

" The role of renewable energies in stimulating investment between the two shores of the Mediterranean "

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Abstract:

Renewable energies are considered one of the most important strategic issues that receive great attention from researchers and decision-makers at present, whether at the political, economic, or social levels, especially security, due to the continuous development in this field, as well as the increasing interest in the requirements of sustainable development related to environmental protection at World level. On the other hand, to avoid the consequences of potential crises or fluctuations in the prices of energy resources, which cause serious economic shocks, especially in fragile economies, and from here investment in renewable energies has become a safety valve for the requirements of sustainable development, and one of the most important development alternatives available to Algeria.

Keywords: energy security; supply; fossil energies; renewable energies; sustainable development.

المخلص:

تعتبر الطاقات المتجددة من أهم القضايا الاستراتيجية التي تحظى باهتمام كبير من طرف الباحثين وصناع القرار في الوقت الحالي، سواء على المستوى السياسي او الاقتصادي أو الاجتماعي، وخاصة الامني، وذلك بسبب التطور المستمر في هذا المجال، فضلاً عن الاهتمام المتزايد بمتطلبات التنمية المستدامة المتعلقة بحماية البيئة على مستوى العالم. ومن ناحية أخرى، من اجل تجنب عواقب الازمات المحتملة او التقلبات في أسعار الموارد الطاقوية، التي تسببت في صدمات اقتصادية خطيرة، خاصة على الاقتصادات الهشة، ومن هنا أصبح الاستثمار في الطاقات المتجددة صمام أمان لمتطلبات التنمية المستدامة، وأحد أهم البدائل التنموية المتاحة للجزائر.

الكلمات المفتاحية: أمن الطاقة؛ امن الإمداد؛ الطاقات الأحفورية الطاقات المتجددة؛ تنمية مستدامة.

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Introduction:

Resources of a strategic nature continue to drive international relations, and affect the forms of interactions and patterns of relations between international actors, as these interactions are fueled by several dilemmas and dilemmas associated with addiction to more energy resources, climate security concerns, the accelerated depletion of non-renewable energy sources, the dilemma of facing the imminent decline in global oil production, its proximity to productive aspects, the dilemma of the smooth transition to replace fossil fuels with renewable energies, how to change energy use behaviors in societies, and the dilemma of scarcity or abundance in energy markets.

The Euro-Mediterranean region suffers from all these dilemmas because it combines the two extremes of the energy equation. Its north consists of some of the most energy importers in the world, while its south and east interact with specific regional balances of the entire international system because they consist of the most oil-producing countries in the world.

The equation in the Euro-Mediterranean region does not stop there. The impasse is becoming more complex in light of the linkage of most economic relations in the region with the oil variable, whose fluctuations in prices have repercussions on the degree of trade exchange and the activity of investment relations.

Hence, the countries of the northern and southern shores of the Mediterranean had to develop a new pattern of economic relations based on the inevitability of investing in renewable energies as a field of trade exchange and stimulating economic mobility in the region. From this standpoint, this research paper attempts to address a fundamental problem related to the possibility of replacing renewable energies with fossil energies in the investment equation in the Maghreb-Mediterranean region, especially investment in solar energy.

We will try to analyze this problem through the following axes:

1. The energy dimension in Maghreb-Mediterranean relations.

The energy axis is a vital element in the relations between the shores of the Mediterranean, because of its importance in achieving energy security for all parties. It is related to supply security for consuming European countries, demand security for producing countries, and supply security for all parties, especially since the Mediterranean Sea is considered the global energy artery. It is the shortest and safest route for all global energy products, given the mediation of this water isthmus for the largest global population and economic communities.

The idea of relations in the region being linked to the energy factor dates back to the 1960s, but this obsession and thinking became clear with the Barcelona Declaration in 1995, which included the Euro-Mediterranean Partnership project, through the establishment of a mutual welfare zone based on an economic and financial partnership, where a decision was taken within the meeting that included 27 Mediterranean countries to carry out consultative work and intensify dialogue in the field of energy policies, given the centrality of the energy element in the economic partnership between Europe and the Mediterranean region (Najat, 2001, P.2).

