China’s Essential Role in the Gulf States’ Energy Transitions

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DECEMBER 2023

THE ISSUE

- After a sluggish start, Gulf states are getting serious about the energy transition. Saudi Arabia and the United Arab Emirates (UAE) are embarking on a concerted effort to decarbonize their power grids and seek regional and international leadership roles in the new energy world.

- China has established itself as an essential partner in Gulf states’ energy transitions. China and Chinese companies have built on their ties with Gulf states in the oil and petrochemical sectors and have gradually transitioned to higher-value inputs in the renewables sector, becoming investors and coinvestors in Gulf states’ largest-scale solar and wind projects in the Middle East and beyond.

- Western governments have been reluctant to compete head-to-head with Chinese enterprises in the renewables sector in the Gulf. The state capitalist landscape acts as a tacit barrier to entry to private Western firms and is more familiar to Chinese firms.

INTRODUCTION

Saudi Arabia and Uzbekistan do not enjoy strong economic ties. Uzbekistan does not even feature in Saudi Arabia’s top 100 trading partners. Yet, a Saudi state-owned developer, ACWA Power, recently broke ground on central Asia’s largest wind project as part of a planned $7.5 billion investment in Uzbekistan. But this project reveals more about the strength of Saudi-Chinese ties than it does about Uzbekistan. A Saudi company may be the lead developer, but a Chinese manufacturer made the wind turbines, a Chinese company is set to install them, and China’s 49 percent stake in ACWA’s portfolio company helped make it happen.

Globally, both China and Chinese companies are playing a central role in the energy transition. They are especially prominent in supply chains for renewables, providing critical components for wind, solar, and energy storage projects. China’s dominant position within these critical supply chains has raised alarm bells in the United States and European Union, with both resorting to muscular industrial policy to push back.

But China has received a considerably warmer welcome in much of the Global South, and in the Middle East especially. Chinese companies and capital have grown beyond their traditional role as suppliers of renewable energy components to become investors and project developers, building deeper economic ties with countries in the process. This expansion along the value chain is particularly visible in the Gulf, where state-owned enterprises (SOEs) have entered into partnerships with their Chinese counterparts to codevelop large-scale renewable projects in the region and elsewhere in Asia and Africa.
This brief will map the growing economic relationship between China and the Gulf states in the context of the global energy transition and deepening geopolitical ties. Starting by tracing the roots of this relationship to older forms of cooperation on oil and gas, conventional power, and petrochemicals, the brief will demonstrate that the partnerships in renewable energy have strong precedents. It will then give an overview of the role of China and Chinese companies in the Gulf states’ nascent energy transition, before looking at emergent forms of cooperation outside of the region by SOEs from both sides.

As Gulf states get serious about the energy transition, China and Chinese companies are emerging as essential partners. Gulf SOEs are eager to play leading roles in the next technological wave, as electric vehicles (EVs), energy storage, hydrogen, and carbon capture technologies take center stage. They see China as a leading player in each of these technology areas. Beyond the Middle East, Gulf states have identified a range of soft-power opportunities afforded by other states’ energy transitions, particularly in the Global South. China is a key partner to these states as well.

**THE GULF STATES BEGIN TO DECARBONIZE**

Gulf states are latecomers to the energy transition. In comparison to other major developing countries, they invested late in solar and wind and have lagged far behind. Comparing their investment in renewables with neighboring Jordan—an economy with high levels of solar radiation but one with no oil—demonstrates how rentier states often move more slowly (Figure 1). The exception is the UAE, which leads the Gulf Cooperation Council (GCC) states in decarbonizing its power sector with solar and wind. In addition to the solar and wind captured in the chart below, its Barakah nuclear plant now contributes almost 25 percent of the country’s electricity.

After a delayed start, Saudi Arabia and the UAE are clearly now embarking on a concerted effort to decarbonize their power grids, and they are developing wind and solar at a considerably faster pace than other members of the GCC (Figure 2). The differences between the approaches of these states are noteworthy and are not correlated with wealth within the group. Among the subgroup often referred to as “super rentiers,” consisting of Kuwait, Qatar, and the UAE, Kuwait is a laggard while the UAE is a leader. Although the rentier effect seems to explain the late transition start as a group, it does not explain the differences now emerging within it.

