WHY DOES POLAND DEVELOP DIFFERENT POLITICS IN THE FIELD OF THE CLIMATE AND ENERGY FRAMEWORK OF THE EU? THE POLISH CASE IN RELATION TO GERMANY - FOCUS ON DISTRIBUTED GENERATION

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Abstract

Poland and Germany have similar resources of coal: nonetheless, theses two countries develop completely different policies in the field of the energy and climate framework of the EU. Germany is aiming, until 2080, based its country energy mix in 80% on renewables energy sources departing from the fossil fuel entirely substituting it with the low carbon energy model based on decentralized supply power system with the greater involvement of citizens. In other words, the German energy and climate strategy is in line with the EU policy in this field. Poland is on the opposite pole. Even in the long time perspective - until 2050 coal is foreseen to be the primary energy fuel in the country. The low-carbon energy model promoted by the EU is planning to be achieved through the implementation of the new Carbon Capture and Storage (CCS), very expensive technology. In sum, the centralized power generation model (with the involvement of the state-controlled energy companies) is winning with the decentralized energy production model that could be built using the potential and willingness of the Polish pro-consumers and citizens. *Why does Poland develop different policies than Germany in the field of the climate and energy framework of the EU?*

To deliver the more holistic answer to the above question the so called theory of *"psychological constructivism"* of Richard N.Lebow (2008) has been applied. The author claims that behind each states' political decision stand different motives: spirit, appetite, reason. He also distinguishes fear as emotion; however many researches have been done in the field of energy security with Russian policy being, very often, the first cause of the root of this fear. Although the Russian aspect is also discussed in the below work, it is treated from the different perspective to see how the country's energy strategy can be influenced by the appearance of the different Lewbow's motives on a state level, both in Poland and Germany. These two countries develop different policies in the climate and energy field primarily because the distinctive motives drive both states. Moreover, it has been detected that very often these concepts (spirit, appetite, reason) have a different connotation for Germany and Poland what also impacts the outcome of their policies. Although the work is referring to the core three aspects of climate and energy framework (GHGs emission reduction, efficiency, renewables energy) the focus is given to the development of alternative energy sources. Hence, there are separate chapters about the Polish and the German legislation in the field of renewables energy until the current status with some background analysis.

Table of Contents

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Dziekuję
Moltes gràcies

I. Introduction

1.1 Rationale

The inspiration to write the thesis: *Why Poland develops different politics in the field of the climate and energy framework of the EU: Polish case in relation to Germany (focus on renewable, decentralized generation)?* has its roots in the observation of climate changes which effects can be seen firsthand. Also, another reason was the fact that Poland and Germany are developing entirely different policies in the field of energy and climate. In other words, Germany decided to departure from the fossil fuels and substituted them with alternative renewable energy sources. The German government's goal is to develop the low-carbon sustainable economy in a long time horizon; hence, coal and gas act as a temporary back-up fuel. On the contrary, Poland has an ambition of being the leader in Europe of energy produced from coal, using the clean carbon technologies (Clean Carbon and Storage – CCS).

Barack Obama during the Paris Conference said that: *"We are the first generation to feel the impact of climate change, and the last generation that can do something about it"* (Obama B.,Nov.,2015). He, as the former leader of the most powerful country and, at the same time, the second – largest emitter of the greenhouse gasses (GHG) expressed the confidence that low-carbon sustainable development is not contradictory to economic growth (Obama B.,Nov.,2015).

In other words, the competitiveness of the economy is not contradictory to the sustainable low – carbon development. This argument does not seem to appeal to Poland and is very often used by the government in the context of (non)-promotion of the energy from renewable resources.

More, as said, the aim of this thesis is not to compare both countries' energy legislations and model in a *sense strict* of the *"comparative analysis"*, but to have Germany as a point of reference. This point of reference will also help to detect better a variety of different reasons

that stand behind the Polish and German government's energy strategy of developing so opposite politics in the field of energy and climate within the European Union.

Germany has also been chosen because of the fact that both countries natural coal resources are comparable and also, because as already mentioned, in the past, its energy mix included mostly coal, which now has changed diametrically.

In sum, Germany is *"acting"* as a reference frame in this work that helps better enhance differences in both countries' approach towards the climate and energy framework of the EU and, because of these, it can be said that Poland and Germany are placed on the opposite poles.

1.2 Research questions

Apart from the central question of the thesis, there will be other ones asked in this work that will help to deliver the most comprehensive answer to the main question. One of these questions are: *Why does the Polish government invest and has plans, to further investment, in very expensive, new coal power plants and nuclear energy, and why not in renewable energies? Why is Poland long – standing opponent of the change of the country's energy status quo, which is based on the centralized power generation mainly from the coal power plants?* In other words, why Poland is against the core recommendations/policies of the European climate and energy framework.

Also the additional question related to Germany is: *Why Germany, that had in the past similar energy model like Poland, based primarily on coal powers, has started promoting and developing the low-carbon decentralized model based on the small renewable energy installations?*

To find out what stands behind the *"Why"* in the central question of the thesis, the theory of International Relations of Richard N. Lebow called *"psychological constructivism"* will shed lights on the *"why"* part introducing, at the same time, an innovative element of psychology in politics. In other words, it will provide the new lenses, through which, the reply to the core question of the thesis, can be delivered. In other words, the motives that

stand behind the Polish decision are hoped to be better detected. The Richard N. Lebow's theory will be the main one used in the thesis. However, I will also refer to the K. Waltz structural realism theory.

Why have been these two theories chosen in the context of the renewable energy and the European Union climate and energy strategy? The simple reply is that they are complementary. Here is why.

As recognized by Richard N. Lebow, the identification of motives of one country's behavior is not an easy task as motives are a sphere of the human being rather a single state. In that sense, Richard Ned Lebow with his theory of psychological constructivism provides entirely new insight into the existing theories of International Relations (IR) such as well know realism (the mentioned K.Waltz), neo-liberalism, constructivism.

The novelty of the Richard Ned Lebow's theory consists of the fact that none of these approaches include the human psychology element and with this feature, he provides an alternative paradigm and new lenses to understand state's motives that stand behind political decisions. Richard Ned Lebow in this book *"A Culture theory of international relations"* (Lebow 2008a) analyzed the behavior of states (since Greek Imperium to the invasion of Iraq during the Bush administration) by applying the human psychology element (Lebow 2008b).

Now, one can ask why applying psychology and human element to IR, and also, to analyze the certain political decision related to energy strategy in Poland and in Germany? The author stresses that there are theories that refer to fear, like realism and to appetite, like Marxism and liberalism; however, there are no theories that would be based on other motives: *"There is no paradigm or theory builds on the motive of the spirit and the human need for self-esteem and describes the ways in which strivings for honor and standing influences, if not often shape, political behavior. My theory of international relations is necessary to explain behavior other theories cannot, identify new problems; reframe existing ones in helpful ways"*(Lebow 2008).

First reason is that Geeks inspired Richard Ned Lebow as they tried to find common ground to many separate disciplines, in others words, they applied the more holistic approach: *"(...)as must any general theory involving human behavior "*(Lebow 2008, 44).

The second reason is that states are *"(...) hierarchically organized groups of emotional people (...)" and that is why they "(...) are not gigantic calculating machines(...)"*(Lebow 2008, 117).This statement is the overthrow of the argument that: *"Individuals may be affected by psychology factors, but states are rational"*(Hymans 2010). The thesis will prove that all of these three motives/goals: appetite, spirit, reason and also fear (as an emotion) are in different degree present in one country's politics and that is why states develop different strategies in the EU, here in the field of energy and climate. However, as it will be proved, some of these motives are primary ones, others are less influential, and these motives which have the heavier weight over others ones, finally impact the most a country's strategy.

1.3 Aim of the research

To my knowledge, the aspect of feelings behind the state's motivations has still not been explored in the relevant literature. There have been scholars who discussed the impact of mistrust, trust and insecurity among Russia and Poland and also among the EU and Russia, meaning the consequence of these particular feelings on the mutual relations, a few examples: (Ziegler 2013),(Goldman 2010),(Bosse and Schmidt-Felzmann 2011),(Szul 2011a),(Natorski and Pomorska 2017),however, these two kinds of feelings have been discussed and yet, not in the context of the question stated in the thesis.

More comprehensive feelings have been assessed in the context of individual motives for investing in renewable energy's projects. The spirit (self-esteem) and emotional bonds of communities and individual's motives for investing in this kind of endowments related to renewable energy, have also been discussed already (Wirth 2014), (Dóci and Vasileiadou 2015). There are also researches about different RES (Renewable Energy Sources) policies within the EU that refer to self-concern driven motivations of voters, shareholders and variety of various political units and how the government needs to balance those interests (Strunz, Gawel, and Lehmann 2016b).Nevertheless, an impact of these three motives (spirit, appetite, reason) on different state's approaches towards the EU's policies (here the climate

and energy framework) has not been analyzed from a pure state's level perspective meaning from more general, aerial view.

Lebow enhances that: *"Institutions and states have neither psyche nor emotions. However, the people who comprise and run them do. They often project their psychological needs on to their political unit"* (Lebow 2008). That is very relevant premise clearly seen when it comes to Putin's doctrine and energy policy that are projected in his power-unilateral aggressive energy policy. In other words, Putin's personality traits influence strongly the energy policy which causes very often, as it is described below, the feeling of fear, insecurity and these creates the *"security dilemma"* and *"vicious circle"* (Waltz 1979) mentioned by K. Waltz, which has an immense impact on the energy (also climate) strategy in Poland.

To the contrary, the K. Waltz enhances that to describe what structure is (here, paraphrasing for the need of the thesis: *"energy structure")* the attributes of units/actors need to be omitted. It means it has to be ignored how units relate with one another (how they interact) and how they stand in relation to one another (how they are arranged or positioned) (Waltz 1979) What does it mean? For K.Waltz the most important property of the international system (here energy system) is the arrangement of units. He emphasizes the need of leaving: *"aside the personality of actors, their behavior, and their interactions"*(Waltz 1979) and thanks to that omission one *"(...) arrives at a purely positional picture of society"*(Waltz 1979). It means that *"structures may endure while personality, behavior, and interactions vary widely"* (Waltz 1979). It is precisely where the complementary theory of Richard Ned Lebow is filling the gap: adding human element related to personality, behavior and wide range of different motives that can play an immense influence and shape political strategy and decision of states (decision of the government).

Now, these two theories complement each other, as K. Waltz exams the foreign policy of each actor's from the rational perspective, and Richard N. Lebow introduces the mentioned human psychology when examining the same problem (state's behavior).

What was the second reason because of which the structural realism theory of K. Waltz has been chosen? To begin with, when energy's policy topics are being discussed, the security aspect cannot be omitted. Now, to deliver the complete reply to the central question of the

thesis, the energy security element needs to be analyzed. Expressly, the renewable energy development, climate topic, and a country's energy policy are under one umbrella, which cannot be discussed without the energy security aspect and the structural realism theory helps to analyze this particular element. For that reason, part of the thesis discusses the energy relations between Poland and Russia as these have a substantial impact on the Polish energy policy.

For that particular purpose, complementary to the Richard Ned Lebow theory, it will serve the K. Waltz's theory that, to a great extent, concentrates on the state's political decision and strategy to maximize its security in the anarchic international system. Also, the theory helps to analyze the states' underlined motives which strive them to secure their safety in the anarchic international energy system, paraphrasing K.Waltz international political system. In sum, it will shed light on why coal is seen as the main contributor to the country's security and why the same capacity is not being given to renewable energy, commonly know and recognized as the best way to strengthen one country's energy security.

Additional inspiration to apply the structural realism theory was the fact that, originally, the K.Waltz approach was used to explain the behavior of states during the Cold War. However, it can also be applied when trying to understand which paradigms influence the energy policy in Poland. The words of prof. Jabłoński explain the use of old theories*: "The phenomenon of circulation of political theory can be noticed. After a long time in the new historical circumstances already forgotten, some theories acquire on actualization"* (Jabłoński A,W.,2010, n.d.).

In other words, some old theories, in this case, the theory used during the Cold War mainly, can be operative nowadays. More, when one observes the language employed by the Polish decision makers and politicians when they refer to topics related to energy, one can notice the adoption of the *"war terminology"*[1]. One can have an impression that there is a war (not in a *sense strict* of the commonly know definition of war), where fossil fuels are being the new weapons. Renewables energy in Poland are not being viewed as an active contributor to

[1] The Former President of the European Commission in 2014 admitted that energy could be used as a weapon and that energy is not only energy: *"(…) energy, even if we do not want to see it as a political weapon, is much more than energy"*(European Commission,May.,2014, n.d.)

the country's energy safety. In other words, alternative energies are not perceived by the Polish government as an effective weapon that contributes to the state's feeling of power and security. The main reason for that is the fact that in the distributed generation, based on renewable energy, the ownership over energy (in the majority of percentage) is under society; hence, the government is losing control over it, thus part of its power.

There are also other reasons explained in the last chapter, where the analysis from the Lebow's theory perspective is performed. Moreover, when analyzing the current academic literature, the *"energy game"*(Szul 2011a) or *"weaponization of Russian energy"* (Goldman 2010) these concepts are already being in use. One of the Polish Foreign Ministry Daniel Rotfelt in the interview, related to the Russian's annexation of Crimea and Ukraine conflict, referred to Jewgienij Messner (Gazeta Wyborcza, Mar.,2014, n.d.). Jewgienij Messner first proposed a departure from the fixed concepts and started seeing a war in a different form with the use of various tools, such as disinformation, manipulation of society with the help of media. J. Messner summed it up as a *"slavery campaign of minds"*(Gazeta Wyborcza, Mar.,2014, n.d.).

This disinformation and manipulation of society take place also in Poland, and it is very visible in the context of renewable energy development (law establishment and its economic potential and profitability[2]), all in the name of questioning the rational reasons that stand behind of the development of these alternative energy carries on the Polish ground.

The construction of the thesis is as follow. The second chapter's objective is to describe briefly the main policy related to the climate and policy framework of the EU (the European Strategy 3x20 from 2009 and the current one from 2014). This chapter will also include the information about the current status of the implementation of the main directives related to the climate and energy framework in Poland. Additionally, the Kyoto Protocol and Paris Agreement will be discussed together with the presentation of the Polish and German approach during the last climate conference. In the first section of the third chapter, the main

[2] This situation about the lack of reliable information regarding the potential of the development of renewables energies in Poland (also real cost of renewables electricity) was confirmed in the survey sent to the non-governmental organizations operating in the field of renewables energies (Annex III) – the question number 3. In the last chapter the whole questionnaire is being discussed.

strategic documents related to the Polish energy policy will be analyzed. The second section of it will analyze the selected case studies of the draft law on renewables energy; also the current status of the law on renewables energy will be included. Chapter IV will illustrate the development of the renewables energies, distributed generation in Germany and the core German legislations to emphasize differences between Polish and Germany model. Chapter V will briefly describe the primary assumption of the Richard N.Lebow theory and K.Waltz one, and in the next Chapter VI, the gas relations of Poland, Germany and the EU with Russia will be analyzed through the lenses of these two theories. These relations are included in the work as they are also fundamental to deliver a more holistic answer to the central question of the thesis. Chapter VII will present the main Polish initiate on the European level in the field of energy view from the both theories' angle, however with emphasize given to the Lebow's theory as it is the leading one in the thesis. The last Chapter VIII is a conclusion part based on the Lebow's and K.Waltz's theory. The analysis is based, both on the information provided in all previous chapters and also on the feedback received from the questionnaires sent to the main Polish non-governmental organizations operating in the renewables energy field.

II. Background

Each year climate around the globe is getting warmer, and this fact is real and noticeable. Without the genuine commitment and involvement of all countries in combating climate changes (especially the most industrialized ones) consequences for both, to the planet and the human health[3], will be devastating. The aim of this chapter is, first; shortly see what the climate – energy policy and agreements on the global and European Union level are, second; point out briefly, what is the Polish government position towards them and how different the Polish approach is in relation with Germany (visible during the Climate Conference in Paris). This section will also include the current status of the implementation of the main EU directives in the field of climate and energy framework to assess where Poland stands regarding fulfillment of the European Strategy 2020 (3x20) and the last Strategy from 2014. This part of the thesis will shed lights on the information included in the next chapter that presents the main direction of the climate and energy policy of Poland. Hence, with this background it will be more understood why Poland might not accomplish the binding targets assigned in the 3x20 Strategy and, also very likely, goals set up for 2030 with the new European Strategy from 2014.

The primary goal of the United Nations Framework Convention on Climate Change (UNFCCC) is to maintain an decrease the average temperature on the earth below 2°C and, at the same time, emissions of CO_2, and the other greenhouse gasses (GHGs) must be decreased drastically, about half before 2050 (European Environment Agency, Dec.,2016 2017). This ambitious and necessary aim will not be achieved without a full commitment of, especially, the industrials economies (developed countries) that are responsible for the most of these emissions in the global scale (see below %). Therefore they would need to change their economy model to the low carbon one, so the CO_2 and GHGs are reduced by necessary 95% before 2050. Other developing countries such as India, China, Brazil need, as well, to commit equally to accomplish this joint target (European Environment Agency, Dec.,2016).

One of the first international agreement was The UNFCCC's Kyoto Protocol. The Kyoto Protocol entered into force very late (16 February 2005), eight years after it was adopted on

[3] According to the last report of the World Health Organization 33 most polluted cities out of 50 in Europe are in Poland (Financial Times,Dec.,2016).

11th of December 1997 (UNFCCC). Similar to The Paris Agreement, according to the Article 23, The Protocol could become part of legal framework once not less than 55 Countries that are grouped in Annex I (states that are responsible for at least 55% of the total CO_2 emission) ratified the Protocol (Kyoto Protocol, Ratification).

The Kyoto Protocol is the first official agreement that introduces binding targets; however, they are mandatory only for those parties that at the end ratified it. The Kyoto Protocol entered into force after the Russian[4] ratification (The Kyoto Protocol 2005, n.d.). The United States of America[5] , also included in the countries of Annex I (UNFCCC, Annex I, n.d.), did not ratify the Kyoto Protocol, on the contrary to India and China (Kyoto Protocol, Ratification), both countries responsible for CO_2 emissions account for 6.24% and 28.21% (Statista, 2016) respectively, as per data from 2016. The lack of solidarity from some of these countries, which are responsible for higher % of the CO_2 emissions and other GHGs, was one of the reasons why Canada decided to leave The Kyoto Protocol (the decision entered into force on December 2012) (UNFCCC, Status, n.d.). The other reason was that the Kyoto Protocol did not set up ambitious enough objectives[6](Government of Canada 2012). When it comes to the Paris Agreement, Canada and USA ratified it(Paris Agreement,Dec.,2015, n.d.).

The European Union that is responsible for 10% of total global emission ratified the Kyoto Protocol and the mandatory targets were set up for each Member States with some small differences in percentage. Those states that became Members of the EU on 1st of May 2004 have from 6-8% reduction goal having as benchmark the year 1990, and the ones that joined before 2004 have 8% target. However, the European Union, as one actor, composed from different countries, had so-called *"burden – sharing agreement",* which means that some

[4] Russia is responsible for 4.53% of the global $C0_2$ emission as per data from 2016 (Statista, 2016).

[5] The United State of America accounted for 15.99% of the global CO_2 emission in 2016, in comparison with Canada that only accounted for 1.71% in 2016 (Statista, 2016).

[6] "*From an environmental perspective, the Kyoto Protocol has not served the international community well in meeting the real challenges of global climate change or effectively engaging all major economies. The Protocol only covers countries responsible for a small, and increasingly smaller, percentage of global emissions and, as a consequence, is not an effective vehicle for addressing the global challenge of climate change. Importantly for Canada, the United States, which is Canada's biggest economic trading partner and is responsible for nearly 20% of global emissions, is not covered by the Kyoto Protocol"(*Government of Canada 2012).

states are allowed to increase their emissions while others have to decrease it (European Environment Agency, Dec.,2016).

2.1 The Kyoto Protocol

The 1st phase (2008-2012) was agreed in Marrakesh, Morocco in 2001. The second period (2013-2020) was discussed in 2012 during Doha Conference, where the further decline in the GHGs emission was adopted (reduction by at least 18% below 1990 level versus 5 % below 1990 of the 1st phase). The Doha Conference can be viewed as an important one because during this meeting the agreement about the extension of the existence of The Kyoto Protocol was reached. Otherwise, The Protocol was going to expire in 2012. Now the timeframe runs until 2020. From 2020 onwards, the targets of The Paris Agreement will enter into force, which was agreed during the Durban Conference (South Africa)(FCCC, Durban, n.d.).

Now, in the light of these international effort and agreement to reduce the CO_2 and GHGs emission it is worth recalling the Polish position. Short before the Climate Conference in Paris the Polish President, Andrzej Duda, vetoed the Act about the Doha Amendment that aimed to extend The Kyoto Protocol: *"The Act of 11 September 2015. Ratification of the Doha Amendment to the Kyoto Protocol to the United Nations Framework Convention on Climate Change, signed in Kyoto on 11 December 1997. Adopted in Doha on 8 December 2012"* (Polish President, Oct.,2015)

As per the justification for this amendment, the reason that stood behind the veto was that Doha Amendment of The Kyoto Protocol, being the international agreement, can affect the functioning of the economy of Poland, therefore, it relates to the social costs. In the light of the above, Polish President decided that more detailed economic and legal Parliament's analysis is required before agreeing to Doha ratification (Polish President, Oct.,2015).

The above position of the Polish government is a clear sign of reluctance in applying international agreement in this field of climate protection.

Both The Kyoto Protocol and The Paris Agreement are significant steps towards the climate change battle. This fight against the climate change can only be successful if all the countries show the same level of commitment. It cannot be forgotten that both agreements provide an extensive financial support for the developing countries. During the Cancun Agreements, on December 2010, it was confirmed that developing countries would receive 100 USD billions per year from developed countries and the funding was channeled through the established Green Climate Fund(WHO, n.d.).

2.2 The European 2020 strategy

Although, Poland did not ratify the mentioned Doha Agreement, being the Member States of the European Union, is automatically committed, through, the European 2020 Strategy to reduce the GHGs emissions and CO_2. The European 2020 Strategy aims to achieve the *"low-carbon"* sustainable economy through the increase of energy production from alternative energy resources and through the energy efficiency (European Commission, Mar.,2010).The "3x20" relates to the European Union jointly achieved objectives:

- 20% greenhouse gas emission reduction (1990 year as a agreed benchmark)
- 20% of the total energy consumption of renewable energy
- 20% improvement in the increase in energy efficiency (EU climte action)

The European 2020 strategy has been in forced in parallel with the Kyoto Protocol not only acting as a gatekeeper ensuring the realization of its targets but even exceeding the goals set up in the Kyoto Protocol. The European 2020 strategy, as the Kyoto Protocol or the Paris Agreement, can finally accomplish assigned targets if all parties will show the same dedication and determination. Above all, states need to believe that climate and energy policies should be designed in such as way that combating climate change will be a leading principal. As per the European 2020 strategy, this can be achieved through the long term vision and replacement of the fossil fuel economy and energy model with the low carbon one, which is less harmful to the environment (European Commission, Mar.,2010).

Now, the reduction of GHGs emission according to the Protocol it is primarily done through the national measure. However, the Protocol also introduced the additional innovative measure to facilitate the reduction of GHG further, which:

- International Emissions Trading
- Clean Development Mechanism (CDM) (it is the investment emission – reducing projects in developing countries and also support the sustainable development, e.g., by financing renewable energy project
- Joint Implementation (JI) is the investment emission – reducing projects in developed countries (Kyoto Protocol, n.d.). The European Strategy 2020 to meet the target of the GHGs emission reduction introduced so-called European Trading System (ETS).

2.2.1 The European Union Trading System (ETS)

The European Union Trading System (ETS) is a cornerstone mechanism, which primary goal is to meet the Kyoto Protocol's (1997, 2005) main objective - decreasing the GHGs and $C0_2$ emission. Through the establishment of the ETS (and its reforms[7] after each phase) the EU aims to reduce by 20% the GHGs and $C0_2$ emission and since 2021 (when the new European Strategy from 2014 enters into force) by 40%. The greenhouse gas emission allowance trading scheme (ETS) Directive 2009/29/EC entered into force in 2005 (European Commission,Apr.,2009), and until now the system has been modified to reduce, in a more efficient way, the GHG emissions, as the functioning of it was criticized. Now the European Trading System is in its 3rd reformed phase, that run from 2013 -2020, the 1st one covered the period from 2005-2007 and the 2nd one from 2008-2012 (Climate Action, ETS). The 4th phase of ETS will run from 2021 and the number of free CO_2 permits, from this year onwards, will be reduced by 2.2% (and not like it was before by 1.7%).All these steps are designed to achieve the 40% of the CO_2 reduction before 2030 (European Council,

[7] The 1st phase was more a learning period and for that reason did not cover all the emissions that were included later. Neither it included fines to encourage industries for more reductions in GHGs. Also, many green certificates were granted for free, and the most necessary, the limit in the GHGs emission could not been set up on the adequate level as there were not yet any data at this stage that could be a reference point. The 2nd phase covered these gaps and introduced higher fees for non-compliance with the policy of ETS; more industries were included, among other aviation (Climate Action, Phase I,II, n.d.).

Oct.,2014).

There were many critics regarding the ETS system, and many scientists question whether this mechanism is efficient when reducing CO_2 emissions among Member States of the EU. For example, in Germany since 1990 until 2012 the share of the renewable energy in the total power generation increased from 3% up to 23% and CO_2 emissions were saved thanks to renewable energy. The permits that were saved were shifted to other emitters. As a result, although Germany decreased the CO_2 emission (fossil fuels were replaced by renewables energy) still, permits for CO_2 emissions (certificates) circulate in the European market and were/are bought by those emitters that need them. Now, even though Germany contributed to the EU's account regarding the CO_2 reductions, the overall balance of CO_2 reductions cannot change drastically, as these permits end up in the hands of emitters that need them. From this point of view, the efficiency of the ETS system is questioned (Kirsten 2014). The proposed solution is to take out from the energy markets those certificates that are avoided thanks to energy generated from alternative sources, that would result in the overall reductions of CO_2 permits in Europe. As there would be fewer certificates, their price would rise, what at the end, would perhaps inspire to change the energy model towards renewable energy one as it would result to be economically more viable; hence much more profitable to Member States. Thanks to renewable energy in 2007 in Europe 220 million tons of GHGs emissions were avoided (Hinrichs-Rahlwes 2013).

The positive aspect is that nowadays more and more country are re-designing the energy model towards the low carbon one and there will be fewer emitters that will have to purchase CO_2 permits. Poland, however, has a different view on promotion of renewable energy at home and on the further CO_2 limits on the European level. After the Council of Europe Summit, related to the new climate and energy framework (new European Strategy 2030), the former Prime Minister E. Kopacz confirmed that Poland negotiated 40% of free CO_2 permits until 2030 (which was going to expire in 2019) and, what is also worth underlying, she described this not only as a great success (which might be understandable as Poland electricity is generated mainly by coal), but she commented the situation using the below words: *"We came back from Brussels with shield. We got 100% of what we wanted"*(Prime Minister Office, Oct.,2014).

This statement is very relevant to the thesis as it shows the attitude of Poland revealing country's feeling as per Lebow's theory discussed and referred in other chapters. This expression as an example of the Polish government's defensiveness is an evident proof of how much the Polish government does not identify itself with the climate and energy policy goals. Additionally, E.Kopacz reassured that Poland cannot bear the cost of more ambitious climate policy of the EU (Prime Minister Office, Oct.,2014), which can also indicate that the competitiveness aspect of the energy strategy is placed above the sustainable one. However, it cannot be forgotten that non-development of renewable energy sources (distributed generation) that would help reduce GHGs and $C0_2$ emission, is very often framed in the name of the high costs. This argument is rejected and questions by pro-consumers (see Annex III, question 3).

2.2.2 Polish reaction on the 40% GHG emission reduction target

As it was already mentioned, the new 2030 climate and energy framework (European Council, Oct.,2014) from October 2014 increased the greenhouse gas emission reduction goal from 20% to 40%.

In the light of the above, it cannot surprise that new target met with opposition in Poland. The former Prime Minister Ewa Kopacz, in her, exposé, from October 2014, highlighted: *"My government will not agree to records indicating additional costs for the Polish economy and higher prices for consumers*" (Exposé, E.Kopacz, 2014). Also, she referred to the mining industry saying that her government:*"(…)will support the development of modern coal technologies and reduce the operating costs of the mines in order Polish coal could be competitive on the market"* (Exposé, E.Kopacz, 2014).

Whenever the theme about the reduction of the greenhouse gas emission or renewable energy is officially discussed, the argument about price is always present, in other words, the government is more concerned about the short-term goal (competitiveness of Polish economy) than about the long term one such as sustainable development. As it is observed and presented in the other parts of the thesis, this argument is repeated regardless of any

political program, both major Polish political parties (PiS and PO)[8] are employing this narrative. On the other hand, it is important to draw attention to the fact that nuclear energy and investment in new power fired plants are very expensive also. However, as these investments contribute to the centralized energy model promoted at home (centrally planned), this fact is not being mentioned. The Polish government frames the argument about how expensive distributed renewable energy is, in such a way, that the real motives, why the pro-consumers' installations cannot be developed, are taped (discussed in the conclusion chapter in detailed). The official argument, as per the exposé, is that this type of energy is expensive for the customers.

2.3 The Paris Agreement

The Paris Agreement, the second international agreement after Kyoto, also set the internationally binding limitation on the greenhouse gas emissions (GHG) and CO_2. The Paris Conference took place during November-December 2015, and the agreement became formally a part of the international legal framework on 4th of November 2016 - the same like in the case of Kyoto, when the required 55 countries responsible for 55% of the total global greenhouse gas emissions ratified the Paris Convention (UNFCCC, Paris Agreement).

The Paris Agreement established even more ambitious goal to combat climate change as its main aim is to maintain the global warm increase below 2 degree[9] Celsius above pre-industrial levels and go even further trying to reach the reduction of warm of about 1.5 degree Celsius (UNFCCC, Paris Agreement).

What is worth enhancing here, is that The Paris Agreement is the voluntary international agreement; hence, it does not impose any concrete way of how each country will achieve their targets in regards to the greenhouse gasses (GHGs) emission's reduction. Similar to the Kyoto Protocol, The Paris Agreement, refers to so-called: *"nationally determined contributions"*(NDCs) (UNFCCC, Paris Agreement), which are in line with national

[8] PiS – Prawo i Sprawiedliwość (Law and Justice) and PO – Platforma Obywatelska (Civil Platform)

[9]Angela Merkel described this target as *"not sufficient"* one and she also underlined that submitted Intended Nationally Determined Contributions (INDC) by more than 170 countries are not enough to reach 2 degree Celsius target (Merkel A.,Nov.,2015).

objectives and provide, if necessarily, the financial support for more vulnerable and developing countries. Also, there is no international penalty if any parties do not achieve their targets, in other words, both Kyoto Protocol and now, the Paris Agreement is "based on" the "good will" when meeting those objectives. The Paris Agreement is also based on the mentioned unconstrained participation, though INDC mechanism, for all countries that ratified the agreement. As in the case of the Kyoto Protocol, there is no legal mechanism that could be activated in the event of non-compliance with the objectives of the Agreement.

Now, when there is room for, first, voluntary participation in the agreement, and second, when there is no clearly defined way of execution of assigned targets, it is where the real proactivity and one country's attitude/spirit towards climate change and sustainable development can be better observed and detected.

The same situation, as it will be in more details described in the next chapter, is in the case of renewable energy directive's 2009/28/EC transposition because the directive does not impose any concrete way as of how its final goal should be accomplished. This choice depends on each Member States. It should be emphasized, in the context of country's energy strategy analysis, that the energy policy is a shared competency with the EU and as per Article 194.2 TFUE each Member State has right to decide about the exploration of its own energy sources, choose country's energy mix, way of energy supply, decide which energy resources to choose. Said that, when establishing the real common energy policy the most important is, as noticed by E. Zapater Duque, *"political will and consensus among the Member States"(Duque 2009).* As it will be presented, consensus among Member States is easier to achieve if there is compatibility between the EU Lebow's psychological motives and each Member States' motives (reason, spirit, appetite, discussed in Chapter VIII, here in the context of Polish and German energy and climate policy).

This lack of real enforcement mechanism in case of international agreement, which as said, is based on a voluntary participation of separates governments, may be one of the characteristics of the international political system described by the K. Waltz in his theory of structural realism. K. Waltz underlines that international politics is *"politics in the absence of government"* on the contrary to the domestic system with its centralized structure and government (Waltz 1979).

As it was noticed, if there is room for choice it is where it can be observed whether a state has long-term sustainable priorities (it aims and aspires to implement the low-carbon economy model) or, it is more concerned about the short terms goals, which can be easier visible as immediate economic profits. The last approach is a typical example of the Lebow's appetite (discussed in detail in the conclusion part of the thesis). In other words, competitiveness of economy (which in the opinion of the Polish government, as it will be presented in the next chapter, is claimed not to be achievable without country's national resources: coal) is placed above the sustainable development. For that reason, renewables energy sources are being treated only as an *"unnecessary evil"* in Poland.

2.3.1 The Polish position during the Climate Conference in Paris

The Polish government, for a very long time, has been very reluctant when it comes to change the old centralized energy model based on the big coal power plants to the decentralized one, based on small and medium size renewable energy installations. The Polish Prime Beata Szydło presented this attitude also during the formal speech at the UN Climate Conference in Paris.

What was the Polish Intended Nationally Determined Contribution (INDC) proposed at the Paris Agreement? According to the Polish Prime Minister Beata Szydło *"(...) appropriate policy of afforestation(...) active global forest policy"* (Szydło B.,Nov.,2015) will be the way, through which Poland will neutralize CO_2 – achieving *"carbon neutrality"*(Szydło B.,Nov.,2015).

Moreover, during the Polish Prime Minister's speech, not a word was spoken about the renewable energy sources, on the contrary to the one given by Angela Merkel, Barack Obama and the President of the European Commission Jean – Claude Juncker (UNFCCC,Paris,Nov.,2015).Instead, the only proposed solution to decrease the greenhouse gas (GHGs) emissions was through the further afforestation of the country. In other words, the primary role was given to forests and not to the innovative installations based on alternative energy sources.

According to the mentioned above, the European 2030 Strategy: *"The European Council calls on all countries to come forward with ambitious targets and policies well in advance of the Conference of the Parties 21 in Paris"*(European Council, Oct.,2014). Instantly, the question that automatically raises is whether the Polish proposition is ambitious enough and can be seen as a strategy for dealing with the GHGs emission reduction in XXI? Additionally, Prime Minister of Poland mentioned the use of the new technologies that can absorb CO_2 and also during the Paris Conference, the Polish government presented two seminaries about the forest farm carbon and clean coal technologies (Ministry of Environment, Dec.,2015).

What is essential to highlight is the fact, that the Polish Prime Minister underlined the existence of the mentioned Intended Nationally Determined Contributions (INDCs) mechanism. She stressed that each country can *"(...)introduce own solutions adapted to the diverse specificity of the environment and the economies of the Parties to the agreement"* (Szydlo B.,Nov.,2015).The fact that Polish Prime Minister reminded the option introduced with the INDC mechanism, together with the proposed solutions about afforestation, shows, that Poland can also mitigate the global climate changes but on its terms, with complete autonomy, which is in accordance with the international law rules. Nonetheless, the Polish contribution is less innovative in this field because the government, at any cost, defends the old energy model, which is contradictory to the one promoted by the all European policy in the field of energy and climate. For that reason, the old energy model is associated with the economic competitiveness and the security or, is at least only framed in the name of it, and the sustainable development is being given less importance; hence renewables' development is being intentionally blocked (described in details in the next chapter).

Now, a question can be asked whether Poland does act in line with the common European Union's climate policy? The Strategy, which first of all, encourages the Member States to *"(...)accelerate the global transformation to a low-carbon and climate resilient society"* (European Commission, Jun.,2016), which is also the main goal of The Paris Agreement. Secondly, does Poland see The Paris Agreement as an opportunity for economic transformation, innovation, and energy transition (European Commission, Jun.,2016) as it is seen by Barack Obama, the EU, and Angela Merkel? (UNFCCC, Paris, Nov.,2015).

In this context, also during the speech, the Polish Prime Minister referred to Poland as a leader in reducing CO_2, by mentioning the CO_2 reduction's results as *"(...)30%*[10] *in comparison to the base year 1998"* (Szydło B.,Nov.,2015), which was accompanied by the GDP growth. The Prime Minister highlighted, what it is important from the Lebow's theory perspective and it will be referred to in the other chapter, that Poland feels, because of this fact as a leader*: "We feel we are leaders, and we have a clear reason to feel so"*(Szydło B.,Nov.,2015).

The similar opinion expressed Minister of Environment Jan Szyszko[11]. He summed up the result of the Climate Conference in Paris as a great success thanks to *"(...)the hard attitude of primer Minister of Poland"* (Gazeta Wyborcza,15 Nov.,2016). What is more, as per his opinion this approach was necessary, because *"Poland began to depend on foreign technology, Polish energy resources, even in the form of hard coal, began to be eliminated"* (Gazeta Wyborcza,15 Nov.,2016). As a consequence of this attitude, according to Minster of Environment, Poland *"secured"*(Gazeta Wyborcza,15 Nov.,2016) its autonomy in term of climate policy based mainly on indigenous energy resources such as coal, lignite, shale and geothermal, and because of these raw materials, he underlined, Poland is a *"unique"* (Gazeta Wyborcza,15 Nov.,2016, n.d.) country in Europe.

[10] Why this reduction took place? This decrease was a natural consequence of the end of the communist period, when the transformation, also based, on privatization, took place (1988-2005). Lots of branches of the heavy industry were closed as the main goal, from now one, was to implement a different, more efficient (financially viable) production model, as well more sustainable one. From 2005 combining the economic growth with the CO_2 reduction again became the problem for Poland(Böhringer and Rutherford 2013).In other words, the CO_2 reduction was the final result of the political and economic changes that occurred in Europe at that time, and it cannot be assigned to the particular strategy designed to achieve the GHGs emission decrease. Also, firms that came from abroad brought know-how and it was easier to implement more sustainable but equally profitable development model(Kronenberg and Bergier 2012). For the comparison, the other countries' CO_2 reductions were: Russia – 36%, Rumania – 57%, Łotwa – 61%. In the light of the above facts, Poland with 30% of reduction since 1988 did not achieve the impressive result (Forsal, Dec., 2015).

[11] Jan Szyszko is a Professor of Forestry and according to the data from the official website of Prime Minister of Poland, Prof. Szyszko: "*Pursues a policy of sustainable development with preserving natural resources and native Polish landscape. He is also responsible for sustainable forestry practices and efficient use of natural resources*"(Prime Minister Office, Szyszko J.,).

In sum, forests, soil, and new technology are core elements of the new climate policy and the way to reduce CO_2 emissions according to Minister of Energy(Ministry of Environment, Dec.,2015). The Prime Minister Beata Szydło also stressed the fact, that the United Nations agreed on the afforestation policy as a way to decrease the GHGs emission, as a political achievement (Prime Minister Office, Dec.,201).

2.3.2 The Germany's and EU's position during the Climate Conference in Paris

The position of Poland during the Paris Conference is the clear example that the Polish energy policy does not go in line with the vision proposed by the European Union, community that on the Paris Conference represented her all Member States. As admitted by Jean – Claude Juncker, because of the EU's responsible role as a leader (the normative aim of the EU that if assessing it through the Lebow's premise lenses contributes to the organization status and prestige) insisted on developing the low carbon energy model based on renewable energy sources and new technologies. This model is indispensable to implement in the long-time horizon to combat climate changes and, second, he also stressed that fossil fuels have their ending date (Juncker JC.,Nov.,2015).For that reason, the Energy Union (2014) perceives others fossil fuels, especially gas as temporary sources ("backups") before the low-carbon model will be integrated(European Commission,Feb.,2016). In other words, energy transition should be a priority for all the Member States. For some countries, this transformation, as underlined by Juncker, can be harder than for other, and because of that, the EU will provide a financial support. However, all countries and their civic societies need to be involved and committed to combating climate change and start to employ energy transition in practice (Juncker JC.,Nov.,2015).

As it will be demonstrated, Germany did, already in early 90's, encourage their society to generate they own energy. The involvement of civil society in the development of renewable energy installation was equally strong as the involvement of the German government. In other words, there was no discrepancy between the government's energy strategy vision and the desire of German society to have renewable electricity and heat. That situation has a lot to do with the character of the German society that always shown the high level of political

activism, which took its roots in the antinuclear protest early in the ‘80s(Hager 2015). All of these characteristics contributed to the spirit of community and the development of a strong “green” identity, which, not only met with the approval from the German government but, what is more, the German government experience change in the country’s identity, which can occur when there is a change in the interest (Lebow 2008) - (described in more detail in Chapter VIII). Entrepreneur skills of the Polish pro-consumers did not meet with the approval and encouragement of the Polish government, as it happened in the case of the German private investors, also analyzed in the next Chapter IV.

Poland proposed, in the XXI century, the afforestation as the way of CO_2 reduction without any reference to renewable energy, what placed the country far away from the innovative vision presented by the EU. On the contrary to Germany, which established, voluntarily, a higher target to accomplish regarding the CO_2 emission reduction (by 2020 – 40% and by 2050 – from 80 to 90% taking as a baseline 1990 (Merkel A.,Nov.,2015). This goal is far above the binding target set up by both the European 2020 strategy and the European 2030 strategy.

Angela Merkel, in her speech during the Paris Conference, underlined that world needs *“(…)a far-reaching decarbonization of our economies in the course of 21st century”*(Merkel A.,Nov.,2015). Moreover, she admitted that Germany, as one of the industrialized countries, should take responsibilities for the *“emission of the past”* (Merkel A.,Nov.,2015) and therefore, with other industrialized countries, should involve themselves in combating climate changes (Merkel A.,Nov.,2015).Similar to the EU, Germany and the USA (Obama B.,Nov.,2015) expressed the will to take a leadership role in developing *“(…)the technology needed to reduce emissions(…)”* (Merkel A.,Nov.,2015) and confirmed projects that are related to the funding of clean energy.

The EU, the government of both Germany and USA, want to take a leading, normative role in promoting the low carbon economy. These countries and the EU expressed the will to governing the way in the field of innovation, new technology, and renewable energy use. Now, how to see it through the lenses of Lebow's theory? The status of the forerunner in the transition economy contributes to the prestige and self-esteem of these actors (the Lebow’s spirit paradigm), which already belong to the developed countries, economically powerful states (the Lebow’s appetite motive is then already fulfilled). As per Lebow, first states try to

assure their countries' security and later on, once this goal is accomplished, they can move to *"(...) their desire for material well-being"* (Lebow 2008). In this context, it can be said, that these developed countries enjoy the economic power and now, to gain a status of leaders, they need something more, which in this case is associated with "higher" purpose. In other words, they need to act and be a role model and the commitment to combating climate change, considered by global public as a priority nowadays, that also has the reputational aspect, helps them to realize this goal-mission giving them, at the same time, a place among leaders, leaders that promote the low carbon energy and economy model. What is more, Lebow highlights that: *"Great powership is a status conferred by others states, and the criteria for this status have not only changed in the course of the last two centuries, but not every state that appears to meet the criteria of the moment achieve this status (...) for this to happen state power must be considered legitimate by existing great powers"*(Lebow 2008).

Poland, as it will be described, is still concentrated on establishing a strong economic position among these leaders and does not link "power", status, prestige to a normative aspect that can be fulfilled through combating climate change and through transformation of the country's economy to the low-carbon energy and economy model and promotion of the sustainable development. What it needs to be here emphasized is that the less economic power comparing to Germany cannot be an excuse for not mitigating climate change that, apart from being an indispensable duties of all countries and their authorities, impact each state and each, single citizen. There are others, more comprehensive motives that also stand behind the energy and climate policy of Poland, which will be described mostly in the conclusion part.

2.4 European Strategy 2030

Prime Minister Beata Szydło, did not refer to the development of renewable energy during the Paris Conference but, on the contrary, she was criticizing the further restriction in the CO_2 and GHGs emission. Nonetheless, Poland, as indicated above, being the Member State of the European Union, is still committed to accomplishing the EU goals in these three below areas (see Table 1).

Europe strategy 2020 for 2030 (from 2009)	**European strategy for 2030 (from 2014)**
Greenhouse gas emission – 20% decrease versus 1990	Greenhouse gas emission – 40% reduction versus 1990
Renewable Energy consumption – 20% aim, increase	Renewable Energy consumption – 27% aim, rise
Energy efficiency – 20% increase	Energy efficiency – 27% rise

Table 1 Both climate and energy European framework from 2009 and 2014 (EUclimte action)

Poland is committed to achieving the objective of The Paris Agreement because the European Council is authorized to act and adopt decision, as a single actor, on behalf of the whole EU based on the Article 218 (6)[12] TFEU (European Commission, Jun.,2016).

Additionally, from the legal perspective, the objectives of the Paris Agreement can be implemented through European Union legislations as the Article 191[13] and 192 (1) TFEU say that the EU should undertake measures (than policies, laws, recommendations) with the final goal of combating climate changes and protecting the environment (European Commission, Jun.,2016, n.d.).Therefore, the objectives of The Paris Agreement are in line with the climate and energy policy framework from October 2014. The new binding targets as per the Table above is 40% of domestic reduction of different kind of gasses, not only CO_2 by 2030 taking as a baseline 1990. They were formally approved as Member States' Nationally Determined Contribution on March 2015(European Commission, Jun.,2016, n.d.).

According to the new framework of 2030 *"(...) substantial progress has been made towards the attainment of the EU targets for greenhouse gas emission reduction, renewable energy and energy efficiency, which need to be met by 2020"*(European Council, Oct.,2014).

The fulfillment of targets set up in the European 2020 strategy will have an influence on

[12] *"(...)provides for the Council, on a proposal from the Commission as negotiator, to adopt a decision authorizing the conclusion of an agreement on behalf of the European Union*"(European Commission, Jun.,2016).

[13] *"(...)the European Union shall (...) preserving, protecting and improving the quality of the environment; promoting measures at international level to deal with regional or worldwide environmental problems, and in particular combating climate change"*(European Commission, Jun.,2016, n.d.).

whether or not; some countries will achieve, the goals of the European 2030 Strategy from 2014. The new European Strategy 2030 will enter into force from 2021 onwards, once the one from 2009 is completed.

2.5 Polish progress in the realization of the targets established in the European 2020 and 2030 strategy

In the light of the above, it should be asked: What is the status of realization of the European 2020 and 2030 strategy by Poland? Can, the progress achieved by Poland, be named as *"substantial"* (European Council, Oct.,2014) one as per the above quoted? For that reason, there is a need for a brief synopsis of the status of the transposition of some of the main European Directives to the Polish legislation system. These directives are core legal measures through which both European Strategies 2020, 2030 are being accomplished.

