

Towards the End in Energy Policies Consuming Nature

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Abstract: Energy policy, technology and economy are the concepts that have to be paid attention together. There is a shortage of energy resources. There are also a number of nature probes as well as a gradual decline in energy reserves. Among them, greenhouse effect and climate change are leading. That is, they require the production of energy politics at national / international level, taking into account the interests of future generations. The use of energy in accordance with sustainable development goals ensures that natural balances are not disturbed at the production / consumption stages. Alternative clean energy approaches such as green economy, ecological footprint are increasingly foreground in energy politics. Diversification of energy resources and less harm to the environment should be aimed. For this reason, investments in wind, solar and hydro-energy resources should be supported. Otherwise, at this rate in the future nature will be completely exhausted, and become 'natural' out. In this context, this study examines the new 'ecological' energy politics that enable the depletion of nature to be avoided. The study is based on the method of scanning related literature and strategy text with resources.

Keywords: Nature, Resource, Energy, Policy and energy policy.

JEL classification: K32, O13, P28, Q48

1. Introduction

Man, like all other creatures, is a living creature. For that reason, he gave the struggle for existence against nature from the first moment on the earth. Human beings, in the struggle continued to do this against nature, nutrition, shelter, production, consumption and so on. He used nature for his activities. Human-natural environment relations can be described as an energy exchange that is necessary for the survival of human life. Energy has become one of the basic requirements people need. However, human intelligence, the technology it has developed and the use of intense energy have increased the impact on nature. Now, I have come to the point of changing nature in the direction of my own wishes. This has not resulted in negative outcomes, positive outcomes. Today, the lack of sensitivity to the production and use of energy that is necessary for mankind causes damage for nature and its resources in a way to be consumed rapidly. Human energy has gone too far and badly to use and destroyed nature.

The world's energy needs are increasing every year. We must reconsider the nonrenewable energy sources that are limited to the reserves to meet this need. These will be consumed in the short term. In addition, it has already been the direction of alternative energy sources in order to meet the growing energy needs of communities in a reliable, uninterrupted and clean way. The cost of obtaining renewable energy types in general is obvious. Moreover, the difficulties in storing the energies obtained from most of them and the limited availability of renewable energy infrastructure prevent the widespread use of renewable energy in the world. However, there is increasing consciousness about ecology and environmental issues. Herein, depending on developments in generation of energy and transmission technologies, it is expected that the requisition for renewable energy sources would increase further in the coming years.

2. Energy Policy and Environmental Policy

The environmental effects of energy production are different forms. These estimates can be measured for each source by the type of pollutant that corresponds to the unit energy production. These comparisons open the door to integrate environmental and energy politics. The effects of pollutants on the health of the workers and the people in the environment and in the atmosphere are being investigated. The quantity and toxicity of wastes has long been explored in terms of environmental and ecological systems. These surveys also bring explanations to the problems leading to strategy and politics.

In addition to pollution, problems such as climate change, global food crisis, and widespread pollution disasters have been added to a major ecological crisis. 20th century civilization has almost consumed the ecosystem. We can recall here that it can function as a capital area. An environment emerged where the credit, total energy and natural resources started to decline all together. Such an environment has never been such violence in history. There has been no scarcity for energy sources on this scale to cover the whole world population. Hence, we can easily say that sustainability is a necessary field of politics. It will never resemble the future past. As a sub branch, ecology politics are becoming common to deal with scarce natural sources in which energy sources exist.

The demonstration of the quantification of the pressure on natural resources and the factors from which it is derived is a prerequisite for sustainable use. As a developing country, for example, Turkey's Ecological Footprint Report questions the sustainability of current trends by examining our use of renewable natural resources with its causes and consequences. The Ecological Footprint that emerges as a result of human activities shows that we live in the limits of renewing natural resources by comparing with the amount of natural resources that we can produce in the same period, that is to say with biological capacity (Yesilaski, 2017).