**A DEFINITIVELY STATE-LED TRANSITION**

Saudi Arabia and the UAE are looking to assume regional and international leadership roles in the new energy

![Figure 1: Solar and Wind as Share of Total Capacity](https://pxweb.irena.org/pxweb/en/IRENASTAT/IRENASTAT__Power%20Capacity%20and%20Generation/RECAP_2023_cycle2.px/).

world that is taking shape. The UAE’s hosting of the UN Climate Change Conference (COP28) in 2023 is perhaps the most obvious example, but Saudi Arabia is also aiming to play a regional leadership role in combating climate change and recently launched the Middle East Green Initiative, a climate mitigation platform and reforestation program. This new posture within the climate and transition discourse represents a stark departure from the more cautious and sometimes obstructionist role played by these states in the past and demonstrates their aspirations as middle powers in the emergent multipolar international system.

Having embarked on their domestic transitions late, Gulf states have had limited opportunities to carve out spaces for themselves in the value chain of renewable energy components, with efforts to establish solar module production facilities generally producing uncompetitive and disappointing results. Early investments by regional and national oil companies (NOCs) in solar technology providers, such as Petroleum Development Oman’s investment in Glasspoint and Saudi Aramco’s investment in the Japanese thin film producer Solar Frontier, failed to yield industrial policy outcomes or returns.

However, Saudi Arabia, the UAE, and Oman are approaching the next phase of the transition with considerably more dynamism, marshaling sovereign wealth and directing resources from their NOCs in an attempt to lead the nascent hydrogen economy and carbon capture, utilization, and storage (CCUS) technologies. These oil and gas states see their locations, renewable energy resource potential, and experience in conventional energy development as distinct advantages with these two sets of technologies.

The UAE’s and Saudi Arabia’s state-owned renewable power developers—Masdar and ACWA Power, respectively—have played a dominant role in the early stages of their countries’ energy transitions. The role of SOEs distinguishes their early transitions from other GCC states. Masdar and ACWA have developed the majority of completed projects in their home states; each is also the second most prominent developer in the neighboring state.

The UAE and Saudi Arabia seem to have employed a national champions strategy, with these companies using their home markets to accumulate large portfolios of projects that qualify them to compete on the global stage. This distinctly state capitalist approach to power development separates the UAE and Saudi Arabia from their regional peers. Domestically focused sovereign wealth funds either created or acquired specialized developers—unrelated to the NOCs and legacy utility

Figure 2: Renewables Development in the GCC (Capacity in MWp)

firms—to advance renewables. In contrast, Qatar and Kuwait have given renewables deployment mandates to the NOCs and their affiliates, with largely disappointing results. Saudi Arabia’s sovereign wealth fund has gone a step further in this state capitalist direction. The Public Investment Fund (PIF) announced that only 30 percent of its planned utility projects would be developed through a competitive tender process (its state-owned developer is still the largest winner of these tenders) and that it would directly develop the other 70 percent with partners of its choosing.7

Navigating this state capitalist landscape, with astonishingly low prices at tenders (Figure 3), has proved too complex or unappealing for most Western firms.8 The inroads made by the French state-owned firm Électricité de France (EDF), which has built a portfolio of wind and solar projects in the region in partnership with Masdar, remains the exception. Chinese firms have also begun to make notable progress, first as component suppliers and contractors, but also more recently as developers.

DEEPENING GEOPOLITICAL TIES BETWEEN CHINA AND THE GULF

Underpinning this trend of deeper economic cooperation is a geopolitical context in which the Gulf states—having long expressed anxieties about U.S. commitment to the region—have adopted a more proactive foreign policy, courting China to secure a stronger position in the multipolar landscape taking shape. This strategy was strikingly evident when Saudi Arabia and Iran recently signed an agreement in Beijing to resume diplomatic ties six years after having closed their embassies. The symbolic value of the signing taking place in Beijing and the implicit role given to China as guarantor are more relevant than China’s actual role in facilitating the agreement. President Xi Jinping’s visit to Saudi Arabia in 2022 also came with a flurry of deal announcements worth an estimated $30 billion.9 U.S. policymakers have increasingly scrutinized China’s investments and interest in the region in recent months. China’s military, technology, and energy cooperation with Saudi Arabia is understood to be a central piece of the normalization negotiations currently underway between Saudi Arabia and the United States. The U.S. administration is clearly now shifting from a position marked by seeming ambivalence to one of overt hostility to the pattern of deepening economic and technological ties. If Saudi Arabia is to receive the security guarantee it is seeking as

