Renewable Energy: A Potential Pathway Towards Alleviating the Resource Curse

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Abbreviations

- **ADCED - Abu Dhabi Council for Economic Development**
- **ADNOC – Abu Dhabi National Oil Company**
- **AFDB – African Development Bank**
- **DEWA – Dubai Electricity and Water Authority**
- **DRC – Democratic Republic of Congo**
- **EIA – Energy Information Administration**
- **EIU – Economist Intelligence Unit**
- **EU – European Union**
- **GCC – Gulf Cooperation Countries**
- **GDP – Gross Domestic Product**
- **GHG – Green House Gas**
- **GW – Gigawatt**
- **HSBC – Hong Kong and Shanghai Banking Corporation**
- **IEA – International Energy Agency**
- **IHA – International Hydropower Association**
- **IMF – International Monetary Fund**
- **IRENA – International Renewable Energy Agency**
- **MINEA – Ministry of Energy & Water (Angola)**
- **MW - Megawatt**
- **NDC – Nationally Determined Contributions**
- **NOC – National Oil Company**
- **OPEC – Organization Of Petroleum Exporting Countries**
- **PDVSA – Petrólas De Venezuela**
- **SWFI – Sovereign Wealth Fund Institute**
- **TW - Terawatt**
- **UAE – United Arab Emirates**
- **US – United States**
- **UK – United Kingdom**
- **UNDP – United Nations Development Program**
- **UNEP – United Nations Environment Program**
- **UNFCCC – United Nations Framework Convention on Climate Change**

1. Introduction

The world is currently experiencing an unprecedented challenge in the form of rising CO2 emissions. Steps are being taken to commit countries to alter their behavior, most notably, with the adoption of the Paris Climate Accord. When the agreement was signed in 2015, it pledged 195 countries to adopt NDC's, which aimed to strengthen decarbonization efforts (UNFCC 2020). The purpose is to strive towards limiting global surface temperatures to 1.5 degrees Celsius, with an upper threshold of no more than a 2-degree increase (Salawitch & Canty 2017). However, since its inception five years ago, the multilateral agreement has not fostered the hoped goal of rapidly transforming society. The NDC's are updated every five years with the next period due this year. So far, only four countries have committed to updated targets (Climate Action Tracker 2020). The IPCC's most recent report finds that even when current NDC's are accounted for, efforts are nowhere near enough to match the ambitious targets. Human activities are already responsible for the global warming of 1 degree, and current projections estimate that the 1.5 thresholds will be exceeded between 2032 and 2050 depending on the policy measures that are undertaken. The report concludes that in order to maintain the prospective goal of 1.5 degrees, carbon emissions will need to be reduced by 45% by 2030 and the world energy systems will need to achieve carbon-neutrality by 2050 (IPCC 2018).

In reality, world CO2-emissions are on a different trajectory. Emissions rose by 1.7% in 2017 and 2.7% in 2018 (Dennis & Mooney 2018). The IEA's world energy outlook predicts that in the stated policies scenario energy demand will continue to grow by 1% every year until 2040. Only half of that demand is to be generated by renewable energy sources (IEA 2019). This scenario sees the planet embark on an impressive build-up of renewable energy, but the rapid development is not enough to keep up with the planet's sustained global growth and subsequent need for energy. The need for transition is urgent and some regions are adopting ambitious goals, such as the EU-wide target of reducing emissions by 40% by 2030 (European Commission 2020). This trend is also happening in developing countries.

Morocco, Gambia, Costa Rica, and India have also embraced ambitious climate targets and initiated projects aimed at meeting them (Climate Action Tracker 2020).

These efforts showcase the world's ability to face the imminent challenge. However, there is a specific group of countries for whom this change is perceived as both undesirable and potentially harmful to economic prosperity. The world's fossil fuel reserves are unevenly distributed and are to a large degree under the control of a handful of countries (Goldemberg 2012). For countries which possess these resources, their economies can become dependent on the income these industries produce. In developed economies with diversified industries and higher average incomes, decarbonization efforts are less likely to be destabilizing, while the risk is substantially higher for less developed countries that have been unable or unwilling to diversify. Becoming dependent on the substantial rents that these lucrative industries produce greatly affects their ability and desire to take part in the ongoing energy transition. It threatens the very way that their economies are set up to succeed. These countries are in principle beholden to, and dependent on, fossil fuel industries (Ross 2012).

National dependence on oil incomes has major implications for how these countries' perceive global climate efforts. Just as oil majors (such as Chevron and ExxonMobile) sought to combat effective climate change action by spreading misinformation and funding climate skeptic think tanks (Lawrence, Pegg & Evans 2019). Leaders of petrostates have also employed tactics to assist the business environment for fossil fuel industries and change perceptions to protect their bottom line. US President Donald Trump announced in 2019 that he would withdraw the US from the Paris Climate Accord, additionally he has pledged to revive the coal industry, and his administration has also been hard at work to repeal environmental standards and climate regulations (Climate Action Tracker 2020). The easing of regulations coincides with the American shale-revolution and the emergence of the US as a net exporter of oil and gas in global energy markets.

Similarly, Brazilian President Jair Bolsonaro has stated his desire to leave the climate agreement and to eliminate the country's ministry of the environment (Escobar 2018). The hesitation and resistance of petrostates' towards renewable development is also evident when comparing the renewable generation capacity of countries in the Persian Gulf. In 2015, IRENA found that the oil and gas producing countries of Bahrain, Iraq, Oman, and Saudi Arabia had a combined installed wind and solar energy capacity of just 31,2 MW, while Jordan, a neighboring country with no fossil fuel reserves, was found to have an installed capacity of 213 MW (IRENA 2016). In some cases, these countries' governments publicly aim to embrace the global challenge. In 2019, Saudi Arabia announced it was going to build the world's largest solar farm at a staggering price of $200bn. However, just months later the plans were canceled, Saudi Arabia's attempt to embrace of renewables has not led the country to limit its primary industry, the last decade has seen Saudi Arabia increase its oil production by 2m bdp (Safi 2019).

These examples capture the challenges that come with dependence on rents from fossil fuel industries for countries, especially as they try to adapt climate-conscious policies. Despite resistance from fossil fuel producers, the renewable energy transition is well underway, and new developments of renewables now outpace the development of other energy sources. The scaling up of the industry in the last decade through technological advances and economics of scale has substantially improved the price competitivity of renewables' technologies. Solar PV and wind technologies have especially seen their prices drop as a result of emerging public and private mega-projects; a recent study conducted by Lazard has found that over a 10-year period, their prices have declined by 89% and 70% respectively (Lazard 2019). Decreasing capital costs, an increase in investment, technological advances, and heightened industry competition are all contributing factors. The same trend is also true for less developed technologies, such as off-shore wind. The next generation of off-shore wind farms in the UK is expected to be subsidy-free within the next

four years (Ambrose 2019). Off-shore wind is projected to attract major investments as prices drop, and the technology becomes a more cost-competitive and attractive investment with costs comparable to onshore wind projects (IEA 2019). Collectively renewable industries are expected to attract three trillion dollars in investment over the next decade (IRENA 2019).

The transition towards renewable technologies is a deep transition, with broader effects beyond simply transforming our energy systems. It will fundamentally alter how the world sees energy as a commodity with geopolitical, societal, and economic consequences. Fossil fuels are geographically restricted to the fortunate few, while renewable energy allows countries to reduce their energy dependencies. The transition provides opportunities for countries to generate energy domestically and avoid issues related to purchasing energy from foreign governments. This is beneficial for most countries as 80% of the world's population lives in areas that rely on fossil fuel imports to fulfill their energy needs (IRENA 2019). A fundamental truth of energy systems centered on fossil fuels divides countries into energy producers and consumers. The transition presents opportunities to build systems that foster interdependence and multilateral cooperation. In that respect, the energy transition is a gateway to increasing global living standards and promoting sustainability in line with the UN's sustainable development goals.

Transitioning away from fossil fuels also exposes real vulnerabilities for countries dependent on wealth accumulated by oil and gas production. Because their economies are so dependent on these industries, they are especially vulnerable to falling prices and shrinking demand, and the transition also threatens to displace millions of jobs for fossil fuel producing countries. In the US alone, energy and energy efficiency industries employ 6.7 million Americans (Energy Future Initiatives 2019). Many of these jobs are in remote areas, where workers may struggle to find new opportunities if industries scale down. Countries willing to adapt their economies to face the new realities brought about by climate change

can offset some of these negative effects. Developing renewable energy allows countries to capitalize by diversification through developing non-oil and gas sectors, while taking steps to tackle climate change. In the process, these technologies bring about wider benefits such as economic growth and increased employment opportunities outside of the dominant fossil fuel sectors.

1.1 Research Aim

This thesis will take a deeper look at two fossil fuel exporting countries that fall into two categories defined by a recent IRENA report. Firstly, the high exposure and low resilience category. These countries are defined as dependent on fossil fuel incomes, which account for more than 20% of GDP, while also lacking the fiscal and political instruments to alter their dependence. Secondly, the high exposure and high resilience category, defined as countries dependent on fossil fuel incomes, which account for more than 20% of GDP, but with the necessary income and capacity to manage the transition (IRENA 2019). The first category makes up the majority of African fossil fuel producers. For this thesis, the country under examination will be Angola. The second category is comprised of most of the fossil fuel producing Gulf States. For this category, the thesis will focus on the UAE.

This analysis will explore the real vulnerabilities these countries face, by focusing on their dependence on wealth accumulated by the production of oil and gas, and on how economically exposed they are to falling prices and shrinking demand. To map out their dependence, my thesis utilizes key metrics established within the theoretical frameworks and scholarly debates centered around energy nationalism and the resource curse. Following this, it will provide an analysis of how these metrics are likely to be affected by the energy transition and the impacts that transforming energy systems are likely to have on the chosen case studies.

Transforming energy systems is a powerful tool to fight national dependence on fossil fuels. While the energy transition provides a credible threat to displace millions of jobs in the affected sectors and also threatens to shrink national revenues, it also presents opportunities. Fossil fuel producing states that embrace these new technologies are likely to develop sustainable and robust economies, by increasing non-oil sector jobs and off-setting negative resource curse effects; such as Dutch disease effects, corruption and rentier state behavior. Thus, renewables present an alternative pathway that holds the potential to hinder some of the most adverse effects associated with the decreasing demand for oil and gas. Despite these advantages, progress is hindered by the fact that governments rely on these industries to support social programs, thus linking these incomes to their ability to obtain legitimacy from citizens. This thesis will explore whether a transition has the potential to provide opportunities to overcome these issues, and whether credible arguments exist that frame the development of renewable energy technologies as a pathway to lessen dependence on the often volatile fossil fuel industry. Adopting national plans to diversify national economies from fossil fuel dependence should be the goal of all fossil fuel producers. For some, however, their reliance on income from these industries hinders them from making the necessary changes. The cases this thesis utilizes are chosen because these countries are facing issues associated with fossil fuel dependence, while being located in areas that are primed to take advantage of renewable energy resources.

The paper adopts the following research question: **To what extent are Angola and The UAE, countries with differing exposure and resilience, both able to utilize the energy transition to lessen fossil fuel dependence and promote economic diversification?**

2. Literature review

This section will examine two issues that have become prevalent within the academic literature on petrostate development. The resource curse describes how an abundance of

natural resources can lead to wider societal and economic impacts that constrain their ability to achieve lasting economic growth. Resource nationalism looks at how tactics are utilized by various fossil fuel producers to capture a larger share of their resource rents. Tracing these issues within the academic literature will allow this thesis to develop a better understanding of the broader subject, which will be analyzed further in the later sections.

2.1 Resource curse

The phenomenon referred to as the resource curse was popularized starting with the rise of national oil companies in the world's oil-producing nations in the 1970s. Since then, the resource curse has become a prominent topic amongst scholars interested in development and how resource and commodity wealth influences politics and economic performance. The resource curse refers to the idea that the world's fossil fuel-rich nations, with a few notable exceptions, have not been able to achieve a level of economic growth and prosperity consistent with the vast incomes they receive from developing their resources (Frankel 2012; Ross 2012). This is especially true of the world's oil-producing countries, which are twice as likely to experience civil war and have a 50% higher chance of being ruled as an autocracy (Ross 2012). Oil is a commodity with very special characteristics, both because of its natural scarcity and geographical concentration. Scarcity has led to the industry becoming highly profitable, providing extraordinary rents that are accrued to the governments and companies that are able to develop it. The likelihood of high rents has continuously led to boom and bust cycles with substantial price fluctuations throughout the industry's history. When times are good companies flock to the industry to take advantage, leading to eventual overproduction and a rapid decline in global prices (Yergin 2011). Resources can propel countries' economies in boom times but also, in many cases, significantly hurt them when boom shifts to bust. Allowing a country to begin utilizing oil rents for development enables them to avoid implementing tools traditionally used by states to foster capital accumulation – such as taxes – meaning they can rely on the rents to sustain economic growth (Shihab 2001).