Title of Directive	**Date of transposition**	**Infringement**
Directive of the European Parliament and Council Directive 2009/29/EC of 23 April 2009. Amending Directive 2003/87 / EC to improve and extend the EU trading scheme for greenhouse gas emission	• 31/12/2009 • 31/12/2012 Transposition completed	**Status for 27.04.2016** • The proceedings concerning failure to transpose - in progress - (2 terms) proceedings were discontinued **Status for 11.01.2017** There is no proceeding
Directive of the European Parliament and Council Directive 2009/28/EC of 23 April 2009. On the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77 / EC and 2003/30 / EC	05/12/2010 Transposition completed	**Status for 27.04.2016** Proceedings concerning the non-transposition and incorrect transposition have been discontinued. There is currently one proceeding relating to the incorrect transposition **Status for 11.01.2017** May 27, 2016 r. The European Commission decided to refer the complaint to the ECJ about the wrongful obligations under Article. 2 and art. 17 Directive of the European Parliament and Council Directive 2009/28 / EC on the promotion of energy from renewable sources (discrimination against biofuels and biomass from outside the EEA)
Directive of the European Parliament and Council Directive 2009/31 / EC of 23 April 2009. On the geological storage of carbon dioxide	25/06/2011 Transposition completed	**Status for 27.04.2016** Proceeding concerning the non-transposition has been discontinued. **Status for 11.01.2017** There is no proceeding relating to this Directive
Directive of the European Parliament and Council Directive 2008/50 / EC of 21 May 2008. On ambient air quality and cleaner air for Europe	10/06/2010 Transposition completed	**Status for 27.04.2016** • Proceedings concerning failure to transpose have been discontinued • Currently, there are ongoing proceedings concerning the incorrect transposition **Status for 11.01.2017** There are currently two sets of proceedings concerning the incorrect transposition: 1. Improper application of Article. 13 (1) in conjunction with Annex XI and art. 23 (1), in

		conjunction with Annex XV, Part A of Directive 2008/50 / EC in about to limit values for nitrogen dioxide 2. Incorrect transposition of Directive 2008/50 / EC of the European Parliament and of the Council on ambient air quality and cleaner air for Europe about to dust PM10 – because of that, on 22 June 2016 r. Commission, addressed a complaint to the European Court of Justice (C-336/16)
Directive of the European Parliament and of the Council 2010/75 / EU of 24 November 2010. On industrial emissions	07/01/2013 Transposition completed	**Status for 27.04.2016** The proceedings concerning failure to transpose have been discontinued **Status for 11.01.2017** There is currently no proceeding
Directive 2006/32 / EC of the European Parliament and of the Council of 5 April 2006. On energy end-use efficiency and energy services and repealing Council Directive 93/76 / EEC	17/05/2008 Transposition completed	**Status for 27.04.2016** The proceedings concerning failure to transpose have been discontinued **Status for 11.01.2017** There is currently no proceeding
Directive 2009/72/EC repealing 2003/54 / EC of the European Parliament and of the Council of 26 June 2003. Concerning common rules for the internal market in electricity and repealing Directive 96/92 / EC	01/07/2004 Transposition completed	**Status for 27.04.2016** There is no proceeding **Status for 11.01.2017** There is no proceeding

Table 2 Information related to the main EU Directives[14] in the field of climate and energy, received for request from the Polish Center of the Governmental Legislation on 24.07.2016 and 11.01.2017

The targets of the European climate and energy frameworks until 2020 and 2030, apart from covering the three areas: renewables, efficiency, and reduction of GHGs, also referred to the energy security aspect. As it was mentioned already, climate and energy policy cannot be discussed without the safety element; hence, in this thesis, this theme is also analyzed. The energy securities policies of others countries had and, still have, an impact on the overall outcome of the Polish climate and energy strategy.

2.5.1 Greenhouse gas emission reduction target

Directive 2009/29/EC about the greenhouse gas emission (GHG) trading scheme and the Directive 2008/50/EC about the ambient air quality and cleaner air relate to each other as their aim is to accomplish a similar objective regarding the improvement in the quality of air.

[14] Greenhouse gas emission – GHG trading scheme - Directive 2009/29/EC, renewable energy sources Directive 2009/28/EC, storage of CO_2 Directive 2009/31/EC, on ambient air quality and cleaner Directive 2008/50/EC, on industrial emission Directive 2010/75/EU, on energy efficiency Directive 2006/32/EC, Directive 2003/54/EC common rules for the internal market in electricity.

These two directives are the legal tool of the European Union through which the above goal is being achieved.

The new purpose of the 40% decrease and the old (20%) one is being achieved conjointly using the reduction of allowance in the European Trading Scheme (ETS) and non-ETS sectors, amounting to 43% and 30% respectively. As already mentioned above, the reformed Emission Trading System (ETS), as the primary instrument to achieved this goal, has been implemented. The new cap, as indicated, on the maximum permitted emission has been changed, and from 2021 onwards it will be 2.2% per year, instead 1.7% to make sure that the 40% of the CO_2 emission reduction is achieved (European Council, Oct.,2014).

As stated in the European 2030 Strategy policy, all Member States should contribute in *"(...) the fair and solidarity manner(...)"* to accomplish the objectives (European Council, Oct.,2014).

Nonetheless, as already described, the Polish government, again, presented itself as a longstanding opponent of further (40%) reduction of the greenhouse gasses (GHGs) emission. Before Ewa Kopacz (in 2014), the former Prime Minister opposed to the European new 40% GHGs emissions limits, also two years later, in 2016, the Polish government maintained the same opinion (although the ruling party changed from PO to PiS the attitude towards the further $C0_2$ emission's reduction remained unchanged). In the resolution adopted by the Polish Council of Ministers on 15th of March 2016 the government stated that: *"(...) The Council of Ministers considers as unacceptable situations in which the vision and the mechanisms of the EU climate policy could hamper the economic security, including the lower of the competition of individual Member States"*(Ministry of Environment, Mar.,2016).

Again, the aspect of competitiveness and security is placed above the sustainable development one. Moreover, the attention should be drawn to the title of the adopted Resolution *"Resolution on not increasing of the agreed ceiling reduction of the concentration of CO_2 in the atmosphere (the ambition of the EU)"*(Ministry of Environment, Mar.,2016).The title can also give some insight on how the Polish government perceives the effort of the EU on combating climate change: expression *"ambitions of the EU"* can be

interpreted, in this context, pejoratively. Further, in the text, the Polish government criticized the tougher reduction of CO_2 and underlined that *"(...)the EU climate policy gradually has less influence on the global climate change"*(Ministry of Environment, Mar.,2016). That statement clearly suggests that Poland (here as a government, because as per many surveys quoted later in the thesis, Poles are of the different opinion) is not integrated with core principal of the climate and energy framework of the EU.

Also, again, in the same document, the Polish government recalled that The Paris Agreement does not impose the concrete way and mechanism of dealing with the climate change and therefore, it does not interfere with a sovereign decision of each state. That means each state can choose the appropriate solution depending on its condition and potential (Ministry of Environment, Mar.,2016, n.d.).

Furthermore, the same argument has been remembered, that Poland has already achieved a lot regarding the emission reductions. It managed to reduce 30% of the greenhouse gases emissions' level compared with the benchmark year – 1990, much more than the Kyoto level which is 6% (Ministry of Environment, Mar.,2016). As explained before, this reduction was due to the natural consequences of the collapse of the communism era and the process of privatization and not because of the climate policy of Poland. Nonetheless, this fact was not mentioned in the Resolution. Again, the same argument was used as during the Paris Conference.

In the light of the above, the attention needs to be drawn to the fact that Poland together with Bulgaria[15] (the latter occupies the 1st position) has the highest level of the PM dust according to the *"Air Quality in Europe 2016"*. Poland is also a leader among the Member State of the EU, in the emission of the BaP (Benzo (a) pyrene (European Environment Agency, Aug.,2016). In this context, the words of the Prime Minister Beata Szydło spoken out during the Climate Conference in Paris, that Poland can feel like leader because it reduced the GHG

[15] The most harmful pollutants for human health are PM (and BaP is present in PM dust), NO_2 and ground – level O_3 and the most dangerous for ecosystems are 0_3, NH_3 and NO_x. The report takes into consideration, as a measure indicators on the heath impact, especially the following ones: PM2.5, NO_2, and O_3 which are also included as measurements indicators of The Air Quality Directives (EU 2004, 2008)-the main policy instruments on air pollution (European Environment Agency, Aug.,2016).

emission of about 30% and that the country has *"(...) a clear reason to feel so"* (Szydło B.,Nov.,2015) can be recalled.

For that reason, the European Commission referred Poland to the Court of Justice regarding of non-compliance with the air quality Directive 2008/50/EC [16] (European Commission, Dec.,2015, n.d.). Also, as per the Table number 2 and according to the information provided by the Polish Center of Governmental Legislation there are currently two proceedings related to Directive 2008/50/EC on ambient air quality and cleaner air for Europe. One regarding the limits values of nitrogen dioxide which were exceeded and the second one, because the PM10 dust was, for a very long time, and still is, above the limit (European Commission, Dec.,2015).

2.5.2 Renewables and energy efficiency

According to the new policy agreed in October 2014, the new target for the share of the renewable energy consumption and the increase in energy efficiency is at least 27% for both and should be reach collectively on the EU level by 2030. The renewable energy directives 2009/28/EC and the Directive 2006/32/EC on energy end-use efficiency and energy services, are two legal instruments, through which, the European Union and the Member States should achieve their nationally binding objectives. Nonetheless, these binding aims are being fulfilled *"fully respecting the Member States' freedom to determine their energy*

[16] European Commission states that over the years there has been and, still is, the high levels of dust particles (PM10) and the daily limit for the airborne particles (PM 10) have been persistently exceeded in 35 out of 46 air quality zones for at least for the last five years, including 2014. These PM dust can cause asthma, cardiovascular problems, lung cancer and premature deaths which cause more deaths than road traffic accidents. The Directive 2008/50/50 set up the limits on an annual concentration value (40 μg/m3) and a daily level value (50 μg/m3) that must not be exceeded more than 35 times in a calendar year. Already Bulgaria has been brought to a court for the same reason. In the case of other Member States (Belgium, Bulgaria, the Czech Republic, Germany, Greece, Spain, France, Hungary, Italy, Latvia, Portugal, Poland, Romania, Sweden, Slovakia, and Slovenia) the European Commission is pursuing infringement actions. In the case of $N0_2$ (Directive 2008/50/EC also set up the limits) mainly result of traffic and diesel cars the infringement proceedings have been opened in case of the United Kingdom, Portugal, Italy, Spain, Germany, and France (European Commission, Dec.,2015).

mix"("European Council, Oct.,2014," n.d.).

The climate European Strategy is already in placed with new targets until 2030.However, as per the latest available European track report *("Renewable Energy progress report" – 15.06.2015*) although, overall in Europe, there is *"(...)three times more renewable power per capita (...) than anywhere else in the rest of the world"*(European Commission, Jun., 2015, n.d.) Poland might not achieve the legally binding target for renewable energy assigned for the year 2020, which is 15% (gross) (Ministry of Economy, Nov.,2009, n.d.), (Ministry of Energy, Dec.,2010, n.d.). As per the mentioned report it can be read: "*Achievement of the 2020 renewable energy targets*[17] *is also not certain in the case of Hungary and Poland: it is only under optimistic assumptions related to the future development of energy demand and country-specific financing conditions that the 2020 renewable energy targets appear achievable*"(European Commission, Jun., 2015).
In the light of the above, the achievement of the new target set up by the new European 2030 strategy might also not be accomplished.

As it will be in details described in Chapter I, the Polish government is extremely reluctant when it comes to promotion of the renewable energy sources on its territory. According to the mentioned data, provided on the request, by the Polish Center of the Governmental Legislation (see Table number 2) there were two legal proceedings related to renewable energy directive 2009/28/EC. First one was due to the lack of the transposition, and the second one, was related to the incorrect transposition, later, these two proceedings have been remitted. Currently (as per the status from 11.01.2017) there are two legal proceedings. One it referred to the non-compliance with the Article 17 of 2009/28/EC Directive that treats about the discrimination of the parties from outside the EEA and import biofuels and biomass from these locations (described in the next chapter). The other proceeding is related to the incorrect transposition.

It needs to be underlined here that the deadline, as stated in 2008/28/EC Directive, for the full transposition was by 5th of December 2010. In January 2011 the Commission sent a

[17] The target for Poland, for renewables, was exactly set up to the level of 15.5 % gross until 2020 (some sources say about 15%). As per the data from the Central Statistic Office in 2014 the share of renewables in the total energy generation was 11.9% gross (Główny Urząd Stat.,Dec.,2016 2017)

formal notice to the Polish government to clarify the status of the transposition of the renewable energy directive 2008/28/EC. As the situation has not improved, the European Commission sent in March 2012, the reasoned opinion as there have been no adequate measures undertaken in the field of renewable energy promotion. Due to the lack of progress, in March 2013, Poland was referred to the Court of Justice for a complete absence of transposition, and the European Commission decided to charge Poland EUR 133.288,80 for every day of delay in transposition. On 29 January 2015, Poland notified the full transposition and the Commission withdrew the case from the court (European Commission, Feb.,2015). However, on 22.06.2016 Polish President signed the Act which amended the previous, very favorable (for pro-consumers) Law on Renewable energy sources approved previously on 20.02.2015 (President, Jun.,2016, n.d.).In Chapter III there are more details provided about how 2009/28/EC Directive was being transposed to the national law, or better said, how the development of the renewable distributed generation was being blocked by each of the Polish government.

As mentioned above, the Energy Strategy of the EU until 2030 also refers to the security aspect. It stressed that further actions need to be taken to decrease the EU's fossil fuel dependency, both in electricity and gas. Additionally, the European Strategy does highlight that energy security can be increased by using one country's indigenous resources; nonetheless, the transformation towards the sustainable economy model is inevitable and required, a model that will be based on low carbon technologies. Moreover, as the diversification of the supply routes contribute the most to energy security; hence, the UE stresses the need to *"(...) implement critical projects of common interest in the gas sector (...) and the promotion of a new gas hub in Southern Europe as well as the key infrastructure projects enhancing Finland's and the Baltic States' energy security (...)"*(European Council, Oct.,2014).

The security aspect of the European Strategy and the gas pipeline together with the difficult relations between Germany and Russia will be discussed in Chapter VII. However, here it can be emphasized that the European Strategy stresses the need for implementation of the gas project that would not only strengthen the EU energy security (here in the context of gas) but also would be of the *"common interest"* (European Council, Oct.,2014). If that is a case, it will be illustrated in Chapter VII.

As demonstrated, on the international and European forum, the Polish government shows its strong reluctance to any European Union's further restrictions related to climate policy that could, in its opinion, hamper the country economic growth. In other words, on the contrary to the EU and Germany, there is no intention to change the current energy model, based mainly on hard and brown coal, to the one, based primarily on renewable energies. Moreover the government many times pointed out that the native country's natural resources contribute to the Polish uniqueness in Europe. For that reason, the UE's climate and energy goals will be achieved through the new clean coal technologies and afforestation policy. That, as it will be shown in practice means no involvement of Polish civil society (as recommended by the EU during The Paris Conference) (Juncker JC.,Nov.,2015) in the creation of the low-carbon energy model. In the opinion of the Polish government, the competitiveness of the economy is in the case of Poland, contradictory to the low carbon economy and sustainable development, which will be proved also in the next chapter.

III. Polish legislation

3.1 Introduction

At a very beginning of this chapter, it needs to be briefly explained the wording that is employed in this section of the thesis, and it is very often referred to across the whole thesis. The wording was inspired by the structural realism theory of the K. Waltz mentioned already in the introductory part. In other words, to better understand the dynamic that is governing the energy market, both in Germany and in Poland, the K. Waltz's structural realism terminology was tailor made for the purpose of this thesis.

As noticed the rules that are followed both in the internal and external energy system in Poland (internal and external climate and energy policy) are similar to the rules that govern the international and domestic political system according to the structural realism theory.

That means the international system will be referred to as international energy system and domestic system as the domestic energy system. The same has been done with the concept of structure: international structure equivalent to international energy structure and domestic structure to energy international structure. In sum, the theory of K.Waltz evolves around three basics concept: system (international and domestic one), structure and units. Units will also be applied to energy's ground in this work and will be referred to as energy units or actors, players.

Finally, it should be stressed that, as per K.Waltz, the system, both internal and domestic is composed of the units that interact with each other and with the structure: *"The structure is the system-wide component that makes it possible to think of the system as a whole"* (Waltz 2010).That means that the K.Waltz is not concentrating on how the units interact with one another (that is the domain of the Lebow's theory with his psychological element) but how the units (energy actors here) stand in relation to one another. In other words, how they are situated and organized.

Now, the most important premises for our analysis is that the structure is defined by the arrangement of its parts (how the units are situated towards each other) and that *"(...) the*

only changes of arrangement are structural changes" (Waltz 2010). K.Waltz explained it by saying that if actors/units will be granted new capability, new ability then the distribution of capability among them change, then automatically their function within structure also will change, therefore the whole structure will be also changed as a consequence.

What does it mean for internal energy structure or also for international energy structure? If the pro-consumers [18] will be given, with the appropriate legislation, the possibility to generate and sell their own energy, that would give them the new capability within the energy structure. Also, that would cause the change in the distribution of capability between the state-controlled energy companies and pro-consumers. Hence, the function of pro-consumers who now produce and sell own energy is changed. More, if they function would changed the whole internal energy structure (energy market) would have also been drastically modified. This change in the internal energy system is influencing and reshaping as well the whole international energy system – departure from the centralized supply energy model/structure towards the decentralized energy one based on renewables energy sourced (distributed generation). As sum up by the K.Waltz: *"(...) A domestic political structure is thus defined, first, according to the principle by which it is ordered; second, by specification of the functions of formally differentiated units; and third, by the distribution of capabilities across those units"* (Waltz 2010).

According to the structural realism, as it was mentioned, the domestic system is organized, and the international one is decentralized and anarchic. In the domestic system some actors, units *"(...)are entitled to command; others are required to obey"* (Waltz 2010). On the contrary to international one, where each unit, on a state is equal, therefore international politics is *"politics in the absence of government"* (Waltz 2010).

As it will be shown, these characteristics related to the domestic structure are visible in the energy domestic structure in Poland, where some actors/units have a more powerful position in the energy system and "imposed" they will on the other smaller ones. On the contrary to the domestic energy structure in Germany where there is an active collaboration between

[18] Pro-consumers are investors who generate and sell to the electricity grid their own energy, they produced electricity in micro and small installations. They build so-called distributed generation spread across a country, decentralized model of energy supply versus centralized one.

citizen, local authorities, and the higher governmental structure. When it comes to the anarchic international energy system, as described by K. Waltz, because there is the EU with the energy law and the whole range of rules and norms in the field, the international energy structure seems to be less anarchic. Nonetheless, some units (Russia) might not follow the rules what, at the end, and as it will be proved, influences the character of the international energy system, especially that each state can aim and do aim to fulfill different psychological motives on the state level, as it will be discussed in the Chapter VIII.

The Chapter III is divided into two parts. The first one consists of the analysis of the main Polish Strategic documents related to climate and energy framework: *"Polish Energy Policy until 2030"*(Ministry of Economy, Nov.,2009, n.d.) from 10th of November 2009,*"Strategy for Energy Security and Environment - perspective until 2020"*(Polish Monitor, Jun., 2014, n.d.) from 15th of April 2014, *"Polish Energy until 2050"* from 2015(Ministry of Energy, Aug.,2015, n.d.).

Also, the close look at how these texts are constructed can reveal what the core priorities for Poland in this field are. Moreover, the language of these document shed some lights on main concerns of the governments in regards to the country relations with others and towards the fulfillment of the EU's climate targets. Already in the introductory part of the *"Strategy for Energy Security and Environment - perspective until 2020"* it is underlined that the Polish membership in the EU had a positive impact on energy security because the stability of power delivery grew. At the same time, it is stressed that *"caring for environment"* (Polish Monitor, Jun., 2014) by accomplishing assigned targets will be challenging for Poland (Polish Monitor, Jun., 2014). Now, this statement together with the proposed establishment of the Energy Union by the Polish government (Chapter VII) shows that Polish approach towards the UE is in line with the structural realism's premises, based on the fear paradigm (treated more in the Chapter VII and VIII). In other words, the UE is treated as a platform to strengthen own national interest when these interests cannot be better accomplish on the national level without the involvement of the EU.

The second part of this chapter presents the different drafts law on renewable energy. The aim of this analysis is to detect the most influential actors, exam the government's position towards distributed renewable energy installations (towards new entrants of the energy

market - pro-consumers) and see what are the motives given by the government for not promoting these kind of micro and small installations.

3.2 *"Polish Energy Policy until 2030"* from the 10th of November 2009 and *"Strategy for Energy Security and Environment - perspective until 2020"* from the 15th of April 2014

These two official documents *"Polish Energy Policy until 2030"* from the 10th of November 2009 and *"Strategy for Energy Security and Environment - perspective until 2020"* from the 15th of April 2014 cover the main directions of the future development of the Polish energy and climate policy. They aim to create the policy, which implementation will lead to the accomplishment of appointed targets as per the European 2020 Strategy (document from 2009) and the targets as per the new version of the European Strategy from 2014 – addressed in the *"Strategy for Energy Security and Environment - perspective until 2020"*from 2014 and also in the other official energy strategy document from 2015 under the title: *"Polish Energy until 2050"* (analyzed separately below).

It passed five (2009, 2014) years between the publications of the two first strategic Polish documents, but the primary objectives and, the same approach towards the energy and climate policy, remains constant. As it was already presented in Chapter II, the Polish government's position, described by the Minister of Energy as *"the hard attitude"* (Gazeta Wyborcza,15 Nov.,2016) had an influence on the fact that no change towards the low-carbon energy and economy model, based on renewables, has been considered as a primary model in Poland.

Nonetheless, the Polish government underlines that an entirely new approach needs to be implemented when designing the national energy strategy, which, on the one hand, will deal more efficiently with environmental issues and, on the other hand, go in line with the EU's expectations and requirements (Ministry of Economy, Nov.,2009, n.d.).

However, again, at the very beginning, the Polish Strategy documents highlights that the country's energy traditional mix and special characteristics of the state need to be taken into consideration when attempting to implement the new approach:*"(…) specific national*

conditions, (…) the protection of the interests of customers, owned energy resources and technological conditions of production and transmission of energy" (Ministry of Economy, Nov.,2009, n.d.)

The mentioned challenge in combining, both the sustainable development with economic growth, are linked to the historical condition of the "*production and transmission of energy*" built in 50-60 of XX century (Polish Monitor, Jun., 2014). Similar to Germany, where in the past the old power energy model was based on energy produced from coal and lignite and, as it will be illustrated in Chapter IV, this ratio has been changed significantly thanks to the implementation of appropriate law on renewable energy that encouraged investors to generate their on renewables electricity and heat. Particularly, as per the Strategy from 2014, because of that historical condition, it is impossible to introduce *"very dynamic changes in system and technology*" and in a short time horizon remodel the old energy mix (Polish Monitor, Jun., 2014). More, the government clearly expresses that country energy mix *"(…)was, it is and it will, in the timeframe of the below strategy, base mainly on coal."*(Polish Monitor, Jun., 2014). The Strategy from 2014 includes timeframe until 2020, however, the same approach towards energy generated from coal is presented in the *"Polish Energy Policy until 2050"* (Ministry of Energy, Aug.,2015). In the light of this statement it is not a surprise that the Polish government perceives *"excessive tightening of the climate policy by the European Union"* as threats Polish Monitor, Jun., 2014). As coal and other fossil fuels are seen as resources, which help to build the country energy security; hence, both Polish strategies foreshadow the establishment of adequate legislatives' policies that create suitable conditions for the realization of this objective(Ministry of Economy, Nov.,2009, n.d.), (Polish Monitor, Jun., 2014, n.d.).

As already stated, the construction of these both official documents can illustrate what, the real priority in the field of energy and climate policy, are. Both strategies have the same priorities' order. Hence, the construction of these documents is not accidental. In other words, the priorities' pyramid - the order of the areas, through which Poland is going to accomplish the targets set up in the European Strategy 2020 and 2030, are equivalent to the importance the government is giving to each of these fields in the overall country energy strategy.

These main areas, in both documents, are order as below:

- "Improving energy efficiency
- Increasing security of fuels' delivery and energy
- Diversification of electricity generation structure by introducing nuclear energy
- Development of renewable energy sources, including biofuels
- Development of competitive fuel and energy markets
- Reduction of energy's on the environment"(Ministry of Economy, Nov., 2009),(Polish Monitor, Jun., 2014)

3.2.1 Renewables Energy Sources

In the case of renewable energy sources, their development is placed on the bottom of priorities' pyramid, according to both documents. Coal, gas, and oil are perceived as core fuels, and renewable energies sources are viewed as an *"element"* only: *"An important element in improving energy security is the development of distributed energy"* (Ministry of Economy, Nov. 2009). However, it should be stress here that, also in the *"Polish Policy until 2050"* a word "element" was used in the context of nuclear power: "*Nuclear power will become an important element in the energy sector"*(Ministry of Energy, Aug.,2015, n.d.) Nonetheless, having analyzed the approach of the Polish government towards renewables energy sources, we can claim that this particular word reflects the reality literally, as in Poland renewables energy sources are being treated, indeed, only as an "element", thus, the use of the word is not accidental(Ministry of Energy, Aug.,2015, n.d.). What is more, the government is planning to invest in the nuclear power plants and open the first block in 2022(Biuletyn, Nov.,2014, nr 4 (90), n.d.), meanwhile hampering the development of renewable distributed generation in the country.

Expressly, the potential of renewables when it comes to *"diversification of energy generation structure"* is not recognized as it is in the case of nuclear energy (Ministry of Economy, Nov.,2009, n.d.). As indicated already the fact that the government took 5 years in drafting the final Act on Renewable Energy is the best proof that alternatives energy sources are treated, truly, as not very significant and substantial "element" that could contribute immensely to energy security of the country.

Even though, the government recognized the positive impact of renewables, it has not assured the adequate legal and administrative conditions for the development and promotion of the renewable energy sources as described in details in the next part of this chapter. Nonetheless, the positive impact of renewables is acknowledged in both documents and relates to: the reduction of CO_2, the increase of the country's energy independency, the contribution to less develop regions and the diversification of country's energy mix(Ministry of Economy, Nov.,2009, n.d.), (Polish Monitor, Jun., 2014, n.d.).What is more, although, the *"Polish Energy Policy until 2030"* stresses that the well-designed, efficient and transparent national support scheme for alternative energy sources is crucial for their development and promotion of renewables installations (Ministry of Economy, Nov.,2009), in practice, this goal and policy have not been followed and accomplished (second section of this chapter).

As per the Table number 3 (see below), biomass will account, still in 2030, for the highest share (after wind energy) in the overall energy electricity generated from renewable energy sources and the highest in the case of heat produced from renewables. This forecast is included in the National Action Plan sent to the European Commission in 2010(Ministry of Energy, Dec.,2010, n.d.). Now, a version submitted to the European Commission did not include the percentage of the shares that account for co-firing, co-incineration of biomass with other materials (in the case of Poland it is coal, explain in more details below). It is only stated in the document that *"co-firing is not included"* and the reason given it that there is a different percentage of biomass in the total fuel stream (Ministry of Energy, Dec.,2010, n.d.).

None of the above official Strategies refer to the process of biomass "co-firing" (Ministry of Economy, Nov.,2009, n.d.), (Polish Monitor, Jun., 2014, n.d.). However, in the case of Poland, as per the report prepared by the Institute for Renewable Energy (*"Assessment of the economic impact of maintaining support for the co-combustion technology of coal with biomass"*(Wiśniewski G.,Marz.,2013, n.d.) biomass is co-incinerated with coal in the big coal power plant installations that are own, mainly, by the state-controlled companies. What concerns the most is the fact that this kind of process, mixed of biomass with coal (proportion of coal and biomass cannot be really identified and measured) is considered as renewable energy, thus, this kind of "green" energy has been receiving the governmental

support in the form of the green certificates - at the same time contributing to the accomplishment of the Polish target in regards to the renewables energy share. As underlined by experts, this kind of support of renewables, named as a *"pathology"* effectively hampers the technical competition and innovation in Poland(Wiśniewski G.,Marz.,2013).

Moreover, as per the calculation, until 2020 the import of biomass will cost Poland 8 billions Polish złotych (around 2 billions Euros) and according to the mentioned report, this import, could be reduced to zero if the country's biomass would be used *"efficiently"* (Wiśniewski G.,Marz.,2013). As per the information sent by the Polish Governmental Center of Legislation, the Polish government is currently facing the legal proceeding because of the discrimination of some countries when it comes to the import of biomass (see Table number 2).

Different energy sources	**2006**	**2010**	**2015**	**2020**	**2025**	**2030**
Electric energy	370.6	715.0	1516.1	2686,6	3256.3	3396.3
Solid biomass	159.2	298.5	503.2	892,3	953.0	994.9
Biogas	13.8	31.4	140.7	344,5	555.6	592.6
Wind	22.0	174.0	631.9	1178,4	1470.0	1530.0
Water	175.6	211.0	240.3	271,4	276.7	276.7
Photovoltaic	0.0	0.0	0.0	0,1	1.1	2.1
Heat	4 312.7	4 481.7	5 046.3	6 255,9	7 048.7	7 618.4
Soild biomass	4 249.8	4 315.1	4 595.7	5 405,9	5 870.8	6 333.2
Biogas	27.1	72.2	256.5	503,1	750.0	800.0
Geothermal Energy	32.2	80.1	147.5	221,5	298.5	348.1
Solar	3.6	14.2	46.7	125,4	129.4	137.1

Table 3 Demand for gross final energy from renewable sources by types of energy [Ktoe] (Ministry of Energy, Dec.,2010, n.d.)

As the distributed renewable energy is associated with the involvement of citizen, the Strategy from 2014 expresses the importance of *"(...) shaping the attitude of society"* as the social acceptance is *"(...) the key to achieving the fundamental environment goal"*. Furthermore, the policy states that *"it is not possible to meet the EU environmental standards without the commitment and support of society"* (Polish Monitor, Jun., 2014, n.d.).

However, this commitment is understood and realized through such basic behavior like, as per the Strategy from 2014, like - water and energy saving, waste sorting, the use of means

of transport that is more favorable for the environment(Polish Monitor, Jun., 2014, n.d.).Although, the Policy stresses the need for the change in the attitude and behavior patterns of society, so *"the principle of sustainable development becomes attractive and marketable imageable"* (Polish Monitor, Jun., 2014) as it is presented in the next section of this chapter, the development of pro-consumers installations have been successfully blocked for years.

Nonetheless, the Strategies from 2014 does underline the significance of the renewable energy and refers to the development of renewable energy *"especially in the formula of distributed generation"*(Polish Monitor, Jun., 2014, n.d.). Additionally, the document lists numbers of actions that should be taken to achieve the development of this kind of energy, decentralized production model (distributed generation). These measures, as per document, are: the improvement of the grid (modernization of the national power system, national power network), identification and systematic removal of all barriers that could hinder the functioning of the renewable energy sector and simplification of *"the nationwide administrative procedures."* What is more, this strategic document also clearly underlines that when moving *"towards a low carbon economy"* both, the ecological aspect, as the *"interest of the end recipients"* will be taken into consideration with equal importance (Polish Monitor, Jun., 2014, n.d.). By the benefit of the end recipient, in this context, the Strategy refers to the price of renewables energy and, as it is proved, in the second section of this chapter, the price of renewables energy is very often used by the Polish government as an argument against development of the distributed generation as the Polish government keeps repeating that renewables electricity is too expensive.

Also, the Strategy from 2014 states that the development of the renewable energy sources in Poland will be realized in line with the *"Polish Energy Strategy until 2030"* (issued in 2009) and the National Action Plan published in 2010. As already indicated, according to the Strategy until 2030, biomass account for the significant share in the whole country's energy mix (when it comes to the energy generated from renewable energy sources). At the same time, the Strategy from 2014 draws attention to the fact that in the rural areas co-firing of wood and coal in the low innovative household installations account for 80% which is 15 millions citizens - 39% of society. What is more, even though this Policy clearly admits that the co-firing is characterized by the high emission being not environmentally friendly and hence, the process should not be supported(Polish Monitor, Jun., 2014, n.d.), the reality

proved there is no integrity between what is written in the Polish Strategic documents (surprisingly only in case of renewables energy) and between what is being done in practice. The next section of this chapter describes in more details the controversy around the process of biomass co-firing with coal in Poland.

Although, as it will be presented, the development of distributed generation was being block, both Strategic document from 2014 and from 2009, perceives renewables energy sources as an important component of energy security being, at the same time, a way of complying with the European climate – energy framework's goals, apart from creating new marketplaces (Polish Monitor, Jun., 2014).

As it will be demonstrated in the next part of this chapter, not only the administrative and legislative barriers, have not be removed, so the renewable energy, *"especially, in the formula of distributed generation"* Polish Monitor, Jun., 2014) could be developed, but the administrative and legal barriers, in each new draft version of the Act on Renewable Energy Sources, could successfully discourage potential investors.

Furthermore, the Strategy from 2014, explicitly refers to the need of *"(...)ensuring the high quality of life of the current and future generations"* (Polish Monitor, Jun. 2014).As per the policy, it can be accomplished by implementation of an adequate condition for the sustainable development and establishment of the modern energy sector in Poland (Polish Monitor, Jun., 2014). For that reason, the Strategy from 2014 highlights that the promotion of *"ecological awareness"* will be an essential element to achieve this goal. What is more, the Strategy underlines the fact that the environmental awareness of citizens pays a substantial role when it comes to the successful realizations of the climate policy. More, the results of the questionnaire from the Ministry of Environment from 2011 are quoted, according to which 76% of citizens think that the environmental protection can influence positively the economic development of the country (Polish Monitor, Jun. 2014). Nonetheless, the potential of the citizen to build distributed generation have still not been fully used (described in the second section of this chapter). Also, the fact that there are legal proceeding in the European Court of Justice due to non-compliance with the renewable energy 2009/28/EC Directive, might lead to the conclusion, that renewables are indeed only an *"element"* for the Polish government when it comes to energy security of the country (Ministry of Economy, Nov. 2009, n.d.). However, this *"element"* is required to *"(...)comply*

with the international liabilities about the share of renewables in the total energy production" (Polish Monitor, Jun. 2014) as per the Strategy from 2014. In other words, renewables energy sources are not perceived as a core component of the climate and energy country policy, as they are in Germany (Chapter IV). As it will be shown these alternatives sources in Germany are associated with the Lebow's feeling of the country's status and prestige, more, they became a country's new identity (Chapter VIII). In Poland, renewables do not have the same connotation; hence, they are seen as required component, which only helps to comply with the European policies in the field. In sum, they are not seen as a way of implementation of the low-carbon economy model: decentralize energy model versus the one that the Polish government wants to preserve – centrally planned based on large installations, mainly coal power plants.

3.2.2 Increase of the security of supply of fuel and energy

The *"increase of the security of supply of fuel and energy"* is planned to be accomplished through the diversification of the energy sources and the different directions of supplies of crude oil, liquid fuel and gas. This diversification will be achieved through the optimal use of domestic energy resources, where coal will play a significant role as it is seen as "*the country's energy stabilizer"* (Ministry of Economy, Nov.,2009, n.d.). Therefore, coal can guarantee an appropriate degree of energy security of the county, which now relies on gas (over 70%) and oil (over 90%) import[19] (Ministry of Economy, Nov.,2009). Both fossil fuels, as it is illustrated in Chapter VI, are imported mainly from Russia, which places Poland in a position of a strong dependency from this particular state.

3.2.3 Coal

As the coal is the Polish energy's stabilizer, the current centralized energy structure model is, and still will be dominated by the state-controlled energy firms that cover the country's

[19] The Strategy document from 2014 updates these numbers slightly: the share of the imported gas in the country's energy balance accounts for 72%, 80% of oil (Polish Monitor, Jun., 2014).

energy demand mostly from coal (see Annex I). For that reason, those companies will still be controlled by the government (the Treasury of State is a major shareholder, what is in details describe in the next section of this chapter). All three Strategic documents confirm this approach: *"The Ministry of Economy will keep the current competency of the minister responsible for the Treasury of State to the mining companies"* (Ministry of Economy, Nov.,2009).

More, the government expresses that it will create the condition to strengthen the position of these companies in the energy market (Ministry of Economy, Nov.,2009, n.d). One of these steps was taken at the end of 2016 when the government created the Polish National Foundation that grouped, under one umbrella, the biggest firms from 17th different industries. Also, firms related to energy sector were included in this group: PGE (Polish Energy Group), Enea, Energa, Tauron, which are leading electricity suppliers in the country (Treasury of State,Jul.,2016, n.d.), but not only supplier (distributors), also producers and sellers of energy (see Annex I). Mostly they generate electricity from coal (see Annex I). Nonetheless, formally, the rules of III Energy Package[20], here concretely the internal market in electricity Directive (2009/72/EC) was accomplished. There is no vertical integration between production, distribution and sale, meaning there is legal unbundling (transmission and distribution is performed by legally two different companies), ownership unbundling (de-merger of energy company from the law and ownership point of view) and accounting unbundling (separate accounting).

In Annex II there are some of these firms (Tauron, PGE, Enea) involved in building new coal power plants with the Treasure of States, nonetheless, again, the extraction/production of coal is performed by the legally separate company; thus there is formally no breach in law. Also, two biggest producers of gas and fuels PGNiG (Polish Oil and Gas Company), PKN Orlen and Grupa Lotos, are also part of the Polish National Foundation (Treasury of

[20] III Energy Package consists mainly from two European Directive: the internal market in electricity Directive 2009/72/EC and the internal market in natural gas Directive 2009/73/EC. The core principal is the introduction of separation between energy providers and energy generation from the network operator. All of that aim to strengthen the competition on the energy market and protect customers. The gas directive stresses that the 3rd party access to the pipeline has to be provided and thanks to that legal provision the energy market cannot be monopolized(Energy.Market, n.d.).

State,Jul.,2016, n.d.). As per Annex I PGNiG Company is also producing, distributing and selling energy from coal.

The Strategy from 2014 highlights the need for further implementation of the III Energy Package and creation of the separate program that would replace the current one and switch to the more competitive one. What is more, the document stresses the need to establish solution and introduction of the mechanisms that would *"(...)protect the poorest groups against the effects of price increases(...)"*(Polish Monitor, Jun., 2014, n.d.), and according to the government, as per the document, this should be the first indicator of greater liberalization of the market(Polish Monitor, Jun., 2014, n.d.).
Now, the decrease in electricity price and protection of customers could be achieved through distributed generation with the involvement of the society. As it is illustrated in the next section of this chapter the government has not considered the implementation of this scenario.

The government plans (as per the document from 2009) to explore new deposits of lignite and hard coal because of the current depletion of these resources on its territory. The new investment is foreseen particularly in hard coal deposits in "Brzie-Dębina", "Śmiłowice", "Brzezinka" and lignite (soft/brown coal) deposits "Legnica", "Gubin" (see Annex II with the most updated information and the current investment in the coal plants). These plans can lead to the conclusion that the Polish government still believes that there is enough deposit of coal in the country. In other words, the Polish government is of the opinion that the country's natural resources will ensure the energy self-sufficiency in the production of electricity and heat for many decades(Ministry of Economy, Nov.,2009, n.d.).The same narrative, meaning that the Polish government will invest in new coal plants, is being presented in the other Strategy Document, issued five years later: *"Strategy for Energy Security and Environment - perspective until 2020"*(Polish Monitor, Jun. 2014) and six years latter in *"Polish Energy policy until 2050"*.

According also to the Strategy from 2014, hard coal and brown coal will be the first two dominant resources, based on which, the country energy mix, until 2030, will be built. The rest of electricity will be produced (in this order) from nuclear energy, wind power, gas, biomass (Polish Monitor, Jun., 2014, n.d.).

This information goes in line with the investment plans of the Polish government or, better said, with energy firms' plans (mainly state-controlled companies) for the timeframe from 2014 until 2028. As per the report prepared by the Energy Regulatory Office, the biggest investment will be made in the fossil fuels: hard coal (which account for 32% of the total investment foreseen for this period), gas (22%) and in the wind farms (40%). The report did not include however nuclear energy (which is not eliminated from the government's investment plans) with the first block being in operation from 2024[21]. Also, the report mentions nothing regarding investment in new brown coal power plants (Biuletyn, Nov.,2014, nr 4 (90), n.d.) as foreseen by the two Strategic documents from 2009 and 2014. However, as per Annex II there are plans to build also brown coal power plants. The *"Polish Energy Policy until 2030"* mentioned about plans of building new fired plants of brown coal in the Gubina region (Ministry of Economy, Nov.,2009) and the policy from 2014 highlighted that the documented resources of the brown coal are 22 583.83 million ton (status dated as of 31.12.2012) (Polish Monitor, Jun., 2014).

Surprisingly the report (Biuletyn, Nov.,2014, nr 4 (90), n.d.) indicated that 40% of funding will be dedicated to the wind energy, which is in accordance with the scenario presented in both official Strategies (where wind energy account for the highest %)(Ministry of Economy, Nov.,2009), (Polish Monitor, Jun., 2014). Nonetheless, according to Prof. Nowicki development of renewable energy will be possible only mainly the involvement from private investments (distributed generation), it will not be financed from public sources (Nowicki M., Dec.,2015, n.d.). And, as of today, it is difficult to believe that funding spent on wind power will account for 40% of the total financial resources spent on energy investment, because,as per the latest, so-called *"Anti-wind law"*(Law Journal,Jul.,2016, n.d.) and the *"Strategy for responsible development"* (Ministry of Development, 2016, n.d.) (both described in the next section of this chapter in more details) the increase of the wind energy has been successfully blocked. As a consequence, private investors do not have enough incentives to invest in the wind project. In other words, the next few years will show if the funding spent on wind power will reach 40% of the total planned investment.

[21] During the timeframe of 2014-2024 (this timeframe also include activities until 2030) the construction of the first block of the nuclear energy is foreseen and it will be in operation in 2024 (Polish Monitor, Nuclear.,2014, n.d.).

The potential of energy that could be produced from the wind is significant, especially when including the offshore wind farms (on the Baltic Sea) together with the onshore ones. Distributed generation could cover from 30% to 35% of the Polish energy demand (wind farms, photovoltaic, hydro, biomass [22] would contribute the most to this percentage) (Nowicki M., Dec.,2015).

Prof. Nowicki also does not agree with the investment in both, nuclear energy and new brown coal power plants. The electricity generated by the nuclear power can be covered by other sources, like renewables or gas. The investment in brown coal power stations has a very damaging effect, both on the environment and human health. First, the construction of the brown coal power plants and the exploitation of deposits of this kind of fuel are not environmental friendly processes. Moreover, energy generated from lignite includes more CO_2 and other harmful gasses than any other fossil fuel(Nowicki M., Dec.,2015). To compare: CO_2 releases to the atmosphere by hard coal and brown coal is 0.95 Mg CO2/MWh, 1.22 Mag CO2/MWh respectively, by gas – 0.37 Mg CO2/MWh and nuclear energy only – 0.02 Mg CO2/MWh(Czopek K., Trzaskuś-Żak B., 2011, n.d.).

During the official opening of a new unit of the brown coal power plant in Bełchatów[23], which took place on 22 of August 2011 the former Prime Minister Donald Tusk said: *"This is the beginning of a great adventure with Polish modern energy (...)Brown coal has a future. We are in the constant campaign in Europe to produce energy from our most precious resource. The energy security of Europe cannot be based on the Russian gas"*(Prime Minister Office, Sep.,2011).Further, Donald Tusk also stressed that the energy produced from coal is the cheapest, which is of the great importance, especially when the country's electricity demand is growing. What is more, the former Prime Minister referred to the example of the other European countries that abandoned the development of coal or

[22] Prof. Nowicki mentioned that the process of co-firing of biomass with coal is slowly putting out(Nowicki M., Dec.,2015, n.d.). As per the mentioned report, there are indeed plans (for 2014-2028) of withdrawing co-firing hard coal with biomass from the overall generated capacity(Biuletyn, Nov.,2014, nr 4 (90), n.d.).

[23] A new power coal plant in Bełchatów is the Europe's largest coal – fired power plant. The total capacity of the plant is more than 5.3 Gig Watts, which covers about 15% of Polish electricity demand (Prime Minister Office, Aug.,2011).

nuclear energy, which decision, he evaluated as a step in the "*wrong direction*" (Prime Minister Office, Sep.,2011). Although Germany was not mentioned here, highly probably that the former Prime Donald Tusk was referring to this country mainly.

Moreover, the document from 2014 highlights, the largest currently exploited deposits are in Bełchatów (brown coal). They cover 62 % of the total domestic production, the remaining part of the energy demand are being covered by Turów (also brown coal) and the deposits of Konin's region (brown coal): Patków and Adamów. As per the forecast, included in the document, the country's deposite of lignite will be sufficient for another 350 years. Also, there is a belief that there are equally large resources of hard coal(Polish Monitor,Jun.,2014).This argument is contradicted by the Prof. Nowicki who claimed that the Adamow's brown coal power plants could operate only for another 12 years and fired coal plants in Belchatow, Konin and Turów for another 30 years. Also, when it comes to the country's hard coal deposits they can be sufficient for another 30 years only with the annual exploitation around 2.1-2.2 million ton (Nowicki M.,Dec.,2012).

What is more, taking into account the claimed deposit of coal on the Polish territory, there are opinions that government is planning to repeat the process that took place in the South Africa, where coal substituted gas and oil. That was possible thanks to the use of new technology of gasification of this fuel, what caused that the South Africa does not need to import gas from abroad anymore. From economical point of view, this solution is very desirable also because energy from coal is cheaper than the one generated from gas (Czaja P., Kwaśniewski K., 2016, n.d.). In the light of the above the *"Polish Energy until 2030"* refers to *"Supporting research and development of technologies to use coal to produce liquid and gaseous fuels"* (Ministry of Economy, Nov.,2009), the solution applied in the South Africa can be indeed the option.

Also, what it is in this context important to emphasize is the use of language and wordings in these two Strategies. The most frequent words used are coal, security, independency, fossil fuels. Given the nature of the documents, it might be understandable. However, the same level of emphasis is not being noticed in the case of the role of renewable energies. Coal is being viewed as the core component of the country's energy security and independency. It is framed in such a way that without the further investment in the country's coal deposits the energy security cannot be achieved, either the Polish economy cannot be competitive. The

role of coal downgraded the role of renewables which are named, as mentioned, an *"element"* in the *"Polish Energy until 2030",* and as such are being treated by the Polish government (see more detail in the second part of this chapter) (Ministry of Economy, Nov.,2009). Littlefield draws attention to the impact of imprecise terminology of the term security, independency, sustainability in the context of energy policy in the United States. He concluded that very often the use of this terminology is designed in such a way as to *"provides a vehicle for particular groups to leverage policy outcomes"*(Littlefield 2013). Also, the mentioned above words of former Prime Minister Donald Tusk, spoken out during the celebration of opening of the new unit of the brown coal power plants, shows that this narrative is being applied; hence, some particular interests groups are more "protected" by the government than others, here interests of the mining industry over the interests of new entrants to the energy market (pro-consumers). In sum, this kind of language, narrative, the way the problem is framed is also employed to strengthen the argumentation for maintaining the centralized energy production model in the country with the leading position of the state-controlled companies.

For that reason, Prof. Nowicki in his article recommended that it would be better if the investment in the newly fired plants would be made by the private investors which would result in the investment only in the economically viable projects and, not in the ones, that have a more political nature (Nowicki M., Dec.,2015.). For example investment in the brown coal, which has the highest emission of CO_2 and other gasses and that, if taking into account the European restriction of CO_2 emissions, influences the price of energy from this kind of coal.

As mentioned, coal is going to be a leading country's fossil fuel as per these two Strategic documents based on which the Polish energy security will be built. For that reason both documents foreseen the establishment of legislations that will facilitate the development of the energy from this resource (Ministry of Economy, Nov. 2009), (Polish Monitor, Jun. 2014). What is more, the coal's role will not be minimalized until 2050. As per the *"Polish Energy Policy until 2050"*[24] this fossil fuel (hard and brown coal):*"(...)will continue to be*

[24] This Policy, according to the information on the official website of the Ministry of Energy was submitted to the public and interdepartmental consultation on 07.08.2015 that was previewed to be finished on 18.09.2015. There is no further information about the outcome

the basis for energy security. Coal remains the primary fuel for electricity and heating"(Ministry of Energy, Aug.,2015).

Both documents have foreseen the modernization of the old coal-fired plants. However, the Strategy 2014 expresses the concern about the future European regulations which still are unknown, and they will increase the risk of investors in the new coal power plants (Polish Monitor, Jun., 2014). Due to these restrictions, *"the efficient use of the geological environment"* will be followed when exploring the new mining resources (Polish Monitor, Jun., 2014). Additionally to comply with the climate restriction and policy of the EU the new technology associated with the power plants and CO_2 capture needs to be developed. The Strategy from 2014 mentions the use of geothermal energy and the possibilities of the use of underground geological structures. The exploration of the geological structure is needed for the development of the storage trailers of CO_2 (so-called technology of the Capture Carbon Storage - CCS) (Polish Monitor, Jun.,2014). As these kind of new technologies and installations are essential for the Polish coal energy *"be or not to be"* having in mind the increasing climate restrictions, there have been already successfully installed pilot projects related to CCS technology in the PGE Bełchatów mines(Czopek K., Trzaskuś-Żak B., 2011, n.d.).

The similar storage is foreseen to be used for crude oil, natural gas, energy (e.g., in the form of compressed air). Also, because of the development of the nuclear energy, the storage of the radioactive waste will also forecast (Polish Monitor, Jun., 2014).

These actions can be the clear indication that the Polish government concentrates on the minimization of the inevitable impact of coal on the environment rather than on shifting towards alternatives and innovative ways of energy production based on distributed generation with the involvement of citizen and renewable energy sources.

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of these meetings; therefore it might be that the document is still not considered to be finalized; hence official one, nonetheless it is placed on the official website of the Ministry of Energy(Ministry of Energy, Aug.,2015, n.d.).