Figure 3: GCC Solar Photovoltaics Tariffs, 2015–2023

<table>
<thead>
<tr>
<th>LCOE (cents/kWh)</th>
<th>Capacity (MW)</th>
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<tbody>
<tr>
<td>MBR solar park phase 6 (2023)</td>
<td>1.62</td>
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<tr>
<td>Al-Ajban (2023)</td>
<td>1.41</td>
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<tr>
<td>Al-Dhafra</td>
<td>1.35</td>
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<tr>
<td>Sudair (2021)</td>
<td>1.24</td>
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<tr>
<td>MBR solar PV/CSP (2017)</td>
<td>7.3</td>
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<tr>
<td>Sweihan (2016)</td>
<td>2.42</td>
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<tr>
<td>MBR park solar phase 5 (2020)</td>
<td>1.69</td>
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<tr>
<td>MBR solar park phase 3 (2016)</td>
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<tr>
<td>Al-Kharsaah (2020)</td>
<td>1.45</td>
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<tr>
<td>Al-Rass (2022)</td>
<td>1.5</td>
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<tr>
<td>Shu'aibah (2021)</td>
<td>1.04</td>
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<tr>
<td>Dumat aal-Jandal wind IPP (2019)</td>
<td>1.9</td>
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<tr>
<td>Sakaka (2018)</td>
<td>2.34</td>
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<td>Rabigh (2021)</td>
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<td>Jeddah (2021)</td>
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<td>Saad (2022)</td>
<td>1.48</td>
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<tr>
<td>MBR solar park phase 2 (2015)</td>
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<tr>
<td>Qurayyat (2021)</td>
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<tr>
<td>Wadi al-Dawassir</td>
<td>1.87</td>
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<tr>
<td>Layla (2022)</td>
<td>2.97</td>
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part of an agreement, the administration is asking for an unwinding of these ties.10

Saudi Arabia’s and the UAE’s recent ascension to the BRICS group (previously made up of Brazil, Russia, India, China, and South Africa) as part of an expanded 10-member organization is in many ways indicative of the tectonic shifts taking place in the international system.11 Of the original BRICS members, China played a crucial role in the effort to expand the group and include the two Gulf states (the new members, not coincidentally, were four of the five Middle Eastern states that have “comprehensive strategic partnerships” with China).12 It is too early to discern the practical effect of this development, but the UAE has already joined the group’s New Development Bank, and Saudi Arabia is expected to follow soon. This group is aiming to provide an institutional forum for a more depoliticized approach to development cooperation outside of the universe of Western institutions and the G7, whose relative economic clout has declined.

CHINESE-GULF CONVENTIONAL POWER TIES

China and the Gulf states have developed deep economic ties in the conventional energy and petrochemical sectors. Trade and investment patterns have slowly transitioned from transactional relationships based on the sale of energy one way and consumer goods the other to deeper ties involving joint ventures and large infrastructure projects.

The focus on hydrocarbon trade between the Gulf and China obscures the depth of the relationship in the power, refining, and petrochemical sectors. Much attention is often given to the fact that China has become Saudi Arabia’s leading trade partner over the past two decades, with Saudi Arabia currently supplying about a fifth of China’s crude imports, with similar trends in the other Gulf states.13 But in a liquid market such as that of oil or gas, this trade does not necessarily lead to deeper economic ties. However, foreign direct investment (FDI) in the sector and joint ventures between state-owned firms do have the effect of deepening ties, locking companies into long-term investment cycles and facilitating the exchange of skills and talent.

Saudi Aramco’s recent history reveals the gradual deepening of ties taking place between sets of SOEs from both sides. The first of these large projects was the establishment of the Yanbu Aramco Sinopec Refining Company (YASREF) in 2014, a joint venture between Saudi Aramco and the China Petrochemical Corporation (Sinopec) over a $10 billion refining facility on Saudi Arabia’s Red Sea coast with a capacity of 300,000 barrels per day (b/d).14 The success of the venture clearly engendered trust and confidence on both sides, and the two countries subsequently announced a number of other projects. Notably, these include Saudi capital from Aramco and state-owned petrochemical giant SABIC flowing to greenfield and brownfield refining and petrochemical facilities along China’s coastline, and Chinese capital from its state-owned Silk Road Fund leading a consortium that acquired 49 percent of Aramco’s gas pipeline company in 2022.15

The UAE and Oman have also attracted Chinese energy contractors and FDI, including the China Petroleum Engineering and Construction Company’s construction of the Habshan-Fujairah oil pipeline in 2012, which bypasses the Strait of Hormuz, through which 45 percent of China’s oil imports flow. Chinese SOEs have also directly invested in UAE offshore concessions over the past 10 years.16 ADNOC, Abu Dhabi’s national oil company, recently signed a framework agreement worth an estimated $12 billion with China’s Wanhua Chemical to codevelop downstream projects following a state visit by President Xi in 2019.17 This list of projects is long and continues to grow, both within the oil and gas sectors and in fields such as logistics and port infrastructure in particular. The picture that emerges is one of a deepening economic relationship with a strong understanding on both sides of how to cooperate on long-term and often risk-prone infrastructure projects.