Developing oil as a resource is very capital-intensive and requires utilizing highly sophisticated technologies. While capital-intensive, the industry creates relatively few jobs relative to its proportion of national economic output. The jobs that are created require highly-skilled workers who are often hard to acquire in the areas where production occurs (Winkler 2000). This is especially true in developing countries where oil production is more likely to occur in economic enclaves utilizing a high number of foreign workers (Karl 2007). Enclaves mean that companies in charge of production become responsible for delivering both the equipment used to extract the resource and to provide accommodation and living quarters for their employees. Workers living in enclaves tend to have most of their needs met by the corporation, thereby providing significantly fewer benefits to the local economy and contributing very little towards local economic development (Ackah-Baidoo 2012). Many oil and gas producing states rely heavily on imported foreign labor to sustain employment in these sectors. The reliance on foreign labor has produced negative effects in countries where it has been poorly managed, producing lasting, and rising, unemployment for nationals (Winkler 2000).

Countries suffering from the resource curse often rely on resource-led development to promote economic growth. Resource-led development is described as a country being overly dependent on revenues stemming from a particular export industry to fuel economic growth. This is particularly true for states relying on oil-led development. Dependence is derived from a country's relative export of oil as a figure of all exports. Oil dependent countries typically see between 60 to 95 % of their total exports earnings stem from oil and related mineral products. These countries are especially susceptible to the negative effects of the resource curse (Auty 2001). Despite these countries' resource endowments, they fall behind on economic development, when measured against countries with a comparable economic performance that lack the same resources. Resource-poor countries, without petroleum, grew four times more rapidly than resource-rich countries with petroleum, despite

the resource-poor countries having half their savings (Karl 2007). This phenomenon is documented by several authors. Auty (2001) argues that since the 1960s, resource-poor countries have consistently and substantially outperformed resource-rich ones. When examining per capita GDP data from 1960-1990, Weinthal and Luong (2006) find that mineral-rich countries, on average, saw annual GDP per capita increases of 1.7%. In the same time period, Mineral-poor countries achieved average increases of 2.5-3.5%.

There are also scholars who have been unable to find statistical results that prove the existence of a resource curse. Sachs and Warner (1999) find conflicting evidence on whether a resource boom results in economic growth, they do instead find some evidence that it has led to decreased GDP per capita in some Latin American countries. Haber and Menaldo (2011) also question the existence of the resource curse. They apply historical data to examine the time period between 1800-2005 and are unable to observe any demonstrable effects attributable to the resource curse. Their findings remain somewhat controversial and have been disputed. When examining their results, scholars have highlighted flaws in their use of data and also criticized how their analysis makes assumptions about the links between democracy and oil wealth. When replicating their experiments with the original dataset and adopting a new metric – which allows for a break in the effect of oil in the 1980's – linked to the rise of national oil companies, the results change. Anderson & Ross (2014) find contradicting results that clearly indicate the existence of a resource curse in oil-producing countries in their revamped analysis incorporating the new metric.

Authors have arrived at several explanations for why the resource curse might be occurring. Scholars have argued that resource-rich countries are unable to achieve lasting economic development because of their development trajectories. These countries are plagued by unbalanced growth, sustained corruption, rising income inequality, and a prevalence of undemocratic regimes (Luong & Weinthal 2006). Leite & Weidemann (2002) find that corruption has significant negative effects that are especially evident in resource-

rich countries and that this is a major contributing factor towards explaining why these countries have poorer economic performance. Auty (1997) argues that resource-poor countries are under increased pressure to develop and extract land resources, and have a subsequent lower tolerance for rent collection and unequal distribution of wealth. The scarcity of natural resources also places heightened pressure on using them efficiently, thereby increasing market competitiveness. Sachs and Warner (1995) argue that increased market competitiveness is linked to increased investment to promote social and human capital. Therefore, the lack of natural resources promotes economic diversification that in turn, curbs potentially harmful Dutch disease effects.

The Dutch disease refers to the adverse effects that a resource boom could potentially have on traditional export sectors (Usui 1997). Dutch disease effects can produce slower socio-economic growth and development for countries that are affected (Larsen 2006). This term is commonly adopted to describe why mineral-rich countries have experienced such lackluster economic performances after developing their resources. The phenomenon occurs when a boom in exports, and subsequent rise in commodity prices, results in an appreciation of the real exchange rate. The export boom shifts labor and capital into the booming mineral sector resulting in other export sectors, such as manufacturing and agriculture, becoming less competitive. The lack of competitiveness often results in a substantial downscaling of these vital industries (Weinthal & Luong 2006). Usui (1997) finds that adopting an expansionary fiscal policy, as Mexico did in response to their oil boom in 1973, exacerbated the country's adverse Dutch disease effects. In the Mexican case, the fiscal policy was backed by foreign loans to promote investment in the oil sector. The misuse of oil rents amidst a lack of a coherent macro-economic strategy was followed by a subsequent intensification of Dutch disease effects. These intensifying Dutch disease effects resulted in oil revenues being needed to service foreign loans, rather than promoting economic development. These findings are contrasted to the case of Indonesia, which chose to run a more cautionary strategy centered around increasing budget surpluses. As a result,

these policy adjustments greatly insulated Indonesia from Dutch disease effects (Usui 1997). Declining exports sectors, especially manufacturing, also significantly affect the labor market and leads to reduced demand and supply of skilled labor. Long-term Dutch disease exacerbates income inequality and causes lasting unemployment. Rising inequality and continuous reduced access to educational opportunities greatly affects a country's ability to sustain economic development (Weinthal and Luong 2006).

However, there are also instances of countries effectively managing their mineral resources to achieve positive outcomes. Norway is commonly heralded as the most successful country when it comes to actively managing its natural resources (Larsen 2006). Through a careful approach, with a strong focus on fiscal restraint, the country has been able to turn a potential oil curse into an oil blessing. The country has carefully and effectively managed its oil rents to insulate and protect itself from boom and bust cycles, thereby maintaining a healthy fiscal balance. Through its effective management, the country has been able to circumvent potentially detrimental outcomes, such as Dutch disease effects, inflation, corruption and reliance on foreign workers (Larsen 2006). Norway has been helped by the state's strong pre-existing political, social and economic structures. Karl (2007) argues that political institutions are vital to a country's capacity to manage fossil fuel rents effectively; this is especially true for countries that are dependent on oil wealth. These rents are especially destabilizing to countries in the developing world that have not had the ability to develop strong institutions capable of managing them. Mehlum et. al (2006) draw a distinction between producer-friendly institutions, where production and rent-seeking can coincide in complementary ways, and grabber-friendly institutions, where a weakened legal system, ineffective bureaucracies, and corruption result in poor growth and a pooling of resources from other sectors into the export sector. These scholars highlight how a lack of strong state institutions when a country starts developing its mineral resources can significantly increase the likelihood that mineral-rich states turn towards rentier state behavior.

Rentier states are defined by certain recognizable characteristics. Beblawi & Luciani (1987) argue that these states exhibit a strong national economic dependence on substantial external rents, which primarily accrue to the government coffers. The reliance on export sector rents results in a devaluation of domestic production sectors. Despite being able to generate substantial rents, only a fraction of the population's workers are involved in the rent generation. Starting fossil fuel production leads to extremely high rent collection and is therefore likely to result in rentier-seeking behavior (Carlos & Weidemann 2002). The resources which were initially intended to promote oil-led development, create adverse effects that for many states turn into revenue dependence. Industries that should promote development instead entice states to turn toward rentier state behavior (Karl 2007).

Ross (2012) argues that the region most adversely affected when it comes to suffering from the resource curse is the Middle East. Resource curse dynamics have been a major hindrance to the region's progress. Relative to the rest of the world, the region has suffered in areas such as progress toward democracy, gender equality and willingness to reform its economy. These characteristics are also prominent on the African continent and have affected several fossil fuel-producing countries. Developing oil resources has turned into a curse for several African countries. Their access to natural resources have led to severe, long-standing, negative effects for their citizens and these effects play out through unstable GDP growth, corruption and rapidly declining living standards (Adams et. al 2019). Among African countries, the economic contraction of Nigeria was especially severe, where living standards and poverty were detrimentally altered since the pre-resource boom period (Sala-i-Martin & Subramanian 2013). The Nigerian example highlights the effects of the resource curse and its potential to produce substantial adverse effects. In this case, the curse produced long-term economic inefficiency. Funds were wasted by a civil society centered around corruption, which in turn provoked a long-term sustained poor economic performance. The state gradually weakened and transformed to encompass the previously

mentioned rentier state characteristics. Economic downturns in rentier states disproportionately hurt the poorer segments of the population, exacerbating income inequality, while wealthy elites are still able to concentrate shrinking rents from the sector in their hands (Sala-i-Martin & Subramanian 2013).

The atypical characteristics of oil wealth geographical distribution and production facilitate the lasting political and economic issues attributable to the resource curse. Resource rents are characterized by their vast scale. These commodity rents are also easily concealed from the general public and can therefore be misappropriated by governing elites (Ross 2012). Democracies tend to have a lower degree of corruption because of the increased likelihood that they have stronger state institutions, which are linked to higher degrees of transparency and more effective regulations. Conversely, state officials in states that have weak institutions are able to obtain these rents through corruption and patronage (Kaskende, Abuka & Sarr 2016). Revenues generated through fossil fuel rents also free rentier governments from the need to levy taxes from their population, thereby alleviating the government of much of their fiscal responsibility to collect taxes; when taxes are not collected, this fails to foster a positive relationship of accountability between a government and its citizens. This is especially problematic due to the volatility of commodity pricing as it pertains to oil rents, which are produced in cycles of boom and bust. These cycles can exert great pressure on a government's ability to maintain budget balances (Ross 2012).

The ways in which attempts have been made to help countries overcome the resource curse are also heavily flawed. The existing remedies in contemporary development literature relating to this topic are significantly underdeveloped (Weinthal & Luong 2006). Common policy proposal provided by economists, such as economic diversification presupposes that states possess the necessary institutional capabilities to handle managing resource rents effectively. Development institutions that recommend policies such as fiscal

and monetary restraint and economic diversification are not taking these factors into account. They would be effective for states that have a proven track record of managing economic resources, however, rentier states do not fall into this category. Weinthal & Luong (2006) believe that development strategies should be focused on fostering private ownership of resource assets. Doing this increases the likelihood that private companies are able to establish a counterweight capable of challenging the state's behavior. In Weinthal & Luang's view (2006), the involvement of privately-owned energy companies increases the likelihood that states are able to build up robust institutions. Privatization of oil assets forces the state to adopt traditional institutional tools, such as taxation, in order to obtain a larger portion of the resource rents.

2.2 Resource nationalism

Energy nationalism has been a mainstay of international energy politics in the last decade. Resource-rich governments all around the world have reaffirmed their stances towards directing economic activity in mineral sectors. This has been done primarily by adopting nationalist policies to increase national profits from these industries (Wilson 2015). The term energy nationalism encompasses embracing strategies towards gaining control of fossil fuel resources. Resource-rich states do this by shifting power away from the international oil companies, towards their national companies controlled by the state (Bremmer & Johnston 2009). While arguably most prominent in the developing world in recent history, it is argued that these characteristics have also historically existed in many developed countries which adopted similar policies (Owen 1988; Ulsaner 1989). Resource nationalism is usually spurred on during cycles of higher oil prices. When prices increase, this leads the host countries to reevaluate their current contracts in order to seek better investment conditions and to increase their taxes and royalties (Vivoda 2009). On the other hand, a shift towards lower prices is likely to switch the bargaining power back to international oil companies who can be more selective of the conditions they are willing to accept (Brenner & Johnston 2009). Resource nationalism also holds a strong ideological

component because the state is perceived as having a strong operational role in the national economy, which it can use to direct its energy resources. Even in cases where this is not the case, this understanding can manifest itself in the public conscience which can lead to popular resistance if the state is seen to liberalize or open key sectors to the public (Stevens 2008).

Johnston & Bremmer (2015) identify four separate variations of resource nationalism. First, revolutionary resource nationalism is linked to a wider societal reconstruction. International oil companies operating in the country are often forced into renegotiations under the threat of full nationalization with little compensation. This type of resource nationalism is exemplified by Russia & Venezuela. In Russia, President Vladimir Putin adopted resource nationalism to consolidate power by bringing privately-owned companies back under national ownership (Vivoda 2009). The consolidation of power was seen as legitimate by the Russian population, while the liberalization that occurred in the 1990s was seen as a power grab by outside forces wanting to control the industry (Stevens 2008). Thus the reclaiming of the industry was touted as the nation reclaiming its rightful ownership over the country's rightful patrimony. In the case of Venezuela, the restructuring of the national oil company PDVSA under Chavez saw a transition of power away from the technocratic elite towards party loyalists (Mares 2010).