3.2.4 Import of coal from Russia

All the above described steps of restructuration[25] of the old fired plants, the establishment of legislations that will facilitate investment in new power blocks, investment in technologies that will minimalize the effect of CO_2 on environment (Capture Carbon Storage[26]) and the investment in the technologies of coal gasification, are planned to be implemented to accomplish two core objective. The first one is to meet the climate expectation of the European Union and the second one, to achieve that coal mines industry in Poland will be economically more viable than it is now. This improvement will contribute to the country's energy self – efficiency; hence, it will strengthen energy security.

As mentioned, because many Polish mines are old, the extraction of coal is more complicated[27] than it was in the past. The price of the Polish coal cannot compete with the price paid by the imported one. What distinguishes imported coal is not only its lower price but also better quality parameters, which characteristics are appreciated by individual consumers that account for 50% (Stala-Szlugaj, K., 2014, n.d.). Also, the Strategy from 2014, is foreseeing the additional increase in energy price related to the various investment plans. Among others: the need for construction of the new fired coal plants, the requirement of purchase of CO_2 permits[28], the growth of energy generated from renewables and also due to the cost of building new transmission lines and distribution networks (Polish Monitor, Jun., 2014, n.d.).

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[25] The technical status of the distributions energy networks required similar modernizations as the distribution grids are old and therefore influence energy security. Main power plants are located in the center and south of the country. Also, adding the poor technical conditions of the distributions networks that as well influences energy security of Poland (Polish Monitor, Jun., 2014).

[26] These kinds of installations are highly required in Poland because future energy mix is still going to be based mainly on coal and gas and CCS facilities have 95% CO_2 capture rate(Budzianowski 2012).

[27] Exploitation of coal takes place at deeper depths because coal, which was located on the shallow depths have been already extracted.

[28] From 2020 Poland will have to purchase the right to CO_2 emission on the open market(Czopek K., Trzaskuś-Żak B., 2011, n.d.).

As per the *Polish Energy Strategy until 2050*, in 2011 Poland imported from Russia 14.8 millions ton of coal which accounted for 20% of the total extraction of the hard coal in Polish mines (this import decreased in the following years reaching 10.8 millions in 2013) (Ministry of Energy, Aug.,2015). The fact that Poland needs to import also coal from Russia makes the country even more dependable when it comes to the overall dependency from one direction, as from Russia came 20% of imported coal (Ministry of Energy, Aug.,2015), 70% of gas and 90% of oil (Ministry of Economy, Nov.,2009). We can observe in this case the typical example of *"vulnerability dependency"* (concept created by Nye and Keohane), which refers and describes the ability to react and face the changes after the policy has been re-established, here, for example, when the cease in delivery occurs (Austvik 2016a). As Poland does not have an alternative direction, this situation placed the country in a very weak position, characterized by the high degree of dependency.

According to one scenario, the mentioned coal import dependency could increase sharply, especially from 2040 reaching peak in 2050 (up to 90 millions per year) if there would not be the exploitation of new deposits of hard and brow coal at home(Czaja P., Kwaśniewski K., 2016, n.d.). How has this dependency shaped the outcome of the Polish energy policy? This question will be replied in the other chapters of the thesis (VI, VII, VIII) applying the Lebow's theory. Here it can be mentioned, that the Polish government aims to re-establish the old status quo of the Polish coal, as in the past, Poland was a leader in the export of this fuel. All the described investment in the new coal power plants and other steps related to the coal industries - mentioned in both Strategic documents, aim to lead to the renaissance of the Polish coal, and the motivation seems to be strong, also because of the described *"vulnerable dependency"* from Russia.

In the past, Poland was a main exporter of coal. Between 1966-1978 shares of Polish coal export, in the global scale, accounted for 19%. Nowadays, this % accounts for only 1- 2 % and Poland became the importer instead. The import of this fuel increased sharply between 1996-1998 (up to 4 millions ton) due to the modernization of the economy and political changes in the country discussed above. During 2004-2013 Poland imported from Russia 59% of all country's coal demand, 18% and 13% came from the Check Republic and the United States, respectively (Stala-Szlugaj, K., 2014, n.d.).

The restructuration process of the coal industry started with closing some of the oldest mines[29] (which will be replaced by the new ones). The new investment in the coal plants and the whole modernization is very costly due to the requirement of the low emission CO_2 standards (CCS technology).

The fact that old fire coal powers are planned to be closed it does not mean that Poland will design different energy mix for the country. On the contrary, short after the decision of the EU about the approval of the public funding for closing the old power fired plants, the Prime Minister Beata Szydło confirmed, during the celebration at the Barbórka Academy (day of commemoration of the mining industry in Poland), that the strong Polish economy cannot exist without equally strong mining industry(Ministry of Energy, Dec., 2016, n.d.). The Minister of Energy added that Poland would be a leader of modern energy based on coal (he referred to coal as a *"black gold"*, which in the light of the mentioned utilization of the language related to energy, gives a clear indication how precious this indigenous natural resources for Poland is. Beata Szydło also confirmed, what are already stated in both Strategic documents, that Poland will be leader in Europe regarding the clean coal technology (Ministry of Energy, Dec., 2016, n.d.).

A system built around the coal industry in Poland can be compared to the machine, where all its parts are dependable from each others, the system is like the connected vessels. Why? Mining companies contribute not only to the Treasury of States, but also to state's social insurance institutions, health services, local governmental offices that charge fee and taxes for the use of mines, and mining industry also means workplaces(Czaja P., Kwaśniewski K., 2016, n.d.) for many Polish citizen, who are electorate. More, mines are considered to be a

[29] At the end of November 2016 European Commission approved the support (under the provision of the state aid) to close the old coal power plants that are not economically viable. The Polish government received approval for the 1.79 billion Euros that is going to be spent on the whole restructuration process of coal mining blocks (pension for workers, compensatory pensions, social security benefits, harm caused to the territory around the closed mines, etc.)(European Commission, Nov.,2016,n.d.). The new coal power blocks (up 6 WG) will be built until 2025 Opole Power Plant, Jaworzno Power Plant, Turów, Stalowa Wola (Tchórzewski K, May.,2016, n.d.).In the construction of these new power plants the state-controlled energy firms will be involved (such as PGE, Tauron, Enea, Energa). Currently, the most country energy demand is covered by three power blocks also owned by state and the state controlled companies: Bełchatów (Polish Energy Group), Kozienice (Enea), Rybniki (EDF Polska) (Tchórzewski K, May.,2016, n.d.)

part of the country's identity, the mine's tradition is still being cultivated in Poland. And, as it is presented in the next chapter, identity from, both K.Waltz and the Lebow's theory perspective plays a significant role when it comes to have an influence on any policy, here climate and energy one.

3.2.5 Gas and Oil

Natural gas and crude oil after coal, are being classified as first-class resources based on which Poland will also contribute to the country's energy security. For that reason, in both Strategic documents, these fuels are placed in the top position on the priorities' pyramid.

As said earlier, Poland covers 70% of the gas's country energy demand by importing it only from one direction, from Russia. Therefore, the primary goal of the energy strategy is the diversification of routes of gas supply. The same aim is assigned in the event of oil as Poland covers 90% of the oil's country demand also by importing it from Russia. This dominant position of one partner (Russia) caused the monopoly on both, gas and oil market in Poland. The Policy from 2009 even enhances the *"monopolist shape of price"* in the case of oil, and although, the Strategy does not mention Russia, it can be interpreted, in this context, that this expression of a negative connotation refers indeed to Russia (Ministry of Economy, Nov.,2009).

However, the Strategic document from 2014, does name directly Russia in the context of the Polish gas and oil dependency (Polish Monitor, Jun., 2014). The word *"Russia"* is being used in the two official Polish documents. The *"Polish Energy Strategy until 2030"* refers to Russia in regards to the establishment of the common rules in the field of transmission of gas and oil, which will protect the interests of both, consumers and transit countries. The document mentions in this context non-ratification of The Energy Charter Treaty[30] and the lack of the Russian signature on the Transit Protocol (Ministry of Economy, Nov.,2009).

[30] Russian Federation signed the Treaty. However, the Russian Parliament has never ratified it. The objective of it is to establish transparent and clear rules when it comes to the energy market. Putin expressed his dissatisfaction with the content and proposed to draft a new legal framework in this field(Ziegler 2013).

This statement reveals the feeling of mistrust in the mutual relations indicating, at the same time, that the Polish government sees Russia as the business partner who does not follow the rules and international agreement when the country's economic interests are at stake. Also, the fact that Russia is named in the official documents, in this context, can be a clear indication how powerful and influential actor this country is, when shaping the outcome of the Polish energy policy, what is being discussed in the next chapters.

Similar to the coal industry, the government declared that it would maintain the majority of state's shares in gas and oil companies: *"Protection of state interests in strategic companies of gas sector"*(Ministry of Economy, Nov.,2009, n.d.) And as an example, the Policy refers to the enterprise: Polish Energy Group (PGE. S.A) and Tauron. Also, as per this document the government (Ministry of Economy) has responsibility for the transmission system operator of electricity (PSE Polish Electric Grid – Operator SA[31])(Ministry of Economy, Nov. 2009). Polish Strategy from 2014 indicates that there is also only one gas transmission system operator OGP Gaz – System (Polish Monitor, Jun. 2014) owned in 100% by The Treasury of State (Gaz system, 2016, n.d.) with 160 distributors of electric operator system(Polish Monitor, Jun., 2014); however, the main gas transmission system and electric transmission system are under state's control.

According to the Strategy from 2014 PGNIG is a leader in the gas market in Poland as it covers 96% of the Polish gas demand (Polish Monitor, Jun., 2014, n.d.). The Treasury of States accounts for 70% of the total shares in this enterprise (PGNiG, Shares, n.d.). Also, as stated in the Policy, PGNiG dominates the gas structure, also because, transmission and distribution, although legally separated, are in practice, under the one company. What is more, PGNiG has full responsibility for the underneath storage of gas (Polish Monitor, Jun., 2014). The same information is confirmed in the Strategy document from 2009, which underlines that despite the transposition of 2003/55/EC Directive (repealed by 2009/73/EC Directive concerning common rules for the internal market in natural gas) and the mentioned separation between operator and distributor, the market is monopolized. Moreover, the Strategy from 2009 clearly highlights the fact that the access of the new entrants to the market is difficult. Nonetheless, the same Strategic document mentions nothing about

[31] Polish Gas Company is the National Distribution System Operator Gas in Poland and, at the same time, is the largest company within the PGNIG Group(PSE, 2015, n.d.).

changing this situation (Ministry of Economy,Nov.,2009). Although, both Policies draw attention to the need for the development of distributed generation, what would allow pro-consumers enter the energy structure, as it will be proved, not a lot has been done in that respect.

None of Strategies refer to the Yamal[32] gas pipeline that is currently the only pipeline through which Poland is importing gas from Russia. There are many controversies around this long term contract, among others related to the established gas price[33] that Poland has been paying since 90's when the contract was signed and it will terminated in 2022(Wójcikowski R.,2016, n.d.).

The construction of the Yamal pipeline was agreed between government of Poland and Russia in 1993, then the amendment to the protocol was signed in 1995, 2003 and in 2010 respectively (European Commission, 2014, n.d.).

In the light of the above it is not surprising that the Polish government place a special emphasis on the diversification of the gas (but also oil) supply routs. *"The Polish Energy until 2030"* mentions the construction of additional transmission system that will allow to import natural gas from the north, west and south. More, both Strategies refer to construction of infrastructure that would enable the diversification of natural gas and oil supplies to Poland. They also underline the need for investment in new infrastructure for gas and oil transmission and distribution. The importance is also placed on modernization, the increase of the capacity of gas and oil storage and the investment in new storage for these two fossil fuels, which are core sources of the Polish current and future energy mix (Ministry of Economy, Nov.,2009),(Polish Monitor, Jun., 2014).

[32] Yamal pipeline goes through Russia, Belarus, Poland and Germany.

[33] In 2014 PGNIG sent the official Statement of Claim to the Arbitrary Tribunal in Stockholm with the goal of change the gas price. The Polish company was of the opinion that the gas price was too high. Before that the Polish Company PGNIG many times tired to modify the condition of the contract(Tchórzewski K, 2016, n.d.).In 2012 European Commission opened an investigation against Gazprom. As a result, in conclusions sent to Gazprom in 2015, the European Commission admitted that Russian gas company abuses its dominant position on the market and violates the EU competition rules (the unfair price policy was also mentioned)(Lenz T., Feb., 2016, n.d.).Again, as the situation did not change PGNIG, at the beginning of 2016, sent another official Statement of Claim to the Arbitrary Tribunal in Stockholm(Wójcikowski R.,2016, n.d.).

In the case of gas, this diversification is already achieved through the LNG[34] (Liquid Natural Gas Terminal) terminal constructed on the Polish coast (in Świnoujście). There are plans of building a new gas pipeline and of the particular interest it is the import of this fossil fuel from the Norwegian Continental Shelf[35] (Ministry of Economy, Nov.,2009, n.d.),(Polish Monitor, Jun., 2014, n.d.). Now, although other gas pipelines: Nord Stream I, possibly Nord Stream II (if finally constructed) and Opal, do not deliver gas to Poland, these relations will be described in Chapter VII and Chapter VIII, as there are many controversies around them and Poland and Germany are directly involved in these complicated relations, complicated also from the EU energy law viewpoint. Additionally this analysis will shed lights on the main question of the thesis from both, the Lebow's and K.Wlatz's perspective.

In the case of oil, Poland is in a more comfortable situation, because it has two alternatives routes of import. One is the sea route through the oil terminal in Gdańsk, built back in the 60's of XX. Importing oil trough sea route is, however, more expensive than using the land route and oil pipeline "Friendship" that connects Poland with Russia. Price determined that most of the Polish oil demand is covered by the import of this fossil fuel from Russia via "Friendship" oil pipeline (Polish Monitor, Jun., 2014).For that reason, the Polish government is planning also diversify even more the land routes, and there are investment plans of importing oil from the Caspian region within the framework of the project the Euro-Asian Oil Transportation Corridor (Ministry of Economy, Nov.,2009).

[34] The LNG in Świnoujście started being in commercial operation since 2016 with the capacity of 5 million cubic meters. Additional capacity can be built in the future, which will result in the total capacity of 7.5 millions cubic meter per year. (Tchórzewski K, May.,2016).The total cost of terminal was 700 million €, half of which was financed by the European Commission and the rest was funded through the loan from the EU (approximately 135 millions Euros)(Johnson and Boersma 2013).

[35] The Prime Minister Beata Szydło, during her visit in Oslo at the beginning of 2016 declared that the Polish government is very interested in importing the Norwegian gas; hence Poland will create appropriate conditions so the investment of new gas pipeline can materialize (Prime Minister, Feb.,2016, n.d.). It is noteworthy that the head of PGNIG also attended the delegation, but, nonetheless, the Prime Minister added that it is, of course, the conversation between the companies (Polish Press Agency, Feb.,2016). As mentioned, The Treasury of State has the majority of shares in this gas-energy company.

3.2.6 Nuclear energy

According to both Strategic documents, nuclear energy is placed in the 3rd position of the priorities' pyramid. Additionally, nuclear power also viewed as the best way for Poland to comply with the European Commission's core obligation regarding promotion of the low carbon energy production model. In other words, nuclear energy, as per the country strategy, would reduce *"the environmental impact of energy"* (Ministry of Economy, Nov.,2009).

Moreover, nuclear energy is not only a chance of expanding diversification of the electricity generation structure, but also, as per the Strategy from 2009 is being viewed as a way of stopping the *"dictate"* related to the energy price (Ministry of Economy, Nov.,2009). Again, Russia is not named in this context; nonetheless, this suggestion refers evidently to Russia, similar like in the case of mentioned oil pricing. The access to uranium - required for the nuclear energy generation can be *"(...) obtained from regions that are politically stable, and competition among manufacturers is high, which protects against potential price dictate"*(Ministry of Economy, Nov.,2009).These kind of statement in the official documents are a clear indicator that Poland as a country is navigated in the fear paradigm and according to structural realism, first, country tries to increase own security and later on, can move, as it was mentioned, to fulfill different needs on the state level(Lebow 2008)(developed in Chapter VIII).

Now, we can see that the argument of incorporating this kind of energy, claimed by many scholars, to be extensively overloaded by the possible damaging risk for both, human health and environment, is framed in terms of country's independency and security. As per the below Table 4, both, nuclear energy and renewable energy installations (distributed generation and facilities own by the state-controlled companies – large renewables projects) had the same characteristics: first, null CO_2 productions (a positive impact on the environment) and second, they both contribute to energy security of the country. The only different relates to the ownership over energy generated by these installations. These characteristics lead to the questions about real motives why, the energy from renewables with the involvement of citizen, is not being promoted? As this section of the thesis concentrates on the analysis of main Strategic energy documents, this question will be replied, through the angel of Lebow's theory, also in the last chapter (in the conclusion part).

Nuclear Energy	**Renewables, distributed generation** (micro and small installations)	**Renewables energy installations, production by the state-controlled companies** (biomass, wind, hydro, ets) [36]
Null CO_2 generation	Null CO_2 generation	Null CO_2 generation
Centrally controlled by the government	Ownership over consumption and generation- citizens/pro-consumers	Centrally controlled, in its majority, by the state
Contribution to country's energy independency, strengthening of the country's energy security	Contribution to country's energy independency, strengthening of the country's energy security	Contribution to country's energy independency, strengthening of the country's energy security

Table 4 Characteristics of nuclear energy and renewables installations (distributed generation and large projects owned by the state-controlled companies)

What is interesting to highlight is the fact, that the possible damaging impact of this kind of energy on the environment is clearly underestimated as the *"Polish Energy policies until 2030"* from 2009 does not even mention any possibilities related to nuclear power's negative influence on human health. That again, shows that competitiveness and security aspect of country's energy mix is downgrading the sustainable development one. The document only, in a very general way, refers to *"minimalisation of the potential risk"* and *"increase of the public knowledge about this kind of energy"*(Ministry of Economy,Nov.,2009).The expression *"highly radioactive waste"* is being used not directly in the context of the human health, but in the context of the preparation of the solutions of the fuel cycles and recycling of fuel burned(Ministry of Economy,Nov.,2009).The environmental impact of this type of energy is commonly known, and some scholars already mentioned a risk related to the uranium shortages and nuclear waste influence, both on the human health and environmental (Budzianowski 2012).

3.2.7 Reduction of GHGs

Nevertheless, both Policies refer to the reduction of energy activities on the environment such as: decrease of the GHGs emissions, construction of the mentioned technologies that would storage and capture CO_2, reduction of different type of gasses ($S0_2$, NOx) and dust

[36] Also see Annex I, which shows the shares of the renewables energy generated by the state-controlled energy companies in comparison with the power generated from others sources, mainly coal.

(including PM10 and PM2.5)(Ministry of Economy, Nov.,2009, n.d.),(Polish Monitor, Jun., 2014, n.d.),the transparent description of the possible damage that could arise from the use of the nuclear power plant is not described.

All of that it will be achieved, as per the Strategy from 2014, *"(...) while maintaining a high level of energy security"* (Polish Monitor, Jun., 2014,). However, as it is also clearly stressed, in the same document, the adaptation to the decarbonization goals of the EU and modernization of the electricity generation will be hard for Poland (Polish Monitor, Jun., 2014,). The reality proved that, indeed, this aim resulted difficult to fulfill, because Poland, as it was indicated in the Table number 2, is currently facing one legal proceeding in the European Court of Justice because of non-compliance with 2008/50/EC Directive on ambient air quality and clean air for Europe.

In the light of the above, it is surprising to see that the government in the Polish Energy Strategy published in 2014, underlines the impacts some of the energy sources can have on the health condition of society. More, the document is quoting the *"European environment — state and outlook 2010 the European Environment Agency (Copenhagen 2010)"* which indicates that the costs associated with changes in climate, without adaptation actions, will be in 2030 about five times higher than the value of capital which has to be invested to counteract them (Polish Monitor, Jun., 2014).

The cited report also stresses the need of decreasing dependence on fossil fuels perceiving the use of alternative energy sources as a best way to mitigate the climate changes. The mention departure from fossil fuels is crucial, because, as per report, with time, the electricity generated from these sources will become more and more expensive, also because they are less deposit of them in the world(European Environment Agency,Nov.,2010).However, the Strategy document from 2014 does not refer to this particular part of the report's recommendation as they do not go in line with the Polish national interest, with the Polish energy mix.

Moreover, the Strategic Document from 2014 claims to be in *"accordance"(*Polish Monitor, Jun., 2014) with the one of the leading European Union strategic initiative called: *"Europe 2020 – A resource - efficient Europe – Flagship initiative under the Europe 2020 Strategy."*

According to *"Europe 2020-A resource-efficient Europe-..."* both, the involvement of society and innovation are the core priority(European Commission,2011, n.d.), and, if implemented, they would reduce the GHGs emission. Now, the involvement of society and innovation are placed at the bottom of the priorities' pyramid in both official country Strategies (Polish Monitor, Jun., 2014, n.d.), (Ministry of Economy, Nov.,2009, n.d.).

This fact should not surprise as the Strategic documents explicitly declare that for the government the top priority is national security which will be achieved by maintaining the current country's energy mix, changed by adding the nuclear energy from 2022. Also, the energy security will be accomplished through the creation of different oil and gas imports routes. Nonetheless, the government does admit the readiness and willingness in taking part in any*"international environment initiative"* (Polish Monitor, Jun., 2014)but always taking into account the particularity of Polish economy and industry ("Polish Monitor, Jun., 2014).

3.3 Polish energy policy until 2050

The *"Polish energy policy until 2050"* created in August 2015 includes three different possible scenarios of the Polish country energy mix until 2050, with a leading one that is mainly based on hard and brown coal. The document stresses that the same *"trends"* will be followed (Ministry of Energy, Aug.,2015, n.d.) as presented in the *"Polish Energy Strategy until 2030"*, issued 6 years ago, and in the Strategy from 2014. During that time, what is also highlighted in this new Strategic document, the European climate and energy framework evaluated, and it is seen rather as a threat to the Polish energy security than as an opportunity for the further development of the sustainable low-carbon energy model based mainly on renewables energy sources. Similar to the Strategy from 2014 that considers further restrictions of the climate policy of the EU as a threat, which can negatively impacts investment in the new power coal plants (Polish Monitor, Jun., 2014, n.d.). The below part can be the best quintessence of the Polish approach towards the European climate and energy policy. We can read in the document as follow:

"It is expected that low-carbon transition will be a permanent place in the EU agenda, but it can be expected that in the long run, when the economic and social costs of radical climate change will be more pronounced (felt), stronger voices will encourage a deep reorientation

*of the EU climate change efforts towards greater balance with the objectives of economic competitiveness, industrial policy and energy security"(*Ministry of Energy, Aug.,2015, n.d.).

Again, that is an evident proof that there is a low level of willingness of departure, even, in such a long time-horizon, from the fossil fuel. Also, the fact, that renewables energy, being perceived as an important component of the energy production, will also account in 2050 for only 20% (Ministry of Energy, Aug. 2015, n.d.) speaks for itself. At the same time, German government aims to produce 80% of its energy from renewables until 2050.

The differences in visions regarding the climate and energy policy between Poland and the EU is contained in the declaration that Polish government will support or initiate any counteraction that may hamper the country energy security. Among others, there are listed further climate restriction and *"(...)excessive emission reduction projects"*(Ministry of Energy, Aug.,2015, n.d.) when there is no global agreement in this regards and when all parties do not contribute equally to the overall global GHGs emission reduction (Ministry of Energy, Aug.,2015, n.d.).

The document makes reference to the future Climate Conference in Paris (at the time of creation of the Strategy, there were still few months before the Conference) stressing that, depending on the agreement reached at the global level, the outcome might influence that the share of renewables energy increases (Ministry of Energy, Aug.,2015, n.d.).Nonetheless, as it was illustrated in Chapter II, the Prime Minister did not even refer, in her official speech, to the alternative energy sources but concentrated on the afforestation policy (Szydlo B.,Nov.,2015).

The Strategy includes three scenarios of the possible Polish energy mix, however as stated, the realization of one of these options depends on the future policy of the EU and situation on the global energy market. Nonetheless, the sustainable scenario with the highest share of coal is viewed as the most probable one to materialize; the other two are the nuclear and the gas + RES scenarios (Ministry of Energy, Aug.,2015, n.d.).The main characteristics of these three options are included in the below Table number 5.

Sustainable scenario (most probably one)	**Nuclear scenario**	**Gas+RES**	**Assumption Common to all 3 scenarios**
Hard and brown coal - as main fuels of the country's security. Other energy carries will be balanced and all of them will be maintained in the range level of 15-20% (oil, gas, nuclear, RES). Although the exact % that will account for coal in 2050 is not given, as per calculation it will account for 40% of total produced electricity. It might be that shale gas can play a significant role, however, still there are no enough data regarding this resources on the Polish territory. As per the document, the "optimistic scenarios" regarding this unconventional gas are not confirmed. Diversification of gas and oil routes. Investment in clean carbon technologies (CCS) to meet the 40% of the GHGs emission reduction is necessary.	Nuclear energy in this scenario will account for 45-60%, hard and brown coal for 10-15%, oil for 10-15%, renewables energy sources for 10-15%. Diversification of gas and oil routes.	Gas and RES, as per this scenario, will be kept on the level of 50-55%, hard and brown coal will account for 30%, oil will be maintained in the range of 15-20%, 12% for nuclear energy and 20% of the renewables energy. Exploration of the unconventional gas (shale gas) will need to have a social acceptance for extraction work.	Increase of numbers of pro-consumers on the energy market (micro-installation),simplification of requirement and reduction of barriers related to connection of these installations to the grid. Assumption that until 2035 renewables (pro-consumers, micro-installations) will not need any additional financial support, in other words, they will become independent. Nuclear energy as a part of the future energy mix. Increase of energy efficiency in all sectors: production, heat and buildings.

Table 5 Three possible scenarios of the Polish energy mix until 2050 as per the "*Polish Energy Policy until 2050"* (Ministry of Energy, Aug. 2015, n.d.)

As indicated above, it may surprise that even in the scenario that foreseen the highest use of renewables energy, the percentage of shares for renewables energy in the total energy production is only 20%(Ministry of Energy, Aug.,2015, n.d.). That might surprise because already now the Polish binding target, as per the European Strategy from 2009 (3x20) is 15% (gross)(Ministry of Economy, Nov.,2009, n.d.) and the Policy is aiming to establish the country energy mix until 2050 so it could be expected that this % will increase immensely during the next 30 years, as it is foreseen in the case of Germany (mentioned 80% of RES in 2050). Nonetheless, this percentage is viewed by the government as *"high proportion"* of *"unstable sources of RES"*(Ministry of Energy, Aug.,2015, n.d.). Moreover, also this country strategy declares support for the renewables energy and increase of *"numbers of pro-consumers"* (Ministry of Energy, Aug.,2015, n.d.). Now, this expression *"numbers of pro-consumers"*, having in mind all the scenarios, indicates that decentralize model of

energy production based on renewables, micro-installations, is not a goal *per se*, but it is only a necessary development that needs to be fulfilled because of the EU's climate and energy policy. It may also surprise that the government stresses that renewable energy will become economically mature until 2035, meaning they will be able to function in the energy market without any financial support. Also, although, the policy speaks about support for renewables energy (removal of all barriers and support mechanism)(Ministry of Energy, Aug.,2015, n.d.), the same, like in the case of other two described Strategies, as it will be illustrated in the next section of this chapter, these promises and plans do not have translation in reality.

It is optimistic that in the case of the further coal extraction (especially brown one, which is the more polluted as mentioned above) and shale gas, the government underlines the need of seeking social acceptance. In the case of nuclear energy, the government is speaking about*"(...)maintain acceptance for program implementation"* (Ministry of Energy, Aug.,2015, n.d.). It should be emphasized now that in Poland, as per many surveys, an example of the one performed by Center for Social Opinion Research the majority of Poles are generally against the nuclear energy (CBOS, Apr.,2013, n.d.). Also, in 2012 there was legally valid, and binding referendum in the municipality of Mielno and more than 90% of residents voted against the nunclear power's construction plans (Polish Radio, Feb.,2012, n.d.). That leads to the question if the social acceptance in the case of the coal, especially the brown one, or shale gas's exploratory works that are also very harmful to the environment, the social acceptance will, indeed, be seek and/or taken into consideration or it will be ingnored like in the case of nuclear energy.

The document also refers to the Polish initiative from April 2014 about the establishment of the Energy Union and the conclusion of the European Council from March 2015 regarding the establishment of the framework for the furure Energy Union (Ministry of Energy, Aug.,2015, n.d.). In the Polish government's opinion the Energy Union should strengthen the common energy market, the former Prime Minister Donal Tusk even proposed the common purchase of gas (Gazeta Wyborcza,Mar.,2014, n.d.). This section is more developed in Chapter VII.

3.4 Conclusions

As it was illustrated in the three Strategic documents, with the oldest one from 2009 and the most current one from 2015, the approach towards the EU climate and energy policy has not changed. First, the renewables energy are seen as a "unnecessary evil" that is required to be implemented to comply with, both the European policy and international binding targets (The Kyoto Protocol and The Paris Agreement). Although all three documents declare the appropriate support mechanism for renewables to foster the development of installations from these alternative energy sources, as it will be proved in the next section of this chapter, these are only declarations. Second, which is a consequence of the first one, there is no willingness to departure from fossil fuels and centralized energy model (based on the large installations) towards the low carbon one, based on distributed generation and micro-installations. In other words, there is no hope for a drastic change in the Polish energy structure, where the production of energy is under the state-controlled companies. The Polish energy mix, even in the long time-horizon until 2050, will include only 20% of the *"unstable"*(Ministry of Energy, Aug.,2015, n.d.) renewable energy sources, as per one of the scenarios (Table number 5).

The centrally-planned energy model is considered to be typical for the Former Soviet Republic and Western European countries (transition economies), where the liberalization in the energy sector is seen as a change in the ownership structure and change in competition (Bridge et al. 2013). Nonetheless, Poland is not anymore consider transition economy, Kronenberg and Berger, points out the need for more *"economic openness"* - the same one that Poland experience during the period of privatization in early 90's. Also,these two scholars highlight that now, the problem might be related to the lack of information flow and interaction between citizen (also investors) and policy makers(Kronenberg and Bergier 2012).

Nonetheless, each of the Strategic documents refer not only to greater involvement of the citizen in the development of energy but also to the need of the increase of awareness and exchange of information between different actors (Polish Monitor, Jun., 2014, n.d.). We can ask the question: What might be a reason, that Poland is so reluctant to change the energy

model toward the low carbon one, not only to the one based on the clean coal technologies and nuclear power but the one mainly based on renewables? The heavy coal energy production might surprise, because as it was illustrated, Polish coal is now not very economically viable (imported coal is still cheaper), and when it comes to the investment in the CCS (Clean Carbon Storage) and nuclear energies, these investments are very expensive[37]; hence some of the funding could be spent on alternatives energy carries. Why this is not taking place? The attempt to deliver this reply is in the last chapter (conclusion – Chapter VIII).

Bohn speaks about different regulatory culture between some Member States and the EU which can be a reason why some of the European legislations and recommendations are not being transposed and followed by certain countries, at least, not in the same degree. The regulatory cultures have their roots in the different country's energy model[38]. Poland as per the author classification and now, also based on the information provided in Chapter III, can be allocated to the category of providing state. The main characteristic of this kind of model is that a state has the ownership over main companies and, through them, provides different kind of goods and services (Bohne 2011). All three strategies highlight that main energy companies will be under the government's responsibility with the Treasury of States being their largest shareholder. As per the K.Waltz realism theory, some states extend the competition on the market, meaning they are opened to new entrants, when other ones,

[37] The EU established, after Fukushima 2011, more radical rules when it comes to the safety measure that needs to be adopted in the case of energy generated through nuclear power plants. These regulations will impact electricity price of around 10% in Western Europe(Hayashi and Hughes 2013) and also in the Easter Europe.

[38] There is three type of state according to E. Bohne: enabling state (United Kingdom), providing state (France) and ensuring state (Germany). In enabling state power is distributed to the citizen, and the government has a controlling function, suppliers are private units. Providing state is a state that delivers main goods and services to their citizen and is doing so through the ownership over central utilities and leading companies (Polish example). Ensuring state is characterized by the fact that power and responsibilities are in the hand of both, citizen and the government, duties over public goods are common, and the policy is established and also transposed by both parties(Bohne 2011). This model goes also better with the federal structure of the German model with leading element in the form of a wide exchange of information and good communication flow between all governmental levels: regional, national, locals(Röttgen 2013). This kind of state (ensuring) as per Bohne definition, was describe by the former Federal Minister of Environment as less *"regulatory"* and less *"paternalistic"* and more market oriented and encouraging(Röttgen 2013) - contradictory to the Polish model.

narrow it (Waltz 1979). This is exactly what is happening in Poland. Why it is occurring, apart from the mentioned regulatory culture, what motives stand behind this kind of policy? What feelings on the state's level, influence Poland to be less opened to changes and the implementation of the European low carbon economy and energy model based on renewables? In sum, as per the central question of the thesis, why Poland develops different politics in the field of the EU energy and climate framework? These questions will be replied using the Lebow's theory lenses in the last chapter (Chapter VIII).

3.5 Introduction. Transposition of 2009/28/EC Directive in Poland: long way to distributed pro-consumer generation

As illustrated in the last section of this chapter, all three Strategic documents refer to the renewables energy development and the need of implementation of the appropriate support system to foster investment in alternative energy sources. According to the "*Polish Energy Strategy until 2030"* from 2009: *"The development of renewables energy is essential to achieve the basic goals of energy policy"*(Ministry of Economy, Nov.,2009, n.d.), in this context the document refers to the binding target (15% gross for Poland) agreed in the European Strategy (3x20) from 2009.The latest version of the "*Polish Energy Policy until 2050"*, from 2015, also highlights the realization of all three new targets of the EU set up in the European Strategy from 2014. The document refers to all three goals, admitting that the renewables energy's ones will be achieved through the implementation of the *"effective support system"*(Ministry of Energy, Aug.,2015, n.d.), which, as indicated above, will lead to the situation that until 2035 renewables technology in Poland will reach the *"economic maturity"* (Ministry of Energy, Aug.,2015, n.d.). Moreover, also the Strategy from 2014 speaks about the *"improvement of environment"* and *"Promotion of Polish new energy and environment technology"*(Polish Monitor, Jun., 2014, n.d.). According to the Strategy from 2009, promotion of development of alternative energy sources contributes to the energy independency having, at the same time, positive impacts on less develop rural region (Ministry of Economy, Nov.,2009, n.d.).

The second part of this chapter has two purposes. First, it is to demonstrate that all of these above plants do not have a direct translation in practice. In other words, the examples of the selected drafts law on renewables energy in Poland show that the government introduced

many legislative and administrative barriers that, in the end, successfully discouraged investors, pro-consumers to persuade any renewable energy's installations. Now, only some of the examples of the drafts laws were selected to present unusual "incidents" during the legislative process, which prove that the government intentionally block the development of distributed generation and, as a consequence, not accomplishing all goals related to renewables described in all three Strategic documents. What is more, this part of the chapter will demonstrate that state-controlled energy companies are the leading, most influential actors/units on the Polish energy market and that the government is defending their interest. This situation, in the end, contributes to the fact that Poland develops different climate and energy policy in the EU in comparison with Germany. What motives (the Lebow's psychological external and internal stimuli on the state level) cause that this situation is occurring in Poland and, in the end, contributes to the fact that Poland is a long – standing opponent of implementation of the more innovative low carbon energy and economy model? This model, in turn, would help to comply with the EU's climate and energy framework. This question will be replied in the conclusion part (Chapter VIII).

As mentioned in all analyzed Strategic documents, some large energy companies are state-controlled, and they are being the most dominant units (using the K.Waltz structural realism theory's wording) through, which Poland aims to accomplish the country energy strategy. In other words, these firms are the substantial "ingredients" in achieving the country energy mix. Hence, their interests are defended, and the established legislation strengthen their capability of monopolizing the energy structure in Poland. Again, as per structural realism theory, some actors are being "granted", by the government, more capabilities than others, which is the calculated policy that leads to control the competition on the market. As said, K.Waltz underlines that in the domestic policy some governments narrow the competition, when other governments, on the contrary, allow more actor to "flourish" on the market, here energy market (example - Germany and the market economy versus the polish centrally-planned model). Expressly, the selected examples of the drafts law on renewables energy show that the government limits the access to the energy market for new entrants (pro-consumers), even though, all three Strategy declare the development of renewables energy, micro-installations, distributed generation.

The second objective is to prove that, in Poland, the promotion of the development of renewables energy cannot be subscribed to any particular ideology of political parties. There

are already research that proved that left-wing's oriented parties are more willing to establish laws that foster the increase of the renewables energy then the right-wing's oriented ones (Biresselioglu and Zengin Karaibrahimoglu 2012). However, in Poland, the left-oriented party is not strong enough, meaning it does not have a majority in the parliament. The two largest parties that do have the most power in the Polish parliament, PiS and PO, fall under the category of conservative and rather liberal-conservative respectively. Hence, the influence of the left – wing party on the development of renewable energy law in Poland cannot be observed[39]. Also, the purpose of this chapter is not to perform such an analysis, because the hypothesis that aims to be defended is different. As said, the assumption is that the distinctive climate and energy policy of Poland and Germany are due to diverse and contrasting psychological motives detected on a state level. These motives have their roots, both in the past, and in the presence, meaning that they might also be shaped by the other state's current action/behavior/politics, here precisely energy strategy.

Now, as observed during the PiS and PO government[40], the same energy strategy was being followed (energy mix based mainly on fossil fuels and future nuclear power plants). That allows us to eliminate any correlation of development or no - development of renewables energy to the political ideology of these two parties. Having this argument rejected, that strengthens the reasonableness of the hypothesis that there must be some other *"higher"* motives on a country's psyche level that influence Polish energy and climate policy more than anything else. These are the psychological state's needs/desires/motives described in the Lebow's theory (Chapter V and VIII).

[39] That leaves room for further research. Also, worth underling here is the fact that the leader of SLD (left wing party) L.Miller expressed the opinion that the government should take less time in the adoption of the law on renewable energy. In his view, the quick adoption of the law on renewable energy would lead to the creation of new firms, new jobs, and the whole renewables industry(Gazeta Wyborcza, Apr.,2014, n.d.).That indeed could be an indication that maybe in Poland distributed generation, the entire renewables energy market, would have been more promoted if the left wing parties would have the majority in the parliament? Nonetheless, one statement, if not backup with concrete action, can only be an assumption that, like said, would require more research and observation if this party would be a ruling one in Poland.

[40] Since the renewable energy 2009/28/EC Directive and the climate and energy framework of the EU was established 2007(3x20) (in force from 2009) - there have not been a leading left-wing party in Poland.

As it was said in the introductory section, other state's policies are the external stimuli that have an impact on the other countries' behavior; hence on both, internal and foreign energy policy. For that reason, it is essential to demonstrate how the government approached the requirement of the transposition of the renewable energy directive 2009/28/EC to the national law. It is important to show that because of various reasons. First, this particular directive is a core legislative element when it comes to fulfillment of two primary goals of the both EU's climate and energy policy from 2009 and 2014 about the reduction of the GHGs (20% and 40%) and the share of renewables energy (20% and 27%). These targets are impossible to achieve until 2030 without the equal contribution and commitment of all the Member States of the EU. More, meeting these two above goal help to accomplish the other one: the departure from fossil fuel to the low-carbon energy and economic model. As the thesis is concentrated mainly on renewables energy (distributed generation) and the reduction of the GHGs emissions, the 3rd goal related to energy efficiency is being referred to, nonetheless, is not being developed in the same proportion like the others two. Furthermore, the foreign energy policy cannot be discussed without the internal policy as there is no clear border between one and another, especially in the case of the energy policy. Therefore, in this section it is described how the transposition of this particular 2009/28/EC Directive to the national law has been performed (the same it is done in the case of Germany, Chapter IV)

More, the internal and external policies cannot be treated separately not only because of the obvious reason that results from the Polish membership in the European structures, but also because *"The foreign policy of the state is its internal policies"* (Łoś-Nowak T., 1997). These two policies cannot be separated as they both have the same objective to achieve and the shared objectives connect them. Expressly, the same aim links foreign and internal policy (Łoś-Nowak T., 1997). Moreover, as said, the line that separates them became more blurred since the Polish membership in the EU. Also, as per Lebow's theory both internal and external stimuli (motives) have, in the end, impact on how Poland is accomplishing the climate and energy framework of the EU. Presenting some selected draft laws can help to detect some of the Lebow's motives on the internal level, which finally will contribute to the main question of the thesis.

Now, the problem and objection might occur when the legal requirements of the EU do not go in line, not only with the particular state's national interest (this argument is obvious and self-explanatory) but also, they might stand in the way of fulfilling the country's deeper psychological needs. In other words, the goal of some of the European legislation might be contradictory to the country's psychological desires aspire to be accomplished in the long time perspective. What is more, these EU's particular targets in the field of energy might be viewed as a reason that leads to the erosion of the core state's identity. However, as it will be explained later, and as it was mentioned above, state's identity is not the end product and can change when the interest change, or at least can change slightly, evaluate.

3.5.1 Introduction of the pro-consumer amendment to the law on renewable energy (February 2015)

The deadline for the implementation of the renewable energy directive 2009/28/EC in Poland, passed on 5 December 2010 (Directive2009/28/EC) and the Polish Parliament approved the separate Act on Renewable Energy with the 5 years delay, on 16th of January 2015(Polish Sejm,print No.2604, n.d.).On 11th of March 2015 the Act was signed by Polish President. This signature and the outcome of the law were considered to be one of the biggest success of the green community. Why? This particular version of law introduced the Feed – in Tariffs system for pro-consumers, for all renewables micro and small installations up to 10kW. This amendment was proposed already at the end of 2014 by the deputy Artur Bramora (Inst.Energ.Odn., 2016, n.d.), however, it became a part of the renewable energy law one year later.

Now, the attention needs to be drawn to the fact that Poland was among few countries in the European Union, where the Feed – in Tariffs scheme has still not been introduced. It was, in the end, considered to be adopted after 6 years since the moment the renewable energy directive 2009/28/EC entered into force. Notwithstanding, the irony of this introduction, celebrated among the green community and all private investors interested in generating and selling their energy, consists of the fact that it has never actually entered into force.

Before explaining why, it should be underlined that the Feed-in Tariffs is one of the most desired financial mechanism by private investors, especially in the first phase of investment.

It is commonly known, that this particular scheme introduces the most investment friendly environment because a price is guaranteed, what means it does not depend on the market condition, thus on market price. Specifically, the guaranteed tariffs immensely mitigate the risk related to the smooth running of the project, especially, as said, in the fist investment phase.

Many types of research have been already done regarding the positive aspect of FiT, and one of them related to so-called volume risk. It means that the grid operator has to connect all the renewables electricity to its network (Mitchell, Bauknecht, and Connor 2006).Furthermore, the fact that this particular financial support mechanism was introduced already in 2009 in 19th Member States of the EU (Büsgen and Dürrschmidt 2009) can be a compelling testimony of it effectiveness at the time of promotion energy from alternative sources. Spain and Germany, by introducing FiT became first leaders in renewable electricity in the EU (García-Alvarez and Mariz-Pérez 2012). In investors' opinion, this kind of support mechanism is also perceived to be the most favorable one because of both, the stable tariffs and the long period of duration of the guaranteed price (Jenner, Groba, and Indvik 2013). Also, in the view of the European Commission, this type of scheme is the most suitable for the promotion of renewable electricity (Eur-lex, 2008, n.d.). Nevertheless and like it was indicated above 2009/28/EC Directive does not impose any particular supportive mechanism, only states that to encourage investors the selected financial support system needs to be effective (Directive2009/28/EC, n.d.).

As mentioned above, the Feed – in Tariffs finally has not entered into the Polish jurisdiction. Short after the new election, when the Conservative Party PiS came to power, the group of PiS's deputies proposed the amendment to the first separate Act on Renewable Energy Source (Rzecz.Posp.,Dec.,2015, n.d.) signed previously, as mentioned, by President on 11th of March 2015. As per the official justification, the aim of the amendment was to postpone the introduction of FiT until 1st of July 2016, instead of the 1st of January, as per the previously approved Act (Polish President, Dec.,2015, n.d.).

The reason for postponing the previously approved FiT scheme for pro-consumers and auction system introduced for renewables installations that before were receiving so-called green certificates (Rzecz.Posp.,Dec.,2015, n.d.) was explained in the official justification. It

referred to the need of *"further impact assessment"*[41] requirements, together with the additional investigation, regarding the construction of wind power plants (Polish President, Dec.,2015, n.d.). In the end, in 2016 so-called *"Anti-wind law"*(Law Journal,Jul.,2016, n.d.) was introduced (described in more detailed below).

Also, what it should be heightened here is the fact that the proposed FiT support system was being offered with the so-called cap limit. That means the fixed priced is guaranteed until the total power produced in the installations up to 3kW will excel/surpass 300 MW and 500 MW in the facilities among the range 3-10 kW per year (Journal of the Polish Republic,Apr.,2015, n.d.).

Now, what is interesting and, at the same time, surprising to notice is the fact that this cap limits was introduced already in the relatively young, not to say first phase of the developing of renewable energy market in Poland. On the contrary, in Germany, in the first phase, there was no such limitation established. The cap limit, however, has been introduced to the law in the later stage of development so that the renewable energy market could be better controlled. Nonetheless, this supervisor and limitation had a different aim in Germany (details in Chapter IV). It was introduced not to limit the numbers of pro consumers' installations and renewables electricity, but rather to balance the increase of this electricity produced by different renewable energy sources (the wind, solar, etc), so the difference in balance between power from the wind is not so big when comparing it to electricity generated by photovoltaic for example.

Also, according to the Act on Renewable Energy Sources from 20th of February 2015 the duration of the proposed guaranteed price was "only" 15 years (Journal of the Polish Republic,Apr.,2015, n.d.), "only", because again, when comparing it with the German legislation, the fixed prices have liveliness of 20 years.

[41] This assessment has been already prepared by the Institute for Renewable Energy (founded in 2001 in Warsaw), which is the first private research Institute specialized in the renewable energy field and also in a technical, political and economic analysis. It is known in Poland for it extensive know-how in the field of renewables energy. According to the assessment, the increase in price from renewables energy installation based on the FiT system would be in 550 million Polish złotych (Inst.Energ.Odn., 2016, n.d.), which comparing to the funding planning to be spent on the new coal power plants (Annex II) is not very high sum, as the other power plants calculation go in billion, not in millions.

As it was said, some incidents will be briefly mentioned to prove that the promotion of distributed generation cannot be linked to any of the two largest parties in Poland (PiS or PO) and also, to prove that the government intentionally hamper the development of pro-consumers' installations. These "incident" for example took placed during the short time-frame when the mentioned pro-consumer amendment has still not been approved: since 16th of January 2015 when the Parliament passed the Act of Renewable Energy until the President of Poland signed it on 11th of March 2015(Inst.Energ.Odn., 2016, n.d.), (Polish Sejm,print No.2604, n.d.).

After the Parliament on 16th of January 2015 approved the pro-consumer amendment, the representatives of the Ministry of Economics, on behalf of the government, during the session of the Senate Commission of National Economy Committee and the Committee on Environment, proposed replaced this favorable amendment for pro-consumer with the so called *"compromise"* (Inst.Energ.Odn., 2016, n.d.). "Compromise" as the proposed agreement was aim to be more satisfactory to all the parties involved. According to this new proposition, the surplus energy generated by micro and small installations was not going to be sold, as per previous pro-consumer amendment, for 80% of the average price from the last year, but for 210% (Inst.Energ.Odn., 2016, n.d.). As noted by the experts from The Institute for Renewable Energy, this proposition did not have any *"economic rational"* as it increased 3 times price over 1 night (Inst.Energ.Odn., 2016). The question that arose now is: what are the possibilities that so expensive electricity could be purchased? And how the price can rise 3 times in such a shot timeframe?

Also, this incident can be more understood using the K.Waltz's structural realism theory premise, which says as follow: "*The leaders of organizations, and political leaders preeminently, are not masters of the matters their organizations deal with"*(Waltz 1979).

Finally, the "compromise" did not become part of the renewable energy law as it was rejected on 20th of February 2015, during the voting in the Parliament. The Act on Renewable Energy Sources was approved on 20th of February 2015 with the Feed – in Tariff pro-consumer amendment (Polish Sejm,print No.2604), which ironically, as already said above, has never entered into force. It did not become an integral, so awaited by pro-consumers, part of the Polish jurisdiction, because, as explained already, PiS party proposed

the amendment of this Act on Renewable Energy from 20th of February 2015, which was signed by President Andrzej Duda (Polish President, Dec.,2015, n.d.).

