

# The Energy Crisis of 2021 and its Implications for Africa

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Energy markets have experienced significant disruptions since the outbreak of COVID-19. In late 2021, soaring natural gas prices triggered a new crisis, leading to risks of energy supply shortages worldwide and propelling the issue of energy security to the forefront. Africa will not be spared the repercussions of this crisis, which could further increase energy inequality, which is in turn linked to other forms of inequality. Indeed, in a context of persistent inflation, the lack of reliable and affordable energy supplies tends to limit production possibilities and industrial growth, with negative impacts on employment, social protection, and health services, among others. While developed countries have achieved energy security and are now focusing on the energy transition, Africa strives to attain both. This makes the road ahead all the more challenging, as trade-offs between fossil fuels and renewables must be made in the short term to maintain a sustainable and secure energy supply. This implies the coexistence of fossil fuels and renewables for quite some time, which seems to go against the general consensus in favor of eliminating fossil fuels as soon as possible. It also raises the question of accountability for climate change action. While the energy transition is inevitable, it must be tailored to the socio-economic, political, and security contexts of each region, and in its implementation must take into account regions' different responsibilities for climate change.

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## INTRODUCTION

The start of 2022 has been marked by a global energy crisis, which has impacted economies worldwide. This crisis is the result of the combination of several forces. The speed and magnitude of the economic recovery—following the plunge in global energy consumption in the early months of the COVID-19 pandemic—has created a mismatch between energy demand and supply. Meanwhile, the energy sector has been characterized by persistent underinvestment and weak market regulation associated with adverse weather events and insufficient buffers. These factors have led to a troubling disruption in global energy markets, resulting in soaring energy prices. This crisis has also revealed the consequences of dependence on fossil fuels and the risks of a poorly managed energy transition, thus bringing the issue of energy security to the forefront.

As Africa is not spared from this energy crisis, this Policy Brief analyzes the implications for the African continent and its energy transition. We start by identifying the causes of the 2021 energy crisis, highlighting the importance of energy security in the turbulent context of the pandemic, and economic and energy shocks. We then identify the implications of this crisis for Africa and question the African dilemma of climate-change mitigation and adaptation versus economic development. More specifically, we discuss what the energy transition means for the continent.

### I. THE CAUSES OF THE 2021 ENERGY CRISIS

The current crisis results from a confluence of supply and demand factors that have tightened markets progressively over several months. In the past, global energy supply crises have been typically limited to oil, but this time, natural gas appears to be at the center. From an economic perspective, energy industry experts concur in identifying three key elements that led to this crisis: COVID-19 and supply chain disruptions; greater interconnectedness of natural gas markets; and signs of energy price volatility during the energy transition (Gilbert et al, 2021; Fernandez Alvarez et al, 2021; Boone et al, 2021).

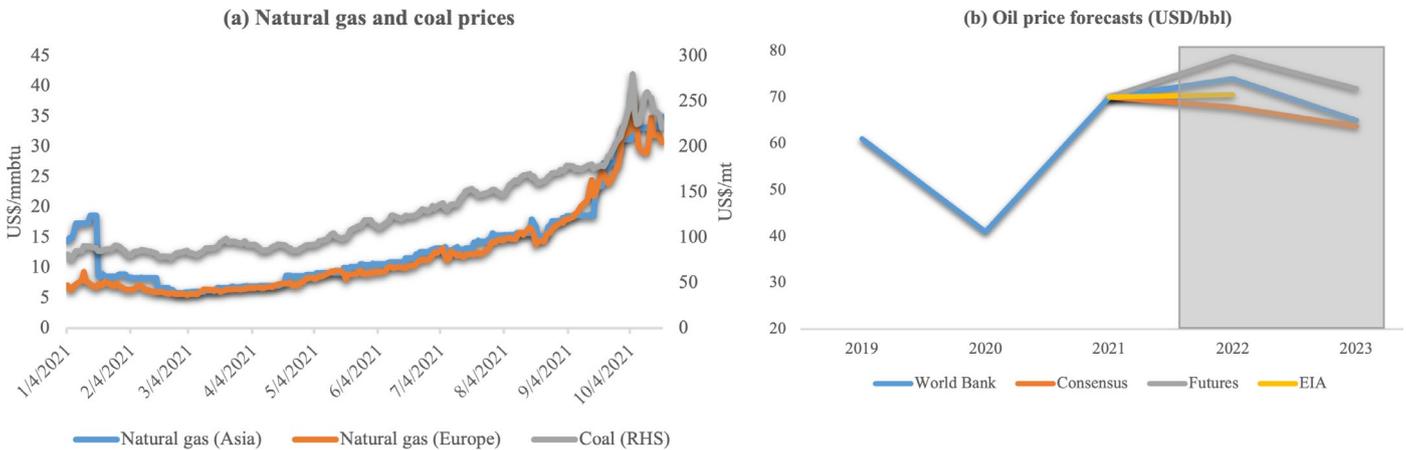
The magnitude of the impact of the energy market disruptions of early 2020 in terms the current crisis is undeniable. The early months of the COVID-19 crisis saw a drastic drop in many fuel prices and a significant decline in global energy consumption. However, energy prices then rebounded strongly due to an exceptionally rapid global economic recovery, a long cold winter in the Northern Hemisphere, and a smaller than expected increase in supply (Fernandez Alvarez et al, 2021). In particular, natural gas prices have skyrocketed and reached record levels in Europe and Asia. Ripple effects are also being felt in coal markets (Figure 1). Indeed, exceptionally high gas prices have prompted many markets, including the U.S., Europe, and Asia, to use coal rather than natural gas for power generation. With coal, the closest substitute, in high demand as power plants use more of it, coal prices have risen to their highest level since 2001 (Pescatori et al, 2021).

