmental Communication: A Journal of Nature and Culture, 4:1, 70-81

Lakoff, G. (2014) Don't think of an elephant !: know your values and frame the debate: the essential guide for progressives US Chelsea Green Publishing

Nirmala, T. and Arul, A. (2017). Framing of environment in English and Tamil newspapers in India: Journal of Media and Communication Studies, 9:1 1-9

Nisbet, M. & Newman, T. (2015). FRAMING, THE MEDIA, AND ENVIRONMENTAL COMMUNICATION: The Routledge Handbook Of Environment And Communication p. 361-375 Rogala, B. (2011). The Framing of Fossil Fuels and Climate Change: Coverage of Environmental Issues in Three of the Nation's Top Newspapers: The Elon Journal of Undergraduate Research in Communications, 2:2 76-86

Silverman, D. (2015). Interpreting Qualitative Data. 5. ed. London: SAGE Publications. Smith, H. M., Smith, J. W., Silka, L., Lindenfeld, L. & Gilbert, C. (2016). Media and policy in a complex adaptive system: Insights from wind energy legislation in the United States, Energy Research & Social Science, 19 53-60

Zhang, Y. & Wildemuth B. (2009). Applications of Social Research Methods to Questions in Information and Library Science, BM Wildemuth, Ed. Westport, CT: Libraries Unlimited. Dianeosis Research and Policy Institute (2017). What Greek beleive in 2017. [Online] [Accessed 14 May 2017]. Available from:

http://www.dianeosis.org/wp-content/uploads/2017/03/ti pistevoun oi ellines final version.pdf European Commission (2017). Renewable energy directive 2017. [Online]. [Accessed 23 March 2017]. Available from: https://ec.europa.eu/energy/en/topics/renewable-energy/renewable-energydirective

Ministry of Environment & Energy (2010). NATIONAL RENEWABLE ENERGY ACTION PLAN IN THE SCOPE OF DIRECTIVE 2009/28/EC. [Online]. [Accessed 23 March 2017]. Available from: http://www.ypeka.gr/LinkClick.aspx?fileticket=CEYdUkQ719k%3D

The Huffington Post (2016). Έρευνα ΕΚΚΕ: Το 84,6% των Ελλήνων επιλέγει το διαδίκτυο ως κύρια πηγή ενημέρωσης (Research of National Center of Social Research - EKKE: 84,6% of Greek is choosing online media as main source of information). [Online]. [Accessed 26 March 2017]. Available from:

http://www.huffingtonpost.gr/2016/11/01/tech-koinonia-ekke-ellines-diadiktyo-pigienimerosis_n_12745422.html

Council Directive 2009/28/EC of 23 April 2009 concerning on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC

Organisation for Economic Co-operation and Development (OECD): Environmental Performance Reviews Greece. [Online]. [Accessed 23 April 2017]. Available from: http://www.oecd.org/environment/country-reviews/2448632.pdf