The second type, economic resource nationalism is more frequent and usually occurs in a more stable political environment. This form of resource nationalism focuses on shifting a larger portion of the rents towards national companies. The focus is not on shifting control of the resources, but rather on ensuring that the state can acquire a larger stake in lucrative oil investment projects. Kazakhstan's renegotiation of the giant Kashagan oilfield to ensure that the state-owned company Kazmunaigas received a larger share exemplifies this variant (Johnston & Bremmer 2009).

Third, legacy resource nationalism sees the government adopting ideas of self-determination over oil wealth as central to political and cultural identity (Johnston & Bremmer 2009). This approach has been adopted in both Mexico and Kuwait to ensure that foreign investment is not instrumental to developing the oil and gas sectors. Mares (2010) argues that Mexico's stance towards its energy industries makes it the country with the clearest resource nationalist character in South America. The country's government constantly has to balance the potential political backlash of liberalizing the industry with the need to increase market competitiveness. Attempts to do so are often met with fierce opposition, both at the political level and through popular protests. Fourth, resource nationalism in OECD countries is described as a soft resource nationalism focused on using the established infrastructure and institutions to impose higher taxes and royalties (Johnston & Bremmer 2009).

Resource nationalism is often regarded as a continuous struggle between national and private interests (Stevens 2009). These competing interests are linked to significant political and economic risks for both the companies and countries involved. The countries that pursue 'resource nationalism' face the possibility of losing out on technology and expertise, both of which are often held by the international oil companies (Johnston & Bremmer 2009). Losing out on technology transfers can lead to hindered development as the state becomes dependent on existing infrastructure to develop new oil and gas projects and continue to deliver resource rents. If this process persists, states can be left vulnerable in the face of an economic downturn and lower oil prices. When the downturn arrives and is felt by the country's citizens, it can also create substantial civil unrest.

The shift towards resource nationalism is also a challenge to international oil companies. They face increased industry competition in the development of new resources. In recent years, international oil and gas companies have seen their share of global development be reduced because of more competition (Vivoda 2009).

3. Methodology

3.1 Research design

This thesis has the primary research objective of mapping out the potential that renewable energy generation has in alleviating economic dependencies, lessening rentier state behavior and minimizing resource curse effects for countries with a high reliance on fossil fuel industries. To achieve this, the thesis adopts a deductive research approach. A deductive research approach aims at developing a hypothesis based on the existing literature on the subject. From there, a hypothesis is developed further by utilizing an appropriate theoretical framework featuring the metrics and data that will be used to test the hypothesis. The thesis will utilize a mixed methods research approach for its analysis. The rationale behind this methodological approach is that it utilizes both quantitative and qualitative data in the same analysis. Conducting research in this way is likely to produce a more thorough understanding of certain phenomena that cannot solely be explained through the use of one research method (Venkatesh, Brown & Bala 2013). Utilizing this method provides the necessary tools to measure both whether our cases are properly aligned with the theoretical concepts outlined in the literature review, and to provide a comprehensive statistical analysis to underscore the qualitative findings, thereby strengthening the validity of the findings. The approach will mainly rely on the academic literature for its qualitative analysis, while the quantitative analysis will be based on production data, databases and indexes from both academic and non-academic sources.

The research strategy chosen for the qualitative aspect of the analysis utilizes a multiple comparative case study framework. Case studies aim to examine phenomena within particular contexts. Comparative case studies strengthen this approach by testing a given hypothesis against a number of cases and adopting metrics that can be applied in a multi-case context, thereby strengthening the generalizability of the findings. The quantitative section of the research will rely on descriptive statistics to present the quantitative data in a

manageable way to underscore and strengthened the findings within the theoretical framework outlined in the qualitative analysis.

Bartlett & Vavrus (2017) argue that comparative studies depend on two key comparative logical challenges. First, the challenge of identifying specific units of analysis that can be used effectively and comparatively to contrast between cases. Specifying the units of analysis in this context means choosing both our case countries and metrics in ways that fit within the theoretical framework and are useful for further analysis. Second is the need to develop a processual logic that is generalizable and can be traced across various actors and time periods. For the purposes of this analysis, the time component of renewable energy generation makes generalizable findings that are consistent across time harder to achieve. The energy sector is undergoing vast transformations that will fundamentally alter energy systems. As noted earlier, price reductions and capacity have vastly transformed the industry in the last ten years, making this analysis possible today, whereas it might not have been if examined in a different time period. It is also important to highlight the many potential and real differences that exist between different energy producers. The findings that this thesis comes to are not necessarily going to be generalizable to all fossil fuel producing countries.

The method of analysis is also strengthened by the diversity between its chosen cases. The fact that countries are chosen based on their relative differences, in both approach and initial capacity, strengthens the validity of the findings across a larger population of cases, by choosing two categories at either extremes with regards to institutional capacity and resilience. The thesis attempts to showcase how renewables will be a functional strategy on both sides of the resource curse spectrum. This increases the likelihood that the findings are generalizable for countries that fall in between the categories. The cases are also chosen because of their geographical disparity, which will strengthen the validity of the findings. Bartlett & Vavrus (2017) also highlight the importance of context,

understood as the political processes, economic developments and social interactions that occur within each case and that influence the phenomena being examined. The major economic shifts that have facilitated the rapid price reductions in renewables showcase the importance of highlighting the context surrounding the cases researched. The industry has been aided by national and regional subsidy schemes that have fostered efficient progress. This also highlights how social aspects affect the cases under examination. Governments who see the benefits of diversifying energy systems tend to promote these subsidies.

3.2 Case selection

This thesis has identified two categories outlined in a recent IRENA report on the geopolitics of the energy transition. These categories are selected because they fit well within the current theoretical framework outlined in the existing resource curse literature. Therefore, they provide a relevant starting point for further analysis. The paper chooses to utilize both categories in order to provide a more holistic view on how countries in distinct parts of the world, and with differing institutional and financial capacities, can benefit from transforming their energy systems.

Category (A) "**High exposure and low resilience**" is comprised of countries that are dependent on fossil fuel incomes, which account for more than 20% of their GDP, while also lacking the fiscal and political instruments to alter their dependence (IRENA 2019). For this category, the chosen case study will be Angola. Angola is chosen primarily because of its relatively global oil production, which accounts for a large part of the country's total GDP and export revenue. Another important aspect is the country's open alignment with the energy transition. Angola has adopted diversification plans that incorporate a substantial development of renewable energy sources, and is therefore a viable candidate for studying the impacts of such developments in realistic scenarios. The country is also lacking in institutional capacity, which has led to cycles of corruption, misappropriation of funds, nepotism, widespread embezzlement and authoritarianism (Hammond 2011). These issues

ensure that for the purposes of this thesis, the country fits well within both resource curse and rentier state frameworks, which will be applied to develop research metrics usable in the analysis.

Category (B) "**High exposure and high resilience**" is comprised of countries dependent on fossil fuel incomes, which account for more than 20% of GDP, with the necessary income and capacity to manage the transition (IRENA 2019). For this category, the thesis will focus on the UAE. The UAE is, similarly to Angola, also chosen because of its vast fossil fuel industries which account for a substantial amount of national revenues and GDP. The UAE fits with category B because it has shown stronger institutional capacity to manage its resource rent collection in ways that promote economic growth and diversification, rather than resulting in outright rentier state behavior. The country has also embarked on rapid industrialization to build up its renewable energy capacity. The country has publicly announced its willingness to continue building renewable energy sources, which it regards as a key development strategy for future prosperity (Nehme 2020). The UAE has comparatively stronger institutional capacity, a condition that has led it to avoid many adverse resource curse effects. However, the thesis will showcase how resource curse and rentier state frameworks still pose credible threats to effective management. This also highlights the extent to which renewable energy can (or cannot) boost the country's diversification efforts.

3.3 Research metrics and data collection process

The research metrics that this thesis will utilize stem from the theoretical frameworks highlighted in the literature review and non-academic sources focused on the renewable transition. This thesis adopts a mixed approach to ensure that the analysis is able to properly examine the relationship between variables. The prevailing resource curse literature identifies these factors as resource curse symptoms:

1. Rentier state behavior: Identified as government dependence on fossil fuel sector rents. State unwillingness or inability to drive economic diversification and a persistent prevalence of corruption.
2. Enclave production, reliance on foreign workers which results in prevailing high unemployment for the country's nationals.
3. A lack of institutional capacity to control and effectively allocate resource rents
4. Dutch disease effects: Increasing real exchange rate and/or downscaling and diminishing of other export sectors.

These four processes will be handled collectively in the first chapter of the analysis. To compare the two countries, metrics such as national revenues, foreign workforce, economic diversification, corruption indexes, business environment and investments will be used to create a holistic picture of whether these countries encompass characteristics that are consistent with the resource curse. This chapter will also explore whether energy nationalist policies are pursued to ensure larger sector rents. To outline this section this thesis will use both the existing literature, datasets and indexes to underscore the quantitative research component.

The next chapter of the analysis section will focus on the respective countries renewable energy build-up and the associated benefits that can be achieved by pursuing this strategy. This thesis primarily utilizes data sets, working papers and government data to underscore the benefits of this approach.

3.4 Limitations and existing literature gap

There are several potential limitations to this thesis that need to be highlighted. Firstly, the thesis is attempting to bridge the gap between existing resource curse theory and the emergence of renewables as a major player in international electricity markets. This is a topic that, to date, has received little attention in the existing academic literature. This poses

both challenges and benefits for the purposes of this paper. Firstly, the lack of academic focus on this topic means that there are fewer sources to go on with when composing a framework for the analysis. The metrics used in this paper are derived within the existing literature, along with additional information derived from non-academic sources. This is an imperfect method of conducting research, which can produce suboptimal results because there are many potential factors that are not highlighted and because of a lack of academic grounding. Undiscovered factors could be, for example, the type of government, access to international funding, public resistance to renewable development. These are all important aspects in resource curse literature that the thesis, because of the limitations of the paper, will not be able to address.

There are also issues related to the validity of the findings in the thesis. I.E. whether the paper is actually researching what it claims to research. As we have noted in the literature review, there are opposing views on the resource curse. Some scholars have come to conclusions that find no evidence for its existence. This paper is, therefore, using a potentially controversial theoretical framework for its analysis, which could impact the validity of the findings. The external validity of the findings, whether they are generalizable to other settings or groups, also poses challenges. The thesis is attempting to highlight the rise of renewables as a prominent development path for resource-rich states. It needs to be mentioned that these findings are not necessarily applicable to all fossil fuel producers. The viability of renewables is dependent on the country-specific context. Access to funding, geographical location and popular support for renewable development are all metrics that will differ depending on the country in question.

There are also potential inherent biases in both my writing and the metrics I will be using for my analysis. For example, I am relying on IRENA sources for both my conceptual framework and some of my data. IRENA is an intergovernmental organization that aims to assist countries with the transition towards renewable energy. Their very mission could

factor in a potential bias when the organization is presenting their numbers. Their numbers could be skewed toward making renewable energy seem a more attractive option.

Despite the paper's potential shortcomings, I firmly believe that there is value to be gained from this analysis. As mentioned, the fact that little attention has been given to this issue in the existing literature provides an opportunity to add a new dimension – namely, the effects of the rise of renewables on countries that are plagued by the resources curse – to potentially modify the existing theoretical framework on the resource curse by adding new elements that have not yet been extensively researched. I am also confident that despite the need for careful country-specific analysis, the findings will present a viable pathway for fossil fuel exporting countries, that deserves to be explored further in future analyses.

4. Analysis

4.1 Case A – High exposure, low resilience – Angola

Hamilton (2011) argues that Angola is a classic example when it comes to a country exhibiting resource curse symptoms. Angola's resource curse is epitomized by several factors. A long-lasting civil war, which was exacerbated by competition between rebel forces for power over natural resources, undemocratic governance, widespread poverty, corruption and a centralized power elite unwilling to pursue economic diversification (Amundsen 2014). Angola has access to vast oil revenues, but is hindered by a corrupt and authoritarian government, which fails to provide welfare that can benefit its people. Angola is Africa's second-biggest oil producer with oil and gas products representing 94% of export revenue, 52% of government revenue and 30% of GDP (African Development Bank 2017). Oil from Angola is mostly offshore, as are most other oil and gas sources in the Gulf of Guinea. Oil from this region is considered to be of high quality and is therefore very attractive to buyers on global oil markets (Hamilton 2011).

