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Postgraduate Dissertation

Qatar state analysis according to macroeconomic indicators in relation to its energy capabilities

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Abstract

With the prices rising to their highest point during the decade and its lack of diversification in supply, EU's energy security and availability are threatened. Meanwhile, the climate crisis demands a sustainable solution, with energy and environmental security being two co-existing factors.

Qatar has become a developed economy, playing an important role in the Middle East financially and diplomatically. It is ranked among the economies with the highest GDP and the largest oil and natural gas reserves and is also entering its RES era. The state has also built strong bonds with the US. The European market is currently left without a main supplier, and it is possible that Qatar will include it into its market expansion plan.

Furthermore, a state analysis takes place to reach valid conclusions about Qatar's current financial state as well as expectations for the foreseeable future. MENA states usually suffer from phenomena such as resource curse that influence their reliability as main suppliers in the long-term. Qatar has not been negatively influenced so far because it has come up with effective solutions such as its National Vision 2030 strategy.

Lastly, EU has come up with the REPowerEU plan, a strategy concerning supply diversification, new LNG imports, climate-oriented solutions, and the required monetization. This can have a huge short-term impact on dealing with the crisis. Qatar on the other hand is more likely to become an effective long-term alternative for Europe, however it is highlighted that Europe should not again over-depend on one and only supplier.

Chapter 1: Introduction

Russia and Ukraine are two major players regarding the global energy sector as they are both big suppliers of oil gas and coal. The Russian invasion in Ukraine has unleashed numerous impacts around the globe such as the surging prices of energy that are being in their highest point during the decade. According to Makau, (*Makau et al, 2022*) “Russia produces approximately 10% of the world’s total consumed energy and exports approximately 10% of the world’s oil, 8% of global gas and 15% of coal as of 2020” (*Makau et al, 2022*). While the world is still recovering from the aftereffects of the COVID-19 pandemic, the disruptions on the global energy market are causing cascading negative effects. The supply gap that is created, considering that Russia is the world’s largest exporter of natural gas, and that the world’s reliance on Russia for oil and gas for energy supply is up to 50%, which poses a great challenge. Europe is facing the most direct effects. Since infrastructure in both Russia and Ukraine has been destroyed, this directly leads to the instant disruption of logistical supply chains of oil and gas chains. Additionally, the trade of goods through the Black Sea region has become significantly more complex and more expensive due to the closure of all Ukrainian ports. Despite that the two countries are not OPEC members; Russia is part of an agreement with member states to cooperate in oil and gas production. The global prices would be stabilized from the production of larger quantities of oil, however OPEC has been hesitant to react for various reasons but especially due to the fact that some member states have certain limitation in their production capacity and due to respect for Russia’s partnership. However, the organization is considering excluding Russia from future deals.

The current circumstances made it clear that Europe needs to urgently diversify its energy supply to avoid energy disruptions and to secure the main foundations of energy security such as availability, affordability, and sustainability. Though the Commission has come up with a fruitful plan to face the short-term impacts of this energy crisis, it is a fact that long-term, Europe must search for stable and multiple suppliers. The state of Qatar is a promising option as it has a stable domestic economy, an honorable position in the Middle East regarding its external affairs, diplomatic bonds with the US as a NATO ally without being a NATO member state and one of the world’s most impressive capabilities in energy production. The country is also geographically close to the EU making the energy transferring through pipelines an easier procedure and it is planning to expand its renewable energy capacity as well. This is a very important progress for the global climate crisis but for the EU targets as well considering its 2030 environmental objectives. **The aim** of this thesis is to examine Qatar’s energy capabilities as an option to become EU’s alternative energy partner to a Russia-independence future. **The methodology** followed in this research is based upon analyzing Qatar’s macroeconomic indicators through state analysis, taking into consideration the international relations theory regarding the energy sector as well as macroeconomics, to reach a statistically valid conclusion about the state’s potential of expanding in the European energy markets and possibly becoming the main supplier for Europe in the long-term. Since MENA states, as energy exporters, tend to appear paradox phenomena that fall within the rentier state theory or such as the resource curse theory, it is important to examine if Qatar is prone or already into this financial state. It is also important to examine the point which Qatar’s expansion into the energy market keeps up with EU’s need for energy supply, in order to meet the objective of the present analysis. **The structure** of this analysis includes an abstract, an

introduction to the subject analyzed and the academical and scientific background through bibliography references. Then moving on to the main body, we will examine the recent events (Russian-Ukraine war) that threaten energy security, followed by Qatar's presence in the global energy environment, Qatar's state analysis according to macroeconomic indicators and the possibilities for Rent Seeking and Resource Curse phenomena. Finally, we will answer the main question of our research if Qatar is an efficient alternative for EU's energy needs. Afterwards we will reach some conclusions and the necessary bibliography will be cited. The war taking place transformed a chronic matter into an emergency for energy security which affects directly and indirectly other aspects of a state's well-being and proper functioning. Therefore, seeking sufficient alternatives and examining thoroughly possible scenarios can strategically provide a safe option and **that is the contribution** of this thesis.

Chapter 2: Bibliography references review regarding the theoretical background of this thesis

2.1 Introduction

As previously referred, this thesis includes and combines 2 main scientific fields: International relations and macroeconomics. These two fields are naturally interrelated since international relations are structurally bonded with economy, and in order to understand and study a state's economic performance, we need to use macroeconomics. Energy security, which is the subject under study, is a sub-category of what is called state security in the IR field and macroeconomics are a branch of the general economic theory. In order to proceed onto proper research, the academic background must be set, since theory backups action. International relations are not a solid theory but can be described as a way of perspective under which we interpret the world events. That is the main reason why there are many different theories in international relations, and they are all valid. Experts choose under which prism it is appropriate to explain, study and interpret each event. However, no matter if we choose to encounter global events such as wars, as acts deriving from the human nature itself (like realism does) or as least favored solutions that the states are forced to choose (like liberalism) or even as mindset-derived constructions based on how we choose to face this world (like constructivism), the importance of IR lies in this: By being aware of how the world machine works, there's a chance of fixing it or even changing it. A great power moving the world gears is economy. It can be described either as the main objective of a state entity or as the necessary means to achieve something greater. There are plenty other factors that affect the behavior of a state as well but what primarily influences policy makers and the final actions taken by an international actor is finance, since the global economic system is capitalism. To properly understand economics in an international level we concentrate in macroeconomics which study macroeconomic indicators and reach certain conclusions about a state's financial state, it's actions and dilemmas as well as its motives, possible future actions, and weaknesses. By setting the tools for our research, which are IR theory and macroeconomics, supported by the appropriate bibliography, we are ready to conduct the analysis, Therefore, this chapter is dedicated in examining the academic background upon which this research was based.

2.2 IR theory

The theory of international relations is a theoretical field studying the relations and interactions of the so-called international actors, meaning states, state unions, international organizations/institutions etc. It seeks to explain and even forecast the effects of international politics. As previously referred, international relations are a prism under which we observe the global events. There are many different factors that influence global decisions and events. They can derive from a single actor's decision, from the internal conditions of a state, or even from a natural event that is out of control. The point being is that to be able to take into consideration all these different variables, we choose to use certain tools such as game theory or foreign policy analysis beside the theoretical background. Therefore, IR is not just a theory but a holistic methodology combining many scientific fields such as statistics, law, politics, and economics.

Global events that affect the international arena such as climate change and geopolitical hazards, bring forward the term of energy into the field of international relations. A great part of international politics is related to the energy sector, regarding the trade of energy, its distribution and prices, its transfer and storage and the required infrastructure, its availability, accessibility, and sustainability. Energy can be used as an instrument in foreign policy, either in terms of soft power such as by mirroring a state's wealth, or even as a tool to force other actors act in a certain way and put pressure in the international community. As for climate change, the era of renewable energy sources is already under adoption, with countries incorporating climate related targets to their domestic and foreign policy. Now more than ever considering that a war and an energy crisis both take place at the same time, energy influences international cooperation and geopolitics. Further examination on how energy affects politics was retrieved from "*Early, C. & Saush, A., 2022, What does the war in Ukraine mean for energy security in Europe?, from The Conference Board, US*", as well as from "*Nevitt, 2022, Climate Security, Energy Security, and the Russia-Ukraine war, Just Security, New York University School of Law*". Energy security clearly affects the decision makers since it is a part of the general security of a state and its ability for self-reliance. Specifically, the relevant reference on the realistic theory proposes that the main goal of a state is to ensure its security to protect its sovereignty. The above constitute the basic concept of energy security, as examined in "*IEA, 2019, Energy security & areas of work, IEA, Paris*". National security governs the actions of a state and its relations with others based on external threats, geography and other challenges, and energy is one of them. In this concept, we shall refer the term of energy diplomacy, which is directly linked to international security since the main objective is to coordinate all national security elements for the safety and well-being of a state. More on the subject are referred in "*Bahgat, Gawdat, 2016, "Energy as a Main Driver of Foreign Policy", from Comillas Journal of International Relations*".

2.3 Macroeconomics

The second scientific field included in the methodology of this research is macroeconomics. Macroeconomics is a part of the general theory of economics studying the economy as a whole, which means it focuses on large-scale and general economic factors and how they affect or interact in the economies. More specifically, some factors studied in this field are the performance of the economies, including the payments, exchange rates etc., the structure and the decision making.

The purpose of macroeconomics is to evaluate the resources, capabilities, the overall performance of an economy and can be used to increase the national income for example, or generally boost an economy in terms of financial development. Further information on this was accessed from “*Hall. M, 2021, Explaining the World Through Macroeconomic Analysis, Investopedia*”. Energy is not only the main source of wealth for many countries around the world, but also the core for the creation of many international cooperation organizations such as OPEC. As a source of income, energy is the primary impetus for all the industrialized world and the most needed commodity for the financial and social well-being of a state. Many countries such as the Gulf states have completely based their economy upon energy exportation. Some countries are characterized as energy suppliers, while others as energy importers. The international trade of energy as a commodity is based upon this categorization. Moreover, since we are currently under a transition era regarding environmental sustainability, the energy sector is undergoing tremendous changes in terms of infrastructure or transportation. The transition to clean energy enlarges the energy market, changing the existing conditions and should be taken into consideration into a macroeconomic analysis.

In the next chapters, we will specifically examine if and how a MENA state which is totally dependent on its energy sector as an energy exporter, may face the odds of rent-seeking and/or resource curse, and therefore macroeconomic indicators shall be collected and examined individually and collectively. Since the purpose of this research is to validate a state’s (Qatar is this case) financial capabilities to become a main supplier of energy for a whole union of states (the European Union), it is important to reach this conclusion through a state analysis based and according to macroeconomic indicators. The necessary information was retrieved from “*Qatar General Secretariat for Development Planning, 2011, "Qatar National Development Strategy 2011~2016 Towards Qatar National Vision 2030"* and “*Deepak John, 2022, "Qatar provides path to global energy security" from The Peninsula*”. Collecting the correct data is the most crucial part of a macroeconomic analysis. Past macroeconomic indicators shall not be left out of the equation since they can provide valuable information about a state’s strengths and weaknesses, and when included and combined with the IR theory, can serve as a tool to forecast a state’s future actions under certain circumstances. This whole process serves in the final decision making.

2.4 Conclusions

The field of international relations alongside with macroeconomics define and discuss the interactions between states. An international economic system is influenced by the political actions of individuals which form the international politics since the international arena does not have any sort of international governmental institution. In conditions of international anarchy, it is the international actors’ actions that define what we call global politics. Vice versa, the domestic policy regarding financial decisions and economic issues, is affected by their political calculations which will be determined by the structure and the processing of global politics. Therefore, we conclude that macroeconomics and IR are totally affecting each other, they shall be used individually and combined to reach valid conclusions about a state’s actions, and they both incorporate the energy sector as a great part of their field of study. After setting the academic fundamentals of this thesis, we are ready to move forward into this analysis.

Chapter 3: Recent events (Russian-Ukraine war) that threaten energy security

3.1 Introduction

Russia's invasion in Ukraine has posed many threats on the markets and geopolitics of energy. The prices are exceeding their existing levels during the decade leading to their highest peak, which in return leads many countries to reconsider their energy supplies, as only in the case of the EU, its economy is mainly fueled by the Russian natural gas. However, economic sanctions have been imposed by the US and the European Union on Russia, while the aforementioned states have announced plans and strategies to cut off this energy dependency from Russia, since it is not the first time that Russian military aggression rose concerns about energy security. The context of climate change further puts pressure on the EU leaders for plans that can be processed in short-term but with a long-term output.

Russia has always been the main gas supplier for Europe as it is one of the top oil producers and exporters globally as well as a giant in NG markets. The country is a major player in global energy markets alongside with Saudi Arabia and the USA and its federal budget heavily relies on revenues from oil and natural gas. Since the beginning of the crisis due to Russia's invasion in Ukraine, implications have taken place and a possible energy crisis scenario drove the IEA member countries to release oil from their emergency reserves in order to reduce the strains in markets. However, the results of this ongoing war are now clearly visible among the European countries with oil and gas prices augmenting and eventualities of power shortages becoming possibilities, which after all directly threaten the energy security.