List of media articles

2015

1) Avgi.gr Το νέο ΕΣΠΑ διέπεται από τη λογική προστασίας του κλίματος (2015). [Online]. [Accessed 01 May 2017]. Available from: http://www.avgi.gr/article/10810/6078386/to-neo-espa-diepetai-apo-te-logike-prostasias-tou-klimatos 2) Econews.gr ΑΠΕ: 18% στα νησιά τον Ιούνιο ενόψει «δυνατού» καλοκαιριού (2015). [Online]. [Accessed 31 May 2017]. Available from: http://www.econews.gr/2015/08/04/ape-nisia-123842/ 3) Econews.gr ΑΠΕ: τι είναι η «στατιστική μεταβίβαση» για τους «αποτυχημένους» (2015). [Online]. [Accessed 28 May 2017]. Available from: http://www.econews.gr/2015/08/21/ape-statistiki-metavivasi-124086/ 4) Econews.gr ΑΠΕ: ένας ανεκμετάλλευτος θησαυρός δισ. Ευρώ για την Ελλάδα (2015). [Online]. [Accessed 29 May 2017]. Available from: http://www.econews.gr/2015/08/13/ape-ellada-politiki-123973/ 5) Econews.gr Οι ΑΠΕ πρώτες στις νέες θέσεις εργασίας με ηγέτη τα φωτοβολταϊκά (2015). [Online]. [Accessed 29 May 2017]. Available from: http://www.econews.gr/2015/05/20/ape-irena-ergasia-122417/ 6) Econews.gr ΑΠΕ στην Ελλάδα: τι αναφέρει η έκθεση Βαρουφάκη στην Κομισιόν (2015). [Online]. [Accessed 01 May 2017]. Available from: http://www.econews.gr/2015/05/12/ape-varoufakis-122262/ 7) Kathimerini.gr Βήματα προόδου στη διείσδυση των ΑΠΕ στην ενεργειακή κατανάλωση(2015). [Online]. [Accessed 31 May 2017]. Available from: http://www.kathimerini.gr/819810/article/oikonomia/epixeirhseis/vhmata-proodoy-sth-dieisdysh-twnape-sthn-energeiakh-katanalwsh 8) Kathimerini.gr Οι ΑΠΕ πηγαίνουν όλο και καλύτερα στην Ε.Ε. (2015). [Online]. [Accessed 31 May 2017]. Available from: http://www.kathimerini.gr/805412/article/epikairothta/perivallon/oi-ape-phgainoyn-olo-kai-kalyterasthn-ee 9) Tovima.gr Οδικός χάρτης για την ανάπτυξη των Ανανεώσιμων Πηγών Ενέργειας (2015). [Online]. [Accessed 01 May 2017]. Available from: http://www.tovima.gr/finance/article/?aid=710968 2016 10) CNN.gr ΚΑΠΕ: Πολύτιμη για την Ελλάδα η εξοικονόμηση ενέργειας (2016). [Online]. [Accessed 01 May 2017]. Available from: http://www.econews.gr/2015/05/12/ape-varoufakis-122262/ 11) CNN.gr Η βιώσιμη ανάπτυξη στο επίκεντρο του συνεδρίου του Economist (2016). [Online]. [Accessed 01 May 2017]. Available from: http://www.cnn.gr/focus/story/56780/h-viosimi-anapty xi-sto-epikentro-toy-synedrioy-toy-economist 12) Econews.gr ΑΠΕ: ποιες χώρες της ΕΕ είναι εκτός στόχου 2020 – Ποιες τον υπερβαίνουν (2016). [Online]. [Accessed 01 May 2017]. Available from: http://www.econews.gr/2016/02/12/ape-europi-epidoseis-128506/ 13) fsyn.gr «Παγώνει» το τέλος ΑΠΕ στην ενέργεια (2016). [Online]. [Accessed 30 May 2017]. Available from: http://www.efsyn.gr/arthro/pagonei-telos-ape-stin-energeia 14) Eleftherostypos.gr Δέσμη μέτρων για την ευρωπαϊκή ενεργειακή πολιτική έδωσε στη δημοσιότητα η Ευρωπαϊκή Επιτροπή (2016). [Online]. [Accessed 01 May 2017]. Available from: http://www.eleftherostypos.gr/oikonomia/57468-desmi-metron-gia-tin-eyropaiki-energeiaki-politikiedose-sti-dimosiotita-i-eyropaiki-epitropi/#more-57468 15) Iefimerida.gr

Τι σχεδιάζει το υπ. Περιβάλλοντος για τις Ανανεώσιμες Πηγές Ενέργειας (2016). [Online]. [Accessed 01 May 2017]. Available from: http://www.iefimerida.gr/news/249202/ti-shediazei-yp-perivallontos-gia-tis-ananeosimes-pigesenergeias 16) Kathimerini.gr Δέσμη μέτρων για την ευρωπαϊκή ενεργειακή πολιτική από Κομισιόν (2016). [Online]. [Accessed 01 May 2017]. Available from: http://www.kathimerini.gr/885902/article/epikairothta/kosmos/desmh-metrwn-gia-thn-eyrwpaikhenergeiakh-politikh-apo-komision 17) Liberal.gr Έρχεται το νέο μοντέλο για τις Ανανεώσιμες Πηγές Ενέργειας (2016). [Online]. [Accessed 28 May 2017]. Available from: http://www.liberal.gr/arthro/29302/oikonomia/2016/erchetai-to-neo-montelo-gia-tis-ape.html 18) Protothema.gr Με μειωμένους ρυθμούς η ανάπτυξη στις ανανεώσιμες πηγές ενέργειας (2016) [Online]. [Accessed 28 May 2017]. Available from: http://www.protothema.gr/economy/article/612503/me-meiomenous-ruthmous-i-anaptuxi-stisananeosimes-piges-energeias/