Angola discovered their oil in 1955 and began developing the resource while still under Portuguese colonial rule. The colonial rulers, which had previously emphasized raw materials, shifted their focus to instead make the most out of the new resource. The development of the new sector also coincided with the Angolan struggle for independence. The country achieved independence from Portugal in 1975, after a 13-year struggle. Upon gaining independence, the country immediately established the national oil company, Sonangol, based on the previously Portuguese controlled SACOR. The NOC became the sole national entity with authority to grant concessions for oil exploration and production (Burgos & Ear 2012). The ambition to do this stems from the events that transpired with the 1973 oil embargo. The profitability of the national oil sector was radically transformed and became the country's primary export industry, accounting for 30% of exports (Hamilton 2011). However, the new nation was not able to maintain stability and fell into a brutal civil war just two years later, which over the course of the fighting saw 1 million Angola's perish. The fighting would last for 27 years until peace was restored with the death of rebel leader Jonas Savimbi in 2002 (Olivera 2015). The war became embroiled within the cold war struggle for global hegemony, becoming an arena for proxy warfare with both global superpowers backing different military forces. Oil and diamonds were vital to keeping the fighting going for the competing militant groups, as both sides in the conflict relied on these revenues to be able to maintain their armies (Frynas & Wood 2001). This is a condition typical of resource cursed countries. Since the 1980s oil revenues have been shown to increase the likelihood of civil war, with low- and middle- income countries being especially susceptible. These countries are twice as likely to experience civil war when compared to non-oil producers (Ross 2012).

Olivera (2015) argues that the period after the civil war saw Angola embark on one of the most intensive reconstructions in recent history. The country's economy embarked on rapid industrialization and managed to more than triple the size of their economy when measured in PPP $. The economy rose from 62 billion in 2002 to 197 billion in 2018 (IMF

2018). From 2003, the country witnessed massive structural and economic development, especially in Luanda, where the urbanization boom turned the capital into a modernized city (Burgos & Ear 2012). This impressive rise was helped immensely by a sustained period of unprecedentedly high oil prices in the early 2000s leading up to the financial crisis. In the years between 2002 and 2007 Angola more than doubled its oil production and became an OPEC member. The country's output increased from 700.000 bpd in 2000 to 1,7 million bpd by 2007 (IEA 2020). This is also the period when the country was able to achieve its peak oil production. Since then, however, progress on developing new oil fields has been slow, with Reuters describing the last decade as a near-paralysis exacerbated by a lack of drilling success, global drops in the price of oil and a deteriorating relationship with major oil companies (Eisenhammer 2018). The new president, João Lourenço, promised an economic miracle in the country when he won the 2017 presidential election. His administration has since then presented a more liberal approach to concession negotiations and relationships seem to be healing between the central government and the oil majors (Eisenhammer 2018). However, current developments mean that projections of growth have taken another major hit due to the global pressure on the industry on account of the coronavirus. The virus has severely hurt the demand for, and the profitability of, oil and gas sector investments. Current projections estimate that the virus has led to the largest decline in energy investments in recorded history (IEA 2020).

Angola has immense potential on account on its impressive resource endowment, which could, if properly utilized, lead it to become one of the most successful developing states in Africa. Additionally, it has access to gold, iron, copper, timber and vast agricultural and marine resources (Amundsen 2014). However, the country has also been heavily criticized for the way in which this development is occurring. Critics argue that the central government's brand of elite-driven development has led to a highly centralized and affluent elite centered in the capital and a few other provinces integral to the oil sector. The rest of the country has seen very few benefits despite the country's vast resources. Angola's

poverty levels have been increasing, even as the country has witnessed impressive economic growth. It is estimated that around 70% of the population live in poverty, while 30% are considered to be living in extreme poverty (Amundsen 2014). 94% of rural households are categorized as poor, with only 6% of those households having access to electricity (UNDP 2019). In the 2019 Human Development Index, the country is ranked at 149 out of 189 countries with a score of 0,574. The country's low scores primarily stem from its low life expectancy, high levels of poverty and relative high inequality (UNDP 2019). Angola also scores very low on Transparency International's Corruption Perception Index, where they are ranked at 146 out of 198 countries with a score of 26 out of 100 (Transparency International 2019). However, there are also aspects of the resource curse that the country has largely been able to avoid. It has been argued that an abundance of natural resources leads to less opportunities for women. While this has certainly been true for most gulf state oil producers, Angola has been able to engage a significant percentage of its women into both its economy and ranking government positions (Ross 2012).

Amundsen (2014) argues that the main reason Angola is suffering from the resource curse comes down to the poor quality of Angola's institutions of redistribution. These institutions have helped facilitate the previously mentioned grabber-friendly behavior typically found in rentier states where elites capture resource rents. The undemocratic state institutions become the apparatus which elites use to enrich themselves. The vast majority of government revenues stem from Sonangol. An IMF report has indicated that as much as 40% of the total government revenues are directly attributable to the company (Human Rights Watch 2004). This is problematic as billions of dollars in revenue, which is legally required to go to the Angolan national bank, has been able to illegally bypass this requirement. Hundreds of millions of dollars are also completely unaccounted for. The central government is complicit in this behavior and work to obfuscate how these funds are used or collected (Human Rights Watch 2004). After his 38-year presidency, José Eduardo dos Santos stepped down on the 25th of September 2017. In the aftermath he, along with

both his daughter and son, are now facing charges of illegal enrichment, money laundering and corruption among a number of other charges. The family is also known to have favored nepotism. Before losing power, the family advocated for a “dynastic solution” where power would be ceded to the president's son, with the daughter controlling many essential enterprises (Cascais 2018). The change of president has led to major personnel changes in key positions, as the new president attempts to better his party’s image. The new president adopts the approach so he can be perceived as tackling the widespread corruption. However, it still remains to be seen whether this is a genuine effort to improve the country’s situation or simply a changing of the “old guard” with party loyalists faithful to the new regime (Doctor 2018). Angola comes in at 119th out of 167 countries on “The Economist 2019 Democracy index” with its electoral process, the functioning of government and civil liberties scoring particularly low (EIU 2019).

Most of Angola’s oil resources, both offshore and onshore, are located in Cabinda which is an enclave separated from Angolan territory by the DRC. The province functions as an economic enclave with 60% of the nation’s oil production taking place there. The large industrial production has not helped the local population in Cabinda with estimates of local unemployment at 88%. The major oil companies in the region are staffed almost entirely by foreigners. Cabinda has seen repeated calls independence since Angola’s independence in 1975. As Angola gained their independence, a separatist insurgency started in Cabinda led by the FLEC (Martin 1977). These voices still persist in the region today. Activists advocating for independence are silenced, and often jailed, by Angolan forces (TRTWorld 2019; Corpley 2016). Angola exports 90% of its crude oil resources and currently has the capacity to refine only 20% of its resources itself (Hamilton 2011). A new refinery, which is set to open in 2021, will increase the country’s capability to be able to handle 80% of the country’s refining needs (Marques 2020). The amount of national oil exported, versus what it uses in domestic consumption, says a great deal about the country’s non-oil economy. Angola exports the vast majority of its oil. This shows the extent to which the economy is dependent on this

single industry and also demonstrates that the country lacks the economic capacity to effectively use its oil resources to fuel its own economic growth (Ross 2012). For all its oil, Angola is suffering hugely from regulatory hurdles in the form of red tape, hitches and pitfalls that can derail projects. This makes it one of the hardest places in the world to do business (Borgus & Ear 2012). Dutch disease effects are ever-present and evident through industrial stagnation, protectionism and a prevalence of uncompetitive exports that cannot be effectively transported because of a lack of skilled workforce. The rentier state patronage has been institutionalized and is manifested through corruption, mismanagement and widespread nepotism (Borgus & Ear 2012). In the 2020 World Bank "Doing Business index" the country is ranked at 177th out of 190 countries and scores particularly low on trade across borders and contract enforcement (World Bank 2020).

4.2 Case B – High exposure, high resilience – The UAE

Over the last fifty years, the UAE has undergone a radical transformation. The country has gone from being one of the least developed in the world, to becoming a global economic powerhouse, on par with the worlds industrialized nations (Shihab 2001). The rapid development has transformed the country from what was largely a deserted wasteland, to a booming modern economy. The turnaround has been predicated on the country's effective use of fossil fuel revenues (Butt 2001). The UAE was established in 1971, a majority of the country's oil deposits are found within the emirate of Abu Dhabi. Oil exploration in the country began in 1960 and is today controlled by ADNOC (ADNOC 2019). The country had only just begun developing its oil resources when it joined OPEC in 1967. Thus, the country was able to capitalize on the radically increasing profits when the organization initiated their negotiated cartelism, to limit the supply of crude oil on international energy markets in response to the Yom Kippur war in 1973 (Yergin 2011). The increasing windfalls boosted national revenues drastically and propelled the economic boom that has transformed the country. The increased profits have allowed the country to rely on oil rents to sustain economic development, thereby bypassing traditional stages of economic

development, such as capital accumulation to sustain economic growth (Shihab 2001). The period of sustained economic growth and prosperity, however, would come to an abrupt end. In response to the 1973 and 1979 oil embargos, the world's developed economies reacted by implementing policies, such as rationing and increasing fuel efficiency, all geared toward limiting their dependence on foreign fossil fuels. The reduced demand would eventually hurt oil producers as it coincided with a gradual easing of tensions, and the stabilization and eventual normalization of the market (Yergin 2011). The mid-1980s saw OPEC's strategies backfire as the stabilized markets led to collapsing oil prices (Haouas & Heshmati 2014). The Middle East was hit particularly hard, as regional oil revenues dropped by 75%, plummeting the region's oil-producing countries into recessions (Chaudhry 1997).

In the last three decades, the UAE has been able to continue its remarkable economic growth. Statistics from 2015 indicate that it is the fourth-largest economy in the MENA-region (World Bank 2020). The country has become a major player in international energy markets. The UAE has access to the 7th largest proven oil and gas reserves in the world, and it is also the 7th largest producer globally (EIA 2019). Alongside this, The UAE economy is one of the fastest-growing in the world (Al-mulali & Che Normee Binti 2018) and unlike Angola, obtains a high UNDP Human Development Index score of 0.866, making it the 35th most developed country in the world (UNDP 2019). The country has also invested heavily to promote economic diversification and developing other industries; however, a significant portion of their economy is still centered around oil and gas industries. IMF projections indicate that oil and gas industries account for 31% of export revenue and 39% of national GDP, while fossil fuels also account for 65% of the government's revenues (El-Katiri 2016). This level of dependence is still significant, although the country's dependence is not as high as some of the other Gulf Cooperation Countries (GCC) producers, such as Oman, Saudi Arabia and Qatar. The UAE government sought to actively stimulate non-oil sectors such as agriculture, tourism, manufacturing and financial services in a concerted attempt to limit their oil and gas dependence (El-Katiri 2016). Their efforts have been very

successful, evidenced by the country's ability to grow these sectors. The manufacturing sector's contribution as a portion of overall GDP has been significantly increased from 0.9 in 1975 to 12.4 in 1998. There are also similar trends when it comes to agriculture and the service sector (Shihab 2001). These efforts have allowed the country to avoid or offset some of the most notorious Dutch disease effects, thereby ensuring that their non-oil and gas sectors maintain international competitiveness.

Developing national industries has drastically increased the number of migrant workers coming to the country. Expatriates now make up 75% of the country's population, despite the fact that the oil and gas sectors only account for 1.6% of employment in the country (Shihab 2001). The UAE is very attractive to internationals due to its ability to provide high wages. HSBC's 2019 "Explorer Expat survey" ranked the UAE as the 9th most attractive location in the world for expats, with the country scoring 3rd in expected wages and 1st in disposable income (HSBC Expat 2019). This is helped extensively by the low taxes in the country, however, there are also downsides to the influx of labor. The majority of the labor force is employed in service sector jobs. 98% of the private sector workforce is made up of expatriates. Some scholars have argued that the massive influx has created a two-layered employment system. This system produces extreme wealth inequality and insecurity for the expatriate workers that find themselves lowest on the employment ladder. A person's attractiveness to employers is highly influenced by their nationality (Tong & Al Awad 2014). UAE nationals overwhelmingly choose to work within the public sector jobs because such jobs are associated with higher wages and increased job security. Nationals wanting public sector jobs feeds into another persistent problem. The country is facing high unemployment amongst nationals, with young job seekers being especially affected, the unemployment rate for nationals at 13% in 2011 (Dajani 2017).

Any country that relies heavily on fossil fuel revenues has to be mindful of public spending. Unchecked public spending of oil revenues greatly increases the risk of rising

inflation, which can significantly hurt long-term growth prospects. Harrison (2010) identifies periods when the country has seen its spending result in higher inflation rates, especially in the period leading up to the 2008 financial crisis. As oil prices hit record highs, the country received record oil rents and increased their spending instead of maintaining a healthy fiscal balance aimed at controlling inflation. Al-mulali & Che Sab (2011) indicate that the UAE's real exchange rate is correlated to the oil price, meaning that any increase in the price of oil is likely to result in currency appreciation of the Dirham, the UAE's currency. Higher oil prices lead to a rapid growth in liquidity, and more money flowing into the economy. The increased cash flow is likely to ramp up domestic spending, which is then expected to lead to higher inflation. The country currently has a fixed exchange rate system pegged to the US dollar. Al-mulali & Che Sab (2011) argue that this system has had a stabilizing effects on inflation up until 2002, but that the rising oil prices in the years after made fixed exchange rates an ineffective tool to ensure monetary stability. The existing system was unable to cope with a period of unprecedented price increases, which in turn rapidly increased the price of assets and resulted in rising inflation. Rising oil prices and government surpluses are a challenge for the government's ability to manage its economic cycles. In the period between 2002-2008, the rising asset prices and rapidly increasing inflation had adverse effects in terms of increasing the cost of living (Al-mulali & Che Sab 2011). This showcases how even a highly developed country like the UAE can suffer from Dutch disease effects. However, it is important to note that the country only experienced adverse symptoms at record oil prices. The UAE still managed to maintain steady economic growth up until the financial crisis; this speaks to the relative stability and strength of the Dirham, as well as the UAE monetary system.