It is interesting to notice that during the voting on the pro-consumer amendment, it was PiS and other party (PLS) that was voting for not adopting so called "compromise" and PO was in favor of it (Inst.Energ.Odn., 2016). That incident, together with quoted already some of the statement of the representative of both parties (Beata Szydł(PiS), Ewa Kopacz (PO), Donal Tusk (PO)), proved that promotion of the development or not of the renewable energy sources, cannot be, indeed, assigned to any particular political program or/and ideology. However as stated, we cannot observe "what if" result if the majority in the Polish Sejm (the name of the Polish Parliament) would have the left wing party.

Why did the pro-consumer amendment not finally enter into force? An immense influence on it had the state-controlled companies operating in the Polish energy sector supported by, in this particular legislative situation by the Ministry of Economy (Inst.Energ.Odn., 2016). Since years, those large enterprises successfully have been blocking the development of distributed generation. With high probability, these companies aim now to prevent the same situation that took place in the renewable sector in German, where in 2012 88.1% of the renewables energy market were dominated by the others actors but not by the big energy companies (Richter 2013) (in the next chapter it is exactly listed which other actors took over the market in Germany).In 2014, 48% of solar energy for examples was produced by citizens and they also had, in that year, ownership over wind energy - 50.4%(Yildiz 2014). The representatives of the large German utilities admitted that they realized to late about the real potential of the small investment renewables projects, owned by citizen, to overtake the energy market in Germany(Hager 2015).

That also explained why in the first proposed pro-consumer amendment, the cap limit of the total 800MW (Journal of the Polish Republic,Apr.,2015) for the electricity generated from renewables, had been set up in the first place. Expressly, in Poland, following the lesson learned from Germany, the potential of pro-consumers have not been underestimated in the first phase of development of micro and small installations. According to the survey from 2016 done by Center for Social Opinion Research, 72 % of respondent would like to produce their own heat, and 46% their own electricity(Gwiazda M.,2016, n.d.). Also according to the Climate Organization around 50% of Poles would like to generated their own electricity and

heat(Inst.Energ.Odn.,Jan.,2015, n.d.). In other words, the potential of pro-consumers for overtaking significant shares of the energy market in Poland is serious and the state-controlled companies, together with the government, seem to be well aware of this fact.

Now, in this context, it is worth mentioning, the letter (Woszczyk M.,Jan.,2015, n.d.) that was sent by M.Woszczy, who is the Chairman of the Board of one of the most dominant energy firm in Poland - PGE (Polish Energy Group). The letter can serve as a proof that, indeed, pro-consumers' potential has not been, and, still is not, underestimated in Poland. The letter, regarding the introduction of the mentioned pro-consumer amendment, was addressed to the Committee on National Economy and the Committee on the Environment (Woszczyk M.,Jan.,2015, n.d.). The fact that it made an explicit reference to the German energy market only strengthens the hypothesis that micro and small installations in Poland are also perceived as a similar threat like there were, after many years (not in the 90's) in Germany.

We can read in the letter: *The dynamic development of the pro-consumer sector initiated with RES Act as adopted by the Parliament would mean a drastic drop in consumption of hard coal and dramatic situations of coal power plants, which run out of funds for the necessary investments - as it currently happens in Germany. For example, the very likely scenario, it will be created 10 GW of photovoltaic power (in Germany during a timeframe 2010-2012 indulged for use approx. 7.5 GW per year) that would mean a decrease in coal consumption by approx. 5 million tons per year* (Woszczyk M.,Jan.,2015).

Again, according to the Act on Renewable Energy approved on 20th of February 2015 the established cap limit for pro-consumers installation was at 800 WM per year (Journal of the Polish Republic,Apr.,2015) and not 10 GW as per the above letter. In other words, the information presented in the official letter to the Committee on National Economy and the Committee on the Environment was incorrect. Automatically, it is occurring a need for referring to the below Lebow's assumption to better understand the legislative process in case of the pro-consumer amendment: *"Document sometimes provide insight into the minds of policymakers and their advisors, and on other occasions are misleadings"*(Lebow 2008). This Lebow's statement will be referred to more frequently in the below part of this chapter, in the context of the different proposed draft laws on renewable energy.

It seems that the Lebow's description of "advisors" matches in this context entirely, especially when taking into account the fact that The Treasury of State is the major shareholder in the Polish Energy Group S.A (PGE), its shares account for 57.39% (PGE, Shares, n.d.). The other actor that resulted in having equally strong persuasive power in the whole process was the Polish Committee for Electricity. It also lobbied against the pro-consumer amendment (Inst.Energ.Odn., 2016). In this context, it is worth mentioning that the Committee is composed of other large Polish energy companies such as the mentioned already PGE S.A, Energa, Tauron, Enea. The shares of Treasury of States in those groups, starting from Energa are: 51.52%(Energa SA.,Shares, n.d.), 30. 06%[42] (Tauron,Shares,2017), 51.5%(Enea,Share, n.d.). Furthermore, one cannot omit the fact that these companies produce mainly energy from coal (see Annex I and Annex II).

As per the structural realism theory of K.Waltz some of the most powerful actors might have a significant influence and, therefore, can dictate the outcome of the regulation, especially when it can be against they future profits because *"Firm, as economic entities, want to increase profits"* (Waltz 1979). As it was observed, some of the actors are capable of influence the decisions because the structure is defined mainly by the most powerful, dominant players (Waltz 1979); hence some of them cannot or, have more difficulties, to shape the energy structure. Again, as per the structural realism assumption *"(…) structures are defined not by all of the actors that flourish within them but by the major ones"*(Waltz 1979). As per K.Waltz the only way the structure can be re-modeled is the structural change. K. Waltz stresses that *"(…)as the structure is defined by the arrangement of its parts(…)"* (here different energy units, also pro-consumers) then the *"(…)only changes of arrangement are structural changes"*(Waltz 1979). The appearance of pro-consumers on the energy market in Poland, in equal number, as it was/is observed in Germany, would cause the refurbishment and erosion of the current Polish energy structure. It would happen because the arrangement between pro-consumers, or better said, between citizens that would be able, on a large scale[43], to produce their own energy, and between the state-controlled energy

[42] Although, the Treasury of State is not the principal shareholder in Tauron Company having "only" 30.06%, KGHM Company has 54.49% shares and the Treasury of State has around 32% of shares in KGHM(KGHM, Shares).

[43] As per the Greenpeace report the potential of renewables energy sources in Poland, in 2011, was used only in 7.8%. The report includes the possible scenario for the year 2050 where the entire country's energy could be produced in 88% from renewables energy sources

companies, would change. That in turn, would require from the government the creation of new ways of maintaining the GDP on the same level. As it was said, around the whole mining industry there has been established, the whole system that remains the connected vessels, as the mining industry contributes to many other industries (heath system, insurance, etc.,) (Czaja P., Kwaśniewski K., 2016, n.d.).

Now, allowing pro-consumers to *"flourish"*(Waltz 1979) on the energy market in Poland as new entrants would be equivalent to losing control over energy by the government. That would thus automatically deprive the country the tool (control) that helps to reach the implementation, hidden at first glance, invisible, immeasurable state's psychological needs (described in Chapter VIII). For that reason, pro-consumers are seen as a threat.

To sum up the above situation, we could ask the question: how can be named the legislations process during which so desirable Feed-in Tariffs system almost started to function in the Polish jurisdiction, but then, in the end, was canceled? As scholars have already noticed, sometimes it might occur that the financial support mechanism for alternatives energy sources experiences so-called *"stop and go"* policies (Negro, Alkemade, and Hekkert 2012). The term describes the situation when the support scheme has different tariffs, or the fixed price agreed before, has fewer years of duration than primarily discussed. In sum, when there is some drastic change in the policy. The *"stop and go policy"* was being detected in the Netherlands, where subsidies for renewables were suspended and re-established in the new form (Negro, Alkemade, and Hekkert 2012). How then, the policy in Poland, that took place in the case of the pro-consumer amendment that has never become part of the Polish jurisdiction, can be named? The *"give and take back" policy?* Or better said, *"approved but never implemented policy"*?

3.6 Examples of selected draft version of the draft Law on Renewable Energy

The below section briefly present some of proposed (during the timeframe 2009-2015) drafts law on renewable energy in Poland. The selected drafts law version were issued in different

(Greenpeace,Oct.,2013, n.d.), meaning similar like planned in Germany – 80% for the same year.

years (2011,2012,2013,2015 until 2017 – current status) to see how and if there has been any change in the paradigm towards the low carbon energy model based on distributed generation. The aim of this section is to show that the government has been, intentionally, (and still is), through legislative and administrative barriers, impeding the development of distributed generation in Poland. In the previous section it was demonstrated how some of the leading players could influence the outcome of the law; nonetheless it would not be possible without the support of the government.
The mentioned example regarding the introduction of *"compromise"* was the idea of the representative of the Ministry of Economics (Inst.Energ.Odn., 2016, n.d.).

As of now, the Feed-in Tariff system is not a part of the Polish renewable energy law. As indicated above, it had been postponed and finally, was going to enter into force on 1st of July 2016 (Polish President, Dec.,2015, n.d.), however that did not happened as promised.

However, it is interesting to illustrate and analyze the legislation process and different version of the draft law, as it would help to detect, in the name of which terms, the government is farming the no-development of renewable energy in Poland. That could give an additional indication of the hidden motives (the psychological Lebow's motives on a state level) that stand behind the Polish energy strategy.

Moreover, the below draft versions proved that the creation of the supportive mechanism (for the pro-consumer) and the establishment of the simple and transparent law, is not the top priority for the Polish government. As mentioned already in the first section of this chapter, indeed, renewables energy are only an *"element"*, nonetheless not *"an essential"* one *"(...)of improving energy security"* as stated in the official strategic document *"Polish Energy Policy until 2030"* (Ministry of Economy, Nov.,2009, n.d.).

As per *"Polish Energy Policy until 2050"* the development of renewables as *"an essential part of electric system"* (Ministry of Energy, Aug.,2015, n.d.) will depend, mainly, on *"(...)the progress in achieving economic maturity by individual renewable energy sources technologies and use of the national potential"*(Ministry of Energy, Aug.,2015). As indicated, the document speaks about the *"economic maturity"* of renewables before 2035, which maturity will allow them to *"compete with the conventional energy without any*

support system" (Ministry of Energy, Aug.,2015). As it will be demonstrated below, based on selected case studies, the government does not establish enough support, especially, taking into consideration the real potential of alternative sources in Poland, as per already quoted research prepared by Greenpeace (Greenpeace,Oct.,2013, n.d.). Also many optimistic publications indicated the real potential of renewables energy in Poland, have been done by the Institute for Renewable Energy, the Institute that many times has prepared assessments for the Polish government.

The government is also well aware of this potential, as in the same document stresses that *"*(...)*the Polish renewable energy sector should develop specialized technology based on identified national potential of the individual sources (wind, biomass, biogas, geothermal, solar energy), allowing to maximize the benefits from the development of renewable energy technologies in the national economy scale*"(Ministry of Energy, Aug.,2015, n.d.).

Now, the *"Polish Energy Policy until 2050"* was issued in August and in December 2015 President signed the amendment to the Law on Renewable Energy from 20th of February 2015 which caused that, in the end, the Feed-in Tariff support system did not enter into force. As it was already indicated, this financial scheme is considered the most favorable one among investors and, without a doubt, as it was already observed, it helped to increase the share of renewable energy in the total energy's production in many European countries. Hence, the Feed-in Tariff is the most common tool used in Europe to achieve the economical maturity of renewables. This maturity is also the aim for the Polish government as stated in the *"Polish Energy until 2050"* (Ministry of Energy, Aug.,2015, n.d.), and without FiT, the optimistic scenario to make renewable economically independent, that could compete with conventional power, will not be accomplished.

Selected below drafts law and, finally, not introduction of the Feed – in Tariffs, created in Poland so –called *"valley of death"* (Negro, Alkemade, and Hekkert 2012), which refers to the 1st phase in the product/project life chain before a certain technology enter into the market. The stable (guaranteed price) support system over the long period of time, helps to mitigate the risk and achieve the market success. Country like Germany, by introducing from the beginning the FiT mechanism, as it will be presented in Chapter IV, managed to achieve, in a very short time, the immense increase of renewable electricity.

3.6.1 I version of the draft law on renewable energy source: 20.12.2011

Already in the first justification for the first draft law on renewable energy, it can be detected the unwillingness of the governmental authorities to introduce such financial subsidies that would drastically foster the development of renewables energies. This version, already at the beginning, underlines that, in a short time horizon, it is impossible to change the country's energy mix. Hence, we can interpret this as the government does not foresee the change of the county's energy model. This reluctance is framed in terms of very time - consuming process that additionally, require well designed political and economic strategy to reach low-carbon energy model (Legislation, Dec.,2011).

The conclusion that can be drawn, assessing the creation of the renewable energy law in Poland, having now the time perspective, is purposefully design time - consuming process. What does that mean? The 1st separate Act on Renewable Energy Law in Poland was approved by Polish parliament in 2015 and the deadline, as per 2009/28/EC Directive was, as said 2010. What is more, until now, 2017, the FiT is still not a part of the Polish legal system. The reason for that, as mentioned already, is that the government aims to maintain the centralized country's energy model controlled through the main energy companies.

As indicated above, according to the structural realism theory, the appearance of the new entrants (pro-consumers), if they would have been granted new capabilities would have a significant impact on the energy market in Poland - energy structure. More, in the long run perspective, it would erode the current energy model, as *"The only remedy for a strong effect is a structural change"* (Waltz 1979). The appearance of the new entrants can be definitely perceives as a *"strong effect"*. For that reason, the government, through the legislation, aims to preserve the old status quo of energy model, without many independent units (K.Waltz wording) capable of generating their own energy. The first draft law is the perfect example of this.

Directive 2009/28/EC itself already in the preamble recommends the adequate support system, especially in the early fist steps of development of the renewable energy technology.

At the same time, it also draws attention to the need of changing the paradigm towards more decentralize model based on alternative energy sources. This model, as per 2009/28/EC Directive, contributes to one country's energy independency increasing the participation of the green local community (Directive2009/28/EC). All of these aspects are recognized and listed as aims in all the three Polish official Strategic documents.

Although, as per mentioned justification the government declared that the investors' confidence could be strengthened through the introduction of efficient support mechanism (Legislation, Dec.,2011, n.d.), the first draft law did not comply with this objective and it was criticized by many organizations operating in the green sector. Although the main goal of the law was to transpose 2009/28/EC Directive, as noticed by the Organization Client Earth, Climate Organization[44], CEE Bankwatch Network, Greenpeace Poland, the District Mazowiecki Polish Ecological Club, the Institute of Sustainable Development, the 1st draft did not comply with the most important articles of the renewable energy directive 2009/28/EC (Climate Coalition, Dec.,2011, n.d.).

The main critique related to the fact that the draft law was not enough concrete, meaning it did not establish the exact quantitative targets. Neither it did name the public authorities that would be responsible for implementation of these clearly specified goals (Climate Coalition, Dec. 2011). The Article 4 of 2008/29/EC Directive underlines that these targets should be fulfilled, through the close cooperation with the local, regional and national authorities (Directive2009/28/EC).

As noticed, the same targets were clearly established in the case of energy efficiency (9% by 2016) (Climate Coalition, Dec.,2011).

The different treatment of renewable energy and energy efficiency, noticeable already in the case of specifying the exact, quantitative target, should not surprise as in both described official Strategic documents (from 2009 and 2014) the energy efficiency is being placed on the top of the Polish government's priorities' pyramid (Ministry of Economy, Nov.,2009, n.d.), (Polish Monitor, Jun., 2014, n.d.). Also, as per *"Polish Energy Policy until 2050"*, the energy efficiency goal will be achieved, mainly, by constructing new, equipped with the innovative technologies, fired coal plants and re-modernization of the transmission and

[44] Climate Organization grouped other 23 non-governmental organizations operating in the sector of renewable energy or related ones.

distribution networks. Also, cogeneration will play a significant role in contributing to the realization of the energy efficiency goal(Ministry of Energy, Aug.,2015, n.d.).

Moreover, the next critique relates to the pricing(Climate Coalition, Dec.,2011).The 2009/28/EC Directive does not only recommend choosing an adequate supportive financial mechanism to promote the development of renewables energy sources, but also, it gives a specification related to the renewables electricity price. According to the Article 2 of 2009/28/EC Directive, the established price should be set up to such a level that it will be encouraging for investors to sell it. In other words, the share of renewables in the total energy production can be achieved through: decrease of *"(...) the cost of that energy, increasing the price at which it can be sold"* (Directive2009/28/EC). Additional incentives can be implemented through different financial help in any sort such as *"investment aid", "tax exemptions or reduction, tax refunds", "direct price support schemes including feed-in tariffs and premium payments"* (Directive2009/28/EC), and also an obligatory increase of the energy that operator of the network needs to accept (Directive2009/28/EC). Nonetheless, any of these additional aids have not been introduced in the 1st draft law on renewable energy(Climate Coalition, Dec.,2011).

Now, as per the solution proposed in this draft, the price offered to investors (pro-consumers) was set up at the level of 70% from the last year, which, as pointed by these organizations worsen the conditions that have already existed (Climate Coalition, Dec.,2011). According to the Polish energy law from 1997 (the Article 9a. 6), the purchase of renewable electricity generated in micro-installations or any other renewable's installations was obligatory on the average selling price of electricity that was established in the previous calendar year. The proposed minimum 70% means worst pricing for investors (Climate Coalition, Dec.,2011). Also, this version of the law only introduced the obligatory purchase of renewable electricity from micro-installations and did not refer to other installations that generated more power (Climate Coalition, Dec.,2011, n.d.). The Directive 2009/28/EC does not specify any restriction related to the size of renewable installations (Directive2009/28/EC).

In the light of the above, it is interesting to see how the government presented the proposed support system in the official justification for this draft law. The government claimed that, in nature, the proposed solution, is similar to the Feed - in Tariff: *"Revenues from the production of energy from renewable sources will be as predictable and reliable as support*

systems based on a system of the Feed-in Tariff"(Legislation, Dec.,2011, n.d.).

What is more, the 1st draft law not only did not introduce any financial incentives, as it was declared in the country energy Strategy from 2009 *("tax relief and exemption")*(Ministry of Economy, Nov.,2009, n.d.), but neither did simplify administrative obstacles (Climate Coalition, Dec.,2011), as recommended in the Article 13 *"simplified and less burdensome authorization procedures"* of 2009/28/EC Directive (Directive2009/28/EC).For example, the requirement of obtaining permission for the construction of micro-installations was also not abolished, what make all the administrative procedures even more complicated (Climate Coalition, Dec.,2011).

Additionally, not only the purchase of the energy from renewable energy was not guaranteed but also, there was no introduction of preferential, guaranteed access to energy networks for installations producing energy from renewable sources. (Climate Coalition, Dec.,2011).In other words, Article 16 of 2009/28/EC Directive was not implemented:

"Member States shall also provide for either priority access or guaranteed access to the grid system of electricity produced from renewable energy sources" (Directive2009/28/EC).

As per the 1st draft bill, the network operator can refuse the access to the system due to the lack of the economic conditions. As noticed by the group of the Polish organizations this legal provision is contradictory with 2003/54/EC Directive concerning common rules for the internal energy market power and with the renewable energy directive 2009/28/EC. None of them refer to the possibility of denying the access to the network due to failure to meet the *"economic conditions"* (Climate Coalition, Dec.,2011).

Moreover, the support for co-firing coal with biomass has still been maintained (Climate Coalition, Dec.,2011), as it was also in all draft law and until now - the new amended version (June 2016) of the law on renewables energy approved in 20th of 2015 kept as well the support for biomass.

3.6.2 II Version of the draft law on renewable energy – from October 2012

The next draft law proposed in October 2012 is the 2nd very illustrative example of the *"give and back policy"* or, better said, the *"proposed and never implemented policy".*

On the contrary to the first one, this version provided a well-designed foundation, in the form of the Feed - in Traffic, for renewables energy technology to obtain, in the long run, perspective, the *"economic maturity"*(Ministry of Energy, Aug.,2015, n.d.). The proposed FiT referred to all source of renewables energy(RCL, Project, Oct.,2012, n.d.).

As per the official justification for this draft bill, this proposed financial mechanism would help to transpose the core requirement of the renewable energy 2009/28/EC Directive to the Polish law. The legal provisions included in this version aimed to foster the development of distributed generation. Moreover, this official rationale stated that the creation of the separate law on renewable energy is needed because until now (the year 2012), there has been no separate law of the statutory act rank that would be strictly dedicated to renewable energy. The justification even lists the number of other European Countries: France, Austria, Germany, which already have separate Act on Renewables Energy. What is more, it is admitted in the same justification that the Feed – in Tariffs mechanism is the most mature supportive financial scheme that positively influences the investors' confidence. Also, this system is easy to "read" what also facilitate all the investment processes (Justification,Oct.,2012, n.d.).

Furthermore, it is interesting to read, that according to the official assessment, issued for this particular draft law, the government underlined that the Feed – in Tariffs system has been already introduced in 20 out of 27 Member States of the EU. Also, the FiT mechanism has been applied around the world, in such locations as China, Australia, Japan, Canada, the Unites States of America, India and many others. What is more, the assessment includes the calculation example of the FiT in the UK Austria, Germany and Dania. The most important fact is that this evaluation includes a very optimistic scenario regarding renewable energy installations: according to the Ministry of Economy until 2027 renewable energy facilities will be able to function independently without any additional support system (RCL, Project, Oct.,2012, n.d.) so even earlier than foreseen in the *"Polish Energy Policy until 2050"*(issued 2015), which document, as said, pointed out 2035 year as the final maturity

date for renewables energy installations in Poland (Ministry of Energy, Aug.,2015, n.d.).

As per the assessment, the total power generated from micro and small renewable installations until 2020 would reach 908.55 MW (the evaluation includes all type of renewable energy sources: biogas plants, photovoltaic, wind farms, water)(RCL, Project, Oct.,2012). Having in mind, that already in 1995 in Germany, the total power generated, only from wind farm, was 1.100MW then this amount is not impressive (Lauber and Mez 2006).

However, this total sum of 908.55 MW is not impressive if comparing it to the example mentioned above, nonetheless, without a doubt, the introduction of the FiT always means granting new entrants (pro-consumers) new capacity using the wording of the structure realism theory of K.Waltz (Waltz 1979).

With this kind law provision, if implemented, the energy structure would start to change, and that change would be even more noticeable for state-controlled companies because, with this draft law, the number of green certificates would decrease (RCL, Project, Oct.,2012, n.d.). And as it was indicated above already, these companies received lots of profits from the green certificates (the Certificate of Origin) for the process of co-firing biomass with coal(Inst.Energ.Odn., 2016, n.d.). For that reason, and as underlined by the Institute for Renewable Energy this particular legal provision of the draft law would result to be very *"unfriendly"* and *"disadvantageous"* for the state-owned companies (Inst.Energ.Odn., 2016, n.d.).

This practice, that benefited only the state-controlled energy companies, has been maintained since 2005. Precisely in this year, the Certificates of Origin were introduced to generate the production of renewables electricity and comply with the previous renewable energy 2001/77/EC Directive that repealed 2009/28/EC Directive (European Commission, Aug.,2016, n.d.). Thanks to this process from 2005 until 2012 there have been a significant increased in renewables energy from 2.58% – 10.6% (European Commission, Aug. 2016). What can surprise is the fact that almost all the draft laws, as mentioned, kept the support for biomass co-incineration with coal, decreasing subsidies but still, the support has not been suspended.

Also, as per the indicated report prepared in 2014 by the Governmental Energy Regulatory Office, there are plans of withdrawing the process of biomass co-firing with hard coal until

2028 (Biuletyn, Nov.,2014, nr 4 (90), n.d.).

In 2013 (August) the European Commission received the official objection regarding this practice (unreasonable state aid), which was registered under the case SA.37224 (2013/CP) Poland CO system for co-firing coal plants (European Commission, Aug.,2016). After having assessed and analyzed the data provided on 15th of July 2014 by four Polish organizations operating in the field of renewable energy, the European Commission gave the opinion. In the EU's view, the Certificate of Origins, that have been using to support this kind of renewables (co-firing), breached the Article 108 (3) of the Treaty of the Functioning of the European Union (TFEU)(European Commission, Aug.,2016).

This particular article refers to the practices that are not in line with the internal market rules. The same Article 108 (3) also relates to the Article 107 (2), which specifies the cases when the state aid is considered to have no discriminatory character; hence, is compatible with the internal market rules. However, in this particular case, there was a breach of state aid, meaning that the Certificates of Origin granted for the co-firing biomass with coal have been misused and had discriminatory character (European Commission, Aug.,2016).

In the light of the above, when, in the end, this draft law did not enter into force, it cannot surprise that this kind of situation and the governmental practice negatively influences the investors' confidence and more, impacted also trust towards their own government. The green community[45] simply expressed that they feel *"cheated"* (Polish Sejm, Sep.,2014, n.d.)., because their civil rights for participating in building the country energy security, through distributed generation that significantly impacts protection of the environment, is not respected. Around 58% of Polish people reassure their support for the renewable energy: *"We demand the preparation of the law which is subject to public consultations and not that one which has been prepared in the comfort of offices of lobbyists carbon"*(Polish Sejm, Sep.,2014, n.d.).

Also, we can now refer to the Polish Constitution, which, as per the structural realism theory describes on the domestic level *"some part of the arrangement"* between units/actors (here pro-consumers, citizen). In other words, political structure (here energy structure) is defined

[45] The "green" community refers to all private investors that would like to generated their own energy from micro and small installations, companies that operate in the sector, non-governmental organizations, farmers.

by the arrangement between these actors/units. Nonetheless, what K.Waltz also stressed is that *"(...) political structures as they develop are not identical with formal constitutions"*(Waltz 1979). What does it mean in this context? Although, according to the Article 74 of the Polish Constitution *"Public authorities shall pursue policies ensuring the ecological security of current and future generations"* (Polish Constitution,Apr.,1997, n.d.) and, the same article points that *"Public authorities support the activities of citizens to protect and improve the state of the environment"* (Polish Constitution,Apr.,1997, n.d.) these provisions have not been accomplished. The government did not support willingness and interest of the pro-consumers, citizens to invest and develop renewables electricity that would protect and improve the environment of the country as per the Polish Constitution. Expressly, because of this fact, the arrangement among actors in the energy structure is *"not identical with formal constitution"* (Polish Constitution,Apr.,1997, n.d.), meaning it can be claimed that, in this context, the provision of the Polish Constitution has not being fulfilled.

Now, if this draft version would have finally entered into force, that would change the relations between pro-consumers and big energy firms in Poland. As said, the state-controlled companies would lose a part of market shares. Again, as in the case of the pro-consumer amendment from 2015, the strong lobby of The Polish Committee of Energy[46], with the support received from Ministry of Economy, influenced that, in the end, this law finally had not become part of the Polish jurisdiction. An entirely different law, that mostly benefited the state-controlled companies, had been proposed – a new version from 12th of November 2013(Inst.Energ.Odn., 2016).

3.6.3 IV version of the draft law on renewable energy - 12 of November 2013

The new draft law on renewable energy from 12th of November 2013 offered to introduce different financial scheme – auction system, instead of the previously recommended the Feed-in Tariffs mechanism. The auction system applied to all the installations in power range

[46] Polish Committee of Electricity grouped the biggest Polish state-controlled companies from energy sector, examples: Tauron, Enea, Energa, PGE (Polish Energy Group). The main aim of the Committee is*"(...)shaping of rational, industrial-friendly regulatory environment, both in Poland and in the European Commission"*. Moreover, as per the official website of the Committee *"(...)we cooperate with the public administration through consulting legal acts and initiatives concerning industry operation*"(PKEE 2017).

from more than 40 MW to the less than 200MW. Those bidders who were offered the lowest price for electricity could have the guaranteed price for the next 15 years (Draft Law, Nov.,2013). Now, if the price is offered at the lowest possible level, then this provision of draft law did not fully comply with the Article 2 of 2009/28/EC Directive. As mentioned above, it refers to the need for establishing the price of electricity on the level that it would be encouraging for investors (Directive2009/28/EC). As it is commonly know, the auction system is less favorable support scheme (in comparison with FiT) when it comes to promotion of renewable energy, especially in its early stage.

Also, the auctioning system, in the form it was structured in the draft law from 12th of November 2013, required to follow a very time–consuming preparatory process. As per the Articles 76 point 6 the whole prequalification process of the auction was very bureaucratic in its nature as many different types of documents needed to be presented beforehand.[47] Now, one of the most controversial document that has to be delivered was a copy of the agreement about the *"interconnection of installations from renewable energy sources to the transmission or distribution network"* (Draft Law, Nov.,2013). This particular provision was question because, both *"transmission or distribution networks"* are strictly related to the government. As already mentioned in *"The Polish Energy Policy until 2030"*, *"transmission network"* - PSE (Polish Power Grid – Operator) is under the full responsibility of the government (Ministry of Economy, Nov.,2009). Also, a per the information from the official website of PSE is *"a wholly-owned state treasury"* (PSE,Shares). A similar situation is in the case of the *"Distribution network"* as it is owned by the main energy companies: Tauron, Enea, Energa, PGE (The Treasury of State,Nov.,2013, n.d.). Now, as noticed by the expert, G.Wiśniewski these operators are not independent units and, whether or not, an investor

[47] 1) Document that proves the admissibility of the location of the area covered by the planned investment, 2) a copy of agreement about the interconnection of installations from renewable energy sources to the transmission or distribution network, 3) a copy of the final decision on the construction permit issued for the planned installation of renewable sources of energy or upgraded, if it is required by the building regulations; 4) a copy of the document confirming contributing the deposit to the President of the Energy Regulatory Office or confirming the establishment of a bank or insurance guarantee in the amount of PLN 30 per 1 kW of the planned installed capacity of the proposed installation;5) The schedule of physical and financial implementation of the planned construction or upgrading of renewable energy sources;6) a copy of the certificate issued by a financial institution with a credit for the manufacturer to the construction installation of renewable sources of energy or its modernization(Draft Law, Nov.,2013).

should be granted access to the network – this particular subject should be regulated by law (Wiśniewski G.,Nov.,2013) and not depends on the decisions of the above not independent actors.

Moreover, this draft law did not comply with the Article 16 and Article 13 of 2009/28/EC Directive. According to the Article 16, non-discriminatory access to the grid should be provided without any *"discriminate between applicants"* (Directive2009/28/EC). In other words, this proposed draft law left a lot room for the above discrimination of new entrants mainly because of the fact, that both transmission and distribution network, as being not "independent" units were in the position to decide who was going to be granted the access to the grid.

Furthermore, as the whole auctioning system had a very bureaucratic nature, as mentioned, thus, the records of the Article 13 about efficient, less time-consuming process, including*"(...)simplified and less burdensome authorization procedures(...)"*(Directive2009/28/EC) was neither complied.

Moreover, still, this draft version maintained the support for biomass (Draft Law, Nov.,2013) what even more empower the large energy companies in Poland.

Similar to the first version from 2011, this one also set up the fixed limit for the renewable electricity on the level below 3500 MWh/MW per year (which was also going to be assessed by both transmission or distribution network's operator)(Draft Law, Nov.,2013 2017).

In the opinion of the Ministry of Economic, these limits will allow *"(...)in a flexible way, to control the amount and the power structure of renewable energy in the electric system and also the total cost of the support for renewables(...)"*(Polish Sejm, Dec.,2013, n.d.).

As noted by the national expert G.Wiśniewski, this criterion can be difficult to achieved for the most of the technologies; hence can influence, in the end, the rejection of the renewable energy project/installation even if it wins the auction (Wiśniewski G.,Nov.,2013).

This kind of legal provision, together with the set up limit for renewable energy electricity, impacts investors' confidence negatively and successfully hampers the development of distributed generation in the country. Moreover, worth underlining is the fact, that, as per the opinion of the Ministry of Economic, the proposed auction system would help *"at the lowest*

cost" and *"(...) in a maximum-friendly and stable for investors"* way to accomplished the renewable energy binding target (Polish Sejm, Dec.,2013, n.d.).

As said above, according to the rationale issued for the draft law from October 2012, the Feed – in Tariffs scheme was described as the most mature one. Also, for that reason, it was being viewed as the mechanism that can positively influence investors' confidence, apart from being, as mentioned above, also the easiest to "read", what also facilitates the whole investment process(Justification,Oct.,2012, n.d.). How this fact, that within one year the government changed the opinion about the best functionality of each supportive financial scheme, can be interpreted? More, in the end, the government again, allowed that these provisions have never entered into force. This fact not only questions the integrity of the government's decisions during the whole legislation process but, additionally, successfully discourages innovation and hampers investors' willingness for entrepreneurship creating, already at a beginning of the investment process , the mentioned *"valley of death"*(Negro, Alkemade, and Hekkert 2012).

In the light of the above, it is important to draw attention on how the auctioning system and this version of the draft law was being presented in the official justification.

In the same justification, the government admits that, in comparison with the others Member States of the EU, in Poland, there is still no separate law on renewables energy. The law that, in these states *"(...) ensures the sustainable development of energy economy based on the use of renewable energy resources in the context of climate and environmental protection (...)"*(Legislation,Nov.,2013, n.d.).

For that reason, the government declared that the law on renewable energy should be created *"as soon as possible"* (Legislation, Nov. 2013) and it will be adjusted to the legal standards that are in force in other European Countries (Legislation,Nov.,2013). However, the rational does not specify what is understood by *"standard"*. Hence, we can only relate for interpretation to the earlier legal justification issued for the draft law from October 2012. This law, as indicated, aimed to introduce the most *"mature"* financial support scheme(Justification,Oct.,2012, n.d.) - FiT, therefore, with high probability *"standards"* in this rational also referred to the most stable support mechanism FiT, introduced in the majority of the EU countries.

The words of the former Prime Minister Donald Tusk in an adequate way sum up, not only the outcome of the draft law version from November 2013 but also the whole legislation process of transposition of 2009/28/EC Directive. In October 2013 Donald Tusk said that: *"(...)Poland respects environmental goals, but it will invest in industry and coal mining, while reducing CO_2 emissions by using modern technologies"* (Prime Minister, Oct.,2013, n.d.).For that reason, what he also confirmed, all laws will be designed in such a way, that renewables energies are kept on the lowest level required by the EU and that Polish legislations will support the development of coal (Prime Minister, Oct.,2013).

Furthermore, in the light of the above declaration that law should be adopted *"as soon as possible"* (Legislation,Nov.,2013) stated in the rationale for the draft law from November 2013, worth mentioning is the other statement made by the same former Prime Minister Donald Tusk. His statement is a quintessence of the Polish approach towards the climate and energy policy framework of the EU. Donald Tusk said that it was good that, in the end, the law on renewable energy was not approved, as it would lead to the increase in electricity prices. However, the most allusive comment was that the Polish energy mix should be designed in such a way that renewables energy *"(...) will be free from the ideological tendencies that have emerged in Europe"*(Prime Minister,Jan.,2014, n.d.). He also stressed, taking probably into account, the overall Polish approach towards the EU's climate and energy framework, that thanks to the Polish effort climate dogma ceases to be the exaggerated premise that could change the traditional energy mix in Poland(Prime Minister,Jan.,2014, n.d.).

What is more, he explained and framed the lack of creation of law on renewable energy in the energy security's terms, apart from the mentioned above, economic terms. The former Prime Minister Donald Tusk stressed that the law that finally will enter into force will be *"(...) safe for Poland and Poles (...) The most important are the protection of people, the health of the landscape, tourist assets against the excessive invasion of various installations, including the wind farm"* (Prime Minister,Jan.,2014).The attention needs to be drawn to the wording here, *"the health of the landscape"* was mentioned, but no reference has been made to the health of citizens. That can be a strong premise confirming the sustainable aspect is downgraded by the security one, both in the political discourse and in the official documents.

Now it should be recalled that the justification for the draft law from 2012, which proposed the introduction of the FiT system, also mentioned that all sort of renewables would be developed, among others wind energy (Justification,Oct.,2012, n.d.).

The next government (PiS party[48]) continued the approach towards the *"invasion of"* the wind farms of the Donald Tusk's part (PO party) and approved in 2016 the mentioned *"Anti-wind law"*(Law Journal,Jul.,2016, n.d.),which can successfully hamper the development of the wind facilities in Poland. The bill was named *"Anti-wind farm law"* because it limits the development of this kind of *"unstable"* renewable energy sources. One of the primary barrier (the Article 4.1.2) of this law prohibits the construction of wind farms at a distance of the 10 times of the high of a single wind installation, which, in practice, is difficult to comply with (Law Journal,Jul.,2016, n.d.). That might surprise as three official polish strategy documents (2009,2014,2015) confirmed that until 2030 and 2050 electricity generated from wind will contribute the most to the total renewable power (Ministry of Economy, Nov.,2009, n.d.), (Polish Monitor, Jun., 2014, n.d.), (Ministry of Energy, Aug.,2015, n.d.). Also, as mentioned above, the report issued in 2014 by the Governmental Energy Regulatory Office also confirmed that 40% of the total funding spent on energy will go to wind power development (Biuletyn, Nov.,2014, nr 4 (90), n.d.).

3.6.4 Controversy around biomass, in the proposed draft law and legislations

Non-development and non-promotion of renewable energy sources in Poland is framed in the security's term to create room for any decision that will help to maintain the centralized energy model and, at the same time, leaving *"mechanism of control"* in the hand of the government. In Chapter VIII, as already stated, it will be demonstrated why the centralized energy model in Poland is more suitable at the time of realization of some of the other

[48] This situation is another, a very illustrative example that both parties have a very similar vision of the country energy mix and the same approach towards non-promotion of renewables.

motives (psychological ones on the state level) and what the *"mechanism of control"* in this context means.

The above-selected example of the drafts law also proved that the Polish government is very reluctant when designing the law on renewables energy in such a way that it would help to foster the development of alternative energy installations.

Moreover, the detected, periodically and consequently, repeated patterns of political behavior *("give and take back policy" or "proposed and never implemented policy")* during the legislative process, illustrate that the government, creates the illusion of making an effort of establishing laws that could be interpreted as the willingness of balancing of all groups' interests, also fulfilling the interests of pro-consumers.

However, in the end, these attempts do not materialize in practice, and the most encouraging legislative procedure never enters into force.

Additionally, it is observed as mentioned above, that each proposed laws maintained the support for biomass co-firing with coal in the big installations owned by the state controlled energy companies. Also, the support was kept also in the amended version of law from the July 2016. It results that biomass is the most favorable form of renewables energy sources which contributes significantly to the total share of renewables.

Why the government kept the support, and still does, for this kind of renewables energy sources? In other words, why does the government choose it over the wind installations and another type of alternative power production? A short answer is that: these kind of "renewables" (co-firing of biomass with coal) correspond entirely with the centrally-controlled energy model, which the government aims to preserve. And as a result, this model facilitates the fulfillment of the state's psychological motives (Chapter VIII).

What is then so controversial with the Polish promotion and development of biomass? First, what it needs to be emphasized it that there is no restriction in any of the European Union's regulation of not using biomass as renewable energy source. The same 2009/28/EC Directive names biomass as: *"(...)the biodegradable fraction of products, waste, and residues from biological origin from agriculture (including vegetal and animal substances), forestry and*

related industries including fisheries and aquaculture, as well as the biodegradable fraction of industrial and municipal waste" (Directive2009/28/EC).

Now, biomass in Poland is used with the co-firing with coal, and as said, the Treasury of State is one of the leading shareholders in the firms operating in the coal industry in the country. As already mentioned, the process of co-combusting of biomass with coal efficiently hampers the development of other renewables energies' technologies and innovations(Wiśniewski G.,Marz.,2013). This practice is a typical example of applying, by the government, one of the K.Waltz's structural realism theory premise about the narrowing competition on the market, which means that some government intentionally aims to avoid the wider competition (Waltz 1979). In Poland, this is clearly noticeable in the energy market where the designed legislation successfully discourages new entrants of attempting to access the market helping, at the same time, to strengthen the position of others units/actors (here big energy firms).

In 2011, numbers of leading energy enterprises were taking part in the process of co-firing of biomass with coal: PGE S.A – 19%, TAURON SA- 14%, EDF-14%, ENERGA S.A – 7%, ENEA – 9%, PAK SA – 6%, CEZ – 3%, GDF SUEZ – 3%, PGNIG Termika – 3%(Wiśniewski G.,Marz.,2013, n.d.). And, the green certificates (Certificates of Origin) that went for these firms for generated this type of "renewables" energy (in the timeframe of 2005-2010) were also significant (Wiśniewski G.,Marz.,2013), (European Commission, Aug.,2016, n.d.).

Co-firing of biomass with coal cannot be classified as a clean energy as it releases to the air not only CO_2 but also $S0_2$, N0x and all sorts of ashes and the sum of organic compounds. In comparison to coal and brown coal these pollutants are indeed higher; however, biomass co-firing with coal still has a very negative impact on the quality of air (Uliasz-Bocheńczyk A.,Mokrzycki E.,2015, n.d.).

As indicated above, some of the Polish environmental organizations, on request from the European Commission, provided data about this practice (biomass co-firing with coal) in Poland. As mentioned, the investigation of the European Commission confirmed that this process is breaching the Article 108 and 107 of the TFEU. In other words, the subsidies provided to biomass under the definition of the state-aid were considered to have a

discriminatory character and did not comply with the internal market rules (European Commission, Aug.,2016, n.d.).

Biomass co-firing with coal contributed immensely to the overall country's energy production from renewables. What is more, without this input it would not be possible for Poland to accomplish the assigned 15% (gross) renewables energy targets (Ministry of Energy, Dec.,2010, n.d.) in the total energy production until 2020. Nonetheless, this goal, as per the opinion of the EU might not be reached before that date(European Commission, Jun., 2015, n.d.), which highly probably will impact the achievement of the new target set up in the European Strategy until 2030 (2014).In the light of the above, it might surprise that only in 2028 the Polish government plans to withdraw from the process of co-firing coal with biomass (Biuletyn, Nov.,2014, nr 4 (90), n.d.).

Since 2005 until 2011 the 6 times rise was noticed in the use of biomass co-firing with coal, with the steep increase especially observed since 2011(Grudziński Z., 2013, n.d.). These data are compatible with the almost 6 times increase in the same period (2005-2012) of renewable energy in Poland (European Commission, Aug.,2016, n.d.). That leads to the conclusion that the EU's requirements about the growth of energy produced from renewables were achieved through the co-firing biomass with coal. In this context, the words of the former Prime Minister Donald Tusk should be recalled. He said that the Polish government is *"respecting"*(Prime Minister, Oct.,2013, n.d.) the environmental goals of the EU when designing its unique country's energy mix including alternative energy sources. Now, can production of these kinds of "renewables" energy, which support process of biomass co-firing with coal, named by experts, as mentioned above, *"pathology"*(Wiśniewski G.,Marz.,2013, n.d.), means that the Polish government is *"respecting"* the EU's climate and energy framework?

Also, the statistics confirmed that biomass (solid biofuels) had the highest shares in the total renewable energy produced in 2015, because it accounted for 72.22% of all energy produced from renewable energy sources. The hydro energy accounted for only 1.82% shares, the wind power for – 10.76%, solar for 0.52%, liquid biofuels for 10.78%, geothermal energy for 0.25%, municipal waste for 0.46%, heat pumps for 0.56%(Główny Urząd Stat.,Dec.,2016 2017).

Furthermore, according to the National Plan of Action for renewable energy (see Table number 3) share of biomass in the general amount of energy produced from renewable energy will keep growing until 2030. The biomass will come from three sectors: forest biomass, biomass from agriculture and fishing, biomass from waste (Ministry of Energy, Dec.,2010), which might lead to the conclusion, taking into account that the coal will be kept almost on the same production level (all three country Strategy), that it will not be a "clean" biomass, but mixed with carbon.

This strategy has been realized with a consequence. In 2016 the Ministry of Development issued the mentioned above: *"Strategy for responsible development"* (Ministry of Development, 2016), according to which the Polish energy mix will be based on the stable energy sources such as biomass or water. When it comes to power generated by wind facilities - this type of energy, according to the Strategy - falls under the category of rather *"unstable"*[49] renewable energy sources (Ministry of Development, 2016).

Hence, the *"Strategy for responsible development"* together with *"Anti-Wind law"* from 2016 (Law Journal,Jul.,2016) even more effectively can limit the development of wind power. Moreover, according to the Strategy, the main aim of the energy market (energy system in Poland, adopting the terminology of structural realism) is to ensure stability and continuity of electricity supply. It will be accomplished by the introduction of legal mechanisms that will help to achieve the vision of the stability of operation of renewable

[49] The Strategy only lists two type of renewables energy carries *"(...)the promotion of renewable energy sources, with particular emphasis on indigenous resources, such as geothermal and biomass"*(Ministry of Development, 2016). One of the most frequent word used in the document is an adjective *"stable"*, each field: finance, economy, insurance, aspired to be *"stable"* as per the Strategy, also the renewable electricity is described with this adjective (Ministry of Development, 2016). What is more, this approach towards selective renewable energy is confirmed in the official reply given by the former Ministry of Energy (Tchórzewski) to one of the deputies: *"The current structure of energy production from renewable sources is based primarily on wind energy, which generation is unstable and dependent on weather conditions (...) The aim of the Ministry of Energy is, therefore, targeting the development of renewable energy sources more stable, which produce energy continuously, e.g., farm biogas plants, biomass plants, hydroelectric or geothermal (...) It should be emphasized that the production of energy will be promoted in a stable manner, giving assurance to end users that energy will not run out"* (Tchórzewski K, May.,2016). According to, already quoted data, from the Central Office of Statistics biomass and not the wind energy contributed the most in 2015 to the overall electricity generated from renewables energy (Główny Urząd Stat.,Dec.,2016).

sources (Ministry of Development, 2016, n.d.). Also, as per the latest *"Polish Energy policy until 2050"* renewables were also described as *"unstable"* energy carries (Ministry of Energy, Aug.,2015, n.d.), in this sense we can observe entire integrity of all policies issued by the government when it comes to non-development of other renewables energy than the ones based on biomass mainly and, yet, to achieve only the minimum required by the European Union. Nonetheless, the law regarding the development of renewables is being designed in such a way that the distributed generation model, recommended by the EU, also in 2009/28/EC Directive (Directive2009/28/EC, n.d.), is not promoted.

The "stable" renewable energy source – biomass – received around 7.5 billion Polish zołtych (around 1.8 billions Euros) for co-firing process in the timeframe of 2005-2012. Around 5 billion of this sum had no economic justification – in the opinion of the green organizations operating in the renewable energy industry(Inst.Energ.Odn.,Jan.,2015, n.d.). Additionally, biomass has been imported from 50 countries (Inst.Energ.Odn.,Jan.,2015) therefore, the classification of biomass as a stable renewable energy source, which would contribute to the country's energy independency (Ministry of Development, 2016) is not reflected in practice. Also, as per the information provided by The Governmental Center of Legislation on 11.01.2017 (see Table number 2) the European Commission questioned the mentioned import of biomass and referred the case to the European Court of Justice. The reason for opening this legal proceeding was the non-compliance of the Article 2[50] and 17[51] of 2009/28/EC Directive related to the discriminatory treatment during the import of biofuels and biomass from outside of the EEA.

In sum, even though all the draft versions maintains the support for the biomass as "renewable" energy source it is highly probably that Poland will not achieve the legally binding target for the share of renewables in the final domestic energy consumption until 2020.

[50] The Article 2 is referring to the definition of the renewable energy sources specifying exactly what biomass means and stressing that renewable energy is *"energy from renewable sources means energy from non-fossil sources"*(Directive2009/28/EC, n.d.); hence co-firing biomass with coal does not comply with this particular Article of 2009/28/EC Directive.
[51] The Article 17 is referring to the sustainability criterion from biofuels and bioliquids, also it indicates that it needs to be in accordance *"with renewable energy obligations"*, among other with criterion of the low GHGs emission (Directive2009/28/EC, n.d.).

As per the already quoted report, issued by the European Commission, the accomplishment of this target is not *"certain"* and can be achieved only under an *"optimistic assumption"* related to the future development of renewable energy (European Commission, Jun., 2015, n.d.). However, the Polish government is of the different opinion. According to the: *"Interim Report on progress in the promotion and use of energy from renewable sources in Poland in 2013-2014"* issued in 2016 and submitted to the European Commission it can be read: *"(...)there has been a constant increase in the share of renewable energy in Poland, and as a result, there is no risk as of today that the intermediate targets or the final objective of Directive 2009/28/EC will not be achieved"*(Ministry of Energy,2016, n.d.).The data included in the report refer to 2013-2014 (the reporting year 2015) and, what is interesting to read, in the light of the presented legislative process and different drafts law, the report underlines that these legislations in the timeframe 2013-2014 have influenced this increase.