Today Turkey's energy policy cannot be thought without European Union initiatives and policy frame. The EU's energy policy is a major issue through environmental anxieties, particularly as it is dependent on third countries, mainly pollution producing countries such as Russia and Norway. Energy policy in an integrated frame aims to ensure the operation of the energy market and procure the safety of supply, gear up the energy efficiency, improve energy savings, and assure the precocity of new and regenerable energies, create the interconnection of energy networks and introduce "energy-climate package" in legislation (Yorlan, 2009).

The integrated frame proposed by the European Commission in 2008 realized with the energy-climate package which aims to minimize the greenhouse gas emissions by 20%, to augment renewable energy by 20% and to reduce the power consumption of globe by 20% till 2020 (Greenpartnerships, 2017). In early 2014, the European Commission proposed new climate and energy targets for 2030. Their joint implementation is planning to make the EU a vying, safe and low carbon economy. These objectives includes a 40% reduction in greenhouse gas (GHG) emissions compared to the 1990 level, a stringent target for the Union as a whole for the share of renewable energy, which is going to be at least 27%, new greeds for effective energy policies, and building a new governance system and a number of new indicators to sustain a vying and safe system of energy.

Turkey's energy resources are outsourced and our natural resources are limited. In this direction, our aim should be to provide our energy needs economically and adequately. The most important tool that can be used to achieve this goal is the efficient use of energy. As a country, we must aim at reducing energy efficiency, reducing energy consumption, reducing the quantity and quality of production, reducing economic development and social well-being without impeding social welfare. Projects and continuous improvements should be made in the awareness of the reduction and efficient use of natural resource consumption. It is therefore believed that sustainable success can be achieved. From this point of view, production methods that conserve the environment and natural resources should be used. Regulatory compliance of emissions from energy consumption and system performance should be checked with measurements made periodically. Thus, we can realize our production with an environmentally friendly process that has no effect on climate change. We have to operate the waste sorting system effectively by creating environmental awareness through trainings to

be given to workers. We must believe that protecting the environment can only be achieved through participation with all workers, citizens and politicians.

When we look at the situation from Turkey's window, it is obvious that we need to change our life style which is away from sustainability because of production, consumption and waste philosophy if considering that ecological footprint per person is 2,7 and bioactive area is 1,3 (Yesilaski, 2017).

3. Energy Consumption and Environmental Problems

When the world electricity production figures are examined, fossil fuels are the biggest share. Fossil fuels are the main source of energy in almost all countries. Considering the environmental effects of fossil fuels, greenhouse effect comes to us. Acid rains and air pollution are the second risk. As the combustion energy is gained from fossil fuels, combustion products are dispersed in the atmosphere as flue gas. These gases are causing global warming. Global warming does not only damage living diversity but also risks future natural resources (Pamir, 2003). Flue gases contain fly ash and hydrocarbons. Nickel cadmium lead poisonous metals such as arsenic are the other particules that are venting to the atmosphere when fossil fuels burn. CO₂ plays an active role in the reveal of greenhouse effect. The increased amount of CO₂ leads to an increase in the temperature of the earth, leading to a harm for the balances about climate and environment. SO₂ and NO_x mainly lead to acid rain. SO₂ and NO_x combined with water vapor in the atmosphere lead mainly to acid rain (Bayram, 2005).

Sulfuric and nitric acid in the atmosphere cause the degradation of the ecological balance of the world. All fossil fuel upgrades are causing air pollution in the winter months, which is under the influence of many seismic effects in the world. The environmental effects of fossil fuels are not limited to these. Coal mining, for example, poses a health risk to workers. As well as the consequences of the explosion of methane gas, which is not extraordinary to a developing country, another problem is encountered in fossil fuel transport. Accidents caused by oil tankers cause hundreds of thousands of tons of oil to spread to the sea (Ulutaş, 2005: 1150)

In the world, an important share of electricity generation is provided by nuclear reactors. This rate is much higher in developed countries. The impact of nuclear energy on the environment is a matter of the spreading of radioactive isotopes of the fission product. Hydroelectric power plants, on the other hand, account for approximately four quarters of electricity generation in the world. Hydroelectric power plants need to provide suitable geographical conditions for energy production. What goes around ruins ecological balances? A large part of the hydroelectric capacity that can be used in today's conditions is already being used. Hydroelectric power plants need policies that will closely monitor their interaction with the environment. It is possible that the natural and geologic equilibrium of the soil loss end could be disrupted. The swamps in these reservoirs also provide a favorable environment for the formation of methane gas. The collapse of the dam in the near past caused many accidents to die (Hydroworld, 2017).