The persistent issue for any fossil fuel-dependent state is the reliance on public spending as the primary engine used by the state to promote economic growth (El-katiri 2016). This is very much the case for the UAE and is also, arguably, where they are most exposed to resource curse effects. Relying heavily on public spending can leave the

economy vulnerable to market fluctuations and the boom and bust cycle of international oil markets. In both the 1980s and 2014, the country struggled on account of decreasing oil prices which curtailed their ability to achieve economic growth. In situations like these, the government cannot afford to halt its spending even as its fossil fuel revenues fall. The country has an underdeveloped taxation system, which means that in downturn periods it lacks the safety of having other sources of income to fall back on. Instead, the state is forced to rely on its oil and gas revenues to maintain growth. The country has acknowledged this and has in response decided to build up a sovereign wealth fund to cover uncertain periods. The wealth fund is currently the third-largest in the world (SWFI 2020). The funds ensure that the state can tap into a dependable alternate source of funding to continue its public spending in times of unsettled oil and gas markets.

The lack of a fully developed and sustainable taxation system has several downsides. In a modern taxation system, the government is held accountable to its citizens because of the taxes it collects. The UAE does not have this basis of trust and therefore appeases its citizens through public spending (Harrison 2010). A recent IMF report criticized GCC states for their reliance on oil incomes to increase national welfare. Instead, the report recommends that these countries work to implement modern tax-reforms and to strengthen financial institutions. Specifically, the report says these countries should incorporate income, corporate, consumption and value-added taxes (IMF 2019). The UAE has taken some steps in the right direction, such as adopting a 5% VAT tax (World Bank 2019). Still, the country's taxation system is underdeveloped when compared to other developed nations within the same category of economic performance. These reforms are very unpopular within the population. Shifting obligations away from the state is complicated because many citizens regard the state as a provider, rather than a collector. These perceptions are grounded within the population and are subsequently hard to alter. Previous attempts to implement such reforms in fossil producing countries have led to popular protests and even riots.

Cutting back on fossil fuel subsidization and other societal benefits is linked to significant political risks for these governments (Aleagha, Birol & Ferroukhi 1995).

The UAE is typically regarded as a very politically stable country. Despite this apparent stability, the country still has several significant anti-democratic characteristics, such as a lack of political freedom and a general ban on the formation of political parties (Rabobank 2013; Davidson 2006). The near-complete lack of democracy means that the country obtains a very low “Economist Democracy Index” score, coming in at 145th of the 167 countries assessed (EIU 2019). Economic progress is helped immensely by a strong business environment and a relatively low rate of corruption. The ‘’Corruption Perception Index’’ ranks the country as 21st out of the 190 countries assessed (Transparency International 2019). A recent GAN corruption report has determined that the UAE has a moderate corruption risk, which could affect companies. While the country has a very business-friendly environment, there is still a reliance on local sponsors, and the local economy is routinely affected by interference from the royal family and its close allies. Their interference is a potential liability for international businesses (GAN 2018). Despite these potential drawbacks, the country still scores very highly on the 2020 “Doing business index” and is ranked 16 out of 190 countries (World bank 2020). Davidson (2006) has argued that the impressive development the UAE has been able to achieve comes as a consequence of its pre-existing political stability, maintained by the ruling family. Sheikh Khalifa has since taking power in 1966 taken advantage of the existing political system to ensure that he is kept in power through the “ruling bargain” (Davidson 2006). This is a norm-centered bargain amongst the ruling class and the country’s nationals where they maintain the existing system. In exchange for their loyalty the nationals receive benefits in the form of distributed wealth, economic or political benefits from the elites and the possibility of forming strategic alliances. This system of elite patronage maintains the ruler’s legitimacy and keeps them in power.

4.3 Comparative table – resource curse characteristics

Resource curse characteristics	Angola (A)	The UAE (B)
Rentier State behavior	Ever-present, affecting all levels of governance	Limited due to concerted government efforts
Oil dependence	Severe	Moderate
Dutch disease effects	Severe	Minimal
Diversification	Minimal	Moderate
Human Development Index score	149th of 189	35th of 189
Democracy index score	119th of 167	145th of 167
Business index score	177th of 190	16th of 190
Corruption Index score	146th of 198	21st of 198

5. Renewable developments

5.1 Case A – Renewable developments in Angola

Angola, as well as large parts of Africa, is in the midst of an energy crisis, which is particularly affecting Sub-Saharan Africa. In total, around 621 million people of Africa's 1.1 billion people lack access to electricity (UNEP 2017). In Angola, the national access to electricity is estimated at just 37%, and access to electricity is obstructed because power is often inaccessible, unaffordable and unreliable, leaving millions of people in energy poverty. In total, 13.12 million people lack access to electricity, mostly in rural areas (UNEP 2017). Africa is a continent with an abundance of available resources but a poor track record when it comes to developing them. Today the continent contributes to 3.3% of the annual energy-related CO2 emissions. Simultaneously the continent is expected to be amongst the most adversely affected by climate change effects (UNEP 2017). In this respect, the emergence of renewables presents a credible alternative to traditional energy resources and a new pathway towards providing cheap and accessible energy to the poorest segments of the world's population (IRENA 2014). At the same time, it also ensures that these countries can pursue electrification and development, while also working to limit their emissions. Thus, transforming Africa's energy systems has the potential to bring numerous benefits that can

alleviate resource curse effects. Sub-Saharan African countries rely heavily on traditional biomass to sustain their energy needs, with some countries having as much as 80% of the population using these energy sources to supply their own energy needs. Only a third of hospitals in Sub-Saharan Africa have access to reliable electricity (UNEP 2017). As we have noted earlier, these issues are also severe in Angola, with only 6% of the rural population having adequate access to electricity (UNDP 2019). Developing renewables energy can assist the country in providing electricity beyond the regions that have been important to the oil and gas industry, while in the process, ensuring that these areas can develop independently of such sectors. The South African region is especially vulnerable to increasingly severe cyclical floods and droughts, decreasing water availability, land degradation, desertification and reduced biodiversity. Together these challenges could seriously impede the region's ability to maintain both development and food security (Lotz-Sisitka & Urquhart 2014).

The continent has an immense renewable potential, with nearly unlimited potential solar capability (10TW) as well as substantial untapped hydro and wind power (350GW and 110GW, respectively) (UNDP 2017). Angola alone has access to an estimated 18.200 MW of hydro-powered energy, although so far, only 1200 MW has been developed (IHA 2017). In 2015, hydropower contributed just 2,5% of total electricity (UNDP 2017). The new president, João Lourenço, has shown a willingness to tackle the issue of lacking access to electricity through his new plan "Angola Energy Vision: 2025". His administration has embarked on a new ambitious new political agenda centered primarily around renewable energy. The new plan maps out a strategy towards developing the country's energy sector towards increasing national generation capacity and extending the grid to rural areas. The long term goal is to further economic development and diversification of the national economy (MINEA 2020). The plan aims to provide electricity to 60% of the population, up from 30% today, and to bring electricity to rural communities and towns that currently have no access at all. The plan, which is being overseen by the Ministry of Energy and Water, is mainly focused on

developing the country's hydropower capabilities thereby ensuring that Angola's power generation becomes 70% renewable (MINEA 2020).

The Angolan government's long-term plans of massively ramping up their generation capacity will encompass both renewable and conventional energy technologies. The goal set by the new plan is to increase the country's installed energy capacity to 9.900 MW by 2025. This will primarily be achieved through the continued development of hydropower projects, which will account for 66% of the new capacity, in the process increasing from 1200 MW to 9000 MW (FHI 2017). The plan also entails developing conventional forms of energy, where natural gas will account for 19% and non-hydropower renewable sources will make up 7.5% to produce 800 MW of electricity (AFDB 2017). The plan also emphasizes strategic goals of developing cross-border electricity projects to boost interconnectivity. The Angolan and Namibian 2021 Baynes Dam project on the Cunene River is expected to provide 300 MW to each country respectively. Projects like these are vital to increasing regional energy connectivity, thereby making it easier to further sustainable energy development since renewables are dependent on interconnectivity to function optimally (Goodrich 2020). Hydropower projects are also being developed independently on rivers such as, Capunda (330 MW), Dala (440 MW), Cafula (520 MW). However, the most ambitious projects in development are found in the country's largest river, Kwanza, with two major dams currently in development, Laúca (2,070 MW) and Caculo Cabaça (2,170 MW). Together these projects will generate power equal to 70% of the country's current total installed capacity (IHA 2017).

Climate change mitigation relies heavily on scaling up the use of new low-carbon energy technologies. Decreasing greenhouse gas emissions by developing electricity sectors is crucial to mitigating some of the worst impacts of climate change and renewables have a vital role to play in this transformation (Aklin 2018; Gross 2020). In the process, these technologies can also shift the country away from its current resource-led development,

which has worked to exacerbate Dutch disease effects and has led to the increased inequality and poverty that is evident in the country today. However, for Angola, progress is hindered by a lack of understanding, limited availability of adequately trained professionals, gaps in national institutional capacity to develop their sources effectively, poor financial coordination and a tendency to misuse funds. Progress is also hindered by the inadequacy of climate change information that is accessible to the public in Portuguese (Lotz-Sisitka & Urquhart 2014). There are also unique challenges when developing renewable technologies. Popular resistance to these technologies is a persistent issue that can affect both voters and governments. In some cases, local opposition to renewables has resulted in weaker electoral results for pro-renewable policymakers (Stokes 2015). Additionally, there are inherent spatial and environmental concerns associated with developing wind and solar energy systems in their increased land usage. These technologies require ten times the space of coal and natural gas-fired power plants to generate the same energy (Gross 2020). Renewable energies in developing countries, more so than in a developed one, are dependent on broad government support from advocates in both civil society and government, who see their potential to reduce CO2 emission and produce local job opportunities. It is also reliant on the necessary political capacity to sufficiently mobilize political support to push for their development (Rennkamp et.al 2017).

The progress that is being made towards electrification means that Angola, and many African countries like it, have the ability to leapfrog certain technological which have traditionally halted progress and facilitated resource curse effects, by instead relying on modern renewable solutions (IRENA 2019). From a national electrification perspective, this provides these countries with a wider variety of cost-effective opportunities when deciding on how to develop their energy systems. In the case of Angola, policymakers have shaped policy to focus attention away from traditional energy systems by focusing on low-carbon and renewable alternatives (AFDB 2019). Angola’s high dependence on oil and high levels of youth unemployment make it especially vulnerable to the negative effects of the energy

transition. In the short-term, Angola faces a great challenge, which if left unchecked, could detrimentally affect the economy as the world lessens its demand for oil and gas products. Over the long run, however, countries who take the right steps, such as promoting national economic diversification, can limit their vulnerability, and Angola's plans to use renewables could create a more stable and equitable economy for their citizens (IRENA 2019).

There are many associated benefits with limiting national economic exposure. This includes a higher probability of long-term growth prospects, since commodity price fluctuations become less important. The world has witnessed a 25% reduction in demand for oil and gas since March, which has seriously hurt fossil fuel producing countries (IEA 2020). Another benefit vital to further non-oil sector development is reducing potential Dutch disease effects and building up non-oil industries to spur job growth (IRENA 2019). Diversifying national economies is one of the most consequential tools available for states attempting to limit their oil sector dependence. When countries take concrete actions to ensures that the threat of Dutch disease effects are limited, it often leads to a boost for non-oil sectors (Karl 2007). Taking this course of action is likely to produce lasting benefits. Limiting Dutch disease effects means stopping the traditional brain drain where skilled labor is transferred from non-oil sectors into the oil-sector. Diversifying could also help alleviate the country's rapid trend of centralization by making rural areas more prone for economic development. Shifting the economy away from the economic enclaves currently sustaining the economy so that less developed areas become more viable, is vital to decreasing inequality (Burgos & Ear 2012).

As previously stated, the oil industry is capital intensive, while requiring relatively less labor. Currently, there are no significant benefits of the oil industry which is accruing to the local population (Amundsen 2014) Renewables technologies, because of their characteristics, are likely to create jobs that benefit the Angolan population. Renewable energy projects require a substantial amount of workers to build, maintain and operate them.

