

A STRATEGY WITHIN THE CONTEXT OF THE ARAB SPRING TO STRENGTHEN PORTUGUESE ENERGY SECURITY REGARDING IMPORT OF HYDROCARBON FROM ALGERIA

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Abstract

Energy plays a crucial role in the survival of the current civilizational model and the dispute regarding its control present a constant challenge to State security.

Portugal is highly dependent on other countries in terms of energy supply. Moreover, Algeria was the sixth biggest Oil exporting country in 2011 and is the second biggest exporter of Natural Gas to Portugal. Considering this and the effects of the Arab Spring in northern Africa, the situation requires assessment so as to determine strategies to reduce the risk for Portugal.

This paper is divided into 4 parts: introduction and 3 chapters. After making evident the relevance of the discussed theme, we present the concepts of security and energy safety and analyze the current situation in Portugal and in Algeria. In the final chapter, we propose a strategy for Portugal to contribute to the stabilization of Algeria and face the situation of Algerian supply of Oil and Natural Gas being reduced/interrupted; we suggest three Strategic Actions to strengthen the energy safety in Portugal regarding importation of hydrocarbons from Algeria within the context of the Arab Spring.

So that Portugal can maintain energy safety regarding Algerian hydrocarbon supply, a critical approach should be used to influence Algeria towards progress, greater democracy and stability and a neo-realistic approach based on a more diverse hydrocarbon supply source, enhancement of renewable endogenous resources, maintenance and development of strategic reserves and planning alternatives of energy supply.

Thus, three Strategic Actions (LAE) are identified: LAE 1 - Support the Algerian development and improve the Portuguese trade balance; LAE 2 - Invest in endogenous resources for energy production; LAE 3 – Widen the options for importing Natural Gas. The best option for the Portuguese situation is an integrated approach by means of adopting policies that allow for the three LAES simultaneously.

Keywords:

Energy saving; hydrocarbons; Algeria; Portugal; Arab Spring

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Introduction

Energy plays a crucial role in the survival of the current civilizational model and the dispute regarding its control present a constant challenge to State security.

"Arab Spring" was the name given to a series of popular uprisings that took place in 2011 in Northern Africa and the Middle East, whose catalyst was Tarek al-Tayeb Mohamed Bouazizi's self-immolation in Tunisia on 17 December 2010. He became the symbol of the population's revolt against poverty, unemployment, dictatorship and corruption in the country (general catalyst). As a result of these events, the dictatorships in Tunisia, Egypt and Libya and their leaders, Zine al-Abidine Ben Ali, Hosni Mubarak and Muammar Gaddafi were overthrown. These Arab, popular rebellions spread to other countries such as Yemen and Syria and gave origins to uprisings in the Democratic and Popular Republic of Algeria.

Currently, the new authorities struggle to create new organizations and define strategies for the future, with no guaranteed success. Those countries where the Arab rebellions were successful suffered such impact that it will take them several years to achieve a balance. In the case of Libya, the situation is extremely unstable, at the risk of becoming a failed State and contributing to instability in the Maghreb.

Considering that from 2000 to 2011, Libya was the fifth largest exporter of Oil for Portugal (7.3%) and that because of the civil war there were no exports to Portugal from that country in 2011 (DGEG, 2012), the impact these popular uprisings may have on Portuguese energy supply is thus made evident.

As far as Portugal is concerned, since it is highly dependent on external energy supply (according to provisional 2011 statistics: 77.1%) and in 2011 Algeria was the sixth biggest exporter of Oil (9.6%) and second biggest exporter of Natural Gas (36.9%) for Portugal (DGEG, 2012), the need to better understand the situation is obvious so as to identify strategies to reduce possible risk for Portugal.



The concepts of Security and Energy Safety

The first references to the term "security" were made in the United States of America and were linked to the years following World War II. As all complex concepts, this one has more than one meaning, which requires that its scope be limited though not forgetting its wider dimension.

