



ENVIRONMENTAL IMPACT ABOVE ORGANIZATION'S PERFORMANCE Case study ROMGAZ GROUP & ROMANIAN NAVY

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Abstract:

Climate change and environmental degradation are an existential threat to civilization. Before the Pandemic and the War on Ukraine the growing concern about the environment and the realization that organizations are the major contributors of harmful emissions and waste as well as major consumers of resources, have resulted in the adoption of the European Green Deal [1]. To overcome climate change and environmental degradation, the European Green Deal was set to transform the EU into a modern, resource-efficient and competitive economy, ensuring no net emissions of greenhouse gases by 2050, economic growth decoupled from resource use and all that by teamwork with no person and no country left behind.

The European Green Deal is also our lifeline out of the COVID-19 pandemic. The long-term effects of the COVID-19 pandemic [2], associated government and private sector's responses on the environment, are linked to the impact of sectoral and regional shocks to the economy until 2040 to a range of environmental pressures, including greenhouse gas emissions, emissions of air pollutants, the use of raw materials and land use change. The impacts of the pandemic on economic activity are not clearly distilled yet. While many countries are now relying on vaccination and improved treatments, China has stuck to a policy of lockdowns and other restrictions (zero-COVID strategy). In addition, recovery packages are still evolving/in progress in many countries. Furthermore, the success of vaccine campaigns implies that there is a higher chance of becoming endemic, the speed with which life "returns to normal" remains to be seen.

Last but not least, Russia's war started on February 24 puts additional pressure on a still fragile economic system and lots of challenges lie ahead. Spiking commodity prices combined with significantly higher energy prices following invasion of Ukraine means the spectre of inflation and insecurity looms large and therefore Romania's efforts to build a resilient economic recovery from COVID-19 just got harder.

In the current geo-political context it's high time for Romania to rise above the times and through smart and timely investments and actions such as those described in this case study to benefit from the strategic relevance of the Black Sea and, with an integrated approach, become a provider of security, energy and food for Europe.

Keywords: Concept of environment, business environment, performance and effects of environment impact on organizational performance, the first climate-neutral continent.





1. Introduction

An organization's environment is a major consideration. The environment is the source of resources that the organizations needs. It provides opportunities and threats, and it influences all the strategic decisions that executives makes. For any organization, the environment consists of the set of external conditions and forces that influence the organization.

It is useful to break the concept of the environment down into two components. The general environment includes overall trends and events in society such as (geo) political, social trends, technological trends, demographics, and economic conditions. The industry (or competitive environment) consists of multiple organizations that collectively compete with one another by providing similar goods, services, or both. Some aspects of the general environment, such as demographics, simply must be taken as a given by all organizations. Overall, the environment has a far greater influence on most organizations than most organizations have on the environment, but every action that an organization takes, such as raising its prices or launching an advertising campaign, creates some degree of changes in the environment surrounded it.

In the case of Romgaz Group, the environment contains its customers, its rivals such as OMV Petrom, Equinor ASA or Gazprom, social trends such as the shift in society toward hydro, solar and wind energy, political entities such as the EU and Romanian Parliament, and many additional conditions and forces.

Romgaz's move to invest in The Neptune Deep¹ project, buying a 50% stake in the Neptune Deepwater natural gas project in the Black Sea for \$1.06 billion from American energy giant ExxonMobil, represents a source of opportunities and threats for Romania, having the potential to become an important gas producer in Europe and, at the same time could probably tempt other major players and riparian countries to revisit their strategy, defence policy, and address challenges or impugnment for international agreements regarding exclusive economic zones in the Black Sea. At the same time, the Neptune Deep project represents a challenge for both Romanian Navy and the 243 "Callatis" I.S.R. Brigade.

2 Evaluating the General Environment

3.1 No man is an island. Why does the Environment matter?

Understanding the environment that surrounds an organization is essential to the organizational performance. There are several reasons for this. First, the environment provides resources that an organization needs in order to create jobs, wealth, prosperity, security and wellness from goods and services. In the 17th century, John Donne the famous British poet said "No man is an island entire of itself; every man is a piece of the continent, a part of the main".

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¹ The Neptun block is estimated to contain natural gas resources of approximately 42 to 84 billion cubic metres (bcm), which is equivalent to three to six times the annual Romanian consumption. The project can also become a significant game-changer for energy security in the Central European region. The Neptun Deep project lies in the Neptun Block, which spans approximately 7,500km² of the deep-water region of the Black Sea. The Neptun Deep natural gas perimeter extends across 9,900km² in the Black Sea.



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Similarly, no organization is self-sufficient. As the man cannot live alone as the Antoine de Saint-Exupéry's Little Prince tried, and also to survive it must consume oxygen, water and food, an organization needs to take in resources such as labor, money, and raw materials from outside its borders. McDonalds or KFC would colapse without the contributions of the franchisees that operate their stores, the suppliers that provide food and other necessary inputs, and the customers who provide them with money through purchasing food. Romanian Navy also needs to take in resources such as manpower, labor, capabilities, money, and materials from outside and cannot survive without the support of its environment.

Second, the environment is a source of opportunities and threats for an organization. Opportunities are events and trends that create chances to improve the performance level at organization or country. For example, "a country's dependence on the exploitation of its natural resources does not cause security problems in itself, but long term reliance can be considered a security vulnerability. The depletion of the non-renewable resources, in the lack of a sustainable economic alternative, may generate serious implications on a country's long term economic and social development"[3].

In this case study on February 3rd 2009 Romania position itself as an EU alternative for Russia's gas by obtaining the sovereign jurisdiction and the sovereign rights, mainly of exploitation, for an area of continental plateau and the exclusive economic zone of 9,700 square kilometres by the Haga Court Decision. In this area, back than it was estimated that there are about 70 billion cubic meters of gas and 12 million tons of oil [4], according to Bogdan Aurescu, who was Romania's agent at the ICJ, (the Neptune Deep project). Threats are events and trends that may undermine an organization's performance. Romania faced such a threat from the inside by the adoptation of the number 256/2018 Offshore Law which is accurate to say that blocked all the investments and gas extraction processes in EEZ. History demonstrated that the stated intention of the Romanian legislators to achieve a balance between the benefits obtained by each of the parties, companies and the state, did not materialize and all they achieved was playing into Russia's hand. Such decisions have had a significant negative impact upon how Romania was regarded in the world in 2018-2019 and led to the abandonment of ExxonMobil's plans to exploit the Neptune Deep project.