3.2 Defining energy security

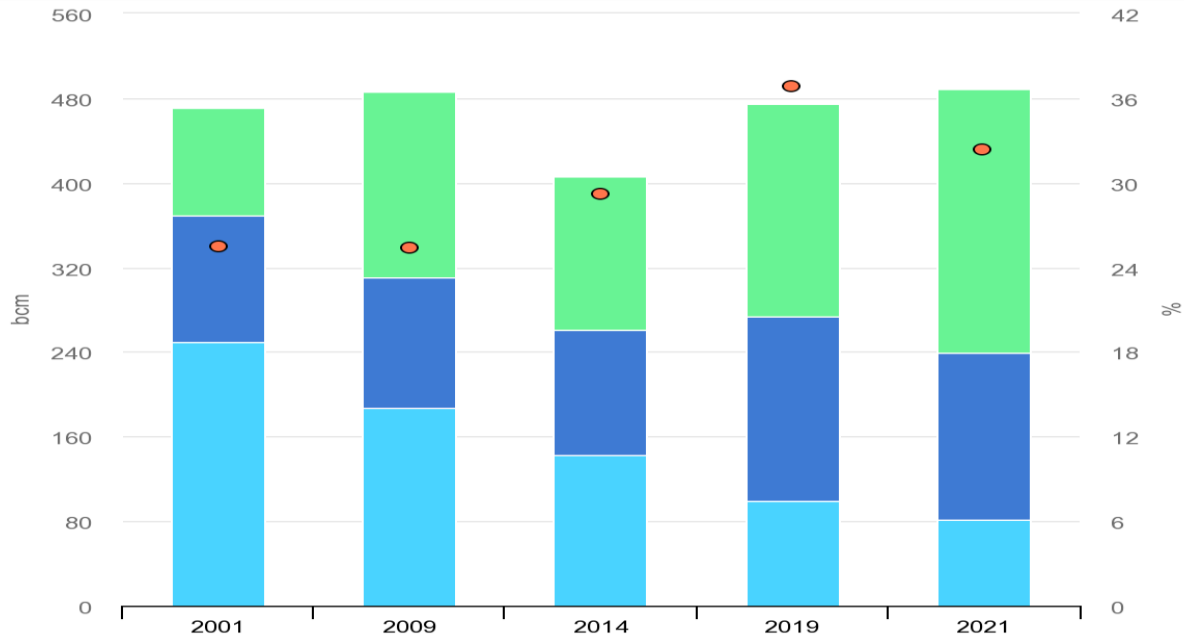
But what is energy security? According to IEA, (IEA, 2019): "Energy security is a multi-dimensional concept defined as the uninterrupted availability of energy in affordable prices" (IEA, 2019). In a long-term aspect, energy security ensures that through investments the energy supply lines up to the economic developments and the environmental issues and needs. In a short-term context, it focuses on the ability to react to sudden supply demand changes. Energy security has also been a tool in the broader context of international relations since it ensures political and social stability, military might and economic development. It is different for each country depending on the geographical location, the natural resource subsidizing, the international relations, the political system and economic deployment and the theoretical views and perceptions of the world. This explains why most IEA members use different energy mixes, a majority of which have a substantial share of oil in them since oil is expected to remain at the top of the global energy demand, to ensure an emergency response capability in case of supply disruptions. In addition, energy security should include weather and climate resilience as well as digital resilience.

3.3 EU's gas supplies

As we can see from Figure 1, (IEA, 2022) EU's and UK's reliance on Russia's gas supplies has escalated over the last 10 years. Though consumption has remained relatively the same over the examined period, production has decreased by 1/3 creating a gap filled by increased imports which rises the region's total demand from 25% to 32% in 2021. Ukraine on the other hand is still an

important transit for Russian natural gas to Europe, despite the creation of other significant transit corridors such as the Nord Stream. The country also heavily relies on Russia to cover its own domestic energy demands:

Figure 1: Share of Russia in European Union and United Kingdom gas demand, 2001-2021



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Domestic production, Russian gas supply, other gas-supply, Share of Russia

Since Russia declared a military invasion to Ukraine, the gas supplies to the EU markets have been critically reduced during the heating season. Europe has not enough storage sites but nevertheless Russia proceeded in reducing its piped gas supplies. While the contractual capacity is at 109 mcm/d, Russia reduced the gas flows that are transferred via Ukrainian grounds to 55 mcm/d. Meanwhile, other suppliers expanded their deliveries to the EU market through the available supply routes. The US and Qatar supplied more than ½ of the LNG imported in Europe. This highlights that energy security in Europe is benefited from EU’s transatlantic relations. Consequently, EU’s gas storage sites that are owned or control by Gazprom are below their working storage capacity (IEA,2022). EU manages to avoid a more vulnerable position and possible supply disruptions thanks to the increased LNG imports as previously referred and their importance in the energy security mix.

It was a matter of time, considering the above, for the prices of natural gas to rise significantly and become extremely volatile. The Russian withhold to pipeline flows alongside with adverse weather conditions which increased the demand, and low storage levels, resulted to a surge of the European prices by 50% day-on-day following the Russian invasion.

3.4 Energy and climate crisis

EU's goal towards net-zero emissions by 2050 are currently affected – there is the need of replacing production elsewhere to avoid immediate inadequacies in the production of fossils from Russia. There are other options for the EU to untangle itself from Russian gas even more quickly, but with significant tradeoffs. It could, for example, increase the use of its coal-fired fleet or usage of alternative fuel such as oil within existing gas-fired power plants, which could decrease gas imports from Russia by more than a half and in a relatively short time scale. However, these options are not in line with the European Green Deal and therefore not backed up from the IEA. Referring to the production, the most suitable projects are the ones with short lead times and quick payback periods for e.g., shale oil and gas. New infrastructure is also needed to diversify Europe's supply from Russia, as many countries are looking to install LNG import terminals which may be capable to also facilitate future imports of hydrogen, with careful investment planning. But as to today's crisis, demand shall be reduced with the rapid disposition of RES and other low emission technologies, as well as with incorporating dynamically the nuclear power into the energy mix. It is a paradox though how in a world that aims to limit global warming to 1.5 °C, the new data following Russia's invasion justify new large-scale infrastructure. Even though it seems rational that some companies are looking forward to the exploration and approval of large and long-term supply projects, the immediate needs that this crisis created cannot be met with projects that will take many years to start producing. They also carry a risk of locking in fossil fuel, contrary to the current climate goals, and not live up to cover the investment costs in case the world meets its net-zero goals by the middle of the century. So, this crisis also carries the risk of an even larger environmental challenge for future generations to face since today's larger emissions mean tomorrow's greater reductions, if we consider maintaining the desirable emission budget. And the world is not capable of choosing between solving the energy or the climate crisis.

3.5 Geopolitics of energy context

Europe is experiencing a crucial reexamine of its energy sources and accomplices. But nowadays' double challenges related to the climate crisis and the situation between Russia and Ukraine highlight the need for a comprehensive approach to energy arrangement including both climate and geopolitical hazard. Climate change is becoming a crisis requiring an immediate shift away from fossil fuels. Beside of the Russia-Ukraine war, climate mitigation exists and puts pressure upon all states to untangle their economies from the usage of fossil fuels. Russia is characterized as an “authoritarian petrostate” and has been one for a long time along with 20 such petrostates, defined as nations that base over 1/2 of their export revenues to fossil fuel extraction. It is obvious that these states will resist any decarbonization efforts which further complicates the goals set to the Paris Agreement. Considering the above in relation to Russia's invasion in Ukraine, it is clear that energy and climate crisis should be addressed together. Europe's security challenges are severe despite the recent pledges to move away from Russian energy because it still relies heavily on natural gas, oil, and coal. Germany, which is Europe's largest economy cannot risk a possible financial breakdown by following Biden's lead directly on cutting of Russian imports. This is a geopolitical vulnerability Putin's aware of. In addition, following Russia's invasion in Crimea in 2014, Germany increased its reliance on Russian natural gas. As reported, prior 2014, Germany

imported 35% of its natural gas from Russia, which increased to 55% at the time of the invasion in Ukraine. The European Council made efforts to cut down gas imports by enhancing energy efficiency and diversifying and developing domestic sources. However, diversification and modernization of energy infrastructure in Europe has not yet taken major steps. Along with the UK, Germany has announced plans to rapidly expand its wind and solar power, targeting to generate almost all the country's electricity from RES by 2035 (*Early. & Saush, 2022*). It also froze the approval process of the Nord Stream 2 gas pipeline, which linked Russia to Germany via the Baltic Sea. French government expressed its support to the IEA plan of reducing gas imports by 2/3 by 2030. Other European nations rely for more than 75% of their oil on Russia (*Nevitt, 2022*). The dilemma is that by importing energy from Russia, EU indirectly financially supports the war, while by cutting off imports completely, energy costs will rise when they are already at unprecedented levels. As Finland currently seeks NATO membership, there are scenarios of Russia weaponizing its energy sources for punishment, as happened with Bulgaria and Poland. Adding to those possibilities, Putin expressed his will to redirect energy exports towards the rapidly growing markets of the South and the East.

3.6 US and 3rd parties' response

United States' response to Russia is relatively aggressive via several executive actions, since the US, due to the "fracking" technology and the shale gas revolution has become a highly energy-independent nation contrary to its NATO and European allies. Already since 2014, each USA leadership placed sanctions against Russia, declaring the situation in Ukraine a national emergency. Examples of these sanctions are Biden's decision to prohibit new American investment in Donetsk and Luhansk, ban completely importation of Russian oil in the US and also prohibit any new investments in Russian Federation. Biden also invoked his authorities in the 1950 DPA (Cold-war era statute to strengthen the American industrial sector for national security) to lead investments towards clean energy technology. The goal is to expand domestic battery production capabilities to secure national defense. DPA could be further extended to address 2 energy security related issues: First, USA's lack of rare minerals which are essential for battery production and clean energy technologies and the state's turn to China which owns 2/3 of the global cobalt reserves. Second, to increase federal loan guarantees to the clean energy sector.

So, considering the situation with Russia and Ukraine, US and Europe should pay attention to China's and India's response to this Russian energy disruption. China is the largest GHG emitter and energy market, while India is the 3rd largest GHG emitter. Unlike USA and Europe, those 2 countries chase cheap energy, and they most likely benefit from Putin's turn away from the West to fresh energy markets. Concerning the climate crisis, future climate progress depends on China and India's intentions to do a transition into clean energy. Since NATO members cannot directly control this transition, they can only lead the way in developing affordable clean energy technologies. But for now, China and India are against a step-by-step abrogation of coal power and fossil fuel subsidies, which further negatively impacts the climate negotiations. Furthermore, Russia's permanent seat on the U.N Security Council serves as an obstacle to possible future climate progress. Until the Russian-Ukraine war is resolved, any action from the Council will stay

on ice. This geopolitical context urges countries to domestically commit to clean energy and ally with like-minded countries.

3.7 Conclusions

Concluding, global resource markets are highly affected from the recent conflict as the two countries are major suppliers of energy. Supply disruption and the need for an immediate response to the crisis, led to the imposition of economic sanctions, trade restrictions and policy interventions like no other, which consequently extremely raised the prices (*Biol, 2022*). Before the conflict, during the COVID-19 pandemic, demand for global resources surpassed supply and raised the prices as economies recovered. These circumstances increased the levels of food and energy poverty, leading the world to a global cost-of-living crisis. The war in Ukraine is most likely to worsen the already critical situation, and threaten human security, especially among populations that are considered vulnerable in terms of income, affecting all economies in a context of high inflation after the pandemic era and limited fiscal capacity. Furthermore, these threats can also trigger a domino-effect of existing socio-economic and political pressures, such as supply-chain disruptions, market volatility, resource insecurity, and geopolitical changes leading to further turbulences and conflict in other parts of the world. Occasional price or supply shocks as a consequence of climate change create an adverse context as well. The Russia–Ukraine crisis is posing new challenges to the international community, with the augmentation of the cascading risks previously referred, being already a part of a new reality in the face climate change.

Chapter 4: Qatar’s presence in the global energy environment

4.1 Introduction

Since Europe’s dependency on Russia is no longer viable for energy security and sustainable development, the only immediate option is to search for new suppliers. A fairly discussed option appears to be the state of Qatar, which among other Middle East nations has been a powerful player in the energy sector, and also a highly ranked GDP country since it has a significant capability to produce and export crude oil and natural gas, compared to its proportionate small population. The state was a member of OPEC until their departure in 2019 in search of increasing autonomy from their neighbors in the Persian Gulf with whom there have been poor relations so far. According to Bahgat, (*Bahgat, Gawdat, 2016*): “Natural gas production has had an important increase since 2007, and it is now the primary fuel chosen for domestic consumption. Qatar’s first oil discovery was in the late 1930s, referring to the oil deposits in Dukhan field, and since then the country claims to have 1.5% of global oil reserves while producing 2% of the global oil economy” (*Bahgat, Gawdat 2016*). The sectors of residential and transport consume the largest amount of oil.