During the Cold War (1945 to 1989) there were three basic concepts of security: the predominant one, which we could describe as "state-military security"; the "alternative security" approach, critical towards the predominant idea, and the so-called "third world security", developed by authors who were not from North America, Western Europe or "developed" Asia. The predominant, realistic concept focused on the State and on its military security, essentially in its military and nuclear issues. The alternative security school was essentially critical of the realistic thought, considering that this derives from international insecurity and that social justice, democracy and disarmament, among others, are needed to increase the level of world security. Finally, the third world security perspective appeared as critical of the other two, stating that they were only focused on East-West analysis and ignored other world actors and the relevance of economic stability and development to security (Fernandes, 2011: 195 a 199).

With the collapse of the former Soviet Union and the end of the Cold War (which began in 1989 with the end of the Berlin wall), world polarity ended. Due to the new international scenario, security became a hard to define reality.

In the last decade of the 20th century, the concepts of security are now divided into three main groups: The neo-realistic trend, which continues the state perspective of security though applied to new dimensions; the realistic-civilizational trend, based on the security of civilizations; and the critical multicultural and humanitarian trends, which share the post-positivist ideal of the individual's security and that of the groups that make civil society (Fernandes, 2011: 200).

After the Cold War, the neo-realistic approach to security is mainly due to Barry Buzan, who widened the military scope to individual, state, regional and systemic perspective, integrated in the political, economic, social and environmental realms. However, the State remained the main actor in international scenario and the object of security (Fernandes, 2011: 201 a 203).

Regarding the realistic-civilizational approach, we may state that this derives from the ideas presented in *The Clash of Civilizations. Remaking of World Order* (1996) by Samuel Huntington. This concept of anti-personalistic and anti-universalistic security advocates that the wishful universalism of Human Rights leads the Western world to intervene in the matters of other civilizations and thus promote world instability. For Huntington, the political, military and cultural dimensions, together with the economic dimension, are crucial for conflict to arise. (Fernandes, 2011: 203 a 204)

The critical concepts, multicultural and humanitarian, of many authors and schools (united due to their critical position towards the traditional realistic approach), may be divided into two main groups: the multicultural approach, based on humanitarian ideals; and that of critical studies on security. The first approach advocates a new concern with security of people, peace, sustained development and democratization,



with environmental, social and citizenship concerns. The second approach: Critical studies on security are inspired by the School of Frankfurt, Adorno, Horkheimer, Marcuse and Habermas, and advocated by Ken Booth; the State becomes an actor in international scenario, analysis becomes wider in scope and more complex and individuals, groups in civil society and external and internal components of States are the focus (Fernandes, 2011: 205 a 207).

Considering the presented theoretical models to analyze the concept of Security in IR and the modernity of Ken Booth's thought, the adopted model will be that of "*critical theory of security*" in his "*Theory of World Security*" (Booth, 2007). This option is inspired by Karl Marx's statement that "the philosophers simply read the world in different ways and the most important is to change the world". Therefore, this is a critical paper as a means of contributing to change towards sustainable growth.

Energy security is also a concept that gathers no consensus. According to Daniel Yergin (Yergin, 2011: 264 a 283), it may be defined in a simple way as "reliable supply at reasonable prices"; yet, due to the complexity needed to achieve this, the following dimensions should be considered:

1. **Physical security** - protection of assets, infrastructures, supply networks, routes and the maintenance of reserves for crisis situations;
2. **Energy availability** - the capacity to physically, contractually and commercially guarantee access to energy;
3. **Energy safety system** - includes national policies and international institutions coordinated to maintain continuous supply and respond to emergencies;
4. **Investment** - without which adequate supply and available infrastructure at the right moment cannot be guaranteed, for which policies are required as well as adequate business environment that leads to long term return on investment.