Therefore, the post-COVID-19 demand surge has coincided with supply that has been slow to respond to price signals because of labor shortages, maintenance backlogs, longer lead times for new projects, and lack of interest from investors in fossil fuel companies. Indeed, investment in the energy sector began to dry up when the pandemic erupted in 2020 and resulted in the laying off of many workers in the industry, and disruption to many supply chains. This has led to energy supply shortages. For instance, natural gas production in the U.S. continues to lag behind pre-crisis levels; production in the Netherlands and Norway is also declining; and Europe's main supplier, Russia, has been cutting back on shipments to

Europe recently (Pescatori et al, 2021). These shortages have contributed to higher gas and coal prices, which have been passed on to electricity prices.

**Figure 1:**

**Evolution of Energy Prices**



Source: Bloomberg; U.S. Energy Information Administration; OPEC; World Bank.

These acute supply and investment challenges in the context of a global pandemic have been accompanied by fundamental long-term changes in energy markets, characterized by the emergence of natural gas as a 'global commodity'. The context of global decarbonization favors this trend, as natural gas is considered less polluting than coal for power generation and is seen as a transition fuel while the energy transition is completed. Historically, natural gas prices and markets were regional, rather than global, given the difficulty of storing and transporting natural gas. With the rapid growth of the liquified natural gas (LNG) market, and greater integration of long-distance pipelines, regional natural gas markets and prices are increasingly linked, thus making electricity markets more globally integrated than ever before (Gilbert et al, 2021).

This situation also means that natural gas is becoming increasingly susceptible to the volatility that characterizes energy products. This situation is best illustrated in Europe, which bore the brunt of the 2021 gas market disruption. European countries have switched from coal to natural gas for power generation to reduce greenhouse gas emissions and meet other environmental goals. However, high European demand in the first half of 2021 did not allow for significant accumulation of gas reserves in storage facilities before the winter period. As a result, Europe has become particularly dependent on imports. Russia's reluctance to increase exports, and tight markets for LNG, have led to fears that Europe will face an energy crisis this winter, with stored gas running out quickly (Zachmann et al, 2021). At the same time, as energy transition efforts accelerate globally, some blame the transition as the main culprit behind the crisis. However, this claim is inaccurate and misleading. Indeed, the world currently remains mainly dependent on fossil fuels, the prices of which are volatile due to the price inelasticity of energy markets, which leads to frequent crises. Yet renewable energy is not subject to the vagaries of global energy markets (Gilbert et al, 2021). Instead, the inadequate management of the transition and the slow deployment of clean energy are criticized. Indeed, oil and natural gas investment has declined in recent years following the collapses in commodity prices in 2014-15 and 2020, thus increasing

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the risks of supply disruptions. Yet, most governments have not pursued strong enough policies to develop alternative energy sources and operationalize rapidly new clean energy infrastructure, which could bridge the gap potentially created by the halt in hydrocarbon investments (Fernandez Alvarez et al, 2021). This situation, hence, reveals the energy trilemma between economy, environment, and security that many countries currently face.

