

European Energy Policies

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ABSTRACT: An energy revolution based on renewable sources and energy efficiency is needed not only to accelerate progress and economic development, but also to reduce the emissions that are rapidly warming and transforming our planet. The energy transition is not a one-size-fits-all process. It involves a combination of objectives, tools, policies, technologies, financing and resources. While the destination is common the path to the final goal depends on economic, social, ecological or security circumstances. However, the process must be fair, comprehensive and systemic so that no one is left behind, and international and regional policies and cooperation are essential to facilitate the exchange of experiences and best practices. The energy transition can no longer be limited to small transformative steps. It is time for it to become a transformational, system-overhaul effort based on the rapid expansion and deployment of all available technologies. This is the right time to reassess long-held assumptions and adopt the most appropriate policies and strategies at European Union level. European policies cover a wide range of areas, from trade and competition, to the environment and climate change, transport, energy, education and more. European energy policy aims to ensure the EU's energy security, promote a transition to a low-carbon economy and encourage the use of sustainable energy resources. This involves making decisions about the energy market, energy efficiency, the diversification of energy sources and the promotion of renewable energies.

KEYWORDS: energy security, green energy, energy trends, energy transformations

1. The need for policies in the current energy transition

A range of authors and organizations provide a critical analysis of current EU energy policies and propose solutions to meet the ever-changing energy challenges. From this perspective, the foundations of sustainable energy development are based on a series of principles that coexist and develop simultaneously. Here we mean energy efficiency (using energy resources more efficiently by reducing energy consumption and improving the energy performance of buildings, industry and transport), renewable energy (promoting the use of renewable energy sources to reduce dependence on energy sources fossil and greenhouse gas emissions), diversity of energy sources (ensuring a mix of energy sources to reduce risks to security of supply and price volatility, as well as to meet the demands of different sectors of the economy), energy security (ensuring a secure, sustainable and affordable energy supply by developing adequate energy infrastructure and promoting international cooperation) to which is added population involvement and participation (involvement of citizens and non-governmental organizations in energy decision-making processes to ensure transparency and responsibility for the decisions made).

Samuele Furfari, a recognized expert in the field of energy, developed a theory related to the sustainable energy development of the European Union (EU), called "The Theory of Triple Sustainability" (The Theory of Triple Sustainability) which brings together, as the foundations of sustainable energy development three major dimensions: economic, social and ecological sustainability (Furfari, 2021). Starting from the mentioned study, we believe that sustainable energy development can only be achieved if these three dimensions are taken into account, which we try to detail in the following.

The economic sustainability of the energy transition lies in the fact that the new energy system must be affordable and financially viable so that it can be sustained in the long term. This involves the development of innovative and cost-effective energy technologies that enable

a gradual and sustainable transition to a low-carbon economy. Within this dimension production costs and access to finance are extremely important elements considering that currently the production costs of renewable energies are still higher than those of fossil fuels and that a significant reduction in these costs is required to make the transition to renewable energy sources more affordable and economically viable. A market-based and competition-based approach can be suggested to ensure economic sustainability but this involves creating an appropriate legislative and regulatory framework to ensure fair competition between energy sources and to encourage innovation and investment in renewable energy sources.

It is also important that access to financing for investments in renewable energy is achieved through appropriate fiscal policies and through European funds. Added here is the importance of cooperation between EU member states to ensure a gradual and sustainable transition to renewable energy sources. Thus, it follows the particular importance of creating a common framework for energy policy and encouraging the development of common infrastructures, interconnected energy networks, in order to improve the EU's energy security and reduce production costs.

Moreover, we add the need for all economic branches to adapt to the new technology generated by the use of renewable energy, which implies a special technological leap, policies that favor development and adapted financing. Thus, economic sustainability involves ensuring the accessibility and financial viability of the transition to renewable energy sources and involves the creation of an appropriate legislative and regulatory framework, access to financing and cooperation between EU member states.

If we refer to the social sustainability of the new energy system, we have in mind the fact that energy development has a major impact on society, and in this sense both the needs and the rights of citizens should be taken into account. This involves involving local communities in decisions about energy infrastructure and taking the necessary steps to develop it in a way that does not have a negative impact on communities and the environment. Thus, the transition to cleaner and more sustainable energy sources should be inclusive and socially equitable, so as not to negatively affect local communities and ensure a fair distribution of the benefits and costs of the energy transition. Therefore, the importance of involving local communities in decisions about energy development and consulting them before making important decisions so that they can understand the impact on their lives and express their opinion should not be neglected.

A transition that does not adversely affect jobs is equally important in this complex process. It is therefore important to convert workers from the fossil fuel industry to the renewable energy industry and develop local economies around renewable energy sources. In addition, it has a major impact on society to ensure access to energy for all communities, including the most vulnerable, so as to ensure sustainable social development and reduce energy poverty and its effects as much as possible.

Ecological sustainability is the dimension that refers to the fact that energy development must have little or no impact on the environment and contribute to the reduction of greenhouse gas emissions. This involves the development of renewable energy sources such as solar or wind energy, and reducing the use of fossil fuels. In this sense the EU must invest in cleaner and more energy-efficient technologies such as solar, wind and hydropower, and promote energy efficiency in all economic sectors and encourage innovation in renewable energy and ensure financial support for the research and development of these technologies.