The following **key principles** should also be listed required to create an emergency system and that allow energy safety to be fully increased:

1. **Diversification of supply sources** - use several supply sources and energy sources, thus reducing the impact of disruption and providing alternatives, accounting for the interests of consumers and producers through long term stability;
2. **Resilience** - through maintenance of excess in production, strategic reserves and adequate and spare stock maintenance along the supply chain, as well as a crisis resolution plan;
3. **Integration** - there is only one, complex, world market for Oil, 90 million barrels are traded every day. A disruption in supply in a given place impacts globally, thus, safety depends on market stability as a whole;
4. **Information** - crucial for the functioning of the markets, builds trust and allows for continuous investment. The International Energy Agency (IEA) and the International Energy Forum (IEF) contribute decisively to this;



5. **Markets** - if large, flexible and functioning adequately, they contribute to safety by absorbing impact and allowing that supply and demand respond more rapidly and with maximum ingenuity within a controlled system. Markets respond more often with efficiency and efficacy than centralized management.

Another noteworthy fact are **cyber-attacks**, especially those on electrical infrastructures and currently managed by computer systems susceptible to hacker interference. Additionally, energy safety must still be widened to respond to the changes in the infrastructures of information technology and of world economy, and should be addressed as both energy supply and **throughout the whole supply chain**, from generation to end user.

Considering this, energy safety contributes to security in the broader sense of the word. Any interruption in the supply of energy to a country harms its economy directly, as well as the well-being of its citizens and consequences in political and social stability. In the 21st century, a huge part of humanity is dependent on energy, both as fuel for vehicles, as well as electricity that puts in motion all type of equipment used in daily life. Industry, transportation and the State should also be considered as they are the biggest energy consumers. Therefore, satisfactory and continuous energy supply is a pre-condition for economic growth and for legitimizing a political entity and social progress.

Currently, the predominant idea of security is still based on the ability States and societies have of maintaining their independence and integrity, i.e., being able to deter threats to those societies' values, which allow them to live. Thus, the uncertainty regarding availability and possible use of primary energy sources compromises security as it places those values at risk.

Describing the situation

Portugal does not produce Coal, Oil and Natural Gas, and does not produce electricity from nuclear plants. The country's primary energy sources are hydroelectric, wind, solar and biomass energy, energy production based on waves is just starting. However, oil products are refined, stored and distributed and Natural Gas is stored, gasified and distributed in Portugal.

According to DGEG (DGEG, 2012), Primary Energy consumption in Portugal has been decreasing approximately 3% a year from 2005 to 2010; in the same period, the consumption of Crude Oil has decreased 7% a year. Concerning Natural Gas, there was a 4% yearly increase in consumption between 2001 and 2010, together with a 3% yearly increase in the consumption of renewable sources. This change was due, on the one hand, to the production of electrical energy using Natural Gas and, on the other hand, to the policy on investment in renewable energies in order to take advantage of national energy resources and reduce dependency on external energy sources.

In terms of consumption of energy products, a shift in the paradigm was visible in the last decade, consumption of Natural Gas increased (100%), of oil for heating (45%) and LPG (25%), and consumption of oil (85% less), fuel (80% less), 98 gas (75% less) and Coal, butane, propane gas and colored diesel decreased. Consumption of IO 95 gas



and diesel slightly increased, its peak having occurred in 2004 and 2005, and has remained stable ever since. We may state that there was an increase in the use of diesel vehicles, an increase in the number of vehicles but together with higher motor efficiency and consequent decrease in consumption, which allowed for the slight increase in consumption of most common fuels. LPG-run vehicles are now more common because of the fact that they are economical (especially due to tax on LPG) and oil for heating is also more usual because of the increase in the purchasing power of the Portuguese in the first decade of the 21st century.