4. Renewable Energy and Incentive Systems

The energy consumption of Turkey is increasing rapidly because it is a developing country with a growing population. It is estimated that half of the fossil fuel resources will be consumed within 10 years if the energy consumption continues in this way around the world. Along with increased energy consumption, the need for increased competition and lowering production costs has also increased the importance of energy efficiency studies.

Through the use of energy efficient equipment and systems, repair, insulation, modification, rehabilitation and process regulation, projects involving the use of unnecessary energy, waste energy, prevention of energy losses and leaks, or recycling of waste energy together with the reduction of waste are begun to be evaluated as Productivity Enhancing Projects today. These projects are the main element of the incentive system.

This incentive is given to projects with a total value of up to 1 million TL. The repayment period is less than 5 years. A maximum of 30% of the project cost is awarded.

Non-licensees benefiting from licensed legal entities that demonstrate electricity generation activities benefit. This incentive includes enterprises that produce all kinds of goods with a yearly total energy consumption of 1,000 TOE and above. Along with the Productivity Enhancement Projects, businesses are contributing to both their own circle and the country's economy via the savings they make. Such projects have been supported by the state since 2009. Efficiency Enhancement Project support applications are accepted by the General Directorate of Renewable Energy in January every year. This institution is the most important institution in this area in country politics. Voluntary Agreement support is another incentive. By way of which government grants are awarded to businesses that, in advance, commit to reduce the energy intensity by an average of at least 10% at the end of the three year monitoring period, based on the reference energy intensity, which is the average of the energy intensity of the past 5 years (EIE, 2017).

Law Numbered as 5346 on the Use of Renewable Energy Sources for Electric Power Generation (RMA Law) is a not an efficiency incentive (Zuvin, & Kirmizioglu, 2016), instead about the renewable energy using. The By-law on the Certification and Support for Renewable Energy Resources Sources prepared as to this law (Regulation on YEKDEM) was published in Official Gazette of Turkey which was dated October 01, 2013 and it was numbered as 28872 (Yıldız & Şekkeli, 2016). Article 5 of the YEKDEM Regulation regulates the applications to be made to the YEK Support Mechanism. The Energy Market Regulatory Authority is the main element of these incentives (EIE, 2017).

5. Eco-Friendly Energy as a Type of Policy and an Ecology Theory

Energy has become one of the most vital needs of mankind today. Every production made requires energy. Increasing demands of mankind and developing production processes have increased the need for energy and energy use.

One of the two major problem areas that are now on the forefront of energy and threaten the future of our world is the irregular use of fossil fuels that cause global climate change and the second is the problem of energy infrastructure that leads to wars (Philp, 1985). Fossil fuels are ending sources and face the danger of exhaustion. Unfortunately, the effort to master the energy resources, which is the most important parameter today in the struggle to dominate the world, has led to very serious consequences. For the sake of possession of energy resources, as well as the war that has turned Iraq into a blood lake, it reveals how sensitive and careful it should be. On the other hand, fossil fuels' harm to the environment and to the people have become more pronounced in this period, when the effects of global climate change are clearly felt and disaster scenarios are spoken.

Today, when climate change, ecological equilibrium is starting to deteriorate due to greenhouse gases emitted from fossil fuels through energy production, hence our world will face the danger of leaving the world as a livable world if measures are not taken on a global scale for eco-friendly politics. It is possible to solve the two basic problem areas mentioned in a way that does not harm both the world and the human being. The name of this solution is the utilization of regenerable energy resources. Along with the usage of renewable energy sources, it is possible to prevent global climate change, at least to slow down, because energy production is done by clean methods while providing the necessary energy source and supply. For this reason, utilization of renewable energy resources as much as possible is not a choice but a necessity. Very serious renewable energy resources that can be evaluated in our country are potential (Sözen, Arcaklioğlu, Özalp, & Kanit, 2004: 275). Especially solar energy is one of them and it has an important potential in our country, especially in Southeastern Anatolia Region. It will be the first political step to be made to present scientific researches to public information about the renewable energy sources that are increasingly important in the face of today's problems and create a synergy in consciousness and sensitivity, reduce adverse environmental effects in the course of energy production and consumption.