Therefore, executives all any level must realize that virtually any environmental trend or event is likely to create opportunities for some organizations and threats for others. This is true even in extreme cases. In addition to horrible human death and suffering, the War on Ukraine devastated many organizations, ranging from small businesses to corporate giants such as Azovstal and Mariupol Harbour and even entire cities that were simply wiped out by Russian's bombs and whose manufacturing capabilities were destroyed. As cinic as it may seem, however, these tragic events also opened up significant opportunities for other organizations. The rebuilding of infrastructure and dwellings requires food, clothes, concrete, steel, and other materials. Romanian railways, Transport Trade Services – Romanian Danube transportation company, concrete manufacturers, steelmakers, construction companies and so on are likely to be very busy in the years ahead.

P.E.S.T.E.L.(E.) analysis

PESTEL analysis is one important tool that executives can rely on to organize factors within the general environment and to identify how these factors influence industries and the firms within them. In particular, PESTEL reflects the names of the six segments of the general environment: (geo)Political, Economic, Social, Technological, Environmental,



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and Legal. Wise executives carefully examine each of these six segments to identify major opportunities and threats and then adjust their firms' strategies accordingly [5]. Each of these segments can affect a company and varying implications, in terms of duration of impact, type of change, rate of impact and importance. The result of this segments is used to identify threats and weaknesses which are used in a SWOT analysis.

The political segment centers on the role of governments in shaping business. This segment includes elements such as global influence, potential change in legislation, tax policies, changes in trade restrictions and tariffs, and the stability of governments.

The economic segment centers on the economic conditions organizations operate. It includes elements such as interest rates, inflation rates, gross domestic product, unemployment rates, levels of disposable income and consumer confidence index and the general growth or decline of the economy. The COVID-19 pandemic has had a tremendous negative effect on a vast array of organizations, has led to a dramatic loss of human life worldwide and presents an unprecedented challenge to public health, food systems and the world of work. The economic and social disruption caused by the pandemic is still devastating: tens of millions of people are at risk of falling into extreme poverty, while the number of undernourished people, currently estimated at nearly 690 million [6], could increase by up to 132 million by the end of the year. Rising unemployment, stay-at-home and work-at-home policy discouraged consumers from purchasing expensive, nonessential goods such as automobiles and television sets. Bank failures during the 2008 economic crisis led to a dramatic tightening of credit markets. This dealt a huge blow to home builders, for example, who saw demand for new houses plummet because mortgages were extremely difficult to obtain.

S is for "Social". In 1990, after the Romanian Revolution fast food was an unknown product in Romania. Today however, HoReCa and food manufacturers sell more fastfood than traditional food in Romania. This change reflects the lifestyle factors, demographic influence and social segment of the general environment. Social factors include trends in demographics such as population size, age, and ethnic mix, as well as cultural trends such as attitudes toward obesity and consumer activism. The exploding popularity of the fast food reflects the growing acceptance of this type of food by younger generations. Sometimes changes in the social segment arise from unexpected sources. Before 2001, the Romanian Navy was exclusively male. When NATO membership began to take shape, however, organization had no choice but to accept female employees. At the time, the attitudes of many highrank officers toward women were appalling. The top of the "Mircea cel Bătrân" Naval Academy in 2006, midshipman Georgiana Marin, the only girl among 200 male classmates in the year, became the first female officer in the history of the Romanian Navy.

The technological segment centers on improvements in products and services that are provided by science. Relevant factors include, for example, changes in the rate of new product development, increases in automation, and advancements in service industry delivery. Some key features of the modern era are the ever-increasing pace of technological innovation and the fact that rules are changeable, and there is no defined endpoint. There are no winners or losers in an infinite game [7]defined by Simon Sinek there is only ahead and behind. The ability to change in a technology skyrocket changing environment is decisive and the environmental impact above organisational performance is huge.

If you look at automotive industry you'll find that no finite thinking companies that are embarrasing right now, preocupied only with existing business, Diesel gate's and all those superfluous "bells and whistles" to increase costs, reduce reliability or complicate





maintenance, manufactures and sells affortable electric cars. Tesla did and crushed them all. As of May 17th 2022 Tesla has a market cap of \$761.94 Billion [8] ranking the world's 6th most valuable company by market capitalisation. The followers in automotive industry are insignificant: VW is worth less than 10% of Tesla, BMW, Ford, GM, Honda or Daimler are all less than 7%, Renault and Mazda are under 1%. Toyota is still alive valued at 30% of Tesla.

The *environmental segment* involves the physical conditions within which organization operate. It includes factors such as regulation and restrictions, natural disasters, pollution levels, and weather patterns. Water cuts across virtually every aspect of the human life on this planet. The threat of pollution, for example, has forced municipalities to treat water supplies with chemicals. These chemicals increase the safety of the water but detract from its taste. This has created opportunities for businesses that provide better-tasting water [9]. Rather than consume cheap tap water, many consumers purchase bottled water. The explosive growth of the bottled water industry has driven corporations to dip into public water supplies and left vulnerable citizens thirsty, a perfect example in which we see the negative side and impact of bottled water companies on environment. Indeed, according to the U.S. Food and Drug Administration, the market size of the Bottled Water Production industry in the US increased faster than the manufacturing sector overall (2,4% versus 1,7%) [10] and the market size, measured by revenue, of the Bottled Water Production industry reached \$8.0bn in 2022. As is the case for many companies, bottled water producers not only have benefited from the general environment but also have been threatened by it.

Some estimates are that 80 percent of plastic bottles end up in landfills. This has led some socially conscious consumers to become hostile to bottled water. Meanwhile, water filtration systems offered by Aquatabs, Hyunday Waco, Brita, Aquasano or MAXX companies are a cheaper way to obtain clean and tasty water. Such systems also hold considerable appeal for individuals who feel the need to cut personal expenses due to economic conditions. In sum, bottled water producers have been provided opportunities by the environmental segment of the general environment (specifically, the spread of poortasting water to combat pollution) but are faced with threats from the social segment (the social conscience of some consumers) and the economic segment (the financial concerns of other consumers).