As to the origin of Crude Oil, the main 5 countries from which Portugal imported Crude Oil between 2000 and 2011 were Nigeria (18.1%), Saudi Arabia (12.2%), Brazil (8.7%) **Algeria** (8.3%) and Libya (7.3), a total of 54.6% of import from 24 different countries. Meanwhile, the only countries that continuously supplied Oil to Portugal were Nigeria and Saudi Arabia. Brazil has been a supplier since 2001 and Algeria and Kazakhstan since 2004. In 2011, the 5 main suppliers of Crude Oil to Portugal were Angola (20.0%), Saudi Arabia (14%), Brazil (13.2%), Kazakhstan (13.1%) and Nigeria (11.7%), a total of 72.0% of all imports from 12 countries. **Algeria** is next, with 9.6% (the other 6 countries were Azerbaijan, Cameroons, Equatorial Guinea, Mexico, Norway and Russia). Noteworthy is that this year no Oil was imported from Libya, a country which accounted for 13.82% of imported Oil to Portugal in 2010. This change was due to the conflicts that broke out that year in Libya; Portugal adapted its imports by increasing imports from Angola (34.6% more), Saudi Arabia (23.3% more), Brazil (20.3% more), **Algeria** (48.4% more) and Russia (76.5% more). We may then state that there is a high probability that Portugal continues to import Crude Oil from Nigeria, Saudi Arabia, Brazil, Algeria and Kazakhstan if these countries offer the same conditions as in the last decade.

Regarding Natural Gas, from 2001 to 2011 the countries which Portugal had imported the most from were: **Algeria** (54.6%) and Nigeria (41.6%), totaling 96.2% of imports from 6 different countries. During this time these were the countries that supplied Natural Gas to Portugal without any interruptions. In 2011 the two major suppliers of Natural Gas to Portugal were Nigeria (54.9%) and **Algeria** (36.6%), totaling 91.5% of imports. When we compare the number of Oil suppliers with the number of Gas suppliers, **it is obvious that Gas suppliers must be diversified and new countries should become part of this group.**

Since 2005, consumption of Primary Energy has been decreasing, together with an increase in home production based on primary renewable energy sources and a gradual fall of external dependency (from 88.8% in 2005 to **77.1% in 2011**). Considering that non-renewable, economically viable primary energy sources do not exist in Portugal and that, therefore, the country is dependent on other countries for energy supply, we can state that energy partners are essential for the State to maintain the citizens' living conditions and for the nation's economic growth.

Portugal's vulnerabilities regarding Algeria within the scope of its energy supply safety result from the fact that Portugal does not have Oil or Natural Gas and depends highly on import of Natural Gas from Algeria. This dependency is heightened by the current



trend to increase consumption of Natural Gas for producing electricity¹, for industry and private consumption. Continuous interruption of that primary energy supply will imply the search for alternatives, whether through the Iberian Peninsula pipeline network or through the LNG-terminal in Sines.

The most relevant threats to the stability in hydrocarbon supply from Algeria are the terrorist attacks to energy infrastructures; the appearance of new hydrocarbon extraction technologies which decrease the competitiveness of Algerian Oil and Natural Gas; the continuous falling of the price of Oil and Natural Gas; the increase in political tensions between Maghreb States deriving from the eventual collapse of Libyan State, or with Morocco due to border conflict or to Western Sahara conflict; and the political instability due to divisions in the leading elite on succession of Abdelaziz Bouteflika.

Interruption of supply due to terrorist attacks may initially lead to use of reserves and, in case this interruption lasts, to search of alternatives. The appearance of new "unconventional" extraction technologies may give origin to alternatives to hydrocarbon import due to use of endogenous resources or of resources from stable and nearer countries. Both the reduction in the demand of Algerian hydrocarbons and the continuous fall in the price of hydrocarbons will lead to Algerian government's diminished capacity to maintain its status through oppression of uprisings, increase in public expenses, of public servants' salaries, of subsidies to staple goods and to access to preferential loans to young people, which has negative effects on the country's economic and social balance and, consequently, lead to increased risk for Portugal.

The increase in political tension among the Maghreb States regarding the situation in Libya or with Morocco concerning Western Sahara may force Algeria to change its attitude towards cooperation in security and defense and to non-interference in other States' internal affairs, participating in coalition forces among Maghreb States and/or European forces to fight terrorist groups outside their borders and lead to resources being allocated to this objective rather than to the country's development.

The possible internal instability regarding succession, among others, may have the following consequences: a president being appointed and status quo being thus maintained; the rise of an alternative leader, able to reform the country's politics and economy; or the collapse of the State with unpredictable consequences (very unlikely due to the hegemony of the military in the power structure).