In addition, the development of transformation strategies and policies requires the protection of biodiversity and natural resources, so that energy development does not negatively affect ecosystems and human health. We conclude that ecological sustainability refers to ensuring a sustainable energy development that has a positive impact on the environment and contributes to the reduction of greenhouse gas emissions. This involves investing in cleaner and

more energy-efficient technologies, protecting biodiversity and natural resources, and promoting innovation in renewable energy.

The dependence of the EU's regional security on the energy independence of the area should not be ignored in this construction. It is proven that the energy security of the EU is closely related to the energy independence of the area, as too much dependence on external suppliers can affect the energy security of the EU as a whole as happened following the armed conflict in Ukraine. This dependence can create vulnerabilities to unexpected events, such as disruptions in energy supplies or sudden changes in energy prices, which cause shocks to economies and societies across the region. It should also be emphasized the importance of regional cooperation between EU member states and the strengthening of crisis management capacity to deal with unexpected events and to ensure energy security as a whole. This may involve, for example, the creation of common energy infrastructures and solidarity mechanisms between member states in the event of an energy crisis.

However, energy experts and researchers say that the EU's energy security is essential to protect its economies and citizens, but there are still a number of challenges that need to be addressed to achieve this goal (Tagliapietra 2020). Among these challenges, the EU's increased dependence on energy imports and the concentration of energy supply in a few member states and from a few external suppliers are processes that can create vulnerabilities in the face of unexpected events. Recently there have been disruptions to energy supplies in European states as well as sudden price changes with major effects throughout the European economy. Also, the impact of climate change on energy security and the need to promote a sustainable energy transition to cleaner and less polluting energy sources are part of this series of challenges generated by the transition to a sustainable energy.

The solutions to these challenges are embodied in the diversification of energy sources so as to reduce its dependence on fossil fuels and encourage the use of renewable and clean energy sources such as solar and wind energy. At the same time, the EU improves its energy efficiency by developing more advanced technologies and promoting energy conservation policies (Mabey, 1997). Solutions also lie in strengthening regional cooperation between EU member states and developing closer relationships with external suppliers to ensure a secure and sustainable energy supply.

We believe that there are several aspects that must be addressed through European strategies and policies to ensure a sustainable and efficient energy security in the EU states. Thus, we believe it is essential for the EU to diversify its energy sources, so as to reduce dependence on fossil fuels and encourage the use of renewable and clean energy sources - solar and wind energy. At the same time, it is complemented by improving energy efficiency through the development of more advanced technologies and by promoting energy conservation policies.

The development of better-connected energy infrastructure in Europe, enabling the efficient transfer of energy between Member States and ensuring a secure and sustainable energy supply is another pillar of the sustainable energy transition. In this sense, we consider that promoting the interconnection of energy networks between EU member states is a priority in the factors that lead to the need for modern policies in the EU.

When it comes to climate change, the EU focuses on reducing greenhouse gas emissions and encourages the development of cleaner and more energy efficient technologies. Considering the latest EU green energy directives - the EU Renewable Energy Directive of 2018 (also known as RED II), which aims to boost the development and use of renewable energy across the European Union we can say that the EU is playing a leader in the fight against climate change and promote a strong international agreement in this regard.

In conclusion, we believe that the energy security of the EU can be ensured by the integrated approach to the issues related to the diversification of energy sources, energy efficiency, the interconnection of energy infrastructure and the fight against climate change, all

these factors clearly determining the need for real, concrete and well determined at the European level.

2. European policies in the field of energy

Energy demand management is an important tool that gives the Union the opportunity to influence the global energy market and consequently the security of energy supply in the medium and long term. In this sense, the financial instruments of the European Union are used in order to obtain practical effects regarding the objectives of the directives developed in this field.

Thus, in addition to Directive (EU) 2018/2001 on the promotion of the use of energy from renewable sources, the EU also adopted other directives and regulations related to green energy, such as Directive 2010/31/EU on the energy performance of buildings and Regulation 2018/ 1999 of the European Parliament and of the Council on the governance of the energy union and climate action (<https://eur-lex.europa.eu/homepage.html>). All these initiatives aim to promote a sustainable energy transition towards the use of renewable energy sources and the reduction of greenhouse gas emissions.

The Renewable Energy Directive (RED II) is part of EU legislation and must be transposed into the national legislation of the Member States in order to be implemented. Among the main objectives of the Directive are: increasing the proportion of renewable energy used in the EU to 32% by 2030; increasing the use of energy from renewable sources in the transport and heating and cooling sectors; promoting the development and use of energy from renewable sources at the level of local and regional communities and simplifying and harmonizing administrative procedures for the development of renewable energy projects in the EU.

Each member state has the obligation to adopt the necessary measures to comply with the Directive and to draw up national plans for renewable energy. These plans must include national targets to increase the proportion of renewable energy used in the EU to 32% by 2030 (<https://eur-lex.europa.eu/homepage.html>) as well as specific measures to stimulate the development and the use of renewable energy in the transport, heating and cooling sectors, and at the level of local and regional communities.