Gulf states and China share a state capitalist model of development typified by SOEs negotiating deals on both sides, and this similarity likely facilitates cooperation and the integration of national and corporate agendas in the deals that are reached. These SOEs are political actors first and economic actors second, so where political will exists for deals to be made, as there has been over the last five years, these firms tend to overcome the commercial hurdles.
CHINA’S CENTRALITY IN THE GULF ENERGY TRANSITION

China’s role in Gulf states’ energy transition mirrors trends in their broader economic relationship. The Chinese side has gradually transitioned to higher-value inputs, from component suppliers, to contractors, and finally to investors and coinvestors in the largest scale solar and wind projects.

China’s dominance in clean energy supply chains is not unique to the Gulf. The top six solar module manufacturers globally by production value are all Chinese companies. Chinese companies also dominate a variety of other solar and wind components along the value chains. In markets that exhibit the rentier effect and a strong focus on achieving the lowest price at tender, states have tended to focus on importing the cheapest and most efficient components. These components nearly invariably come from China, even if that comes at the expense of effective industrial policy in the short term. This has meant that the Saudi and UAE markets have rapidly become important export markets for Chinese companies. Chinese contractors such as the China Energy Engineering Group and Shanghai Electric have also played an important role in building the first group of utility-scale projects, but with the entry of lower-cost Indian contracting firms, they now play a smaller role in that part of the value chain.

China’s growing role as an investor and developer in solar projects, both at the utility and commercial scale and in greenfield and brownfield developments, is interesting. For the most part, Gulf states do not have an issue accessing capital or debt, and Gulf SOEs typically do most of the investing in this sector. But at the utility scale, module manufacturers such as Jinko Solar, the largest in the world, are leading consortia that have won large solar tenders in Saudi Arabia. Chinese firms have captured much of the value chain in such projects; in this case, Jinko is the developer and module supplier, and a smaller percentage of expenditure—for cables, civil contracting, and understructures—is directed to local firms to satisfy local content requirements. Jinko also played a similar role in the 1.2 gigawatt-peak (GWp) Al Sweihan project in Abu Dhabi, which is one of the largest single-site photovoltaic (PV) projects in the world. Jinko codeveloped the project along with UAE state-owned developer Taqa and also supplied the modules. These two recent projects signal Chinese firms’ strong intention to play a role in all parts of the project development value chain in the Gulf.

However, the 2019 announcement that China’s state-owned Silk Road Fund had acquired 49 percent in ACWA Power Renewable Energy Holding (ACWA Power RenewCo) represents the clearest and most important signal of this deepening cooperation, as the company is one of Saudi Arabia’s main renewable energy project holding companies, with 1,668 megawatts (MW) of wind and solar assets in the UAE, South Africa, Jordan, Egypt, and Morocco. This larger transaction followed a series of one-off greenfield codevelopment deals between ACWA and the Silk Road Fund relating to one coal and two solar projects in the UAE. The growing partnership would prove to be a precursor to more international codevelopment in years to come.

As of October 2023, the total Chinese investment in ACWA projects has exceeded $10 billion. ACWA’s chair highlighted these developments during an address at a forum celebrating the 10-year anniversary of the Belt and Road Initiative in October 2023. During the forum, ACWA signed seven new cooperation agreements with a host of Chinese SOEs and asserted its commitment to the Chinese market.

Notable developments have also occurred at the commercial and industrial scale. In 2021, the China Three Gorges company, one of the largest state-owned power developers, acquired UAE-based Alcazar Energy. With a portfolio of only around 400 MW, this transaction is not interesting for its scale. Rather, it indicates a nuanced understanding of the market on the part of China Three Gorges because it bundled together a large group of smaller projects from markets across the MENA region—an indication that their risk appetite extends beyond cooperation with state-owned players on mega-projects. Unsurprisingly, the Silk Road Fund also played a role financing the transaction.

Another powerful indicator of the deepening economic cooperation between China and the Gulf on clean energy is the increased level of investment further upstream in the renewables value chain. As the United States and European Union have erected new trade barriers to slow
the growth of Chinese companies in key sectors, the opposite trend seems to be unfolding in the Gulf. Saudi Arabia and the UAE have each established ambitious sets of industrial policies and have marshaled their sovereign wealth to attract joint venture partners to codevelop manufacturing facilities in their domestic markets. The most notable example of this trend is the announcement of a joint venture agreement between Saudi Arabia’s PIF and China’s Longi Solar, one of the world’s largest module manufacturers. Longi has since become the module supplier of preference on a series of mega-scale solar PV projects developed by the PIF. A similar agreement was also recently announced between the PIF and China’s Hon Hai Precision Industry Company (Foxconn) to codevelop an EV brand in Saudi Arabia called CEER, breaking ground on the project in 2023. The PIF has also built an assembly plant with the U.S. EV carmaker Lucid, after becoming its largest shareholder, and is set to begin operation in the third quarter of 2023.