The *legal segment* centers on how the courts influence business activity. Examples of important legal factors include employment laws, health and safety regulations, discrimination laws, and antitrust laws. Intellectual property rights are a particularly daunting aspect of the legal segment for many organizations. When a studio such as Netflix produces a movie, a software firm such as BitDefender revises a program or a global platform where millions of people gather together every day to imagine, create, and share experiences with each other in immersive, user-generated 3D worlds as Roblox launch a new game these firms are creating intellectual property. Such firms attempt to make profits by selling copies of their movies, programs, and games to individuals. Piracy of intellectual property—a process wherein illegal copies are made and sold by others—poses a serious threat to such profits. Law enforcement agencies and courts in many countries, including Romania, provide organizations with the necessary legal mechanisms to protect their intellectual property from piracy. In other countries, such as Russia, China and North Korea, play "follow the follower game" and piracy of intellectual property is encouraged and became a state policy. Just a look at a Lada and you'll see a Fiat and J-31 is a chinese copycat of the F-35 as well. Three other general environment segments play a role in making piracy a major concern. First, in terms of





the social segment, China is the most populous country in the world. Second, in terms of the economic segment, China's affluence is growing rapidly. Third, in terms of the technological segment, rapid advances in computers and communication have made piracy easier over time. Taken together, these various general environment trends lead piracy to be a major source of angst for firms that rely on intellectual property to deliver profits.

The most recent addition to PESTEL is the extra **E** - making it **PESTELE** or **STEEPLE** [11]. This stands for *ethical*, and includes ethical principles and moral or ethical problems that can arise in a business. It considers things such as fair trade, slavery acts and child labour, as well as corporate social responsibility (CSR), where a business contributes to local or societal goals such as volunteering or taking part in philanthropic, activist, or charitable activities.

How PESTELE analysis is useful to organizations

"I never laugh before drinking a cup of coffee" Clark Gable, the famous King of Holywood once said. For many of us, myself included, a good day starts with a cup of coffee. To transform a coffee bean into a refreshing drink I use a grinder. Simple by operating a lever on top of the machine I turn a set of gear wheels inside the machine. The coffee beans are poured into the small trough above the mechanism and are ground between the gear wheels into a small hopper below. In the same way PESTELE reflects the general environment factors—political, economic, social, technological, environmental, and legal—that can crush an organization like a coffee bean. We can anticipate such outcomes by performing a PESTEL analysis to diagnose where in the general environment important opportunities and threats arise.

3. The Black Sea and Romanian's EEZ

Sea power. Whoever rules the waves rules the world.

The notion of "sea power" established 200 years ago by Horatio Nelson, recall imperial ambition and naval diplomacy. Yet the greatest exponent of sea power studies, the American naval strategist Alfred Thayer Mahan, is still valid and read carefully nowadays. "Control of the sea by maritime commerce and naval supremacy, means predominant influences in the world; because, however great the wealth product of the land, nothing facilitates the necessary exchanges as does the sea......Whoever rules the waves rules the world" wrote in 1890 on his famous book The Influence of Sea Power Upon History, argued that national prosperity and power depended on control of the world's sea-lanes.

Mahan, the man in whose honour several U.S. ships, including the USS Mahan destroyer class were named, argued that British control of the seas, combined with a corresponding decline in the naval strength of its major European rivals, paved the way for Great Britain's emergence as the world's dominant military, political, and economic power. With an empire that stretched across the globe, Britain become the first trully world superpower and enjoyed this position throughout the latter centuries of the last millennium as its military, economic and cultural power allowed it to hold sway over two thirds of the world.

Half a century after, Romanian historian Gheorghe Brătianu wrote [12] "The Pontic problem is much more complex. It is, in fact, an almost closed sea, which communicates with





the Mediterranean only through the narrow exit of the Turkish Straits; however, due to the large rivers flowing into it from the depths of the steppe or the massifs of Central Europe, due to the multiple network of continental roads that reach its ports, it deserves the name of the hub of heavy traffic and trade."

I could not find any better considerations that would emphasise the importance of the Black Sea for Romania today.

Who rules the waves of Romanian's EEZ?

Throughout history we have witnessed a never-ending competition between Russia and Turkey, regardless of their ephemeral names, to expand their territories or at least influence over the lands adjacent to the Black Sea, to transform it into a "Turkish (Russian) Lake".

Even though after Russo-Turkish War in 1877-1878, certain states have appeared between them, I do believe that neither Russia nor Turkey will reduce the level of ambition in order to achieve their geopolitical goals of local domination, if the international situation is favorable for them. The current War of Ukraine is sustaining my opinion, Russia continuing to invade, terrorize and seize territories in Ukraine, using their patterns well-known by Georgia in 2008 and prior in Moldova. Unless defeated, Russian aggressor will not be stopped at Odessa. Romania has traditionally been concerned about potential Russian aggression, explaining the country's resolute support for NATO and frequent requests for a greater NATO troop presence in the country.

Turkey, on the other hand, is evolving demographically and militarily and, simultaneously since 2018 suffer an ongoing <u>financial and economic crisis</u>, characterized by the currency plunging in value, high <u>inflation</u>, <u>rising borrowing costs</u>, and rising <u>loan defaults</u>. In addition, after July 16th 2016, Muslimism tends to become a state policy, and Turkey's support for the Muslim-majority states in Europe (Albania, Kosovo, Bosnia and Herzegovina) can be seen as their future gateway to the northern and western Balkans. Furthermore this ambivalent Turkish positions in the War of Ukraine should be alarming.

Although today Turkey is a NATO member, history teaches us that alliances and partnerships are made and broken. Sometimes in the blink of an eye, Allies became unreconciled enemies, and vice versa. Changing is the only constant of the Universe (but national interests should be eternal).

Therefore, I don't exclude the possibility that in the medium term one of those two states will challenge Romania and try to take control or at least take a part of the Romanian's EEZ. To sustain my affirmation I will present some diplomatic events that marked the geopolitical evolution of the Black Sea region and Romania.

The first one is the World War II. British Prime Minister Churchill appointed in 1940 Anthony Eden Secretary of State for War. In December 1941 Eden travel to Moscow to negotiate an alliance with Stalin and they signed a protocol according to which Romania, at that time a German ally will lose the Danube Delta "in order to ensure security of the USSR [13]". On October 9th 1944, Churchill and Stalin agreed in Moscow about the infamy 90/10 percentage of the USSR influence in Romania and 10/90 in Greece. This 90/10 is the exact weight of Mediterranean versus the Black Sea and the influence of Great Britain in the Aegean Sea and of the USSR in the Black Sea was clearly established. Anthony Eden declared: "The Black Sea is the lake of the USSR".