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The Euro-Mediterranean region consists of some of the world's poorest countries for fossil energies and most in need of them to continue their economic activity (the countries of the European Union), and some of the richest countries in the world (the Gulf countries, Algeria and Libya), in addition to being the main gateway for energy resources between the four parts of the world. This situation has made the energy dimension a key determinant of relations and interactions in the region, according to which balances are adopted and decisions are taken, and the recent Syrian crisis is only clear evidence of the importance of the energy factor in strategic relations in the region.

The observer of the development of the situation in the Syrian arena is aware of the impact of the energy change on the strategies of countries and their positions on the developments on the ground. Considering Syria as the pivotal link in any pipeline to transport gas and oil to energy-hungry Europe explains these conflicting and conflicting positions. In the beginning, the conflict in the Syrian arena was raging between Iran and its supporters on the one hand and Qatar and its allies on the other, due to the Qatari-Iranian competition to win the loyalty of Syria as the main transit area for Gulf oil and gas towards Europe.

It was supposed to build networks for energy transmission lines from the Gulf region through Saudi Arabia, Jordan, and Syria to Turkey and Europe, this is for the Qatari-Gulf project, or through Iraq and Syria and then Turkey and Europe for the Iranian project, which appeared publicly with the signing of Iran, Iraq and Syria in 2011 an agreement to build a pipeline to transport gas from the Arabian Gulf to the Mediterranean Sea to supply Europe, and this agreement was considered a stumbling block in the face of the Qatari-Gulf project (WBG, 2005, P.9).

From this standpoint, we can understand the causes and development of the Syrian crisis after this date. Syria has become a region for building regional and global strategic balances after the intervention of Russia and the United States of America. The real driver of the conflict is the energy variable through the concept of ensuring the security of supplies.

Russia seeks to maintain its control over the European market by remaining the main supplier of gas to European countries, and by thwarting the project of Iran and Qatar to deliver Gulf gas through Syria to Europe. As for the United States of America, it is driven by the smell of energy. Its policy revolves around where energy resources interact in production, export, or supply (Tekwasht)

The real determinant of the interactions of conflict, competition, and alliance in the Euro-Mediterranean region is controlled by the data of the energy factor. Whoever wants to determine the nature of relations must draw the energy map of the region.

2. Energy security challenges across the EU-Southern Bank of the Mediterranean axis:

On the northern bank of the Mediterranean basin are advanced industrial countries, but they lack sources of energy of fossil origin. On the southern bank are troubled developing countries, including those with important reserves of energy resources. The two shores of the Mediterranean constitute the two sides of the energy equation. The northern end needs the continued flow of oil and gas to remain the wheels of industry and continue the means of well-being. As for the southern end, it has countries where the continuation of development projects and the fulfillment of the requirements of life depend on the continuation of energy relations with importing countries (especially France, Italy, and Spain) (Baassou, 2010, P. 125)

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The contrast between the two shores of the Mediterranean has given a distinctive character to Euro-Mediterranean relations in their energy content, as the European Union absorbs three-quarters of the production of the southern bank of the Mediterranean basin from oil and gas, to meet an important part of its growing energy needs. In return, the energy countries of the southern bank receive important financial revenues to pay import bills from the same northern bank of the Mediterranean (Mané-Estrada, 2008) in a financial recycling relationship that mainly benefits European industries.

In the field of relations between the northern and southern shores of the Mediterranean, the relations can be analyzed through the gas leaf, and then the relations of interdependence.

2.1. As for the gas paper, the countries of the southern Mediterranean have a set of mechanisms for exporting natural gas to European energy markets, due to their huge reserves and proximity to consumer markets, thanks to the advantage of the geographical factor. These mechanisms are reflected in the transport of gas through a pipeline network that extends between the two shores of the Mediterranean, or by giant liquefied gas carriers, from gas liquefaction facilities in the southern Mediterranean bank to gas reception facilities in the northern shore, especially in Spain and Italy. Algeria is at the forefront of LNG exporting countries, as its exports in 2007 amounted to about 46% of the total LNG exports from North Africa to Europe, Egypt by about 21%, and Libya by 3% of the total of those exports. Sub-Saharan African gas can also be exported through the same route by extending the lines towards Algeria and from there to Europe as shown in the map below:

2.2. As for the relations of interdependence between the two shores of the Mediterranean in the field of energy, they are clear and obvious, as European countries consume the largest share of the production of the southern shore countries of fossil energies, and thus represent the relations of market dependence in the best form between importers and exporters of energy, as neither European countries can dispense with the Mediterranean supplier nor the southern shore countries can achieve their energy security away from the European market (Baasu, P. 126).