To date, most EU Member States have adopted measures to comply with the Renewable Energy Directive and have developed national renewable energy plans. However, the degree of implementation and the performance of each member state in achieving the objectives set by RED II may vary and will be monitored by the European Commission within the Member States' Reporting and Verification Mechanism.

Romania has adopted a series of measures to increase energy security, which include various directions of action. Thus, regarding the diversification of energy sources, the solution lies in the fact that Romania has a diversified energy mix, which includes hydropower plants, nuclear plants, coal plants, but also energy production from renewable sources (solar, wind, biomass). This diversification helps reduce dependence on a single energy source and increases the country's energy security.

Regarding the improvement of the transport and distribution infrastructure, Romania has invested in the modernization and expansion of energy transport and distribution networks, in order to reduce the risk of power interruptions and increase the efficiency of energy delivery.

At the same time, Romania adopted a series of policies and measures to increase the production of energy from renewable sources, including a system of green certificates and support programs for investments in renewable energy.

In the area of increasing energy efficiency, Romania has developed programs and policies to improve energy efficiency in various sectors, including buildings, transport and industry.

In addition to the development of international cooperation, Romania collaborates with its partners in the EU and in the region to increase energy security and to reduce dependence

on a single source of energy. For example, Romania has developed a network of interconnections with neighboring countries to ensure greater security of energy supply.

In Romania, the energy market is an important one, considering the country's considerable energy resources and at the EU level, the realization of a fully functional and resilient energy union would transform the Union into a vanguard region for innovation, investment, growth and social and economic development, also providing a good example of how the pursuit of ambitious climate change mitigation goals goes hand in hand with measures to boost innovation, investment and growth.

Energy economy market planning and energy policies are two interrelated aspects of the efficient management of energy resources and energy supply. Energy economy market planning focuses on the development and implementation of strategies to ensure the supply of energy so that it is sustainable, secure and affordable. The planning of energy economy markets is based on the assessment of energy needs, the identification of energy sources, the development of energy transport and distribution infrastructure, the establishment of prices and tariffs for energy produced and consumed, the promotion of renewable energies and the improvement of energy efficiency.

Energy policies are a set of measures taken by governments, institutions and organizations to manage energy resources and ensure energy supply. These policies include setting clear targets for renewable energy, reducing greenhouse gas emissions, improving energy efficiency, promoting the diversification of energy sources and encouraging innovation and investment in the energy sector. In the EU there is a planning of the energy market which is carried out at the level of the European Commission and is based on the objectives established within the Common Energy Policy of the European Union.

Energy market planning at EU level is based on the legal and political framework of the Union, which includes, in addition to the Renewable Energy Directive, the Energy Efficiency Directive and the Clean Energy Package Directive for all Europeans, the EU Strategy for an Energy Union with an Economy of Sustainable, Secure and Competitive Resources, as well as other normative acts and strategic documents. As part of this planning, the European Commission analyzes the EU's energy needs and develops strategies to ensure energy supply, improve energy efficiency and promote renewable energy sources. The European Commission also collaborates with EU member states and other relevant organizations to coordinate efforts to achieve the objectives set at EU level.

In addition, the European Commission monitors the evolution of energy markets within the EU and reacts to any problems or changes that could affect the EU's energy supply or energy security.

3. Conclusions

The European Union has developed and adopted a series of initiatives in the field of sectoral energy policy, especially regarding energy from renewable sources, energy efficiency, including the energy performance of buildings, and market organization. These initiatives form a package under the overall theme of “energy efficiency first”, the Union's world leadership in renewable energy and a fair solution for energy consumers, including by tackling energy poverty and promoting competition loyal on the domestic market.

The binding target of at least 40% domestic reduction of economy-wide greenhouse gas emissions by 2030 compared to 1990 has been approved since 2015 and is based on the integration of strategic planning and policy implementation climate and energy as well as coordination between the actors responsible for energy and climate policies, at Union level and at regional and national level.

Another conclusion is that a socially acceptable and equitable transition to a sustainable low-carbon economy requires changes in investment behavior, both in terms of public and private investment, as well as incentives at the entire political spectrum.

4. Materials and methods used

In writing this article I used various methods. The dialectical method of knowledge allowed the identification of the basic laws and categories of energy security viewed from the perspective of science. The dialectical method of knowledge, a philosophical concept defined as a very old form of finding the truth, allowed the identification of the basic laws and defining elements of the energy transition viewed from a scientific perspective, as well as the socio-economic roots of economic, social and ecological transformations.

When writing the article, I also used specific scientific methods. The analytical method was used as a basis for the analysis of European policies and strategies by comparing them with the provisions of the works of experts in the field and the legal-logical method was used to reveal the concept and essence of the energy transition as well as its main determining factors. Subsequently, the methods of analysis and synthesis were used to summarize the theoretical material and formulate conclusions based on them. Sociological methods allowed the analysis of the consequences of the current socio-economic situation and also allowed the estimation of some trends that we find in the chapter devoted to conclusions.

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