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The Political Economy of Energy Transitions in MENA

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Summary

The combustion of fossil fuels for energy is responsible for over 80% of anthropogenic (human-caused) greenhouse gas emissions, meaning that there is no viable pathway to limiting global warming without a fundamental, rapid and deep transformation of the way societies across the world produce and consume energy. The narrative regarding the impact of energy transitions in the prominent oil producing countries in the MENA region has focused on the potentially adverse effect on economies posed by lower revenues. However, the region's vulnerability to the impacts of climate change means that it has a significant stake in mitigating the rise in greenhouse gas emissions. Oil producing countries in the MENA region have for long embraced the rentier system whereby oil revenues have been distributed to citizens in return for no political representation.

The production of hydrocarbons is thus deeply intertwined with politics in this region. This is why these countries face enormous challenges to keep pace with the energy transition worldwide. Sizable energy subsidies in the region constitute the one of the main obstacles facing the transition to clean energy in the region. Gradual removal of these subsidies along with campaigns to inform the public about the benefits of moving away from fossil fuels were successful in mitigating any potential political unrest in several countries in the region. The energy transition is underway in the region albeit the pace is slow. Many countries have set Nationally Determined Contributions as well as targets to generate energy from renewables. The essential question that MENA regimes face is whether energy transition can potentially disrupt the existing status-quo or create new economic opportunities that can be usefully harnessed to maintain economic—and therefore, political—stability.

The prospects for transition will therefore be inherently viewed through the prism of what these might mean for regime survival and durability. MENA regimes are likely to cherry pick from the transition menu to ensure that it delivers new political mileage—or, at least, is less politically disruptive. The political economy logic of reform is therefore central to appreciate the direction, pace, and nature of energy transition currently underway in MENA states. In assessing the political economy of energy transition, it is important to recognize that the consequent challenges and opportunities posed by such a transition are likely to vary across different MENA states.

1. Introduction

The combustion of fossil fuels for energy is responsible for over 80% of anthropogenic (human-caused) greenhouse gas emissions, meaning that there is no viable pathway to limiting global warming without a fundamental, rapid and deep transformation of the way societies across the world produce and consume energy. This energy transition, away from fossil fuels towards non-emitting forms of energy like solar, wind and nuclear, will have an outsized impact on the countries across the world that rely on the revenues from the export of oil and gas to run their economies. The producers of the Middle East and North Africa are some of the most fossil-fuel dependent economies in the world. The potential for changing market dynamics, in which long-term demand trends downwards (with a likely commensurate impact on prices), threatens the macroeconomic stability of the producers, whose somewhat undiversified economies have varying levels of resilience to the overall decline in revenues. This paper will outline the unique potential economic impacts of energy transitions on the producers of the MENA region, and outline the policy options available to governments looking to mitigate risks, taking into account the profound political-economy implications and considerations that they will need to navigate in the process.

2. MENA's energy context

The narrative regarding the impact of energy transitions in the prominent producing countries in the MENA region has focused on the potentially adverse effect on economies posed by lower revenues. However, the region's vulnerability to the impacts of climate change means that it has a significant stake in mitigating the rise in greenhouse gas emissions. Some countries, such as Qatar, have already seen average temperature increases above 2° Celsius. Furthermore, climate models predict that the Middle East and North Africa will be one of the regions that will be worst impacted by further rising temperatures, which, among a range of other potential stressors, would exacerbate water shortages in a region that is already designated as the most water-stressed in the world (all of the region's producers have been categorized as "high stress" or "extremely high stress" by the World Resources Institute). According to the World Bank, the economic impact of climate-related water stress alone could reach between 6% and 14% of their gross domestic product by 2050.

The fossil fuel producers of the MENA region are significant users of energy themselves, spotlighting the entire region as being a global outlier in energy and emissions trends. While the world has made strides in reducing the energy intensity of its economy,[1] which has fallen by over 35% since 1990, the MENA region stands out as being the only major part of the world where this trend is reversed. The energy intensity of the economy is 30% higher than it was three decades ago (Al-Saffar and Lebdioui, forthcoming).