The exchange relations between the two shores of the Mediterranean are not only related to the volume of production of the countries of the southern shore of the Mediterranean energy outputs but also the exploitation of the infrastructure of these countries to transport these products from sub-Saharan Africa (Nigeria and the Gulf of Guinea) to consumption areas in the northern shore of the Mediterranean as shown in map (Mané-Estrada, P. 12).

2.3. The possibilities of investment in renewable energies in the Maghreb-Mediterranean region and its economic repercussions

Working in the Euro-Mediterranean region to invest in renewable energies is linked to two main factors, which are seeking to reduce the effects of climate changes caused by greenhouse gases emitted from the combustion of fossil energies, and working to ensure energy security in the long term in light of the possibility of global production of fossil energies reaching its peak, which portends major disruptions in the supply of gas and oil, hence the urgent need to invest in renewable energies.

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These policies are more related to the countries of the northern shore of the Mediterranean than to the countries of the southern shore, which is confirmed by the agreements and pledges of the European Union countries in the field of energy. For example, the member states of the European Union committed in March 2007 to reduce the emission of greenhouse gases to 20%, increase energy efficiency by 20%, and expand the use of renewable energies by 20% of the total energy consumed in Europe (Baassou, P. 170), which is a commitment aimed at protecting the environment on the one hand and saving energy on the other, thus reducing dependence on energy imports.

Map of the Trans-Saharan energy pipeline towards Europe



Source: S&P Global Commodity Insights

These measures would lead to serious economic repercussions for the Euro-Mediterranean countries whose resources depend on the export of fossil energies, which have negative repercussions on the economies of all parties because they will inevitably lead to a decline in macroeconomic transactions, given the shrinking imports of oil and gas exporting countries as a result of the decline in

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their financial returns, but the reality proves the possibility of getting rid of these undesirable effects, by exploiting the investment opportunities offered by alternative energies (especially solar energy).

Statistics of meteorologists and climatologists indicate that one sunny day is equivalent to the energy produced from burning all the fossil energy that the earth stores in its interior. Therefore, investing in this field would achieve economic returns for all stakeholders in the process. Its effects would be of a sustainable nature that applies to all segments of society and all countries of the Euro-Mediterranean region, as the Sahara region in Algeria is the most sun-intensive region in the world, as investing in electricity generation in this geographical area would generate 4 times the needs of the globe for electricity and 60 times the needs of the European continent.

The shift towards renewable energies is driven by many factors that vary according to the level of development of each country, as it achieves gains in the short and long term. There is a set of determinants that encourage the use of renewable energies and replace them with other fossil derivatives (IPCC, 2011, P. 21), perhaps the most important of which are:

2.4 Economic and Social Development:

The exploitation of local sources of renewable energies, starting from the manufacturing component and the expansion of the electricity network to the installation and maintenance of generation systems has a significant local economic impact, and this is especially important for places that do not have traditional energy sources, or that have high unemployment levels, as the statistics of the World Energy Organization indicate that investing one dollar in renewable energies generates four times the job opportunities generated by a dollar invested in fossil energies. These jobs are highly skilled and offer better wages. For Algeria, for example, statistics indicate that the renewable energy sector will create nearly 1.5 million jobs by 2025.

The establishment of an infrastructure base (electricity network, operating systems...), with stable energy sources that are safe, low-cost, and sustainable is crucial to the confidence of domestic and foreign investors, who often consider the availability of a stable supply of energy to be essential to the investment climate.