According to the report, biomass accounted for the highest shares (around 50%) in the total renewable energy generated in Poland in each year 2013 and 2014. The report indicates that in the case of only biomass as fuel it is possible to make the exact calculation regarding the installed capacity. This calculation results more complicated, what is also stated in the report, for the process of biomass co-firing with coal that takes place in Poland using for this purpose large system facilities.. Now, the correct assessment of the real proportion of, both biomass and coal in the process of co-incineration is hard, because it *"(...) varies with each installation and may vary with each time (...)"*(Ministry of Energy, 2016). This statement only confirms that the government cannot determine, or does not want to, the proportion of the real quantitative value of coal and biomass that had been used during the process of biomass co-firing with coal in the large system installations (own by the energy firms mainly).

Furthermore, the report emphasizes that the energy efficiency goal, according to the National Energy Efficiency Action Plants issued in 2007,2011 and 2014 has been accomplished, even exceeding the assigned target. This particular accomplishment should not surprised because, as per the Strategic document *"The Polish Energy policy until 2030"* and the Strategy from 2014: *"Energy Security and the Environment - Prospects for 2020"* the efficiency objective is placed on the top of the priorities' pyramid; hence the target set up in 2006/32/EC Directive has been complied (Ministry of Energy, 2016). Moreover, as the report was issued in 2016 it also refers to the first, separate legislative Act in the form of a bill that is explicitly

dedicated to renewables energy: to the mentioned Law on Renewables Energy approved on 20th of February 2015 - the same one that included the so awaited pro-consumer amendment, which aimed to introduce the FiT system, that, in the end, never entered into force. Nonetheless, the report underlined that this system will enter into force starting from the 1st of July 2016, what will increase the share of distributed generation (Ministry of Energy,2016), but, in practice, it has never become the part of the Polish jurisdiction as explained already above.

The report was probably issued before the FiT was changed for so called: *"opusty"*- rebates and, instead of the green certificates, the auctioning system was introduced. These changes entered into force from 1st of June 2016(Rzecz.Posp.,Jan.,2017, n.d.).The current regulation, law does not encourage investors to generate their own energy because almost no incentives are provided as the amendment of the law did abolish, previously approved the Feed-in Tariffs system. What should also be emphasized is the fact, that this situation was the aim of the government: not to encourage pro-consumers to invest in alternatives renewables out of the business needs but to act as *"pro publico bono"* similar to *"stamps collectors"* as commented by some representatives of the government (Rzecz.Posp.,Jan.,2017, n.d.).

These statements of the representative of the government indicate that there is, year by year, less hope that the low carbon energy model based on distributed generation, with the involvement of citizen, will ever become a reality in Poland. This situation also means that the aim of increasing *"numbers of pro-consumer*", as per the *"Polish energy policy until 2050"*(Ministry of Energy, Aug.,2015, n.d.), has been accomplished meaning that only a few numbers of pro-consumers might appear in the Polish energy market – those ones that would like to generate their own energy, indeed, out of the hobbies' motives.

In sum, to improve the situation when it comes to renewable energy legislation, as per the expert comment, the numbers of fundamental improvement should be introduced: the increase of the amount and the price of the green certificates that Polish utilities need to purchase, the introduction of the Feed-in Tariffs system, the introduction of the rule that facilities up to 500kW can also be granted green certificates and installations up to 200kW, including electric cooperatives, receive higher price for their energy. Also the amount of energy that is planned to be ordered on auction should be established upfront (3 years in advance) (Rzecz.Posp., Jan.,2017, n.d.).

3.7 Conclusion and current status of law on renewable energy in Poland.

Richard N. Lebow does not underestimate the official country's document in detecting a variety of motives that can stand behind policies of governments. As mentioned above, Lebow highlights the below: *"Document sometimes provides insight into the minds of policymakers and their advisors, and on other occasions are misleadings"*(Lebow 2008). Now, as it was illustrated above this particular premise of the psychological constructivism theory entirely reflects the situation in Poland. The three Strategic documents indicate clearly which are the core priorities for the Polish government to accomplish and, as a result, to establish the country energy mix based mainly on coal. This part is transparent. The misleading element is noticeable when the government is stressing that the appropriate regulations and supportive mechanism for renewable energy will be created to foster the development of distributed generation that it is crucial when reaching the $C0_2$ reduction and complying with the climate and energy framework of the European Union and, at the end, none of these promises have been accomplished.

What is more, the misleading documents were being detected during the transposition of 2009/28/EC Directive and the attempt to design the draft law on renewables energy for the past 6 years. These documents were not only misleading but also helped to *"play with time"* creating the false illusion that the encouraging law and supportive financial mechanism can be introduced in Poland. In other words, through same selected draft version of laws and their official rational justification, Polish citizens were deceived, what they expressed in many official letters to the government (only some examples were mentioned).

Additionally, the K.Waltz's premise also can help to better "understand" the approach presented by the Polish government. The author stresses that states when *"pursuit of its security"*[52] it would not *"act with perfect knowledge and wisdom"* (Waltz 1979). This assumption shed light on the fact that even though, according to experts, the investment in

[52] In the Chapter VIII, there are listed other motives apart from the security one.

the brown coal power plants is not economically viable, these investments are taking place and are foreseen to happened in the future. What is more, the same experts confirmed that Poland does not have enough coal deposit to build the country energy security on these indigenous resources. Additionally, the other statement of K. Waltz , mentioned above, that *"The leaders of organizations, and political leaders preeminently, are not masters of the matters their organizations deal with"*(Waltz 1979) can also shed light why this particular situation is taking place in Poland (the other motives are discussed in Chapter VIII).

That kind of situation was being noticed when, during one night, the proposed price for renewables energy increased 3 times - the mentioned "compromise" (Inst.Energ.Odn., 2016, n.d.) between pro-consumers and Polish energy companies. In sum, it is surprising that after 6 years, in Poland, where the renewables energy technologies still have not achieved the economic maturity the most encouraging support system (FiT) has not become part of the Polish jurisdiction. Instead, Poles, from 2017, probably will have to pay the so-called *"carbon pro"* fees (Rzecz.Posp.,Jan.,2017, n.d.) to help to build the future Polish energy market based on coal. In the light of the above, it can be said that the Polish government does not follow and forget the meaning of the quotation that is written on the official website of the Polish Parliament: *"All the authority of the human community takes its origin from the will of the people"*(Polish Sejm, n.d.). The will and the power of citizen should not be underestimated and, above all, respected.

What is more, the Polish government also does not follow the recommendation of the European Union framework regarding the Energy Union from 2015 (*"Energy Union Package (...) A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy")*, according to which, citizens are at "core" of Energy Union:*"(...)citizen take ownership of energy transition, benefit from new technologies to reduce their bills, participate actively in the market, and where vulnerable consumers are protected"*(European Commission,Feb.,2015, n.d.). The same communication about the framework of the Energy Union stresses that to build secure future energy the departure from fossil fuels , old technologies and old energy model based on the centralized structure, should take place; instead, governments should concentrate on the decentralized low-carbon, more sustainable way of energy generation. Again, the model, where citizen are *"at its core"*, they are *"empower"* and have *"choice"(*European Commission, Feb. 2015, n.d.).As it was illustrated, Poland is implementing none of these approaches. The document about the

Energy Union was issued in February 2015 and, a few months later, the Polish government issued the new energy strategy: *"Polish energy policy until 2050".* And as it was presented, according to this document carbon and centralized model of energy supply is at the core of the country energy mix and not the Polish citizen, even in the long time horizon – until 2050 (Ministry of Energy, Aug.,2015, n.d.). As noticed in the European Union official communication about the Energy Union, the European Union has common rules in the field of energy, nonetheless *"in practice it has 28 national regulation framework"* and this reality *"cannot continue"* (European Commission,Feb.,2015, n.d.).

IV. German legislation

4.1 Introduction

The primary objective of this chapter is to point out the difference how the German government approached the promotion of renewables energy sources; hence, how the interests of pro-consumers had been taken into consideration when designing law on renewables energy. Expressly, this section illuminates that the appropriate provisions included in the laws boost investor confidence what has a direct translation to the increase of energy generated from renewables energy sources. At the same time, this brief analysis of the core German legislation aims to accentuate entirely contrasting vision that both countries have when transposing the EU's requirements in the field of renewable energy. Additionally, the synthesis presented in this chapter will serve to the further analysis performed in the Chapter VIII mainly, because the mentioned different paradigms towards the development of renewable energy are also due to the distinctive psychological, hidden motives on the state level (application of the Lebow's theory). Moreover, this chapter refers to the certain political and social circumstances that, as well, influenced the German government to move from the fossil fuel energy model towards the low-carbon one.

Legislation in the field of the renewable energy in Germany is utterly different because of two main reasons noticeable when reviewing the existing literature and research performed in the field. What it should be emphasized as the first reason is that already, at the beginning of 90's, there was a consensus among decision makers and German community about the need to departure from fossil fuels to more alternative energy sources. In other words, already at that time, environmental concerns entered into the political agenda. The second reason, being the outcome of the first one, is that the German government designed the legislation to implement this vision in practice. As a consequence and, as indicated already, the so-called policy of the *"death valley"* has not been observed in Germany.

In other words, the interest in green energy came from the top-down and bottom-up almost simultaneously. However, it was society or being more precise, first, a small community that later managed to grow immensely acquiring supporters across all Germany. In other words, as observed by scholars, the movement towards alternative energy sources started in Germany at peripheries, which was an outcome of impressive German communities' proactivity and the German entrepreneur skills (Hager 2015). What it might surprise because

still, in 80's, the sustainable energy model has not been so popular and broadly promoted. As it was illustrated in the previous chapter Poles shows the similar level of interest in producing their own renewables electricity and heat(Gwiazda M.,2016, n.d.),(Inst.Energ.Odn.,Jan.,2015).(Also, see the replies on the questionnaires in Annex III, which is described separately in the last chapter- VIII).

Finally, as it will be illustrated below, in Germany there was no discrepancy between the German private investors (pro-consumers) and the government regarding the desire of developing micro and small renewables installation.

On the contrary in Poland, this vision of the community was (and still) is clashing with the vision of the government. The indicated disparity can be observed, both in regards, to the importance of distributed renewable energy model when strengthening the country energy security, and the definition of what can be understood by the "renewable". As it was presented the Polish government in all proposed draft laws on renewable energy, also including the last one from the 1st of July 2016 considered the process of co-incineration of biomass with coal as "renewables" energy sources. This situation did not take place in Germany, where from a very beginning (90's) there has been an immense increase in solar and wind energy achieved through the early application of the FiT mechanism. Expressly, in Germany, there was no legislation battle between the community and decision makers, which could not only negatively influence the investors' confidence but, most importantly, their trust in their government. In other words, the German green community could not say they feel *"cheated"* as it was in the case of the Polish pro-consumers (Polish Sejm, Sep.,2014, n.d.), as there was no the *"show and not implementing"* policy (or the *"give and take back policy")*, like it was in the case of Poland.

This feeling of disappointment was probably deepened also by the fact that the Polish green community could observe how the neighboring German government was severally supporting the pro-consumers' enterprising need for investing in alternative energy (this aspect is also more developed in the last chapter).).

4.2 The green German community awareness has its roots in the anti-nuclear protests

It should be emphasized that the capacity of the civic society when influencing and shaping the government policies cannot be overestimated and it is clearly remarkable in the case of Germany. This impact refers both, to the endorsement of distributed renewables generation but also, to the overall approach towards climate and energy framework. This "green awareness" of the German community has its roots in the anti-nuclear protests.

The German government decided to stop the so-called *"path dependency"* (Nordensvärd and Urban 2015) relatively early, meaning that the first ideas related to it occurred after the Chernobyl in 1986 and intensified after the Fukushima accident in 2011. The terms *"path dependency"* (Nordensvärd and Urban 2015) refers to the dependency between fossil fuels industry and economy. It has its roots and, is being reflected, in the firm tie across all sphere, meaning that the economy built around fossil fuels has the dependency dimension visible across all area: institutional, political, social and technological (Nordensvärd and Urban 2015). This situation is exactly taking place in Poland, as it was presented in the previous Chapter III, and the Polish government, through the centrally planned energy and economy model, aims to preserve this status quo. As mentioned already, there is no indication that this model, in a long time-horizon, will be changing towards the decentralized one, because even according the *"Polish energy strategy until 2050"* (2015) it will be kept(Ministry of Energy, Aug.,2015, n.d.). Expressly, the economy will be built still around fossil fuels, and the "low-carbon" model will be accomplished through the clean carbon technology and modernization processes performed in mines.

Furthermore, a government's unwillingness to limit or progressively end with the *"path-dependency"* leads to the so-called *"lock-in"* (Nordensvärd and Urban 2015) situation. It means that the government establishes legislations that block the development of the new renewables energy technologies advocating the reinforcement of the old ones. In the case of Poland, these *"policy failures"* (Nordensvärd and Urban 2015) that reinforced the old technologies blocking the development of the more innovative ones, were being performed intentionally as illustrated. Expressly, the form of the *"lock-in"* practice could have been observed when the Polish government regularly "practice" the *"show and not – implement*

policy", (or the *"give and take back"*[53]), which final implementation could have positively fostered the pro-consumers installations..

The process of the departure from the *"path dependency"* (Nordensvärd and Urban 2015) in Germany towards the low carbon economy model, as noticed by scholars, would not happen without the significant involvement of the society, in other words, it has its roots, as mentioned, in the peripheries(Hager 2015). In other words, the proactivity (Hager 2015) of the German society shaped and had the impact on the change in the paradigm. Other scholars, agreed with the already quoted premise of the structural realism theory by saying that the path dependency can be stopped only by the strong *"shake –up"* of the system coming from a different direction: the political and social sphere (Nordensvärd and Urban 2015). Assessing it through the K.Waltz theory, the change in current status – quo of the existing model can only be possible by its entire re-establishment, here the reconstruction of the energy structure, again, as already quoted*:"(...) The only remedy for a strong effect is a structural change"*(Waltz 1979).

This change of the structure, which created the firm foundations for the current development and the status of renewable energy in Germany, started slowly already in 70's. It was when the environmental awareness of German community began to influence the outcome of the political agenda, or at least, at that time, drew attention to the environmental concern of German society, giving the clear sign to the government that these worries cannot be omitted. With years this awareness evaluated and matured being influenced, in turn, by mentioned, Chernobyl and Fukushima accidents. As a consequence, the "green" German community grew, which strengthened not only the community but also grounded more its new identity. These circumstances were extremely important as this united community shaped and influenced, later on, the political agenda of the government but also, and first of all, the country's identity (regarding environmental awareness). Hence, as indicated, the pro-consumer movement in Germany started not in the center of state power but at its borders, peripheries (Hager 2015).

[53] In this case the term the *"show and not-implement policy"* described better the legislative situation during the creation of the first law on renewables energy in Poland, than the *"give and take back policy",* because the proposed provisions have never become the part of the Polish jurisdiction at the end.

The anti-nuclear protests started in Germany already in 70's. However, the anti-nuclear movement also manifested their discontent with the German energy model, at that time mainly based on coal. Already in 1980, the community formed the first German Green Party, which entered to the governmental structure (the Bundestag) 3 years later (Hager 2015). That was a significant achievement, which showed that green German community had already broad electorate. Moreover, the entry to the Bundestag, again making the reference to K. Waltz, equipped the green community with the new capability, power. In other words, now the community was not anymore on the peripheries, but they had access to the source of the governmental body, where all decision were/are being established, as noted by Hager. That, without a doubt, facilitated the lobbying process towards the sustainable development model and as well helped to handle the German society's preoccupation regarding the climate-related themes in a more efficient way – through the political agenda.

After the Chernobyl nuclear accident, most of the German public was against nuclear power. However, what was even more important, the German community wished to have more impact on the political decision, and it was already in early 90's when the more participative model of democracy was the ideal model in the view of many Germans (Hager 2015).This "political green maturity" when it comes to the democratic model, together with the environmental awareness of the green German community, were crucial at the time of designing the more decentralized energy structure model few years later.

In other words, the environmental awareness started to form very early on, and over the years the maturity of German society in this field evaluated and spread around all country. According to the national survey that aimed to assess the broad public acceptance towards alternative energy and grid expansion, there is the total approval and support towards the low-carbon energy model based mainly on renewables energy(Bertsch et al. 2016) (Bertsch et al. 2016).However, the most positive findings relate to the fact that environmental aspect – sustainable development together with security of energy supply are perceived as more important than economic competitiveness and public acceptance. For that reason, the other data should surprise neither, as around 50% of respondents would not agree on the construction of coal plant, but would accept wind facilities (50%) and solar ones (85%) (Bertsch et al. 2016). Also, it should not surprise that more than 60% of Germans prefer to

use renewable energy over the one generated from fossil fuel, even if it means the increase in electricity price (Hayashi and Hughes 2013).

As it is presented below, also for the German government, assessing it by taking into account the country's legislation in the field of renewables energy and the government's approach towards the climate and energy EU framework, the order of the priority is similar, the same priorities' pyramid. In other words, as said before, there is no discrepancy between community/civil society and decision makers in this field (at least in the first few years of development of renewable distributed generation, as illustrated below). On the contrary to the Polish government[54], which clearly states in the official Strategy documents that the competitiveness is placed higher than the sustainable development (not expressly using this words, but the intentions are readable). Additionally, statements of politicians also confirm this approach. As indicated already, according to the survey, the one performed by the Center for Social Opinion Research (Gwiazda M.,2016, n.d.) Polish society is interested in generating its own energy. Base on that fact it might be concluded that the sustainable development could also be ranked higher by Poles than the competitiveness, especially now, when the pollution smog, in most of the Polish cities, became even more obvious, and almost visible problem.

In Germany, already in 70's ,took place the biggest country protest against the nuclear power plant's construction in Wyhl (in the Upper Rhine near Freiburg). The protest lasted 18 months (Hager 2015), which proves the determination of the German society at the time of demanding that they opinions should be considered when taking any environmental decision on a country level, which directly affects society. This situation is in line with the regulatory culture model (described already in the previous chapter) of ensuring state according which, both citizen and the government, take part in creating and transposing established law in practice (Bohne 2011).What is more, the protest was supported across all West Germany and had it end in the administrative struggle (Hager 2015).

[54] It would be interesting to perform the same national survey in Poland to determine what would Poles reply on the same questions. It can only be now presumed that it could happen that sustainable development and competitiveness would also be ranked similarly as by the German public.

Coincidently, in 70's the electricity price increased, which, at that time, was an additional argument for the anti-nuclear activists to lobby for alternatives way of energy production. In the same village where the protests against the nuclear power started, the German citizens demonstrated the mentioned need for the entrepreneurship and initiated, more as an experiment first, the generation of energy from the solar collectors. This spirit of innovation quickly became welcome by other German villages. Especially the alternative way of energy production become at peak interests after the Chernobyl explosion of the nuclear plants. Very early, in 1977[55] the first Institute of Applied Ecology (Eco-Institute) was founded which grouped scientists, and their findings and opinion had an immense impact on the development of know-how in the field of renewables energy (Hager 2015). The impact of the anti-nuclear movement on the public was significant as already in 1988, 70% of Germans were against nuclear power. This high percentage of rejection towards this kind of energy production, was probably also influenced by the establishment of the independent working group, whose primary goal was to elaborate a plan for the CO_2 and methane reduction by 30% until 2006 and by 80% until 2050. What it needs to be highlighted here is the fact that this group was created already in 90's (Chowdhury et al. 2014).

What also should be emphasized is that the German government since the oil crisis 1973 dedicated significant funding for R&D and subsidies to find new ways of energy production, and although most of them went to coal and nuclear power, some percentage was also spent on renewables energy. In the timeframe of 1974 -1982 the spending increased from 20 millions Deutsche Mark (DM) – 20 million USD to over 300 million (Laird and Stefes 2009). Nonetheless, Lauber and Mez claimed that in comparison with the funding spent on coal or nuclear power plants, the financial resource dedicated to renewables energy *"are truly peants"* (Lauber and Mez 2006).What is more, the EU confirmed that the subsidies granted by the German government to coal had discriminatory character (Laird and Stefes 2009).The extraction of coal, similar to Poland, became more expensive with years and because 50% of the German energy was covered by coal (in 2009) the government was spending funding to help to keep the carbon electricity generation (Laird and Stefes 2009).

[55] In Poland the most prestigious private institution that has know-how in the field of renewables energies, as indicated above, was founded in 2001 in Warsaw – Institute for Renewable Energies.

In sum, the *"path dependency"*(Nordensvärd and Urban 2015) related to fossil fuel model started to erode early, and it was possible thanks to the determination and political involvement of the society, as described. The process can be compared to the domino effect as it had its origins among small groups of activists, which slowly managed to reach the access to the government. As a result, the environmental concerns of the citizens could not be ignored. The new identity of the united community had an immense impact not only on the future governmental decision in the field of climate and energy, but also on the German society and its environmental awareness and maturity. In the words of Goodman: *"(…) an ecological transformation 'produced' by society, itself literally starts to transform society"*(Goodman 2016). In the Chapter VIII, it will be presented what impact, from the Lebow's perspective, this situation had on the future development of the climate and energy policy of Germany.

4.3 Decentralized structure of energy market

The environmental awareness of the German society started to form early on. As per some scholars, the low level of environmental awareness among Poles is occurring due to the lack of interests to request from the government a climate-related information (Kronenberg and Bergier 2012). What is more, despite the fact that the Strategy from 2014 perceives environmental awareness of citizen as a threat and emphasizes the need to strengthen the exchange of information between local authorities (Polish Monitor, Jun., 2014, n.d.), in practice, this is not happening, because of the simple reason that it does not go in line with the interest of the government that aims to keep the centrally planned energy and economy model in the country. On the contrary, in Germany, it is observed the market economy model.

Already in 1992, the German oil and gas utilities had been privatized what caused the broad market competition because the number of players on the energy structure increased. As an example, there are many companies operating in the oil field: Exxon and Mobil, Total, PetroFina and Elf, the merge of BP, Veba Oil, Deutsche Shell and DEA Mineralöl (Renn and Marshall 2016) versus, as mentioned, one leading firm in Poland – PGNiG with the Treasury of State as a main shareholders - more than 70% of the total shares(PGNiG, Shares, n.d.).

The German gas sector is even more decentralized as there are many small actors: own private gas companies, municipally utilities, firms with foreign capital, supra-regional firms, etc. The gas structure is composed by 16 national gas producers, 14 – gas imported companies, 15 regional distributors and 700 local distributors and 11 gas dealers (Renn and Marshall 2016) versus 4 main leading players in the Polish gas sector: Tauron, Enea, Energa, PGE. As previously indicated, again, in this case also, the Treasury of State is the primary shareholders in those firms.

The German coal industry is however still dominated by only 2 main actors; one is RAF AG which took over the Saarbergwerke AG (the government – owned utility) and Preussag Anthrazit Gmbh, RAF AG – mainly hard coal and Braunkohle AG – brown coal (Renn and Marshall 2016).

As it was indicated in the previous chapter the Polish government is tightening the competency on the market, not only on the one related to energy. The mentioned above Polish National Foundation grouped all 17 industries. The leading, state-controlled companies that are part of the organization (PGE (Polish Energy Group), Enea, Energa, Tauron (Treasury of State,Jul.,2016) all together, cover 90% of the country electricity demand (The Treasury of State,Nov.,2013). Also, PGNiG (gas, oil, coal), the oil firm: PKN Orlen and Lotos Group became part of the Polish National Foundation (Treasury of State,Jul.,2016).

In sum, in Germany, there are numbers of small companies operating in the electricity sector. Already in 2014, there were 800 local utilities, 120 power dealers, 56 regional utilities and 4 supra-regional companies, which cover 80% of the electricity demand of the country, the big giants are RWE, EnBW, E.ON and Vattenfall Europe AG. Now, the appearance on the energy markets 40,000 of new entrants, pro-consumers (Renn and Marshall 2016) changed the character of the energy structure drastically.

4.4 An overview of the German legislation in the field of renewable energy

4.4.1 1990 StrEG

The brief synthesis of German legislation in the field of renewable energy is an example how the appropriate policy can foster the rapid development of renewable energy facilities among pro-consumers.

The fist law on renewables – the Electricity Feed Act (Stromeinspeisungsgesetz – StrEG) was adopted in 1990. What it should be emphasized, in the light of the Polish legislative constant battle between pro-consumers and the government, is that the StrEG Act was approved unanimously (Lauber and Mez 2006). Already the first law on renewables energy (StrEG) created a very stable and favorable investment conditions for pro-consumers and, as a consequence, the share of alternative energy on the market increased since 90's significantly (Mitchell, Bauknecht, and Connor 2006).

This sharp growth of the alternative energy was possible due to the implementation of the two key provisions which were the core element of the first German law on renewables (StrEG). What is more, the same regulations, 29 years later became one of the most important articles of 2009/28/EC Directive, which must be complied with if the share of renewable energy is going to increase.

The first provision relates to the legal obligation imposed on the companies to buy renewable electricity (Mitchell, Bauknecht, and Connor 2006).The second one demands to purchase this electricity at the fixed rate (Feed-in Tariffs system).In the first German bill, this price was set up on the rage level 65-90%, which the German utilities charged their customers (Lauber and Mez 2006), what means that the price was dictated by the market condition - market price (Mitchell, Bauknecht, and Connor 2006). With this first law, (which has changed later) the German energy utilities, if they owned renewables installations, were not beneficiaries of the FiT system under StrEG law, neither facilities that exceed 5MW(Laird and Stefes 2009).

Furthermore, the provisions of the first German law were constructed in such a way that the potential investors did not need to go through the complicated and time-consuming process,

in other words, all sort of additional bureaucratic and administrative barriers were omitted. For example, new market entrants were not obliged to negotiate any contracts with the Distribution Network Operator (Lauber and Mez 2006). Now, we can recall the Polish draft law that proposed to introduce, in November 2013, a very bureaucratic designed auctioning system that demand the pre-approval from the grid transmission network or distribution network (Draft Law, Nov.,2013), which bodies are not independent and are under the government's responsibility (Treasury of States).

What also should be underlined, is the fact that from the 1st German Feed-in Law (StrEG) and after it was repealed - when the new bill entered into force (including its amendments) the priority access to the grid has always been guaranteed. The distributor network operator was obliged by law to provide the entry to the renewables electricity and pay for it a fixed priced (Langniß, Diekmann, and Lehr 2009). That, without a doubt, influenced immensely the steep increase of the renewables in the total country electricity production, especially in the early investment steps.

The first law StrEG established a very favorable market conditions for the pro-consumers as it aimed to reduce a gap between new entrants and the other Germans utilities operating in the coal sectors, which enjoyed the dominant position on the energy market. For that reason, the German government informed the EU - receiving in response no objection at that time, that the feed-in system was being introduced under the state aid provision (Lauber and Mez 2006). In Poland, the state aid provision was used, as indicated, to support the process of co-incineration of biomass with coal in large power installations owned mainly by the state-controlled companies. The process that is still in place even though the EU confirmed that it breached the Article 108 and 107 (European Commission, Aug.,2016).

What is also worth indicating is the fact that the government not only established the mentioned, so supportive conditions for investors but also tried, already in 90's, to investigate the renewables energy technologies and their efficiency. With that purpose, the government launched the program under the name: *"1.000 Photovoltaic Solar Roofs"* (1991-1995). As the program ended with a huge success, the other one was initiated, in 1999 - the *"100.000 Photovoltaic Solar Roofs"* (García-Alvarez and Mariz-Pérez 2012).This program was mainly inspired by the fact, that after the introduction of the first Law (StrEG), there

was more electricity on the market generated by the wind power plants than by the solar installations and the government wanted to minimalize the difference (García-Alvarez and Mariz-Pérez 2012).

4.4.2 2000 - The Erneuerbare Energie Gesetz (EEG, Renewable Energy Law) and its amendements

In 2000 the German government introduced, after having observed the energy market and gaining some experience, the new law, called: the Erneuerbare Energie Gesetz, which replaced the Feed-in Law (the Electricity Feed-Act, StrEG 1991). The aim of EEG 2000 was to double the renewables electricity energy by 2010 (Morey and Kirsch 2014). What also should be stressed here is the fact that the Electricity Feed Act stated that the law should be re-designed periodically, every 4 years, so the new trends in the renewables technologies could be reflected(Laird and Stefes 2009).Hence the new, improved provisions could, even more, boost the development of alternative energy sources.

In other words, that is a clear sign that from the side of the government existed a willingness to establish a law that could help to departure from the fossil fuel model to the low-carbon one. Also, at that time, the majority in the parliament had the Red-Green with additional support from VDMA (The Investment Goods Industry), and this fact also influenced that this version of the EEG was approved in the form (Lauber and Mez 2006) that created a very encouraging condition of investment for pro-consumers.

The main renovation related to the guaranteed fixed price was its duration, with the new law the fix price was guaranteed for the period of 20 years. The previous law - StrEG did not specify for how long investors can be assured the fixed tariffs. Moreover, the law established different quotes that depended on the type of the renewable energy source (Laird and Stefes 2009). Additionally, the maturity of each technology and installations conditioned the final payment (that mainly affected the wind energy) (Hinrichs-Rahlwes 2013). As mentioned above, the wind power plants benefited the most thanks to first StrEG bill, what can be confirmed by statistics. From 1989 until 1995, energy generated by the wind installations

grew from 20 MW to 1.100 MW (Lauber and Mez 2006). In 5 years the wind power increased almost 6 times, reaching over 6000 MW in 2000 (Laird and Stefes 2009).

With the EEG 2000 law, the new premium rate for the PV installations was introduced, as the government aimed to balance the solar energy with the wind one (Laird and Stefes 2009).Between 1990-1999 there was almost no increase in the solar energy generation and the situation changed drastically after the adoption of the EEG 2000 law. Specifically, in the timeframe of 2000-2011 solar electricity increased 170 times, meaning from 44 MW in 2000 to 7.5 GW in 2011(Chowdhury et al. 2014). Again, in Poland, as analyzed, the government not only introduced a yearly cap limit[56] for all renewables but also promote the development of some renewables energy over others, as for example described biomass, the most "stable" renewables sources as per the quoted *"Strategy for responsible development from 2016"* (Ministry of Development, 2016, n.d.).

In sum, the conditions to invest in the PV installations were so encouraging that resulted in the payback (return) reduction to few years. In the light of the above, pro-consumers were willing to produce own energy driven by, not only, environmental reasons but also, by the economic one. In other words, it was even more economically viable to generate solar power on its own than purchase it from the network. The price of energy from PV decreased sharply, which turned that it was more economically to consume it than sell it receiving the agreed guaranteed price as per FiT (Chowdhury et al. 2014). However, 10 year later, in 2010 there was some modification in the law, which introduced the reduction in subsidies for 12-16% together with the annual cap limit for 3500MW per year. These changes met with strong opposition from pro-consumers, what is more, they caused that some small enterprises moved from the market (Hinrichs-Rahlwes 2013). Nonetheless, in 2010 solar energy in

[56] It can be recalled the Law on Renewable from 20th 2015 (that was a 1st separate law that treated exclusively about renewables energy in Poland approved 6 year from the time 2009/28/EC Directive entered into force) with the cap limit for receiving the guaranteed price until the renewable electricity will not exceed of 300 MW for installations up to 3kW and 500 MW for ones between 3-10 kW per year (Journal of the Polish Republic,Apr.,2015, n.d.). Also the draft law from November 2013 introduced similar limit (Draft Law, Nov.,2013 2017).

Germany reached the economic maturity thanks to the financial support that this kind of renewable energies have been received for years already, but still, the FiT system was kept, with only some reductions in tariffs.. The gradual subsidies reduction is a rule when renewable installations have achieved already economic maturity. That reduction helps to lead to the situation that these facilities can become independent functioning on energy market without any additional financial support.

Moreover, under the StrEG German utilities, as indicated above, were not beneficiaries of the feed-in system, but what is more, they were obliged to construct the renewables energy facilities (Lauber and Mez 2006). As per the new law - EEG, they could also become recipients of the Feed-in Tariffs support scheme. That provision was also necessary because only large German energy firms could invest and construct off-shore winds plan (Laird and Stefes 2009).

Moreover, as per the new law, a different type of renewable energy received different tariffs, also this differentiation applied to the size of the source as well as to its maturity. If the technologies had been already many years on the market and run with efficiency, the tariffs were decreased, not only to reflect the mentioned technology maturity, but also to comply with the EU law (Laird and Stefes 2009).The amendment of EEG from 2004 introduced some changes in tariffs not only to balance electricity produced from different types of sources but also to stimulate learning and innovation. Hence, the Feed-in Tariff quota was modified - decreased for onshore wind and increased for off - shore wind plants to stir their development. The same occurred for energy from biomass and hydro plants (Lauber and Mez 2006).

As a consequence of this tariffs' adjustment, it could be observed a sharp increase in solar electricity, from 3GW in 2007 to 9 GW in 2009, however, still, the gap between solar and wind energy was notable, as the wind power reached in 2009 - 26GW (Hinrichs-Rahlwes 2013).

The amendment of 2004 was approved, not as it was in the case of the first Feed-Law (1990) by unanimously, but, this time, with only one support vote from conservative party CDU-CSU. This situation took place because the leading coal providers noticed that new entrants

could overtake a significant amount of the energy market and similar like it was/are in Poland, they started actively to oppose the further development of renewables.Also, analogous to the Polish rhetoric, the rejection of renewables energy was being done in the name of electricity price increase[57] affected by the cost of alternative energy (Lauber and Mez 2006). However, with the difference, that this kind of rhetoric in Poland is being practiced both by the government and by the large energy companies supported by the first one.

The opposition towards renewables energy from the part of the German coal utilities grew from year to year, because now, the pro-consumers became a real threat and the implementation of the new decentralized model of energy production in the country has started to be viewed as a reality. Also, the further amendment of EEG 2000 (the 1st one, as indicated above took place in 2004, and the 2nd in 2009) was not received well by the coal providers, because the primary aim of these amendments were still to keep increasing the share of renewable energy electricity in the total country energy mix. In other word, the same positive attitude towards the decentralized energy model and alternative power carries has been maintained. Still, the main provisions have been kept: the fixed priced guaranteed during 15 and 20 years and the obligatory access to the grid for renewable electricity (García-Alvarez and Mariz-Pérez 2012).

As there was a massive increase in photovoltaic, with the amendment from 2009, tariffs for this source were reduced slightly. In the case of biomass, all amendment of law EEG from 2000 stimulated the use of different type of material (various type of biomass), depended which one was chosen - the different subsidies applied. In the case of heat, the government introduced the Renewable Energy Heat Act in 2008 and, with it, aimed to promote the thermal solar with the budget of 500 million Euros for the period of 2009-2012(García-Alvarez and Mariz-Pérez 2012).

Concluding, the German government, with each law and its amendment, kept establishing not only the favorable conditions for new market entrants but first of all, responded to the

[57] In 2000 the price of electricity grew by about 18%, however, as claimed by the Environment Ministry and economic experts, renewables energy was responsible for only 7% out of 18%(Lauber and Mez 2006).

society's needs of changing the country energy model towards the most sustainable one, based on the distributed generation and the low-carbon alternative way of power generation. This approach of the government towards renewable energy resulted that in 2013 alternative sources accounted already for 23.4%[58] of the total gross generated power versus hard coal – 19.7 %, brown coal – 25.8%, nuclear power – 15. 4%, natural gas – 10.5% and others - 5.2% (Hager 2015).

What should be highlighted is the fact that these mentioned 23.4% that account for renewables energy sources, were generated mostly by pro-consumers (micro and small size facilities), who started to prove that the decentralized model, based on distributed generation, can be implemented. The date speaks for itself: in 2014, 48% of the solar installations were owned by citizens versus 48.5% owned by institutional and strategic investors, the numbers for wind energy facilities is even more impressive: 50.4% owned by citizens versus 39.4% owned by institutional and strategic investors. Also, in the case of bioenergy, citizens owned more installed capacity (42.2%) than the other groups (36.1 %) (Yildiz 2014).

In the light of the above, the German utilities were not pleased with the fact that, year by year, the renewables electricity connected to the grid is increasing. This growth was translated, not only, in the number of jobs created related to the renewable energy field (in 2013 – 371.400) (Hager 2015), but and first of all, in the significant loss of the annual revenue of many German utilities. A remarkable example is RWE with 3.8 billion $ yearly loss (Hager 2015), which is an indisputable confirmation of both, pro-consumers potential to dominate the energy market and, that the small and medium size installations can slowly erode the power structure, especially when this development is shaped and supported by the legislation, which without a doubt, was the case in Germany.

As said above, Eon, Vattenfall, RWE and EnBW these are the 4 leading German utilities (operating in fossil fuel and nuclear power) that are responsible for covering three-quarters of the county's electricity supply (Goodman 2016). These are the biggest opponents of, not only the new energy market entrants' but also the German transition policy,so-called

[58] Wind power accounted for 7.9 %, biomass for 7.6%, hydro and solar energy for 3.4 and 4.5% respectively (gross in 2013)(Hager 2015).

Energiewende (Goodman 2016), which describes the transition towards the low-carbon economy.

This discontent of the German leading energy firms could also become visible when the utilities did not want to participate in the research project related to the improvement of better accommodation of the new entrants (pro-consumers) on the German energy market held by the Deutsche Energie Agentur (DENA) in 2005(Lauber and Mez 2006).This reluctance cannot surprise, because pro-consumers constitute and, constituted at that time already, a huge competition for the share of the German energy market.

What should be emphasized is that early on, also in Germany, it occurred a similar situation like it still takes place in the energy market in Poland, where energy production and transmission is under supervision and responsibility of the leading energy firm, which is against the EU unbundling model. As it was mentioned formally the internal market in electricity 2009/72/EC Directive has been complied as legally these are different entities from the law point of view, nonetheless, in practice, there are strongly business related through the tight collaboration (for example "Tauron Dystribycja" – Tauron Dystribution, "Tauron Wydobycie"- Tauron Mining (see Annex I where the different business activities are listed). The large German utilities that were controlling almost 90% of energy generation and transmission were charging renewables energy high fees for access to the network. This situation was resolved by establishing in 2005 Federal Network Agency, which from now one, was regulating these additional charges independently. What is also interesting, the German public was against the dominant position of the German utilities and linked the increase of energy price with these utilities' domination on the market rather than with the growth of the renewable energy on the market(Laird and Stefes 2009).

On the side of the above, it can be recalled that it was Germany who set up, while leading in the European Council in 2007, the 20% of the share of renewable energy objective for the EU. That can be interpreted that Germany is the powerhouse of the climate and energy policy in the EU (Büsgen and Dürrschmidt 2009).

The government also stated in the German Renewable Energy Sources Act (EEG) that by 2050 the share of the renewable energy in the gross electricity generation should reach 80%

(Bertsch et al. 2016). What is more, already in 2020 the target set up by the German government was at least 30% (Yildiz 2014), meaning higher than what was established in the European 2020 strategy. What is also worth underlining, and what is a testimony of the German effort of departure from the fossil fuel energy model is that already in 2009 there was 6th German policy in the field of renewable energy versus 17th of the European Union's ones (as per the Global Renewable Energy Policies and Measures Database). Also, since 90's Germany was collaborating with the European Community in this field (Antoni, Janser, and Lehmer 2015).

4.4.3 2011 *"Energiewende"*

In the light of the above, it is not a surprise that *"Energiewende"* – which means the energy transition to the low-carbon energy model, met with an expanded approval in the German society (Scholz et al. 2014). The fact cannot surprise as a German community "cultivated" the environmental awareness since 70's and, with time, the desire of establishing more sustainable energy model grew among the public.

Additionally, climate change topics became present in the political agenda already in 80's as said above, and since that time, these themes were at the core interests of the German public and its government. The entire approval for the energy transformation was strengthened by the fact that German society is also characterized by its strong opposition towards technological risk associated with such innovative facilities like Carbon Capture and Storage (CCS), nuclear power plants or hydraulic fracturing(Pegels and Lütkenhorst 2014).

In the event of the above, *"Energiewende"* concept felt on the fertile ground. In 2010 with the *"Energy concept"* the German government decided that nuclear energy will be a temporary back-up power use until the energy transition toward the low-carbon economy will not be accomplished. The Fukushima accident in 2011 influenced that this paradigm has been changed and the *"Energy concept"* was replaced with *"Energiewende"*, which also means that the nuclear energy will be phased-out earlier than planned, the decision was taken that until 2022 there will be no energy produced in Germany from nuclear power(Goodman 2016).

This decision about resignation from nuclear energy, as mentioned above, was commented negatively by the former Premier Donald Tusk (Prime Minister Office, Sep.,2011 2017), especially that in 2010 almost 25% of the total German energy demand was covered by nuclear power (Schiermeier 2013).

With *"Energiewende"* policy the German government decided that coal will be the backup, transition fuel instead nuclear power (Goodman 2016). Germans, as said, already in the 70's had the aversion towards nuclear energy and after Fukushima, the acceptance to it significantly dropped. Again, the German's public attitude towards nuclear power and its opinion influenced the outcome of the final decision about earlier exits date for nuclear energy. The Angela Merkel's government did not have a choice, knowing the pressure, opinions and concerns of German society, and after reaching the agreement with the opposition, agreed to speed up the date of the nuclear power's departure from German energy mix(Hayashi and Hughes 2013). Again, that is a totally different situation that is occurring currently in Poland in regards to nuclear energy. As it was mentioned, the Polish government does not take into consideration the opinion's of Poles in that matter (above quoted survey (CBOS, Apr.,2013) and referendum(Polish Radio, Feb.,2012, n.d.)). What is more, in the official Strategic document (*"Polish Energy policy until 2050"*) it is written that this consensus must be maintained(Ministry of Energy, Aug.,2015, n.d.), and there is no consensus within Polish society when it comes to that matter.

With the decision taken in 2012, 10 new coal-fired plants were planned to be constructed to cover the energy demand that nuclear power plants would not generate any more. As a consequence, there was forecasted 10% increase in the GHGs (Goodman 2016); nonetheless, the German government continues the adoption towards the low carbon energy and economy model. In other words, the ambitious goal of reaching the 80% of the share of renewable energy in the total energy country production until 2050 (Hayashi and Hughes 2013) has not been modified. This is a clear sign of the German authorities' determination of shifting from the fossil fuel energy model, combat climate change by reducing $C0_2$ and GHGs emission through the innovative energy and economy approach/model.

The decision of building new coal plants could not be avoided, because renewables energy sources were forecasted to replace not only nuclear power but also gas, meanwhile leaving coal as fossil fuel that accounts for 45% German electricity generation. For that reason, in 2015, the German government took the decision that 45% of the total country electricity will be generated from both, hard and brown carbon until 2030 (Goodman 2016). That is not a lot if we compare it with the most possible scenario in Poland foreseen for the year 2050 (sustainable scenario - see Table number 5) according to which, the electricity generated from carbon will account still in 2050 for 40%, and as per other scenario (Gas + RES) this proportion changed slightly with the coal electricity kept on the level of 30% also in 2050 (Ministry of Energy, Aug.,2015, n.d.).

In the light of the above, the 45% is still not a significant number if compare it to the Polish forecast. Also if the German utilities would like to keep the profits on the same level in the next years, they need to re-define they energy model and shift also towards the alternative source of power generation. However, it is not the easiest task because the large German utilities need to compete with micro and small investors (distributed generation, small projects). This competition, as noticed already by scholars (Yildiz 2014) is becoming complicated, because the return rate from the small investment is usually in the rage of 4-6% and the large energy firms need to offer a higher rate return to their shareholders (Yildiz 2014). Also, in the Polish energy market, this trend is noticeable. As per Annex I energy generated from renewables by the state-controlled firms accounts only for a small percentage of the total power production. Also, as mentioned in the previous chapter the date in Germany from 2012 speaks for itself: the German utilities lost already 88.1% of the renewable energy market. This percentage is distributed as following: private persons – 34.9%, independent projects developers – 13.8%, investments funds and banks – 12.5%, farmers – 11.2%, small and medium sized companies and others – 1.2 % and utilities only – 11.9%(Richter 2013).

The chief executive of RWE Peter Terium summed this situation perfectly: *"We were late entering into the renewable energy market-possibly too late"*(Hager 2015). Currently, the German utilities are in a constant struggle for the energy market share, especially after *"Energiewende"* has been established. The New York time commented this energy transformation situation in Germany also by stressing that the revolution towards the low-

carbon energy model will not be allowed by the German utilities to go without them(Hager 2015).

Nonetheless, German utilities, were and still are in the more difficult situation than Polish energy firms and utilities, because first, *"Energiwende"* has the approval of all the political groups in the Bundestag (Schiermeier 2013) and also because the German public is willing to pay for the implementation cost of this ambitious policy, which is noticeable also when Germans are changing providers to use energy generated from alternatives energy sources, even if it means to pay more (Richter 2013). That cannot surprise because, already in 90's, as illustrated, the environmental awareness among German was very mature. Now, *"Energiewende"* for German society is the reason to be proud of, because the policy is contributed to the state's environmental, political and economical future (Röttgen 2013).

In the light of the above, German utilities do not have alternatives - it means that in the long time horizon, they need to implement a different business model, a model that will be mainly based on renewables energy and, which needs to be re-designed now. As observed, some of the German energy giants are already starting this new journey towards the greater use of alternative energy sources in their business model.

4.5 Objection of the German utilities and the reform of the EEG German Act until the current status from 2017

In the beginning, Germans utilities underestimated the potential of renewable energy and, as indicated above, that was also the reason why the first Feed-in Law was approved in 1991 with the full consensus (Lenz T., Feb., 2016, n.d.). In other words, the German utilities and energy firms did not imagine that this law would be a first milestone for the commencement of the great era of renewables that took the significant shares of the German energy market with the speed of the domino effect. In 1993 German utilities were of the opinion that renewable energies are not capable of cover more than 4% of total energy's demand (Strunz, Gawel, and Lehmann 2016b). With time their potential was not only recognized, but it also provoked a real threat to the German utilities' position on the energy market. As a result, they started to question a legitimacy of the first German law on renewable energy sources - Feed-in Act (StrEG Act). First in 1996 Association of German Electrical Utilities – VDEW

claimed that the Feed – in Tariffs are violating the state-aid rules and after the intervention of the DG Competition these tariffs were slightly reduced (Lauber and Mez 2006). However, later the favorable conditions for investors were being continued with the new law EEG (2000) that repealed StrEG, and its amendment as illustrated above.

Two years later in 1998, the other German utilities - PreussenElektra, again questioned German Renewable Energy Act (EEG), claiming that the Feed-in Tariffs mechanism is against the rules of state aid. In 2000 the European Court of Justice confirmed that in this case the German FiT scheme is not against the state aid provision. That opinion resulted in further support for alternative energy carries (Strunz, Gawel, and Lehmann 2016b), as illustrated above, tariffs were even more generous than in the beginning of 90's.

Two years later, the EU introduced the new regulations related to the state aid and the decision of the EU related to the PreussenElekra case from 1998 could not act anymore as the reference point for similar law cases in the European Court of Justice (Strunz, Gawel, and Lehmann 2016). The new EU regulation regarding the sate aid was established in 2014, two years after the European Commission was reviewing the German EEG from 2012 (German Renewable Energy Act) against breaching the state aid granted to renewables through the Feed-in Tariffs mechanism. (Strunz, Gawel, and Lehmann 2016)

As per the European Commission the Act EEG 2012 (in operation from 1st January 2012) was not being previously verified by the Commission whether it complied with the state aid rules or not (European Commission, Nov. 2014, n.d.). The German EEG Act from 2012 still kept the Feed - in Tariffs mechanism and market premium; nonetheless, the guaranteed price was foreseen to be reduced gradually, precisely, each year(European Commission,Dec.,2013, n.d.).This rule was being followed also in the case of each of the amendments of the EEG Act by taking into consideration the maturity of the certain renewables technology on the energy market.

In December 2011, the official complain was sent to the European Commission by the German Association of Energy Consumers regarding the fact that the additional surcharges that end users (customers) need to pay are against the state aid (European

Commission,Dec.,2013, n.d.). Also, some separate letters[59] from the customers reached the Commission, which expressed objection for too high surcharges that they customers needed to pay after the amended EEG-Act entered into force in 2012. In the opinion of the German government, no breach in the state aid took place, because it was the same case like PreussentElektra, when too high surcharges were imposed, not by law (here the EEG Act 2012), but by network operators and private utilities-energy providers, meaning the German energy firms. What needs to be emphasized is the fact that the EEG-Act does not include any requirements that electricity providers should impose surcharges on end users. The Article 40 of the EEG-Act only specifies that in the electricity bill the amount that accounts for these extra costs needs to be clearly stated. What is more, the EEG-Act even restricts the amount of the surcharges, which can be imposed on the citizen. In sum, these surcharges were being decided by the German utilities and network operator and not by the law itself (European Commission,Dec.,2013, n.d.).