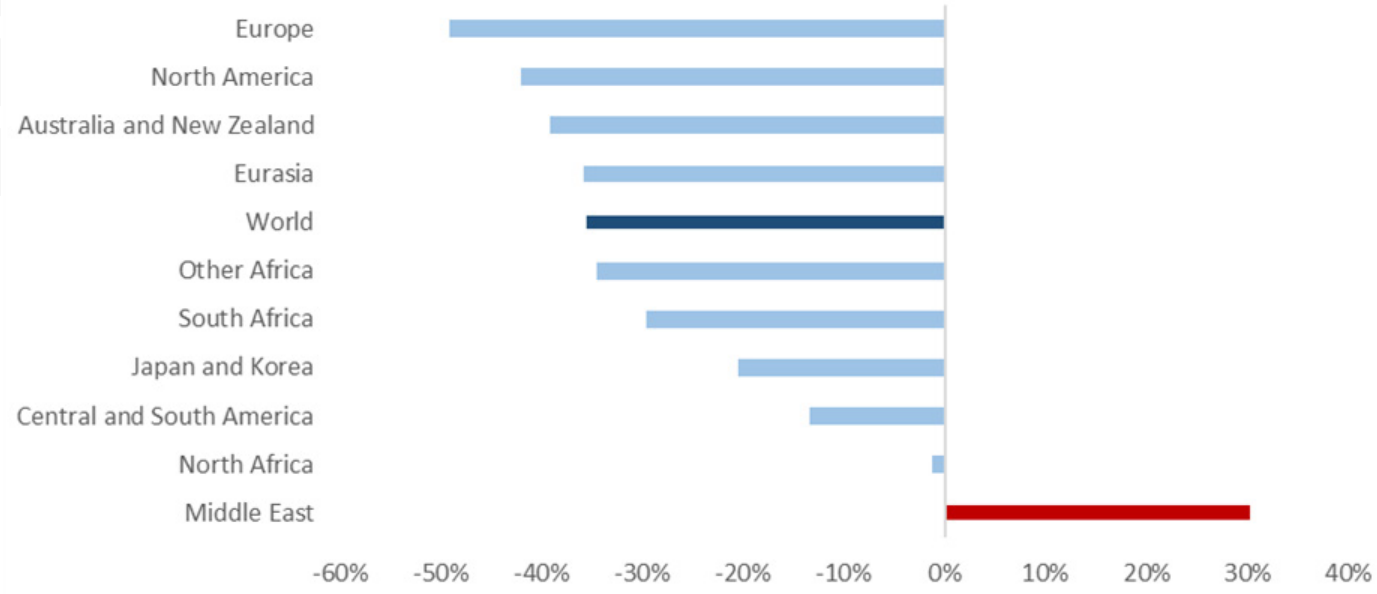
These trends are partly explained by two prominent and enduring features of the oil and gas-dominated economies of the region: the dominance of the public sector, and the over-exuberant use of fossil fuel subsidies.

The predominance of the public sector in the oil and gas producers has contributed to relative declines in labor productivity over time, which has fallen across all of the region's producer economies since the 1970s (IEA, 2018). The differences in labor productivity are particularly stark when comparing producer economies in the Middle East and North Africa with other countries in the region that import oil and gas, which suggests that many of the public sector jobs that have been created in the producers are not adding significantly to economically productive activity. The balance of employment across the private and public sectors is, in many instances, shaped in by a large gap in average wages, with public employment offering higher pay: across the Gulf Cooperation Council (GCC) countries, for example, the gap between average public and private wages is often between 150% and 250% (IMF, 2017). In aggregate, this has dampened enterprise and growth in the high-productivity activities, and skewed economies towards dependence on high-energy/high-emissions sectors.

A more direct explanation for the skewed energy use and emissions output is the prominence of subsidization for fossil fuels across the region, which totaled around $2.4 trillion in the decade between 2010 and 2020 (Atlantic Council, 2022). These subsidies not only push energy use up, but tilt energy balances in favor of oil and gas in the producers, slowing the development of the region's huge renewable energy potential.

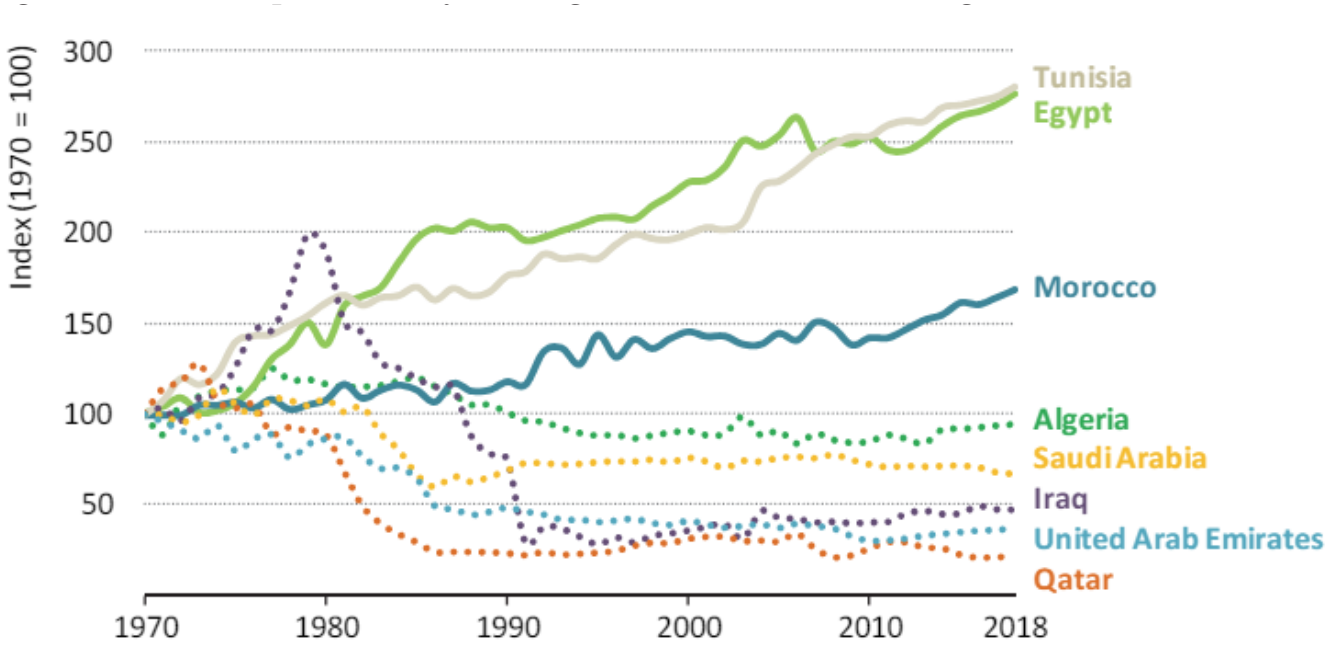
[1] This is the amount of energy needed to produce a single dollar of economic output

Figure 1. Change in energy intensity of GDP in selected regions, 1990-2022



Source: Authors' calculations; IEA

Figure 2. Labor productivity changes in the MENA region, 1970 - 2018



Source: Outlook for Producer Economies, IEA, 2018 and The Conference Board Total Economy Database, March 2018.