Despite all these events, the consequences of the Arab Spring have not yet reached Algeria and the main reasons for that general rebellion not having reached Algeria are the financial resources resulting from the abundance of hydrocarbons, aversion to becoming involved in another civil war and the possibility of an increase in radical Islam. In practice, the high ability and experience of security forces in controlling uprisings without casualties and the lack of organization and common objectives among the insurgents, together with the increase in public expenses, subsidies to staple goods and easier access to preferential credit for young people have been crucial factors to pacify the Algerian people.

In terms of external politics, the current conflict levels in Mali and Libya should not be ignored because of their possible impact on the relations among the Maghreb States

¹ In 2013, the amount of rain and wind led to increase in energy production from renewable sources, thus the combined-cycle power plants (which use natural gas) had a small production; yet, in the long run, the increase in consumption remains.



and because of the support they may provide to terrorist groups by offering staff, shelter, training and armament.

A strategy for Portugal

In the medium and in the long run, to improve the living conditions of Algerians and decrease internal conflict, the Algerian State must invest in the technical training of its citizens, especially of its youth and in the following fields: hydrocarbon extraction, processing, transport and distribution; iron ore, phosphate, uranium, lead and zinc extraction, processing, transport and distribution; agricultural product extraction, processing and distribution; construction and building activities (construction materials, infrastructures and buildings), tourism, education and training, health, industry and services; **diversify its economy**, essentially in the already mentioned fields in terms of technical training, resorting to external support by always including Algerians because of its potential for multiplier effects; and **deepen its democracy**, effectively separating executive, legislative and judicial powers, reducing military influence on politics, making politicians accountable and increasing public participation in politics. All these measures must be synchronized so that diversification of economy is made using national human resources (who need technical training) and that deepening of democracy is gradual and based on the increased availability of human resources who are adequate training and education for political positions, and an improvement of living conditions of Algerians. An effective deepening of democracy is only possible once the living conditions of Algerians is attained and unemployment decreases, as these are determining factors to reduce radical Islam's room for subversive activities.

Therefore, we propose two different approaches for Portugal to safeguard its energy safety regarding Algerian supply of hydrocarbons:

- A **critical approach**, focused on influencing Algeria towards progress, deepening its democracy and stability, contributing to the security of its citizens through economic, political and social development so that, in the medium and in the long run, they may achieve equality in terms of political, economic and social rights (become emancipated) and, at the same time, the physical safety of the supply chain is ensured as well as the reinforcement of investment in energy infrastructures, allowing for continuous flow in the supply of Oil and Natural Gas to Portugal and to other importing countries;
- A **neo-realistic approach**, based on diversifying hydrocarbon supply sources, increasing the use of renewable national resources, maintaining and developing strategic reserves and previewing solutions for crises by planning alternatives to energy supply to Portugal.

Thus, three Strategic Actions (LAE) are made evident to safeguard Portugal's energy safety regarding possible impact of Arab uprisings in Algeria which may have consequences in hydrocarbon supply to Portugal; the first Strategic Action is within the scope of the critical approach, the other two within the scope of the neo-realistic approach

**LAE 1: Support the Algerian development and improve the Portuguese trade balance:**

Good diplomatic relations between Portugal and Algeria, the fact that Portugal is in the European Union (EU), together with new European programs being launched on economic and social development in Maghreb, make the flow of people and goods easier and allow Portugal to deepen the cooperation with Algeria within the EU. Within this framework, Portugal may allow for easier relations between the EU and Algeria, deepen the interdependence between the two countries and improve the trade balance through promotion of increase in export of goods and services, simultaneously contributing to the Algerian economic development through diversifying its economic activity in the agricultural, industrial and service areas. Portugal may also offer support in technical training, thereby generating employment and improving Algerians' living conditions. In the medium run, this type of measures may contribute to narrow the room for terrorist groups to work in Algeria and the potential negative effects for Algerian economy of a decrease in price of hydrocarbons.