4.2 State of Qatar: Data

Qatar mainly depends on fossil fuels for its energy production. Globally, fossil fuels are also the main energy source but in Qatar a greater percentage of the electricity is produced from fossil fuels since the greatest share of electricity generated from fossil fuels, including coal, natural gas, and oil, reaches 99,98% (*GlobalPetrolPrices, 2022*). The country has a very large consumption of oil. This is due to the country’s limited resources in sectors such as agriculture, forestry, and fishing

since most of its terrain is primarily desert. This high economic dependency on oil in a domestic level currently reaches 40% of the GDP while 63% is based on government revenues. In 2016, the percentage was higher at 51% which led the government of Qatar to come up with “Qatar National Development Strategy” due to the instability of oil prices. In this Strategy, Qatar aimed to accomplish the Qatar National Vision 2030, based on four main pillars including economy, policies, regulations, and political motives. In order to sustain financial prosperity, the plan focuses on enlarging the value of the state’s productive base, promoting increased efficiency to guard against economic instability, and the diversification of the economy alongside with the encouragement of innovation and discovery. These targets are set into the context of Qatar’s hydrocarbon revenues continuous decrease to promote RES technologies instead, as well as the exhaustion of oil resources. As for extending the base of production, it revolves around attracting tourism and expatriation to the area and providing better housing and transport to the citizens in terms of quality. However, this process requires constant construction, causing frustration to the population throughout the process. Additionally, the government’s adaptation of a more stable economy while maintaining the national wealth should be gradually and cautiously processed to not affect primarily the population’s living standard, although it comes with a cost to Qatar’s government since the hydrocarbon assets are property of the State. As previously referred, Qatar’s terrain is mainly desert, which puts further restrictions on the expand of its productive base, therefore, according to Qatar General Secretariat for Development Planning, (*Qatar General Secretariat for Development Planning, 2011*): “the Development Strategy is focused on raising efficiency on the existing physical and social structures, meaning managing inefficiencies in the production, distribution, and use of water. Generally, a more diversified economy is a more stable economy and less vulnerable to the cycles of oil and gas prices” (*Qatar General Secretariat for Development Planning, 2011*).

4.3 RES and solar energy potential

Discussing renewable sources, the mix in Qatar’s production is negligible, reaching only 0.08% (*Ritchie et al, 2022*). But with the aim of reaching 20% non-gas energy by 2030, Qatar has made steady steps towards energy diversification through investments in PV solar energy. According to Zafar (*Zafar, 2021*): “regarding the average daily sunshine of around 9.5 hours, low-cloud cover conditions and plentiful space, there is great scope for large-scale solar power projects in the country” (*Zafar, 2021*). This step creates opportunities for U.S companies that can act as the suppliers to a ground-up photovoltaic operation. With the population growth and the expansion of the industries, Qatar’s government develops a strategy for the country to generate and properly conserve its energy in a more sustainable and efficient way. Part of this energy mix campaign is the 800MW photovoltaic (PV) solar plant project which has been under the BOOT model (build, own, operate, transfer) for a period of 25 years. Moreover, considering Qatar aims to boost its natural gas exports in the forthcoming period due to the rise in global demand, investing in solar energy will cover its domestic demands and therefore free up more natural gas for export. Considering the country’s beneficial geographical position related to its solar potential, Qatar has set a target of 2% RES contribution by 2022. Besides PV, the State has also a very good potential for CSP/concentrated solar power, which can be effectively utilized in seawater desalination processes and large-scale power generation. Currently, developing solar capacity through research

centers and a number of institutions is prioritized as Qatar is transforming into a knowledge-based economy, and also the number on institutions and companies in the solar sector has rapidly multiplied in recent years. According to Bohra & Shah (Energy Reports, Volume 6, Supplement 2, Pages 194-198): “Kahramaa, the state electricity and water utility, plans to install solar panels on redundant surfaces (roofs of power stations, water reservoirs) in order to utilize the existing power transmission lines, a plan that will reduce construction costs. Solar energy has multiple advantages for Qatar. It promotes energy security, reduced GHG emissions, opportunities for employment, as well as water and food security. There is scope for up to 60,000 GWh per year of electricity production from solar PV followed by investments in grid-scale, intra-day battery storage and cross-border transmission capacity. By adding renewables to the grid, the carbon footprint is reduced while at the same time the availability of low-carbon hydrogen for export is increased” (Bohra & Shah, 2020).

4.4 Relations with 3rd parties and international presence

Returning to its oil and gas reserves, Qatar is ranked 13th in the world on its oil reserves, which are equivalent to 402.1 times its annual consumption (worldometers, 2022). It is also 3rd in the world on natural gas reserves, which also cover 602,3 times its annual consumption. The central energy company in Qatar is the former QP – Qatar Energy. With this ratio of production/consumption, Qatar is also a major exporter, with the main importers being in the Asia region and more specifically Japan, China, and India. It also imports from the US and with that bilateral trade taking place, a close economic and trade relation has formed which makes these two international actors allies since Qatar is also a NATO ally. The country also imports from China, UAE, Japan, and Germany. This shows bonds with the strongest markets at the moment as well as at the foreseeable future, areas that Russia is aiming at energetically penetrating which will create a void in the EU region. And according to IR theory, each void in the international arena shall be covered. It is safe to assume that recent developments will offer Qatar an opportunity to become a standard energy supplier for Europe. Qatar is also a member of OPEC, Organization of Islamic Cooperation, Gulf Cooperation Council, Council of Arab Economic Unity, and a strategic ally with China. Qatar, now rich in oil and natural gas, is one of the wealthiest countries globally. Since 63% of its GDP derives from manufacturing, construction and financial services, the country weathers the global decline in oil prices. The Qatari leadership wants to increase production capacity of the LNG, the majority of the GDP relies on oil & gas and the relevant industrial activities. This is a clear effort to diversify its sources in order to decrease dependence. According to Ryan Lance, Chairman and CEO of ConocoPhillips, Qatar and LNG are a path to global energy security and sustainability since LNG in Qatar is needed to power the global economic prosperity and help protect against climate change (The Peninsula, 2022). This statement is referring at the development of the North Field in partnership with Qatar Energy, which is the world’s largest gas field with the lowest cost of supply and lowest GHG intensity globally.

Since it is one of the largest producers of natural gas globally, Qatar seeks to play a bigger role in contributing into global energy demands. Qatari leadership is aware of the geopolitical worth of the country as a “peacemaker”, playing a part into promoting conflict resolution and stability in the Middle East. In the past years, Qatar has significantly contributed to peace mediation efforts,

such as helping the United States to evacuate a large number of people from Afghanistan in 2021 and indirectly helping to revive the Iran nuclear accord between the parties (*World Economic Forum, 2022*). The country is also in touch with both sides in the Russian-Ukraine crisis in hopes of finding a peaceful solution. Due to its large production in LNG, Qatar is looking to participate in the improvement of energy security, which will consequently lead to market stability, especially given the disruption on European countries due to the Russian invasion in Ukraine. Sustainability will not be out of the equation, particularly when it comes to emission-reduction technologies and cleaner energy.

However, there is always another side of the coin. Analysts and researchers are doubting Qatar's potential as a main supplier for Europe and are predicting a serious limitation in its energy capabilities. According to research conducted by Nikolay Kozhanov (*Middle East Institute, 2022*) there are advantages and disadvantages in Qatar's expansion into the EU gas market. On the one hand, Qatar will strengthen its presence in the Western European market by displacing Russia out of Eastern and Southern Europe. The state has clearly demonstrated its willingness to aid in the consumption when called upon. In 2021, Qatar helped UK cover the existing demand by delivering LNG consignments that were initially destined for Asia. This gave Doha the "supplier of last resort" status, referring to its readiness to assist the British authorities in case of gas interruptions in the supply chain. Additionally, Qatar's positiveness in resolving the US and EU's gas dilemma represents the country's intention to strengthen its ties with the Biden administration. Since the al-Ula agreement between Qatar and the so-called boycott countries is probably a temporary cease-fire that could be violated any day soon, searching for alliance with the US by capitalizing politically on its economic resources, is a rational move. On the other hand, however, Doha does not have the required free volumes of LNG to export, therefore that stands in the way of ensuring EU's energy security in a decisive way. In order to secure there will be the full demand in relation to its LNG production, Qatar follows a certain market strategy which aims on maximizing the NG share sold in long-term contracts, while at the same time it minimizes the NG sold in the spot market. (*MEI, 2022*). Therefore, the share of Qatari LNG traded in short-term contracts was around 10-13% annually for the year 2022, of which the EU accounted a pretty small percentage (2.8 bcm from around 9.7 traded). Even if the remaining bcm are redistributed from Asia to the EU, considering that the total demand in the European market is more than 326 bcm, Qatar could not effectively influence the gas market balance or act as a substitute for Russian supply shortages. Recognizing the above, Doha has called upon other gas producers (and consumers) to act in a collective manner as an international community in order to offer assistance in EU's energy dilemma (*Middle East Institute, 2022*). Moreover, EU's regasification infrastructure decreases its ability to import high LNG volumes.

There are plenty of other factors too, such as that Doha primarily aims for the Asian markets and secondarily for the European one. With a consumption less than 1/3 regarding Qatari LNG exports with only occasional raises, Qatar can divert extra gas from the Asian market to keep at arm's length from overheating when needed or simply to have extra financial benefits. This took place this winter when the European prices for LNG were higher than those in Asia. However, Asia is still the priority concerning the long-term since its dependence on natural gas will continue to grow in the upcoming decades, while its market operating environment is much more beneficial for

suppliers compared to the over-regulated conditions in Europe. Considering the above, Qatar is not currently interested in redirecting a considerable part of LNG export flows from Asia to the EU (MEI, 2022). It would temporarily cause a further increase in prices in Asia, which could potentially lead to market overheating, making alternatives such as coal or oil seem more favorable, and reducing consumer confidence in Doha as a reliable supplier. Moreover, according to the Middle East Institute (MEI, 2022): “there exists an intense competition regarding present and future Asian LNG market share between major producers such as Qatar, Australia, and the U.S, and Qatar is temporarily at a low point. In 2021, the U.S. not only threw Qatar from second to third place in the ranking of LNG suppliers to China, but also recently concluded a vital contract for the supply of NG to Beijing” (MEI, 2022). Under these circumstances, Qatar is unable and has zero benefit of focusing exclusively on the European markets. Adding to the above-mentioned, US’s offer to aid the EU could be motivated by the future potential of debilitating Qatar’s ability to extend its presence in Asia by rerouting part of Qatar’s LNG to the EU market. Qatar is ready and capable for a market share war due to its low production cost but wants to avoid this economic rivalry leading to political tensions, as Qatar’s main foreign policy is dominated by maintaining both its influence and objectivity, serving as a mediator in international conflicts. In summer 2021, during the current Ukrainian conflict, Doha declined in joining the "Crimean Platform" initiative targeting Moscow, while agreeing to enter discussions about supplying Ukraine with Qatari LNG via Poland. Since 2014, Qatar avoids using its gas resources neither as a means of political pressure, nor to expand its own or its partners’ interests against a 3rd party. For example, even when there was tension with Egypt and the UAE, Qatar did not consider or made any effort to breach its energy contracts and withhold energy supply from these countries. This serves as another obstacle in exporting gas to Europe as well because any abrupt fundamental increase in Qatar’s LNG supplies to Europe would be perceived as a hostile move with political incentives by the Russian Federation. Qatar has previously used European dissatisfaction with Russia to expand its sales in the EU as in the cases of Poland, Italy, and France, where it is steadily increasing its presence. However, in all of these cases, these moves were considered as market-driven and not politically motivated. This statement is furtherly secured by Qatar not entering the Austrian or German markets, which are considered a main domain for Russia. It is a logical move for Doha to continue in the same line as it works towards building its relations with consumers and competitors in Europe.

4.5 Qatar’s global energy strategy and the EU

Qatar is not interested in providing short-term LNG supplies on the spot market, but that does not mean overall that Qatar does not want to or will not help Europe. Even though Doha is not interested in being a short-term immediate solution to help cope with another urgent situation, it is yet interested in the EU market in the long run, especially in the case scenario where it provides a more favorable state such as the capacity for larger export volumes, and a mixture of short- and long-term contracts or a longer timeframe in general. Qatari leadership officially stated that securing European energy security is above the war between Russia and Ukraine and this is probably what that statement meant according to the Middle East Institute (MEI, 2022): “Although there are not enough LNG volumes for export now, it is possible in the next five years that Qatar will face a surplus of them, which means a remarkable increase in production from the current 106

bcm to 175 bcm per year by 2027, co-existing with the impending expiration of a number of current supply contracts, as well as the authorization of the U.S.-based Golden Pass NG liquefaction plant mutually owned by Qatar Energy and ExxonMobil in 2024-25. Under these circumstances, Doha is already conducting new contracts with Asian consumers to secure ensuing demand for its gas, yet the entire expected future volumes of LNG are still higher” (MEI, 2022).