As for residents living in rural areas far from electricity networks, providing access to electricity using the energies available in their places of living will stimulate economic development and reduce the unemployment crisis, which leads to their resettlement in their places of living, and reduces the phenomenon of migration from the countryside to the city, and from the countries of the southern shore of the Mediterranean to the countries of the northern shore(*), and on the other hand contributes to increasing agricultural production associated with energy intensity, which in its outcome enters into the macro economy of the region.

This means empowering the rural population with a source or sources of energy that can stimulate economic activity, which results in improving living conditions, in parallel with respecting the environment and settling these populations in their lands, and this is an essential bet for decision-makers in developing countries.

The most important renewable energy resources lie in the southern region of the Mediterranean, and the exploitation of these resources would provide the right climate for local and

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international investment, generating jobs, providing electricity to towns, cities, and industries, and serving as a key driver of development in Euro-Mediterranean economies (LAS, 2013, P.22).

3. Energy security:

The use of renewable energy allows reducing dependence on imports of fossil fuels for poor countries. This type of energy also allows the provision of these resources to future generations for rich countries. It thus reduces the exposure of the national economy to the risks of price fluctuations. Renewable energy also contributes to the diversification of the energy sources portfolio, as it is not characterized by geographically concentrated supply as it is for fossil resources, which makes its supply reliable and available to all at an appropriate cost. Renewable energies also contribute to meeting the growing domestic demand, which reduces the volume of production allocated for export in oil and gas-producing countries, increasing pressure on the national economy as hydrocarbons are the main and almost the only source of hard currency.

Unlike fossil sources, renewable energies are also characterized by flexibility towards disruptive risks such as natural disasters. For example, during extreme heat waves and droughts, fuel energy needs large amounts of water, which poses a threat to the process of generating electricity, for example, due to the lack of availability of water sources near production areas, this is not possible for renewable energies (Hajer, 2014, P. 80).

3.1. Improving public health and environmental quality:

3.1.1. Decreasing costs over time:

Given the constantly fluctuating prices of fossil fuels, it can be said that the prices of energy generated from renewable sources are competitive in the medium and long term, as the reality of renewable energy projects requires huge investments at the beginning of the project, but production costs tend to decrease continuously with the beginning of operation, to the point of zero over time, as the costs resulting from exploitation are almost non-existent except in cases of periodic maintenance, or equipment failure. Otherwise, the raw material is available in nature free of charge and without environmental impact, because the development of the production and use of renewable energies can make a significant contribution towards reducing environmentally harmful carbon emissions without compromising on access to energy, the backbone of the global economy, and the local, national and international development wheel (Rakash, 2016, P. 130).

Carbon emissions from fossil energy sources affect public health and cause many diseases, especially respiratory diseases. The associated economic losses are estimated at 2% to 3% (Hajer, , P .395) of global GDP. In the Euro-Mediterranean region, the percentage is more than 5% (Jamal, P. 96). Therefore, energy generated from clean sources is the best option for preserving the public health of the population of the Euro-Mediterranean region and protecting the environment from imminent dangers.

Commitment to these matters will enhance the process of moving towards renewable energies, which in turn contributes to moving the wheels of sustainable development, especially concerning local development related to rural and isolated areas, or away from energy sources, through several axes, the most important of which are:

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- Reducing environmental impacts: It is the most important element of sustainable development according to Agenda 21, which links the relationship between energy and the environmental dimensions of sustainable development (Rakash, P. 131), especially those related to protecting the atmosphere from pollution resulting from the use of energy in various economic and social activities, and in the industrial and transport sectors in particular, where Agenda 21 called for embodying the objectives related to protecting the atmosphere and reducing the negative effects of the energy sector, taking into account equity in the distribution of energy sources, and supporting research programs necessary to raise the efficiency of energy systems and methods, in addition to achieving integration between energy sector policies and other economic sectors, especially the transport and industrial sectors.

- Enhancing the energy supply of the population: Renewable energies contribute to providing the needs of the population, especially the population of rural areas, at an appropriate cost, and thus can contribute significantly to enhancing the energy supply and stimulating development in the places where it is available.