2017

19) Avgi.gr

Στοιχεία Eurostat για την ενεργειακή κατανάλωση από ΑΠΕ το 2015 (2017). [Online]. [Accessed 01 May 2017]. Available from: http://www.avgi.gr/article/10951/7978050/stoicheia-eurostat-gia-ten-energeiake-katanalose-apo-apeto-2015 20) Bankingnews.gr Εφικτή η επίτευξη των ευρωπαϊκών στόχων για τις ΑΠΕ το 2020, σύμφωνα με την Κομισιόν (2017). [Online]. [Accessed 01 May 2017]. Available from: www.bankingnews.gr/διεθνή/item/291236-εφικτή-η-επίτευζη-των-ευρωπαϊκών-στόγων-για-τις-απετο-2020,-σύμφωνα-με-την-κομισιόν.html 21) Capital.gr EBRD: Επένδυση €300 εκατ. στις ΑΠΕ στην Ελλάδα (2017) [Online]. [Accessed 01 May 2017]. Available from: http://www.capital.gr/oikonomia/3196626/ebrd-ependusi-300-ekat-stis-ape-stin-ellada 22) CNN.gr Ελλάδα: Στο 15,4% η κατανάλωση από ανανεώσιμες πηγές (2017). [Online]. [Accessed 01 May 2017]. Available from: http://www.cnn.gr/news/ellada/story/71840/ellada-sto-15-4-i-katanalosi-apo-ananeosimes-piges 23) Enikonomia.gr Ε.Ε: Εφικτή η επίτευξη των στόχων για τις ΑΠΕ το 2020 (2017). [Online]. [Accessed 01 May 2017]. Available from: http://www.enikonomia.gr/economy/138132,ee-efikti-i-epitefxi-ton-stochon-gia-tis-ape-to-2020.html 24) Greenagenda.gr ΕΝΤΟΣ ΤΩΝ ΣΤΟΧΩΝ ΤΟΥ 2020 ΓΙΑ ΚΛΙΜΑΤΙΚΗ ΑΛΛΑΓΗ ΚΑΙ ΑΠΕ Η ΕΕ (2017). [Online]. [Accessed 01 May 2017]. Available from: https://greenagenda.gr/κομισιόν-εντός-των-στόχων-του-2020-στις-απ/ 25) Insidestory.gr Συμφέρουν οι Ανανεώσιμες Πηγές Ενέργειας; (2017). [Online]. [Accessed 29 May 2017]. Available from: https://insidestory.gr/article/ananeosimes-piges-energeias?token=JZV73VDU8I 26) Naftermporiki.gr Πανευρωπαϊκή πρωτιά χθες της Ελλάδας στο μερίδιο της αιολικής ενέργειας (2017). [Online]. [Accessed 31 May 2017]. Available from: http://www.naftemporiki.gr/finance/story/1241151/paneuropaiki-protia-xthes-tis-elladas-sto-meridiotis-aiolikis-energeias 27) Newsbomb.gr EBRD: 300 εκατ. ευρώ για εργα ανανεώσιμων πηγών στην Ελλάδα (2017). [Online]. [Accessed 31 May 2017]. Available from: http://www.newsbomb.gr/oikonomia/news/story/776274/ebrd-300-ekat-eyro-gia-erga-ananeosimonpigon-stin-ellada 28) Skai.gr Πράσινη Επιχειρηματικότητα στην Αγορά των ΑΠΕ: Μια Πρωτοπόρος Προσέγγιση στο Δήμο Νέας Ιωνίας (2017). [Online]. [Accessed 31 May 2017]. Available from: http://www.skai.gr/news/business/article/342849/prasini-epiheirimatikotita-stin-agora-ton-ape-miaprotoporos-proseggisi-sto-dimo-neas-ionias/ 29) Tovima.gr

Οι επενδυτές στρέφονται στις ανανεώσιμες πηγές ενέργειας (2017). [Online]. [Accessed 28 May 2017]. Available from: http://www.tovima.gr/finance/article/?aid=873304