Given Qatar's actions to guarantee future demand for its gas, the EU may soon be able to acquire more of its LNG. Qatar preferably chooses to diversify its markets and also has a flexible policy in pricing, which offers EU the opportunity to get contracts on favorable terms. However, since Qatar will be able to sell its gas in any case, it is objectively in a more beneficial position regarding the negotiations. As a result, Doha can use this negotiation head start to achieve more favorable conditions considering its expansion to the European market, in order to compensate for the potential loss of market share in the more beneficial Asian market. This is why Qatar has already set 3 key conditions to the EU in order to obtain Qatari gas: Firstly, the EU must not allow the resale of any LNG supplied outside Europe. This is to avoid any competition with Qatar's direct supplies to Asia or elsewhere. Secondly, Brussels shall close the investigations that began in 2018 concerning Qatar's market policies in Europe. Thirdly, Doha insists on following the contractual principles in the trading process instead of the principles of spot trading. On the one hand, if Europe accepts these terms, Qatar will contract a proportion of its LNG production capacity for the long-term and will be able to bring this up as the outcome of commercial negotiations and not a politically motivated attempt targeting Russia's interests. On the other hand, if Europe refuses, this will serve as a justification for Qatar not being able to help Brussels towards the US. So regardless of EU's choice, Qatar wins the game.

4.6 Conclusions

Concluding, Qatar has a growing influence in solving the international energy crisis. It is a wealthy state with a huge impact on global energy markets, strategically planning its steps to avoid tensions in an already tensed international arena and working towards guaranteed exports according to the foreseeable demand. It is certainly a favorable ally for the EU. Given the recent events and how they are going to play out, the upcoming months will be crucial and will determine both EU's energy security and Qatar's LNG export strategy. Qatar's final decision will be determined by combining long-term economic and political considerations. Having cited both sides of the coin in this chapter, we will continue our research by conducting a state analysis with macroeconomic indicators to ascertain whether Qatar is a suitable alternative supplier for Europe or another state that will sooner or later fall into the disfunctions of its energy dependency to support its domestic economy as other states of the MENA region.

Chapter 5: Qatar's state analysis according to macroeconomic indicators

5.1 Introduction

Unlike microeconomics, which look at single factors that affect individual decisions, macroeconomics study general economic factors. They are studying the behavior of the economy as a whole. For this reason, macroeconomic theory tends to be very complicated, since they are influenced by a variety of factors which are analyzed with many economic indicators in order to

show the overall health of the economy. According to Investopedia, (*Investopedia, 2021*) “macroeconomic analysis broadly focuses on three things: national output (measured by gross domestic product/GDP), unemployment, and inflation. GDP refers to the total amount of goods and services a country produces. The unemployment refers to how many people from the available pool of labor (the so-called labor force) are unable to find work. In periods with high GDP, unemployment rate is usually low, indicating growth. Inflation is the rate at which prices rise and is mainly measured in two ways: with Consumer Price Index (CPI) which gives the current price of a selected basket of goods and services and the GDP deflator which is the ratio of nominal GDP to real GDP” (*Investopedia, 2021*). As previously stated, this chapter will be dedicated to a Qatar - state analysis, according to macroeconomic indicators. The data used will be retrieved from “TradingEconomics.com”, last updated on Saturday, September 10, 2022. There will also be a comparison between the 2021 data which will be retrieved from the “World Bank”. The indicators we are about to examine include GDP, GDP per capita, GDP growth, central government debt, budget deficit, inflation, unemployment, and current account balance. In order to understand the prospects of a country’s national economy and therefore its position in the international field, we shall study the macroeconomic aggregates. Understanding a state’s image through macroeconomics offers stable and certain conclusions.

5.2 2019-2020 state risk assessment according to Coface

We are going to begin with a risk assessment analysis conducted by the Compagnie Française d'Assurance pour le Commerce Extérieur (*Coface in Central and Eastern Europe, 2022*), associated with the major macroeconomic indicators Qatar is showing and also taking into consideration estimated and forecasted data, the country has certain strengths and is also prone to certain weaknesses. It not only has the world’s 3rd largest natural gas reserves but also possesses sizeable oil reserves. The country’s public debt is pretty low, and its strong public accounts is a worth-mentioned strength. We also observe a high GDP per capita and a business-friendly environment since up to 100% foreign ownership is allowed in all sectors, combined with low level of corporate tax. According to Coface, (*Coface, 2022*): “The state also enjoys social and domestic political stability as well as reduced geopolitical risks in line with GCC reconciliation. Last but not least, there exist efficient infrastructure and logistics services. However, Qatar is still a small economy mostly dependent on hydrocarbons and has a considerable exposure to volatility in energy prices” (*Coface, 2022*). These statements derive from the data shown in Table 1:

Table 1: Major Macro Economic Indicators

MAJOR MACRO ECONOMIC INDICATORS

	2019	2020	2021 (e)	2022 (f)
GDP growth (%)	0.8	-3.6	3.7	4.0
Inflation (yearly average, %)	-0.7	-2.7	2.5	3.2
Budget balance (% GDP)	4.9	1.3	2.8	5.7
Current account balance (% GDP)	2.4	-2.4	4.0	4.0
Public debt (% GDP)	62.3	72.1	59.0	53.0

(e): Estimate (f): Forecast

Retrieved from: Coface Central Europe, 2022

As we can see in Table 1, during the year 2020 we see a negative GDP growth, which states a recession in the national economy, probably from the aftereffects of the Covid-19 pandemic. However, the estimations for 2021 are positive and even more for 2022. Inflation is negative, leading to the so-called deflation where the supply exceeds the demand and therefore the prices fall, a situation which is also estimated to change in 2021 and 2022. While deflation is not beneficial for an economy in general and for businesses to be more specific, it surely is for the standard of living and for the majority of people who can enjoy lower prices in products and services. As for the budget balance, the great surplus of 2019 fell during the pandemic, but it is still not reaching negative levels and it is estimated to rise again during 2021 and 2022. The current account balance was also negative following the peak of the pandemic era, reaching -2.4% of the GDP, a serious decrease from the 2.4% of the GDP of 2019. The estimations and forecasts however are positive as in each index so far. Public debt rose by almost 10 points in 2020, equal to 72.1% of the GDP, estimated to fall to lower levels that it already was in 2019, reaching probably 59% of the GDP by 2021 and further falling to 53% by 2022.

Further into the risk assessment analysis, we observe a resilient growth in 2022. The strong demand for gas and its rising price alongside with other major events such as the holding of the FIFA World Cup 2022 and the re-opening of the economy in addition to the vaccination campaign, are factors that can promote and ensure economic growth in 2022. Referring to the Covid-19 consequences, already by November 2021, 76% of Qatar's total population had been fully vaccinated. This led the authorities to remove all mobility restrictions in late-July 2021, a decision that boosted consumer and business confidence. In November of 2022, private consumption (which is

approximately 25% of the GDP) will accelerate ahead, primarily due to the FIFA Soccer World Cup that will be hosted in Qatar. The completion of the vaccination campaign and the organization of the World Cup are expected to revive tourism as well. Tourism receipts (which constitute around 10% of GDP in normal times) are expected to reach 8 billion USD in 2022, doubled from an estimated of 4 billion USD in 2021. The country has around 100 hotels and tourism related accommodation projects under construction and according to data, Qatar will have nearly 185 hotels and services apartments by the end of 2022. Tourism will be further benefited from the removal of the blockage by Qatar's neighboring countries allowing a higher level of revenues, considering that 30% of total tourist arrivals in Qatar were from the Middle East in 2019. Improvement of the relations with neighbors will also create new opportunities for Qatar to attract investments. Within the Vision 2030 program, up to USD 6.9 billion are intended by the authorities for transport and infrastructure projects ahead of the World Cup, and approximately 3 billion for event facilities and other related projects. These investments will not contribute as much to the national output compared with the 2015-2019 average, because many of the event-specific projects are close to completion. Nevertheless, Qatar Petroleum (also going by "Qatar Energy"), in order to expand its existing oil and gas assets, has announced plans to spend USD 82.5 billion in capital expenditure between 2021-2025, an act that will sustain investment (40% of GDP), with the largest project being the North Field Expansion. There is also a second expansionary project, related to the Dukhan onshore oil and gas field. As we've already mention in the previous chapter, the construction of infrastructure continues with Kahramaa, Qatar's General Electricity and Water Corporation, aiming at implementing independent water and power projects in order to increase power capacity.

5.3 Qatar's fiscal data

Regarding Qatar's external and fiscal accounts, the high levels of energy prices and demand will lead to Qatar's external position remaining strong due to the resulting continuous current account surpluses. However, Qatar's willingness to expand into the Asian spot markets that comes in line with its decision to lower its gas export prices, will negatively influence the export revenues. The expansion of the gas North Field will gradually rise the hydrocarbon exports (which constitutes 90% of the total exports). On the other hand, the completion of many projects related to the World Cup will decrease import demand in 2022. The fiscal revenues will be sustained due to a growth in hydrocarbon revenues amid higher business activity. A possible introduction of a 5% VAT, likely ahead of the World Cup, will also support these revenues. Notwithstanding, revenues will continue to remain mostly dependent on hydrocarbon revenues (40% of total revenue) and fiscal spending will drop in 2022 due to the fall in capital expenditures and the roll back of COVID-related expenses. Most of the state-owned enterprises tap into the international markets in order to raise the funds needed to pursue new investments. For example, Qatar Petroleum sold USD 12.5 billion in bonds in June 2021, its first issuance. In accordance with higher budget surplus, Qatar's debt position is also expected to improve in the foreseeable future. Considerable assets in Qatar's sovereign wealth fund, around 170% of GDP, in addition to foreign exchange reserves representing around 40% of GDP, will continue to protect the country from any external shocks, reducing this way the fiscal risks.

5.4 Qatar's presence in the Middle East

We have previously referred to Qatar's role as a mediator in the Middle East region and how this is important for its place in international relations. In January 2021, Saudi Arabia, the United Arab Emirates, Egypt, and Bahrain (the quartet) decided to restore their relations with Qatar and therefore terminating the blockade they posed in 2017. In the context of any agreement between Iran and the US, a higher need of regional cooperation will be needed, thus the aforementioned countries' relations are expected to be further improved in 2022. Qatar hosts one of the biggest U.S military bases in the world and is also declared a NATO ally, which will also allow the quartet to keep warm relations with the US by holding closer ties with Qatar. The country's close relations with Turkey and Iran reinforce its role as a mediator in the area. Qatar and the U.S. also agreed upon Doha representing the diplomatic interests of the U.S. in Afghanistan. The country, under its current leadership, will maintain its domestic political stability in the upcoming period along with its high per capita income. We should not ignore however that the dependence of fiscal and export revenues on hydrocarbons will leave the country vulnerable to any sustained fall in prices.

5.5 2021-2022 data analysis

Moving on to the data collected from the World Bank [*World Bank, 2021*] and Trading Economics [*Trading Economics, 2022*] which are the most recent ones, we have created Table 2 which contains all public indexes related to Qatar's economy from 2021 and 2022. Unfortunately, as for the central government debt the most recent data are not yet publicly known. The data collected are shown below:

Table 2: Qatar's Macroeconomic Indicators 2021-2022

INDICATORS	2021	2022
GDP (USD Billion)	179.57	180.88
GDP per capita (USD)	61.276	-
GDP annual growth (%)	1.5	2.5
Central government debt (% of GDP)	71.8 (2020)	-
Budget deficit (% of GDP)	0.24	-
Inflation rate (%)	2.3	4.98
Unemployment rate (%)	0.3	0.1
Current account balance (%)	14.6	-

Retrieved from: World Bank, 2021 and Trading Economics, 2022

5.5.1 Qatar's GDP, GDP per capita, GDP annual growth

Qatar's GDP, GDP per capita as well as GDP annual growth rate are indicating a highly developed country. Qatar has a comparably small population of only about 2.88 million people, and this is one of the prime reasons why Qatar is regarded as one of the richest states in the world. The small population together with the amount of petroleum production pledges them the title of the wealthiest country in the world. According to the World Bank, Qatar comes 4 in ranking for the top 25 countries by GDP per capita for 2020 (*World Bank, 2020*). According to Investopedia, (*Investopedia, 2022*): "A nation is typically considered to be "developed" if it meets certain socioeconomic criteria. In some cases, this can be as simple as having a sufficiently developed economy. Where that is not adequate, other qualifiers can include but are not limited to a country's GDP/GNI per capita, its level of industrialization, its general standard of living, and/or the amount of technological infrastructure it has. These factors are typically interconnected (i.e., the level of available technology can impact the amount of GDP a country is capable of generating, etc.)" (*Investopedia, 2022*).