In the opinion of the European Commission, the surcharges that were paid at the end by end users were too high, thus not in accordance with the EU state aid rules. The decision was referring to the period of 2013 and 2014.The responsible for the competition policy within the EU (Margretje Vestager) commented this final decision as an example of the balance[60] between renewables energy producer and citizen. She also added that the *"competitiveness of the European industry"* is being protected, at the same time, the promotion of renewable energy is being continued*"(...)ensuring its stable financing"*(European Commission,Nov.,2014, n.d.).

Now, although the German government did not agree with the opinion of the European Commission, in 2014 amended the EEG Act (Strunz, Gawel, and Lehmann 2016) paving the way to the auctioning system instead of the Feed-in Tariffs mechanism. Some scholars

[59] As already indicated there is consensus and approval towards *"Energiewende"* and Germans are willing generally to pay more for the renewables energy. These letters cannot be treated as counterarguments to the previous research in the field of general public acceptance towards the low-carbon model based on renewable energy and towards their willingness to pay for its implementation. Nonetheless, it cannot surprise that the German customers expressed they objection if the surcharges exceed the reasonable level imposed by electricity suppliers (German utilities) and operators.

[60] One of the example that can be given is that in this period of time the German energy firms were paying 23.8 Euros per kWh for the solar electricity, which they could trade on the open market for 5.9 Euros per kWh(Morey and Kirsch 2014).

criticized the situation and this reform: the below words summed up it as: *"(...) the 2014 reform can be seen as unprecedented horse-trading between political actors from EU and national level. Indeed, it can been called "a hasty government's adaptation to supranational pressure"*(Strunz, Gawel, and Lehmann 2016). With the new amendment from 2014, the German authorities introduced the limit of the amount of surcharges by allowing only its yearly rise of 2.5 % (Morey and Kirsch 2014).

The new period for renewables energy started in Germany with the EEG-Act amendment in 2014 as recommended by the European Commission. It is when the slow departure from the Feed-in Tariffs scheme has started to be implemented in Germany. In other words, the new support system in the form of auctioning has being implemented in the German energy market. The Feed-in Tariffs era introduced with the first Feed-in Law Act in 1991 ended officially, and the next amendment (2017) of the EEG-Act also confirmed this approach. However, for the micro and small installations (pro-consumers), up to 750 kW, the Feed-in Tariffs is still kept. The amendment from 2014 and from 2017 only introduced the auctioning system for bigger renewables facilities(GramywZielone,16 Jun.,2016, n.d.).

As it was described in the case of Poland, also in Germany these investors that offer the lowest price will win the auction assuring, at the same time, the contract for the next 20 years receiving the guaranteed price for this period. It means that the Feed in Tariffs is only for these investors that will win the action. The main reason for changing the support mechanism is to lead to the situation where, first, the price for the renewables energy is lower and second, the renewables installations, renewable electricity can function independently on the energy market. As per the opinion of the Ministry of Economic Affairs and Energy the main aim of the modification of the old FiT support mechanism, apart from the two mentioned above, was as well to *"(...)maintain diversity among investors –i.e. they should continue to be citizen-owned projects"*(Clean Energy Wire,Apr.,2016, n.d.).

Additionally, with the new amendment of the EEG Act from 2017, the German government introduced the collaboration with the neighboring countries. It means that 5% of new renewables energy generated in Germany can be purchased by the Member States of the EU, also through the auctioning system. Moreover, the amendment established the yearly cap for the development of the onshore wind farms and solar energy on 2.8 GW and 600 MW

respectively. For biomass, this cap was set up until 2019 on the level of 150 MW yearly. Also, the system of control for the development of wind energy in the Northern Germany was introduced. It means that "only" up to 60% of the wind installations are going to be supported in this part of Germany, because, meanwhile, the development of new transmission network system is being performed to adjust the capacity of the new wind farms to the real opportunity to connect the generated wind energy to the grid(GramywZielone,16 Jun.,2016, n.d.).

It cannot surprise that there are some critics of the reforms mainly because the Feed - in Tariffs gave investors more encouragement and stability. Nonetheless, the Feed-in Tariffs is still maintained for the micro and small renewables facilities. More the well-integrated renewables energy in the market also means economically independent power, and this goal needs to be, sooner than later, achieve if the other core goal of *"Energiewende"* is going to be accomplished: 80% of the country energy electricity produced from renewables until 2050. In other words, the financial support scheme has been only slightly modified but the core aim of the German energy and climate policy to base the energy supply model on renewables sources (distributed generation model) remains the same.

4.6 Conclusion

As it was illustrated, the successful development of renewables energy in one country is determined by the fact, whether or not the government supports it through the appropriate legislations as per the recommendation of 2009/28/EC Directive. This requirement is, at the same time, the first condition for the fulfillment of the EU's climate and energy goals. As it was observed since early on, there was a consensus between the interest of German pro-consumers to invest in the micro and small renewable energy's facilities and the government's vision to base future country's energy model mainly on alternative sources. For more than 23-year renewable energy sources profited from the most encouraging support scheme – FiT that helped to boost immensely the development of renewables on the German energy market. As observed the voice and opinion of the German public were taken into consideration, contrary situation that it is occurring now in Poland and it has been occurring before. This brief presentation of some of the leading German legislation in the field of renewables energy and the attitude of the German authorities towards the climate and energy

framework were the needed background to present, which will be referred to in the last Chapter VIII - conclusion. It was necessary to recall the old and the more updated version of the German law on renewable energy to detect in the conclusion section of the thesis why Poland and Germany are situated on the opposite poles when it comes to the application of the EU's climate and energy policy when assessing it through the lenses of the Lebow's theory.

V. Theory of Lebow and K. Waltz: the instruments to understand the position of Poland ?

5.1 Introduction

As the leading theory of the thesis is *"psychological constructivism"* of Richard N. Lebow, the primary attention is given to this doctrine; nonetheless, K.Waltz theory is also implemented (the main premises are referred to the concrete examples) to provide a more holistic answer on the main question and sub-questions of the thesis listed in the introduction part. As mentioned, Germany was chosen as a point of reference because of some similarities in the energy mix in the past (previously German energy mix was based mostly on coal) and also because, as a country, Germany falls under a different category as per the Lebow's theory. This situation provides a good point of reflection and comparison. In other words, the fact that one country is placed under different category can have a direct translation and impact on both, its domestic and international politics, here climate and energy policy.

First, briefly, the principal assumptions of the Lebow's theory are presented before moving to the part where its paradigms are directly applied, using for the analysis, the information provided in previous chapters. However, also some new data have been added regarding the energy relations of Germany and Poland with Russia and with the UE. The energy and climate policy of Poland, when applying the Lebow's theory cannot be discussed omitting Russia, because of the simple reason that these mutual relations, the Russian political behavior/strategy, also has an impact, thus shapes the Polish paradigm towards climate and energy policy. Hence, these relationships are instrumental to our analysis. More they help to view the topic from a more comprehensive perspective, as many variables contribute to the Polish and German paradigm towards the country's climate and energy strategy.

As per the Lebow's theory, internal and external stimuli have an immense influence on the state's behavior:*"(...)people and states are moved by a combination of internal and external stimuli"*(Lebow 2008). Starting from this chapter and ending in the conclusion part, I will try to identify the most relevant external stimuli that shape the Polish energy and climate policy. As mentioned in the introductory part, Richard N. Lebow stresses that it is not an easy task to spot which of these external factors contribute the most to other state's behavior/here energy policy. In other words, which of them have *"relative weight"* (Lebow 2008). It is not

something that it can be easy quantified, as these motives and feelings are abstract. Gas and oil relations between Poland - Russia - Germany and the UE can be classified as one of these external stimuli. More, these relations are the governing and persuasive component of the international energy system, meaning their relative weight, when speaking about the Polish energy and climate policy, is substantial. When it comes to internal stimuli, they are strictly connected and shaped by external ones; thus they are a consequence of external stimuli. In other words, the described non-promotion of renewables energy in Poland, seeing coal as a primary sources to build the energy security of the country and finally, the overall paradigm towards the sustainable low carbon energy and economy model, all of these approaches and decisions are also a consequences of the external impact of the energy international system on Poland. Therefore, the oil and gas relations and its impact on the Polish energy strategy need to be discussed. Now, how these abstract motives can be spotted? As per Lebow, the pattern of the repeated political behavior has to be detected, what was done, to some extend, in previous chapters already. Here the conclusion will be withdrawn.

Now, one of the proof that oil and gas relations with Russia act as important external stimuli on Polish energy policy, are the outcome of the quantitative analysis performed using articles from one of the leading Polish newspaper: *Gazeta Wyborcza*. The first proof was already presented in Chapter III where it was illustrated that Russia is referred to in the official countries' documents. The timeframe of the analysis covers the period of few years 2009-2015. The articles were searched by the combination of two words: *"energy security"* and the aim was to detect with what this term is mostly associated with. Only those articles were taken into consideration, which quoted the statements of politicians, members and representative of the Polish energy utilities. The other opinions, such as one of the representatives of the green sector community, were omitted to have only a pure vision of how the term *"energy security"* is being perceived by the government's authorities. In Annex III the question number 4 refers to the country's energy security and it can be treated as the representative opinion of the non-governmental organizations in Poland (described separately in the Chapter VIII).

The finding proved that the energy relations with Russia are the essential element when shaping energy security of the country. The *"energy security"* concept was presented and referred to mostly to international dimension, precisely to relations with Russia and to coal

and nuclear power, renewable energy was mentioned sporadically. These findings are an additional proof that there is some degree of mistrust in the relations between Poland and Russia, also nowadays towards Germany (as it will be illustrated in next chapters), when it comes to oil, but mainly to gas relations. Already, there have been done many studies about the feeling of mistrust and fear towards Russia from the side of Poland but also the EU (the examples of scholars that discussed this particular topic, are listed previously). My objection is not to repeat this analysis and recount these case studies, but to identify different psychological motives that stand behind the Polish strategy and shape the climate and energy policy of the country. As said, the Richard N. Lebow theory would help to classify, detect and name these motives, which, in consequence, shed more light on the central question of the thesis.

What it should also be emphasized is that the structural realism of K. Waltz is in line, with some aspects, premises of the Lebow's theory. K. Waltz also underlines that one country's intentions might be unknown and together with insecurity, they have a substantial impact on a final behavior of another state. K. Waltz illustrates the situation by referring to the *"security dilemma"* of John Herz, which *"describe the condition in which states, unsure of one another' intentions, arm for the sake of security and in doing so set a vicious circle in motion"*(Waltz 1979). To minimalize this insecurity and protect itself, a state, which is guided in its policy mostly by the structural realism's premise *"rely for their security both on their own internal efforts and on alliances they make with others"* (Waltz 1979). Clearly, that part of the theory is also reflected in the Polish energy policy, because coal is the domestic resources; hence it contributes to state's internal resources, through which, Poland tries to assure and widen its energy independency - strengthen the country energy security, as coal and all structure built around it (*"communicating vessels"*), the mentioned *"path-dependency"* (Nordensvärd and Urban 2015) and, in consequence, the centralized energy model acts as a *"mechanism of control",* through which Poland is fulfilling the psychological desire as per the Lebow's theory - on a state level that are reflected in the energy policy-explained in Chapter VIII.

As it was stressed, there are numbers of complex variables that contribute to the fact that Poland develops different climate and energy politics. The Lebow's theory will help to organize them. First, the analysis will be performed on the state-state level, what means that

states' interaction will be assessed from the bird's eye survey. This kind of perspective facilitates to capture the overall character of one state, which influences significantly the outcome of country's strategy, here the climate and energy policy. In other words, first, the chapter will refer to the mentioned external stimuli determining their role when designing energy policies. In sum, after the brief presentation of the main premises of Lebow theory the impact of gas relations on the Polish energy-climate framework will be discussed. In the Chapter VIII the internal policy and, both external and internal stimuli, will be analyzed through the lenses of both theories. In sum, both internal and external motives shed light on the central question of the thesis: "*Why Poland develops different politics in the field of the climate and energy framework of the EU: Polish case in relation to Germany (focus on renewable, decentralized generation)"?*

5.2 The Richard N. Lebow theory and its most relevant assumptions

The Lebow's theory concentrates purely on state's psychological motives (as a political unit), which contribute to a particular country's character. On the contrary, non-states actors (such as non-state political groups, non-governmental and international organizations, multinational corporations) are not included in his theory. Nonetheless, the author admits that these non-states actors can also be viewed through the same typology of goals and motives (spirit, appetite, and reason) (Lebow 2008, 112–15), which ultimately shape the outcome of one state's policy, here the Polish energy and climate strategy.

These three motives like spirit (honor, self – esteem, reputation), appetite (interest), reason and separately fear (classified more as an emotion – consequence of some action, circumstances), as said, are not easy to detect. The author himself says: *"I noted how difficult it is "(...) to identify the motives behind actions that appear to be consistent with multiple motives"* (Lebow 2008, 159). Lebow concluded that to affirm that states are driven by appetite, reason, spirit and fear is not equal as to prove it. The only way of demonstrating it, as indicated above, it is to show that the significant decisions were taken by the government repeatedly on a ground of particular motive or conjunction of motives. In this way, the pattern of behavior driven by a specific purpose/motives, based on which the decision was taken, can be detected.

Lebow's underlines: "We can also search for revealing cases where different motives, say interest and honor, pulled leaders or appeared to pull them, in opposite directions" (Lebow 2008, 159). Also, the selected case studies related to foreign energy policy of Poland were chosen to identify one or another motive (here external ones). Additionally, also the language used by politicians, might also be treated as an indication of appearance of some of these motives; hence, it shed some light on the specific reasons that trigger certain political decisions.

5.2.1 Spirit based paradigm and the honor society

According to Lebow's theory, motives are withdrawn mainly from appetite, spirit, and reason. Spirit – based paradigm is built on the assumption that each person or community craves for self-esteem. As commonly understood and underlined by the author: *"(...)self – esteem is a sense of self-worth that makes people feel good about themselves, happier about life and more confident about theirs ability to confront its challenges. It is achieved by excelling in activities valued by one's peer group or society and gaining the respect of actors whose opinions matter"* (Lebow 2008, 61). This paradigm can be clearly seen using the example of the German renewable energy community, which took enormous pride in their entrepreneurship green initiative boosting, in each member of the group, self – esteem and strengthening their community's identity (Dóci and Vasileiadou 2015).

A self - esteem Lebow also closely linked to honor. In a society where honor is the dominant, leading drive, the author claims *"(...)status is an actor's most precious possession"*(Lebow 2008, 71). In the case of Poland, only briefly mentioning here, status is being built around the country energy self-sufficiency thanks to coal. For that reason, Poland aspires to be a leader in Europe in the energy production from coal using the clean carbon new technologies. In other words, country's status is associated with energy independency based on this particular fossil fuel.

For Poland, the decrease of dependency from Russia is a matter of honor and the investment in the new coal power plants (even if these investments are being criticized for not being

economically viable or environmental friendly as described in Chapter III) helps to achieve this goal (detail in the next section of this chapter).

The reference to coal as to the Polish *"black gold"* (Ministry of Energy, Dec., 2016, n.d.) contributes to correctness of the hypothesis that this fuel helps to achieve the greater country's energy sufficiency; hence self - esteem. As a consequence, this situation additionally adds to the country's status and prestige because it leads to the diminution of the dependency from Russia. Additionally, as said, the decrease of energetic dependency from Russia is viewed as an honorable matter, and it is related to the historical experience with this country and the feeling of humiliation. In the Lebow's theory, this sense of shame/humiliation plays a crucial role and it is one of the most prominent roots of the motives that can stand behind one state's behavior, in other words, it can influence a country's politics/strategy. Expressly,,a feeling of humiliation in International Relations has a substantial impact on the outcome of the foreign policy of each state. As it will be illustrated this sense of embarrassment is also an influencing factor on the Polish energy policy.

Lebow stresses that primarily great powers but also smaller actors, which in the past, were humiliated by the stronger actors will become very aggressive (Lebow 2008, 430). This is a case of both Russia and Poland, which is in detailed developed in the next section of this chapter and in the conclusion part. More, this aggression is typical characteristic for the honor society, which as said, was humiliated in the past by other actors (Lebow 2008, 150).

In others words, a feeling of shame/past humiliation can be translated to an ultimate desire for revenge. These feelings might lead, and in many cases do lead, to rebuild one actor's self-esteem, which again, is the case of both Poland and Russia as it will be demonstrated below. In the case of Germany, it is rather a feeling of extending its normative power, which is noticeable in the state's desire of being a leader in the low-carbon economy (the country concept of *"Energiewende"* being a German *"trade mark"* (Goodman 2016) or, which is being interpreted as a sign of *"foresighted tinkering"*(Röttgen 2013)).

In that sense, using the terminology of Lebow, Poland can be classified as *"honor society"* (Lebow 2008, 71), which is typical for the spirit-based paradigm. The *"honor societies"* are

reluctant towards cooperation and the collaboration is *"(…)most difficult between equal because no actor wants to accept the leadership of another, and thereby acknowledge its higher standing"* (Lebow 2008, 72).

It very often occurs that cooperation might result to be complicated, even if there are common safety's interests at stake. In honor society it happens frequently that a state *"(...)will defend their autonomy at almost any cost because it is so closely linked to honor unless they can find some justification for disaggregating it from honor, that is convincing to themselves and their peers"*(Lebow 2008b, 72).Now, this is clearly noticeable in the case of both, Poland complicated gas relation with Russia (details describe in the next section of the chapter) and in the event of the Polish reluctance when adjusting its country's energy security strategy to the climate and sustainable guidelines of the EU. Being in the EU is *"convincing"* (Lebow 2008) for Poland; nonetheless, the country is strongly defending its "autonomy". This situation is very noticeable in the context of the climate and energy policy and the state's desire of maintaining the energy independency trough the energy mix based on coal when in the EU there is a strong emphasize placed on the departure from fossil fuels.

As it was said, the aggressiveness is a characteristic pattern of the honor society humiliated in the past. As per the external and internal definition of the policy of Łoś-Nowak, aggressive countries, she named them also, actors with *"high potential",* do not agree so quickly and easily that other states dictate, influence the outcome of their internal policy. The author concluded that it is the other way around, that the *"internal function shapes the outer one"*(Łoś-Nowak T., 1997). In the case of the weaker states, the same logic is applied. It is observed that domestic policy is shaped by the external function (external policy) of other countries (Łoś-Nowak T., 1997). This is exactly noticeable in Poland being, at the same time, in line with the Lebow's definition of the honor society characterized by the relatively high aggressiveness. In consequence, Poland does not allow easily that the EU shapes and influences their domestic energy policy. However, Poland as being one of a Member State of the EU has to transpose the European law into the national jurisdiction; thus, allows that the outer function shapes the internal one (Łoś-Nowak T., 1997). Nonetheless, the high level of reluctance was being noticed as illustrated in the above chapters.

Additionally, one of the K.Waltz assumptions is that a need for defending a state's character - identity and autonomy is vigorous: *"The impulse to protect one's identity – cultural and political as well as economic – from encroachment by others is strong"* (Waltz 1979). In the light of all above, the statement of the former Prime Minister Donald Tusk can be reminded. He described the climate and energy policy of the EU (referring mainly to the low carbon model and renewables) as *"ideological tendencies that emerged in Europe"*(Prime Minister,Jan.,2014, n.d.), *"tendencies"* that are against the national interest of Poland. It is precisely where we can observe Lebow's *"defense of autonomy"* typical for spirit paradigm (Lebow 2008) and where the honor society, does not easily agree that outer policy shapes its internal one (Łoś-Nowak T., 1997).The above statement of the former Prime Minister Donald Tusk might surprise taking into account that Poland is in the EU already for the last 13 years and when the climate changes are becoming now even visible in the country (the mentioned smog in the most of the biggest Polish cities).

Now, referring again to aggressiveness and the feeling of humiliation, emotion which has it roots in the troublesome history of mutual relations (between Poland, Russia, Germany), Lebow associates these characteristic with the so-called *"parvenus power"* (Lebow 2008). It means that these actors that crave for power are also characterized by a high level of aggressiveness. This combative behavior has its bases in the past and previous pejorative mutual experience, as mentioned: *"Aggressive behavior is all the more likely if their leaders or peoples have been previously ostracized or otherwise humiliated by the dominant powers of the system"*(Lebow 2008a, 539). The past is the part of one country's identity and to understand better the whole context of the Polish reluctance towards the climate and energy policy, especially when assessing it from the Lebow's perspective, one fact about the Polish history needs to be recalled. For 123 years Poland was under occupation of Austria, Prussia and Russia (three partitions of Poland) and after this extended period, the country regained the independency.

The fact and the proof that this history is still remembered and that the feeling of humiliation is still alive in Poland can be the opening page of the official Polish document, already quoted in Chapter III and issued in 2016 by the Ministry of Development: *"Strategy for responsible development"* (Ministry of Development, 2016, n.d.). The cover page includes the quote of Józef Piłsudski: *"Poland will be great, or it will not be at all"*(Ministry of

Development, 2016). Józef Piłsudski is remembered in Poland as a politician who had a significant impact on the creation of the Second Republic of Poland in 1918, after 123 years of dependency from Russia, Austria, and Prussia.

This aggressiveness typical for spirit paradigm, honor society and *"parvenus powers"* (Lebow 2008) can also be manifested in the defensiveness style, in more indirect form, which depends on a political situation or better said, on political circumstances one country has to maneuver in. Poland being a Member State of the EU, discloses the characteristic of spirit based world through different kind of behavior, political act: the lack of the EU's directives transposition, open objection towards the climate and energy framework of the EU, pejorative comments of decision makers regarding these policies, these are only few examples and detected pattern of behavior. The one of these examples is the mentioned official bill, signed by the Polish President Andrzej Duda, regarding the objection of the further restriction regarding CO_2. In the official title of this bill there is expression written: *"the ambitions of the European Union"*(Ministry of Environment, Mar.,2016), which as said, judging by the content of the document and its goal, leads to the conclusion that this expression has indeed a negative connotation.

Lebow also stresses that in case of the spirit - based world, which he additionally describes as warrior societies, these society *"(...) be highly ordered but still characterized by frequent warfare"*(Lebow 2008, 539).

5.2.2 Appetite based paradigm

Another Lebow's paradigm is appetite. Lebow's theory states that in such appetite base-world *"(...) everybody is supposed to be recognized equal and have the same opportunities for advancement"*(Lebow 2008, 74). On a community level, it is clearly seen in Germany, where farmers wanted to persuade their own renewable energies endowment's projects rather than delegated them to private investors (Wirth 2014). The same situations are taking place in Poland where pro-consumers continue a legislative struggle with the government and with utilities, which are supported by the first one. This reflection of the Lebow's premise can be both seen on the internal as on external dimension: *"Domestic and transnational coalitions*

would form to advance common interest and provide mutual assistance" (Lebow 2008, 75–76). Examples of the external dimensions of this kind of coalition driven by the appetite paradigm, are developed in the last chapter, as examples it can be named here only: the energy solidarity in the Treaty of Lisbon (the Polish initiative) and the Energy Union, also the idea initiated by the Polish government.

In the appetite based-world states collaborate with each other mainly because they share the same interests and as underlined by the author, these interests are primarily economic ones (Lebow 2008, 75–76) and if these interests change *"(...) yesterday's partners might become today's opponents. Relations among units would resemble the kind of shifting coalitions. The conflict would be as common as cooperation, as actors would have opposing interests on numerous matters of importance"* (Lebow 2008, 75–76). Also, the particular rule for the appetite based world is that cooperation is between equal – *"principal of equality"*, cooperation is ordinary and usual. This is also noticeable, primarily between Russia and Germany in the field of gas relations, what is in detailed analyzed and illustrated in the next section of this chapter.

Briefly, it can be mentioned here, that when the world observed the aggressive power politics of Russian "performing" the annexation of Crimea, Germany was more willing to join the idea of the Energy Union and started to vote for the stronger gas and oil independency in the EU. However, as it will be illustrated below both countries' gas relations strongly cement this mutual Russian-German coalition, what in consequence, influences that this cooperation is not easy to "shift" as per Lebow's wording, even when there is a breach of international law by Russia (Crimea annexation) - detail below.

5.2.3 Reason based paradigm

Another paradigm that forms part of Lebow's theory is reason. This assumption is based on the fact that actors cooperate even when: *"(...)it may be contrary to their immediate self-interest"* (Lebow 2008, 77). Moreover, the author stresses that in the reason-based world conflicts is easier to resolve due to the existence of the common values: *"(...) conflict exist but it is relatively easy to resolve because actors share fundamentally similar goals and the*

same conception of justice. Propensity for risk-taking depends on the nature of the society and its principle of justice"(Lebow 2008).

A below Table number 6 groups different motives that ultimately influence the direction of one country's political decisions. These emotions, which each state aspire to satisfy, are being accomplished using different instruments. What it should also be emphasized is that the author underlines that it might occur that one country is moved by different motives. However, some of these emotions are more important than others, and it is where it can be detected, which motives have more weight than others; hence, they influence more frequently a state's political decisions, strategies. For example, a desire to fulfill some emotions is so dominate that *"(...) reason very often is not enough to suppress them"* (Lebow 2008), and it is where, again, it is easier to detect which emotions are the strongest drive in one country policy, here energy and climate policy of Poland and Germany. Also Russian motives are briefly explain as well since, because like said before, Russian energy policy (as a external stimulus) influence both German and Polish politics in this field.

Motives or emotion	**Goal**	**Instrument**
Appetite	Satiation	Wealth
Spirit	Esteem	Honor/Standing
Fear	Security	Power

Table 6 Motives, emotions, goals, means. Table credit to Richard N. Lebow (Lebow 2008, 90)

As it will be proved in the next section, because different emotions stand behind political decisions; hence, each country performs distinctive politics in the field of climate and energy. Also, it will be illustrated that Poland is driven mostly by the spirit and fear based - paradigm. The Russian policy falls under the spirit model and German policy is primary influenced by reason and appetite paradigm. However, also Germany is moving in the Lebow's spirit based - world (detailed description in Chapter VIII). In sum, fear, interest (classified under appetite paradigm), honor (the spirit-based world) has a power to*"(...) give rise to different foreign policy orientations and specific preferences (...)"*(Lebow 2008). Again, this is exactly what is happening in the case of Poland and Germany, in short, different motives that stand behind each of these two countries' psychological desires *"give rise to different"* climate and energy policies within the EU.

5.2.4 Fear based word

The last paradigm is the fear-based worlds. The main characteristic of it is conflicts because the primary goal to achieve is security. Safety is the highest aspiration for a state as its loss: *"(...) is understood to have catastrophic consequences"* (Lebow 2008). There is a certain level of cooperation between actors mainly based on fear because they perceive collaboration with other players of the international system as a way of increasing a country's security. Moreover, fear is the primary drive that leads states to, not only the creation of the mentioned coalitions, but also to increase the both economic and military power. All these actions result in the strengthening of one country's means/competency and self-sufficiency (Lebow 2008, 89).

In sum, Lebow, highlights that status is one of the most important goals and that also some realists, and liberals consider that *"(...) prestige in international relations is a means of maximizing power"*(Lebow 2008, 558). The next section of this chapter will illustrate how each state is reaching this prestige, however, what was detected is that Germany and Poland have a slightly different understanding of prestige, in other words, both countries associate status with distinctive condition, goods, possession (Chapter VIII).

5.2.5 Identity and order

As indicated above, country's history defines and contributes to one state's identity (country's national character). What is more, an identity is among the most significant factors, which immensely shapes and influences state's policy. Both, Richard N.Lebow and K.Waltz agreed in this aspect. Lebow also acknowledges after K.Waltz, that the character of the international system (here the character of international energy system) influences also how actors interact with each other; hence what their final strategy is(Lebow 2008b). Additionally, as per structural realism, each players' identity contributes to the character of the international system (Waltz 2010).

In Lebow's words: *"Identities are assumed to have a prior existence or develop in the course of interactions with other actors, interactions that are shaped, if not largely determined, by the character of the system in which they occur"*(Lebow 2008, 558). This theory assumption is essential when delivering the reply to the central question of the thesis: "why" Poland develops different politics in the field of the climate and energy of the EU in comparison to Germany. Expressly, how others actors behave, what strategy they design, has a direct impact on the Polish politics and these politics are as well an aftereffect of these countries' identities that contribute to the international energy system. These interactions, in the energy system, can also be compared to communicating vessels where states' policy leaves an imprint on others countries' strategy. The situation is illustrated in the Figure number 2: identity of actor A contributes to its own energy policy and, at the same time, shapes the character of international energy system and influences the energy policy of the actor B. Also, the character of the international energy system influences, in turn, the policy of both actors and might cause change in their identity.

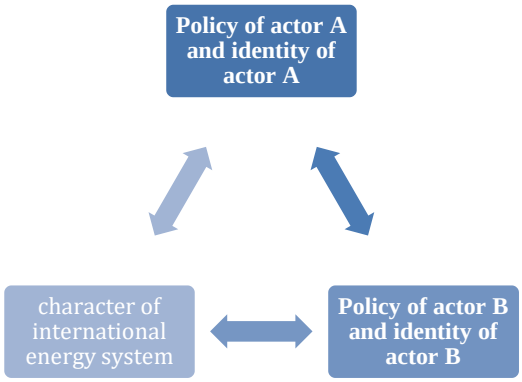

Figure 1 Different countries' identity influence the character of international energy system. Figure elaborated based on K.Waltz structural realism theory

Furthermore, Lebow stresses that identity can change. In other words, the identity of actor/state is not a final product, as said above. The change in identity might take place, through learning and observations: *"life experience"* and *"lessons they learn"*. The author highlights that *"(...)changes in interests affect identities"* (Lebow 2008b, 563–64). What is also crucial to the central question of the thesis is the fact that if re-shape of identity occurs in the case of leading players of the system, that naturally, and automatically, influences the character of the system (Lebow 2008b, 563–64) (Figure number 2).. This is especially noticeable on the state's domestic level, precisely, on the community level in Germany where this community acquired a new identity – "green" component, which finally managed

to influence and change the character of German state. As indicated in Chapter IV, the journey of Germany towards todays' low carbon energy and economy model started on the peripheries, and the new identity of the German's green community impacted the domestic energy system; hence, the state energy policy.

This movement of the green community, although on the smaller scale, can be noticeable also in Poland, where pro-consumers have the immense potential to change the identity of state in the context of energy production. However, as presented there is a low possibility that Polish state acquires new identity thanks to pro-consumers, who already experienced a change in their identity, also through the observation of the German pro-consumers. This is where the Lebow assumption about the *"life experience"* and lesson learned can be observed. However, on the contrary to Poland, the potential of the German pro-consumers was not wasted.

As mentioned, the next chapter and the two last chapters will identify motives that stand behind the Polish versus German policy in the field of climate and energy policy. This analysis will be based, as said, on the information given in the previous chapters and on the selected cases studies related to the energy relations, both with Russia, Germany and with the EU, as these relations have an immense impact on the character of the international energy system; hence, also on the Polish energy and climate strategy. The aim of the next chapter is to prove that Germany and Poland are driven by the different motives - aspire to fulfill different psychological desires on a state level, which,as indicated, is a principal reason, why these two countries design diverse policies in the field of energy and climate. The next section focuses on the external stimuli; these will be first evaluated. In Chapter VIII both external and internal stimuli will be analyzed shedding light on how they impact the climate and energy policy in Poland and Germany.

VI. The implementation of the theory of Lebow and K. Waltz

6.1 Introduction

In the light of the brief presentation of the Lebow theory, one of the assumptions of this section is that Russia's political decision and strategy in the field of energy have a direct impact on the overall energy and climate policy of Poland, Germany and also on the UE. As indicated, mutual energy relations, the security aspect of these relationships, the feeling of mistrust and fear have been already broadly discussed in the academic literature. However, to my knowledge, there is a gap in the literature as of how individual psychological motives on the state level impact the way Poland and Germany are approaching the climate and energy framework of the EU. Russia is a leading actor that has the power to generate the appearance of particular emotion and motives being the dominant player in the international energy system; hence these relations needs to be discussed through the lenses of the Lebow's theory, they cannot be omitted, particularly, in the context of Polish energy policy.

Also, the EU is the leading gas consumer in the world being heavily dependent on this fossil fuel from Russia. What is more, gas is seen, in the EU, as a transition energy source before the EU could entirely shift to the low – carbon energy model (European Commission, Feb.,2016, n.d.). Hence, the EU, Poland, and Germany being the biggest Russian gas consumers, have a lot to lose when it comes to gas relations. For that reason gas relations, mutual interaction in this particular area, can reveal a lot indicators about the states' feelings, The attempt to detect the Lebow's motives through selected case studies of gas relations have been made in the below section.

In the previous part of this chapter, the hypothesis has been stated that Russia is navigating mostly in the spirit based-world. This section will try to prove the correctness of this assumption. After having this classification, I will try to determine how the fact that Russia falls under a certain paradigm, shapes, not only its own energy policy but also the Polish energy strategies (Chapter VIII) contributing to the fact that Poland, in comparison to Germany, developed different policies in the field of climate and energy framework of the EU. However, what it must be underlined is that the Russian influence is listed among many others factors, here motives, that shape both countries' energy and climate strategy (again, discussed in Chapter VIII). In other words, the Russian energy strategy cannot be solely

"blamed" that Poland is not developing the low carbon energy model based on distributed generation; nonetheless, it impacts the outcome of the overall Polish energy strategy. In the course of this analysis the other motives might also be detected.
A similar analysis, in the case of Germany, regarding the motives' paradigm classification and how it influences the Polish energy and climate policy, will also be performed in this section with the continuation in Chapter VIII.

6.2 Case study Gazprom

It is commonly known that Russia is one of the most powerful units in the international energy system, thus it contributes significantly to its character. This position was built around and through the tight oil and gas relation's dependency with most of the European Union's countries, especially, with both, Poland and Germany and the EU as the whole. As per the structural realism, it might occur that this high degree of dependence of one country from another, is achieved thanks to the other state's natural resources (Waltz 1979). Furthermore, as it was illustrated, Poland became even more dependent on Russia because of the coal import.

Gazprom is the leading and dominant Russian gas and oil company controlling almost all gas and oil country's resources. Already these two fossil fuels have been named Russian weapons by many scholars, as per examples given earlier. The Russian government is the principal shareholder in Gazprom (Szul 2011). As it will be presented, this energy company is being also used as a tool to re-build the country self-esteem, status, honor, and prestige on the international system

Gazprom falls under the category of supranational agents, as per K. Waltz structural realism theory. Although the company did not *"(…)acquire some of the attributes and capabilities of states"* (Waltz 1979), guided by the Russian government can *"act effectively"* (Waltz 1979) as the supranational agent.

As it was indicated, some governments encourage the narrow competition on the energy market (Waltz 1979) and, through appropriate legislations successfully maintain the status

quo of the leading players (the example of Poland and Russia). Others governments (Germany) foster wider competition (Waltz 1979), market-oriented model. Now, these centrally - planned energy structures at home result to be more convenient for Russia and Poland to accomplish some of the psychological state's need related to different motives such as honor, self-esteem, prestige (spirit paradigm), status, satiation, wealth (appetite paradigm), reason paradigm (cooperation, some fundaments) and security, power (fear paradigm).

In this context the centrally - planned energy model (Poland and Germany) acts here as a tool, which facilitates to fulfill country's psychological motives. In other words, centrally – planned model, as it was mentioned before, is the *"mechanism of control"* through which some states (example Poland and Russia) have it easier to accomplish some of these motives on a state level. However, it might occur that there are different understandings of power, self-esteem, prestige, because, for example, states are on a different economical and political level (and already assure some of these motive and they now gained different dimension for them, example Germany versus Poland, discussed in more details later). In the light of the above, a tool and the way a country is accomplish its own needs, may and does vary. These differences will be discussed in Chapter VIII, here also it can be emphasized that Poland and Russia use the same mechanism of control (centrally planned model of energy) and there is not a lot of discrepancy in the understanding of some of these concepts (power, status, prestige) between these two countries. In other words, the connotation and association related to these concepts are similar. In the case of Germany, there have been detected some differences when comparing the understanding and interpretation of these concepts with the connotation and understanding of them by Poland and Russia (Chapter VIII).

As per the structural realism theory, the non-firm actors are capable of *"(...)threatened and regulated other firms"* (Waltz 1979). It could be observed in the case of Germany and pro-consumers community. However, it can also be said that in the case of Gazprom, firms can equally threaten states. In other words, the role of Gazprom on the overall character of international energy system cannot be underestimated.

Gazprom, being a leading global firm in oil and gas industry, contributes significantly to the Russian GDP, what is also noticeable on the Gazprom's official website when analyzing statistics. For that particular reason, this firm is a strong colonnade of the Russian economy.

On the other hand, also Russian economy, as stated in many academic pieces of literature, is also significantly dependent on its oil and gas export. As per K. Waltz's premise the larger a state's *"(...) exports, the more it depends on others"*(Waltz 1979). That situation goes in both directions. In the past, the revenue from this fossil fuel industry helped Russia to regain after the collapse of the Soviet Union in 1990. Also, in the timeframe of 2000-2008 GDP grew about 5% thanks to oil and gas import, in 2009 increased by another 8%(Paltsev 2014). In the light of above the desire to strengthen and control oil and gas market should not surprise as the Russian GDP would be affected drastically in case of the possible loss of business partners. In the K.Waltz's words: *"The more dependent a state is on others and the less its leverage over them, the more it must focus on how its decisions affect its access to supplies and markets on which its welfare or survival may depend"* (Waltz 1979, 153).

Poland and Germany, as the whole EU, are dependent on the Russian gas and oil, and through investment in renewables energy sources, Germany aims to minimalize this dependency. As said above, Germany aims that, in the future, the nuclear power plants and gas are replaced by renewables (Goodman 2016), however meanwhile Germany still needs Russian gas. This high degree of dependency from the Russian fossil fuel, allows this country to dictating conditions in the international energy market. However, because its economy is also vulnerable as it relied significantly on fossil fuel export, Russia tries to control and tighten, even more, the energy market within the EU. These gas relations are cemented well with some Western European countries through Nord Stream I, Nord Stream II and Opal gas pipelines. In case of Poland, as discussed in Chapter III, the degree of dependency from oil (*"Friendship"* pipeline) and gas (Yamal pipeline) is high. For that reason, Poland tries to re-build, at any cost, the former status of the Polish coal, which would help to increase the country's self - energy sufficiency.

As per the structural realism, it is common that each country aims to minimalize dependency from others state and increase self-energy sufficiency. As per selected case studies, this will be clearly seen in the case of Poland and Germany.

As per the below data (see Table number 7), the dependency from the Russian gas has been growing continuously. Since 1980 Russia delivered to Europe 54.8 billion cubic meters. In 2015 the gas delivery reached 158.6 billion cubic meters, 82% out of the total 158.6 billion cubic meters were delivered to Western European countries and the rest, 18% to Eastern Europe ones (Gazprom Export, n.d.).

Year	1980	1985	1990	1995	2000	2005	2010	2014	2015
Total	54.8	69.4	110.0	117.4	130.3	154.3	138.6	146.6	158.6

Table 7 Gas supplies to Europe in billion cubic meters (Gazprom Export, n.d.)

Among the biggest consumers of Russian gas are Germany with 45.31 billion cubic meters out of the total of 130.055, which was supplied to Western European countries in 2015 (the data also includes Turkey with the total consumption of 27.01 billion cubic meters in 2015). The second position, among the biggest Western European Russian gas consumers, is occupied by Italy with the total 24.42 billion cubic meters in 2015, France with 9.7, Austria – 4.4, Finland and Netherlands, 2.76 and 2.38 respectively (Gazprom Export). Having this dependency in mind, one cannot be surprised that Western European countries joined the pipeline project (North Stream I, II and Opal, detail below) to secure their gas deliveries.

When it comes to the biggest consumers among Eastern European and Central Europe countries, Poland is occupying the first position with the total consumption of 8.91 billion cubic meters out of 28.508 delivered to these countries in 2015. The second place is taken by Hungary with 5.87 and by the Czech Republic and Slovakia with 4.20 and 3.81 billion cubic meters respectively (Gazprom Export, n.d.).

Regarding oil, it can be observed the same massive level of dependency in Europe. In 2014 around 29.0% of the EU's oil import came from Russia with Norway being the second biggest exporter of crude oil and gas to Europe, South Africa, Australia and Colombia are the next suppliers of this resource to Europe (Eurostat Statistics, 2016).

Gazprom declares that its primary strategic objective it to establish itself as a *"leader among energy companies"*(Gazprom Company 2017). Also, because of that all activities related to

transportation, production, processing, distribution, selling (Gazprom Company 2017), etc., are accumulated under Gazprom's management, which is contradictory to the unbundling model introduced [61] (European Commission, Mar.,2011, n.d.) with III Energy Package. However, Russia, as not being a Member of the EU, cannot be "required" to follow the European rules in that field. What is more, Russia being an "honor society" that aims to rebuild its status after the collapse of the Soviet Union (describe below in more details); hence navigating in the spirit based paradigm, will never agree on the EU *"external governance's"* role in the field of external energy policy, which means on the expansion of *"acquis communitairs"* to the non-Member States of the EU(Herranz-Surrallés 2016). That would be equal with agreeing on the *"leadership"* and admitting *"higher standing"* of the EU (Lebow 2008, 72), and as mentioned, honor society is very reluctance to do it; hence the collaboration with the honor society can be more difficult. In the light of the above, it is easier to "understand" Russian unilateral and aggressive politics, that very often breach the international law rules: examples the Crimea annexation, the war in Georgia, the cease in the gas delivery to Ukraine, all of these political acts indicate that the country very often acts against commonly understood European legal standard and international law rules.

In the light of the above, it should not surprise that oil and gas are perceived by Russia like coal by Poland. In other words, these fossil fuel resources have not only reached a status of national treasure but also serve as a weapon (European Commission,May.,2014, n.d.) through which, Russia not only seeks to accomplish some political goals but also the other psychological motives; hence Gazprom is not just the commercial company. What is more, precisely the power that can be acquired through oil and gas helps Russia to fulfill these psychological stimuli.

The primary one, which is visible and described in the below example, is the Russian needs for self-esteem by re-establishing the country's status and honor. As indicated, these feelings are typical for the spirit-based paradigm, and if so, then, the past plays an important role,

[61] The primary goal of unbundling is to introduce fair competition which can be accomplished by eliminating the dominant position of one energy firm responsible for all business line related to the energy field, such as transition of power, production and/or supply of energy. The introduced separation of these activities allowed others companies access energy market and create a more fair market and competition (European Commission, Mar.,2011.).

especially when it was a negative experience (Lebow 2008), which was in the case of Russia. The county, as per Lebow's classification, also falls under the category of *"prevents power"(*Lebow 2008b) - great power that in the past were *"ostracized"* by other great powers or humiliated by them - the collapse of the Soviet Union is interpreted as such by Russia (example below).

Expressly because of that past, as per the Lebow's premise, Russia may feel a need for revenge, what is being reflected in her politics. Moreover, that would also contribute to the explanation why Russia conducts so aggressive politics breaching the international law rule. As described, the aggressive behavior is typical of the honor society, and Russia is also classified as such, because of the above (past humiliation, desire to re-build the country status and prestige). Moreover, the need for revenge rooted in the past shame translates into aggressive political strategy and have a significant influential power to affect the whole international energy system and each actors' policy separately. Said that, the unilateral power politics of Russia has an impact also on the Polish and German energy and climate policy as both countries depend heavily on the Russian gas and oil export.

According to famous Putin's words, spoken out during the parliament meeting in 2005, the worst tragedy of the XX century was the collapse of the Soviet Union (President of Russia, Apr.,2005). After 9 years, during the other speech in the Russian Parliament Putin still repeated these words saying that the collapse of USSR (The Former Soviet Union) was impossible to happen, but at the end, it took place being "*(...)truly dramatic(…)events"*(President of Russia, Mar.,2014).These statements (together with the aggressive power politic of Russia towards Crimea, Ukraine, etc.) can support the hypothesis that unfavorable Russian history (here feeling of shame and humiliation) is still present in her country's spirit.

These feeling were also ultimately manifested in Russia's aggressive energy security politics (as per some of examples below) and power politics overall. As per Putin's words: *"Above all, we should acknowledge that the collapse of the Soviet Union was a major geopolitical disaster of the century. As for the Russian nation, it became a genuine drama. Tens of millions of our co-citizens and compatriots found themselves outside Russian territory. Moreover, the epidemic of disintegration infected Russia itself"*(President of Russia,

Apr.,2005).These words also underlined Russia's self-conscience about her unique identity as a state, that was affected by the disintegration due to the collapse. This unique state's character is also based on the feeling of own set of values and outstanding accomplishment. In Putin's word*:"(...) the people of Russia had to both uphold their state sovereignty and make an unerring choice in selecting a new vector of development in the thousand years of their history. They had to accomplish the most difficult task: how to safeguard their own values, not to squander undeniable achievements, and confirm the viability of Russian democracy. We had to find our own path to build a democratic, free and just society and state"* (President of Russia, Apr.,2005).

What should also be emphasized is that states are framing their political decisions in the name of motives that have nothing to do with reality. Lebow recalls the period of Cold War when the United States framed its strategy under the security concept, however *"(...) host policies and programs (...) had little or nothing to do with security"* (Lebow 2008, 444). The primary and essential reasons were the state's desire for domination, having a status of hegemony in the world. As a result of this, the original motives were hidden successfully. In the case of the Putin's speech, we can observe the same, having in mind his aggressive policy towards mentioned Crimea, Georgia, etc. (below are listed other example related to the gas relations in Europe). In other words, the real reasons were downgraded by the official motive to *"(...)build a democratic, free and just society and state"*(President of Russia, Apr.,2005) when the true underlying stimulus was, and it is, the re-establishment of the country's status, power and prestige. The below words of Putin confirm that hypothesis: *"Above all else Russia was, is and will, of course, be a major European power"*(President of Russia, Apr.,2005).

The feeling of uniqueness in the sense of no - identification with the European Union's law and international law's standard overall, manifested itself also in the rejection of mentioned unbounded rule related to gas and oil market. The Russian government considers the unbundling model (European Parliament, Apr.,2009, n.d.) of the EU as *"anti-Gazprom clause"*(Boussena and Locatelli 2013). If this European standard would have to be applied, that would mean that Gazprom, as one firm, would have to change its company structure. Nowadays all the segments of the energy production (distribution, transmission, marketing, etc.,) are under the responsibility of one single company (Boussena and Locatelli

2013),(Gazprom Company).However, such designed structure, helps to maintain the monopolist position on the energy market. More, this energy company acting as a super-agent (Waltz 1979) is a part of the mentioned *"control mechanism"* for a state, through which, a country has it easier to accomplish its psychological motive. This model like indicated, is also applied in Poland, where at the end of 2016 the Polish National Foundation has been founded that groups all the 17th industries (energy companies included) with the leading role of the Polish government(Treasury of State,Jul.,2016, n.d.).

However, there is a certain degree of liberalization of the Russian energy market, as the government allowed some private company access the energy structure. As a consequence of that, the illusion of competition in internal energy system has been created. Illusion, as these businesses, cannot compete with Gazprom, which remains the leader and the biggest state-controlled company (Boussena and Locatelli 2013).

The fossil fuel resources help, first; to build state's both political and economic wealth that ultimately means power, second; strengthen state's autonomy and identity. Similar like in the case of Poland, Russia also associates her identity with her natural raw materials. What is more, Gazprom in his advertisement slogan in the Russia TV, referred to the company as a national treasure (Index3000, n.d.). That statement only proves how strongly a country's identity is linked to the gas and oil sector when even the company, and not only domestic natural resources, are put on such high pedestal.

Here, we can recall the situation when in 2007 two Russian submarines put the Russian flag on the bottom of the Arctic Ocean[62] claiming, through this symbolic act, that this zone belongs to Russia. Umbach speaks, in this context about the *"resource nationalism"*(Umbach Frank, 2010) meaning that this global oil and gas reserve, in the opinion of the Russian government, belong not to the world but to Russia. This act is a typical example of the aggressive politic, behavior characteristic to honor society (Lebow 2008). More, this situation also proves that, in case, when something is paramount to Russia contributing to the country's economic and also political well-being, here the access to the word national resources – the state is willing to breach international law rules to assure its

[62] The Arctic Ocean, as per some forecasts, has up to 25% of the global oil and gas reserves and other non-energy resources (Umbach Frank, 2010).

control over these fossil fuel world's reserves. And, as a consequence, the country maintains not only the mentioned, economic well-being, but, at the same time, is re-establishing country's status and prestige. And prestige is equivalent to a dominant position in the energy international market, as indicated *"prestige is a means of maximizing power"* (Lebow 2008), and status, which can be achieved through power and prestige, is for a state a *"most precious possession"* (Lebow 2008).