Ecologic theory emphasizes environmental factors, while environmentalists who explain the harm caused by energy consumption emphasize biological factors. Urie Bronfenbrenner is the premise of this view not solely giving a phase on ecocentric environment. The development approach based on

the environmental system has nested systems. Microsystem, mesosystem, exosystem, macrosystem and chronosystem are the main ones (Guardia & Evans, 2008: 166). Ecology theory is not about environmental degradation. For example, a healthy environmental study is also included in the theory of ecology. The interaction with the closest relatives is the microsystem. Mesosystems are links and relationships between microsystems or various contexts. The similarities and differences between the interactions in the family and peer relations in the school are handled within this system. An ecosystem is a social environment in which an individual does not actively play an active role or an influence on the experiences and experiences of the context in which the individual is active. The macrosystem is the culture in which the individual lives. Cultural belief systems, values and attitudes in a culture are related to this system. The chronosystem affects the experience and the reflections of the changing sociodemographic events and environmental conditions over time in the individual's life.

In ecosystem theories, all these interrelated living and inanimate elements are formed by energy links. The ecosystem feeds itself and nourishes with the circulation of matter and energy between these elements. The cycle of matter and circulation of energy and constant exchange between air, water, soil, plants and other living things are preserved. This shopping allows the earth's natural riches to be used repeatedly and to survive. The primary source of energy in the ecosystem is the sun. All living beings in the world need energy to sustain their lives. There is nutrition on the basis of the relation between living things. The substance and energy in the ecosystem is through the food chain, which is seen between transport organisms. In each energy conversion, there is about 90% energy loss in this case, only 10% of the energy reaching that nutrient level can be transferred to the next level of nutrition. This energy that can be transferred is called usable energy. The remaining 90% of the unused energy is spent on heat energy (Savaş, 2012).

6. Resource Consumption and Sustainable Strategies for Turkey

Turkey is increasingly being contingent upon the importation of energy, notably as natural gas or petroleum, due to the request for more power need. Indeed, almost one-fourth of the whole power claiming of Turkey is composed by local resources, and the rest is met by various imported resources. Turkey also aims to augment the pie of regenerable energy in the energy inputs, to avail from the nuclear energy, to work on increasing energy efficiency, and to contribute to the energy security of Europe, in the framework of multi-dimensional energy strategy, being a source country and route diversification (Energy6, 2017).

It is expected that our annual energy demand of approximately 125 million tons of petroleum equivalent (million tonnes) in 2014 will reach 218 million tons in 2023 according to the projections. At present, approximately 35% of Turkey's primary energy demand is met by natural gas resources, 28,5% by coal, 27% by oil energy, 7% by hydro electric and 2,5% by other renewable sources (MFA, 2017).

Turkey, having an important potential for regenerable energy, is ranked in 7th order in the planet according to its geothermal energy sources potential. In addition to this energy source, priority is given to the development of hydroelectric sources as well as wind power and solar energy. Following the "National Renewable Energy Action Plan of Turkey", which was declared by the Ministry of Energy and Natural Resources in December 2014, it is aimed to augment the downloaded caliber of hydroelectric energy upto 34.000 MW till 2023 in this framework. Now, it is the main objective of the wind energy board capacity to rise to 20,000 MW. Reaching 3,000 MW of solar energy capacity was a similar step. It is also requirable to augment the geothermal energy power upto 1,000 MW. It was targeted that 30% of the total electricity generation would be covered by renewable energy. Turkey was one of the charter members of the International Renewable Energy Agency (IRENA), which is composed by a chartered having accepted at the end of the convention organized in Bonn on January 26th, 2009, as a prelude to the development of renewable energy resources (IRENA, 2017).