5.5.2 Qatar's public debt

Moving on to Qatar's public debt, a 2013 study by the World Bank - "*Finding the Tipping Point - When Sovereign Debt Turns Bad*" found that "if the debt-to-GDP ratio exceeds 77% for an extended period this indicated a slowdown of the economic growth. Specifically, every percentage point of debt above this level costs the country 0.017 percentage points in economic growth" (*World Bank, 2013*). In Qatar's case, the percentage is at 71.8% as last measured in 2020 indicates a country with a stable economy, especially during the pandemic era at this point, with low to zero possibilities of negatively affecting the production to the point it cannot pay off its debt or slowing down leading to a recession. It exceeded however the estimated percentage shown in Table 1. The debt-to-GDP ratio shows the strength and resilience of a country's economy and the possibility of paying off its debt. It is often used to facilitate the comparison between countries or between a nation's economic output (as measured by gross domestic output) and its debt levels or to determine a country's likelihood of heading for economic turmoil. A high ratio, exceeding 100%, means that the production of a country is not enough to pay off its debt, whereas a ratio of 100% indicates just enough output to pay debts. A lower ratio on the other hand shows enough economic output to make debt payments (*Amadeo, 2022*).

5.5.3 Qatar's budget deficit

Qatar's budget deficit is pretty low at the moment. While in 2017 there was a deficit in the country's budget, this was non-permanent and went back to surplus in 2018. During 2019 it began to shrink again and given the decrease in oil and gas prices, it moved into deficit of 2.1% of GDP in 2020. However, in 2021 the percentage is only at 0.24% and according to Oxford Economics Qatar's budget surplus is expected to rise to about 6% of GDP in 2022, due to higher oil and gas revenues. Oil production capacity continues to increase, but according to Gulf Times (*Gulf Times, 2022*): "what changed the game for Qatar's wealth was the investment in two LNG projects, Qatargas and RasGas, supported by the biggest non-associated gas field in the world and the second highest proven gas reserves in the Middle East after Iran. Qatar remains the world's greatest

LNG exporter, while heavy investment in gas-to-liquids, petrochemicals, gas export pipeline, infrastructure, and tourism is currently taking place” (*Gulf Times*, 2022). As previously referred, approximately \$200bn is being spent, partially related to the 2022 World Cup hosting and partially to Qatar’s National Vision 2030 which is the country’s long-term strategy related to an expanding population. Moreover, the country is developing into an important financial and educational center for the region.

5.5.4 Qatar’s inflation rate

Regarding the inflation rate, there is an increase from 2.3% in 2021 to 4.98% in 2022 due to the pent-up demand for services, combined with food and energy prices, mirroring the global trends. The rise in the country’s general price level came among a general inflationary pressure worldwide, which led central banks towards tightening their capitals and budget policies to avoid a possible economic slowdown. The main reason behind inflation was a growth in the entertainment sector around 37%, as the country slowly removed the pandemic restrictions” (*Gulf Times*, 2022). Qatar Central Bank (QCB) affirmed that there are enough tools to contain inflation, while maintaining its currency’s peg to dollar. It is a fact that most advanced economies are witnessing 8% and above inflation, so in Qatar’s case it is still manageable. On the measures to address inflation, Qatar’s leadership focuses on the food security programmes. Another possible factor is that the unemployment rate is close to zero, as shown in Table 2. Low unemployment is generally a positive sign for the economy, however a very low a rate of unemployment can lead to negative consequences, such as inflation and reduced productivity.

5.5.5 Qatar’s current account balance

Closing our data analysis with Qatar’s current account balance, a positive current account balance is generally regarded as a sign that a state is a net lender to the rest of the world, while a negative one indicates that it is a net borrower, further showing that it has a surplus and the ability to provide a plethora of resources to other economies and being owed money in return. By doing so, a country with a current account balance surplus gives other economies the opportunity to raise their productivity even though they are running a deficit, also referred to as “financing a deficit”. Qatar has a surplus and has also improved its national debt.

5.6 Conclusions

Concluding our data analysis, despite the fact that at the beginning of the pandemic the petrochemical prices were really low and there was a general decline in the economy, Qatar managed to maintain its position as one of the most financially stable markets in the region. The country took the necessary containment measures and run a rapid vaccination campaign to slow down the spread of Covid-19 and limit its health impacts. Moreover, Qatar delayed the contracts that were not essential for the World Cup investments in order to lessen deficit spending (*International Trade Administration*, 2022). However, even though oil incomes in Qatar count about 67% of the total government budget, the real percentage is higher than 90% because all investment gains and amount of corporate income tax comes from Qatar Petroleum. This predominance of the oil sector will be further examined in the next chapter in the context of

possible rent-seeking phenomena that will make Qatar a questionable alternative for Europe regarding energy supply.

Chapter 6: Possibilities for Rent Seeking and Resource Curse phenomena

6.1 Introduction

Qatar is an economically powerful country in the MENA region, sharing common economic characteristics such as large gas and oil reserves and high fiscal dependency on its energy sources. But the global energy structure is currently undergoing transformation because of two forces: the decarbonization policies and the technological developments. As for the first force the Paris agreement addresses global warming, and it is an act between developed and developing countries with strong decarbonization measures. Afterwards we have the technological advancements that increase cost competitiveness of low carbon technologies for example solar and wind power that have an important role in the power generation mix. These reshape the global energy system. Assuming that decarbonization process is continuing in the future, this acceleration will lead to a peak in global oil demand. So due to the above there may be an impact on the word key oil and gas producing regions as known as MENA. In a macroeconomic context MENA oil exporters over rely on the oil rent which leads to a rent seeking behavior, and it is the foundation for the rentier state theory. There is lack of economic diversification, and the MENA macroeconomic model is inconsistent with Paris agreement. We will be discussing 3 main phenomena that tend to appear in oil-based economies: Rent-seeking behavior, resource curse theory and Dutch disease. The analysis will move gradually from the broad MENA region to specifically the state of Qatar. The purpose here is to find out if Qatar, taking into consideration the aforementioned data, is likely to appear any of these phenomena that will eventually deconstruct its economy and its possibility to become a major energy supplier for Europe.

6.2 Resource curse phenomena in the MENA region

Taking a closer look to the MENA region, there is an irregular distribution of oil, with high percentage of their GDP being based on oil while government activities are heavily funded from oil revenues, so exports are affecting the fiscal revenues and the economic stability also affects the political stability of these countries. In these countries, non-oil and non-government sectors have high level of interdependence with oil and government activities for example construction which is a non-oil sector heavily depends on government contracts. In Qatar, all investment income and the bulk of corporate income tax comes from Qatar petroleum as we previously referred. This shows and no economic diversification. Regarding employment and labor productivity in these oil exporting countries, the largest percentage of employment is in the public sector, so oil again plays a crucial role. This can be translated in protected jobs with high wages that lower the labor productivity compared to the private sector of these countries. This low productivity in oil exporters is the main reason why there is no economic diversification: they didn't invest high earnings that they had as a result of the two oil crises and now they are having limited economic and production capabilities because they have employment with low level of labor productivity. As a result, these economies do not have the necessary means to create an international competitive private sector. Also, high shares of nationals employed in the public sector equals low shares of

nationals employed in the oil sector because in the oil sectors experts of the oil industry are mainly needed so it doesn't contribute that much to the total employment rates.

Even if this model seems not viable and competitive in a long-term context, there is a fair reason it keeps being used: the vast majority of the population is supported by a small part of the nationals that contribute to the rent. This rent is mainly based on oversized public sectors but also on expensive and, from an economical aspect, inefficient subsidy schemes. Energy subsidies are kind of a social contract, and they lead to a consequent energy inefficiency. Oil exporters are giving the higher energy subsidies that there may be creating a rent seeking behavior. If the accomplishment of decarbonization becomes a reality, these countries will not have the capability for these energy subsidies which will lead to both economic and political instability. High energy subsidies equal significant economic losses because oil resources are sold nationally at a much lower price compared to their international value. They distort the economics of energy and the price signals of energy resources, so they hold back the competitiveness of the renewable energy sources because simply investment in RES does not take place due to the existence of subsidies. They also lead to inefficient allocation of energy sources and to market distortions which lead to rent seeking behavior and thus excessive production or consumption. They are focusing on the short-term earnings that are coming from oil and this is creating a high rate of consumption capability but long-term it will affect both economic and political stability.

6.3 Defining Resource curse theory and its causes

Examining the resource curse theory, according to Ross (*Ross, 2012*): “it refers to the phenomenon in which states that are abundant in natural resources often perform poorly in economic and political terms due to the presence of weak institutions, the commodity price volatility especially for commodities of the primary sector and the conflicts”. Specifically, The term addresses the important social, economic, and political challenges faced by countries with abundant oil and gas resources that cannot reach their full potential due to their abundance of natural resources, also known as “the paradox of plenty”. In general, they appear to be more conflict-prone and less financially stable than countries without these resources. (*Ross, 2012*). According to the Natural Resource Governance Institute (*NRGI, 2015*), we will be referring to 6 main causes for this phenomenon:

The first one is the lack of democracy, and this is due to the taxation system. When countries generate significant revenues from natural resources, they do not need to tax citizens, and as a result citizens feel they have less influence over government budgets. Politicians and civil servants are also less directly connected to citizens' concerns or demands. Also, if the resource revenue is not known to the public, it will not be clear to the citizens whether the resource revenue is well spent or not. (*NRGI, 2015*). This leads to authoritarianism. Resource is not the issue but quality of institutions. **Secondly**, we have civil war in control of ownership. Control over natural resources is often the cause of internal conflicts between different groups. They could also serve as the means to finance their fighting. According to the definition given by the NRGI (*NRGI, 2015*) this is called: “Petro-aggression, the tendency of oil abundant states to launch or be targets of international conflict, and it has been observed in some cases” (*NRGI, 2015*).

Third comes the inefficient spending and borrowing. Governments that are rich in resources often have a tendency on overspending on salaries into the public sector and inefficient fuel subsidies while at the same time they underspend on basic social services such as the education and/or the healthcare system. Moreover, these types of governments often over-borrow because they have constructed their credibility as lenders when revenues are high. **Forth** on the list of causes is the Dutch disease, a mechanism by which an increase in imports from the discovery of natural resources causes a strengthening of the national currency, thereby adversely affecting the exports of all other sectors of the economy, especially export-based manufacturing. Inflation or an increase in the exchange rate. From the non-resource sector to the resource sector. (NRGI,2015). By transforming resource revenue inflows into tangible investments in order to promote non-resource sector growth, it is possible for the country to avoid these negative effects.

Next, it is observed that many fiscal regimes, when it comes on splitting the profits between the government and private companies, do not succeed in offering proper compensation to the state or other communities regarding their resource spending or environmental damage. This has as a result only a small part of the production value of the resources to stay in the country. The above are likely to happen when countries are so dedicated into promoting the extraction of the resource that they decrease the tax rates without correctly estimating the true value of their resources. While there are high expectations for employment, development of local businesses as well as improved workforce skills, usually the real percentage of opportunities is low. The industry appears to have a very low employment rate compared to the investments that take place, while the equipment required to implement them is both mostly imported from abroad and extremely specialized. **Number six** is about weaker institutional development. This gives the place for rent-seeking behaviors to appear, and therefore lead to chasing control of the resources in a corruptive manner instead of investing them in resourceful ways. For example, an oil project, or other large single-point revenue sources, can be managed apart from the normal budget process. This way they can be easily captured by governmental authorities with tools such as sovereign wealth funds or national oil companies. Moreover, in some cases, elites have also abolished social controls or regulated new legislation in order to access these resources, a process called rent-seizing.

6.4 Defining Rent-seeking behavior

Moving on to the rentier state theory, according to Shambayati, (Shambayati, 1994): “it is based on an interplay of oil economic and political structures in the Middle East region oil exporters. Rentier states are those countries that receive on a regular basis substantial number of external rents which have little to do with the production processes in their domestic economies” (Shambayati, 1994). Oil revenues are an external rent related to only a specific sector of the economy and these rents are related to the earnings coming from the oil sector as a result of the high demand of the world economy and not of the comparative advantage of a specific sector of the economy. As defined by Tagliapietra, (Tagliapietra, 2019): “a Rentier state relies on substantial external rent to sustain the economy reducing the pressure to develop a strong productive domestic sector” (Tagliapietra, 2019). The biggest part of the population is just involved in the distribution or utilization of the rent, while only a small part of the people is generating it. The government is the one primarily receiving this rent. This leads to the conclusion

that Middle East states are Rentier states. The state has to provide social and collective goods through taxation. However, rent-seeking states provide private favors through the ruler's benignity. Democracy is based upon the fundamental principle "no taxation without representation" which in our case turns into "no representation without taxation". This means that the part of the population that remains untaxed should not demand participation in the political process. A rentier state's economy generates a rentier mentality in which income is mostly related to chance and is detached from concepts such as work and risk. This also leads to 2nd order rents such as real estate and financial speculation. Since the main function of rentier states is to allocate the revenues from the oil sector or from other resources to its nationals, they can also be defined as allocation states. On the other hand, production states have subtracted via taxes from those that originally possess them and redistribute them to others in the society on the regarding a declared common interest. So, growth in the domestic economy is not a prerequisite for the existence and development of a rentier state as it is for the production state. In a rentier state there is a financial independency from its society and so it doesn't have to seek constitutionality through democratic representation. This structure is bizarre and does not offer a direct long term evolutionary structure.