## II. AN INCREASED EMPHASIS ON ENERGY SECURITY

The disruption in the energy markets has brought the critical issue of energy security to the forefront. Over the years, policymakers and analysts have sought to define this concept and its implications. According to the European Commission, energy security is “the ability to ensure that future essential energy needs can be met, both from adequate domestic resources exploited under economically acceptable conditions or maintained as strategic reserves, and from accessible and stable external sources supplemented, where necessary, by strategic stocks” (European Commission, 2011). Barton et al (2004) gave a more simplified definition and described it as “a condition in which a nation and all or most of its citizens and businesses have access to sufficient energy resources at reasonable prices for the foreseeable future, without serious risk of major disruption of service”. More recently, the International Energy Agency (IEA) identified energy security as “the uninterrupted availability of energy resources at an affordable price” (IEA, 2019).

The IEA definition, the most commonly used, distinguishes between long-term and short-term energy security. The former is primarily about timely investments to provide energy in line with economic developments and environmental needs. The latter focuses on the ability of the energy system to respond quickly to sudden changes in the balance between supply and demand. Historically, energy security was associated with oil supply. But today, a broader range of vulnerabilities has emerged, showing that disruptions can affect other fuel sources, infrastructure, or end-use sectors. Furthermore, the globalization of the energy market suggests that rhetoric about the goal of energy self-sufficiency is obsolete. Energy security is an international issue that involves increasing interdependence among major producers and consumers. No country or region can achieve energy security alone. Thus, diversification of the energy mix and energy sources is considered as the main path to energy security.

Countries worldwide are rallying around the goal of ‘zero emissions’ to stop the rise in global temperature. The push for zero emissions is driving many global energy policy decisions. Yet the balance between energy security and the current accelerated energy transition efforts is fragile. For instance, World Bank board members urged the Bank’s management, in February 2021, to implement a new plan to cease investments in coal and oil projects and phase out investments in natural gas projects. In 2019, The World Bank Group stopped investing in upstream oil and gas (World Bank, 2021). In addition, according to the IEA’s Roadmap to Zero, there should be “no investment in new fossil fuel supply projects, and no further final investment decisions for new non-operating coal plants” (IEA, 2021a). Such decisions can pressure developing countries, particularly in Africa, to adopt cleaner energy sources at the same rate as more developed countries, even though their contribution to greenhouse gas emissions is vastly lower. Moreover, many developing countries do not yet have sufficient renewable infrastructure capacity to displace fossil fuels, which is why natural gas is seen as an important temporary fuel while they put in place the necessary facilities for the energy transition.

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Moreover, now that gas shortages threaten the energy security of both developed and developing economies, many countries seem to be reverting to the same energy sources (coal and oil) that they are trying to phase out. This highlights the difficulty of pursuing both energy security and the energy transition. Completely halting investment in certain fossil fuels when most countries, especially developing ones, do not yet have the renewable facilities to replace them seems like a gamble. It is not a question of interrupting or slowing down the transition efforts, but rather of accelerating the investments for renewable energies while maintaining a level of energy supply that will not jeopardize economic development and the standard of living of the population. And this implies the temporary coexistence for a period of both fossil fuels and renewable energies.

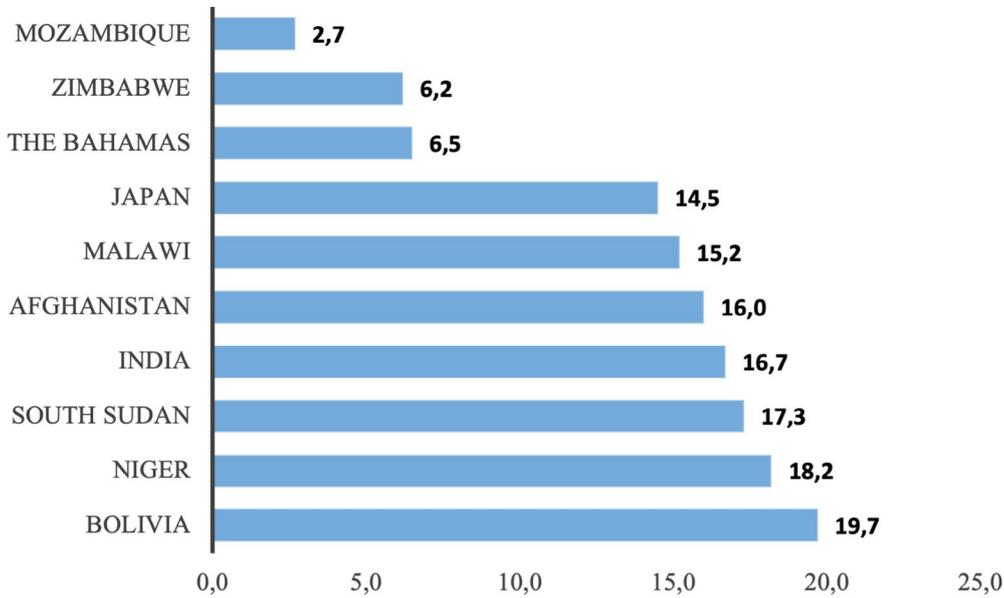
### **III. WHAT ARE THE STAKES OF THE ENERGY CRISIS IN AFRICA?**