- Diversification of energy sources: Renewable energies contribute to providing energy needs for different sectors and diversifying their sources, and this leads to an abundance in the consumption of traditional sources of energy, which can represent a surplus for export, or contribute to prolonging the life of the stock of traditional sources in oil and gas producing countries. In addition, the current potential of large central systems for generating electricity from renewable energy represents an opportunity to move towards developing these systems and exporting electricity generated outside the region, which in the case of the Euro-Mediterranean region is possible, especially after the study conducted according to the German (*) Dizeretec project, which considered Algeria the richest country in terms of solar energy in the world, which means the possibility of heading in the future to exporting electricity produced from renewable energy sources.

- Resisting poverty and improving the quality of life: The contribution of renewable energy in providing the energy supplies necessary for the development of rural and remote areas at a lower economic cost compared to the costs of extending traditional networks can lead to improving the quality of life, because it provides better educational and health services to the population of rural areas, and contributes to combating poverty in these areas, which can lead to the creation of job opportunities in the fields of manufacturing, installing and maintaining renewable energy equipment, as many of this equipment can be manufactured with limited capabilities that can be provided in poor areas.

- Providing energy sources for desalination: The availability of locally renewable energy sources in locations of water need, especially small communities that need limited consumption of fresh water, can represent an economic and technical solution for desalination in areas where traditional sources cannot be provided at an economic cost.

The world is witnessing a great focus on moving towards the sustainable development model, which works to reformulate the mechanisms and mechanisms of the prevailing economic model by developing economic innovations capable of overcoming the various challenges facing the world, those challenges posed by the energy file within the economic, social and environmental dimensions of the use limits. However, this formulation requires reconsidering many policies that are

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characterized by weak achievements related to the promotion of the energy sector for sustainable development, especially in countries with rentier economies, including the southern Mediterranean countries (Algeria, Libya, and the Arab Gulf countries). They rely almost entirely on fuel revenues to finance development projects. In this context, we find that global trends impose several restrictions within the framework of a strict environmental policy aimed at containing and reducing environmental degradation on the one hand and upgrading the efficiency of using natural stocks (energy resources) to maintain the sustainability of supplies at the local, regional and international levels on the other hand.

Conclusion:

Renewable energies and the Euro-Mediterranean security trilogy Energy-Environment-Development:

The importance of renewable energies in terms of being sustainable, which supports the issue of stability in the economy of countries, is also clean and free of waste and therefore does not affect the environment or human health, in addition to securing new job opportunities more than any other productive sectors, which enhances the full employment process to eliminate the unemployment crisis, especially in local communities, and exploiting it leads to protecting groundwater, rivers, and seas from the risk of pollution, in light of increasing productivity and securing food security as a result of reducing chemical pollutants and harmful gases, and the gradual replacement of the use of renewable energies instead of fossil energies will reduce the severity of natural disasters caused by global warming.

As a result, renewable energies are considered the most effective economic alternative, the best and inevitable option for the crises of the global economic system, most of which are related to energy security predicaments, and the costs of local development related to energy provision as a necessity to move forward with development projects.

The Euro-Mediterranean region today is in an economic situation that requires it to work on serious investment in renewable energies and to try to gradually and rapidly replace the outputs of these resources with the energy resulting from hydrocarbons, given its energy situation, which is characterized by a strong dependence on enduring energies, whether for producing and exporting countries or importing countries, which depends on the process of trade exchange between the shores of the Mediterranean that is affected by the fluctuations in fuel prices.

Accordingly, the Euro-Mediterranean countries must adopt a deliberate energy policy, based on the exploitation of renewable energies that are less expensive and more profitable. In this regard, the exploitation of solar energy is one of the most important options available to these countries, due to the role of this energy in the field of local development, especially since it does not require major operations as is the case with water or wind energy, as it is energy that can be exploited at a macro level and can also be included in the microscopic development processes associated with the local development of small residential communities, or remote cities and villages.

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(*) - The phenomenon of migration from the southern bank of the northern bank of the Mediterranean is one of the most important issues in relations between Euro-Mediterranean countries, as this issue falls within the core issues related to comprehensive security.

(*) - The Desertec project considered that Algeria has the largest percentage of solar energy in the world, estimated at 4 times the total global energy consumption, and 60 times the need of European countries for electricity.