These market distortions are visible in the region's power mix. The availability and (artificially low) price of oil in domestic markets have contributed to MENA being the most prominent consumer of oil for power generation in the world. The region relies on oil for over one-fifth of the electricity it generates, compared to a global average of around 1%, where it is mainly confined for use in backup diesel gen-sets or for electricity access applications in remote communities. This partly explains why the region also has the lowest share of renewables in the power mix, with subsidies incentivizing fossil fuels over highly-competitive renewables (even at less than half the average oil price in 2023, solar is able to compete on cost grounds with oil-fired generation, with a similar story being repeated for natural gas).

Though countries across the region would argue that, as they sell these oil and gas resources to utilities at a price that is above the cost of attraction, there is no implied subsidy, it is clear that the opportunity cost of these resources is not being realized.[2] This comes at a large cost to treasuries across the region, and removes the imperative for the more efficient use of energy domestically. For instance, countries across the region could generate the same electricity as they do now while consuming one-third less natural gas if they were to switch their simple-cycle gas turbine technology to more efficient combined-cycle gas power plants. This change alone would free up 50 billion cubic meters (bcm) per year of natural gas for export. A more ambitious push to displace domestic natural gas use with solar could, theoretically, free up 150 bcm of natural gas a year, either to be used in more productive ways or exported (Al-Saffar and Wanner, 2022). Under current continental European wholesale prices of around $8.5/mmbtu, this represent over $45 billion in additional annual revenue. The value proposition for replacing oil is even more compelling. The 1.75 mb/d currently used in power generating plants across the region are more easily substituted, and would bring in around $48 billion in revenue (Al-Saffar and Lebdioui, forthcoming).

3. Energy subsidy reform in MENA: easier said than done

Energy subsidies continue to be sizable in most MENA countries (See Table 1). The main objective of energy subsidies in MENA is to protect low-income households and to encourage the productive use of energy through commercial and industrial use. These subsidies are also considered an element of an unwritten social contract or an authoritarian bargain according to which citizens share the revenues that accrue to the state from oil extraction. As such, they have contributed for decades to the relative political stability of the state in the MENA region, allowing many of the producers to tamp down public disquiet. In the absence of safety net systems in the region, reform of these energy subsidies continues to be a difficult task to accomplish. The political turmoil following the Arab Spring has made this task even more difficult with states concerned about the political unrest that reforming energy subsidies would fuel. Coalition groups consisting of industrial firms that tend to benefit from these subsidies is also a stumbling block facing reforms. Albeit, fiscal pressure continues to mount for both importers and for exporters of oil -given the fall in oil prices- in the region and provides strong incentives to reform these subsidies. These subsidies not only distort prices, encourage wasteful energy consumption, promote high energy intensity, and discourage diversification towards renewables, but they are inequitable as they benefit rich consumers who typically have high energy consumption. Moreover, these subsidies promote energy intensive industries where low-income countries do not have a comparative advantage. (EL-Katiri and Fattouh, 2017). Fuel subsidies lead to negative externalities in the form of air pollution, congestion, road accidents as well as climate change. If countries are to impose a tax on the benchmark price of energy to correct for such externalities, the value of energy subsidies would be even much higher. (Boudekhadekh, 2022).

Alternatively, these subsidies could have been allocated to spending on health, education, infrastructure or could have permitted reduction in taxes for small and medium enterprises. (EL-Katiri and Fattouh, 2017). To reform energy subsidies without fueling political unrest, governments must undertake a careful and considered approach to equity, with the aim of introducing a more progressive system that does not accrue predominantly to the richest in society. There are some instances of this being done, predominantly in the region's net energy importing countries. Jordan, for example, followed a gradual approach to energy subsidy removal and accompanied that with targeted cash transfers to poor households to ease economic hardships. This approach is superior to energy subsidies as it does not create price distortions. Between 2013 and 2014, Morocco reformed energy subsidies and indexed the price of energy to international prices. The reform was not met by resistance from the public as the authorities launched a widespread media campaign explaining to citizens why the reform is necessary and how it will impact the country. There are numerous examples of less successful attempts. Yemen's reforms to energy subsidies were met with strong opposition from the public and were eventually reversed in the wake of a weak state. (EL-Katiri and Fattouh, 2017).

Attempting to reform energy prices, in 2014, Egypt raised the prices of most energy products by up to 70% overnight. The main reason behind such price increase was not met by any public opposition was the timing. The price increase took place following Abdel Fattah El Sisi's emergence to power, introducing several measures to mitigate the negative effect of the energy subsidy removal on the poor by freezing the prices of publicly distributed bread, rice, sugar and oil. It also provided discounts on

[2] See, for example, the price-gap methodology of the IEA, where governments are deemed to be subsidising consumers if the end-user prices are lower than international reference prices.