6.5 Qatar's susceptibility to resource curse

Now that the theoretical context is set, there remains one question to be answered: Is Qatar prone or even subject to these phenomena? It is a fact that a developing economy completely based on hydrocarbons like Qatar's, is a candidate for suffering from the curse since its reliance on its energy sources is overwhelming. However, despite older studies, recent developments in Qatar's domestic policy show otherwise. Despite challenging times due to the drop in the price of oil, we have seen so far that Qatar, unlike other countries that are heavily reliant on oil exports and now have to decrease their public spending, is still one of the most competitive and powerful economies in the region with a very high GDP per capita globally. Qatar made a major step towards diversification through a long-term development plan included in the National Vision 2030. The plan is to diversify its economy with infrastructure spending related to education, transport, sports, telecommunication, and healthcare. This strategy already proved to be successful since despite the weaker oil prices, Qatar continues to grow. Further into this strategy, growth in the construction sector and infrastructure as well as the commitment from the government's side on spending to projects related with the World Cup, will play a primary role into the growth of the economy. According to Gaskell, (*Gaskell, 2019*): "the plan also includes multi-modal transport infrastructure systems that will promote long-term sustainable economic growth through the movement of goods, people, and information" (*Gaskell, 2019*). A great example is the advanced aviation system of Qatar. But investment is not only limited to transport as Qatar, according to the Commercial Bank (*Commercial Bank, 2020*): "has taken major steps into transforming the education system, led by Qatar Foundation and some foreign universities in Education City. Major funding has been allocated to new schools and in scientific research companies in the Qatar Science and Technology Park" (*Commercial Bank, 2020*). In addition, there has been a successful improvement in the country's healthcare system with the National Health Strategy (NHS) into the context of National Vision 2030. This is not limited to new healthcare infrastructure since it also includes a healthcare research program. The above will only reinforce Qatar's transition into a knowledge-based and diversified economy. Last but not least, Qatar Investment Authority (QIA), the state's sovereign

wealth fund invests surpluses of oil and gas income to diversify revenues and reduce risk related to the reliance on energy prices. Due to large foreign assets that have been held, QIA can ensure Qatar's feasible financial state by providing alternative sources of revenue and protecting the country's strong sovereign credit rating. The conclusion that derives from the aforementioned is that Qatar is likely to avoid the resource curse in a long-term context, which is a favorable scenario for possible energy importers such as the EU that first and foremost need security of supply.

6.6 Qatar's management of Rentierism

Moving on to the rent-seeking behavior, it is mainly based on the "deal" that the government secures the well-being of its people in terms of finance, and the people do not start a rebellion or try to have an impact at the political decisions of the state. Qatar has been used as a case study to reframe the concept of Rentierism, as seen in a study from J. Zach Hollo (*Hollo, 2013*): "Qatar created a set of symbols based on Qatari tradition and heritage that legitimized [the emir's] rule as a natural prolongation of the country's cultural history and national tradition. This way the crafting of a national narrative was achieved. Two examples of oil rent deployment in order to achieve this narrative are the construction projects of the Abdul Wahhab Mosque, which declare Qatar's religious identity with the whole Islamic society and the Museum of Islamic Art that provides the citizens with the feeling of cultural heritage" (*Hollo, 2013*). In addition, the spending on World Cup related projects since 2013 is a bold statement of stability. This example of how Qatar incorporates the wealth deriving from oil incomes to create a national statement, shows that the financial relationship between the state and its people includes much more than the government handing out checks for the citizenry's implicit approval (*Fair Observer, 2013*). Another important feature regarding rentier structures is related to the external deployment of rents. This deployment has a great political economy significance that is mainly ignored by most studies. As MENA is a region with large energy reserves, most hydrocarbon exporters in the area maintain sizeable current account surpluses, which enable them to promote their financial and diplomatic power abroad. Through foreign investment and acquisitions, Arab exporters gain significant geopolitical influence, which in turn helps maintain the domestic authoritarian structure. Extensive economic and financial relations with the outside world include external recycling of rents, an activity that helps create permanent external commitments to the domestic political order, while various capital flows serve as a cover for the distribution of rents. Pray for key outside voters to buy into a firm commitment to the ruling family (*Malik, 2017*).

6.7 Conclusions

Concluding, Qatar is determined to maintain its place in the national ranking as one of the wealthiest states in a very unstable global economic frame. Its strategy and national narrative are its most powerful weapons against paradox phenomena such as the ones analyzed in this chapter. While resource curse in the Gulf region is a frequent problem, Qatar is already diversifying its economy from oil-revenue-exclusive, turning into a state of knowledge and diversified economy. Its rentier-state character exists but is used as an advantage strengthening both its national and international presence. The country is a major energy exporter and has the full potential of becoming the best alternative for Europe as the primary supplier providing energy security.

Whether this potential is enough to become the foreseeable future's reality, is what will concern the last chapter of this research.

Chapter 7: Is Qatar an efficient alternative for EU's energy needs?

7.1 Introduction

Reaching the last research chapter of this analysis, it is important to address the subject that putted into motion this whole process: Is Qatar an efficient alternative for EU's energy needs? Could Qatar's development in the international energy sector become the alternative upon which Europe can begin its diversification of supply and become independent from Russia's natural gas reserves? EU has announced an official plan to face the current energy crisis meaning there's a strategy to become independent from Russian fossil fuels. The European Commission has unveiled an aspiring, fundamentally political and long-term plan called "REPower EU", to achieve full energy independence from Russia by 2027. This plan is also transformative: until now, the EU energy market was used to cheap and reliable supplies from Russia but due to the recent events, this has to change. EU will have to face the challenges of diversifying suppliers, re-designing its infrastructure, boosting renewable alternatives while ensuring energy security, increasing efficiency and mitigating price hikes. According to the European Commission, (*European Commission, 2022*): "under REPowerEU initiative, the European Commission aims to increase LNG imports to replace 50 bcm of Russian gas by the end of 2022. In this quest for energy diversification, the state of Qatar has emerged as a key pillar of the EU's strategy" (*European Commission, 2022*). Throughout this chapter, we will see how Qatar is expected to play a crucial role into this initiative.

7.2 The REPowerEU plan in 5 steps

The European Commission had to urgently come up with a viable initiative to overcome the global energy disruptions and hardships into the energy market. The urgency is related with 2 co-existing factors in Europe's energy system, the energy dependence on Russia that shall come to an end and the climate crisis. The measures into the REPowerEU plan which include energy savings, supply diversification and accelerated roll-out of renewable energy to replace fossil fuels are capable to reach the two aforementioned targets. The REPowerEU plan has five main key points regarding its execution.

First and foremost, EU depends on Russian natural gas (45% of total gas supplies) in the process of sanctioning coal and oil. Since it is not possible to completely replace this massive amount of gas with green products, LNG emerges as the best alternative solution. LNG is transported via ships, which then unload the tanks in terminals, turning the liquid back into gas. EU has been having high records of LNG imports since 2022 (*euronews, 2022*) and there is also an advantage given to the coastal states that have terminals, increasing their purchase with relative ease. On the other hand, this is a disadvantage for landlocked countries because they depend on pipelines for transportation and most of them are operated by Russian companies. Additionally, LNG is expensive while the global markets are pretty competitive, especially the Asian market. According to Euronews, (*euronews, 2022*): "REPowerEU suggests that 2/3 of Russian gas – around 100 bcm – could be slashed by the end of this year. Half of this – 50 bcm – would be

replaced by LNG diversification, while 10 bcm would come from non-Russian pipelines, including those from Norway, Azerbaijan, and Algeria” (*euronews*, 2022). EU also signed a political agreement with the US providing a fair percentage of LNG as well. Partnerships with other LNG producers include EU’s engagement with Qatar, Egypt, Israel, and Australia.

Secondly, in order to manage LNG’s competitive nature, the 27 states of the European Union should act as one powerful client. In fact, the aim is to create a “joint purchasing mechanism”, a collective and voluntary venture to negotiate the gas contracts on behalf of the member states. This will guard overall energy security in Europe. According to Euronews, (*euronews*, 2022): “The bloc has already set up the EU Energy Platform, a voluntary scheme to pool demand and coordinate imports that met for the first time in early April of 2022” (*euronews*, 2022). **Third**, REPowerEU is considered an extra layer of the European Green Deal and is focused on renewable energy, proposing the quick deployment of solar and wind energy systems to replace a percentage of the Russian gas imports. However, the infrastructure for wind farms is a slow and complicated process, estimated around to 9 years, while solar panels also need 4-5 years to be installed due to bureaucracy. But considering the urgent events, the European Commission asks the member states to speed up the process by establishing obligatory maximum deadlines. RES is now perceived as a matter of public interest that requires faster permitting. Meanwhile, the plan also includes an update to EU’s renewable target for 2030 and the solar panels becoming mandatory for all new public buildings by 2025 and for residential buildings by 2029.

Fourth, in order for the initiative to work, there should be major changes related to the personal use of energy. European citizens should reduce their energy consumption by all means including use more public transportation, choose efficient house appliances etc. These suggestions are not legally binding and are in accordance with the IEA. Due to the lack of a legislative framework around these rules, it is doubtful if European citizens will be willing to participate since they’re already facing high prices and inflation. The European Commission along with IEA, national governments, and local authorities, will work on information campaigns to promote more energy-efficient behaviors. **Fifth**, this energy independency plan and the transformation it suggests is going to cost 210 billion euros in investments for the period between 2022-2027 (*euronews*, 2022). The amount of money will be shared between the deployment of renewables/ hydrogen systems and to diversify the LNG pipelines. There has been a suggestion by the Commission to exploit the unused COVID-19 recovery funds for this purpose.

7.3 Further into the REPowerEU plan

This transformation of the energy framework, as described above, is going to further secure the economic growth, energy security and decisively act into managing the climate change as for Europe do for their partners. The core of the REPowerEU plan lies into the Recovery and Resilience Facility (RRF), which coordinates the planning and financially supports infrastructure inside and outside of the national framework, including energy projects. The European Commission proposes for this reason to make specific modifications to the RRF Regulation in order to implement the REPowerEU plan in the Member States’ existing recovery and resilience plans, adding up to numerous other reforms and investments already existing in the RRFs. The quickest and less costly way to face the current energy crisis is by saving energy. By saving energy,

there will be appropriate preparation in case of an intense upcoming winter. The Commission's proposal is to focus in strengthening durable measures regarding energy efficiency. An example of that is according to Europa.eu (*europa.eu, 2022*): “the increase from 9% to 13% of the binding Energy Efficiency Target under the “Fit for 55” package of the European Green Deal legislation” (*europa.eu, 2022*). Additionally, the “EU Save Energy Communication” is addressing the Member States with detailed brief changes in their behavior regarding the energy consumption, to decrease gas and oil demand by 5% and promote related awareness and advocacy campaigns. Also, according to Europa.eu, “they are encouraged to use fiscal measures to enhance and promote energy savings, such as reduced VAT rates on energy efficiency heating systems, building insulation and appliances and products” (*europa.eu, 2022*). The Commission is additionally preparing emergency measures to deal with a possible disruption of the supply chain with severe aftereffects and will do some counseling on customer prioritization criteria. As for the diversification process regarding the supply chain, the EU has acquired satisfying levels of LNG imports and higher pipeline gas deliveries. The EU Energy Platform, which is assisted by regional task forces and works in a voluntary framework, will allow day-to-day purchases of gas, LNG, and hydrogen, by demand concentration and infrastructure optimization, as well as a coordinated approach to the suppliers. Ambitiously, the next step will be a “joint purchasing mechanism” where Member States will negotiate and purchase gas contracts, participating as one entity. Moving on to the EU External Energy Strategy, it aims to ease the diversification process and construct deep-rooted and abiding partnerships with suppliers. EU's dedication to transit in clean energy to ensure energy savings and efficiency is a priority, so that the pressure put on prices can be decreased. It will also enhance the development of RES and hydrogen and promote energy diplomacy by developing major energy corridors in the Mediterranean and North Sea. Regarding Russia's invasion, Ukraine as well as Western Balkans and Eastern Partnership countries will be succored as being the most at risk.