The second one is the long series of events and efforts for delimitation of maritime spaces in the Black Sea that led to the establishment of the EEZ [14] [15]. In 1947 according to the Paris Peace Treaty between Romania and the Allied and Associated Powers leaves Romania the Island of Snakes. In 1948: The protocol specifying the state border between Romania and the USSR provides for the illegal transfer, contrary to the Peace Treaty, of the Snake Island to the USSR. 1949: the Romanian-Soviet agreement is concluded in the form of minutes of demarcation and delimitation of the border by which a partial delimitation is established around the Island of Snakes, agreement later confirmed by documents of the same type concluded in 1954, 1963, 1974. During 1967-1987: 10 rounds of Romanian-Soviet negotiations for the delimitation of the continental shelf and the exclusive economic zones in the Black Sea. USSR never agrees with Romanian's EEZ. In 1982 Romania participates in the signing of the UN Convention on the Law of the Sea in Montego Bay, after actively participating in the Third UN Conference on the Law of the Sea negotiating this important multilateral treaty. Follow up, in 1996 Romania ratifies the 1982 UN Convention on the Law of the Sea and declares that "uninhabited islands with no economic life of their own can in any way affect the delimitation of areas belonging to the main coasts of riparian states." This statement concerned Snake Island and was not objected to by any state. 1997: The Basic Political Treaty between Romania and Ukraine and the Conex Agreement are concluded and enter into force, which provides for the possibility of recourse to the ICJ to resolve the issue of delimitation of the continental shelf and exclusive economic zones in the Black Sea in case of failure of bilateral negotiations. 1998-2004: 34 rounds of negotiations between Romania and Ukraine for the delimitation of the continental shelf and the exclusive economic zones in the Black Sea - 24 at the level of the plenum of delegations and 10 at the level of experts. Of these, 26 take place in the last phase of negotiations (2001-2004). Negotiations fail due to Ukraine's failure to apply the delimitation rules in accordance with ICJ practice, proposed by Romania in accordance with the provisions of the 1997 Conex Agreement. An essential condition for joining NATO, the Treaty on the state border regime between Romania and Ukraine is concluded in 2003, which entered into force in May 2004. September 9, 2004: the last round of negotiations between Romania and Ukraine takes place for the delimitation of the continental shelf and of the exclusive economic zones in the Black Sea, in Bucharest. On September 13, 2004: Romania signs the Request for Notification of the ICJ to start the process in The Hague. 2005: creation of the Office for Maritime Borders and Boundaries, in the composition of the General Directorate of Legal Affairs of the Romanian MFA, both for the management of the ICJ process and other issues related to the law of the sea in relation to Romania's neighboring states in the Black Sea of the issue of international law regarding the borders of Romania. 2005-2006: 4 rounds of Romanian-Ukrainian consultations take place at expert level, which do not lead to any results. After 2006, no further bilateral negotiations took place on this issue. September 19, 2008: The hearings in the process on the Maritime Delimitation in the Black Sea (Romania v. Ukraine) end, after Ukraine presented its second round of pleas on September 18-19. The court enters the deliberation.

On February 3, 2009 in the solemn public meeting, with the participation of the full ICJ, the delegations of the parties and the press, of the ICJ Decision, which is originally handed to the Agents, Court decides Black Sea border with Ukraine [16]. The unanimous decision by the court's 15 judges, which both parties agreed in advance would be binding, ends a long-running dispute that began more than a decade ago. As part of its judgment, the court also determined that Serpent Island could be considered an island, rather than just a rocky outcrop.



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During this Geopolitical Trial, Team Romania was enforced with brilliant experts [17]. The foreign component of the Romanian team in The Hague was made up of three renowned professors and experts in international law from the Universities of Paris, Cambridge and Oxford, who have a recognized expertise in participating in the processes before the ICJ, especially in maritime delimitations as well as two experts with relevant practice in the processes before the ICJ. The three professors are James Crawford - University of Cambridge, Alain Pellet - University of Paris -La Defense and Vaughan Lowe - University of Oxford. The first two have been consulting the Romanian side on the delimitation of maritime spaces with Ukraine since 1999. The other two experts are Daniel Mueller and Simon Olleson. Mueller is a researcher at the Center for International Law in Nanterre, University of Paris -La Defense and has been a counselor and assistant in many cases before the ICJ. Olleson is a member of the Bar of England and has been a researcher in International Law at Cambridge University and the British Institute of International and Comparative Law.

USSR/Russia and Ukraine never accepted willingly the Romanian's EEZ as it is today.

Even though it spent 630,000 Euros for this process, Romania obtained, according to the decision of the ICJ on February 3, 79.34% of the disputed area in the Black Sea, a large part of the continental shelf and the exclusive economic area to which it claimed. Romania thus obtained the sovereign jurisdiction and the sovereign rights, mainly of exploitation, for an area of continental plateau and the exclusive economic zone of 9,700 square kilometers out of 12,200.

Production in the gas extraction zone could reach 10 billion cubic meters of gas per year, according to estimates, almost sufficient to cover Romania's entire annual gas consumption of 12 billion cubic meters.

In an analysis of South-eastern Europe in the context of the war in Ukraine [18], noted analyst and strategist George Friedman, founder of the Stratfor Worldview, one of the world's leading geopolitical intelligence platforms [19] says of our country that "it is not pinning its hopes on a heroic moment or a cunning plot. It is following the course of events, and in doing so is perhaps the most skilful in all of Eastern Europe". With an effective diplomacy, praised by George Friedman, and being a NATO and EU member, Romania's rules the waves of our EEZ.



Figure 2.2.1: The Hague's decision on the 3rd December 2009 Source: http://www.worldcourts.com/icj/eng/decisions/2009.02.03_black_sea.htm



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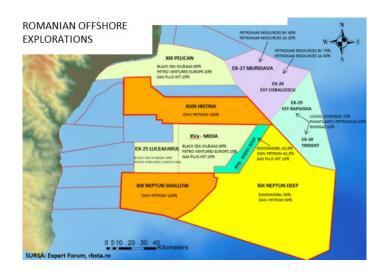


Figure 2.2.2: Romanian's offshore explorations in 2022 Source: https://www.naturalgasworld.com/neptun-fid-deferred-until-2019-omv-65473

4. Environmental impact above organizational performance

The current environmental impact above Romania's policies

Opportunities and risks for energy independence

Geopolitical priorities are changing across Europe, and energy is no exception. The current geopolitical framework has forced European countries to redefine their energy relations and take swift steps to become energy independent. Over the last ten years, Europe has relied heavily on Russian oil and gas, especially countries such as Germany, Italy and Hungary but that is about to change.