Table 1. Energy subsidies in MENA region (Million US Dollars)

	Algeria	Bahrain	Egypt	Iraq	Kuwait	Libya	Oman	Qatar	Saudi Arabia	United Arab Emirates
2010	10994.17	2214.91	21477.38	10862.63	7639.95	5951.44	84.70	4819.99	62865.31	19842.72
2015	11441.34	1914.42	15882.89	5348.51	7967.28	3006.83	109.08	3625.22	63908.30	11937.68
2021	23577.32	2355.73	27042.41	10824.85	8286.97	5721.26	162.40	6816.32	40938.42	17468.98

Source: Arab Development Portal 2024 - http://www.arabdevelopmentportal.com

meat and bread distributed to the poor. (EL-Katiri and Fattouh, 2017). Egypt raised the prices of fuel again in 2023 and, once again, the timing was a crucial element in that such price increase was met with virtually no public opposition. The reason is that the price increase took place amid the latest Gaza Crisis when the public was preoccupied with this conflict and people in general approved of the way in which the Egyptian president handled the crisis.

Iran's experience –- as a large producer and exporter of oil –- with subsidy reform is also interesting, providing valuable lessons to similar countries. Back in 2010 the government increased the prices of energy drastically but provided subsidies to firms and government institutions to help them adjust to these price changes. The government also provided cash transfers to households to reduce the hardship of such energy price hikes. More importantly, these reforms were accompanied by a wide-reaching media campaign explaining to the public why the reform is needed and the economic gains from such reforms. (EL-Katiri and Fattouh, 2017)

While most countries of the MENA region have reduced energy subsidies (Egypt, Saudi Arabia, Behran, UAE, Iran, Kuwait, Oman, Algeria, Tunisia) since 2014, the experience of countries with reform discussed above offer valuable lessons on subsidy reform. Gradual subsidy reform is effective since the price elasticity of demand for oil is low in the short run and agents incur adjustment costs to shift from oil to other alternatives. Country experience also shows that the more stable the political system the more it becomes feasible to reduce energy subsidies. Raising awareness regarding the negative environmental consequences of energy subsidies increases the feasibility of and provides momentum to energy subsidy reform. In situations where energy subsidies are a means by which citizens share oil revenue with the state, a viable alternative could be to provide checks with these shares directly to citizens. (Moghadaam and Wirl, 2018).

4. The state of energy transition in MENA

Before we delve into the state of energy transition in MENA it is necessary first to define what is meant by energy transition. IRENA (2018) defines the current energy transition as " a pathway toward the transformation of the global energy sector from fossil-fuel based to zero-carbon by the second half of this century" More recently and according to UNDP,[3] the energy transition is defined as a continuing process requiring long-term energy strategies and planning, with a country-tailored focus on applying appropriated energy technologies to reach net-zero emissions.

The energy systems in MENA have been influenced by four main global factors. The first is the move internationally towards decarbonization and the rising political pressure from the international community pushing countries to pursue this goal.[4] The second factor is the reluctance of international financial institutions, developing banks, private and commercial banks to limit investment in fossil fuel infrastructure either because of the political reasons just described or due to the fact that fossil fuel infrastructure might become stranded assets. Continuous falling prices of renewables represent the third factor. The Paris agreement to which many MENA countries are signatories constitute the fourth global factor underlying the transition to RE. Through Nationally determined Contributions many countries in the MENA region have made commitments to reduce Carbon emissions all of which reflect commitments to move towards RE. (Terrapon-Pfaff and Ersoy, 2022).

Another factor affecting the energy transition is the funds allotted under the conference of the parties (COP) to help developing countries cut greenhouse gas emissions and facilitate the transition to renewable energy. These funds, however, fall short of the trillions needed to achieve these goals. Rising temperatures across the region and the

[3] https://www.undp.org/energy/our-work-areas/energy-transition

[4] https://unfccc.int/news/cop28-agreement-signals-beginning-of-the-end-of-the-fossil-fuel-era

advent of fires, floods and extreme weather events that result from climate change are also important factors that should force countries to accelerate the transition to renewable energy.

Many countries in the region have set ambitious targets to increase the share of energy generated from RE in the energy mix. These countries include Egypt, Tunisia, Algeria, Morocco, Jordan, Iraq and Yemen, Lebanon and Palestine. These targets range from 52% by the year 2030 in the case of Morocco to 15% by the year 2025 in the case of Yemen. Most of these countries – particularly those with little fossil fuel resources like Morocco and Jordan- are well on their way to achieve these targets except for Palestine and Yemen since they both suffer due to war and political instability. However, despite these ambitious targets, electricity generated from fossil fuel continues to dominate the energy mix in all the above countries. This heavy reliance on fossil fuel coupled with energy subsidies constitute the most important factors underlying the slow transition to RE in the region. Countries in the MENA region have also acknowledged the role of energy efficiency as a pillar of energy transition and they all introduced energy efficiency plans and targets. (Terrapon-Pfaff and Ersoy, 2022)