In order to accelerate the green transition and achieve the reduction of the high energy prices over time, there will be a massive boost to the renewable energy in power generation, industry, buildings, and transport. There is a proposal from the Commission for the EU's 2030 target for RES to be increased from 40% to 45% and consequently creating the framework for other ambitious initiatives as well such as a dedicated EU Solar Strategy, a Solar Rooftop initiative, which according to the European Commission (*European Commission, 2022*) is: “doubling the rate of deployment of heat pumps and measures to integrate geothermal and solar thermal energy in modernized district and communal heating systems” (*European Commission, 2022*). Adding up, another ambitious initiative is a Commission Recommendation to encounter the slow bureaucracy for RES projects, and a specific modification on the Renewable Energy Directive to acknowledge renewable energy as a matter of public interest. Commission is creating available data bases for areas with high environmental risk related to energy, industry and infrastructure to simplify the permitting processes for the Member States. According to the European Commission (*European Commission, 2022*): “among the EU's targets is accelerating the imports of hydrogen by 2030 to replace natural gas, coal and oil in hard-to-decarbonize industries and transport sectors” (*European Commission, 2022*). The Commission is also publishing “two Delegated Acts related to the definition and production of renewable hydrogen to ensure net decarbonization” (*European Commission, 2022*). It is also accelerating hydrogen projects via funding for research. Last but not

least among the aims of the European Commission, there is a “Biomethane Action Plan to increase production to 35bcm by 2030, including through the Common Agricultural Policy” according to Europa.eu (*europa.eu, 2022*). By replacing coal, oil, and natural gas in industrial processes, GHG emissions will be reduced, and security and competitiveness will be strengthened. Additionally, as stated in Europa.eu (*europa.eu, 2022*): “Energy savings, efficiency, fuel substitution, electrification, and an enhanced uptake of renewable hydrogen, biogas and biomethane by industry could save up to 35bcm of natural gas by 2030 on top of what is foreseen under the Fit for 55 proposals, according to the European Commission” (*europa.eu, 2022*). The REPowerEU plan will be financed by the Innovation Fund using revenues from emission trading to further support independency from the Russian fossil fuel. The European Investment Bank will also provide, in line with the Commission, a technical advisory facility to ensure guidance on renewable energy power purchase agreements. The Commission also proposes the establishment of an EU Solar Industry Alliance and a large-scale skills partnership to support the workforce and to maintain technological and industrial leadership in areas like hydrogen and solar. Furthermore, to strengthen energy savings and speed up the transition towards zero-emission vehicles, a Greening of Freight Package is currently presented, with the purpose of “a legislative initiative to increase the share of zero emission vehicles in public and corporate car fleets above a certain size. The EU Save Energy Communication also includes many similar recommendations to cities, regions, and national authorities regarding transportation” as stated from the European Commission (*European Commission, 2022*).

In order to deliver the REPowerEU targets an extra investment of €210 billion between 2022 and 2027 is needed. By cutting fossil fuel imports from Russia €100 billion approximately can be saved annually. Both private and public sector must be a part of these investments, while these run at the national, cross-border and EU level. For the support REPowerEU, €225 billion is already available in loans under the RRF. A legal regime was adopted by the Commission to guide the Member States in making the required modifications and additions to their RRFs to incorporate REPowerEU plan. Additionally, as the Commission proposes (*European Commission, 2022*): “to enlarge the RRF financial envelope with €20 billion in grants from the sale of EU Emission Trading System allowances currently held in the Market Stability Reserve, to be merchandized in a way that does not interrupt the market. As such, the ETS not only reduces emissions and the use of fossil fuels, but it also increases the demanded funds to achieve energy independence” (*European Commission, 2022*).

Here follows the European Commission’s data regarding the financing of the plan (*European Commission, 2022*): “Under the existing MFF, cohesion policy will support decarbonization and green transition projects with up to €100 billion by investing in RES, hydrogen, and infrastructure. An additional €26.9 billion from cohesion funds could be made available in voluntary transfers to the RRF, and a further €7.5 billion from the Common Agricultural Policy through voluntary transfers to the RRF. The Commission will double the funding available for the 2022 Large Scale Call of the Innovation Fund this autumn to around €3 billion. The Trans-European Energy Networks (TEN-E) have aided to create a durable and interrelated EU gas infrastructure. Limited additional gas infrastructure, estimated at around €10 billion of investment, is needed to supplement the current Projects of Common Interest (PCI) List and fully compensate for the future

loss of Russian gas imports. The substitution needs of the next decade can be met without locking in fossil fuels, creating stranded assets, or hampering the climate ambitions. Accelerating electricity PCIs will also be necessary for the adaptation of power grid to our future needs. The Connecting Europe Facility will support this, and today the Commission is launching a new call for proposals with a budget of €800 million, with another one to follow in early 2023” (*European Commission, 2022*).

7.4 Qatar’s involvement into the European Energy Targets

As we previously referred, EU’s objective under its REPowerEU initiative is to increase LNG imports to reduce its high dependence on Russian gas, especially during this geopolitical and energy crisis. Specifically, the European Commission aims to increase the liquid natural gas imports to replace 50bcm of Russian gas by the end of 2022 (*European Commission, 2022*). In this period of searching for energy diversification, the state of Qatar has emerged as a key factor of the EU’s strategy. According to Zaretskaya, (*Zaretskaya, 2022*): “In 2021, Qatar provided for 24 per cent of Europe’s total LNG imports, behind the US (26 per cent) and before Russia (20 per cent). In 2021, total EU LNG imports reached 77bcm; the figure increases to 108bcm if the UK and Turkey are added. Recently, the EU, along with the US, has extensively engaged Qatar given its leading role in the LNG market and close relations with the West” (*Zaretskaya, 2022*). Qatar has a highly centralized LNG industry unlike other similar exporting countries such as US and Australia. This indicates that Doha has a better control over its export policies and over the sector overall.

Even though Qatar has demonstrated its intention to play an active role in EU’s improvement of energy security and variegation of energy sources, the chance of Europe receiving Qatari LNG volumes for the time being is unknown, due to the fact that Qatar has currently a lack of spare LNG export capacity. Qatar is exporting its energy mainly in Asia (more than 70% of its LNG exports) by signing LTCs, which spare a very limited flexibility to increase quotas. Qatar couldn’t renegotiate or undermine its LTCs risking its reputation as a reliable supplier since it is known for its solid contracts, with limited alterations to 3rd parties or reselling its LNG cargoes. Consequently, for now, Europe’s ability to import additional LNG volumes from Qatar relies on Asia’s decision, as Qatar’s main buyer, to divert part of its imports and of course Doha’s approval of these diversions. However, in the long-term, Qatar is capable of increasing its exports to the EU, which will both achieve Europe’s independence from Russian gas and Qatar’s strong strategic role in the European gas markets (*Raimondi, 2022*). According to Ulrichsen, (*Ulrichsen et al, 2021*): “This expansion strategy from Qatar’s point of view is a result of Doha’s years of regional isolation due to the Saudi-led embargo between 2017 and 2021 and is aiming to increase the state’s self-sufficiency and resilience” (*Ulrichsen et al, 2021*). In 2017, Qatar proceeded to expand the North Field which increased its LNG export capacity from 77 million tons annually to 100Mtpa in 2026 while the State publicized a 2nd stage which will rise the production to 126Mtpa by 2027. These new volumes are expected by the end of 2025. Qatar aims to use its competitive advantages through this expansion strategy in order to address the rising competition from other LNG exporting countries despite the low oil and gas prices. Qatar is establishing its presence in global LNG markets and consolidates its political and strategic status in the West. The country has pretty

attractive LNG projects in economic terms with a lower effective average cost of LNG production compared to other countries, which gives Qatar an extensive competitive advantage in the industry. Furthermore, Qatar Petroleum's – ExxonMobil collaboration through the Golden Pass LNG project, the first overseas investment in a liquefaction project, serves to further solidify Qatar's LNG position. It is expected to have the capacity of 16Mtpa of LNG and exports are estimated to start in 2024, however it is not clear whether these exports will be directed for Europe. Therefore, assuming that Europe can make the necessary commercial agreements, and create the required infrastructure for the process, Doha could begin to satisfy some of the EU's needs related to gas diversification by 2024/25. Qatar seems to be a better alternative for Europe compared to other potential gas suppliers such as Egypt, Algeria, and Libya, due to the state's significant financial resources required for further investment, its stable government and small population which is equal to limited growing energy consumption needs. Moreover, Qatar being geographically closer to the EU than the US and Australia, indicates shorter and cheaper export routes for LNG volumes based in Qatar. However, EU's energy security cannot be completely based on one single supplier. Europe's plan to combine its diversification strategy with its climate targets can benefit Qatar as one of the world's lowest carbon intensity rates in LNG supply (*Energy Intelligence Group, 2022*). According to Qatar Energy, (*Qatar Energy, 2022*): "Qatar's commitment to cut its LNG carbon intensity by 35% by 2035 through deployment of carbon capture and storage technology which is needed to prepare its products for a low-carbon future, will further improve its low carbon intensity rates in LNG supply chain" (*Qatar Energy, 2022*). Considering the aforementioned competitive economic and environmental advantages, Qatar could become the largest LNG exporter globally while securing future market shares by 2025/30. Qatar can also balance its current LNG export portfolio by increasing the European share of its total export. In Asia, which is its core market, Qatar is going to face heightened competition from other liquified natural gas exporters such as Australia and the United States. Additionally, by 2030, over 60% of Qatar's export portfolio will be far uncontracted due to the expiry of 20 Mtpa of legacy contracts mostly in North Asia, hence the country needs to secure new contracts and the EU is a great potential option.

After a long period of buyer dominated energy markets, the current tight gas market and Qatar's competitive advantage seem to shift the dynamic giving market power to the suppliers. According to Miller, (*Miller et al, 2022*): "Qatar has already signed a contract with Germany since Japan decided to not renew its expiring contracts with Qatar" (*Miller et al, 2022*). This indicates that Qatar is ready to make new contracts not only motivated by political reasons but also if the commercial factors are satisfied. In this framework, according to Reuters, (*Reuters, 2022*): "Qatar has requested some favorable conditions regarding its exports to the EU, such as prohibiting the resale of its LNG outside the EU, the closure of EU's research into Qatar's market behavior and the preference of LTC's over spot trading. The European Commission so far halted its probe into long-term energy contracts signed with QatarEnergy" (*Reuters, 2022*). The current extremely high prices in Europe may result in decreasing the demand both inside the EU and in other parts of the world which may lead to a faster shift towards alternative low-carbon energy solutions. According to IEA, (*IEA, 2022*): "tight supply, high prices and increased market uncertainty have led to a downward revision in global gas consumption growth, which as a result is expected to turn negative for 2022" (*IEA, 2022*). It is possible for Qatar, due to the fact that heightened prices in

gas and the increased antagonism deriving from other low-carbon alternatives will potentially weaken the role of gas in the energy transition, to lose some opportunities before the additional LNG volumes come online. Considering the above, Qatar must secure new contracts in time and prove that natural gas plays a major role in energy transition both in developed and developing countries. Qatar's willingness to contribute to the EU's energy diversification strategy implies the country's gained political capital in the West. Qatar's motivation is to secure new LTC's and increase its share in the European markets as well as balancing its export portfolio given the increasing competition in Asia. Yet, in the short term the chances of seeing higher Qatari LNG imports to Europe are pretty low, due to limited spare capacity.

7.5 Conclusions

Europe's response to the energy crisis is ambitious yet based on this current reality. After a major economic crisis and a pandemic, EU has to face an energy and climate crisis at the same time while ensuring the energy security for each Member State. The REPowerEU plan is detailed and specific and offers a short-term strategy which is urgent and necessary at the moment. As a whole, Europe's soft power can overcome the immediate consequences of Russia's aggression. Meanwhile, Qatar is the best option both for a long-term diversification of supply and for taking solid steps towards decarbonization. Hence, EU's co-existing targets are covered by Qatar as a new and main supplier. It is important to not repeat the overdependence to another supplier as it is proved hazardous for energy security and ineffective. But until Qatar is totally ready to enter the European energy markets, EU should keep looking for possible suppliers, ensuring new gas contracts. Additionally, it should spend in supplementary infrastructure in the meantime to collect and reallocate these additional imported gas volumes throughout the Member States. All, in accordance with EU's climate objectives by promoting the minimization of methane emissions along the value chain in the current time and foster decarbonization of gas in the longer term.

Conclusions

Reaching the end of this analysis, we have come to acknowledge certain conclusions related to the current events, EU's response, and Qatar's role in the resolution of the energy crisis.

First, global energy markets are highly affected from the consequences of Russia's invasion in Ukraine since the two countries are major energy suppliers. Supply disruption and the need for an immediate response to the crisis, led to the imposition of economic sanctions, trade restrictions and policy interventions, which consequently extremely increased the prices. During the COVID-19 pandemic, demand for global resources surpassed supply and raised the prices as economies rebounded, leading the world to a global cost-of-living crisis. Furthermore, these threats can also trigger a domino-effect of existing socio-economic and political pressures, such as supply-chain disruptions, market volatility, resource insecurity, and geopolitical changes leading to further turbulences and conflict in other parts of the world.

Secondly, Qatar has a growing influence in solving the international energy crisis. It is a wealthy state with a huge impact on global energy markets, strategically planning its steps to avoid tensions in an already tensed international arena and working towards guaranteed exports according to the foreseeable demand. It is certainly a favorable ally for the EU. Given the recent events and how

they are going to play out, the upcoming months will be crucial and will have a decisive impact both on the EU energy security and Qatar's LNG export strategy. Qatar's final decision will be determined by combining long-term economic and political considerations.

Third, despite macroeconomic decline and low petrochemical prices at the beginning of the Covid-19 pandemic, Qatar maintains its place as one of the most fiscally stable markets among the Gulf states. The country has dynamically slowed the spread of Covid-19 and limited its health impacts through containment measures while running a rapid vaccination campaign. A crucial part of Qatar's spending policy was putting on ice ungranted contracts that were not required and not related to World Cup investment, construction, and development projects, to limit deficit spending. However, even though oil incomes in Qatar count about 67% of the total government budget, the real percentage is higher than 90% because all investment gains and amount of corporate income tax comes from Qatar Petroleum. Non-oil related fiscal revenues come from corporate income tax only of 10% imposed on foreign companies, withholding tax of 5-7% imposed on certain payments to non-residents, customs duties of 5% and some fees.