Large developers from the United States and the United Kingdom are notably absent from the broader renewable landscape altogether, despite a growing appetite for investments in other developing markets in Asia and Latin America. An exception to this absence of Western firms is the large role played by French firms in the Gulf renewables landscape, particularly large state-owned firms EDF and Engie. Their success at winning public solar and wind tenders in the region, and building lasting partnerships with local developers, lends credence to the hypothesis that it is the shared feature of state ownership, nearly ubiquitous in Chinese, French, and Gulf firms operating in the sector, that is key to success. The statist nature of these firms permits access to lower-cost capital and cheaper debt and enables them to invest with longer time horizons than private firms, allowing them to target projects that have substantial soft-power or non-financial returns to their state ownership.

**CHINESE AND GULF CLEAN ENERGY COOPERATION BEYOND THE MIDDLE EAST**

In addition to their deep cooperation in the Gulf, China and Gulf states are also increasing their economic cooperation elsewhere in the world. China and the Silk Road Fund’s acquisition of half of ACWA Power’s renewables portfolio company in 2019 gave the two state-owned companies shared exposure to a group of projects in South Africa, Jordan, Egypt, and Morocco. This type of engagement is qualitatively different from the type of FDI that preceded it and indicates a deeper level of cooperation and alignment. A number of other greenfield development agreements between the two parties followed this deal, most notably the 1.5 gigawatt (GW) Sirdarya combined cycle gas turbine facility in Uzbekistan and a $2.4 billion investment in three large wind projects spearheaded by ACWA totaling an additional 1.5 GW. These facilities, set to be completed in early 2024, are expected to meet up to a quarter of the country’s power needs. These investments have quickly made Saudi Arabia an important economic player in a former Soviet republic with which it previously shared only tenuous ties.

Following the recent addition of the UAE and Saudi Arabia to BRICS, these types of engagements are likely to increase substantially, with the Gulf states gaining legitimacy and access to new markets by associating with China, a great power. China is also eager to strengthen partnerships with traditional U.S. allies in the region, and as budget constraints have slowed Belt and Road Initiative projects in recent years, China could increasingly look to Gulf financial sponsors to play a role in stalled development plans.
WESTERN RESPONSES

As noted above, Western governments generally have been reluctant to compete head-to-head with Chinese enterprises in the Gulf as the global energy transition unfolds. The major U.S. initiative in this field is the November 2022 UAE-US Partnership for Accelerating Clean Energy, which promises to “catalyze” $100 billion and deploy 100 GW of clean energy by 2035. What “catalyze” means exactly is unclear; other parts of the plan refer to “mobilizing,” but fundamental issues such as financing, control, and ownership are not spelled out. Partly, this omission is due to a different idea of the relationship between the government and private sector in Western societies. But it is also due to a Western preoccupation in the energy field with dividing the roles of asset owners, policymakers, and regulators. In the Gulf, these roles are often conflated in the interest of speed and agility. The strategy of Western firms is to precede construction with intensive studies on demand, economic viability, and environmental impacts; to stress safety; and to have diverse stakeholders evaluating technical and economic analysis, forecasting, simulation, communication, and management.

China’s orientation to build things and get them online quickly is often much more in tune with the instincts of Gulf governments.

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CONCLUSION

The energy relationship between China and the Gulf states has evolved slowly from a relationship characterized by transactional trade to one that now includes large-scale reciprocal FDI in both conventional fossil fuel assets and increasingly in renewable energy assets that are the central pillars of the Gulf states’ energy transitions. A decade and a half of investment cooperation in the oil and gas sector afforded both sides opportunities to develop relationships and trust, which have been carried forward by a different set of state-owned firms into the renewables sector. China’s dominant position in the supply chain of both solar and wind projects has also amplified this trend. Moving beyond this pattern of reciprocal FDI in the energy sector, China and its Gulf partners have begun to develop projects jointly in other developing markets, signaling a further deepening of this economic relationship and growing alignment of economic and foreign policy priorities. Interestingly, the unique success of French state-owned firms among Western developers in this market strongly suggests that state ownership in a state capitalist landscape brings with it a set of advantages and perhaps acts as a tacit barrier to entry to other private Western firms.

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This brief is made possible through support from the Japan External Trade Organization (JETRO)
ENDNOTES