Modernizing energy infrastructure which encompasses transmission, transformation and distribution infrastructure is essential to the success of energy transition in the region. In all the above countries, such infrastructure, particularly grid lines and substations are not ready to allow the integration of large shares of renewables. Meanwhile, for several countries in the region (Egypt, Algeria, Tunis and Jordan) places where RE generation potential is high are far from centers for RE demand and hence a strong grid is necessary to transmit large amounts of RE without leading to congestion of electricity lines since this in turn poses a risk to grid stability. On the other hand, regional interconnections are low. Institutions necessary to facilitate the energy transition are also necessary for the success of this process. Currently, existing institutions in many of the above countries are structured to suit the requirements of energy systems based on fossil fuel. As such they tend to delay the energy transition by having vested interest in the status quo. In Morocco, Egypt and Jordan on the other hand, separate institutions to facilitate RE transition were created. Aside from Jordan where the electricity sector has gradually been liberalized, an electricity market that is dominated by the state owned companies in contrast to one that is liberalized- is another impediment to the development of RE. (Terrapon-Pfaff and Ersoy, 2022)

Oil producing countries in the MENA region have for long embraced the rentier system whereby oil revenues have been distributed to citizens in return for no political representation. The production of hydrocarbons is thus deeply intertwined with politics in this region. This is why these countries face enormous challenges to keep pace with the energy transition worldwide. By focusing mainly on price rather than volume maximization, MENA hydrocarbon producing countries have preserved their reserves of oil and gas that could last for decades. This poses the risk of stranded assets when the world decarbonizes and demand for oil falls. Despite these challenges, MENA oil producers have changed their attitude from climate obstructionists and, since Cop 26 in Glasgow, they slowly increased their climate change commitments and are investing in RE. (Hafner and Riamondi, 2023)

For example, GCC countries have pledged to reach carbon neutrality by mid-century. In an effort to preserve export revenues to maintain the rentier state, these countries are now encouraging the deployment of RE, and have set targets ranging from 15% to 20% for the share of energy generated from renewables in the energy mix. Saudi Arabia, Qatar, and UAE have worked on reducing carbon intensity by reducing substantially flaring and venting activities. This could become all the ever important in light of border adjustment taxes. Several countries in the region like Qatar are heavily investing in carbon capture and storage technology all of which will reduce their carbon footprint. Gulf countries are also investing heavily in blue and green hydrogen. Egypt is also joining the race to produce hydrogen. These countries are relying on hydrogen to decarbonize industries such as iron, steel and fertilizers and for exporting (Hafner and Riamondi, 2023).

According to Hafner et al (2023) below are the latest development in the area of RE for different MENA countries:

Saudia Arabia has awarded a contract to build Al Khafji project. In 2021, the country started the construction of 300 MW Jeddah Solar power plant. In addition, A financial close for 1.5 GW Sudair solar power plant was reached. Saudia Arabia also invested in Concentrated Solar Power (CSP). With regards to renewable energy generated from wind, as of 2021 Saudia Arabia has only one wind project (Turaif) with a capacity of 2.75 MW and 3 other projects are planned. The Country is also considering the production of green and blue hydrogen. The Kingdom set a goal to produce 17 GW of energy from nuclear power by 2040.

Due to their reliance on energy intensive desalination, many countries particularly in the Gulf region are now in the process of integrating RE with desalination. Dubai is planning a project the combine solar PV and desalination. In Dubai, Mohamed bin Reshid Al Maktoum solar park is considered the largest solar park in the world with a capacity of 5000 MW. Several Nuclear power plants are under construction. The UAE has a wind turbine with a capacity of 30.85 MW which was commissioned in 2008. Otherwise, investment in wind energy is limited in the country.

Qatar commissioned its first solar power plant (800 MW) in 2022 and has no plans to develop energy from wind. Between 2011 and 2020, Iran increased RE capacity from 8.8 to 12.9 MW 95% of which comes from hydropower. The country so far has modest solar and wind capacity. Iran has also invested in nuclear energy. For Jordan in 2020, installed solar capacity amounted to 1359 MW and wind 515 MW. In the case of Lebanon the main source of RE is small scale PV projects.

Egypt Created several large wind farms projects and the largest solar power park in the Mediterranean region and 4th worldwide the Benban Solar park 1650 MW. The construction of a nuclear power plant is also underway. Due to the unavailability of land, renewable energy projects are limited to small scale rooftop solar PV in Palestine. Algeria Developed mostly solar PV and has to date limited investment in wind energy. Tunisia Renewable energy capacity is mainly from wind amounting to 245 MW by the end of 2019, but as of 2021 several solar power projects were launched. Morocco is considered the leading country in MENA in terms of adoption of renewable energy. As of 2020 the country has 1.77 GW from hydropower, 1.41 GW from wind and 704 MW from solar power and 7 MW from bioenergy.

There are considerable efforts to invest in the area of green hydrogen in the region. Egypt commissioned the first phase of what is considered to be the largest integrated green hydrogen plant in Africa. Morocco is also taking quick and bold steps in this direction. UAE is developing green hydrogen locally and abroad. Saudi Arabia is set to create the world's largest utility green hydrogen facility. Oman is targeting an annual production of 1-1.25 Megtones of green hydrogen by 2030. Qatar is launching a project to establish the largest blue ammonia project in the world.[5]

[5] https://www.atlanticcouncil.org/blogs/energysource/hydrogen-in-the-mena-region-priorities-and-steps-forward/

5. Political economy dimensions

Political and geopolitical dynamics are central issues in the region's energy transition. The MENA region is characterized by complex political and geopolitical dynamics, including conflicts, regional rivalries, and shifting alliances. These factors can impact energy transition efforts by affecting investment climate, cross-border cooperation on energy projects, and the stability of energy infrastructure. Beyond such global influences, energy transition in the MENA region will be ultimately shaped by domestic political considerations. The essential question that MENA regimes face is whether energy transition can potentially disrupt the existing status-quo or create new economic opportunities that can be usefully harnessed to maintain economic—and therefore, political—stability. The prospects for transition will therefore be inherently viewed through the prism of what these might mean for regime survival and durability.