The renewable transition is estimated to create over 11 million energy sector jobs by 2050 globally, while also providing intrinsic benefits associated with providing reliable electricity to a larger part of the country (IRENA 2019). These regions become more susceptible to further economic development. Increasing the viability of commerce and the availability of jobs in rural areas is vital if the country is to continue its development and pursue long-term goals of reducing unemployment, especially amongst the nation's youth.

Diversifying away from oil dependence is also likely to better Angola's tumultuous relationship with oil-related conflicts. The country has seen both a war for interdependence and a civil war that were largely determined by the control of fossil fuel assets (Amundsen 2014). Tensions are not likely to disappear as long as the fundamental dependence on one sector persists, along with the capability to enrich those in power. Since the civil war, the country has enjoyed relative stability because there has not been a group capable of challenging the central power structure. However, as evidenced by the case of Venezuela, (Jankovic et al. 2019) a prolonged period of stability does not mean that tensions are incapable of rising again. Especially now as the country is getting accustomed to a new president, which is in the process of replacing much of the personnel that previously held power (Doctor 2018).

The main challenge associated with the resource curse that is likely to hold back the development of renewable energy in Angola is the continued prevalence of the rentier state. The Angolan rentier state is characterized by wide-ranging corruption, which is adversely affecting nearly all pillars of society (Amundsen 2014). This behavior has been intrinsic to the country for decades and has produced a national culture of corruption and self-enrichment. This poses a series of challenges as Angola now attempts to work towards a more effective and equitable allocation of resource rents that benefit the population to a greater extent. Corruption is a significant problem for many African nations and persists, even as policy initiatives are implemented to stop it (Hope 2017). For Angola, the socio-

economic and governance challenges that corruption poses are likely to persist, even if renewable energy is developed. Systemic corruption significantly hurts the credibility of democratic institutions, opposes and actively combats good governance, destroys confidence in administrative bodies and political processes, exacerbates inequality while impoverishing communities, and reduces both educational and employment opportunities (Hope 2017). These are immense hurdles that the country will have to tackle, in a long-term perspective. The new energy plan charted out by the central government is a promising first step towards achieving the ambitious goal of sustainable development. Going forward, the success of this energy plan will depend on the new president and his cabinet, as well as their ability and genuineness in pursuing diversification efforts. The elite-level corruption that stems from oil and gas dependence cannot be tackled solely through developing renewable energy sources. However, these technologies still have a vital role to play in terms of building a more robust economy, which in the long-term, could foster societal change towards more responsible governance.

Angola is suffering from a broad range of resource curse characteristics, predominantly its lack of economic diversification, wide-spread rentier state behavior and corruption, lack of development, enclave production and lacking educational and employment opportunities for nationals. Developing renewable energy technologies can grant access to electricity to new areas outside of those vital to the oil and gas sectors, while also providing these regions with new employment opportunities and priming them for further economic development. In the long run, these changes are likely to produce more opportunities for Angolan nationals. Developing renewables also shifts the country further away from its current enclave production where foreign elites in Luanda see the majority of the development benefits that stem from the oil and gas industry, while working to ensure that Angola’s distribution of its resource rents become more equitable.

5.2 Case B – Renewable developments – the UAE

The Arabian Gulf is starting to feel the effects associated with climate change. The number of yearly cold days and nights, measured in average temperatures, has been rapidly decreasing since 1960 (Al-Maamary et. al 2017). The UAE, along with other GCC states, are becoming increasingly aware of the threats and challenges posed by a rapidly transforming climate. Adverse climate effects have the potential to radically alter the gulf's period of growth, wealth and prosperity. These impacts will be multifaceted, however, the primary concerns stem from a lack of precipitation and rising average temperatures (Al-Maamary et. al 2017). These new realities are coinciding with an immense population boom, that is both boosting overall population and leading citizens to flock towards urban areas (Said, Alshehhi & Mehmood 2018). The growing population density and increasing living standards are altering habits and electricity use. In 2012, the average CO2-consumption in GCC countries was four times the global average, and the massive increases are facilitated by GCC countries electricity and fuel subsidization. GHG emissions in the Gulf Peninsula have increased by 121% between 1994 and 2004 (Al-Maamary et. al 2017).

In response to the environmental challenges, the UAE has sought to chart out a new path. In 2017, the country launched "Energy Strategy 2050", the first unified energy strategy in its history (UAE 2020). The strategy aims to radically increase the country's renewable energy generation capacity to 50% clean energy by 2050, decrease the country's national carbon footprint from power generation by 70%, and increase energy efficiency by 40% for individuals and corporations (UAE 2020). The strategy aims to build up a diverse mix of energy systems: 44% will stem from renewable energy sources, 38% from gas, 12% from coal and 6% from nuclear energy plants. To achieve its goals, the government will invest AED 600 billion in new energy projects (UAE 2020). The shift towards sustainability is outlined further in the country's largest emirate, Abu Dhabi whose national development plan, "Economic Vision 2030" outlines an economic action plan consisting of developing a sustainable and diversified economy that intends to further reduce the national dependence

on oil (ADCED 2008). The plan's number one policy priority is developing a sustainable economy through non-oil focused sector development. Diversifying away from current energy systems is seen as a key strategy to achieving these goals, while also ensuring future energy security (ADCED 2008).

The country's second-largest emirate Dubai has also presented a national energy strategy "Dubai Clean Energy Strategy 2050". The plan was launched to ensure that Dubai positions itself to become an international pioneer in terms of developing its renewable energy sector (DEWA 2020). The emirate will increase renewable output to 7% (1500 MW) of total energy capacity by the end of 2020, and renewable output is then expected be increased further with goals of 25% by 2030, and 75% by 2050 (IRENA 2015). The plan also aims to decrease the overall demand for water and energy by 30% by 2030 and to reduce carbon emission by 19% before the end of the year. These ambitious plans place Dubai as the most ambitious renewable energy developer within the UAE (DEWA 2020). The country has also chosen to develop four nuclear power plants with a combined generation capacity of 5.6GW (Sgouridis et. al 2016). When finished, these plants are expected to meet around 20% of national power demand (IRENA 2015).

The UAE's pivot towards renewable energies comes as a consequence of the industry's increased competitiveness and rapidly declining prices. Developing renewable energy is seen as a way to further the national diversification process to limit dependence on oil and gas sectors, while also limiting national reliance on high-cost natural gas for electricity production (Jamil, Ahmad & Jeon 2016). Introducing modern renewable energy technologies into the energy mix helps alleviate resource curse effects by bringing both environmental and economic benefits to the UAE as they are projected to increase national GDP and produce new job opportunities (Said, Alshehhi & Mehmood 2018; Sgouridis et. al 2016). The country grew its renewable energy portfolio by over 400% in the last decade and is on track to repeat that again in the coming decade. The central government is also

investing heavily in carbon capture and storage facilities (Nehme 2020). Abu Dhabi's newest 2GW solar project, ''Al Dhafra'', is projected to begin construction in 2021 and is estimated to produce power at a world record low 1.35 cents per kwh (Dudley 2020). When finished, the project is set to become one of the largest in the world and will produce enough power to provide electricity for 160,000 households (Dudley 2020). By 2030, the country projects to have 30.000 MW of installed renewable energy (Malik et. al 2019).

There are many reasons for the UAE to alter their energy strategies towards emphasizing energy efficiency and renewable technologies. The rapid economic and demographic changes that the country is going through are pushing the existing electricity infrastructure to its limits, resulting in the UAE having to import energy from neighboring countries to ensure electricity at peak hours (Jamil, Ahmad & Jeon 2016). Increasing the generation capacity, while also diversifying energy systems is likely to bring several benefits and help decrease the risk of Dutch disease effects. IRENA has calculated that increasing the share of renewable energy in the total energy mix by just 10% could lead to annual savings in the region of $1.9 billion by 2030 (IRENA 2015). Taking advantage of a variety of renewable energy systems, primarily solar and wind energy, presents a fossil fuel extension strategy that allows the country to receive a higher price for its oil and gas products (Sgouridis et. al 2016). Boosting renewable generation capacity reduces the domestic demand for oil and gas and limits consumption; subsequently, the UAE will be able to sell more oil and gas on international markets. Developing renewables is estimated to reduce domestic consumption of oil by between 8.5 and 15.5%, returns as high as 20% could be realized on their renewable energy projects in liberated oil exports alone (IRENA 2015). When health and environmental benefits are taken into account, the same report indicates that these measures could result in savings up to $3.7 billion (IRENA 2015).

There are also wider societal benefits of developing non-oil sectors. Building up non-oil sectors reduces the risk of potential Dutch disease effects and is likely to result in new

high-paying jobs. If properly prioritized, non-oil industries have an immense potential to spur major economic growth for oil-dependent countries (IRENA 2019). This is also true for the UAE. Developing renewable energy projects increases the national emphasis on sustainability as these projects command national attention. In addition, it provides socio-economic benefits, especially due to their potential to bring growth and employment opportunities to rural areas. Renewable energy projects are likely to spur job growth rurally where jobs are traditionally scarce (Said, Alshehhi & Mehmood 2018).

The UAE has enormous potential for renewable energy technologies, primarily through solar energy. The country receives an average of 10 hours of sunlight a day, as well as around 350 days of sun a year (Sgouridis et. al 2016; IRENA 2015). There are also major environmental gains that can be achieved; increasing the renewable energy generation capacity by 5% nationally is projected to result in a 7% reduction in CO2 emissions (Said, Alshehhi & Mehmood 2018). Present challenges that hinder further development of renewables are national perceptions about issues relating to renewable technologies. Cost-competitiveness, grid intermittency, desalination concerns, fossil fuel subsidization and inconsistencies in the regulatory framework are all reasons why some segments of the population remain unsure about their development (Al-Amir & Abu-Hijleh 2013; IRENA 2015). These energy challenges can be substantially mitigated by developing strategies and policy initiatives that highlight the dangers of dependence on fossil fuels and its associated resource curse effects. Additionally, the new realities associated with renewables needs to be presented so that a more holistic approach to investments and policies can be conducted. Solar technology is able to compete with fossil fuels in the UAE, but a decade of conventional thinking that prioritizes fossil fuels hurts their viability and popularity. Currently, the lack of awareness presents a bigger challenge to further renewable development than current cost levels (Sgouridis et. al 2016). The desert landscape also ensures that spatial issues, which were highlighted in the Angola case, are less of a concern, however there are greater institutional hindrances. The UAE utilizes price controls to ensure that its population

has sufficient access to cheap energy and national fuel consumption subsidies were estimated to cost the UAE 21.8 billion dollars in 2011 (Sgouridis et. al 2016). The national government fails to consider the total costs associated with various energy systems, as well as their ability to provide wider societal benefits. Instead, governmental subsidization protects the status quo, as companies refrain from considering other forms of energy. There are no incentives for companies to even consider these technologies because their energy needs are fulfilled at sub-market rates (Sgouridis et. al 2016).

The UAE has proved that it possesses the necessary institutional capacity to effectively manage resource curse characteristics. The government has allocated its resource rents in ways that promote economic diversification, build up non-oil sectors and limit Dutch disease effects. Renewable energy technologies provide a pathway toward fulfilling these goals, while also ensuring the country can further its sustainability agenda and strengthen national energy independence. Growing energy consumption coincides with increased environmental threats that pose a credible challenge to GCC states. There is an urgent need to focus on building capable technologies to be able to meet these challenges (Malik et. al 2019). The UAE, as the first GCC member, is realizing the issues inherent in relying on fossil fuel energy systems. Appearing progressive on climate change issues also provides a boost to the national public image vital in an era where oil and gas production is becoming increasingly controversial. Developing renewable energy technologies provides both economic and societal benefits in both the long and short term, while also helping the country keep its resource curse effects in check. Simultaneously, these technologies further the national plans of economic diversification and provide non-oil sector employment opportunities that could help the country tackle its youth unemployment issues.

6. Conclusion

This thesis has attempted to answer the following research question: **To what extent are Angola and The UAE, countries with differing exposure and resilience, both able**

to utilize the energy transition to lessen fossil fuel dependence and promote economic diversification? By doing so, it endeavors to showcase that renewable energy technologies can present a credible pathway forward for fossil fuel producing countries.

This thesis concludes that the transition towards renewable energy is both an important and necessary tool for countries to limit their dependence on fossil fuels and promote economic diversification. The two case studies outlined highlight an emphatic case of how countries with various financial, as well as institutional and political capacities, can utilize these technologies effectively. In the case of Angola, renewable energy provides a credible path for the country to develop its non-oil sectors, thus limiting its relative exposure toward its oil and gas sector. It also provides substantial opportunities to extend the grid and provide electricity to millions of Angolans, while in the process priming these areas for further economic development. The emphasis on renewable technology also has the potential to provide increased job opportunities for Angolan nationals, thus helping the country tackle its problem with unemployment. In the case of the UAE, renewables are route towards limiting dependence on the fossil fuel industry and helping limit national reliance on gas for electricity. The country will also be able to create jobs in rural areas and allocate resource rents in a way that helps to facilitate a smoother energy transition away from fossil fuels in the future. The two case studies illustrate how renewables play a significant role when it comes to limiting resource curse effects. Both in their ability to diversify away from oil dependency, and also because of their ability to promote sustainable development that stimulates growth in non-oil sectors and leads to an emergence of new jobs. This thesis has endeavored to showcase how renewables can build on the existing literature on the resource curse and economic nationalism, by highlighting their potential to lessen some of the associated issues identified by such scholars.