These kinds of political accidents (more example listed below) are being observed by other country causing that they might feel threatened, what, in turn, might activate, the mentioned: *"vicious cycles of security"(*Waltz 1979). As a consequence, a feeling of fear turns to be an additional variable that has the power to impact the final vision of one country's energy strategy. For example, the centrally – planed energy model at home (Poland) - named previously as a *"mechanism of control"* - can be a consequence of this fear. What does it mean exactly? With this particular model, a country might have a greater sense of control over the situation than when giving the ownership over energy to the public by promoting distributed generation on a big scale.

In other words, such designed domestic energy structure might give Poland a sense of illusion that with the centrally - planned model the country is more capable of responding better when threatened by others states. This kind of hypothesis is based on and, is also inspired by, some comments of leading politician: example *"threat of gas dictation from Russia"(Gazeta Wyborcza,Mar.,2014, n.d.),* or the mentioned gas dictate in the official document *"Polish Energy policy until 2030"*(Ministry of Economy, Nov.,2009, n.d.) However, the energy security could also be increased and secured by the use of the development of renewables. It is not happening because the Polish government (on the domestic level) is navigating in the appetite - based world and, as said, wants to have full control over the country's energy. On the external level, Poland is navigating in the spirit and fear paradigm (developed and discussed in more details in the conclusion part – Chapter VIII).

Polish defensiveness and mistrust towards Russia are being expressed officially also because, as indicated already, Gazprom is used by the Russian government as means of influencing and controlling the political outcome in the energy system, which aspect has been already

discussed many times in the academic literature. Nonetheless, some examples can be recalled to view them again from the Lebow's perspective and, in the context, of their influence on others' countries energy strategy. One of these examples is a different gas pricing[63] for the Eastern and Western European partners. Another proof that Gazprom acts almost like an additional governmental unit is a cease in the gas delivery to Ukraine in 2014 and the drastic changed in the price[64]. When the gas delivery to Ukraine stopped, the President of Russia addressed the letter to 18th countries[65](President of Russia, Apr.,2014) that import Russian gas through the Ukraine's territory. That shows Gazprom is not an independent company, but indeed is a tool, through which Russia accomplishes her political goals, at the same time, fulfilling Lebow's psychological motives. In other words, with the letter, the government gave a signal to all these European countries that Russia controls the situation on the energy market. From the Lebow's theory perspective, again, this control and dominant position is one of element thanks to which Russia is accomplishing the country's need for prestige, honor, and status.

[63] As per data from 2013 Western Europe paid around 400$ per thousand cubic meters of gas, when Poland and the Czech Republic needed to pay over 500$(Natural gas world, Aug.,2014, n.d.).

[64] The price for the gas increased from 268$ per thousand cubic meters to 485$ when the pro-European leader came to power replacing pro-Russian Wiktor Janukowycz. President Putin was claiming, in the letter sent to the European Countries, that the cease in gas delivery to Ukraine occurred because of lack of payment (President of Russia, Apr.,2014). This reason was commented by the Polish Prime Minister - Donald Tusk as a *"political cynicism"*(Gazeta Wyborcza, May., 2014, n.d.).

[65] Austria, Bosnia and Herzegovina, Bulgaria, Czech Republic, Croatia, France, Germany, Greece, Hungary, Italy, Macedonia, Moldova, Polish, Romania, Serbia, Slovakia, Slovenia and Turkey

VII. Polish initiative regarding energy policy within the EU and Polish energy relations with Germany from the Lebow's and K. Waltz perspective

7.1 Energy solidarity in the Treaty of Lisbon and the Energy Union

As mentioned above, the cease in the gas delivery was described by the Prime Minister Donald Tusk as the *"threat of gas dictation from Russia"*(Gazeta Wyborcza,Mar.,2014, n.d.) and short after this accident, in April 2014, the Polish Prime Minister proposed the establishment of the Energy Union (Austvik 2016b) to secure gas delivery, not only to Ukraine but also other European countries. Primer Donald Tusk suggested common strategy when it comes to the gas purchase from Russia, which would result in the same gas prices (Gazeta Wyborcza, 13 Mar.,2014).

This kind of political initiative is a typical example for the Lebow's appetite paradigm when coalitions are strengthening to*"(...)advance common interest and provide mutual assistance"* (Lebow 2008). Before the idea of creating the Energy Union, Poland proposed together with few other countries to add to the Treaty of Lisbon (December 2007) a separate chapter about energy solidarity (Szul 2011).It can be considered as a significant first milestone towards the future foundation of the current Energy Union's framework launched a few years later, in February 2015(European Commission,Feb.,2015, n.d.).

The attention should be drawn to the fact that the energy solidarity of the Lisbon Treaty appealed to *"the spirit of solidarity"*(Eur-lex, Apr.,2010, n.d.). That means that unity and loyalty of each Member State when realizing energy policy should be present (Eur-lex, Apr. 2010, n.d.). This particular point is important from the Lebow's perspective as it can be interpreted that appetite paradigm (particular economic interest of each Member States) should not prevail over reason. Here, precisely, in this context, appetite should not have a bigger weight over *"the spirit of solidarity"* if the real common energy policy is aimed to be accomplished. This expression can also be understood as Lebow's *"principal of justice"* and shared *"fundamentally similar goals"* and values – two main characteristic of reason based paradigm (Lebow 2008).

In practice, it is being materialized through solidarity, unity and honorable fulfillment of the energy EU law (for example the established a few years later: III Energy Package, internal market in electricity Directive2009/72/EC, internal market in natural gas Directive 2009/73/EC (EC, Energy, n.d.)). In other words *"the spirit of solidarity"*(Eur-lex, Apr. 2010, n.d.) should be a determinant of the energy policy of each Member State. The same *" spirit of solidarity"* became in 2015 *"at heart of Energy Union"*(European Commission,Feb.,2015, n.d.).

Although, in the case of the Lisbon Treaty, the chapter on energy was criticized for not introducing the precise, technical description regarding the interconnectors (Szul 2011), it can be considered as a success being a fist attempt, on the EU level, of strengthening the energy unity and solidarity. It founded ground for *"providing mutual assistance"*(Lebow 2008) in the field of energy market operation, a safety of energy delivery, development of energy interconnection, energy efficiency (Eur-lex, Apr. 2010). The energy solidarity of the Lisbon Treaty is the example that the EU (understand here as a single actor) is being guided by both, reasons (actors have core complementary aims strengthened by the shared fundamental values) and appetite paradigm.

Now, this expression about *"gas dictate"* of Polish authorities expressed in the context of price in the official energy strategy document(Ministry of Economy, Nov.,2009, n.d.) can be an indication, if assessing it through the lenses of the Lebow's theory, that Poland is guided in her energy policy by the fear paradigm. The EU is viewed as a platform to increase the national energy security. Again, a reference to the realism theory can be made: *"(...)swimming separately looks attractive to those able to do"*(Waltz 1979). For Poland *"separate swimming"* results complicated, also because of the country heavy dependence on Russian fossil fuels. Even in the official communication that set up the framework for the Energy Union, the European Commission highlights that *"Six Member States depend on a single external supplier for their entire gas imports and therefore remain too vulnerable to supply shocks"*(European Commission,Feb.,2015, n.d.). As it was illustrated in previous chapter one of these country is Poland that imports from Russia around 97% of oil and around 70% of its gas demand(Ministry of Economy, Nov.,2009, n.d.),(Ministry of Energy, Aug.,2015, n.d.).

In other words, for Poland the EU is seen as a way to establish a counterweight for the Russian "dictate". On the other hand, framing the energy policy in terms of security, (treated in the academic literature already (as mentioned in the introductory part) is also a convenient argument when it comes to the internal energy policy and blocking the development of distributed generation. With the centrally - planned energy model, the government creates an illusion and a counterargument (for investors) that country is more capable of ensuring the country energy security.

The Polish fear and insecurity can be increased by other states' politics, especially in the field of the gas relations. It is worth quoting here now the Angela Merkel's reply to the former Prime Minister Donald Tusk regarding his proposition of jointly purchase of gas from Russia: *"Gas is not bought by governments, but companies on the basis of different contracts"*(Gazeta Wyborcza, 13 Mar.,2014).

More, in the same tone, the EU Commissioner of Energy Politics, Günter Oettinger, confirmed the German approach towards gas: *"I do not agree to a politically appointed common price (...) For the EU, gas is a commodity, not a political weapon"* (Rzecz.Posp.,May.,2015, n.d.).The idea proposed by Tusk was interpreted as against the internal rules market, where competition, free movement of services and goods (Austvik 2016) are its core bases.

For that reason, the framework of the Energy Union established in February 2015 did not include the proposition of the Polish Prime Minister Donald Tusk regarding that matter. The decision can be understood from the EU law point of view and the internal market rule as said. However, it is also commonly known, that there are close relations between these energy enterprises and governments. Although Angela Merkel said that the purchase of gas is the business responsibilities of energy firms and *"is not bought by governments"* (Gazeta Wyborcza, 13 Mar.,2014) she appeared on the Nord Stream I gas pipeline's inauguration back in 2011[66](President of Russia, Nov.,2011). As noticed by A.Herranz, the agreement to

[66] Other countries' Prime Ministers, which companies were involved in building Nord Stream I also took part in the inauguration: Prime Minister of the Netherlands - Mark Rutte, Prime Minister of France - Francois Fillon, and the EU Energy Commissioner - Gunther Oettinger were present (President of Russia, Nov.,2011).

construct the Nord Stream I gas pipeline's was being *"depoliticized"*, which means the German parliament was not involved in the final approval decision, but the agreement was presented as the commercial deal between companies (similar situations happened now with the Nord Stream II 2016,with the only objection from the German Green party in the parliament)(Herranz-Surrallés 2017). In the light of the fact, that Angela Merkel took part in the official inauguration of the first leg of the Nord Stream (I) pipeline can be understood and interpreted that in practice, these kinds of the gas agreements do not have a pure business character.

At the end, the Energy Union referred to some general political actions that need to be taken, with the special emphasize placed on three words: *"security, solidarity, and trust"*(Energy Union, n.d.). The primary goal of the Energy Union is, nonetheless strengthening the EU's energy safety that is too dependent on external energy delivery, including Russia(European Commission,Feb.,2015, n.d.).

The Energy Union, although it relates to diversification and security aspect *"(...) through solidarity and cooperation between the Member States"* (Energy Union, n.d.), it concentrates more on sustainable energy dimension. The main pillars covered by the Energy Union's framework refers to, the mentioned solidarity and trust, integration of energy market, energy efficiency, innovation, research in the field of clean technology, the low carbon energy and economy model and energy for customers (European Commission,Feb.,2015, n.d.).The concrete steps that would secure, in practice, the possible interruptions, or any other problems related to gas's delivery to the Central and Eastern European countries, as noticed by Austvik, have not been included (Austvik 2016a).

Nonetheless, as per the Energy Union's framework, the EU has to strengthen its position on the international energy market, which can only be achieved by the political involvement of all Member States of the European Union. What is more, the document even stresses that energy policy cannot be *"(...) used as a foreign policy tool, in particular, in major energy producing and transit countries"*. Also, it enhances that the Energy Union should be based on *"true solidarity"*, *"speak with one voice in global affairs"*, because only through strong collaboration the EU can *"improved global governance system for energy"*. In sum, all

Member State should *"see that depends on each other"* (European Commission,Feb.,2015, n.d.).

Now, in the light of the above, it can be said that the European Union is based on the reason paradigm and as the institution is aiming to establish policies that are rooted and based on shared values and common goals. In other words, the EU is acting as a *"blockade"* for Member States' appetite and spirit so these two motives/desires do not overtake reason in certain political circumstances. The established framework of the Energy Union is one of the examples of such policies, which goal is also to hold up states' spirit and appetite. In other words, the EU acts as a gatekeeper for a reason, and reason in the words of the author *"(...)constraints and educates appetite and spirit"*(Lebow 2008b) which, as a result, assures that there is an order and strong collaboration. When spirit or appetite or both of these motives overtake reason, then there are consequences for each actors (Lebow 2008, 539) of the international energy system, which we can observe on the below examples regarding Nord Stream I, II and Opal.

As per K. Waltz's premise, countries, before joining any common projects, evaluate alternatives, see benefits and losses, and base on that assessment take decisions. Here again, for some European, old Member States of the EU, with Germany leading the way, it resulted more beneficial to establish more selective gas relations with Russia, even though these relations were being questions by Poland. In the next section, the gas pipeline: Nord Stream I, Nord Stream II and Opal are discussed from the Lebow's and K. Waltz's perspective to determine how these relations can influence the energy strategy in Poland and also to detect hidden motives that stand behind involved countries' policies.

7.2 Nord Stream I, Nord Stream II, Opal

As it will be illustrated below, some of the Western European countries, including Germany, do *"swim separately"*(Waltz 1979) when it comes to the gas relations with Russia. The examples of the gas pipelines: Nord Stream I, Nord Stream II (the construction is still not being finalized) and the latest controversial decision of the EU regarding the Opal gas

pipeline, can be named. The building of the Nord Stream I and possibly Nord Stream II additionally increased a feeling of insecurity, mistrust, and fear in Poland. More, the situation likely created suspicion towards the energy unity, deepening doubts about *"the spirit of solidarity"* (European Commission,Feb.,2015, n.d.). The question that could arise is about the erosion of *"security, solidarity and trust"* (European Commission,Feb.,2015, n.d.) among the Member States of the EU. This feeling, in turn, could also influence and, be materialized and reflected in the Polish reluctance towards any climate and energy policy of the EU that might impact her own energy vision, hence, the Polish government's objection towards the low carbon energy decentralized model based on renewables, which is one of the most important aims of the Energy Union (European Commission,Feb.,2015, n.d.). However, that situation cannot be any excuse, on the internal level, to refuse the citizen rights of generating their own energy.

The Nord Stream I pipeline was constructed under the Polish Baltic Sea bypassing Poland and Balkan Republics and delivering gas directly to Germany and other Western European countries. The Nord Stream I was constructed by the leading energy companies of the Western European countries[67]. The fact that Poland was excluded from the project, especially when the pipeline was constructed under the Polish Baltic Sea, was very negatively commented by the Polish government. One of the strongest, broadly quoted statement, was made by the former Foreign Ministry Radosław Sikorski, who compared the Nord Stream (I) pipeline to the Ribbentrop-Molotov Pact[68] (Polish Sejm, Jul.,2008, n.d.). Moreover, R. Sikorski underlined the lack of transparency in the EU and said that: *"Taking the decision first and consulting us later is not our idea of solidarity"*(NY Times, Oct.,2009, n.d.).The similar negative opinion, making a connotation to war, was made by the former head of security service, Z. Siemiatkowski, who described the Russian dominance as follow: *"Yesterday tanks, today oil"*(NY Times, Oct.,2009).

[67] Gazprom (51% of shares) and German firm E-ON Ruhrgas and BASF also the some shares (around 9%) has the Dutch firm Gasunie (Szul 2011a).

[68] The Ribbentrop-Molotov Pact was signed few days before Germany invaded Poland (1st of September 1939). It was signed by the Foreign Minister of Germany - Ribbentrop and by the Foreign Minister of Russia - Mołotow. The Pact is also called the Treaty of Non-aggression as two countries renounced warfare between each other's and promised to remain neutral in case attacked by the third party.

These references to the tanks and the Ribbentrop-Mołotow Pact show that Lebow's premise related to the importance of the impact of harmful past is present in the politics; hence it can be translated in pejorative connotation to the current politics. This particular reaction of the Polish government also proves the existence of a feeling of mistrust towards not only Russia but also to Germany. When these negative feelings appear, typical for the honor society - *"ostracized"* (Lebow 2008) by the greater powers, a desire to defend own country's identity, autonomy; hence also a historical energy mix being a part of this identity, might increase. In turn, as said, these negative feelings can contribute to the Polish defensive and reluctant attitude towards the EU's climate and energy framework, with Germany, being a powerhouse of it. In other words, the climate and energy policy of the EU is being viewed not as a long term strategy but as something temporary, more as*"(...)ideological tendencies that have emerged in Europe"*(Prime Minister,Jan.,2014, n.d.) as per the words of the former Prime Minister Donald Tusk. Moreover, a comparison to the Ribbentrop-Molotow confirmed that Poland felt not only excluded but also betrayed. We could say that the trust towards Russia after construction of Nord Stream I was strongly eroded, and that has later its consequences on the mutual Polish-Russian relations (especially now, the condition of these relations, in the light of the possible construction of the Nord Stream II, can be easier noticed). As *"(...) trust (...) shape(s) the condition of actors' performance"*(Natorski and Pomorska 2017), then, it can also be said that it influenced and shaped, in this particular case, the Polish attitude (suspicious) towards Russian energy policy.

In sum, particularly when the circumstances are not favorable (erosion of trust and when the suspicion and doubts towards energy solidarity appear) it may occur and, it does occur, in this context, a shift towards different paradigms. Here, reason base paradigm (translating in collaboration with the EU and visible also in the transposition of the EU law, here energy law to the national jurisdiction) changed towards spirit-based one. As it was indicated, for spirit based paradigm dispute, conflict takes place more often than in the case of the appetite and reason paradigms. The statement of former Prime Minister E.Kopacz: *"We came from Brussels with a shield"* (Prime Minister Office, Oct.,2014 2017) perfectly proved that hypothesis revealing the defensive position of the Polish government (as mentioned above, she used the above wording to comment the outcome of the negotiation regarding the free permits for the CO_2 emission extended from 2019 until 2035).

For Poland, the Nord Stream I, II, pipelines are the example of the Putin's imperialistic strategy in the energy system in Europe. The Russian strategy in this field is being interpreted by Poland, as a desire to re-build the old Russian Imperium with all the country's influence zone (in the Balkans and the Central European countries). Naturally, this is not going to be accomplished through the physical domination. The strategy, as will be illustrated below (also Nord Stream I and Opal) is based on the establishment of more separate gas relations with the Western European countries, what in turn, stimulates the erosion of the solidarity of the European Union. In sum, the Western European countries have, as a consequence, more stable energy relations with Russia than the Eastern European ones, what causes the introduction of element of fear in the mutual relations. Gazprom enjoying its dominant and leading position in the international energy system is the main tool for the realization of this strategy.

One might now ask if choosing the date of the Bolshevik Revolution 1917 when launching the first leg of the North Stream I pipeline is only a coincidence? Or it is rather direct sign that history, both successful events, and less favorable ones, is being especially rooted in the present Russian politics. Again, that confirm the correctness of the Lebow's premise about the impact that one country's history, identity can have on its politics. What more, the state's character, identity can immensely shape not only its own country's policy, but also influences other countries' strategies contributing as well to the nature of international energy system (Figure 2).

By choosing the date of the Bolshevik Revolution, the Russian government, highly probably, wished to highlight the importance and role of the Nord Stream gas pipeline's project in expanding the country's gas dominance in the European market, keeping European partners even more dependable. This situation, as a consequence, contributed to re-establishment of Russia prestige and the country's self-esteem, and in the case of Poland, deepened the country's fear and insecurity, also trust towards partners in the EU, which has its translation on the Polish energy strategy, both at home and outside.

In the light of the above, the question emerges automatically, is Nord Stream I only an economic enterprise between leading Western European companies or it has a political underneath aspect? It is important also to draw attention that, even though Angela Merkel is

one of the longstanding opponents of the aggressive Russian politics, Germany tightens its economic relations with Russia, establishing the gas hub in its country. Worth recalling is Angela Merkel's comment regarding the Russian annexation of the Crimea. She described it as *"the criminal annexation"*(Federal Chancellor, May.,2015, n.d.) and, admitted, that because of this aggressive event and also *"(...)the military clashes in the Eastern Ukraine(...)"* the collaboration between Russia and Germany *"suffered a serve setback"* (Federal Chancellor, May.,2015, n.d.). Nonetheless, as already concluded above, highly probably this cooperation does not include "pure" economic transaction.

What is more, even though, Angela Merkel said that the Crimea annexation was both, violations of international law and *"(...) the foundation of the common European peace order (...)"* (Federal Chancellor, May.,2015, n.d.) the economic cooperation (Nord Stream II - 2015) between these two countries did not *"suffer a serve setback"* (Federal Chancellor, May.,2015, n.d.), even though that Angela Merkel said to other EU leaders that Putin *"could not be trusted"*(Natorski and Pomorska 2017).

For Russia, this was not an annexation but referendum [69] that was held according to democratic standards and international rules and thanks to which, people leaving in Crimea (also Crimea Tatars) returned to *"their homeland"* (President of Russia, Mar.,2014).

4 years after the Nord Stream I started to operate, the new agreement for the construction of the second leg of the Nord Stream I – the Nord Stream II was signed on 15th of September 2015. Gazprom again remained the leading shareholder with 50% of stakes. German E.ON, Austrian OMV, Dutch Shell, German Wintershall and former French giant GDF Suez – today's ENGiG, all 5 companies proportionally accounted for 10 % shares each (European Parliament, Apr.,2016, n.d.).The project is scheduled to be completed in 2019. This decision was commented by the Polish Prime Minister Beata Szydło as being the project more of the political nature rather than the economic one: *"We believe that the investment Nord Stream*

[69] This aggressive – power politics of Russia is explained using the different interpretation of real fact and therefore to mask real motives (psychological country's desire) that stand behind the Russian politics denying the apparent obedience to the international order and law. Here worth mentioning, are words of George Orwell *"Political language is designed to make lies sound truthful(...)and to give appearance of solidity to pure wind"* (The Economist, Jul.,2013).

II is not justified on economic grounds and is only politically motivated. This assessment we clearly express also on the EU forum" (Polish Press Agency, Feb.,2016).

The former Prime Minister Prof. Jerzy Buzek expressed even that the EU cannot speak about the Energy Union and, at the same time, agreed on the Nord Stream II (Natural Gas World, Apr.,2016, n.d.). Russia seems to be perfectly aware that common economic interest (the appetite paradigm of Lebow) can prevail over the higher values like solidarity (which here, like indicated, can be assigned to the Lebow's reason paradigm, with the EU representing the core common goal and values). The quintessence of the Russian attitude towards the energy's unity within the EU, or even towards the existence of the common Energy Union, is reflected in the words spoken out when the Nord Stream I (2008) was being constructed. The pipeline's delegate to the EU, Sebastian Sass said: *"As far as common energy policy exists, we are part of it on the highest priority level"*(NY Times, Oct.,2009, n.d.). The expression *"as far as"*, in this context, says it all.

What it should be emphasized is the fact that since the construction of the Nord Stream I, the EU energy law has been evaluated. The first leg of Nord Stream I was constructed in 2008, which means before the III Energy Package and gas directive that entered into force in 2009 and before the Energy Union's framework was established. Nonetheless, the "*spirit of solidarity"*(Eur-lex, Apr.,2010, n.d.) of the Lisbon Treaty was already in placed. Moreover, there are some aspects that should be considered. First, the national regulators of the countries, through which waters the pipeline is going, need to give permissions to construct the project (Russia, Finland, Sweden, Germany, and Denmark). Now, in the case of Nord Stream II, it is questionable if the construction of the pipeline will comply with the EU energy law. One of the rules is already not in line with the III Energy Package, as owners of pipelines cannot be, at the same time, providers of gas. That is not possible since Gazprom is both the owner of the pipeline and supplier, similar to the other Western European companies involved as suppliers and providers (Sell, OMV, Engie) and, additionally, the access to the 3rd parties needs to be provided on the non-discriminatory basis. That means the rule of the unbundling (gas directive) is not being complied (Energypost, Apr.,2016, n.d.).

What is interesting is the fact that German regulators (the Bundesnetzagentur) do not agree

with the European Commission's point of view that the Nord Stream II pipeline does not comply with the EU energy legislations (Financial Times, Mar.,2017, n.d.). The fact that the EU does not agree with the construction of Nord Stream II, also because of the fact that it is against the idea of solidarity within the EU, it can be viewed as an example of the EU *"energy diplomacy"*, its governance in the field (Herranz-Surrallés 2016) and its normative discourse, which, as described below (Chapter VIII) can be linked to the Lebow's reason paradigm when it comes to the EU energy policy. In the opinion of the German Bundesnetzagentur, there should be coherence in the application of the law, and the law should not be applied in this particular case either. In other words, the German national regulators question why the EU energy law should be employed in the event of Nord Stream II if it was not applied in the case of Nord Stream I and in the case of other pipelines with the no-EU countries (the Mediterranean pipeline Green Stream and MEDGA)? The similar opinion expressed Russian representative of Nord Stream II (Financial Times, Mar.,2017, n.d.). However, the simple reply here can be that the law is not retroactive and now, it should apply because the regulations have changed.

The UE, as per the Energy Union's rule, could make itself involved, (through the IGAs – Intergovernmental agreements), in any agreement related to gas projects between the EU countries and the non-EU countries if that gas pipeline could destabilize the energy market in the EU; hence decreases the energy security of the EU(European Commission, Feb.,2016, n.d.). Also, as per Prof. Alan Riley, additionally the Nord Stream II is breaching the law of United Nation that explicitly does not allow other countries (here the 5 mentioned states involved in the project) to join any initiative that would bring any economical harm, here it would happened in the case of the transit Ukraine's territory (Natural Gas World, Apr.,2016, n.d.), as the Nord Stream II is bypassing Ukraine delivering gas directly to the Western European Countries. Moreover, the official document regarding the framework of the Energy Union is stressing the need to strengthen the Strategic Partnership with Ukraine being the important transit country (European Commission,Feb.,2015, n.d.).

Now, what is interesting, and it is discussed, from the Lebow's theory perspective in Chapter VIII, is the fact that, both Denmark and Sweden, on the contrary to Germany, asked the European Commission to provide them with the legal judgment regarding the Nord Stream II project. Both countries want to know which EU's regulations should they apply to assess a

correctness of a possible approval of the project (Financial Times, Mar.,2017, n.d.).

In this context, the decision of the European Commission from 28th of October 2016 that gave the Gazprom Company the access to 80% of the transmission capacity of the Opal's pipeline[70] (European Commission, Oct., 2016, n.d.) can be recalled. This decision, in the Polish government's opinion, was interpreted as a non-compliance with numbers of provisions of 2009/73/EC Directive that regulates common rules of the EU's gas market. According to this directive, the 3rd parties cannot have a limited accessibility as it would mean the violations of the competitiveness rule. In the light of the above, Poland sued the decision of the EU to the European Court of Justice and short after, the EU Court of Justice agreed with the Polish argumentation and suspended its decision from 28th of October (PGNiG,Dec.,2016, n.d.).This decision will not allow the deepening dependence on the Central and Eastern Europe gas supplies from Gazprom (Ministry of Energy, Dec., 2016, n.d.).

This particular decision of the EU might surprise because the EU itself, in the official document establishing the Energy Union's framework, referred to importance of complying with the *"existing energy and related legislations"*. Also the III Internal Energy Market Package was listed. The document stressed that *"Full implementation and strict enforcement"* of these energy rules and standards *"(...) is the first priority to establish the Energy Union"* (European Commission,Feb.,2015, n.d.). Nonetheless, the optimistic fact is that the decision was, at the end, canceled.

However, the question arises: why has this decision been taken in a first place if it is against the European law? It occurred because, even on the EU level the Labow's appetite can overtake the reason, for a moment at least in this case?

As observed, the gas relations within the EU can be a source of many hidden motives (appetite, reason, spirit) and also fear, detected on a state level. In this section, only a brief reference has been made to Lebow's theory and these underlying feelings. In the next

[70] Opal gas pipeline is the largest natural gas pipeline in Europe, it capacity is 36 billions cubic meter yearly, which is equivalent to the 1/3rd of the annual German demand. Opal starts from the Baltic Sea and it is the prolongation of the Nord Stream I. It goes through Germany and the Czech Republic (Opal Pipeline 2016).

chapter, conclusion part, it will be assessed which feelings prevail and what impact they have on the climate and energy strategy. In other words, how these motives contribute to the answer to the central questions of the thesis.

VIII. Conclusions

8.1 External dimension

In this chapter, motives of Poland, Germany, and Russian will be detected base on the information provided in the previous chapters. The impact of these motives, mainly Polish but also German ones, on the energy and climate policy, will be assessed. The two triangles from the Lebow's theory will help to perform the analysis. One triangle presents motives, and the other one concentrates on fear. After that the below questions will be replied:

- *Why does the Polish government invest and has plans to further investment, in very expensive new coal power plants and nuclear energy?*
- *Why does the Polish government not invest in renewable energy sources? Why is Poland long – standing opponent of the change of country's energy status quo?*
- *Why Germany, that had in the past similar energy model like Poland, based primarily on coal powers plans, has started promoting and developing the low-carbon decentralized model based on small renewable energies installations?*

All of these above questions will contribute to the reply on the central question of the thesis:

"Why Poland develops different politics in the field of the climate and energy framework of the EU? The Polish case in relation to Germany (focus on distributed generation)"

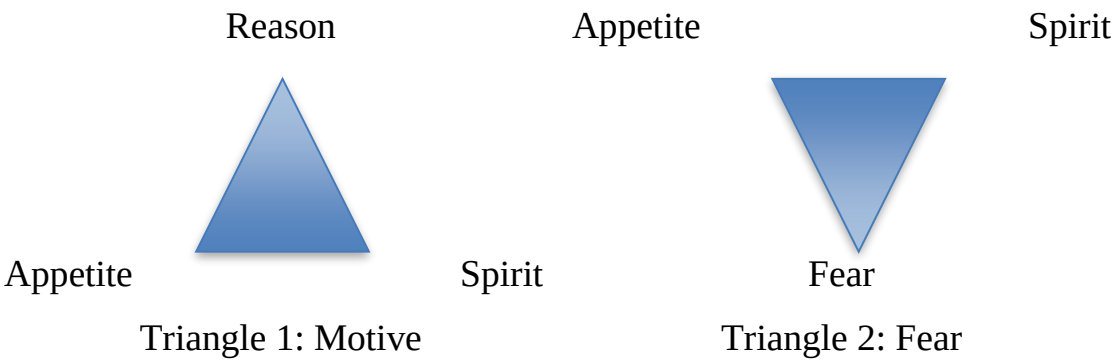

Figure 2: Triangles with different stimuli/motives. Figures credit: Richard N. Lebow (Lebow 2008, 510–11)

The first triangle (1), related to motives, has reason on the top. This configuration represents the situation where a state, unit/actor, navigates - through its political actions - close to the area of apex - where the reason is situated. It reflects that international system (here in this context also international energy system) is based on rules and these rules are followed; hence the international energy system is more peaceful and order. However, Lebow highlights that one condition needs to be fulfilled: the same understanding of *"(...) widely accepted principle of justice (...)"*(Lebow 2008a). That also means same values or, at least similar ones, which strengthen the collaboration, like for example, common European standards in the general meaning of this word. More, based on the other Lebow's assumption, if, additionally, the reason-based world is strengthened by common economic interests the collaboration has a very firm bases. In other words, disputes occur rarely, and if they happen, they are easily resolved, since, like indicated, in the reason – based world actors have similar goals and conflicts take place depending on the character of the society (example honor society) (Lebow 2008).

The second triangle (2): fear, represents situation when reason is overtaken by appetite and spirit. The situation occurs when some actors for example threaten others' units of the system, here energy system. For example the actor A being threatened by the actor B is moving to the fear - based paradigm or also called by the author: the fear based world (Lebow 2008).

As indicated, states maneuver in the international system (energy system), which is never constant. As underlined by Lebow, the change in environment causes a shift of conditions and the new dynamic of the system influences that none of the actors can be linked permanently to the one or the other triangle but can by defined *"(...) rather by a shaded area(...)"* (Lebow 2008).

As per the author of the theory, if we manage to detect *"roughly"* where each state/units can be placed within the second triangle, then we can have significant characteristics regarding their strategies, politics. These characteristics include: a ground and level of collaboration, the underlining motives of the disputes, repetition of aggressiveness or warfare, also units'

tendency for daring action, risk-taking(Lebow 2008b).

These characteristics, together with the above discussed selected case studies, can help to see in which areas of these both triangles Poland, Germany, Russia and also the UE are navigating with the most frequency. As indicated, gas relations were chosen as they are "packed" with emotions; hence, it is easier to identify motives and observe the mentioned characteristics. This kind of approach towards energy relations will help to deliver a more holistic reply to the central question of the thesis.

Fist the external dimension will be analyzed and then the internal one to determine why Poland does not promote the development of renewables energies (mainly distributed generation) and Germany did and does. For that reason, this chapter is divided into two sections.

Below there are two tables that will help to group the finding and conclusion.

Characteristics of politics	**Russia**	**Poland**	**Germany**	**EU**
Repetition of aggressiveness or warfare, or the underline motives of dispute	Crimea annexation, war in Georgia, cease of the gas delivery to Ukraine, "resources nationalism".	Non-compliance with the EU Directives (on renewables energy 2009/28/EC and on a quality of air 2008/50/EC). General questioning of the climate and energy policy of the EU: unwillingness of changing the centralized supply energy model to the decentralized one based on renewables energy and not on fossil fuels, opposition towards further CO_2 and GHGs emission reduction, both the core EU's recommendation being against the Polish vision of the country's energy mix. Questioning of the solidarity and unity of the Energy Union, example Nord Stream I, II,	Full integration with the low-carbon economy model and the climate and energy framework of the EU, one possible dispute regarding Nord Stream II.	Normative power, promotion of rules of law.

		first decision of the EU's regarding Opal, which was changed later. Dispute with Russia around Yamal pipeline (pricing)		
Tendency of actor to risk-taking	Power politics with high tendency of risk taking when accomplishing goals that aim to expend the domination in the energy system	N/A	N/A	N/A, normative power
Ground and level of collaboration	Economic and political reason, privilege strategic relations with the Western European countries within the EU (Opal, Nord Stream I,II), ground – increase and maintain the leader position in both gas and oil sector, position of dominant power in Europe and in the world. A lack of integration with the EU law (example, unbundling, III Energy Package) and international law (as listed in the 1st row), conviction of separate Russian values, non-ratification of The Energy Charter Treaty and Transit Protocol.	The EU as a platform for increasing the country's energy security, both ideas related to tightening collaboration in the field of energy came from Poland (2014-Tusk-The Energy Union, the Lisbon Treaty and energy solidarity provision).	High level of collaboration within the EU, identification with the climate and energy framework of the EU, outside of the EU - economic relations with Russia and the Western European countries in the gas sector (Opal, Nord Stream I and II).	Tightening the integration and collaboration in many areas, the EU as a counterbalance to the Russian power politics, the EU acting as the gatekeeper of the EU law and standard, example: the change of the decision regarding Opal, questioning the construction of the Nord Stream II as being against the energy law, the establishment of the energy law, also to avoid non discrimination and protection of the customers (framework of the Energy Union)

Table 8: The policy's characteristic related to the Polish, German, Russian and the EU selected case studies. Table elaborated based on characteristics from the Richard N.Lebow's theory

8.1.1 Russian's motives and their impact on the energy policy

From the above Table number 8 and, having in mind all the information provided in other chapters, we can withdraw the following conclusion. First, Russia operates mostly in the spirit and appetite words. Spirit, because the country craves to rebuild the self-esteem and prestige lost after the collapse of the Soviet Union. Also, the feeling of shame and humiliation connected to this particular event classified Russia under honor society and

parvenus power. All of that contribute to the country's aggressiveness in international energy system.

The reason was suppressed by the desire of reestablishing status even if it meant the aggressive power, unilateral politic. As said, honor society and parvenus power will not agree on any form of leadership of another actor, here also understood as the agreement with the international law rule, the EU standards in the field of energy. The agreement[71] with the other actor's leading role would be *"(...) equal for them as acknowledge its higher standing"*(Lebow 2008a). All the actions (Nord Stream I, II, Opal) had been designed to decrease dependence of the Western European countries and strengthened the Russian dominate position in the energy system. The appetite paradigm is reflecting in the strong collaboration with the EU's partners in energy filed, the economic common interest strengthen this collaboration. However, these relations are selective and well-planned, because Russia, as indicated above, wants to create two blocks of countries with the EU: the Eastern and Western ones, which, in turn, has its consequences for Poland.

8.1.2 Polish's motives and their impact on the energy policy

In the case of Poland, as indicated already, the country, because of its past (regained independency after 123 years of occupation under Austria, Russia, and Prussia-today's Germany) falls under the category of the honor society and parvenus power. The fact that Poland in the official document, from 2016, refers to the past, proves that the unfavorable history can become reminded when the country feels insecure and threatened by others. Also, similar negative connotation to the past has been done, as presented, when the Nord Stream I was agreed to be constructed. The opposition towards any European directives that

[71] Also, Lebow's stresses that character of leaders, here Putin's personality can have a direct translation to foreign and internal policies. More, as mentioned already, actors, units formulate their identity through the *"life experience"* and their beliefs(Lebow 2008).Now, the fact that Putin received education by KGB should not be underestimated. It shaped his attitude towards West, which is also translated in the mentioned high level of aggressiveness and rejection of international law rules when achieving goals regarding energy market's domination, or maintenance of the status quo of the dominant actor in the international system.

are not in line with the Polish vision of energy mix can be an example of defending the country's identity and autonomy. The reluctance to any change imposed from outside, as said above, is a typical characteristic of the honor society that has been *"ostracized"* (Lebow2008) in the past by great powers.

All of these facts indicate the domination of the spirit - based paradigm in the Polish foreign policy. However, if *"losing"* a part of self-government through the Membership of the EU, is more convincing to an actor (the Polish case) then this actor will renounce a part of the autonomy. Nonetheless, as per Lebow's theory, actors, especially, those that are honor society (Poland) have to find *"some justification"* (Lebow 2008) to renounce a part of independency. This *"justification"* can be based on the fact that honor societies might gain something more, but, at the same time, they have to somehow disconnect the loss of the part of this autonomy, identity from honor (Lebow 2008). This disconnection is actually very important because honor is strongly associated with autonomy (Lebow 2008). Only when these conditions are fulfilled, the reason - based paradigm can have a higher weight over others motives (appetite, spirit).

In the case of Poland and the country's energy and climate policy in the EU, reason prevails over spirit, but only sometimes. Most of the time Poland is navigating in the spirit and fear paradigm. This is precisely why, and where, we can observe the Polish government political struggle and opposition within the EU. This reluctance is especially noticeable in the climate and energy sector through the rejection of the core principal of the EU climate and energy policy. As it was mentioned above, in the reason paradigm, conflicts are easier to resolve because country *"shares fundamentally similar goals"* (Lebow 2008) and the low carbon model, the decentralized energy structure based on renewables energy mostly and also the departure from fossil fuels, are not shared objectives between the Polish government and the EU. In other words, this is exactly where we can observe the movement from the reason paradigm. Expressly, Poland is moving from the first triangle: motives (1) to the second one (2) – fear as per the Figure number 3.

However, Poland being a Member of the EU collaborates within the structure, because, as in the reason-based world, Poland share *"fundamental similar goals"*(Lebow 2008) even if these goals are *"(...)contradictory to(...) immediate self-interest(...)"* (Lebow 2008) here

coal energy mix. The same *"principle of justice"* and same values still manage to cement this cooperation, they are its basis. Also, it has to be added here, that for the Polish government the energy mix based mostly on coal is a way to achieve both wealth (appetite paradigm) and self-energy sufficiency (spirit) – see Table number 6.

However, the collaboration in the reason paradigm is selective, because not all goals are shared; hence the cooperation is like "cherry picking", what creates the conflict. As a consequence, and as mentioned already, Poland is moving away from the reason paradigm towards the spirit and the fear based word (Figure number 3, movement from first triangle to the second one – fear), which has its consequence to a country (Lebow 2008). In the case of no - transposition of the EU directives there are both financial and reputational consequences for Poland..

Also for the EU – if this paradigm would be followed by more countries, meaning they would move frequently away from the reason paradigm, that would result in the total erosion of the EU's solidarity and, in the long run, in the collapse of the EU itself. In other words, there must be more shared goals than less, only the same *"share fundamentally similar goals and the same conception of justice"* (reason –paradigm) might not be sufficient to sustain the EU among many Member States for a long run. As per Lebow, again, in the reason-based world there is order because of these shared fundamental goals (more common goals than less), similar values and the same understanding of principals of justices, these elements strengthen collaboration and cause that any small clashes and dispute can be resolved easier.

Also, it can be said that appetite based – paradigm is also reflected in selective collaboration in the field of energy with the EU, when through this collaboration, the country can strengthen its energy security (the two Polish proposition regarding the *"spirit of solidarity"* in the Lisbon Treaty and especially the idea to set up the common price for gas and the establishment of strong Energy Union). In other words, Poland can achieve, through this collaboration, security, but also higher economic wealth-being – appetite (Table number 6).

Nonetheless, in the case of Poland, the appetite paradigm is not a leading one and the approach towards the cooperation is very selective, because, as said, there are less *"shares fundamentally similar"* (Lebow 2008) goals in the field of climate and energy, than more (reason paradigm).

In the appetite paradigm, as said above, when interests change, yesterday's coalition can also change. Hence, the core fundaments of the EU climate and energy policy are not perceived by Poland with the same degree of urgency and priority as they are by the EU or Germany. As a result, the clash is seen between the EU's policy and the Polish policy for that matter. In sum, spirit, appetite, fear - these are motives that depending on the political circumstance can be more visible at given time than others in Polish climate and energy policy. The spirit and fear based paradigms can be observed more often than others Lebow's paradigm. The fear based word, for example, is observed when Poland show a high degree level of mistrust and suspicion towards the Western European countries and Russia in regards to the gas sector. Also, this paradigm was "activated" when the UE issued the first decision regarding Opal or when the Nord Stream II is considered to be built even though it is against the EU law.

The fear paradigm can activate the mentioned so-called *"vicious circle"* and *"security dilemma"* (Waltz 1979, 186–87). As said, it happens when *"(...) states, unsure of one another's intentions, arm for the sake of security and in doing so set a vicious circle in motion to arm"* (Waltz 1979). In this case, Poland does not see Russian and German relations in the field of gas as "only" economic ones (Nord Stream I, II). At the same time, Poland is questioning the energy solidarity with the EU. Said that, although we cannot say, following the structural realism's premise, that Poland *"arm for the sake of security"* in a *sense strict* of the word *"arm"*, it is noticed the high level of defensiveness in her politics. The country is "arming" using centralized energy structure at home to have better sense of control over energy. As said in the introduction part the K.Waltz theory served to explain relations in the Cold World. However, as it was also stressed, some theory in certain political circumstances, can serve to explain better the dynamic and the relation in the international system, particularly in the energy system, where fossil fuels are being compared to weapons.

Now, all of these above circumstances influence that Poland is moving to fear paradigm. Additionally, when this paradigm is combined with spirit (defense of own autonomy,

identity) it might even more influence that country's natural resources - coal is being treated as indigenous strategic "tools". That means that energy is not being perceived as public goods and these circumstances have their consequences also for the internal dimension described in the second part.

Moreover, when these two paradigms (fear and spirit) prevail in one country's policy that additionally strengthen unwillingness for any changes. In other words, the Polish reluctance of shifting towards the more decentralized low-carbon economy may also occur, because for spirit driven actors, that in the past, have been humiliated by other powers (Lebow 2008), it is difficult to agree on the leadership of the others actors (Lebow 2008), here the guidance of the EU.Similar situation like in the case of Russia. Also as said, in the spirit based world, a desire to defend the country's identity, autonomy is essential for the honor society and, in this particular case, coal and the centralized energy model in Poland is additionally perceived as a part of the country's identity.

Furthermore, and what it was already mentioned, in transition economies of the Central Europe and the former Soviet Union, change in the energy model is understood as *"liberalization"* (Bridge et al. 2013) of energy, a change of ownership over energy. In other words, energy is not being seen as a public good but strategic tool. This is exactly what is happening in Poland. That is again the similar approach like in the case of Russia. In other words, the centrally - planned model based on coal (Poland) is very historically rooted in the whole economy and industry and, precisely because of that, this model is strongly linked to the country's identity, autonomy. Now, as indicated above, the defense of identity and autonomy is very strong for honor society navigating in the spirit based - world. This defensiveness grows when the circumstances are more hostile (Nord Stream I, II) and there is a lack of solidarity and a general mistrust in mutual relations.

In sum, for Poland, a collaboration with the EU results more convenient than leaving its structure, a typical gain – loss calculation. In other words, the primary motive for cooperation, very visible in the context of climate and energy policy, is fear and appetite (selectively) and not a strong feeling of integration with the European climate and energy framework (clash in the reason paradigm with the EU), opposite situation to Germany. Hence, in Germany the reason and appetite based paradigm dominate mutual climate and

energy relations between this country and the EU. The reason based-world here indicates that these two actors (Germany and the EU) share a common vision, have the same goal of departure from the fossil fuel economy to the low-carbon model. Particularly this finding gives us the reply to the other question asked in the thesis:

Why Germany, that had in the past similar energy model like Poland, based primarily on coal powers plants, has started promoting and developing the low-carbon decentralized model based on the renewables energy installations?

On the contrary in Poland, the central paradigm, which governs mutual relations between Poland and the EU in the field of climate and energy, is spirit, appetite and fear. Appetite, as said, was visible in case of the Polish idea of the *"energy solidarity"* in the Lisbon Treaty and in the case of the Energy Union when Poland wished to strengthen energy security through the platform of the EU. Spirit, like indicated is visible in the defensiveness when it comes to the application of the EU policy framework, which is perceived as a clash with country's identity and autonomy. As per one of the strategy document: *"Poland was, and it will be based on coal"*(Polish Monitor, Jun., 2014, n.d.). Also, this contradiction with *"fundamentally similar goals"* (Lebow 2008), was noticeable in the pejorative use of the expression: *"ambition of the EU"* (Ministry of Environment, Mar.,2016, n.d.) stated, as quoted before, in the official document related to the EU proposal of the decrease of CO_2 - and it is a good illustration of this approach. Now, when reason is the primary drive, primary country's paradigm, materialized and visible through the shared vision towards the EU climate and energy policies, that situation makes the collaboration easier and, as a result, the low-carbon model is promoted together with others core fundaments of the EU climate and energy framework (example, increase of share of renewables energy, further reduction of CO_2 - both the UE and Germany agreed in these matters). All of the above analysis and findings provide the reply to others two questions of the thesis:

Why does the Polish government invest and has plans to further investment, in very expensive new coal power plants and nuclear energy?

Why does not the Polish government invest in renewable energy sources? Why is Poland long – standing opponent of the change of country's energy status quo?

The second part of this chapter, internal dimension, additionally will shed more light on these two questions and the main one of the thesis.

8.1.3 German's motives and their impact on the energy policy

As indicated above, Germany is navigating mostly in the reason-appetite world, where, common climate and energy goals are bases for mutual collaboration between Germany and the EU. The reason based paradigm between Germany and the EU is seen through the promotion of the renewables energy and the low-carbon economy and energy model. The appetite based world is clearly noticeable through the establishment of more individual gas relations with Russia (Nord Stream I and II) even though the gas pipeline can be against the EU energy law (Nord Stream II and the decision of the German regulators). However, again, Angela Merkel even though she stressed that companies are responsible for negotiation and businesses, she was present at the inauguration of the Nord Stream I. In other words, the line between business (especially the one related to energy) and politics is blurred.

It is also where we can see that appetite, as a motive, has more weight than reason. As a consequence of this German approach, Poland is questioning energy solidarity and trust and is moving to the fear based paradigm (Figure 3, Triangle number 2) and the mentioned *"vicious circle"* and *"security dilemma"* is being "activated" (Waltz 1979). In this situation, Poland is more willing to see coal as a strategic tool, through which, the country will gain energy self-sufficiency. More, even though, Angela Merkel describes some of the political acts of Russia as a violation of international law and *"(...) the foundation of the common European peace order (...)"*(Federal Chancellor, May.,2015, n.d.) common interests between these two countries (Germany and Russia) prevail, so does the appetite based paradigm over the reason one, example: the case of Nord Stream II.

If we want to observe this situation on the Lebow's triangles (see the below Figure number 4) where Germany are moving away from the apex (reason) towards appetite, and this situation causes some erosion of the peaceful relations within the EU. Poland, in this particular circumstance, is situated on the second triangle, where fear and two motives (spirit

and appetite) are influencing her energy policy with the equal strength. Russia with her energy policy (mainly spirit-appetite) is shaping the character of the whole international energy system (described in general in the Figure number 2), influencing that Poland and Germany are placed on two opposite triangles. The EU, as a gatekeeper of rules is placed on the top of triangle, in the reason paradigm, maintaining peace and order in the international system, here international energy system.