Viewed in this light, energy transition is no different from any externally induced reform that will ultimately be modulated and navigated through a political prism. Here, the MENA region does not present itself as an exception. The political logic of reform applies with equal force to developing countries, in general. When faced with an external impulse to implement economic and trade reform—say as a result of an IMF programme, joining of the World Trade Organization, or free trade agreement with a major trade partner—political incumbents tend to pursue these reforms in ways that do not upend the status-quo (van der Walle 2001). The typical policy response, in such circumstances is selective or partial reform. Political regimes selectively pursue reforms to selectively shield strategic actors and economic arenas from the negative fall-out for reforms. Thus, it is common to observe that politically connected sectors are shielded from competition by preserving tariffs or alternative trade policy instruments in the wake of trade reforms. Such selective liberalization is a routine feature of post-liberalization economic landscape in developing countries, including MENA states (Malik and Eibl, 2019). Energy transition is no different. MENA regimes are likely to cherry pick from the transition menu to ensure that it delivers new political mileage—or, at least, is less politically disruptive. The political economy logic of reform is therefore central to appreciate the direction, pace, and nature of energy transition currently underway in MENA states.

The challenges and opportunities entailed by energy transition will be perceived by most countries in the region through its anticipated political economy impact.

Whether resource-rich or resource-poor, political order in MENA states is overwhelmingly reliant on oil and gas revenues. In oil-rich MENA states, hydrocarbon exports finance national budgets and sustain social contracts. In the relatively resource-scarce states, such as Jordan and Egypt, remittances and aid inflows from oil-rich neighbors are key to financial—and, therefore, political—stability. Few other regions in the world exhibit such a tight correspondence between natural resource intensity, economic structures, and political order. Global energy transition is thus likely to have a profound impact on the region.

As the world gradually shifts away from hydrocarbons, this could have direct and profound consequences on future revenue streams. A world with a falling demand for hydrocarbons could imperil the entire economic and political edifice in MENA states, which is built on and sustained through proceeds from oil and gas exports. While experts argue that hydrocarbon exports are likely to remain relevant in the distant future (Fattouh and Sen 2021), energy transition is not a peripheral item for oil-rich MENA states, especially in the GCC where active engagement with the global climate debate remains a high priority item. The GCC approach is not one of denial of climate change approaches but active engagement with, even leadership of new initiatives. Energy transition is thus not a cosmetic concern that can earn political leaderships greater global legitimacy. It is fundamentally linked with the sustainability of the resource pie that sustains political order. We will offer more discussion on this below.

In assessing the political economy of energy transition, it is first important to recognize that the consequent challenges and opportunities posed by such a transition are likely to vary across different MENA states. Such differences might arise from the scale and size of oil riches, demography, geographic location, and the pre-existing institutional room to maneuver, among other factors. For instance, consider the role of demography. The more populous oil-rich states, such as Saudi Arabia and Iraq, face a very different challenge of energy transition compared to less populous oil exporters, such as UAE and Qatar. The energy needs and financial requirements for maintaining the social contract are very different between labor-abundant versus labor-scarce states. Linked with this is the role of pre-existing financial capacities. Countries with greater financial bandwidth, such as the capital-surplus nations of the Gulf, are better positioned to embark on ambitious green energy initiatives. This includes efforts to decarbonize the final petroleum products by increasing the efficiency of oil and gas production. As Youngs (2024) notes:

> *"Strong hydrocarbon sales have helped these relatively flourishing Middle Eastern states begin to convert the power sources for existing manufacturing industries such as steel and ammonia manufacturing from oil to low- or zero-carbon energy sources, making these exports more appealing to customers aiming for green transitions."*

Rich Gulf countries have more resources at their disposal to underwrite the costs of energy transition compared to the region's other less financially endowed oil exporters. The latter category includes countries like Iraq, Libya, and Algeria where political regimes are less stable and oil rents are comparatively lower. With fewer resources, these countries will find it harder to finance green energy projects. Yet another crucial factor is the nature of governance structure. The prospects for energy transition can be also profoundly shaped by the underlying complexity of power sharing arrangements. Given that such a transition will entail both a concerted effort and can result in both payoffs and losses for different groups involved, it is likely to be slower and complex in countries with more difficult power sharing arrangements. Policy cohesion is more difficult to achieve in an ethno-sectarian power sharing setting in Iraq, a fractured state in Libya, and an ossified military rule in Algeria. In each of these contexts, competing elite interests are likely to make it more difficult to agree on the potential payoffs and losses resulting from a possible energy transition.