Considering Portuguese energy companies' policy of internationalization and the interest of the Algerian government in establishing partnerships with Portuguese companies, further involvement of PARTEX and the involvement of GALP in Algerian upstream may be advantageous for the Portuguese trade balance and for the energy companies. Similarly, due to the situation the construction activity is currently facing, there is opportunity for the Portuguese construction and building industry to internationalize and contribute to the improvement of Algerians' living conditions through building infrastructures, housing and industrial buildings and thus foster the country's social stability.

Another aspect to be explored and which can be beneficial for both countries is Portuguese experience in renewable energy through exporting and assembling of photovoltaic panels and aerogenerators and diversifying the Algerian energy sources and improving the environmental sustainability of the country and the world.

In view of the current economic and financial scenario and the limited financial resources in Portugal regarding structuring investment and Algeria's financial resources, this is an opportunity to jointly explore the aspect referred above, for example to finance the enhancement of energy producing technology using renewable sources would be beneficial to both countries.

LAE 2: Invest in endogenous resources for energy production:

Due to lack of non-renewable primary sources of energy, Portugal is highly dependent on other countries for energy supply; however, since 2005, consumption has gradually decreased. As consumption of Primary Energy has been decreasing, together with an increase in home production based on primary renewable energy sources, a gradual fall of external dependency is visible, from 88.8% in 2005 to 77.1% in 2011.

Investment policy in renewable energy sources, water, wind, solar or biomass, has been crucial to reduce energy dependency and has been a good investment in the medium and long run. According to Direção Geral de Energia e Geologia (DGEG h), 2012; 12), in 2011 Portugal was third in renewable energy sources for the production of electrical energy in Europe (45.3%) right behind Sweden (57.2%) and Austria



(56.3%). Considering that the average in the EU 15 was 21.7%, and that, at global level, only New Zealand (73.3%) and Canada (63.7%) evidence higher contributions from renewable energies, Portugal is at the forefront of renewable energy sources for sustainable production of electrical energy.

Given the present economic and financial crisis, Portugal does not have financial resources to make structuring investments in energy systems. However, the 'decarbonization' of the economy, due to the increased energy efficiency in transport, housing and industry, and due to the investment in renewable sources, is the safest path because, though it requires investment, in the long run it will lead to higher energy efficiency and renewable sources are more sustainable economically and environmentally, decisively contributing to the decrease in energy dependency from abroad and to environmental protection.

In terms of hydrocarbon prospection, though no economically viable sources have been found in Portugal, the country should continue to foster its search in its onshore and offshore.

LAE 3: Widen the options for importing Natural Gas:

In terms of the need to replace Algerian hydrocarbons in the Portuguese energy mix, Portugal must bridge the gap by importing Oil and Natural Gas from other countries. In the case of Oil, it is easy to solve, considering that in 2011 Portugal imported only 9.6% From Algeria, the country imports this primary source of energy from several countries and recently evidenced (during the civil war in Libya) that it is flexible enough to adapt and search supply from other exporting countries. In terms of Natural Gas supply, the solution is more complex considering that, up to now, Algeria has been Portugal's biggest supplier, this, the need to search for alternatives.

Upon the implementation of the trans-European energy networks proposed by the European Commission, the LNG-terminal in Sines, together with the oil product refining, storage and distribution systems and Natural Gas storage and distribution systems in Portugal may be an alternative to hydrocarbon entry pipelines in central Europe, and Portugal may use that network to import hydrocarbons from northern Europe. Additionally, Portugal should increase its LNG imports in the spot market to Portuguese-speaking countries such as **Brazil** and **Mozambique**, to other Atlantic countries such as **Venezuela** and the **USA**, and to Middle Eastern countries, such as **Qatar** and **Saudi Arabia**, considering the conditions offered by these suppliers.

The most favorable option for the Portuguese situation is an integrated approach through adopting policies that allow for implementing the three identified LAE, the main effort being on the critical approach so as to contribute to decreasing conflict and improving world order.

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