Africa is one of the regions most affected by climate change, even though it contributed a mere 4% of global carbon dioxide (CO<sub>2</sub>) emissions in 2019 (IEA, 2021b). According to the 2021 Global Climate Risk Index, half of the 10 countries most affected by extreme weather in 2019 are located in Africa (Eckstein et al, 2021) (Figure 2). At the same time, Africa is endowed with significant fossil-fuel resources, including oil and gas that it exports worldwide, and significant renewable energy resources, ranging from solar to wind to hydro to geothermal. Therefore, any disruption in global energy markets will undoubtedly impact Africa. As the continent comprises more than 50 heterogeneous countries, each with different levels of development and resources, the energy crisis will not be felt to the same degree in each country. Nevertheless, some common economic implications can be highlighted.

A key implication is that higher energy prices will lead to more persistent inflation, which can put pressure on domestic consumption. This is particularly critical for Africa's post-pandemic economic recovery, as higher energy prices could stifle the nascent recovery before it has time to gain momentum. Rising food prices, combined with the spike in energy costs, are already pushing up inflation in many African economies (World Bank Group, 2021; Choi, 2021) (Figure 3). In Nigeria, for example, rising international natural gas prices caused the price of cooking gas to increase by more than 100% in 2021, making it too expensive for some households (Okwedy, 2021). As a result, many households fall back on firewood and charcoal, which they envisage as cheaper alternatives. But as affordable as these solutions may seem, they impact on people's health, the environment, and overall quality of life, which are some of the reasons why the world is moving away from them. Similar trends are evident in Kenya, which is also struggling with a chaotic gas market, rising living costs, and high prices at the pump. The removal of oil subsidies, in September 2021, increased the price of gasoline in Nairobi by about 6%, upsetting many Kenyans (Mutua, 2021). As a result, the ripple effect of high oil and gas prices continues to affect many sectors, particularly public transport.

**Figure 2:**

### 10 Most-affected Countries by Extreme Weather Events in 2019

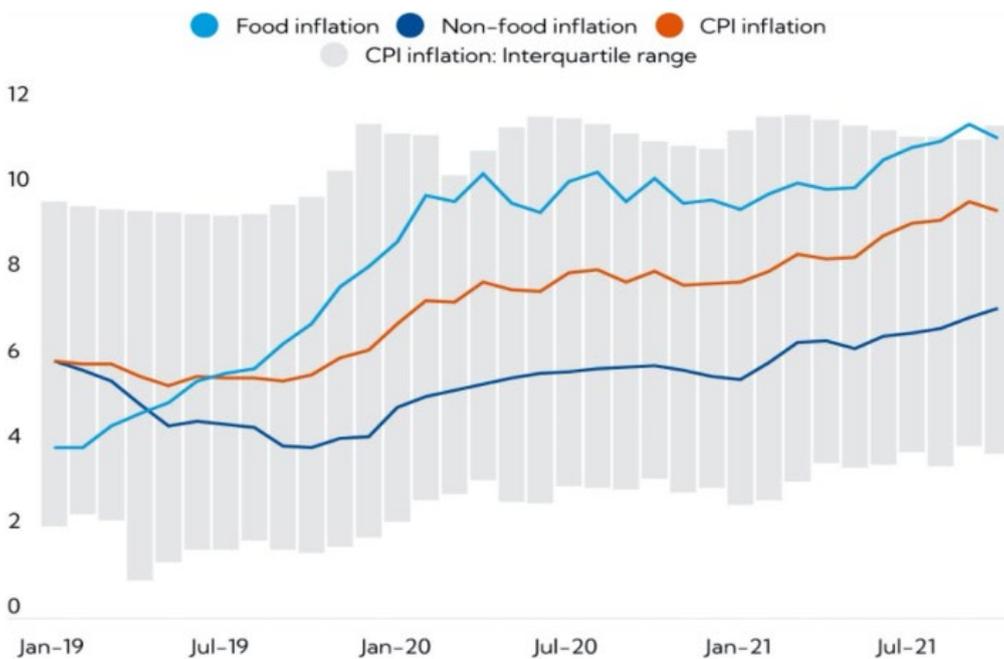


Source: Global Climate Risk Index 2021, Germanwatch.