Such differences in demography, endowments, and resources mean that the nature, pace, and direction of energy transition is likely to differ across different states. Political economy can help to explain the differential momentum of energy transition across MENA states. There is clear evidence that the region's capital-surplus nations—such as the oil-rich states of the GCC—are making a more decisive push towards some of the goals linked with energy transition. Several reasons can help to explain this. One is performative virtue signaling that can earn brownie points for rulers and bolster their international legitimacy for supporting the global climate cause. Indeed, in recent years, GCC regimes have championed many worthy causes, positioning them as sponsors, conveners, and front-runners of global causes. While such virtue-signaling is clearly relevant, it provides an incomplete explanation. A more important reason is rooted in favorable ruler incentives, shaped by the possibility of aligning the energy transition agenda with ongoing efforts towards economic diversification. Economic diversification, which essentially boils down to the need to wean away the GCC States' excessive economic dependence on oil, has become front and center of national policy agendas. Saudi Arabia's Vision 2030 is just one prominent example. Saudi Arabia—and GCC states at

large—are leveraging the global climate commitments to integrate the energy transition projects into ongoing economic diversification efforts. Energy transition is therefore not purely a climate agenda but also a crucial ingredient for economic transformation. Green energy projects are a means to support new investments in the non-oil sector, support job creation, and claim a stake in the emerging climate-linked economic opportunities. These includes green investments inside the country as well as abroad.

There are numerous ways through which investments in energy transition can reap economic dividends. For example, investments in solar, wind, and hydrogen energy projects can not only create alternative energy sources but also establish leadership in global clean energy markets. Initiatives like Saudi Arabia's NEOM project and the UAE's Masdar City are concentrating on renewable energy as part of broader diversification goals. Energy transition also provides avenues to develop supporting green industries, such as battery production, electric vehicles, and renewable energy equipment manufacturing, to foster new value chains. Relatedly, green hydrogen can be deployed to produce decarbonized products lower down in the value chain. Green investments can also be integrated with existing initiatives for creating a knowledge-based economy through the creation of technology and innovation clusters. Among other things, such clusters can support technologies, smart grids, and digital energy solutions. The development of alternative or green energy sources can help to generate additional export revenues. This creates beneficial incentives for resource-scarce as well as resource-rich economies of the Middle East. For resource-scarce economies like Morocco, green energy projects raise the possibility of generating additional export earnings through exports to Europe. For the region's oil and gas rich countries, these projects provide an alternative revenue source that can help to diversify the external rent streams away from hydrocarbons. Furthermore, beyond harnessing the export potential, the development of green energy sources, such as solar and renewables, can help to meet domestic demand. Again, this is helpful both for resource-scarce countries, as it will reduce their need to expensive energy imports, and resource-rich countries who will be able to free up precious resources consumed for subsidize local energy provision. For the latter, more green energy means greater exportable surplus for conventional oil and gas exports. For the region's labor-abundant oil exporters, such as Saudi Arabia and Algeria, this could free up considerable resources. Algeria offers a stark example. About 30 percent of its hydrocarbons are consumed domestically. For a populous country that is struggling to meet its meet its domestic commitments within the available resource pie, the diversion of hydrocarbon resources to domestic consumption carries a high opportunity cost. Although Algeria is still behind the region curve, the development of alternative energy sources is well-aligned with regime incentives.

All of this suggests that there is a genuine pressure for reform. It is not just another good feel item and a box to tick. Even the resource-rich countries of MENA realize that this might be the time to support an energy transition while there are resources to facilitate this shift. There is also a realization that, besides being an economic opportunity, energy transition is likely to become a political imperative in a growingly de-carbonized world. Most of the region's hydrocarbon exporters recognize that there are going to be real and tangible effects. If energy transition happens globally, it will directly affect the political economy of MENA states, regardless of whether they are oil exporters or oil importers. In a world moving towards decarbonization, MENA oil exporters need to ensure a stable revenue stream for domestic political stability. The region's social contract is largely predicated on stable external revenue streams from oil and gas exports. The prospect of falling hydrocarbon revenues and the risk of local economies not diversifying enough in time carries imminent political economy risks. They have the potential to upend domestic political order in not only in oil exporting states but also in neighboring resource-scarce countries whose social contracts are typically financed through their oil-rich neighbors.

Even if a distant prospect, a genuinely de-carbonized world will profoundly shape a region whose economic and political order overwhelmingly rests on proceeds from oil and gas exports. It will trigger the important question of how the burden of such a profound shift will be distributed across different groups and sectors within a country. However, in the current stage, there are few political economy risks of supporting the energy transition. To the contrary, as mentioned earlier, many MENA regimes are strongly incentivized to support energy transition initiatives as current efforts are unlikely to have immediate distributional effects. However, as argued above, political economy factors are likely to shape the nature and pace of energy transition. One key issue, which has long remained on the reform agenda and is also crucial for energy transition, is the reform of the subsidy system. A little more than half of global energy subsidies are distributed in the MENA region. These subsidies are part of a generous social contract that sustains political stability of MENA regimes. A large-scale reform of this subsidy system will be more politically challenging, which is why it has been a relatively low-key item on existing energy transition initiatives.