Following the outbreak of the Russia-Ukraine conflict, political discourse has focused on how Europe must immediately stop importing gas from Russia and turn to other sources. Europe must find a reliable solution to achieving energy independence in a timely manner, but the road to this goal is full of both challenges and opportunities.

The current geopolitical status has opened the door to opportunities, but short-term solutions could be a step backwards in terms of achieving decarbonisation and sustainable development. Due to fears related to energy security, Oltenia Coal Company is going to increase its production capacity for 2022 [20].

In addition, the risks posed by the current conflict are exacerbated by the delayed use of transitional fuel in the Black Sea. The Neptune Deep project is just resuscitated by the adoption of the offshore law this month. In the most optimistic scenario, Romania could start extracting natural gas from the Black Sea in 2026. Until then, the lack of investment in natural gas production will increase its dependence on imports and, consequently, will have an impact on the country's path to energy independence.

While Romania is focusing on implementing long-term measures to achieve energy independence, in the short term prices will remain high and volatile, causing inflationary pressures and other side economic effects.





The biggest opportunity for us is to accelerate the transition to clean energy and increasing the production of electricity from gas and renewable sources will bring expectations such as reducing both the use of fossil fuels and prices in the energy market.

In the context of the current political and economic situation, Romania is in a unique position, with the Black Sea as a major advantage, which can accelerate the process of switching to renewable energy. The Black Sea has a massive potential to generate wind energy - according to a study published by the World Bank, Romania can set up wind farms with a capacity of up to 72,000 MW.

Both offshore and onshore wind energy and solar energy are of strategic importance for Romania's energy system: by 2030, as part of the National Plan for Energy and Climate, Romania aims to implement an additional wind energy capacity of 2,302 MW and a solar energy capacity of 3,692 MW [21].

Initiation of the listing process of the Hidroelectrica on Bucharest Stock Exchange and London Stock Exchange was approved in the Proprietatea Fund's general shareholder meeting held on 31 March 2022. Hydroelectric power plays a very important role in Romania's energy mix, representing approximately 30% of the national electricity generation mix. In the long run, the modernization of existing power plants would ensure a steady share of production from renewable sources.[22]

Given that a significant part of hydropower production assets is nearing the end of its first life cycle, it is necessary to implement a complex renovation program so that hydropower remains a central pillar for national electricity generation.

Nuclear energy has received increased attention in the light of the EU's green taxonomy, being labelled as sustainable energy by the European Commission. Whether it is an intermediate step in the green transition or not, nuclear energy is certainly on Romania's agenda. With a share of almost 20% in the electricity generation mix, with investments of €1.85billion in the regeneration of Unit 1 of the Cernavoda nuclear power plant over the period 2027-2029 [23], as well as the construction of the future nuclear units 3 and 4, nuclear energy remains a solid opportunity for diversification and eventually energy independence.

In addition, the construction of a small modular nuclear reactor (SMR) in Romania, which is to be completed by 2030, is proof that nuclear energy is here to stay in the national energy system. During the Small Modular and Advanced Reactors Workshop Planning IV organized in Bucharest by the US Trade and Development Agency (USTDA) in partnership with the US Department of Commerce, Nuclearelectrica, NuScale and E-Infra just signed on 24th May a Memorandum of Understanding for the development of the first Small Modular Reactor (SMR) in Romania on the site of the former Doicești Thermal Power Plant, Dâmbovița County.

Social and security challenges

The war in Ukraine is creating significant social and security challenges for Romania, but at the same time, after a long period of intrigue and political wrangling, after a series of short-lived governments, we have seen that, when the chips are down, when our backs are on the wall, we can be united and determined for the national good. A Russian attack of Romania is improbable considering both the huge capability difference between NATO and Russia and the Moscow's clear intent to avoid a war with any NATO member.

Still, Romania's firm position on Russia and its support for tougher EU sanctions against Moscow and an increased NATO presence in the Black Sea region with a French-led NATO battle group at Cincu, make our country vulnerable to unconventional retaliation from





Russia. This month we witnessed the blocking of websites of ministries and government agencies as well as delays in the payment of salaries for about 40% of budget employees, facts that we've could assimilate with cyber attacks against Romanian state institutions, infrastructure and private companies. Romania could also be subject to disinformation campaigns and other destabilization attempts from the Russian government or pro-Russian groups, either directly or in neighbouring Moldova, which is not a NATO member.

In my opinion the current environmental impact above Romania's policies resulted in a beneficial political stability. This means that our country will not face a political crisis, will confront economic challenges of the next period, particularly by capping energy prices, protecting consumers, free money for the misfortunates (700 lei for all the citizens earning less than 2000) and accelerating the transition to a greener and more independent energy market and will be able to stand strong on issues such as applying and enforcing sanctions against Russia, providing support to Ukraine, housing asylum seekers, and support to Moldova's EU aspirations.

In the future, Romania will need financial support from the European Union to cope with Ukrainians migrants, but our proven generosity will cope with this challenges with or without EU aid. Although Romania has no history in receiving large numbers of asylum seekers, we became a model. While the Romanian government has provided residency rights and housing to migrants from Ukraine who want to stay in the country and free transportation to those who want to go to other parts of the European Union, that they can use to travel on to Hungary, Austria, Germany, Switzerland, Slovakia and Bulgaria, a significant part of the assistance is coming from nongovernmental organizations, helping more than 750.000 refugees [24].

Perhaps now, in the context of the war in Ukraine, looking eastwards with the peace and comfort that NATO and EU membership brings, the time has come to appreciate the true value of the vision, resilience and courage of such outstanding personalities as Ion Raţiu, Corneliu Coposu and Mircea Ionescu Quintus who have chiselled the generation of politicians led by Andrei Pleşu and Emil Constantinescu, when they took historic decisions, with great sacrifices of popularity, to initiate the reforms necessary for EU membership in 1999 and to be totally and unconditionally on the side of NATO during the Wars of independence of the former Yugoslav republics.

Environmental impact above Romgaz Group performance

November 12, 2013 has gone down in the history of the Bucharest Stock Exchange as the day when the biggest listing of the century took place: Romgaz Mediaş, Romania's largest gas producer and supplier, valued at three billion Euros, became a public company by listing its shares on the stock exchange. The listing of the most valuable state-owned company, thanks to its profitability and gas reserves, followed an initial public offering (IPO) in which the state sold 15% of the company for €391 million. Romgaz's IPO was the largest ever share offering to the general public, and the reaction from Romanians was commensurate. Although small investors were allocated about 15% of the 57.8 million shares put up for sale by the state, Romanians submitted purchase orders for 17 times that amount, putting up 4.9 billion lei. Institutional investors, such as investment funds, pension funds and investment banks, also showed a high level of interest, submitting purchase orders for almost seven times the amount of shares allocated to them.