Note: The Climate Risk Index indicates a country's level of exposure and vulnerability to extreme events. A low score corresponds to the highest level of exposure and vulnerability.

**Figure 3:**

### Inflation in Selected Sub-Saharan African Countries, %, Year-on-Year



Source: S. M. Choi (IMF Blogs).

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Rising energy prices also affect food production. Coal and natural gas prices typically have a relatively smaller impact on consumer prices than oil, given the regulated nature of household electricity and natural gas bills and the more rigid prices. In the industrial sector, however, higher natural gas prices are likely to affect producers who use natural gas to make chemicals or fertilizer (Pescatory et al, 2021). These dynamics are especially concerning because they affect the already uncertain inflation outlook in the context of supply chain disruptions, thus raising food prices and strengthening demand. South Africa has not been immune to this phenomenon. The South African agricultural industry association Agri SA, for example, warned that food prices would reach “catastrophic proportions”, expressing concern that the combined costs of fertilizer, diesel, electricity, and labor were making sustainable food production extremely difficult (Okach, 2021).

Moreover, despite numerous attempts to diversify African economies, notably through developments in natural gas, renewable energy, and associated sub-sectors like transport and logistics, many African countries remain dependent on fossil fuels to generate revenues and develop their economies. Yet, oil and gas production in the leading African producer countries has been declining since the end of 2021. The OPEC+ decision in July 2021 to add 400,000 barrels per day (bpd) to production from August to December 2021, thus phasing out the unprecedented supply cuts, hasn’t helped. Many experts warn that Africa’s largest oil exporters, Nigeria and Angola, will struggle to increase production to meet their OPEC quotas at least through 2022, especially since they remained below their quota at the end of 2021 (African Energy Chamber, 2022).

These declining production trends, if they continue in the context of the 2021 energy crisis, will have a significant impact on refineries and domestic energy supply in Africa. One of the main reasons for the decline in production across the continent is the lack of adequate investment in the upstream market. COVID-19, coupled with global pressure for an energy transition, has thus led many international investors to withdraw from hydrocarbon projects in Africa, diverting capital to green energy. While valuable for the renewable energy market, this development has proven disastrous for oil and gas-dependent African nations (African Energy Chamber, 2022).

Therefore, the 2021 energy crisis will likely further increase energy inequality in Africa, which is linked to other forms of inequality. Indeed, lack of reliable and affordable energy supply tends to limit productive opportunities and industrial growth, which negatively impacts employment, welfare, and healthcare facilities, among other things. In particular, as Africa faces its own energy crisis—with 56% of the population is without access to electricity—a prolonged disruption in energy markets and a persistent energy production downturn could further accentuate the crisis and delay the economic recovery. The lack of energy investment in Africa also begs the question of how the continent can tackle the energy transition. Should all hydrocarbon projects be interrupted suddenly? Or should they continue while simultaneously increasing renewable energy investment?

## **IV. DOES ENERGY TRANSITION IN AFRICA MEAN ABANDONING FOSSIL FUELS ALTOGETHER?**

The debate surrounding economic growth, energy security, and energy transition in Africa poses a critical conundrum to many African countries. On the one hand, it is becoming imperative to address climate change, given the negative consequences it is already causing in many African countries. But on the other hand, Africa cannot currently industrialize

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and achieve strong economic growth solely through renewable energy. This does not challenge the legitimacy of the energy transition, which is undoubtedly essential, as it is a crucial driver of sustainable development and climate resilience. Moreover, due to their dependence on fossil fuels, many African countries remain exposed to the adverse effects of erratic fluctuations in energy prices. Thus, diversifying their energy mixes can contribute to alleviating the burden that oil-price volatility places on their economies. But since the energy transition will not happen overnight, an abrupt halt to investment in hydrocarbons, especially natural gas, may not be the best solution, as it may threaten energy security by hampering energy supply, which was already a challenge in many African countries even before this crisis.