The situation that Turkey faces in energy can be summarized as a very high annual demand increase rate, which is dependent on imported resources at three quarters of primary energy. Strategy

and policies require that the usage of regenerable and other alternative power resources, the diversification in the resources (Unfccc, 2017), the development of domestic technologies and the search for indigenous resources and energy efficiency should be given special importance. For a country like Turkey, where renewable energy sources are rich and potentially large, it is necessary to make the most effective use of these resources. Maximizing energy efficiency will be the greatest and indisputable requirement to achieve the goal of energy independence.

As a new application in electricity market, the establishment of a power plant based on renewable energy sources with a maximum capacity of 1 MW and the real and legal entities establishing a micro-cogeneration facility were exempted from licensing. And they were also exempt from the obligation to establish a company. It is already a new and big step in benefiting from renewable energy sources in Turkey. Already, about 120 plants have been accepted and commissioned to cover all the electricity distribution regions. Approved project is about 1200 MW electricity generation from most solar energy. In practice, with the flexibility provided over time, certain acceleration in the speed of implementation of the projects has been possible (Gazetevatan, 2017). Licensed solar projects are experiencing certain progress has already wanted to have an installed power approaching 50 MW thanks to unlicensed production projects. At the same time, this area came to mean the formation of experience and praxis with a certain engineering (Enerjiatlası, 2017).

Scarce resources of our country should be looked at first. First, metal ores can then be viewed as energy stocks. Because these hammers are referred to in the industry, energy wastes are also important, if they are in abundance. It is the most important raw material of the iron and steel industry. It is very important for the industrialization steps. Turkey is very rich in terms of iron ore reserves. In almost every region iron ore is encountered. However, about 60 of these beds can be operated. The same is true for copper. Copper, one of the first mines used by people in prehistoric times, is still a strong raw material in the industry. Copper reserves are common in volcanic regions of the earth's crust. Since pure copper production can't meet the needs of the country, pure copper is taken from the outside. For another, our country is not enough for copper resources. Bismuth strontium calcium copper oxide is an excellent conductor and makes copper even more valuable for energy efficiency. Chromium can also be an important industrial raw material. It is known as very hard, well-polished and non-rusting. It is widespread in volcanic areas. It is an important mine used in machinery and motor industry and stainless steel construction. According to today's data, Turkey is ranked for the 4th place in world's chromium production order (Agrifood, 2016). Chromium, today, is an important mineral that is sold abroad (Ercisli, 2004).

We are fortunate to have boron minerals. It is the most important raw material of the chemical industry. Turkey ranks first in the world in terms of reserves. However, due to the low production and exports, the contribution to the economy is also low. Sulfur is still important both as agricultural and industrial raw materials. It is used in the chemical industry, mainly in the production of artificial fertilizers and agrochemicals. Our largest reserves are in Manisa. Production can't cover a small part of consumption. For this reason, it is also taken from abroad. Bauxite is another rich source in the world are scarce sources. It is one of the mines where our country has the richest reserves (Doğanay, 1994). Aluminum is obtained after the bauxite is processed. It is the most consumed mineral after the iron ore products in the industry. It is widely used especially in the construction of aircraft bodies. We are rich in Tungsten. It is a material used in space and war industry. But it is rarely found in the world. The richest reserves are in Bursa. Manganese is in our country, but its process is not stable There are scattered beds in Turkey. It does not exist purely. Production is purchased from outside because it can't meet consumption. Mercury is taken out of İzmir's Ödemiş and Karaburun, around Konya's Sarayönü and also around Niğde. It is the only mine in liquid form in the country. It is used in the field of enchantment and photography. Emery rock is on the average level. This material as a metamorphic stone is found in the use of a wide range of mine. The richest reserves are in the Aegean region. Salt is very important for the food industry. It is used as for salting and preventing the growth of bacteria and bacteria flora. However, in recent years it has become an important raw material of the chemical industry. Salt Lake and İzmir-Çamaltı are places where salt reserves are coded as the largest ones (Tamzok, 2003).