With a market capitalization of \in 3,51 billion, on May 24, 2022, Romgaz is today the second largest listed company in Romania, being preceded by OMV Petrom with a capitalization of \in 5,38 billion.

In the case of Romgaz Group, the environment contains its customers, its rivals such as OMV PETROM, EQUINOR ASA or GAZPROM, social trends such as the shift in society toward solar and wind energy, political entities such as the EU and Romanian Parliament, the War in Ukraine, the Pandemic and many additional conditions and forces.

Since the listing day up to present, Romgaz is considered an attractive company for investors in terms of dividend distribution to shareholders, company stability and future development perspectives, also reflected by the evolution of Romgaz securities prices in the last 12 months, with 42% randament without dividends to be paid to shareholders on July 27.

In the last 12 months, Romgaz shares recorded an oscillating trend quite similar to that of other securities traded on Bucharest Stock Exchange and London Stock Exchange [25].

The main environmental factors which influenced the quotation of Romgaz securities on the two stock exchanges and the positive trend and disconnection from BET Index and even its rival, OMV Petrom were: the result of the concerns about inflation and growing tension between Ukraine and Russian Federation, the evolution of Bucharest Stock Exchange indices further to the War in Ukraine, starting from 25 February, the information on completion of transaction concerning the acquisition of shares issued by ExxonMobil Exploration and Production Romania Limited (EMEPRL) and the distribution of 2021 dividends, 3.8 lei/share.

On the 23rd March, ROMGAZ C.E.O., Aristotel Jude, stated on a press release: "Neptun Deep Project in the Black Sea is a strategic opportunity for Romania, representing an important gas source to secure the energy safety of our country. The current energy and geopolitical context awards the project a higher significance. We plan to complete the transaction in Q2 of this year so that together with our future partner we can proceed, as soon as possible, to the development-production phase. Under these circumstances, we estimate that the first natural gas production in XIX Neptun block, Deep Water Zone, will be obtained at the end of 2026 or the beginning of 2027. In S.N.G.N ROMGAZ S.A 2021-2030 development strategy, we prioritised the completion of Neptun Deep transaction, and investments in other onshore development projects, and renewable energy projects, given the "Green Energy" European policies."

After long procrastination and delays, Romanian lawmakers approved legislation to reduce taxes on future income from offshore gas projects, hoping it would unlock investment in the Black Sea to extract its sizeable reserves. On the 25th May, Energy Minister after the enactment of the 2022 Offshore Law stated: "Officially the exploitation of gas from the Black Sea can start. The President of Romania, Klaus Iohannis, signed today the decree on the promulgation of the Law amending and supplementing Law No 256/2018 on some measures necessary for the implementation of oil operations by holders of oil agreements relating to offshore oil perimeters"

As the EU enforced tougher sanctions against Moscow and express the will to reduce the Russian's gas dependence, the Romgaz capitalization and securities prices rises. This is the example of how the (geo) political, economical, environment and the legal components of the PESTELE impacted Romgaz performance.

Technological landscape changes at a higher rate than ever and Romgaz is huge impacted by technological breaktrhougs especially in the way company discover, explore, develop and launch production operations in the shallow and deep waters of the Black Sea for



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new offshore supply sources of gas and recently by repurposing gas infrastructure for hydrogen in a joint-venture with Transgaz. Despite the uncertainty brought on by COVID-19, Romgaz continue to make progress toward a low-carbon future and could benefit from the role of natural gas in decarbonising European energy systems: EU Green Deal, energy mix and energy security.

Even innovations that don't specifically make oil and gas processing greener and cleaner can still help improve the industry's overall sustainability by allowing for more costefficient processes [26]. For example, in the Neptune Deep project, new ultrasound technology allows companies to create 3D images of the inside of gas wells, enabling them to make more informed and cost-effective production decisions. Similarly, IIOT, analytics, automation, reserve replacement and enhancement capabilities, and emerging artificial intelligence programmes can all help find and eliminate operational inefficiencies.

By improving the efficiency of ongoing operational processes by even a small fraction, Romgaz can produce the same amount but with reduced costs and energy expenditure, leading to a lower overall carbon footprint.



Figure: 3.2. Romgaz vs.OMV Petrom vs. BET index sec. performance in the last 12 months Source: Tradeville, Burlacu Ciprian.

The Romgaz performance under the influence of the concern about inflation and the War on Ukraine helped to balance the budget of the majority shareholder, Romania. Romgaz (SNG) announced all-time record results for the first quarter: turnover of € 790 million in the first quarter of 2022 and net profit of € 180 million [27].

Those environmental conditions (spiraling inflation, high energy prices, the War, disruption of the supply chains and scarcity of the resources) affect not only Romgaz but any other company from Romania to Japan. According to the profitability value, OMV Petrom ranks first in the BET Index [28], with a net result of € 354 million in Q1/2022, compared to € 116 million in Q1/2021, amid unprecedented increase in the price of oil and higher sales volumes. Romgaz is in second place taking advantage of record natural gas prices, and





Fondul Proprietatea (FP) is in third place, with a profit of € 167 million, taking advantage of increasing energy prices and adjustments for Hidroelectrica, in which FP has a 20% stake. These three energy based companies alone have a cumulative profit of 720 million, or about 65% of the total. As a fact, Apple is no longer the world's most valuable company, being surpased by an old fashioned energy giant based on fossil fuel, Saudi Aramco.

When we analyse the impact of the Social and Technology factors in the PESTELE we easily see that the offshore law will give Romania through Neptune Deep project an competitive advantage in the context of the *Perfect storm* which is foreshadowed by the combined effects of the War on Ukraine, Pandemic, Climate change and environmental degradation, crisis on the resources market and implicitly benefits from investments in exploitation: budget revenues from taxes and duties associated with these investments of about € 1 billion annually, new jobs attracting related investments and prosperity. According to the study performed by PricewaterhouseCoopers Romania for the Oil and Gas Employers Federation [29] as Europe grapples with an energy crisis amid the war in Ukraine, Romania could in the long term challenge Russian Gazprom's dominant role in central and eastern Europe, diversify gas supplies and bring billions of euros in revenue.