This underscores the critical issue of finding a balance between energy transition and energy security. Energy security is crucial for economic development and stability. Given that many African countries, including Nigeria, Angola, and Guinea, have low electrification rates, the current energy crisis underlines why developing countries, especially in Africa, need more time to shift away from polluting energy sources (Okwedy, 2021). Thus, in the short term, the most sensible solution to protect Africa against similar energy crises is to adopt a 'both/and' approach to hydrocarbons and renewables, rather than an 'either/or' strategy. In other words, in Africa's economic, social, and geopolitical context, the energy transition implies coexistence of renewable energies and fossil fuels, at least for a while. This means a well-functioning oil and gas sector, given the centrality of these resources in some African economies. Therefore, maintaining upstream investments to ensure adequate production, particularly for natural gas, remains vital to ensure the stability of these economies and the energy sector, as gas can be used as a transition fuel to buy time to put the appropriate transition structures in place. In parallel, the right institutional and regulatory environment needs to be implemented rapidly to accelerate the energy transition.

In the longer term, African countries need to take into account several considerations in order to successfully achieve the energy transition. Africa can capitalize on the continental free trade agreement to reduce intra-African trade barriers and attract more private sector investment through expanded and connected market opportunities, particularly in the energy sector and clean technology market (Ordu et al, 2021). In addition, the continent can take advantage of green economic opportunities, primarily through the circular economy. Furthermore, the increased demand for electric vehicles and their batteries in other parts of the world implies a higher demand for essential minerals and renewable energy systems. This presents an opportunity for Africa to capture a larger share of the supply chains in the new green economy. For instance, the Democratic Republic of Congo accounts for 70% of the world's production of cobalt. This mineral is essential for battery production; demand for it is expected to double by 2030. Adopting equitable development financing that can catalyze private sector resources remains a crucial challenge for the success of this transition. Finally, there is a need for proportional recognition of responsibilities and actions related to climate change. Africa has historically contributed the least to climate change. Therefore, under the common but differentiated responsibility principle, the continent must be given more time to complete the energy transition.

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## CONCLUSION

Volatility is an inherent characteristic of fossil-fuel products, primarily because of the seasonal nature of energy demand. This partly caused the energy crisis of 2021, when the resurgence of energy demand with the reopening of major economies coincided with a continued lagging supply of oil and natural gas, resulting from the collapse of demand in 2020. As a result, many countries, including developed ones, have turned to coal for power generation, leading to soaring natural gas and coal prices, which peaked in October 2021 (Nagle et al, 2021). This shift seems to go against the energy transition efforts and climate action undertaken by many countries. According to the World Bank's latest Commodity Market Outlook, "energy prices-which are expected to average more than 80% higher in 2021 than the last year-will remain at high levels in 2022, but will begin to decline in the second half of the year as supply constraints ease". Therefore, this energy crisis highlights the fragility of climate action in the face of a sudden escalation in energy prices. It also creates energy security tension.

While developed countries have achieved energy security and are now focusing on the energy transition, Africa is striving to achieve both. This makes the path ahead even more challenging, as it requires trade-offs between fossil fuels and renewables in the short term to maintain a sustainable and secure energy supply. This trade-off implies an efficient oil and gas sector, and increased investment in deploying renewable energies (large-scale or decentralized). However, in the current gloomy global economic context, many advanced countries are adopting very ambitious energy and climate policies, which aim to completely eliminate the use of fossil fuels, including natural gas, in the short term. These countries fail to recognize that, due to its economic development level and its limited responsibility for climate change, Africa should not have to match the same pace of energy transition. The transition, albeit imperative, must be adapted to the different socio-economic contexts of African countries in order to generate maximum benefits in terms of sustainable growth, job creation, climate resilience, and energy security, while minimizing the risks of energy supply disruptions, stranded assets, and job losses in the fossil-fuel industries.

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## About the Policy Center for the New South

The Policy Center for the New South: A public good for strengthening public policy. The Policy Center for the New South (PCNS) is a Moroccan think tank tasked with the mission of contributing to the improvement of international, economic and social public policies that challenge Morocco and Africa as integral parts of the Global South.

The PCNS advocates the concept of an open, responsible and proactive « new South »; a South that defines its own narratives, as well as the mental maps around the Mediterranean and South Atlantic basins, within the framework of an open relationship with the rest of the world. Through its work, the think tank aims to support the development of public policies in Africa and to give experts from the South a voice in the geopolitical developments that concern them. This positioning, based on dialogue and partnerships, consists in cultivating African expertise and excellence, capable of contributing to the diagnosis and solutions to African challenges.

The views expressed in this publication are those of the author.

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