The thesis has, because of its limited scope, not been able to address several issues that could better help our understanding of the resource curse. The importance of this topic

will only increase in importance as climate change effects become more prominent, as will the need to tackle resource curse characteristics for affected countries. Building on these findings, new research should focus on mapping out the institutional structures that can help facilitate a more effective transition towards renewables. The two cases outlined differ widely in their economic, institutional and political make-up and capacity, thus further research should be conducted so the proper impacts of state institutions in facilitating this transition can be understood.

Renewables are becoming increasingly important in international energy markets, even to the point that the industry's own growth estimates were severely underestimated, with price reductions first thought to be reachable by 2020, arriving as early as 2014 (Sgouridis et. al 2016). Based on the industries current trajectory, projections for 2030 are perhaps already understated. As the new reality surrounding renewables becomes clearer, and realities about the climate become harder to ignore, these technologies are likely to become even more important for countries looking for opportunities to fulfill their future energy needs. As evidenced by the immense cost-reductions, which have occurred in the last ten years, the scaling up of this industry still has untapped potential, for instance when small-scale personalized systems, such as solar panels suitable for homes become price-competitive.

The world is becoming increasingly aware of the need to respond meaningfully to the urgent issue of climate change and its associated issues; however, there are still persistent constraints affecting countries' energy-decisions. The status quo, which this thesis understands as business-as-usual, incremental decision-making within limited frameworks, is helping to promote investments into traditional fossil fuel infrastructure (Olson & Lenzemann 2016). The current trajectory is not only environmentally detrimental, it also continues to reinforce the dominant energy systems, which has for a long time produced energy winners and losers. Sub-Saharan Africa and the Gulf Region are both bearing the

brunt of these burdens in which the status quo continues to protect. On the other hand, renewables present a different trajectory and creates further alternatives for countries, regardless of their economic capacity. The industry's rapidly changing perceptions are solidifying this reality, with an increasing number of renewable energy applications – which have previously been unattainable due to cost – now becoming cost-effective and sensible development paths. When decisions are made within narrowly confined frameworks, that are predisposed to see intrinsic value in fossil fuels, this also shapes the public perception to devalue renewable technologies, despite the insurmountable price-tag associated with inaction on climate change (Olson & Lenzemann 2016).

The way forward must incorporate plans that aim to transform global energy systems by embracing the need for sustainability. Economic planning has to be predicated on holistic thinking that envisions development beyond simply privileging economic factors. These plans also must take into account the special relationship that exists between the fossil fuel industry and national governments. This industry benefits from the relationship in the form of subsidies, special privileges and protections (Yergin 2011) and these aspects greatly boost the longevity of fossil fuels as reliable and profitable investments. The IMF estimates that the world spent $5.2 trillion (6.5 % of GDP) on fossil fuel subsidies in 2017 (IMF 2019). $634 billion of these funds are provided as direct energy sector subsidies, of which 70% is given to fossil fuel industries (Taylor 2019). Within this framework, it is not difficult to understand the entrenched power possessed by fossil fuel industries. While there are spatial, intermittent and material limitations that prevent renewables from single-handedly maintaining large scale energy grids, they still present a vital path towards modernizing energy systems and limiting global emissions.

7. Bibliography

Ackah-Baidoo, A. (2012). Enclave development and 'offshore corporate social responsibility': Implications for oil-rich sub-Saharan Africa. *Resources Policy*, 37(2)

Adams, D., Adams, K., Ullah, S., & Ullah, F. (2019). Globalisation, governance, accountability and the natural resource 'curse': Implications for socio-economic growth of oil-rich developing countries. *Resources Policy*, 61

ADCED (2008) "Economic Vision 2030" https://www.ecouncil.ae/PublicationsEn/economic-vision-2030-full-versionEn.pdf [Retrieved on: 23/06/2020]

ADNOC (2019). "Our History" https://www.adnoc.ae/en/about-us/our-history [Retrieved 11/06/20]

African Development Bank (2019). "The energy sector of Angola: Vision, Action Plan and Investment Opportunities" https://www.afdb.org/sites/default/files/2019/07/16/angola_aemp_presentation_0.pdf [Retrieved on: 17/06/20]

African Development Bank (2017). Angola - Country Strategy Paper 2017-2021 https://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/Angola_-__Country_Strategy_Paper_2017-2021.pdf [Retrieved on 08/06/20]

Aklin, M. (2018). How robust is the renewable energy industry to political shocks? Evidence from the 2016 U.S. elections. *Business and Politics*, 20(4)

Aleagha, A. Birol, F., & Ferroukhi, R. (1995). The economic impact of subsidy phase out in oil exporting developing countries: A case study of Algeria, Iran and Nigeria. Energy Policy, 23(3)

Ambrose, J (2019) "New windfarms will not cost billpayers after subsidies hit record low" *The Guardian,* London. https://www.theguardian.com/environment/2019/sep/20/new-windfarms-taxpayers-subsidies-record-low [Retrieved on 01/04/2020]

Al-Amir, J., & Abu-Hijleh, B. (2013). Strategies and policies from promoting the use of renewable energy resource in the UAE. *Renewable and Sustainable Energy Reviews*, 26

Al-Maamary, H. M., Kazem, H. A., & Chaichan, M. T. (2017). Climate change: the game changer in the Gulf Cooperation Council region. *Renewable and Sustainable Energy Reviews*, 76

Al-mulali, U. & Che Normee Binti, C.(2018) Energy consumption, CO2 emissions, and development in the UAE. *Energy Sources, Part B: Economics, Planning, and Policy*, 13:4

Al- mulali, U., & Che Sab, C.(2011). The impact of oil prices on the real exchange rate of the dirham: a case study of the United Arab Emirates (UAE). *OPEC Energy Review*, 35(4)

Amundsen, I. (2014). Drowning in Oil: Angola's Institutions and the "Resource Curse". *Comparative politics*, 46(2)

Andersen, J., & Ross, M. (2014). The big oil change: A closer look at the Haber–Menaldo analysis. *Comparative Political Studies*, 47(7)

Auty, R. M. (1997). Natural resource endowment, the state and development strategy. *Journal of International Developmen*t: *The Journal of the Development Studies Association*, 9(4)

Auty, R. M. (2001). The political economy of resource-driven growth. *European economic review*, 45(4-6)

Beblawi, H. and G. Luciani (1987) *The Rentier State*. Croom Helm, New York.
Bartlett, L. & Vavrus, F. (2017). Comparative case studies: An innovative approach. *Nordic Journal of Comparative and International Educatio*n (NJCIE), 1(1).

Bremmer, I., & Johnston, R. (2009). The rise and fall of resource nationalism. *Survival*, 51(2)

Burgos, S., & Ear, S. (2012). China's Oil Hunger in Angola: history and perspective. *Journal of Contemporary China*, 21(74)

Butt, G. (2001). Oil and Gas in the UAE. *United Arab emirates: A new perspective*. Trident Press. London

Cascais, A (2018). "Angola: The fall of the dos Santos clan" *DW,* Bonn. https://www.dw.com/en/angola-the-fall-of-the-dos-santos-clan/a-45646757 [Retrieved on: 10/06/20]

Chaudhry, K. (1997). *The price of wealth : Economies and institutions in the Middle East* Cornell University Press. New York

Climate Action Tracker (2019) "Global Projections Update - COP25 Madrid" https://climateactiontracker.org/documents/698/CAT_2019-12-10_BriefingCOP25_WarmingProjectionsGlobalUpdate_Dec2019.pdf [Retrieved on: 27/03/20]

Coady, D. Parry, I. Nghia-Piotr, L. & Baoping, S. (2019) "Global Fossil Fuel Subsidies Remain Large: An Update Based on Country-Level Estimates" IMF Working Paper. https://www.imf.org/en/Publications/WP/Issues/2019/05/02/Global-Fossil-Fuel-Subsidies-Rmain-Large-An-Update-Based-on-Country-Level-Estimates-46509 [Retrieved on: 22/06/20]

Cropley, E. (2016). "Rebels alive and kicking in Angolan petro-province, oil workers say" *Reuters,* London. https://www.reuters.com/article/angola-oil-security/rebels-alive-and-kicking-in-angolan-petro-province-oil-workers-say-idUSL8N1952C9 [Retrieved on: 10/06/20]

Dajani, D (2017) "UAE minister told of frustration at Emirati unemployment levels" *The National. https://www.thenational.ae/uae/uae-minister-told-of-frustration-at-emirati-unemployment-levels-1.682011* [Retrieved on 12/06/20]

Davidson, C. M. (2006). After Shaikh Zayed: the politics of succession in Abu Dhabi and the UAE. *Middle East Policy*, 13(1)

Dennis, B & Moody, C (2018) "'We are in trouble.' Global carbon emissions reached a record high in 2018". *The Washington Post,* Washington D.C. *https://www.washingtonpost.com/energy-environment/2018/12/05/we-are-trouble-global-carbon-emissions-reached-new-record-high/* [Retrieved on: 25/03/20]

DEWA (2020) https://www.dewa.gov.ae/en/about-us/media-publications/latest-news/2020/01/renewable-energy-shaping-the-future-of-sustainability [Retrieved on: 23/06/2020]

Doctor, A (2018) “Can Angola’s new president get rid of corruption and revive his party’s reputation?” *The Washington Post,* Washington D.C*. https://www.washingtonpost.com/news/monkey-cage/wp/2018/08/03/can-angolas-new-president-get-rid-of-corruption-and-revive-his-partys-reputation/* [Retrieved on: 10/06/20]

Dudley (2020) “Abu Dhabi Lays Claim To World’s Cheapest Solar Power, After Revealing Bids For 2GW Mega-Plant” *Forbes.* https://www.forbes.com/sites/dominicdudley/2020/04/28/abu-dhabi-cheapest-solar-power/#76859a224924 [Retrieved on: 23/06/20]

Energy Future Initiatives (2019) The U.S Energy & Employment Report, on behalf of the U.S. Department of Energy, Washington D.C. https://static1.squarespace.com/static/5a98cf80ec4eb7c5cd928c61/t/5c7f3708fa0d6036d7120d8f/1551849054549/USEER+2019+US+Energy+Employment+Report.pdf [Retrieved on: 01/04/2020]

EIA (2019) “What countries are the top producers and consumers of oil?” https://www.eia.gov/tools/faqs/faq.php?id=709&t=6 [Retrieved on 12/06/20]

Eisenhammer, S (2018). “Angola battles to revive oil exploration as output declines”. *Reuters,* London *https://www.reuters.com/article/us-angola-oil-exploration/angola-battles-to-revive-oil-exploration-as-output-declines-idUSKCN1NK0KQ* [Retrieved on 06/06/20]

EIU (2019) “Democracy Index 2019” http://www.eiu.com/Handlers/WhitepaperHandler.ashx?fi=Democracy-Index-2019.pdf&mode=wp&campaignid=democracyindex2019 [Retrieved on 10/06/20]

El-Katiri, L. (2016). Vulnerability, resilience, and reform: The GCC and the oil price crisis 2014–2016. New York: Columbia University Center on Global Energy Policy.

Escobar, H. (2018) “Scientists, environmentalists brace for Brazil's right turn”. *Science* (New York, N.Y.), 362(6412)

Frynas, J., & Wood, G. (2001). Oil & War in Angola. *Review of African Political Economy*, 28(90)

Goodrich, G. (2020) “Namibia, Angola to Construct Dam in 2021” *Africa: Oil & Power* https://www.africaoilandpower.com/2020/03/16/namibia_angola-to-construct-dam-in-2021/ [Retrieved on: 17/06/20]

Goldemberg, J. (2012) *Energy: What everyone needs to know*. Oxford University Press. Oxford

Gross, S (2020) “Renewables, land use, and local opposition” Brookings Institute.https://www.brookings.edu/research/renewables-land-use-and-local-opposition-in-the-united-states/ [Retrieved: 19/06/20]

Haber, S., & Menaldo, V. (2011). Do natural resources fuel authoritarianism? A reappraisal of the resource curse. *American political science Review*, 105(1)

Hammond, J. L. (2011). The resource curse and oil revenues in Angola and Venezuela. *Science & society*, 75(3)

Haouas, I., & Heshmati, A. (2014). Can the UAE avoid the oil curse by economic diversification? *Discussions Paper 8003*. IZA - Institute of labor economics.

Harrison, M. (2010). Taxation and the GCC States. Gulf One Lancaster Centre for Economic Research Report. Lancaster University Management School, Lancashire.