Overall, it would not be wrong to conclude that ongoing efforts towards energy transition are not meant to replace the old rentier model but to preserve it. In fact, it has entailed the survival, even an extension of rent-seeking interests. The state continues to play a dominant role in energy transition initiatives, especially in Gulf countries where climate initiatives are being pursued more vigorously by state-directed investment funds. The region's sovereign wealth and development funds are the primary actors in pushing green investments at home and abroad. This climate push entails an important dimension of global political economy. Resource-rich states of the GCC are actively engaging with carbon offset projects in Africa. These are essentially environmental projects, such as the development and regeneration of forests, used to generate carbon credits for polluting countries. The market for carbon credits is estimated at nearly 250 billion dollars. The GCC states are playing an important role as financial backers of this market. Sovereign Wealth Funds in Gulf states are supporting the development of carbon exchanges. The Dubai-based company, Blue Carbon, is playing an important role in carbon offset projects in Africa. Similarly, the Saudi-based Regional Carbon Market Company has taken a lead in organizing carbon auctions in which Saudi firms, including Saudi Aramco, have actively participated. Similarly, UAE is an important financial backer for the African Carbons Market Initiative (ACMI), a global alliance to facilitate the creation of carbon markets for indebted African states (Hanieh 2024). These examples serve to illustrate the growingly important role of GCC states as crucial global nodes in creating the requisite financial infrastructure for carbon markets. As Hanieh (2024) observes: "The Gulf is emerging as a key economic space where African carbon is turned into a financial asset that can be bought, sold and speculated upon by financial actors across the globe".

The impact of energy transition initiatives can be determined by pre-existing inequalities, whether global, regional, or domestic. This is an important context to appreciate contemporary critiques of the role of MENA states in the changing global energy landscape. For example, Hanieh (2024) has critiqued GCC states' green investments in African as a form of "green washing" and "carbon laundering", creating new forms of dependency of African states. In the same vein, Scheutze (2024) opines that the hydrocarbon projects of North Africa, which are targeting Europe's growing appetite for green energy, risk promoting "green colonial dependencies" and a "colonial logic of resource extraction". While such analyses might appear unnecessarily alarmist, they nevertheless highlight the importance of global power asymmetries in navigating the impact of green investments. Importantly, they underscore the fact that discussions of political economy of energy transition in MENA cannot be divorced from Global Political Economy. Both are fundamentally inter-linked. Such linkages are increasingly visible through the financing of green investments, which has involved the role of GCC's investment vehicles, such as Sovereign Wealth Funds. Also, the interconnectivity of energy infrastructure entails new challenges and possibilities for regional connectivity, which has the potential to reconfigure existing geo-political relationships. Finally, turning to the potential of energy transition to reinforce domestic inequalities, Lebanon provides a relevant example where a substantive shift is taking place towards solar energy. However, in an institutional context where decentralized provision is a norm, a functional grid is absent, and public provision is both "fragmented" and "patchy", the transition to solar is likely to exacerbate the inequities of private provision. The access and affordability of green energy will still depend on a fundamental overhaul of the energy system, which will be resisted by Lebanon's "entrenched" political class (Fheili 2024).

6. Conclusion

For MENA states, energy transition is more than an environmental issue—it is closely tied to the core political question of regime survival. The transition poses risks of disrupting the political and economic status quo but also offers opportunities for maintaining stability by creating new economic avenues. Consequently, MENA governments tend to approach energy transition selectively, aligning initiatives with political goals and avoiding reforms that could destabilize existing power structures.

Oil and gas revenues are central to the political and economic order in MENA, whether through direct exports or through remittances and aid from oil-rich neighbors. As global energy demands shift toward decarbonization, this dependence creates significant vulnerabilities for the region. The impact varies by state, with oil-rich and capital-surplus nations like the Gulf Cooperation Council (GCC) states being better positioned to pursue green energy initiatives than resource-scarce or politically fragile countries like Algeria or Libya. Wealthier Gulf states are integrating energy transition into broader economic diversification plans to reduce reliance on hydrocarbons, foster new industries, and bolster their international standing as leaders in climate initiatives.

Green energy investments, such as in solar, wind, and hydrogen projects, offer economic and political benefits. These include reduced energy import reliance, new export

opportunities, and job creation. However, pre-existing inequalities and governance challenges, such as weak institutions or complex power-sharing arrangements, can impede progress in some states. For instance, Gulf states with surplus capital are spearheading global climate projects, including carbon offset initiatives in Africa, which have drawn criticism for perpetuating global inequalities. Critics label these initiatives as "greenwashing" and forms of "green colonialism" that deepen dependencies in poorer nations.

Domestically, energy transition remains politically sensitive. Key reforms, such as reducing energy subsidies, are challenging due to their role in maintaining social contracts. While efforts toward energy transition are accelerating in the GCC, they are not aimed at dismantling the rentier model but at adapting it to preserve state dominance. These initiatives often rely on state-driven investments, such as sovereign wealth funds, to finance projects both locally and abroad. Ultimately, energy transition in MENA will reflect a broader interplay of domestic and global political economies, shaped by resource wealth, institutional capacity, and geopolitical considerations. While promising, the uneven pathway to energy transition risks reinforcing existing inequalities at both regional and global levels.

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ERF at a Glance: *The Economic Research Forum (ERF) is a regional network dedicated to promoting high-quality economic research for sustainable development in the Arab countries, Iran and Turkey. Established in 1993, ERF's core objectives are to build a strong research capacity in the region; to encourage the production of independent, high-quality research; and to disseminate research output to a wide and diverse audience. To achieve these objectives, ERF's portfolio of activities includes managing carefully selected regional research initiatives; providing training and mentoring to junior researchers; and disseminating the research findings through seminars, conferences and a variety of publications. The network is headquartered in Egypt but its affiliates come primarily from different countries in the region.*

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