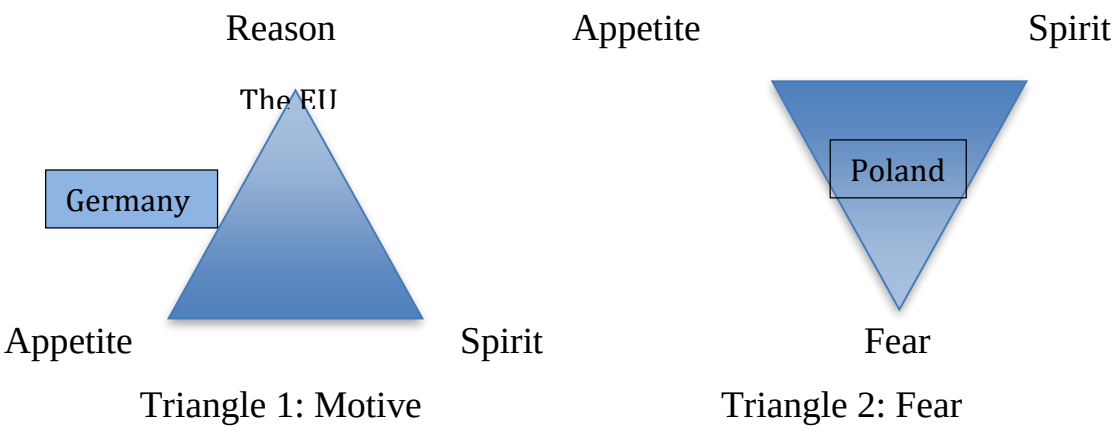

Figure 3 Modified figure from the author based on Richard N. Lebow (Lebow 2008). The allocation of Poland and Germany on the motives' and fear's triangle of Lebow

Putin's plan to strengthen the gas dependency with Germany bypassing the transit countries was to mainly have Germany and the Western European countries on the Russian's side. The consequence of that will be: in the case of disruption in the gas's delivery, Germany will still receive gas through the North Stream I (if constructed, also through Nord Stream II) and Opal. Hence, for Germany, Gazprom will always be a reliable *"independent"*(Szul 2011) company, only Ukraine and the others Eastern European countries (including Poland) might be affected. Also because the appetite paradigm prevails, Germany sees gas as goods, commodity conditioned and influenced by the market economy (Szul 2011), here in the EU also by the internal common market and not by the common energy and foreign policy (Szul 2011).

In this context, we can speak about *"asymmetric interdependence"*(Waltz 1979) that defines the international energy system, where Germany, being one of the biggest importers of the Russian gas (Gazprom Company 2017) is still more dependable on Russia, as a business partner, than the another way around. This high dependency and the fact that gas is a backup fuel for both the EU and Germany - before the low carbon economy will be achieved, causes that German appetite paradigm can overtake the reason paradigm. However, in this kind of mutual dependency, none of the actors want to admit these *"unequal conditions"*(Waltz 1979) of dependency. More, having that in mind, the "soft policy" of Germany – meaning no concrete political action to hamper the aggressive Russian policy and towards the construction of Nord Stream I and II, can be better understood. Also as per structural realism *"Dependent parties conform their behavior to the preferences of those they depend on"(*Waltz 1979, 157), which is what Germany are doing.

In other words, relations in appetite based world that are driven by common interests, especially economic ones (the case of Germany) and, not by fear, like in the case of Poland, are stronger and more stable as per the structural realism theory (Waltz 1979). That is exactly what can be observed in the case of Germany and Russia; the mutual economic gas relations are so significant for Germany that the coalition did not shift even when Russia breached both international and European law. The appetite paradigm prevails as economic relations have the highest weight. At this point, Germany still needs Russian gas before the country will achieve 80% of renewable energy in its total power generation in 2050.

No, if that would be already accomplished, we can predict a change in the dynamic in the gas and energy relations between Germany and Russia. It could happen that Germany would shift from the appetite paradigm towards common interest, goals of the whole EU (thereason paradigm) and would question both gas projects: Nord Stream I and II as economically unneeded, rather than politically desired by Russia. In other words, reason would prevail over appetite, because having 80% energy from renewables Germany would not need Russian gas so much, or anymore. However now, typical to the appetite world paradigm all actors involved in the cooperation *"recognized their overriding interest in maintaining peaceful relations "*(Lebow 2008a). Now, Germany proved that their mutual economic interest with Russia (together with other Western European countries involved) are above

any political discrepancy/clashes that might arise or already occurred in bilateral relations with Russia.

Moreover, according to the appetite paradigm, some actors are willing to develop different *"rules of the game"* because, interests, mainly economic ones, condition and shape policy's preferences (Lebow 2008). Whether any disagreement, conflict will be further developed or not, and if it will affect cooperation, causing, for example, cease in relation, all that also depends on one actor's *"skill in framing arguments"* (Lebow 2008).

We could observe a *"skill in framing arguments"(*Lebow 2008) in the case of Germany that views gas and oil as a commodity rather as a political weapon. What is more, the *"skill in framing argument"* (Lebow 2008) is shown, in the case of Germany, more through political actions, or rather lack of action to avoid an open conflict with Russia that could affect economic relation. Both, Germany and the EU (the EU because of its normative nature as an institution) openly criticize the power-aggressive politic of Russia; however, the appetite paradigm prevails in the case of Germany.

8.1.4 The EU's reason paradigm – climate and energy policy

Moreover, the EU is navigating between reason and appetite (common gas, oil interest with Russia) paradigm as well. The reason based paradigm of the EU could be observed when the EU is questioning the legal basis (III Energy Package, gas directive) of the construction of Nord Stream II, on the contrary to German's energy firms and the German regulators. However, firms as mainly business oriented, highly probably, will always choose appetite over reason. Again here, we need to remember that the line between energies companies' interests and governments' interests sometimes is blurred. This trend however in the business words is changing as the reputational aspects (which also falls under the spirit paradigm) are more often taken into consideration because of increasing importance of opinion of civil society. Now, we can also recall the situation when Denmark and Sweden (national regulators of these countries) asked the EU for the legal assessment what aspect of the EU energy law should be taken into consideration when giving the final approval for the

construction of Nord Stream II. That is the example that these two countries have the same *"principal of justice"* (Lebow 2008) like the EU (treated as a single actor) and want to follow the share values and fulfill the same goals - here the solidarity towards the framework of the Energy Union and also towards the European Union. In the light of the above, it can be said that Denmark and Sweden are navigating in the reason paradigm in this situation. If that were a case of all the other Member States, the unity, not only of the UE but also solidarity towards the framework of the Energy Union would be seen. As Poland is not navigating in the reason paradigm; hence the country questions and does not comply with the climate and energy framework of the EU. Poland being threatened by the mutual gas relations of Germany and Russia (Nord Stream I and II) is moving, as said, to the fear based-world (Figure number 4, triangle number 2). As indicated this situation is caused also because of the fact that German's appetite paradigm prevails over reason (again, Figure number 4, triangle number 1, where we can see the movement of German from the reason apex).

8.1.5 Conclusions

As it was observed, the EU, being a gatekeeper of the EU energy law, is navigating in the reason paradigm, which is the EU's default paradigm, because of the normative nature of the institution itself. For that reason on the Figure number 4 the EU is placed on the top of the triangle, close to the reason apex. Poland having less privileged gas relations with Russia is moving in the spirit, appetite, and fear –words. Also, the desire to defend the country's identity pushes Poland towards spirit paradigm (honor society). Germany is maneuvering in appetite and reason, as a country has not been classified under the honor society (Figure number 4). The next section of this chapter will include the analysis how these motives (spirit, appetite, reason, and fear as an emotion) are reflected in the internal policies of Poland and Germany and how these motives shape their internal climate and energy strategies.

8.2 Internal dimension

8.2.1 Germany

The first fact that is the most noticeable, when comparing the climate and energy policy - its internal dimensions between Poland and Germany, is that in Germany there was no discrepancy between the Germans' pro-consumers interests and the government' interest. First Feed - in Law (1991) was approved by no objections from any parties. Viewing it through the Lebow's perspective, we can say that, at that time, the appetite based world of pro-consumers did not clash, interfered with the interests (appetite) of German utilities, still in 90's pro-consumers were not perceived as a threat (Hager 2015) that may overtake a significant amount of energy market. The high degree of Germans' entrepreneurship in early 90's help to build green communities that grew quickly and managed to spread the sustainable ideas to the core of the power (Bundestag). The new green identity that had its roots in anti-nuclear protests back in 70's (Hager 2015) influenced a formation of the green party and since that time many German parties had renewables' development in their political agendas, the environmental concerns of society were taken into consideration. In other words, both government and Germans pro-consumers had the same interests, and both were navigating in the appetite paradigm when it comes to development of alternatives energy sources based on distributed generation and mitigation of climate change.

Research confirmed (Dóci and Vasileiadou 2015), (Wirth 2014) that self-esteem of pro-consumers that generated their energy grew, as did the self-esteem of all green Germans' villages and their farmers. It can be recalled now, what the representative of the Freiamt village said, village that runs mostly on renewables thanks to citizens' initiative: *"Now we are Freiamt*[72]*, and we're proud (...) Freiamt cannot go back"* (Hager 2015). It can be said, that there were not collide between spirit (self-esteem of German pro-consumers, whole villages), appetite (interest in generating own energy) and the government's reason based paradigm (provide its citizen with the adequate conditions that can help balance and compete with the privileged position of the German utilities and energy firms). In other words, both

[72] Freiamt's village generated 14 million kWh from renewable energy and was an example for the rest of German villages (Hager 2015).

the appetite and reasons paradigm of Germans' pro-consumers and the German government were compatible.

Also, as indicated, the spirit based paradigm, was being materialized, not only through the self-esteem and the increase of confidence of Germans' pro-consumers. It was also noticeable through the fact that the Germans pro-consumers want/wanted invest in renewables out of *"higher"* purpose as the sustainable development aspect was perceived of the same importance (Dóci and Vasileiadou 2015), (Wirth 2014).In other words, spirit in this context also means reputation, have a positive connotation.

As per mentioned research, nowadays, for Germans the sustainable development aspect is more important than economic competitiveness (Bertsch et al. 2016). That again confirms that the spirit based paradigm prevailed and still does, not only among Germans pro-consumers but also among German public. Why the spirit based-paradigm in this context? The government views the development of renewables at home, as an honorable matter (reputation, honorable see Table number 6). The spirit-based paradigm can have as well a positive connotation in political actions/strategy (like in this case) – reputation; hence does not go in a collision with reason (shared goals).

The below words of Sigmar Gabriel, the former Minister of Economic Affairs and Energy, confirmed that Germany was guided by the spirit based paradigm at the time of establishing *"Energiewende"* (2011) - the future low carbon energy and economy model planned to be fully in operation until 2050 (80% renewables). Moreover, his words prove also that Germany, as a country, perceived itself as the only leader in Europe that can demonstrate that this kind of energy and business model can be achieved. The implementation of this model, seen in Germany in the category of reputation, honor and also self – esteem can be viewed as the Lebow's materialization of the spirit paradigm.

"We have to show that a country like Germany and a continent like Europe can succeed in combining high levels of industrialization, high-tech development, and innovation with ecological sustainability and climate protection. Only if we in Germany and Europe are able to demonstrate that the Energy Transition and a sustainable energy supply system do not hamper but-on the contrary-can even boost economic success, only then will we get other

countries to follow us. Only if we in Europe show that we are not producing fewer jobs in industry, but more, we will be able to convince people who are just embarking on the path to industrialization"(Goodman 2016).

Also, the fact that Foreign Minister Frank-Walter Steinmeier compared the German transition towards the low carbon model to: *"Man to the Moon"(*Goodman 2016) is additional proof that the country took pride in being a leader in the renewables energy promotion and development, not only at home but around the word. The country's status was associated not with power itself and wealth (appetite) but with reputation (Table number 6). Also, it should be stressed that Germany as a leading economic power in Europe had already the fist two motives: wealth (appetite) and political power, accomplished. Said that, the country could move to the different connotation of the concept of power in international politic – normative aspect of it, normative power.

That leads to the finding that all three Lebow's stimuli (reason, appetite, spirit) on the line: investors versus the German government, were coherent. That shed additional light on the question of the thesis (from internal dimension's perspective):

Why Germany that had in the past similar energy model like Poland based primarily on coal power has started promoting and developing the low-carbon decentralized model based on the small renewable energy installations?

The compatibility of these 3 stimuli on the line: the government and investors were reflected in the fact that the German legislations in the field of renewables were designed in a way to foster and promote the development of the alternative energy sources. A below triangle (Figure number 5, triangle number 1 - motives) represents this coherence on the 3 levels' motives between the German government and pro-consumers. Particularly important is the high compatibility between spirit paradigm of the government and pro-consumers, here understood as a reputation, ambition of the country to promote the low carbon economy and energy model not only at home but also worldwide.

Before that, in early and middle 90's the spirit and appetite based-world of pro-consumers (spirit - increase of the self - esteem by generating own energy and appetite - economic

interest) corresponded with the reason and appetite based - world of the German government. Reason - understood here as providing an adequate, encouraging legal basis for citizens to develop their energy, in other words, the appetite and reason paradigm represent here shared economic interests and common goals.

The second triangle (Figure 5, triangle number 2 - fear) illustrates the position of Germans energy utilities/firms that are guided by fear paradigm because pro-consumers took significant shares of the energy market. As a consequence, there were struggles and disputes initiated by German energy firms (here it is visible a negative spirit connotation) to reduce tariffs and the support granted by the government for renewables (examples of the case in the ECJ in 1998 and the most current one in 2014 when the Commission influenced the decrease of the support for renewable energy, claiming that it was made in the name of achieving by renewables energy more economic independency).German utilities and energy firms wanted to maintain their power and security through the preservation of the old status quo on energy market with only few large energy firms. In other words, these actors operating also in energy field did not want to allow that the new entrants (pro-consumers) access the German energy market and decrease their profits.

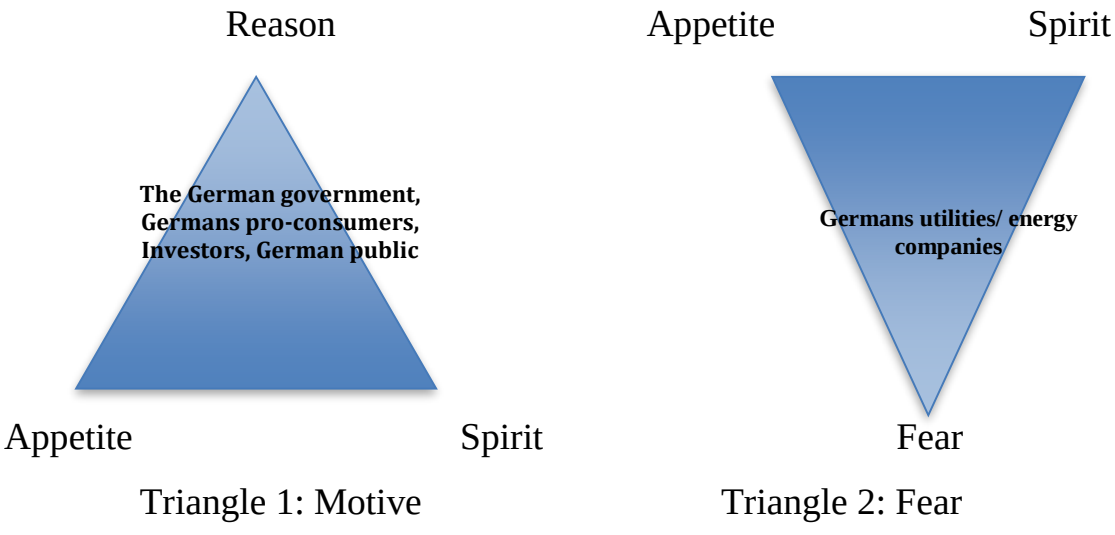

Figure 4 Modified figure from the author based on Richard N. Lebow (Lebow 2008). The allocation of Germans pro-consumers and the German government versus German energy firms and utilities on the motives' and fear' triangle of Lebow

Figure 6 represents a location of the German government and the EU on the same triangles of motives, as both actors perceive the development of renewables energy and also other mains goals of the climate and energy framework (3x20 policy and the updated version of it, from 2014) as the core long – term objectives that lead to the accomplishment of the key aim - the implementation of the low-carbon economy.

There is no discrepancy between these three Lebow's stimuli; therefore, all the EU recommendations and policy in the field of energy and climate are followed and implemented by the German government, especially that Germany, as it was indicated, is a powerhouse of the low-carbon economy not only within the EU but also in the world and aspires to be a leader in that field as per the mentioned above words of the former Minister of Sigmar Gabriel. Nonetheless, as the configuration of the Lebow's stimuli can change, depending on circumstances, some motives can have more weight than others.

The Figure 4 (triangle 1 -motives) also illustrates the outcome of the situation when the Nord Stream II pipeline will be built even though the EU and the Eastern European countries are of the opinion that the construction would breach core energy laws (III Energy Package and Gas Directive). If that happen then, German will move towards the appetite-based world (understood here as a common interest with Russia even though the EU law has not been complied). Hence, Germany is moving away from the reason paradigm as share fundaments and the same *"principal of justice"*(Lebow 2008a) understood here as an application of the EU energy law have not been fulfilled. As a result, after the agreement on the Nord Stream's construction, Germany are situated differently on the Figure number 6 (the country moves from the reason apex towards appetite with the EU in the middle). The EU is in the middle as to represent that the EU (here understood as a group of the all Member States) also has the tight gas and oil relations with Russia (appetite paradigm), however, if treated the EU as a single unit (it is treated as such in this work), that acts, as mentioned, as the gatekeeper of the EU's law rules (here energy law) then the EU is placed close to the reason apex as per the Figure number 4, triangle 1 – motives.

Also, the EU and the German government were placed in the middle of the triangle as to present that reason, appetite and spirit are understood similar, and there is no discrepancy between them (except the decision about the Nord Stream's construction, however when it

comes to the accomplishment of the targets of 3x20 and the new European Strategy from 2014 then there is, indeed, compatibility between these two actors, shared goals). That precisely shed light on the central question of the thesis. Poland versus Germany develops different politics in the EU because there is no coherency between Poland and the EU when it comes to these 3 motives as it is in the case of Germany. What is more, spirit and appetite have a different connotation, as explained above.

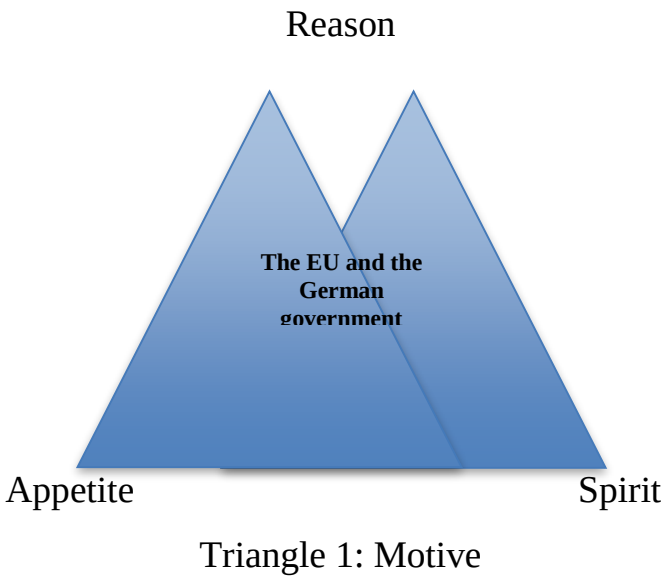

Figure 5 Modified figure from the author based on Richard N. Lebow (Lebow 2008). The allocation of the German government and the EU on the motives' and fear' triangle of Lebow

8.2.2 Poland

As it was observed, there is a discrepancy between the Polish government's policy and the EU's policy regarding the energy and climate framework. The ground for incompatibility, as per the Lebow's theory, refers to 3 motives (appetite, spirit and reason). In other words, as detected and mentioned below, for the Polish government appetite and spirit are being interpreted differently; hence, also the reason paradigm for these both actors represent opposite goals (lack of main shared aims) in the field of energy and climate policy of the EU

(see below Figure number 7 and also Table number 8). These findings shed light on the central question of the thesis:

Why does Poland develop different politics in the field of the EU energy and climate framework? The Polish case in relation to Germany - focus on decentralized generation.

Poland is being situated on the fear triangle as the element of insecurity and mistrust, as it was discussed in the previous section (external dimension) dominates complex energy relations; hence can impact and influence the outcome of polish energy strategy. As per structural realism, others states' strategies (Germany and Russia mainly) can contribute to the character of international political system (here energy system, Figure number 2) and influence strategy of other countries (Poland).

Moreover, Poland is placed on the fear triangle, because appetite and spirit, as said, are linked to different aspect. In short, appetite for the Polish government is materialized through investment in the new coal power plants (see also Annex II) and the preservation of the old centralized – energy model with few state – controlled energy firms that produce, distribute and sale electricity (Annex I). Coal and the centralized supply model is a way through which the Polish government aims to maintain and keep wealth (appetite). And for the EU appetite means more investment in the renewables energy and departure from fossil fuels, which is also expressed in the Energy Union's framework document(European Commission,Feb.,2015, n.d.). This is where the discrepancies between the UE and Polish government are the most visible (both paradigm appetite and reason – mean different goals).

Additionally, also the structure of the Polish centralized energy model is not fully compatible (in practice[73]); hence, unbundling model of the EU is not fulfilled in practice, legally it is complied, which means incompatibility with the EU reason paradigm – shared goals,

[73] As per Annex I these companies maintain production, sells and transmission, so the core business activities are under the same umbrella of one organization, nonetheless management is different. Legally these companies are different - different legal entities but they work towards the same goal; this is where the unbundling model does not comply in practice, because still these firms entirely dominate the Polish energy market. These companies deliver electricity to the majority of Poles.

understood also by the EU's energy law implementation. Also, the low carbon energy model based on citizen participation is a core objective of the Energy Union's framework (European Commission,Feb.,2015, n.d.), thus Poland does not show the integrity and solidarity with this model; hence with the Energy Union.

In the previous section, it was said that Poland is navigating in the spirit and fear paradigm that strengthen the country desire to defend its identity, which is strongly connected to the centralized supply energy model controlled by the state with coal, being strongly linked, to the country's character, identity. In sum, energy is not treated as a public good but as a strategic tool; hence, the development of renewables energy is being blocked. The government's focus on investment in the new coal power plants, because the centralize energy model is the mentioned *"mechanism of control"*. Through this mechanism the Polish government is not only fulfilling the country's needs (spirit, honor society) but additionally has a sense of better control - is better "arm" in the hostile energy international system (fear paradigm). More, this is where the appetite paradigm on the internal level is seen on the line: Polish government and Polish state-controlled energy companies, reflected in the desire of domination and control over the energy market in Poland (Table number 9).

The incompatibility in spirit, between the Polish government and the EU, is reflected in the fact that the Polish government does not perceive, as Germany does, the EU climate and energy policy as the reputational, honorable matter that needs to be implemented to combat and mitigate climate changes. Here it can be recalled the pejorative comments regarding the further reduction of the CO_2 emission sum up in the official document as *"the ambitions of the EU"* (Ministry of Environment, Mar.,2016) or the former Prime Minister Donald Tusk' comment about the *"ideological trend that emerged in EU"* (Prime Minister,Jan.,2014, n.d.) in the context of the development of renewables energy and the low carbon economy and energy model.

In other words, Poland questions the needs of strict climate policy of the EU claiming that the EU is only responsible for 7% of CO_2 global emission(Budzianowski 2012). Expressly, there is no integration with the climate policy in this field. More, what is also express in the strategic documents: *"Polish energy policy until 2009"* and *"Polish energy policy until 2050"*, Poland wants to re-establish the status of the coal from the past and use this

indigenous source to strengthen the country energy security. In can be said that the Polish government does not feel integrated with the ambition of the EU in the field of climate and energy policy (different definition of spirit). That fact affects also establishment and existence of common goals in the climate and energy field between the EU and Polish government (what translates into the incompatibility in the reason paradigm).

As a consequence, the Polish government is entirely moving away from the reason paradigm and, if the country is changing the configuration of motives, moving away from the reason – based word, then, as per Lebow, the conflict situation is arising (see below Figure number 7). Also because of the mentioned fear element in mutual gas relations, Poland is placed on the second fear triangle (Figure number 7).

Now, since in the case of the German government and the UE there is compatibility in regards to all these 3 motives (Figure number 6, triangle number 1-motives and Table number 8), both actors are situated in the same triangle of motives. Germany accomplishes all climate and energy law of the EU, and, as a consequence, there is no clash in the Lebow's motives between these two actors. This is exactly why Poland and Germany develop different policies and strategies in the field of climate and energy framework of the EU what is precisely illustrated in both, Figure number 6 and 7, both countries situated on different triangles. In other words, the reply to the central question of the thesis is illustrated in these two figures: number 6 and 7 (additionally Figure number 5).

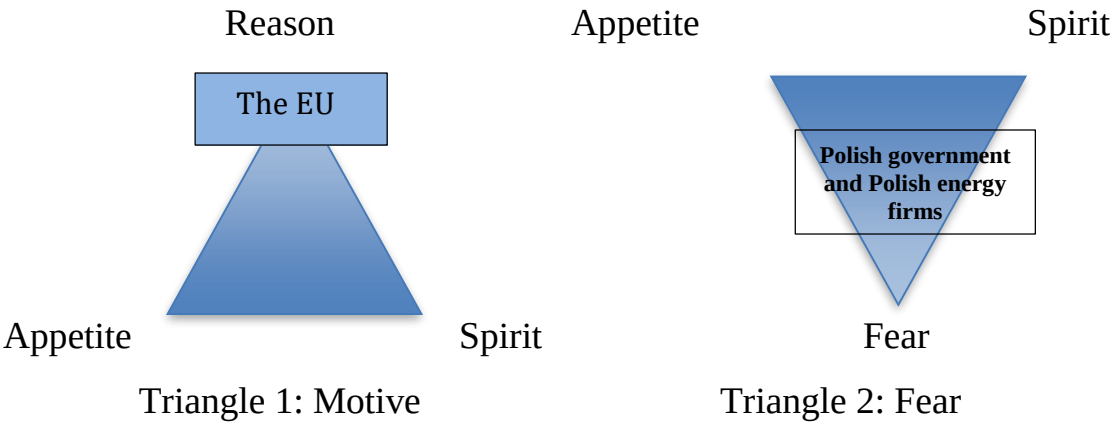

Figure 6 Modified figure from the author based on Richard N. Lebow (Lebow 2008). The allocation of the Polish government and the EU on the motives' and fear' triangle of Lebow

8.2.3 Pro-consumers and the Polish government

Motives	**Polish Pro-consumers**	**Polish government and the state-controlled energy companies**	**The UE**	**German government and German pro-consumers, German public**
Spirit	**Compatibility:** Dispute with the government and the Polish energy firms, demanding rights for generation of own energy, investment out of higher purpose, not only because of business reasons, desire to implement the low carbon energy model (sustainable development), care about the reputation of the country to follow European standards	**Clash:** Defense and desire of preservation of old centrally-planned energy model based on coal production with the domination of few firms controlled by the government, connotation of old energy model with identity and autonomy, defense of this model seen as a matter of honor. Frequent connotation to humiliation in the past by actors in energy relations	**Compatibility** Promotion of the departure from fossil fuels, role model for other countries to follow, reputation of the EU in combating climate changes, normative power. Promotion of energy solidarity, security and trust in mutual energy relations (the Energy Union, the EU's energy law, III Energy Package, Gas Directive)	**Compatibility** Taking pride of being the leading country in promoting of the low carbon economy based on decentralized energy production, based on renewables
Appetite	**Compatibility:** Common economic interests, investment in renewables	**Clash:** Contradictory economic interest, investment in new coal power plants (Annex II), blocking development of renewables energy and decentralized model based on distributed generation.	**Compatibility** Common economic goals – further investment in renewables, funds related to renewables energy project, the EU aid of closing old power plants, etc, all to departure from fossil fuel, decrease energy dependence from one supplier (Russia) – also core fundaments of the Energy Union,	**Compatibility** Common economic goals, investment in renewables, treating gas and coal as a back-up fuels until 80% of renewables will not be achieved in 2050.
Reason	**Compatibility:** Shared goals, fundaments reflected in the desire to follow the EU law (implementation of 2009/28/EC Directive), implementation of the low-carbon economy, decentralized energy model based on renewables energy	**Clash:** Lack of shared goals with the EU in the field of energy and climate policy. Intentional *"playing with time"* when implementing the appropriate law that would promote the development of renewables energies: questioning core fundaments of the climate and energy EU framework.	**Compatibility** Establishment of law that would strengthen mutual trust and solidarity (The Energy Union). The EU as a gatekeeper of energy law (III Energy Package, objection to constructing Nord Stream II, correction of decision regarding Opal), establishment of	**Compatibility** Accomplishment of energy law and all directives, possible expectation regarding Nord Stream II (against III Energy Package, the Energy Union rules)

			different directive to combat climate change and protect customers (gas Directive)	

Table 9 Compatibility in all three motives between Polish pro-consumers, German pro-consumers, the German government and the EU versus incompatibility in all three motives with the Polish government

The conclusion related to Polish pro-consumers and the Polish government will be based both, on the information given in the previous chapters and the information provided in the survey (Annex III). Some of the information of the survey confirm the information provided in previous chapters.

The questionnaire was sent (June 2015) to some of the Polish non-governmental organizations operating in the field of renewables energies. Replies of all of these organizations are compatible. What should be emphasized, as per feedback received, there is a compatibility of the 3 Lebow's motives (reason, appetite and spirit) between the EU and the Polish pro-consumers (Table number 9). Hence, the Polish pro-consumers can be placed on the first motives triangle together with the German government, the German pro-consumers, German public and the EU, on the motive triangle under the Figure 6 and 5.

At the same time, the Polish government together with the state-controlled energy companies, that mainly generate electricity from fossil fuels, less from renewables (Annex I) can be situated on the triangle 2 - fear, Figure 7 and 5.

Also, it needs to be underlined that these organizations can be seen as a representation of the voice of the Polish citizen, pro-consumers, not only representing their own interests. The Climate Coalitions is the organizations that grouped 23 [74] other non-governmental

[74] Foundation Aeris Futuro Foundation, ClientEarth Poland, Foundation for Energy Efficiency, Ecological Foundation, Arka Foundation, Ecological Earth Legnica, Green Action, Foundation for Sustainable Development Foundation, GAP Poland Foundation, Greenpeace Poland, the Foundation for Sustainable Development, Institute for Sustainable Development, The League of Conservation, Polish Ecological Club Lower-Silesian Branch, Polish Ecological Club Upper-Silesian Branch, Polish Ecological Club District Mazowiecki, Polish Ecological Club District Swietokrzyski, Polish Ecological Club District of East-Pomeranian, Workshop for All Beings, the Ecological Society EKO-UNIA, Ecological and Cultural Association Club Gaia, Social Ecological Institute, WWF Poland, Green Mazovia, The Union of Associations Green Network.

organizations operating in the renewables and climate sector in Poland, and the reply to the sent questionnaire is treated as a 1 voice that represents all these 23 organizations. Also, many surveys and researches, as cited above, have been done in Poland, and they confirmed that majority of Poles are interested in the decentralized model of energy production based on renewable energy. In other words, they would like to become pro-consumers (Gwiazda M.,2016, n.d.). In sum, Polish citizen prefers renewables energies over fuels (Climate Coalition, Dec.,2014, n.d.).

As per feedback received, the law on renewables energy is written in a complicated way, which makes it difficult to understand by the pro-consumers (question nr 1 of Annex III). All the draft laws and the final law, later amended, were being created without the involvement of experts, excluding the voice of citizens or any other parties that would be impacted by this law (question nr2). Or if these experts were involved, together with the representatives of different interested groups (as all projects need to be given to the public consultation), at the end, their opinions were not taken into consideration; hence the replies on the question 2 are negative. This situation is entirely contradictory to what it is happening and took place in Germany, where the legislation related to renewables energy was being created with the involvement of experts. One of the most significant examples is the Energy Dialog 2000 led by Federal Ministry of Economics and Technology and the Forum for Future Energies (Renn and Marshall 2016), this dialog grouped independent experts in the field of renewables. It was this group that influenced to convince the authorities to departure from nuclear energy and fossil fuels (Renn and Marshall 2016).

Also as mentioned in Chapter IV, in 2005, the Deutsche Energie Agenture (DENA) (German Energy Agency) led a study in order RES became more integrated, and representatives from the German utilities were invited (Lauber and Mez 2006). In Poland, the RES community claimed that law is influenced in huge extends by the lobby of the coal industry (Polish Sejm, Sep.,2014, n.d.). This situation should not surprise because the government wants to maintain the old status quo of centralized energy model based on coal, which is perceived as a national wealth (question number 7). This cultivation of the mines tradition is being considered as one of the major obstacles for the development of the decentralized model based on renewables (question number 7). For that reason, the government is establishing

legislations that will maintain the current status quo of Polish energies companies in which the Treasury of States has shares (question number 8).

Moreover, the Polish pro-consumers are being given not sufficient information or not reliable information regarding the potential of development of energy from renewables (question number 3). They are of the opinion that it is possible to build the energy security of Poland based on renewable energy (distributed generation) – (question number 4). Also as confirmed in the questionnaire there is a lack of political force that would support the development of renewables energy (question number 9), which is again different in Germany, where the Green Party managed to enter the Bundestag at the beginning of 90's already. Nonetheless the pro-consumers keep/kept struggling with the government demanding the full and adequate promotion of renewables energy as per 2009/28/EC Directive (question number 10).

Now, the Polish pro-consumers, as it was indicated, could learn from the *"life experience"* and *"lesson they learn"*(Lebow 2008b) through the observation how the distributed generation was being developed in other Member State of the EU, also in Germany. That increased the interests of Polish public to departure from fossil fuels (Climate Coalition, Dec.,2014, n.d.) increasing the desire to generate renewable electricity. In other words, both pro-consumers and Poles are well aware that with the appropriate support from the government (legislation) it is possible to build energy security of the country, in its majority, on distributed energy supply model using alternative energy sources. More, as per Lebow *"(...) changes in interests affect identities"* (Lebow 2008b, 563–64), what it means in this context is that Poles and Polish pro-consumers changed identity through the observations, on the contrary to the Polish government. This situation causes that there are discrepancies between spirit, appetite, and reason between Polish pro-consumers and Polish government and the state-controlled energy companies. For that reason, Polish pro-consumers only and not the Polish government, could be placed in the same triangle of motives together with the German government, German public and the EU (Figure number 6), because there is compatibility in the three motives between these actors.

The Polish government intentionally hampers the development of renewables energies also by not including the most favorable financial support scheme (Feed- in Tariffs), at least, on

the entry stage of development as it was in the case of Germany (question 11 of the survey). Additionally, pro-consumers encountered and, still do, problems with access to the grid (questions nr 5). Moreover, there was no additional financial support like in the case of loans or any other form of support, again to the contrary to Germany where there was many form of support for renewables energy especially in the fist 20 years (question number 12) of the process of renewable energy development.

All of these above replies additionally confirmed that there is incompatibility on the 3 motives' level between Polish pro-consumers (also Polish public) and the Polish government. It is worth mentioning here what was written in the letter to the former Prime Minister when the Feed-in-Tariffs did not enter into force finally; the letter was sent by some of the Polish non-governmental organization:

"We feel cheated. As citizens, scientists, entrepreneurs, social activists, and taxpayers. We feel deceived for many years, during which representatives of the government, which is chaired by the Prime Minister, tell us and the general public that renewable energy is not for us and our economy a good solution" (Climate Coalition, Dec.,2014, n.d.).

This is an example of the "materialized" spirit of pro-consumers, because they demand their right for self-energy sufficiency, autonomy. Now, as the government has a different vision for the future energy mix, then there are no shared goals (reason paradigm) between Poles and the Polish government (Table number 9). Also, it needs to be recalled that the electorate of the regions where there are many Polish mines is quite significant in Poland; hence the investment in the new coal power plants is very often used in the electorate narrative to win power. Nonetheless, as said and, as indicated in the survey quoted, the majority of Poles want the departure from fossil fuel economy and energy model and are eager to implement the EU energy vision based on the greater involvement of citizens (compatibility in reason, appetite, spirit with the EU, Table 9).

In the light of the above, it should be emphasized that the Polish government is presenting entirely different version saying that this is only *"stereotype"* that *"the Polish energy sector is not developing clean, renewable energy sources"*. Also, the other *"stereotype"* is that *"the energy mix, based on domestic raw materials, pollutes the environment"* and this is not

occurring because the fired coal plants, that were built in Poland, are *"among the most modern in the world"*(Treasury of State,Jul.,2016, n.d.). In sum, not only there are differences in the three Lebow's motives between the Polish government and the Polish pro-consumer, but also, there are discrepancies in the facts' and reality's presentation. Again, the words of Orwell can be recalled in this context: *"Political language is designed to make lies sound truthful (...)and to give appearance of solidity to pure wind"* (The Economist, Jul.,2013).

As it was presented, politic can also be full of emotions, what makes it even more interesting to observe. Countries' strategies, here in the field of energy and climate policy can be shaped by different psychological stimuli not visible on the fist sight. Only through the observation of the repetitive patterns of the political behavior of states these motives can be detected. When there is a compatibility between different motives and also, what is very important, the same understanding of them, it is when countries have similar goals, here, they can be translated in the fulfillment of the core fundaments of the EU's climate and energy framework.

As it was indicated, the German government and the EU show the high degree of similarities when it comes to compatibility of Lebow's three motives. In other words, there is no discrepancy in the energy and climate field. The contrary situation is in Poland; hence, the country develops different strategies in this area. Additionally, on the Polish side there is an element of fear; nonetheless, it cannot be an excuse for not given its citizen rights to develop their own energy, the right that it is also assured by the Polish Constitution. This most important country document, as said, speaks about the right of the citizen to protect the environment and to take any activities that have it as a final goal. However, the Polish government's appetite (development with the state-controlled company the centralized energy model based on coal) overtakes the reason and this situation is the root of the administrative struggle in the case of the development of renewables energy sources between Polish pro-consumers and Polish government.

Nowadays, there is proposition of creating "Europe of many speeds." Based on the example illustrated in this thesis, we can assume that the reason of that might have a lot to do with the incompatibilities in motives and their different understanding, psychological Lebow's stimuli on a state' level. Shared goals, apart from the same *"principal of justice"* (Lebow 2008) as per Lebow reason paradigms, are the bases of the EU's unity. Now, if there will be more goals that are not shared then less, the conflict will be with time more difficult to resolve even if the same values cement this historical and beautiful collaboration.

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Annex I

Generation of energy from different resources by PGE, PGNiG, Enea, Energa, Tauron, data from 2015 (PGE, Comp., n.d.), (PGE, 2011, n.d.), (PGNiG, n.d.), (PGNiG, Fuels structure, n.d.), (Enea, Fuel structure, n.d.), (Enea.Comp., n.d.), (Enea, Sales, n.d.), (Energa, Data., n.d.),(Energa,Areas of act., n.d.), (Tauron, Fuel structure, n.d.),(Tauron,Areas of act., n.d.)).

Name of the company	**Renewable energy (%)**	**Hard coal (%)**	**Brown coal/lignite (%)**	**Natural gas (%)**	**Others (%)**	**Main business area**
PGE (Polish Energy Group)	4.95 – biomass 1.82 – (large wind installations), 1.82 (large water installations)	51.05	32.92	7.45	0.03	Distribution, sale and production of energy, ownership over transmission networks. It delivers electricity to 5.1 millions (data from 2011)
PGNiG (Polish Oil and Gas Company)	6.44 (biomass, geothermal, wind, solar, hydro)	81.56	10.28	1.0	0.73	Production, distribution and sale of both electricity and heat. It delivers electricity to 6.7 millions.
Enea	16.55 (biomass 4.86, hydro-1.96, wind-9.73)	64.41	15.61	1.78	1.65	Production, distribution and sales of electricity. It delivers electricity to 2.42 millions.
Energa	17 – water 15-biomass 10 –wind)	57	N/A	N/A	N/A	Production (Partnership Energa Production), Distribution, Sale (Partnership Company ENERGA- OBRÓT SA (Energa is the monopolist in northern and central Poland through its distribution assets delivers electricity to more than 2.9 millions, delivers electricity to ¼ of citizen, exploring 184 thousand electricity transmission networks),
Tauron	6.54 (biomass 4.67; biogas 0.06; wind 1.44; hydro 0.07, solar – 0.01)	83.61	7.83	0.79	1.21	Production, distribution and sales. Tauron explores coal in three Polish mines, that cover 29% of all hard coal sources in the country. It delivers electricity to approximately 5.3 millions of customers.

Annex II

Shared investments in new power coal plants of the Treasure of State and the Polish energy companies (Treasury of State,Inv.,2030, n.d.).

Type of Investment	Total Value of Investment	End of Investment	Localization of Investment	Investors
Power station from hard coal	11.6 mld PLN brutto (approx., 2.8 billions Euros)	III quarter of 2018 (5 block), I quarter of 2018 (1 block)	Brzezie near Opole	GK Polish Energy Group (PEG)
Power station from hard coal	N/A	Project is being planned	Puławy	Azoty Puławy Group
Power station from hard coal	5.4 mld PLN brutto approx., 1.29 billions Euros)	I quarter of 2019	Jaworzno	GK Tauron
Power station from hard coal	6,4 mld PLN brutto approx., 1.52 billions Euros)	July 2017	Swieze Gorne, Gimna Kozienice	GK ENEA
Power station from brown coal	4 mld PLN brutto approx., 1 billions Euros)	2019	Bogotynia	GK Polish Energy Group (PEG)

Annex III

Original (translated) questionnaire sent (June 2015) to some of the Polish organizations operating in the area related to renewable energy sector. The feedback came (July 2015) from: Foundation of Energy Development, Climate coalition (the association of 23 other organizations[75]), Polish Technology Corporation, Association of Producers and Importers of heating devices.

Questionnaire: Barriers faced when developing Renewable Energy Sources (RES) in Poland, mainly distributed generation

I turn to you with a request to fill out the below questionnaire as a part of the research work on the development of energy based on renewable energies, mainly distributed generation in Poland. Please select one of the answers: A, B, C, D, E.

1. Do you think that the current Law on Renewable Energy Sources is written in an understandable manner to the average citizen who wants to invest in renewable energy sources and produce energy based on micro-installations?

A) Strongly disagree, B) Rather disagree, C) Do not know, D) Rather agree

E) Strongly agree

Replies: Climate Coalition A, Foundation of Energy Development A, Polish Technology Corporation B, Association of Producers and Importers of heating devices B,

2.Do you think that the current Law on Renewable Energy Sources has been written with the participation of experts, taking into account the voice of society, producers, traders, and appraisers of renewable energy sources?

A) Strongly disagree, B) Rather disagree, C) Do not know, D) Rather agree

E) Strongly agree

[75] Foundation Aeris Futuro Foundation, ClientEarth Poland, Foundation for Energy Efficiency, Ecological Foundation, Arka Foundation, Ecological Earth Legnica, Green Action, Foundation for Sustainable Development Foundation, GAP Poland Foundation, Greenpeace Poland, the Foundation for Sustainable Development, Institute for Sustainable Development, The League of Conservation, Polish Ecological Club Lower-Silesian Branch, Polish Ecological Club Upper-Silesian Branch, Polish Ecological Club District Mazowiecki, Polish Ecological Club District Swietokrzyski, Polish Ecological Club District of East-Pomeranian, Workshop for All Beings, the Ecological Society EKO-UNIA, Ecological and Cultural Association Club Gaia, Social Ecological Institute, WWF Poland, Green Mazovia, The Union of Associations Green Network.

Replies: Climate Coalition: B, Foundation of Energy Development A, Polish Technology Corporation B, Association of Producers and Importers of heating devices A,

3.Do you think that there is a widely available and reliable information on the potential of development of energy based on renewable sources, mainly distributed generation? (also for example regarding information on costs of renewables electricity?)

A) Strongly disagree, B) Rather disagree, C) Do not know, D) Rather agree

E) Strongly agree

Replies: Climate Coalition A, Foundation of Energy Development B, Polish Technology Corporation A, Association of Producers and Importers of heating devices A,

4.The amendment of Mr. Arthur Bramora introduced to the Law on Renewable Energy is considered to be a milestone in the development of renewable energy in Poland, because it empowered a single citizen by giving him the right to generate and sell its own energy. Do you think that it is possible to build energy security, which is mostly based on renewable sources, where civic distributed generation could play a huge role?

A) Strongly disagree, B) Rather disagree, C) Do not know, D) Rather agree

E) Strongly agree

Replies: Climate Coalition E, Foundation of Energy Development D, Polish Technology Corporation D, Association of Producers and Importers of heating devices E,

5. Do you think that pro-consumer encounters difficulties and obstacles when it comes to connecting its micro-installations to the grid?

A) Strongly disagree, B) Rather disagree, C) Do not know, D) Rather agree

E) Strongly agree

Replies: Climate Coalition E, Foundation of Energy Development E, Polish Technology Corporation D, Association of Producers and Importers of heating devices D,

6.Do you think the accessibility to equipment and new technology, when it comes to renewable energy, is today also a serious obstacle for the development, on the large-scale of distributed generation from renewables in Poland?

A) Strongly disagree, B) Rather disagree, C) Do not know, D) Rather agree

E) Strongly agree

Replies: Climate Coalition A, Foundation of Energy Development D, Polish Technology Corporation B, Association of Producers and Importers of heating devices B,

7. Do you think that a serious obstacle to the development of renewable energy sources, mainly distributed generation, is a desire, in the governmental structure, to base Polish energy mix on coal, which also results from the attachment to tradition - ethos of mining and in seeing coal as a national "wealth"?

A) Strongly disagree, B) Rather disagree, C) Do not know, D) Rather agree

E) Strongly agree

Replies: Climate Coalition E, Foundation of Energy Development E, Polish Technology Corporation E, Association of Producers and Importers of heating devices E

8. Do you think that the energy market in Poland is very heavily monopolized by companies such as such as PGE, ENEA, Tauron, in which the Treasury of States has the majority of shares? And this "group" seeks to maintain the current status quo, and therefore the government does not want to support the development of the "pro-consumer," distributed generation?

A) Strongly disagree, B) Rather disagree, C) Do not know, D) Rather agree

E) Strongly agree

Replies: Climate Coalition E, Foundation of Energy Development E, Polish Technology Corporation E, Association of Producers and Importers of heating devices E

9. Do you think that in Poland there is a lack of the political force that supports the environmental movement, and thus also the public distributed generation from renewable energy sources?

A) Strongly disagree, B) Rather disagree, C) Do not know, D) Rather agree

E) Strongly agree

Replies: Climate Coalition E, Foundation of Energy Development E, Polish Technology Corporation E, Association of Producers and Importers of heating devices D,

10. Do you think that Poland in the area of the development of renewable energy sources, including a fulfillment of obligations arising from 2009/28/EC Directive from 23rd of April 2009, effectively promoted the use of energy from renewable sources?

A) Strongly disagree, B) Rather disagree, C) Do not know, D) Rather agree

E) Strongly agree

Replies: Climate Coalition A, Foundation of Energy Development A, Polish Technology Corporation A, Association of Producers and Importers of heating devices A,

11. Do you think that the support system based on auctions and certificates of origin and not, as in other countries, for example in Germany on the Feed-in Tariffs, was not sufficient incentives to invest in renewable energy, mainly in micro-installations? Did this kind of support system effectively inhibit the growth of public distributed generation in Poland?

A) Strongly disagree, B) Rather disagree, C) Do not know, D) Rather agree

E) Strongly agree

Replies: Climate Coalition E, Foundation of Energy Development E, Polish Technology Corporation D, Association of Producers and Importers of heating devices E,

12.Do you think that the pro-consumer amendment that introduced the mechanism based on fixed prices (Feed - in Tariffs) is enough support for the development of micro-installations?

A) Strongly disagree, B) Rather disagree, C) Do not know, D) Rather agree

E) Strongly agree

Replies: Climate Coalition A, Foundation of Energy Development B, Polish Technology Corporation D, Association of Producers and Importers of heating devices D,

Optional comment

Additional comment was provided by the Climate Coalition: *"Some questions would require a broader response. An example is a question number. 12. FiT are the necessary support, but it needs additional assistance, clear and simple administrative and organizational rules, and also aid / financial loans, which will make that potential pro-consumers will have courage and motivation to invest in renewable energy sources. Hence, the answer A, although FiT (at proper rates) itself is an essential element of support for the development of RES".*

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Thank you for completing the survey!
Aneta Ciupek