Fourth, despite its oil dependence in its domestic economy sector, Qatar is determined through its plan "Vision 2030", to maintain its place in the national ranking as one of the wealthiest states in a very unstable global economic frame. While resource curse in the Gulf region is a frequent problem, Qatar is already diversifying its economy from oil-revenue-exclusive, turning into a state of knowledge and diversified economy. Its rentier-state character exists but is used as an advantage strengthening both its national and international presence. The country is a major energy exporter and has the full potential of becoming the best alternative for Europe as the primary supplier providing energy security.

Last but not least, The REPowerEU plan is a detailed and specific initiative, offering a short-term strategy which is urgent and necessary. Europe, if united as a whole, can overcome the immediate consequences of Russia's aggression. Meanwhile, Qatar is proven to be the best option both for a long-term diversification of supply and for taking solid steps towards decarbonization (*QatarEnergy, 2022*). Hence, EU's co-existing targets are covered by Qatar as a new and main supplier. It is important to not repeat the overdependence to another supplier as it is proved hazardous for energy security and ineffective.

Bibliography

- Abdulaziz A Al-Ghorairi, 2020, "The Rise of Qatar: an Economic Success Story", Commercial Bank, Retrieved: October 2, 2022, <https://www.cbq.qa/EN/AboutUs/Pages/The-Rise-of-Qatar-an-Economic-Success-Story.aspx#:~:text=Qatar%20has%20an%20ambitious%20and,key%20part%20of%20this%20plan>
- Amadeo K., 2022, "What Is the Debt-to-GDP Ratio?", The Balance, Retrieved: September 28, 2022, <https://www.thebalancemoney.com/debt-to-gdp-ratio-how-to-calculate-and-use-it-3305832#:~:text=Economic%20Growth%20Can%20Slow%20After,period%2C%20it%20slows%20economic%20growth>

- Bahgat, Gawdat, 2016, "Energy as a Main Driver of Foreign Policy", Comillas Journal of International Relations, Retrieved: September 21, 2022, <http://www.nesa-center.org/wp-content/uploads/2016/04/6741-14680-1-PB.pdf>
- Birol, F., 2022, "What does the current global energy crisis mean for energy investment? – analysis", IEA, Paris, Retrieved: September 17, 2022, <https://www.iea.org/commentaries/what-does-the-current-global-energy-crisis-mean-for-energy-investment>
- Bohra M., Shah N., 2020, "Optimising the role of solar PV in Qatar's power sector", Department of Chemical Engineering, Imperial College London, United Kingdom, Retrieved: September 25, 2022, <https://doi.org/10.1016/j.egy.2019.11.062>
- Caner.M, Grennes T., Koehler-Geib F.,2010, Finding the Tipping Point: When Sovereign Debt Turns Bad, World Bank Conference on Debt Management, Retrieved: September 29, 2022, https://doi.org/10.1596/9780821384831_CH03
- Coface, 2022, "Economic analysis-Qatar", Coface in Central and Eastern Europe, Retrieved: September 27, 2022, <https://www.cofacecentraleurope.com/Economic-analysis/Qatar>
- Deepak J., 2022, "Qatar provides path to global energy security", The Peninsula, Retrieved: September 27, 2022, <https://s.thepeninsula.qa/nbgwen>
- Early, C. & Saush, A. 2022, "What does the war in Ukraine mean for energy security in Europe?" The Conference Board, US, Retrieved: September 18, 2022, <https://www.conference-board.org/topics/geopolitics/energy-security-europe-ukraine-war>
- European Commission, 2022, "REPowerEU: A plan to rapidly reduce dependence on Russian fossil fuels and fast forward the green transition", Europa.eu, Retrieved: October 4, 2022, https://ec.europa.eu/commission/presscorner/detail/en/IP_22_3131
- Gaskell A., 2019, "Innovating Your Way Out Of The Resource Curse", Forbes, Retrieved: October 2, 2022, <https://www.forbes.com/sites/adigaskell/2019/12/04/innovating-your-way-out-of-the-resource-curse/?sh=655e949b5baa>
- Global Petrol Prices, 2022, "The Energy Mix of Qatar", GlobalPetrolPrices.com, Retrieved: September 21, 2022, https://www.globalpetrolprices.com/energy_mix.php?countryId=144#:~:text=For%20the%20world%20as%20a,the%20rest%20of%20the%20world
- Gulf Times, 2022, "Qatar inflation 'momentary', has enough tools to contain: Al-Kuwari", Gulf Times – Doha, Qatar, Retrieved: September 29, 2022, <https://www.gulf-times.com/story/719668/Qatar-inflation-momentary-has-enough-tools-to-contain-Al-Kuwari#:~:text=Pent%2Dup%20demand%20for%20services,basis%2C%20according%20to%20official%20data>
- Hall M., 2021, "Explaining the World Through Macroeconomic Analysis", Investopedia, Retrieved: September 27, 2022, <https://www.investopedia.com/insights/macroeconomic-analysis/>
- IEA, 2019, "Energy security & areas of work", IEA, Paris, Retrieved: September 17, 2022, <https://www.iea.org/areas-of-work/ensuring-energy-security>
- IEA, 2022, "Gas Market Report", IEA, Paris, Retrieved: October 4, 2022, <https://www.iea.org/reports/gas-market-report-q2-2022>

- IEA. 2022. “Russia's War on Ukraine – Topics”, IEA, Paris, Retrieved: September 16, 2022, <https://www.iea.org/topics/russia-s-war-on-ukraine>
- IEA. 2022. “Gas Market and Russian Supply – Russian supplies to global energy markets – Analysis”, IEA, Paris, Retrieved: September 17, 2022, <https://www.iea.org/reports/russian-supplies-to-global-energy-markets/gas-market-and-russian-supply-2>
- Investopedia team, 2022, “Top 25 Developed and Developing Countries”, Investopedia, Retrieved: September 28, 2022, <https://www.investopedia.com/updates/top-developing-countries/#toc-what-is-a-developed-nation>
- International Trade Administration, 2022, “Qatar country commercial guide”, ITA, Retrieved: October 5, 2022, <https://www.trade.gov/country-commercial-guides/qatar-market-overview>
- Kozhanov, 2022, “Qatar is no short-term savior, but it may still play a role in strengthening EU energy security”, Middle East Institute, Retrieved September 21, 2022, <https://mei.edu/publications/qatar-no-short-term-savior-it-may-still-play-role-strengthening-eu-energy-security>
- Liboreiro, 2022, “Five things to know about the EU's big plan to become independent from Russian fossil fuels”, euronews. ,2022, Retrieved: October 4, 2022, <https://www.euronews.com/my-europe/2022/05/18/five-things-to-know-about-the-eu-s-big-plan-to-become-independent-from-russian-fossil-fuel>
- Makau W., Young Professional, Capacity Building Department, Samoei S., Young Professional, Partnerships Department, 2022, “Russia-Ukraine Conflict and its Effects on Global Energy Security”, KIPPRA, Retrieved: September 16, 2022, <https://kippra.or.ke/russia-ukraine-conflict-and-its-effects-on-global-energy-security/>
- Malik, Adeel, 2017 ‘Rethinking the Rentier Curse’ - Combining Economic and Political Development: The Experience of MENA, International Development Policy series 7, Graduate Institute Publications, Boston, Retrieved: October 2, 2022, <https://journals.openedition.org/poldev/2266#tocto2n1>
- Miller, Kazmin, Borrelli, 2022, “Germany Clinches Long-Term Gas Supply Deal with Qatar”, Financial Times, Retrieved: October 5, 2022, <https://www.ft.com/content/1192517b-e405-486f-a743-51b5be356024>
- NRGi Reader, 2015, “The Resource Curse The Political and Economic Challenges of Natural Resource Wealth”, Natural Resource Governance Institute, Retrieved: October 2, 2022, https://resourcegovernance.org/sites/default/files/nrgi_Resource-Curse.pdf
- Nevitt, 2022, “Climate Security, Energy Security, and the Russia-Ukraine war”, Just Security, New York University School of Law, Retrieved: September 18, 2022, <https://www.justsecurity.org/81440/climate-security-energy-security-and-the-russia-ukraine-war/>
- Pratap J., 2022, “Qatar budget surplus to rise to nearly 6% of GDP in 2022: Oxford Economics”, Gulf Times – Doha, Qatar, Retrieved: September 29, 2022, <https://www.gulf-times.com/story/707612/Qatar-budget-surplus-to-rise-to-nearly-6-of-GDP-in-2022-Oxford-Economics>

- Qatar General Secretariat for Development Planning, 2011, "Qatar National Development Strategy 2011~2016 Towards Qatar National Vision 2030", Qatar General Secretariat for Development Planning, Doha, Retrieved: 24 September, 2022, https://planipolis.iiep.unesco.org/sites/default/files/ressources/qatar_national_development_strategy_2011-2016.pdf
- QatarEnergy, 2022, "QatarEnergy Launches Updated Sustainability Strategy", QatarEnergy.qa, Retrieved: October 4, 2022, <https://www.qatarenergy.qa/en/MediaCenter/Pages/newsdetails.aspx?ItemId=3702>
- Rafiq Latta, 2022, "Upheaval Prompts Qatar to Review Expansion Plan", Energy Intelligence, Retrieved: October 6, 2022, <https://www.energyintel.com/00000180-28d7-dd6c-af83-fef71c200000>
- Raimondi, 2022, "A Scramble for Gas: Qatari LNG and EU Diversification Plans", IAI COMMENTARIES, Retrieved: October 4, 2022, <https://www.iai.it/en/pubblicazioni/scramble-gas-qatari-lng-and-eu-diversification-plans>
- Reuters Staff, 2022, "EU Regulators Close Antitrust Investigation into Qatar Energy", Reuters, Retrieved: October 4, 2022, <https://www.reuters.com/article/eu-qatarpetroleum-antitrust-idAFL5N2VY3QI>
- Ritchie H., Roser M., and Rosado P., 2022 - "Qatar: Energy Country Profile", OurWorldInData.org., Retrieved: September 21, 2022, <https://ourworldindata.org/energy/country/qatar>
- Ross M., 2012, "The Oil Curse: How Petroleum Wealth Shapes the Development of Nations", University Press, Princeton, Retrieved: September 30, 2022, http://www.michaelross.info/oilcurse/oil_curse_chapter_1.pdf
- Shambayati, H., 1994, 'The Rentier State, Interest Groups, and the Paradox of Autonomy: State and Business in Turkey and Iran', Comparative Politics, Retrieved: September 30, 2022, <https://www.jstor.org/stable/422114>
- Tagliapietra S., 2017, "The political economy of Middle East and North Africa oil exporters in times of global decarbonization", Energy Strategy Reviews, Retrieved: September 30, 2022, <http://www.jstor.org/stable/resrep28636>
- The World Bank, 2022, "Qatar Data", WorldBank.org, Retrieved: September 28, 2022, <https://data.worldbank.org/country/qatar>
- Trading Economics, 2022, "Qatar Indicators", Trading Economics, Retrieved: September 28, 2022, <https://tradingeconomics.com/qatar/indicators>
- Ulrichsen, Harb, Jahshan, Macaron, Whitson, 2021, "The GCC Reconciliation: An Assessment", Arab Center Washington DC, Retrieved: October 6, 2022, <https://arabcenterdc.org/resource/18767/>
- World Economic Forum, 2022, "Amir of Qatar Says Achieving Global Energy Security Will Lead to Market Stability", World Economic Forum, Retrieved: September 27, 2022, <https://www.weforum.org/press/2022/05/amir-of-qatar-says-achieving-global-energy-security-will-lead-to-market-stability/>
- Worldometer, 2022, "Qatar Oil", worldometers.info, Retrieved" September 25, 2022, <https://www.worldometers.info/oil/qatar-oil/>

- Worldometer, 2022, “Qatar Natural Gas”, worldometers.info, Retrieved: September 27, 2022, <https://www.worldometers.info/gas/qatar-natural-gas/>
- Zach Hollo, 2013, “Rethinking Rentier State Theory: Qatar and the Rise of Smart Money”, Observer, Retrieved: October 2, 2022, https://www.fairobserver.com/region/middle_east_north_africa/rethinking-rentier-state-theory-qatar-rise-smart-money/
- Zafar S., 2021, “Solar Energy in Qatar”, EcoMENA, Retrieved: September 25, 2022, <https://www.ecomena.org/solar-energy-in-qatar/>
- Zaretskaya, Peterson, Wilczewsk, 2022, “Three Countries Provided Almost 70% of Liquefied Natural Gas Received in Europe in 2021”, U.S Energy Information Administration, Retrieved: October 4, 2022, <https://www.eia.gov/todayinenergy/detail.php?id=51358>