HSBC Expat (2019) "Country Survey - United Arab Emirates" https://www.expatexplorer.hsbc.com/survey/country/united-arab-emirates [Retrieved on: 12/06/20]

Human Rights Watch (2004). "Some Transparency, No Accountability
The Use of Oil Revenue in Angola and Its Impact on Human Rights" https://www.hrw.org/report/2004/01/12/some-transparency-no-accountability/use-oil-revenue-angola-and-its-impact-human [Retrieved on: 10/06/20]

IEA (2020) "Angola Country Profile" https://www.iea.org/countries/Angola [Retrieved on 06/06/20]

IEA (2015) "2025 Angola Long Term Strategy" https://www.iea.org/policies/5849-2025-angola-long-term-strategy [Retrieved on: 17/06/2020]

IEA (2020) "World Energy Investments 2020" *IEA Flagship Report.* https://www.iea.org/reports/world-energy-investment-2020/key-findings#abstract [Retrieved on: 06/06/20]

IEA (2019) "World Energy Outlook 2019" *IEA Flagship Report.* https://iea.blob.core.windows.net/assets/1f6bf453-3317-4799-ae7b-9cc6429c81d8/English-WEO-2019-ES.pdf [Retrieved on 20/04/19]

IHA (2017) "2017: Hydropower Status Report" https://www.hydropower.org/2017-hydropower-status-report [Retrieved on:17/06/20]

Coady, D. Parry, I. Nghia-Piotr, L. & Baoping, S. (2019) "Global Fossil Fuel Subsidies Remain Large: An Update Based on Country-Level Estimates" *IMF Working Paper.* https://www.imf.org/en/Publications/WP/Issues/2019/05/02/Global-Fossil-Fuel-Subsidies-Remain-Large-An-Update-Based-on-Country-Level-Estimates-46509 [Retrieved on: 22/06/20]

IMF (2018) "Report for Selected Countries and Subjects" https://www.imf.org/external/pubs/ft/weo/2018/02/weodata/weorept.aspx?pr.x=47&pr.y=7&sy=1980&ey=2023&scsm=1&ssd=1&sort=country&ds=.&br=1&c=614&s=NGDP_RPCH,PPPGDP,PPPPC,PCPIPCH,GGXWDG_NGDP&grp=0&a= [Retrieved on: 09/06/20]

IMF (2019) "Why Improving Fiscal Institutions is Critical to the Middle East and Central Asia" https://www.imf.org/en/News/Articles/2019/10/25/na102819-why-improving-fiscal-institutions-is-critical-to-the-middle-east-and-central-asia [Retrieved 12/06/20]

IPCC (2018) "Summary for Policymakers"" In: Global Warming of 1.5°C" https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15_SPM_version_report_LR.pdf [Retrieved on: 24/03

IRENA (2019) “A new world: The geopolitics of the energy transformation” Global Commission on the Geopolitics of Energy Transformation, Abu Dhabi. https://www.irena.org/publications/2019/Jan/A-New-World-The-Geopolitics-of-the-Energy-Transformation [Retrieved on: 01/04/2020]

IRENA (2014). “Estimating the Renewable Energy Potential in Africa A GIS-based approach”. IRENA-KTH working paper. Abu Dhabi. https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2014/IRENA_Africa_Resource_Potential_Aug2014.pdf [Retrieved on: 26/06/20]

IRENA (2016) “Renewable Energy in the Arab Region” Overview of Developments, International Renewable Energy Agency, Abu Dhabi https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2016/IRENA_Arab_Region_Overview_2016.pdf [Retrieved on 31/03/2020]

IRENA (2015) “Renewable Energy Prospects: United Arab Emirates” REmap 2030 analysis. Abu Dhabi. https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2015/IRENA_REmap_UAE_report_2015.pdf [Retrieved: 25/06/20]

IRENA (2019). “10 Years: Progress to Action” Abu Dhabi. https://www.irena.org/publications/2020/Jan/10-Years-Progress-to-Action [Retrieved on: 16/03/20]

Jamil, M., Ahmad, F., & Jeon, Y. J. (2016). Renewable energy technologies adopted by the UAE: Prospects and challenges–A comprehensive overview. *Renewable and Sustainable Energy Reviews*, 55

Jankovic, N., Colin, M. O., Ari, M., & Haidacher, A. (2019). The divided Venezuela. *International Journal of Foresight and Innovation Policy*, 14(1)

Karl, T. L. (2007) Oil-led development: social, political, and economic consequences. *Encyclopedia of energy*, 4(8)

Kasekende, E., Abuka, C., & Sarr, M. (2016). Extractive industries and corruption: Investigating the effectiveness of EITI as a scrutiny mechanism. *Resources Policy*, 48

Larsen, E. (2006). Escaping the resource curse and the Dutch disease? When and why Norway caught up with and forged ahead of its neighbors. *American Journal of Economics and Sociology*, 65(3)

Lawrence, F., Pegg, D. & Evans, R. (2019) “How vested interest tried to turn the world against climate change” *The Guardian.* London. https://www.theguardian.com/environment/2019/oct/10/vested-interests-public-against-climate-science-fossil-fuel-lobby [Retrieved on: 31/03/2020]

Lazard (2019). “Levelized cost of energy analysis” Lazar Capital Markets Report, version 13, New York. https://www.lazard.com/media/451086/lazards-levelized-cost-of-energy-version-130-vf.pdf [Retrieved on: 16/03/20]

Leite, C. & Weidemann, J. (2002). Does Mother Nature corrupt? Natural resources, corruption, and economic growth. *In Governance, corruption and economic performance*. IMF

Lotz-Sisitka, H. & Urquhart, P (2014) Strengthening University Contributions to Climate Compatible Development in Southern Africa - Angola Country Report. *SARUA,* Cape Town. https://www.sarua.org/files/SARUA%20Vol2No1%20Angola%20Country%20Report.pdf [Retreived: 19/06/20]

Malik, K., Rahman, S., Khondaker, M., Abubakar, A., Aina, N., & Hasan, I. (2019). Renewable energy utilization to promote sustainability in GCC countries: Policies, drivers, and barriers. *Environmental Science and Pollution Research*, 26(20)

Mares, D. (2010). Resource nationalism and energy security in Latin America: Implications for global oil supplies. Working paper, institute of public policy baker Institute

Marques, J. (2020). "Soyo Refinery: All Bets Are In" *AOP.* *https://www.africaoilandpower.com/2020/01/31/soyo-refinery-all-bets-are-in/* [Retrieved on 06/06/20]

Martin, P. (1977). The Cabinda Connection: An Historical Perspective. *African Affairs*, 76(302)

Mehlum, H., Moene, K., & Torvik, R. (2006). Institutions and the Resource Curse. *Economic Journal*, 116(508)

MINEA (2020) "Angola Energy Vision: 2025, Executive Summary" http://www.angolaenergia2025.com/en/conteudo/executive-summary [Retrieved on: 17/06/20]

Nehme, D (2020). "UAE To Double Renewable Energy Portfolio in the next 10 years: ADNOC" *Reuters,* London. https://www.reuters.com/article/us-emirates-energy/uae-to-double-renewable-energy-portfolio-in-next-ten-years-adnoc-idUSKBN1ZC0IB [Retrieved 28/05/20]

Oliveira, R. (2015). *Magnificent and beggar land : Angola since the Civil War*. Hurst Publishers. London

Olson, C., & Lenzmann, F. (2016). The social and economic consequences of the fossil fuel supply chain. *MRS Energy & Sustainability*, 3.
Owen, A. (1988). Australia's role as an energy exporter: Status and prospects, *Energy Policy*, 16(2)

Rabobank (2013) "Country Report United Arab Emirates" https://economics.rabobank.com/publications/2013/may/country-report-united-arab-emirates/ [Retrieved on: 15/06/20]

Rennkamp, B et al. (2017) Competing coalitions: The politics of renewable energy and fossil fuels in Mexico, South Africa and Thailand. *Energy Research & Social Science. (*34)

Sachs, J., & Warner, A. (1995). Natural resources and economic growth. *Development Discussion Paper 517a*. Harvard Institute for International Development. Cambridge

Sachs, J., & Warner, A. (1999). The big push, natural resource booms and growth. *Journal of development economics*, 59(1)

Safi, Michael (2019) “How Reliable is Saudi Arabia’s Interest in Renewable Energy” *The Guardian,* London. *https://www.theguardian.com/environment/2019/oct/12/how-real-saudi-arabia-interest-renewable-energy* [Retrieved on: 31/03/2020]

Said, Z., Alshehhi, A. A., & Mehmood, A. (2018). Predictions of UAE's renewable energy mix in 2030. *Renewable Energy*, 118,

Sala-i-Martin, X., & Subramanian, A. (2013). Addressing the natural resource curse: An illustration from Nigeria. *Journal of African Economies*, 22(4)

Salawitch, R. J., & Canty, T. P. (2017) *Paris climate agreement: Beacon of hope.* Springer International Publishing. New York City

Sgouridis, S., Abdullah, A., Griffiths, S., Saygin, D., Wagner, N., Gielen, D., & McQueen, D. (2016). RE-mapping the UAE’s energy transition: An economy-wide assessment of renewable energy options and their policy implications. *Renewable and Sustainable Energy Reviews*, 55

Shihab, M. (2001) *United Arab Emirates: A new perspective*. Trident Press Ltd. Cape Town.

Stokes, L. C. (2015). Power politics: Renewable energy policy change in US states. Ph.D. Dissertation. Cambridge, MA: MIT Press.

SWFI (2020) “Top 91 Largest Sovereign Wealth Fund Rankings by Total Assets” https://www.swfinstitute.org/fund-rankings/sovereign-wealth-fund [Retrieved on 07/05/20]

Taylor, Michael (2020), Energy subsidies: Evolution in the global energy transformation to 2050, International Renewable Energy Agency, Abu Dhabi. https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2020/Apr/IRENA_Energy_subsidies_2020.pdf [Retrieved on: 22/0620]

Transparency International (2019) “Corruption Perception Index - Angola” https://www.transparency.org/en/cpi/2019/results/ago [Retreved: 09/06/20]

TRTWorld (2019). “Cabinda- a little known oil-rich region- seeks independence from Angola” https://www.trtworld.com/africa/cabinda-a-little-known-oil-rich-region-seeks-independence-from-angola-26799 [Retrieved on: 09/06/20]

UAE (2020) “UAE Energy Strategy 2050” https://u.ae/en/about-the-uae/strategies-initiatives-and-awards/federal-governments-strategies-and-plans/uae-energy-strategy-2050 [Retrieved on: 23/06/20]

Uslaner, E. (1989). Energy policy and free trade in Canada, *Energy Policy*. 17(4)

UNDP (2019) “Angola: Human Development Indicators” http://hdr.undp.org/en/countries/profiles/AGO [Retrieved on: 09/06/20]

UNDP (2019) “2019 Human Development Index” http://hdr.undp.org/en/content/2019-human-development-index-ranking
[Retrieved on: 09/06/20]

UNDP (2019) “The UAE: Human Development Indicators” http://hdr.undp.org/en/countries/profiles/ARE [Retrieved on:15/06/20]

UNEP (2017) “Atlas of Africa Energy Resources” https://wedocs.unep.org/handle/20.500.11822/20476 [Retrieved on:15/06/20]

UNFCCC (2020) “The Paris Agreement” https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement [Retrieved on: 24/03/20]

Usui, N. (1997). Dutch disease and policy adjustments to the oil boom: A comparative study of Indonesia and Mexico. *Resources Policy*, 23(4)

Venkatesh, V., Brown, S., & Bala, H. (2013). Bridging the Qualitative-Quantitative Divide: Guidelines for Conducting Mixed Methods Research in Information Systems. *MIS Quarterly*, 37(1)

Weinthal, E., & Luong, P. (2006). Combating the Resource Curse: An Alternative Solution to Managing Mineral Wealth. *Perspectives on Politics*, 4(1)

Wilson, J. (2015) Understanding resource nationalism: economic dynamics and political institutions, *Contemporary Politics*, 21:4

Winckler, O. (2000) The challenge of foreign workers in the Persian/Arabian Gulf: The case of Oman, *Immigrants & Minorities*, 19:2

World Bank (2020) “Economy Profile - Angola - Doing Business 2020”. World Bank Group. https://www.doingbusiness.org/content/dam/doingBusiness/country/a/angola/AGO.pdf [Retrieved on: 10/06/20]

World Bank (2020) “Economy Profile - The UAE - Doing Business 2020” World Bank Group https://www.doingbusiness.org/content/dam/doingBusiness/country/u/united-arab-emirates/ARE.pdf [Retrieved on: 16/06/20]

World Bank (2020) “GDP (current US$) - Selected countries - MENA Region” https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?end=2015&locations=QA-SA-OM-AE-KW-BH-IR-EG-DZ-DJ-IQ-IL-TR&name_desc=false&start=1965&view=chart [Retrieved on: 12/06/20]

Yergin, D. (2011). *The prize: The epic quest for oil, money & power*. Simon and Schuster. New York City