The Ethical factor. Romgaz activities in the field of social responsibility are performed voluntarily, beyond the legal responsibilities, for the company is aware of the role of corporations in a redefined society as a result of market globalization and the emergence of social and environmental challenges [30]. Romgaz supports the sustainable development of the company and the community in the following main domains: sport, environment, social and economic. Supporting social responsibility actions and initiatives, totally or partially, within the limits of budgeted financial resources, has revealed the pro-active attitude of the company in the field of social responsibility and has increased the awareness degree of the parties as regards the importance and the benefits of applying social responsibility.

Environmental impact above RO NAVY performance

Romania shares a 614-kilometer land border with Ukraine, which means that the war is getting closer to Romania as <u>Russia intensifies its attacks in western Ukraine</u> [31]. Romania also has Black Sea coastline, meaning if Moscow ends up controlling parts of the southern Ukraine as a part of a strategy to deny/limit [31] of Black Sea access, Romania and Russia will share a larger maritime border. (Russia de facto controls Crimea and the Serpent Island on the Black Sea) This will increase the risk of deliberately provoked or accidental confrontation between the Russian and Romanian navies, and potentially constrains Romania's room to explore for hydrocarbons in the Black Sea.

As I demonstrated in the second chapter, USSR/Russia and Ukraine never accepted willingly the Romanian's EEZ as it is today. According to the study performed by PwC Romania for the Oil and Gas Employers Federation as Europe grapples with an energy crisis amid the war in Ukraine, Romania could in the long term challenge Russian Gazprom's dominant role in central and eastern Europe, diversify gas supplies and bring billions of euros in revenue. In this section I'll analyse the impact of this new environment above RO Navy level of ambition and the new capabilities needed to deter any aggession towards its EEZ.

Being part of the most successful defensive alliance of all time, with no major threat or war in proximity and no serious intention to exploit the hydrocarbons in the Black Sea in the years since the 2009 Hague Process, with the notable exceptions of the SCOMAR system of the 243 ISR Brigade "Callatis" and Raytheon - Kongsberg system of anti-ship missile





launchers based on the Naval Strike Missile, Romania postponed the modernisation of the Navy.

We have a modern surveillance system to watch for the unauthorized entry into EEZ and 5th generation ASM launchers based on the NSM stealth missile for over-the-horizon defense. On the offensive we still rely on an obsolete frigate, 1978 Romanian project, Mărășești with Soviet origin armament, three Tarantul"-Russian missile class corvette, four corvettes (two <u>Tetal-I</u> and two <u>Tetal-II</u> class) and couple MCM ships. The flagships of the Romanian Navy, two british type 22 frigates are adequate to C4ISR and low-intensity operations such as maritime security and patrol missions against trafficking, piracy and illegal fishing.

For Romanian Navy, this ongoing War on Ukraine is the perfect window of opportunity in order to modernise. There have been another 2 for the Navy since 1990. The first window (1995-2005) would have been recovering technical readiness and defining a new technical lifespan of the Kilo class "Delfinul" submarine as the Polish did. Polish submarine is set for going strong for another ten years [33] Despite the fact that ORP "Orzeł" became a part of the Polish Navy back in 1986, it still offers a major combat potential. For the last couple of years ORP Orzeł has undergone a series of repairs and monetization, during which the vessel remained out of service. However, despite lengthened overhaul of ORP Orzeł and significant cost overrun of the project, the Polish Navy announced in mid-2019 its intention to keep the vessel in service for at least another decade [34].

The second window of opportunity opened after the Russian annexation of Crimea in 2014. The ongoing political-naval war for Romania's 1.6 billion euro corvettes started in 2016 after the Ciolos (technocrat) Government signed an agreement with the Dutch group Damen (which was to build the ships in the Galati shipyard, owned by the concern). The purchase was later cancelled in 2017 by the Tudose (social) Government, on the grounds that the conditions for awarding the contract should have been established by law, not by a decision of the Executive (gov-to-gov). With the War on Ukraine still in progress, with the Russian Navy in the Serpent Island, dominant in the Black Sea and blocking the free passage for commercial ships just at the outskirts of Romanian EEZ [35], with Turkish Straits closed under the Montreaux Convention for March 1, 2022, Romania has still not signed the contract for new multipurpose corvettes and the modernization of the current frigates, even though a winner has been chosen since 2019, association Naval Group-Constanta Shipyard.



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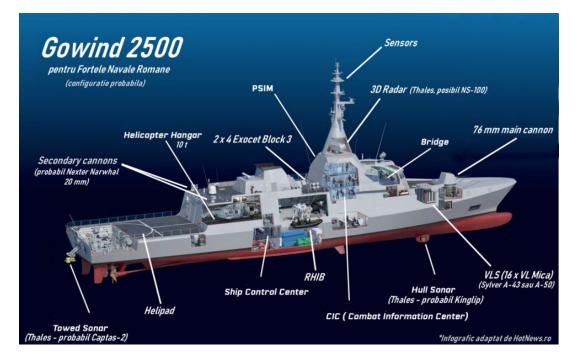


Figure: Gowind 2500 corvette for RouNavy. Source: Naval Group/hotnews.ro

However, those two opportunity windows could not be valorised due to a combination of factors of which I mention poor economic situation of Romania and the uncertainty of the chosen path - "we do not sell our country policy" (Delfinul case) fragmentation of political power, political corruption and an upswing of populism between 2017-2019 -(multi-purpose corvette program).

"Strengthening defense capabilities is a strategic priority for Romania" President Klaus Iohannis said in a message on the occasion of the Land Forces Day. In his message, the president says the defense budget will increase from 2% to 2.5% of GDP from 2023. Although this increase is a definite step forward to achieve the modernization of the Navy, budgetary resources should be at the required level and careful prioritization and the increase in effectiveness of the use of public money is an absolute requirement.

In the interview "The need to equip the Romanian Naval Forces - a priority for companies in the defense industry" granted on 19 April to the newspaper "Bursa", General Gheorghe Savu, Director for Defense Intelligence Directorate (2009-2012), retired in 2017 and currently Director of Damen Naval Romania, states that: Definitely, the Mangalia shipyard is ready to build the corvettes needed by the Naval Forces, in case the Naval Group-Constanța Shipyard association will not sign the contract with the Ministry of National Defense and, following this refusal, according to the procedure established by HG48/2018, the contract will be entrusted to the company ranked second, i.e. Damen. We are ready to produce the naval corvettes, at the same price and under the same conditions set out in the offer we submitted in the procurement procedure.

Moreover, we can build two corvettes at the same time in Mangalia and a third one in Galati, which would considerably reduce the time to produce these products.