We can now look into the energy sources. Hard coal is the first order. The largest coal deposit basin in Turkey is in the Western part of Black Sea Region of the country. The anthracite coalbeds, therein, were emanated in the 1st geological time of history. Iron - Steel coal used as an energy source in the steel industry is also the raw material of the chemical industry. Annual generating is approximately 4-5 million tons. This output can't cater for Turkey. The reserve in Turkey is the richest source of energy. Almost every region in our region has more or less lignite deposits. It is mostly used as fuel and in thermal power plants. The largest lignite coalbed exists in the location as Afşin- Elbistan. Yearly net output is around 40 million tons. The output and depletion are augmenting in the meantime. It is one of the most important energy sources of the world economy. However, Turkey is not very rich in terms of oil reserves. The major oil deposits of Turkey are located in Southeastern Anatolia. Turkey's annual production is around 2.5-3 million tons. The oil produced can cover up to 20% of the country's needs. For this reason, oil is among the first to be taken abroad.

Renewable energy strategy policy and aims are the most important steps to deal with scarce resources issue. 29.40% of Turkey's energy needs are natural gas, 25% of hydroelectric power plants, 20,40% of coal and lignite, 10,40% of small hydroelectric power plants, 5.90% of wind, 0,8% are geothermal sources, 0.3% are sunshine and the remaining 7.80% are covered by other sources. According to the Electricity Market and Supply Security Strategy Document, which was published in 2009 (Unfccc, 2017), it is aimed that the pie of regenerable energy sources in power generation is at least 30%, all hydraulic potential is used for electricity generation, the electric power of geothermal power is to reach at least 1000 MWe capacity and 20 thousand MWe wind energy foundation power. On the other hand, at least 5,000 MWe for solar energy and a thousand MWe for biomass energy were targeted (Geni, 2017).

7. Conclusion

Our country has begun to feel its energy deficit more than ever, especially with its growing industry in recent years. In recent years, it has started to form an important source of our specialty natural gas production. It's already showing up in numbers. This includes natural gas, imported coal, imported lignite, fuel oil and so on. When you put in resources, we are also dependent on energy at seventy percent. This directly affects the current account deficit, increasing the economic fragility. 2023 should be able to bring a solution to this problem with renewable energy.

In Turkey, the share of renewable energy in primary energy use is 6.5% and its share in electricity generation is 24% (Baris & Kucukali, 2012: 390). Along with the scope of Turkey's 2023 energy strategy, it is aimed to increase the share of renewable energy in electricity production to 30%, indeed, it is aimed to "use all of our country's hydroelectric potential" (Bireselioglu, Yelkenci, Ozyorulmaz, & Yumurtaci, 2017: 1224). The goal of the WWF is to provide 100% renewable energy transfer on a global scale by 2050. The way to this goal is to promote energy efficiency and the use of renewable energy sources. Within this target, WWF-Turkey publishes reports in order to create consciousness and influence politics, and performs various projects. The increase in the population of the world and underdeveloped and developing countries and the decrease of resources in the world parallel to this, alarm for humanity. Because while the First and Second World Wars have emerged for ambitious sharing of abundant resources, the declining resources will not inevitably lead to world wars, indeed, they will also create inevitable conditions for the emergence of regional wars. This inevitability started with the Gulf Wars. It is clear that the most extreme way of providing scarce resources is "civil war" in Africa and solutions like the Gulf Wars. The possibility of these wars turning into regional nuclear conflicts in the longer term is a rising danger for humanity.

Besides energy and mines, there is no doubt that suddenly there will be another source that will become increasingly important in the world. Although around 70% of the world is composed with water, only 3% of it is unused water and 2/3 of them are in glacier or snow, water has become a more strategic material with population increase and climate changes. Moreover, the fact that the distribution of water is disproportionate on the world also makes it even more important. Even with the distribution of scarce water, the right proportion of the poverty to the world is increasingly visible. In the future, conflicts can be expected in the Middle East, Africa and Asia, especially due to water. It

would be a great possibility that the dimensions of these conflicts are two or more countries in the same region and regions. The shortage of water in the near future will lead to demographic displacement, such as migration between countries first, and then migration, resulting in serious military conflicts. It is a good example of the fact that the EU's control efforts over the Euphrates and the Tigris, which have caused a serious sharing problem between Turkey, Syria, Iraq and indirectly Israel since its long history, show how clear the water is to the threats in the coming period.

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