If materialized, that increase to 2.5% GDP will favor the opportunity window to modernize the Navy by:



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- closing the corvette saga with Naval Group if they maintain the offer [36] or with Damen;
- modernize the Type 22 frigates;
- enhance the C5ISR system by MDA and SCOMAR phase 2 programs;
- recovering technical readiness and defining a new technical lifespan of the Kilo class "Delfinul" submarine with Polish expertise/ start procurement procedures for another similar submarine.

The War on Ukraine and consequently formalization of *Strengthening defense* capabilities as a strategic priority for Romania by law reflects the P – (geo)political and the L acronym in PESTELE analyze.

The E segment reflects on the economic conditions within RoNavy operate and elements such as sharp rise in interest and inflation rates may jeopardise major procurement programmes for the Navy, unless if carefully analysed, prioritized and corrected.

S is for "Social".

After the Revolution we've witnessed a significant rise of popularity of the defence institution. Romanian Army if the most trusted institution in the country [37] and a mirage of good work environment, decent salaries and pension, loyalty and the ideal of military modernity have led to the enlistment of intelligent, motivated and educated young men and women into the military ranks. It was easy to infuse military virtue [38] such as courage, integrity, honor and compassion into an educate person through repeated practice and development of skills of moral analysis, deliberation and action, especially in the ethical use of force. After the accession to the EU and due to the demographic decline, the increase in emigration and the increase in the standard of living, together with the introduction of the Unified Salary Laws for budgetary personnel, laws which gradually placed the military profession straight to the bottom of the budgetary professions, have dramatically changed this trend.

Today, with a large part of its personnel paid the minimum wage, Romanian Navy can no longer compete for capable young people. Consequently, it's difficult to infuse military virtue such as courage, integrity, honor and compassion into a lesser educate person, despite efforts and repeated practice and this difficulties influence the (under)development of skills of moral analysis, deliberation and action, especially in the ethical use of force, and this fact will affect the entire organization in short term. Worforce is an essential military resource. Only with industrious, educated, skilled and motivated people can budgets and weapon systems be turned into an effective military capabilities that are required to provide for Romania's security.

There's no simple solution to change the paradigm and the mindset of politicians who see the Military only when needed. Kipling's words are, unfortunately still valid today:

"In times of war and not before, God and the soldier we adore. But in times of peace and all things righted, God is forgotten and the soldier slighted." -Rudyard Kipling - A time for prayer.



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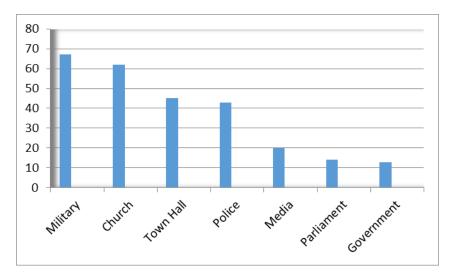


Figure: 3.3.3 Romanians confidence in authorities (%)

The **S factor** is correlated with **T, L and E** (ethical) acronyms. There is hard to find another domain wich apply more key features of the modern era than the military. Throughout the history, most of the breakthroughs are made for military purpose than applied in the civilians. Today there are ever-increasing pace of technological innovation and the fact that rules are changeable and there is no defined endpoint means that the soldier of the future will be less a young-trained to fight young male and more a highly trained and specialised, resilient and motivated human of an certain age and gender. The development of autonomous systems as we see in Ukrainian War (TB-2 Bayraktar UAV), antimunitions systems, armed robots, cyber attack and cyber defense systems, are projected to become the centerpiece of 21st century military and counter-terrorism operations. Yet Ukrainian drone warfare and the Saint Javelin images are merely the leading edge of a broader worldwide trend toward more autonomous methods of warfighting.

This trend has also challenged commanders, legal advisers, and professors of ethics to frame those developments and challenges within existing international law and just war theory. There are no winners or losers in an infinite game [39], there is only ahead and behind. The ability to change in a technology skyrocket changing environment is decisive and the environmental impact above RoNavy performance is huge.

It's hard to believe that this highly trained and specialised, resilient and motivated human of an certain age and gender will be found in the Navy been payed at the same level as a city bus driver or a prefecture secretary.

The **E**, *environmental segment* involves the physical conditions within which RoNavy operate. It includes important factors such as climate change and environmental degradation regulation and restrictions, especially in the Danube Delta, natural disasters, pollution levels, and weather patterns.

5. Conclusion

Has the Romanian Navy the required capabilities to ensure a credible deterrence and, if this fails, the defence of the country against a sudden "Russia's special operation" in the



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Romanian's EEZ in the Black Sea? Can we find the will and means to modernize the frigates, close the corvettes saga and purchase an effective submarine?

The Black Sea has a strategic importance for Romania's gas production and energy security. Romania has proven access to 200 billion cubic metres of gas in its offshore reserves, the fifth-largest gas reserves in Europe and the development of large-scale offshore projects will undoubtedly lead to sustainable economic growth and significantly contribute to the welfare of all citizens to bigger investments in education, healhtcare, agriculture, infrastructure and hopefully in modernisation of the Navy.

As of 25th of May, by Presidential signing of the decree on the promulgation of the Law amending and supplementing Law No 256/2018, all the necessary regulatory changes to rapidly advance offshore development are made. Europe [40] is highly dependent on Russian gas and in the light of the War in Ukraine, it is becoming ever more important to improve energy security and speed up the energy transition in Europe. Can Romania play an important role in achieving this goal?

As of 1 January, 2020 [41], there were almost 500 gas fields and blocks in Ukraine. The most promising areas for the discovery of new hydrocarbon deposits are located in the South of Ukraine are the Black and Azov Seas waters, areas now occupied by the Russians. As a fact, the aggressor state just ask Ukraine to pay for the energy produced in the Zaporoje nuclear plant, just because a Siberian-born soldier is threatening with nuclear disaster an entire continent. How plausible is the scenario in which Romania will be asked to pay for natural gas extracted from the Neptun deepwater perimeter just because a Russian warship took over the drilling platform and now claims it is Russian territory?

In Ray Dalio's New York Time bestseller "Principles for Dealing with the Changing World Order: Why Nations Succeed and Fail", Romanians decidents can easily find metrics from history that can be applied to understand the environment today, can see timeless and universal forces behind these environmental changes and uses them to look into the future, finding practical principles for positioning Romania for the future. I do believe that this "perfect environmental storm" we are going through now is an important window of opportunity to develop, modernize and unite as a nation and will affect Romania's place in Europe for our children.

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